Notice of Decision

Granting a water licence under a process in a plan or regulation

This Notice of Decision is given under sections 116(3) and 114(5) of the *Water Act 2000* (the Water Act) for a decision made to grant a water licence under section 116 of the Water Act, to the applicant Adani Infrastructure Pty Ltd, in accordance with the Terms of Sale for the Carmichael Coal Mine and Rail Project, January 2017 for the release of unallocated water from the strategic reserve in the Belyando-Suttor Subcatchment Area E of the *Water Plan (Burdekin Basin) 2007*.

s.49 - Signature

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Darren Moor
Executive Director, Central Region
Department of Natural Resources and Mines

Authorised delegate of the chief executive under the Water Act the *Water Regulation 2016* and the *Water Plan (Burdekin Basin) 2007.*

Date: 29-3-2017

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Background matters

On 5 January 2017, as an authorised delegate of the chief executive, under the Water Act, the *Water Regulation 2016* (Water Regulation) and the *Water Plan (Burdekin Basin) 2007* (Burdekin Basin WP), I decided the Terms of Sale entitled *Release of unallocated water in the Belyando-Suttor Subcatchment Area E of the Water Plan (Burdekin Basin) 2007 Strategic reserve, Terms of Sale for Carmichael Coal Mine and Rail Project (Adani Infrastructure Pty Ltd), January 2017* (Terms of Sale).

Adani Infrastructure Pty Ltd (Adani Infrastructure) submitted an application for a water licence on 10 January 2017 in response to the Terms of Sale.

The application was assessed by officers of the Department of Natural Resource and Mines (Department or DNRM) against the evaluation criteria in the Terms of Sale, which were informed by the relevant legislative provisions of the Water Act, Water Regulation and the Burdekin Basin WP. On 10 March 2017, I decided to offer a water licence to Adani Infrastructure in accordance with the Terms of Sale.

Decision

I am an authorised delegate of the chief executive under section 116 of the Water Act, under the *Water Act Delegation (No 1) 2016* and the *Water Act (Burdekin Basin Chief Executive) Delegation (No 1) 2017*.

Under section 116 of the Water Act, I have decided to grant a licence to Adani Infrastructure with conditions, for the State purpose of the Carmichael Coal Mine and Rail Project.

Reasons for the decision

Evidence and other material on which findings of fact were made

In making this decision, I have considered the following evidence and other material:

- Relevant legislation, including:
    i. the Burdekin Basin WP;
    ii. the Water Regulation; and
    iii. the Water Act.
- Departmental brief CTS No. 07862/17 dated 29 March 2017 recommending the grant of a water licence with conditions authorising the take of 12 500ML (10 800ML mean annual volume) watercourse water from the Suttor River for the purpose of water supply for the Carmichael Coal and Rail Project (Project) to Adani Infrastructure, which included the following attachments:
    - Proposed water licence with conditions;
    - Signed letter of offer to Adani Infrastructure dated 9 March 2017;
    - The Acceptance of Offer document signed by two officers of Adani Infrastructure and provided to the Department on 22 March 2017;
    - Evidence of the payment by Adani Infrastructure of Invoice 158758 of an amount of $1 612 224, namely a direct credit transaction statement from the Commonwealth Bank dated 23 March 2017 and an email from DNRM Finance confirming receipt of the payment;
    - ASIC Current Company Extract for Adani Infrastructure;
    - Overview of legislative framework;
    - Departmental brief CTS No. 00224/17 which I signed on 5 January 2017, where I decided:
        - to release 10,800 megalitres of strategic reserve unallocated water as mean annual volume from Subcatchment Area E (Belyando-Suttor) of the Burdekin Basin WP, adjacent to Lot 3/SP278559, for the State purpose of the Carmichael Coal Mine and Rail Project (Project); and
        - the Terms of Sale;
    - Terms of Sale entitled *Release of unallocated water in the Belyando-Suttor Subcatchment Area E of the Water Plan (Burdekin Basin) 2007 Strategic reserve, Terms of Sale for Carmichael Coal Mine and Rail Project (Adani Infrastructure Pty Ltd), January 2017*;
    - The assessment report completed by DNRM, dated 8 March 2017;
    - Departmental brief CTS No. 06171/17 which I signed on 9 March 2017, where I decided to offer a water licence with conditions authorising the take of 12 500ML (10 800ML mean annual volume) watercourse water from the Suttor River for the purpose of water supply for the Carmichael Coal and Rail Project (Project) to Adani Infrastructure.
    - Native Title Notification letter and form under the Commonwealth *Native Title Act 1993*, dated 13 and 16 January 2017;
    - Submissions provided by the downstream landowners and/or existing entitlement holders;
    - The fixed price application form submitted by Adani Infrastructure and received by DNRM on 10 January 2017;

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Release

- A report supporting the fixed price application form entitled, '*Adani Infrastructure Pty Ltd, Supporting Information for an Application for a Water Licence to Take Unallocated Water from the Strategic Reserve in Sub-Catchment E of the Burdekin Basin*', published by CDM Smith, dated 10 January 2017;

Findings on material questions of fact

1. The proposed licensee, Adani Infrastructure, is a prescribed entity under schedule 4, item 39 of the Water Regulation, who is eligible to apply for a water licence pursuant to section 107(4) of the Water Act.

2. Section 40 of the Water Act states that the chief executive may release unallocated water if a volume is stated in a water plan or prescribed by regulation. Under section 40(2) and (3), the chief executive must release unallocated water under the process prescribed by regulation. However, section 40(2) does not apply to the extent that the water plan provides for an alternative process for the release of the unallocated water. Under section 40(4), the chief executive may set a price for the unallocated water.

3. Under section 116 of the Water Act, the chief executive (or authorised delegate) may grant a water licence in accordance with a process stated in a water plan, water management protocol or regulation for the allocation of water or interference with the flow of water under a water licence. The chief executive may grant the water licence in accordance with the process without the need for an application to be made under section 107 of the Water Act.

4. On 5 January 2017, as an authorised delegate of the chief executive under the Water Act, the Water Regulation and the Burdekin Basin WP, I decided Terms of Sale for a fixed price sale process for the release of unallocated water held as strategic reserve in Subcatchment Area E (Belyando-Suttor)[1] of the Burdekin Basin WP, for the State purpose of the Project.

5. As at 5 January 2017, the processes for the release of unallocated water for a State purpose were as set out in the Burdekin Basin Resource Operations Plan, December 2009, Amended October 2010, Revision 2 (Burdekin Basin ROP),[2] chapter 2.[3]

6. The provisions of the Burdekin Basin ROP were taken to be, or taken to have effect for, a number of other documents including the water plan or a water management protocol under the Water Act as amended.[4]

7. The new part 5, division 2 of the Burdekin Basin WP (inserted in February 2017), in material respects, mirrors the provisions of the Burdekin Basin ROP in terms of the processes for the

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[1] See section 5 and Attachment 2 of the Burdekin Basin ROP.
[2] That was the effect of s 31 of the Burdekin Basin WP, current as at 6 December 2016.
[3] Chapter 2 of the Burdekin Basin ROP sets out the process for making available and dealing with unallocated water, including unallocated water held as strategic reserve for state purposes. Section 38 of the Burdekin Basin ROP states that the processes for making unallocated water available are described in part 2, division 1C of the *Water Regulation 2002*. Pursuant to s 145 of the *Water Regulation 2016*, a reference in an Act or other document to the repealed regulation may, if the context permits, be taken to be a reference to the *Water Regulation 2016*. Therefore, a reference to the *Water Regulation 2002* may be taken to be a reference to the *Water Regulation 2016*. Therefore, the reference to the process under part 2, division 1C of the *Water Regulation 2002* in the Burdekin Basin ROP may be taken to be a reference to the provisions in part 2, division 2 of the *Water Regulation 2016*, as these provisions have been renumbered with minimal changes.
[4] See sections 1259(2)(e) and 1264 of the Water Act.

release of unallocated water for a State purpose.[5] Therefore, relevantly, the processes for granting, refusing, amending or otherwise dealing with water licences and the volume or volumes of unallocated water reserved or available to be released are set out in part 5, division 2 of the Burdekin Basin WP.[6]

8. The processes for granting water licences include a process by way of fixed price sale, where the chief executive may determine the terms of sale (see sections 16(c) and 18 of the Water Regulation).

9. The Application made by Adani Infrastructure on 10 January 2017 was made in the approved form (as per Schedule 3 of the Terms of Sale), was lodged before the specified closing date and the supporting information was consistent with the water product specification in the Terms of Sale.

10. The supporting information accompanying the application received by the Department from Adani Infrastructure on 10 January 2017 appropriately addressed the evaluation criteria included in the Terms of Sale, on the basis set out in the Department's assessment report which I considered when I decided to offer a licence to Adani Infrastructure on 9 March 2017 (see departmental brief CTS 06171/17).

11. No responses were received in relation to the Native Title Notification letter and form under the *Commonwealth Native Title Act 1993*, dated 13 and 16 January 2017.

12. The issues raised by downstream landowners and/or existing entitlement holders in submissions received on 17 February 2017 and 18 February 2017 which I considered when I decided to offer a licence to Adani Infrastructure on 9 March 2017 (see departmental brief CTS 06171/17) have been reviewed and I consider that the issues have either been dealt with as part of the assessment of the application and/or have been catered for in the conditioning of the proposed licence. These include:
    a. Inclusion of conditions to ensure monitoring and reporting of extraction of water is undertaken and publicly available;
    b. Inclusion of a condition to require installed monitoring equipment to be authorised by an approved independent meter validator; and
    c. The water licence will be granted for the purpose of the Project only.

13. The Application made by Adani Infrastructure on 10 January 2017 was made in the approved form (as per Schedule 3 of the Terms of Sale), before the specified closing date and the supporting information was consistent with the water product specification in the Terms of Sale.

14. The supporting information and the application received from Adani Infrastructure on 10 January 2017 has been assessed by the Department as appropriately addressing the evaluation criteria included in the Terms of Sale, which I considered when I decided to offer a licence to Adani Infrastructure on 9 March 2017 (see departmental brief CTS 06171/17).

15. Section 11 of the Terms of Sale states that if the applicant's application is successful, a letter of offer will:

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[5] That is, under both the Burdekin Basin WP and the Burdekin Basin ROP, 35,000 ML of unallocated water held as a strategic reserve may be released for a State purpose and that the process for releasing the unallocated water is the process stated in the *Water Regulation* (see footnote 3 above). 'State purpose' is also now defined in schedule 10 of the Burdekin Basin WP, whereas it was not clearly defined in the Burdekin Basin ROP.
[6] See section 1264 of the Water Act.

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Released

a. include the volume in megalitres nominal entitlement and mean annual volume being offered;
b. enclose a draft licence including the conditions of licence that will apply if the offer is accepted;
c. enclose an acceptance form for the applicant to complete and return if it accepts the volume and licence as offered; and
d. stipulate the deposit that must be paid by the due date to accept the licence.

16. Section 13 of the Terms of Sale states that to accept the offer of a licence, the applicant must sign and return the acceptance form and pay a non-refundable deposit of 8% of the purchase price by the due date stated in the letter of offer.

17. In this context, the letter of offer dated 9 March 2017 required Adani Infrastructure to sign and return the acceptance form and pay a non-refundable deposit of 8% of the purchase price ($1,612,224.00) by 23 March 2017.

18. The offer was accepted by Adani Infrastructure in accordance with the requirements of the Terms of Sale and the letter of offer, as the acceptance form duly signed by a director and the company secretary of Adani Infrastructure was received by the Department on 22 March 2017 and payment of the non-refundable deposit (as per the Department's invoice 158758) was made on 23 March 2017.

Reasons

Having regard to the material and findings referred to above, I have decided to grant a water licence to Adani Infrastructure under section 116 of the Water Act for the State purpose of the Project for the following reasons:

- Adani Infrastructure, is a prescribed entity under schedule 4, item 39 of the Water Regulation, which is eligible to apply for a water licence pursuant to section 107(4) of the Water Act.
- On 5 January 2017, I decided Terms of Sale for a fixed price sale process entitled *Release of unallocated water in the Belyando-Suttor Subcatchment Area E of the Water Plan (Burdekin Basin) 2007 Strategic reserve, Terms of Sale for Carmichael Coal Mine and Rail Project (Adani Infrastructure Pty Ltd), January 2017.*
- Adani submitted an application in response to the Terms of Sale which was assessed by DNRM as appropriately addressing the evaluation criteria included in the Terms of Sale.
- On 9 March 2017, I decided to offer a water licence to Adani in accordance with the Terms of Sale, where I offered a water licence with conditions authorising the take of 12 500ML nominal entitlement (10 800ML mean annual diversion) watercourse water from the Suttor River for water supply for the State purpose of the Project.
- Adani complied with the requirements of the Terms of Sale and the letter of offer by returning the signed acceptance form to the Department and paying the non-refundable deposit by the due date specified in the letter of offer (being 23 March 2017).
- As Adani Infrastructure has now accepted the offer in accordance with the Terms of Sale, I have decided to grant a water licence to Adani Infrastructure under section 116 of the Water Act, as the fixed price sale process for the grant of the water licence under the Burdekin Basin WP and the Water Regulation has been duly followed.

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Release

WATER LICENCE

Water Act 2000

Queensland Government

Reference	617268	**Expiry date**	30/06/2077
Licensee	ADANI INFRASTRUCTURE PTY LTD ACN 606 764 827		
Authorised activity	The taking of watercourse water from the Suttor River with the point of take on or adjacent to Lot 3 on SP278559. Water will be taken from the Suttor River and transferred to an off-stream storage via the Belyando River Anabranch.		
Authorised purpose	Water supply for the Carmichael Coal Mine and Rail Project		
Nominal Entitlement	12,500 megalitres		
Rate of Take	11,600 litres per second		

Conditions

This licence is subject to the conditions attached.

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This licence is given under the Water Act, on this 29 **day of** March, 2017

s.49 - Signature

Darren Moor

Executive Director

Delegate of the Chief Executive

Department of Natural Resources and Mines

Water Licence Conditions: 617268
Expiry Date: 30/06/2077

Conditions:

Interpretation

1. In this licence:
   a. a reference to a Condition shall be a reference to a Condition of this licence;
   b. headings to Conditions are for ease of reference only and shall not in any way affect the meaning of the Conditions;
   c. a reference to days or months is a reference to calendar days or calendar months;
   d. a reference to the conclusion of the Carmichael Coal Mine and Rail Project is a reference to the surrender or cancellation of Mining Lease 70441, Mining Lease 70505 and Mining Lease 70506;
   e. a reference to the Chief Executive includes the Chief Executive's successor;
   f. a reference to a document (including this licence) is to that document as varied, or replaced from time to time;
   g. a reference to a statute includes its delegated legislation and a reference to a statute or delegated legislation or a provision of either includes consolidations, amendments, re-enactments and replacements;
   h. a reference to a schedule, attachment or annexure is a reference to a schedule, attachment or annexure to or of this licence, and a reference to this licence includes all schedules, attachments and annexures to it;
   i. a word importing the singular includes the plural (and vice versa), and a word indicating a gender includes every other gender;
   j. if a word or phrase is given a defined meaning, any other part of speech or grammatical form of that word or phrase has a corresponding meaning;
   k. 'includes' in any form is not a word of limitation; and
   l. a reference to $ or dollar is to Australian currency.

Definitions

2. Terms not otherwise defined in this licence have the same meaning as in the Act, except where a contrary intention appears:

"***Act***" means the *Water Act 2000* (Qld).
"***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.
"***Authorised Activity***" has the meaning set out on the first page of this licence.
"***Authorised Meter Validator***" is a person appointed by the Chief Executive as an authorised meter validator under section 109 of the *Water Regulation 2016*.
"***Authorised Purpose***" has the meaning set out on the first page of this licence.
"***Balance of Total Purchase Price***" means that sum of $18,540,576.00 being the Total Purchase Price less the Deposit.
"***Business Day***" means a day on which trading banks are open for normal banking business in Brisbane.
"***Carmichael Coal Mine and Rail Project***" means the Carmichael Coal Mine and Rail Project which was declared a coordinated project under the *State Development and Public Works Organisation Act 1971* (Qld) (SDPWOA) on 26 November 2010 and declared on 7 October 2016 as a prescribed project and a critical infrastructure project pursuant to section 76E(1) of the SDPWOA.
"***Chief Executive***" means the Chief Executive administering chapter 2 of the Act and his or her authorised delegate.
"***Deposit***" means the non-refundable deposit of $1,612,224.00.
"***Due Date***" means 1 July 2018.
"***Expiry Date***" means 30 June 2077.

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"***Licensee***" means the Licensee set out on the first page of this licence.
"***Mean Annual Volume***" means the long-term average annual volume share of the resource availability as determined by the Chief Executive from the parameters of this licence.
"***Monitoring and Evaluation Program***" means the program as described in Condition 21 of this licence.
"***Publish***", for the purposes of this licence, has the meaning set out section 1009A (2) (b) of the Act.
"***Nominal Entitlement***" means the maximum volumetric limit or volume in megalitres that can be taken under this licence during a water year.
"***Relift***" is where a volume of water is released into a watercourse, and then an equivalent volume is taken from that watercourse.
"***Rate of Take***" is a volume measured in litres per second.
"***State***" means the State of Queensland.
"***Strategic Reserve***" means unallocated water reserved as strategic reserve as provided for in the *Water Plan (Burdekin Basin) 2007* (Qld).
"***Total Purchase Price"*** means the sum of $20,152,800.00.

Payment

3. The Chief Executive acknowledges receipt of the Deposit from the Licensee.
4. Water **must not** be taken under the authority of this licence until the Licensee has paid the Balance of the Total Purchase Price by the Due Date.
5. Upon failure of the Licensee to pay the Balance of the Total Purchase Price by the Due Date, the Chief Executive may commence a show cause process under sections 132(1)(c) and 135 of the Act to determine whether the licence should be cancelled.

Entitlement

6. The Authorised Activity is permitted only for the Authorised Purpose.

7. The Mean Annual Volume assigned from the Strategic Reserve for this licence is 10,800 megalitres.

8. The taking of water under this licence is permitted only when the flow of water, as determined by the State's Gauging Station Suttor River at St Anns (gauging station no. 120303A), exceeds 2,592 megalitres per day.

9. The Daily Volumetric Limit that may be taken under this licence is 830 megalitres.

10. This licence expires on the earlier of:
    a. the Expiry Date; or
    b. the conclusion of the Carmichael Coal Mine and Rail Project,

    whereupon the volume of water returns to the Strategic Reserve as unallocated water to be released for State purposes in accordance with section 33B of the *Water Plan (Burdekin Basin) 2007*.

Metering

11. The Authorised Activity must not be undertaken under this licence unless a measuring device (which may include a telemetric meter), of a type approved by the Chief Executive (to measure the volume of water taken and released), is installed for:
    a. water taken from the Suttor River;
    b. water released into the Belyando River Anabranch; and
    c. water taken from the Belyando River Anabranch.

12. Meters installed under Condition 11 must be validated by an Authorised Meter Validator.

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Recording and Reporting

13. The total volume taken during the previous day must be Published by the end of the following day.

14. On each occasion that water is taken from the Suttor River under this licence, the Licensee must record:
    a. the date and the time at the start and end of the period of take;
    b. the meter reading at the start and end of the period;
    c. the daily volume taken;
    d. the Rate of Take, and for each change in the Rate of Take:
        i. the date and time of the change; and
        ii. the new Rate of Take.

15. Such records under Condition 14 must be Published within 5 Business Days of the end of each month by the Licensee and made available to the Chief Executive upon request (and within 5 Business Days of such request).

16. On each occasion that water is released into the Belyando River Anabranch for the purpose of Relifting the water under this licence, the Licensee must record:
    a. the date and the time at the start and end of the release period;
    b. the meter reading at the start and end of the period;
    c. the daily volume released;
    d. the release rate, and for each change in the release rate:
        i. the date and time of the change; and
        ii. the new release rate.

17. Such records under Condition 16 must be Published within 5 Business Days of the end of each month by the Licensee and made available to the Chief Executive upon request (and within 5 Business Days of such request).

18. On each occasion that water is taken from the Belyando River Anabranch under this licence, the Licensee must record:
    a. the date and the time at the start and end of the period of take;
    b. the meter reading at the start and end of the period;
    c. the daily volume taken;
    d. the Rate of Take, and for each change in the Rate of Take:
        i. the date and time of the change; and
        ii. the new Rate of Take.

19. Such records under Condition 18 must be Published within 5 Business Days of the end of each month by the Licensee and made available to the Chief Executive upon request (and within 5 Business Days of such request).

Relift requirements

20. Water taken daily from the Belyando River Anabranch under this licence:
    a. may only be taken after water taken from the Suttor River is released or is being released into the Belyando River Anabranch by the Licensee; and
    b. must not exceed the daily volume released into the Belyando River Anabranch.

21. Operations to release water into the Belyando River Anabranch under this licence must take into account impacts on watercourse bed and bank stability and riparian vegetation by having an appropriately qualified person develop, implement and maintain a Monitoring and Evaluation Program that includes a monitoring and maintenance strategy which identifies maintenance actions and details remedial works

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to be undertaken (including a timetable for completion of proposed works) to address impacts on the physical integrity of the watercourse and riparian vegetation.

22. A report of the outcomes from the Monitoring and Evaluation Program (as required under Condition 21) must be prepared by an appropriately qualified person and an electronic copy of the report must be provided to the Chief Executive upon request and within requested timeframes.

23. The Licensee must carry out any activities or make any alteration deemed necessary by the Chief Executive for the protection and maintenance of the physical integrity of the watercourse and the riparian environment.

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CTS:07862/17
eDOCS:

Department of Natural Resources and Mines
DEPARTMENT BRIEFING NOTE

SUBJECT: Approve the grant of a water licence to Adani Infrastructure Pty Ltd for the State purpose of the Carmichael Coal Mine and Rail Project

TIMING: Approval as soon as possible

Approved / Not approved / Noted
s.49 - Signature
Signature:.....
Name:
Position:
Business Unit:
Dated 29/3/2017

RECOMMENDATION:
It is recommended that you:

a) Approve the grant of a water licence with conditions under section 116 of the *Water Act 2000* authorising the take of 12 500 megalitres (ML) nominal entitlement (10 800ML mean annual diversion) watercourse water from the Suttor River for water supply for the State purpose of the Carmichael Coal Mine and Rail Project (Project) to Adani Infrastructure Pty Ltd ACN 606 764 827 (Adani Infrastructure).

b) Note:

a. In accordance with the Terms of Sale for a fixed price sale process for the release of unallocated water held as strategic reserve in Subcatchment Area E (Belyando-Suttor) of the *Water Plan (Burdekin Basin) 2007* (Terms of Sale, **Attachment 10)**, Adani Infrastructure accepted the offer of a water licence made by an authorised delegate of the chief executive on 9 March 2017 by providing the following to the department by 23 March 2017:
   i. completed and signed acceptance form (**Attachment 4**); and
   ii. payment of Invoice No. 158758 of amount of $1,612,224 for the non-refundable deposit for the purchase price for the water (**Attachment 5 & 6**).
b. Conditions on the water licence (**Attachment 2**) require payment of the balance of the total purchase price ($18,540,576) by 1 July 2018 and prior to the physical take of the water under the licence.
c. If you approve the grant of a water licence as recommended in this brief, a water licence with the conditions and other details set out in **Attachment 2** will be prepared in the approved form under the *Water Act 2000* for your signature, together with a cover letter and a notice of the decision as required under the *Water Act* (in the form of **Attachments 1 and 3**).

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CTS 07862/17

KEY ISSUES:

1. Under section 116 of the *Water Act 2000* (Water Act), the chief executive may grant a water licence in accordance with a process stated in a water plan, water management protocol or regulation for the allocation of water or interference with the flow of water under a water licence. The chief executive may grant the water licence in accordance with the process without the need for an application to be made under section 107 of the Water Act.
2. The legislative framework governing the process is set out in detail at **Attachment 8**.
3. On 5 January 2017, as an authorised delegate of the chief executive under the Water Act, the *Water Regulation 2016* (Water Regulation) and the *Water Plan (Burdekin Basin) 2007* (Burdekin Basin WP), you decided Terms of Sale (**Attachment 10**) for a fixed price sale process for the release of unallocated water held as strategic reserve in Subcatchment Area

Author:	Recommended
Name: Kathy Batts Title/Business Group: A/Manager, Water Management and Use Telephone: 07 4837 3481 Date: 29 March 2017	Name: Sam Tarlinton Title/Business Group: Regional Manager Water Services Telephone: 07 4999 6868 Date: 29 March 2017

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E (Belyando-Suttor) of the Burdekin Basin WP (**signed brief CTS 00224/17 at Attachment 9**).

4. On 10 January 2017, Adani infrastructure submitted an application for a water licence to the department in response to the Terms of Sale (**Attachment 17 & 18**).
5. The Application was assessed against the evaluation criteria in the Terms of Sale, which were informed by the relevant legislative provisions which are set out in further detail in **Attachment 11**.
6. Section 11 of the Terms of Sale states that if the applicant's application is successful, a letter of offer will:
    a. include the volume in megalitres nominal entitlement and mean annual volume being offered;
    b. enclose a draft licence including the conditions of licence that will apply if the offer is accepted;
    c. enclose an acceptance form for the applicant to complete and return if it accepts the volume and licence as offered; and
    d. stipulate the deposit that must be paid by the due date to accept the licence.
7. On 9 March 2017, as an authorised delegate of the chief executive under the Water Act, the Water Regulation and the Burdekin Basin WP, you:
    a. approved the offer of a water licence to Adani Infrastructure for the State Purpose of the Carmichael Coal Mine and Rail Project (Project) in accordance with the Terms of Sale (**signed brief CTS 06171/17 at Attachment 12**); and
    b. signed a letter of offer to Adani Infrastructure (**Attachment 16**) in accordance with section 11 of the Terms of Sale, offering a water licence with conditions authorising the take of 12 500 ML nominal entitlement (10 800 ML mean annual diversion) watercourse water from the Suttor River for the purpose of water supply for the State purpose of of the Carmichael Coal Mine and Rail Project.
8. In approving the offer of a water licence, you considered the matters set out in brief CTS 06171/17 (**Attachment 12**) and its attachments, which included, inter alia:
    a. Native Title Notification letter and form under the Commonwealth Native Title Act 1993, dated 13 and 16 January 2017 (**Attachment 13 & 14**); and
    b. Submissions provided by the downstream landowners and/or existing entitlement holders (**Attachment 15**).
9. Section 13 of the Terms of Sale states that to accept the offer of a licence, the applicant must sign and return the acceptance form and pay a non refundable deposit of 8% of the purchase price by the due date stated in the letter of offer.
10. The letter of offer required Adani Infrastructure to sign and return the acceptance form and pay a non refundable deposit of 8% of the purchase price ($1,612,224) by 23 March 2017.
11. The offer was accepted by Adani Infrastructure in accordance with the requirements of the Terms of Sale and the letter of offer, as the acceptance form (**Attachment 4**) duly signed by a director and the company secretary (**Attachment 7**) was received by the department on 22 March 2017 and payment of the non-refundable deposit (as per the department's invoice 158758) was made on 23 March 2017 (**Attachment 5 & 6**).
12. As Adani Infrastructure has now accepted the offer in accordance with the Terms of Sale, an authorised delegate of the chief executive may now grant a water licence to Adani Infrastructure under section 116 of the Water Act, as the process for the grant of the water licence has been duly followed.
13. Conditions on the water licence require payment of the balance of the total purchase price ($18,540,576) by 1 July 2018 and prior to the physical take of the water under the licence.

BACKGROUND:

14. The Project was declared a co-ordinated project under the *State Development and Public Works Organisation Act 1971* (SDPWO Act) on 26 November 2010. The Project proponent is Adani Mining Pty Ltd (Adani Mining), a related body corporate to Adani Infrastructure.
15. On 7 October 2016 the Adani Combined Project (comprising the Project, the North Galilee Basin Rail Project and the North Galilee Water Scheme Project) was declared to be a

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prescribed project and a critical infrastructure project pursuant to section 76E(1) of the SDPWO Act.

16. Adani Mining completed an Environmental Impact Statement (EIS), supplementary EIS and additional information to the EIS between 2012 and 2014, as required under the SDPWO Act. These documents assessed the environmental, social and economic impacts in developing the proposed coal mine in the northern Galilee Basin. The EIS process was subject to public submissions.
17. The volume made available through the strategic release process is modelled as a mean annual volume (i.e. on average, if the licence is granted, the licensee will be able to access 10 800 ML per year). In any given year, the licensee may have access to less or more depending on the conditions of the catchment each year.
18. The Terms of Sale specify that any licence granted will also include an annual volumetric limit which will be higher than the mean annual volume, in recognition of those years where the conditions allow a higher volume of take.
19. Queensland Treasury has been consulted on the pricing principles outlined in the pricing paper *'Pricing for unallocated water from the strategic reserve in the Belyando-Suttor subcatchment area E of the Water Plan (Burdekin Basin) 2007'* and is supportive of the pricing considerations.

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ATTACHMENTS:

Attachment 1: Notice of Decision

Attachment 2: Proposed water licence

Attachment 3: Cover Letter

Attachment 4: Acceptance of Offer Form

Attachment 5: Commonwealth Bank Transaction Statement

Attachment 6: Emails - Finance Confirmation dated 23 March 2017 & 24 March 2017

Attachment 7: ASIC current company extract for Adani Infrastructure dated 24 March 2017

Attachment 8: Legislative Framework

Attachment 9: Signed brief CTS 00224/17 approving Terms of Sale

Attachment 10: Terms of Sale

Attachment 11: *Assessment Report s116 Water Act 2000 (the Water Act) Application for a Water Licence Report date: 8 March 2017*

Attachment 12 Signed brief CTS 06171/17 approving the offer of a water licence to Adani Infrastructure

Attachment 13: Native Title Attachment 101 Form under the Commonwealth Native Title Act 1993 dated 13 January 2017

Attachment 14: Native Title Notification letter under the Commonwealth Native Title Act 1993, dated 16 January 2017.

Attachment 15: Submissions provided by the downstream landowners and/or existing entitlement holders.

Attachment 16: Signed Letter of Offer to Adani Infrastructure

Attachment 17 & 18 : The fixed price application form submitted by Adani Infrastructure and supporting report entitled, 'Adani Infrastructure Pty Ltd, Supporting Information for an Application for a Water Licence to Take Unallocated Water from the Strategic Reserve in Sub-Catchment E of the Burdekin Basin', published by CDM Smith, dated 10 January 2017.

Relea

Notice of Decision

Granting a water licence under a process in a plan or regulation

This Notice of Decision is given under sections 116(3) and 114(5) of the *Water Act 2000* (the Water Act) for a decision made to grant a water licence under section 116 of the Water Act, to the applicant Adani Infrastructure Pty Ltd, in accordance with the Terms of Sale for the Carmichael Coal Mine and Rail Project, January 2017 for the release of unallocated water from the strategic reserve in the Belyando-Suttor Subcatchment Area E of the *Water Plan (Burdekin Basin) 2007*.

……..
Darren Moor
Executive Director, Central Region
Department of Natural Resources and Mines

Authorised delegate of the chief executive under the Water Act the *Water Regulation 2016* and the *Water Plan (Burdekin Basin) 2007.*

Date:

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Background matters

On 5 January 2017, as an authorised delegate of the chief executive, under the Water Act, the *Water Regulation 2016* (Water Regulation) and the *Water Plan (Burdekin Basin) 2007* (Burdekin Basin WP), I decided the Terms of Sale entitled *Release of unallocated water in the Belyando-Suttor Subcatchment Area E of the Water Plan (Burdekin Basin) 2007 Strategic reserve, Terms of Sale for Carmichael Coal Mine and Rail Project (Adani Infrastructure Pty Ltd), January 2017* (Terms of Sale).

Adani Infrastructure Pty Ltd (Adani Infrastructure) submitted an application for a water licence on 10 January 2017 in response to the Terms of Sale.

The application was assessed by officers of the Department of Natural Resource and Mines (Department or DNRM) against the evaluation criteria in the Terms of Sale, which were informed by the relevant legislative provisions of the Water Act, Water Regulation and the Burdekin Basin WP. On 10 March 2017, I decided to offer a water licence to Adani Infrastructure in accordance with the Terms of Sale.

Decision

I am an authorised delegate of the chief executive under section 116 of the Water Act, under the *Water Act Delegation (No 1) 2016* and the *Water Act (Burdekin Basin Chief Executive) Delegation (No 1) 2017*.

Under section 116 of the Water Act, I have decided to grant a licence to Adani Infrastructure with conditions, for the State purpose of the Carmichael Coal Mine and Rail Project.

Reasons for the decision

Evidence and other material on which findings of fact were made

In making this decision, I have considered the following evidence and other material:

- Relevant legislation, including:
    i. the Burdekin Basin WP;
    ii. the Water Regulation; and
    iii. the Water Act.
- Departmental brief CTS No. 07862/17 dated 29 March 2017 recommending the grant of a water licence with conditions authorising the take of 12 500ML (10 800ML mean annual volume) watercourse water from the Suttor River for the purpose of water supply for the Carmichael Coal and Rail Project (Project) to Adani Infrastructure, which included the following attachments:
    - Proposed water licence with conditions;
    - Signed letter of offer to Adani Infrastructure dated 9 March 2017;
    - The Acceptance of Offer document signed by two officers of Adani Infrastructure and provided to the Department on 22 March 2017;
    - Evidence of the payment by Adani Infrastructure of Invoice 158758 of an amount of $1 612 224, namely a direct credit transaction statement from the Commonwealth Bank dated 23 March 2017 and an email from DNRM Finance confirming receipt of the payment;
    - ASIC Current Company Extract for Adani Infrastructure;
    - Overview of legislative framework;
    - Departmental brief CTS No. 00224/17 which I signed on 5 January 2017, where I decided:
        - to release 10,800 megalitres of strategic reserve unallocated water as mean annual volume from Subcatchment Area E (Belyando-Suttor) of the Burdekin Basin WP, adjacent to Lot 3/SP278559, for the State purpose of the Carmichael Coal Mine and Rail Project (Project); and
        - the Terms of Sale;
    - Terms of Sale entitled *Release of unallocated water in the Belyando-Suttor Subcatchment Area E of the Water Plan (Burdekin Basin) 2007 Strategic reserve, Terms of Sale for Carmichael Coal Mine and Rail Project (Adani Infrastructure Pty Ltd), January 2017*;
    - The assessment report completed by DNRM, dated 8 March 2017;
    - Departmental brief CTS No. 06171/17 which I signed on 9 March 2017, where I decided to offer a water licence with conditions authorising the take of 12 500ML (10 800ML mean annual volume) watercourse water from the Suttor River for the purpose of water supply for the Carmichael Coal and Rail Project (Project) to Adani Infrastructure.
    - Native Title Notification letter and form under the Commonwealth *Native Title Act 1993*, dated 13 and 16 January 2017;
    - Submissions provided by the downstream landowners and/or existing entitlement holders;
    - The fixed price application form submitted by Adani Infrastructure and received by DNRM on 10 January 2017;

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- A report supporting the fixed price application form entitled, '*Adani Infrastructure Pty Ltd, Supporting Information for an Application for a Water Licence to Take Unallocated Water from the Strategic Reserve in Sub-Catchment E of the Burdekin Basin*', published by CDM Smith, dated 10 January 2017;

Findings on material questions of fact

1. The proposed licensee, Adani Infrastructure, is a prescribed entity under schedule 4, item 39 of the Water Regulation, who is eligible to apply for a water licence pursuant to section 107(4) of the Water Act.

2. Section 40 of the Water Act states that the chief executive may release unallocated water if a volume is stated in a water plan or prescribed by regulation. Under section 40(2) and (3), the chief executive must release unallocated water under the process prescribed by regulation. However, section 40(2) does not apply to the extent that the water plan provides for an alternative process for the release of the unallocated water. Under section 40(4), the chief executive may set a price for the unallocated water.

3. Under section 116 of the Water Act, the chief executive (or authorised delegate) may grant a water licence in accordance with a process stated in a water plan, water management protocol or regulation for the allocation of water or interference with the flow of water under a water licence. The chief executive may grant the water licence in accordance with the process without the need for an application to be made under section 107 of the Water Act.

4. On 5 January 2017, as an authorised delegate of the chief executive under the Water Act, the Water Regulation and the Burdekin Basin WP, I decided Terms of Sale for a fixed price sale process for the release of unallocated water held as strategic reserve in Subcatchment Area E (Belyando-Suttor)[1] of the Burdekin Basin WP, for the State purpose of the Project.

5. As at 5 January 2017, the processes for the release of unallocated water for a State purpose were as set out in the Burdekin Basin Resource Operations Plan, December 2009, Amended October 2010, Revision 2 (Burdekin Basin ROP),[2] chapter 2.[3]

6. The provisions of the Burdekin Basin ROP were taken to be, or taken to have effect for, a number of other documents including the water plan or a water management protocol under the Water Act as amended.[4]

7. The new part 5, division 2 of the Burdekin Basin WP (inserted in February 2017), in material respects, mirrors the provisions of the Burdekin Basin ROP in terms of the processes for the

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[1] See section 5 and Attachment 2 of the Burdekin Basin ROP.
[2] That was the effect of s 31 of the Burdekin Basin WP, current as at 6 December 2016.
[3] Chapter 2 of the Burdekin Basin ROP sets out the process for making available and dealing with unallocated water, including unallocated water held as strategic reserve for state purposes. Section 38 of the Burdekin Basin ROP states that the processes for making unallocated water available are described in part 2, division 1C of the *Water Regulation 2002*. Pursuant to s 145 of the *Water Regulation 2016*, a reference in an Act or other document to the repealed regulation may, if the context permits, be taken to be a reference to the *Water Regulation 2016.* Therefore, a reference to the *Water Regulation 2002* may be taken to be a reference to the *Water Regulation 2016*. Therefore, the reference to the process under part 2, division 1C of the *Water Regulation 2002* in the Burdekin Basin ROP may be taken to be a reference to the provisions in part 2, division 2 of the *Water Regulation 2016*, as these provisions have been renumbered with minimal changes.
[4] See sections 1259(2)(e) and 1264 of the Water Act.

release of unallocated water for a State purpose.[5] Therefore, relevantly, the processes for granting, refusing, amending or otherwise dealing with water licences and the volume or volumes of unallocated water reserved or available to be released are set out in part 5, division 2 of the Burdekin Basin WP.[6]

8. The processes for granting water licences include a process by way of fixed price sale, where the chief executive may determine the terms of sale (see sections 16(c) and 18 of the Water Regulation).

9. The Application made by Adani Infrastructure on 10 January 2017 was made in the approved form (as per Schedule 3 of the Terms of Sale), was lodged before the specified closing date and the supporting information was consistent with the water product specification in the Terms of Sale.

10. The supporting information accompanying the application received by the Department from Adani Infrastructure on 10 January 2017 appropriately addressed the evaluation criteria included in the Terms of Sale, on the basis set out in the Department's assessment report which I considered when I decided to offer a licence to Adani Infrastructure on 9 March 2017 (see departmental brief CTS 06171/17).

11. No responses were received in relation to the Native Title Notification letter and form under the *Commonwealth Native Title Act 1993*, dated 13 and 16 January 2017.

12. The issues raised by downstream landowners and/or existing entitlement holders in submissions received on 17 February 2017 and 18 February 2017 which I considered when I decided to offer a licence to Adani Infrastructure on 9 March 2017 (see departmental brief CTS 06171/17) have been reviewed and I consider that the issues have either been dealt with as part of the assessment of the application and/or have been catered for in the conditioning of the proposed licence. These include:
    a. Inclusion of conditions to ensure monitoring and reporting of extraction of water is undertaken and publicly available;
    b. Inclusion of a condition to require installed monitoring equipment to be authorised by an approved independent meter validator; and
    c. The water licence will be granted for the purpose of the Project only.

13. The Application made by Adani Infrastructure on 10 January 2017 was made in the approved form (as per Schedule 3 of the Terms of Sale), before the specified closing date and the supporting information was consistent with the water product specification in the Terms of Sale.

14. The supporting information and the application received from Adani Infrastructure on 10 January 2017 has been assessed by the Department as appropriately addressing the evaluation criteria included in the Terms of Sale, which I considered when I decided to offer a licence to Adani Infrastructure on 9 March 2017 (see departmental brief CTS 06171/17).

15. Section 11 of the Terms of Sale states that if the applicant's application is successful, a letter of offer will:

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[5] That is, under both the Burdekin Basin WP and the Burdekin Basin ROP, 35,000 ML of unallocated water held as a strategic reserve may be released for a State purpose and that the process for releasing the unallocated water is the process stated in the *Water Regulation* (see footnote 3 above). 'State purpose' is also now defined in schedule 10 of the Burdekin Basin WP, whereas it was not clearly defined in the Burdekin Basin ROP.
[6] See section 1264 of the Water Act.

a. include the volume in megalitres nominal entitlement and mean annual volume being offered;
b. enclose a draft licence including the conditions of licence that will apply if the offer is accepted;
c. enclose an acceptance form for the applicant to complete and return if it accepts the volume and licence as offered; and
d. stipulate the deposit that must be paid by the due date to accept the licence.

16. Section 13 of the Terms of Sale states that to accept the offer of a licence, the applicant must sign and return the acceptance form and pay a non-refundable deposit of 8% of the purchase price by the due date stated in the letter of offer.

17. In this context, the letter of offer dated 9 March 2017 required Adani Infrastructure to sign and return the acceptance form and pay a non-refundable deposit of 8% of the purchase price ($1,612,224.00) by 23 March 2017.

18. The offer was accepted by Adani Infrastructure in accordance with the requirements of the Terms of Sale and the letter of offer, as the acceptance form duly signed by a director and the company secretary of Adani Infrastructure was received by the Department on 22 March 2017 and payment of the non-refundable deposit (as per the Department's invoice 158758) was made on 23 March 2017.

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Reasons

Having regard to the material and findings referred to above, I have decided to grant a water licence to Adani Infrastructure under section 116 of the Water Act for the State purpose of the Project for the following reasons:

- Adani Infrastructure, is a prescribed entity under schedule 4, item 39 of the Water Regulation, which is eligible to apply for a water licence pursuant to section 107(4) of the Water Act.
- On 5 January 2017, I decided Terms of Sale for a fixed price sale process entitled *Release of unallocated water in the Belyando-Suttor Subcatchment Area E of the Water Plan (Burdekin Basin) 2007 Strategic reserve, Terms of Sale for Carmichael Coal Mine and Rail Project (Adani Infrastructure Pty Ltd), January 2017*.
- Adani submitted an application in response to the Terms of Sale which was assessed by DNRM as appropriately addressing the evaluation criteria included in the Terms of Sale.
- On 9 March 2017, I decided to offer a water licence to Adani in accordance with the Terms of Sale, where I offered a water licence with conditions authorising the take of 12 500ML nominal entitlement (10 800ML mean annual diversion) watercourse water from the Suttor River for water supply for the State purpose of the Project.
- Adani complied with the requirements of the Terms of Sale and the letter of offer by returning the signed acceptance form to the Department and paying the non-refundable deposit by the due date specified in the letter of offer (being 23 March 2017).
- As Adani Infrastructure has now accepted the offer in accordance with the Terms of Sale, I have decided to grant a water licence to Adani Infrastructure under section 116 of the Water Act, as the fixed price sale process for the grant of the water licence under the Burdekin Basin WP and the Water Regulation has been duly followed.

WATER LICENCE

Water Act 2000

Queensland Government

Reference	<Auth Reference>	**Expiry date**	30/06/2077
Licensee	ADANI INFRASTRUCTURE PTY LTD ACN 606 764 827		
Authorised activity	The taking of watercourse water from the Suttor River with the point of take on or adjacent to Lot 3 on SP278559. Water will be taken from the Suttor River and transferred to an off-stream storage via the Belyando River Anabranch.		
Authorised purpose	Water supply for the Carmichael Coal Mine and Rail Project		
Nominal Entitlement	12,500 megalitres		
Rate of Take	11,600 litres per second		

This licence is also subject to the attached conditions (Conditions).

Under the *Sustainable Planning Act 2009* a development permit may be required for operational works to take or interfere with the water described in this licence. The licensee must ensure that the relevant development approvals have been obtained prior to installing or constructing new or additional operational works.

This licence is given under the Water Act, on this date day of month year.

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Darren Moor

Executive Director

Delegate of the Chief Executive

Department of Natural Resources and Mines

Conditions:
Interpretation

1. In this licence:
   a. a reference to a Condition shall be a reference to a Condition of this licence;
   b. headings to Conditions are for ease of reference only and shall not in any way affect the meaning of the Conditions;
   c. a reference to days or months is a reference to calendar days or calendar months;
   d. a reference to the conclusion of the Carmichael Coal Mine and Rail Project is a reference to the surrender or cancellation of Mining Lease 70441, Mining Lease 70505 and Mining Lease 70506;
   e. a reference to the Chief Executive includes the Chief Executive's successor;
   f. a reference to a document (including this licence) is to that document as varied, or replaced from time to time;
   g. a reference to a statute includes its delegated legislation and a reference to a statute or delegated legislation or a provision of either includes consolidations, amendments, re-enactments and replacements;
   h. a reference to a schedule, attachment or annexure is a reference to a schedule, attachment or annexure to or of this licence, and a reference to this licence includes all schedules, attachments and annexures to it;
   i. a word importing the singular includes the plural (and vice versa), and a word indicating a gender includes every other gender;
   j. if a word or phrase is given a defined meaning, any other part of speech or grammatical form of that word or phrase has a corresponding meaning;
   k. 'includes' in any form is not a word of limitation; and
   l. a reference to $ or dollar is to Australian currency.

Definitions

2. Terms not otherwise defined in this licence have the same meaning as in the Act, except where a contrary intention appears:

"***Act***" means the *Water Act 2000* (Qld).
"***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.
"***Authorised Activity***" has the meaning set out on the first page of this licence.
"***Authorised Meter Validator***" is a person appointed by the Chief Executive as an authorised meter validator under section 109 of the *Water Regulation 2016*.
"***Authorised Purpose***" has the meaning set out on the first page of this licence.
"***Balance of Total Purchase Price***" means that sum of $18,540,576.00 being the Total Purchase Price less the Deposit.
"***Business Day***" means a day on which trading banks are open for normal banking business in Brisbane.
"***Carmichael Coal Mine and Rail Project***" means the Carmichael Coal Mine and Rail Project which was declared a coordinated project under the *State Development and Public Works Organisation Act 1971* (Qld) (SDPWOA) on 26 November 2010 and declared on 7 October 2016 as a prescribed project and a critical infrastructure project pursuant to section 76E(1) of the SDPWOA.
"***Chief Executive***" means the Chief Executive administering chapter 2 of the Act and his or her authorised delegate.
"***Deposit***" means the non-refundable deposit of $1,612,224.00.
"***Due Date***" means 1 July 2018.
"***Expiry Date***" means 30 June 2077.

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"***Licensee***" means the Licensee set out on the first page of this licence.
"***Mean Annual Volume***" means the long-term average annual volume share of the resource availability as determined by the Chief Executive from the parameters of this licence.
"***Monitoring and Evaluation Program***" means the program as described in Condition 21 of this licence.
"***Publish***", for the purposes of this licence, has the meaning set out section 1009A (2) (b) of the Act.
"***Nominal Entitlement***" means the maximum volumetric limit or volume in megalitres that can be taken under this licence during a water year.
"***Relift***" is where a volume of water is released into a watercourse, and then an equivalent volume is taken from that watercourse.
"***Rate of Take***" is a volume measured in litres per second.
"***State***" means the State of Queensland.
"***Strategic Reserve***" means unallocated water reserved as strategic reserve as provided for in the *Water Plan (Burdekin Basin) 2007* (Qld).
"***Total Purchase Price"*** means the sum of $20,152,800.00.

Payment

3. The Chief Executive acknowledges receipt of the Deposit from the Licensee.

4. Water **must not** be taken under the authority of this licence until the Licensee has paid the Balance of the Total Purchase Price by the Due Date.

5. Upon failure of the Licensee to pay the Balance of the Total Purchase Price by the Due Date, the Chief Executive may commence a show cause process under sections 132(1)(c) and 135 of the Act to determine whether the licence should be cancelled.

Entitlement

6. The Authorised Activity is permitted only for the Authorised Purpose.

7. The Mean Annual Volume assigned from the Strategic Reserve for this licence is 10,800 megalitres.

8. The taking of water under this licence is permitted only when the flow of water, as determined by the State's Gauging Station Suttor River at St Anns (gauging station no. 120303A), exceeds 2,592 megalitres per day.

9. The daily volumetric limit that may be taken under this licence is 830 megalitres.

10. This licence expires on the earlier of:
    a. the Expiry Date; or
    b. the conclusion of the Carmichael Coal Mine and Rail Project,

    whereupon the volume of water returns to the Strategic Reserve as unallocated water to be released for State purposes in accordance with section 33B of the *Water Plan (Burdekin Basin) 2007*.

Metering

11. The Authorised Activity must not be undertaken under this licence unless a measuring device (which may include a telemetric meter), of a type approved by the Chief Executive (to measure the volume of water taken and released), is installed for:
    a. water taken from the Suttor River;
    b. water released into the Belyando River Anabranch; and
    c. water taken from the Belyando River Anabranch.

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12. Meters installed under Condition 11 must be validated by an Authorised Meter Validator.

Recording and Reporting

13. The total volume taken during the previous day must be Published by the end of the following day.

14. On each occasion that water is taken from the Suttor River under this licence, the Licensee must record:
    a. the date and the time at the start and end of the period of take;
    b. the meter reading at the start and end of the period;
    c. the daily volume taken;
    d. the Rate of Take, and for each change in the Rate of Take:
        i. the date and time of the change; and
        ii. the new Rate of Take.

15. Such records under Condition 14 must be Published within 5 Business Days of the end of each month by the Licensee and made available to the Chief Executive upon request (and within 5 Business Days of such request).

16. On each occasion that water is released into the Belyando River Anabranch for the purpose of Relifting the water under this licence, the Licensee must record:
    a. the date and the time at the start and end of the release period;
    b. the meter reading at the start and end of the period;
    c. the daily volume released;
    d. the release rate, and for each change in the release rate:
        i. the date and time of the change; and
        ii. the new release rate.

17. Such records under Condition 16 must be Published within 5 Business Days of the end of each month by the Licensee and made available to the Chief Executive upon request (and within 5 Business Days of such request).

18. On each occasion that water is taken from the Belyando River Anabranch under this licence, the Licensee must record:
    a. the date and the time at the start and end of the period of take;
    b. the meter reading at the start and end of the period;
    c. the daily volume taken;
    d. the Rate of Take, and for each change in the Rate of Take:
        i. the date and time of the change; and
        ii. the new Rate of Take.

19. Such records under Condition 18 must be Published within 5 Business Days of the end of each month by the Licensee and made available to the Chief Executive upon request (and within 5 Business Days of such request).

Relift requirements

20. Water taken daily from the Belyando River Anabranch under this licence:
    a. may only be taken after water taken from the Suttor River is released or is being released into the Belyando River Anabranch by the Licensee; and
    b. must not exceed the daily volume released into the Belyando River Anabranch.

21. Operations to release water into the Belyando River Anabranch under this licence must take into account impacts on watercourse bed and bank stability and riparian vegetation by having an appropriately qualified person develop, implement and

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Attachment 8

Legislative framework

1. The *Water Act 2000* (Water Act) provides a framework for the sustainable management of Queensland's water resources by establishing a system for the planning, allocation and use of water (see section 2 of the Water Act).
2. Significant changes were introduced into the Water Act in December 2016.
3. The new water planning documents include the *Water Regulation 2016* (Water Regulation),[1] water plans and water management protocols.
4. The relevant legislative provisions are discussed further below, under relevant subheadings for each legislative instrument.

Water Act

5. Section 40 of the Water Act states that the chief executive may release unallocated water if a volume is stated in a water plan or prescribed by regulation. Under section 40(2) and (3), the chief executive must release unallocated water under the process prescribed by regulation. However, section 40(2) does not apply to the extent that the water plan provides for an alternative process for the release of the unallocated water. Under section 40(4), the chief executive may set a price for the unallocated water.
6. Section 116 of the Water Act provides that the chief executive may grant a water licence in accordance with a process for the allocation of water stated in a water plan, water management protocol or regulation without the need for an application to be made under section 107 of the Water Act.
7. Section 118(1)(b) of the Water Act allows the chief executive to impose conditions for a particular licence. In the circumstances, the authorised delegate of the chief executive considered it appropriate to impose conditions on the proposed water licence offered to Adani Infrastructure on 9 March 2017 to:
    - define the water product;
    - ensure the water returns to the strategic reserve[2] as unallocated water to be released for a State purpose[3] in accordance with section 33B of the *Water Plan (Burdekin Basin) 2007* (Burdekin Basin WP);
    - ensure full payment prior to any water being taken;
    - ensure that the water taken is measured, recorded and published for the administration and/or enforcement of the licence;
    - ensure that the water taken from the Belyando River anabranch is only water that has been transferred from the Suttor River; and
    - ensure that any impacts regarding erosion under the relift requirements[4] are monitored and remediated.
8. Chapter 9 of the Water Act contains transitional arrangements for projects that have proceeded part way or completely through the approval process.
9. Section 1259 of the Water Act provides transitional arrangements for provisions stated in a resource operations plan to be included in, or to be read and construed with, other documents if the resource operations plan was in force immediately before the commencement.[5] It states as follows:

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[1] The *Water Regulation 2002* has been repealed. The *Water Regulation 2016* commenced on 6 December 2016.
[2] See section 116 of the Water Act and section 31 of the Burdekin Basin WP.
[3] Pursuant to section 33B of the Burdekin Basin WP, and the definitions of 'State purpose' and 'coordinated project' in schedule 10, the Project has been declared a coordinated project under the *State Development and Public Works Organisation Act 1971*.
[4] See condition 20 of the water licence at Attachment 2.
[5] 'Commencement' is defined in section 1250 of the Water Act to mean the commencement of section 1250, which was 6 December 2016.

1259 Stated provisions of a resource operations plan are taken to be, or are included in, or to be read and construed with, other documents

(1) This section applies to a resource operations plan in force immediately before the commencement.

(2) On the commencement, the provisions of the resource operations plan—

…

(e) if section 1264 applies—cease to have effect for the resource operations plan but are taken to have effect for the purposes of the water plan (previously the water resources plan) the provisions were implementing and, for those purposes, are to be read and construed with the water plan, with necessary changes; or

…

(7) Subsection (2) (e) continues to apply for the purposes of a water plan until the plan is amended to include provisions of the kind mentioned in section 1264.

…

(emphasis added).

10. For a water plan, these transitional arrangements continue until an amendment is made to the water plan under section 1259(7) to transition provisions relevant to section 1264 of the Water Act into the water plan.
11. Pursuant to section 1259(9) of the Water Act, on amendment of the water plan as mentioned in subsection 1259(7), the provisions of the resource operations plan mentioned in section 1264 are taken to be omitted from the resource operations plan.
12. Section 1264 of the Water Act provides as follows:

1264 Provisions of resource operations plan taken to be included in a water plan

For section 1259(2) (e), the provisions are the provisions that are relevant to—

(a) resource operations plan zones, including water management area zones and water supply scheme zones; or

(b) water management areas, subcatchment areas or subartesian areas; or

(c) the criteria and process for granting, refusing, amending or otherwise dealing with water licences, other than the criteria and process for deciding applications for a seasonal water assignment or for relocation of a water licence; or

(d) the volume or volumes of unallocated water reserved or available to be released.

(emphasis added).

Water Regulation

13. The *Water Regulation 2002* has been repealed and the Water Regulation commenced on 6 December 2016. Its relevant provisions are discussed further below.

Burdekin Basin WP

14. The *Water Resource (Burdekin Basin) Plan 2007* has been renamed the *Water Plan (Burdekin Basin) 2007*.[6]
15. The Burdekin Basin WP, part 5, division 2 states a process for the allocation of water.
16. Section 31 of the Burdekin Basin WP states that unallocated water may be granted from the general, strategic or SunWater reserve under a process in the resource operations plan.
17. As at the date that the terms of the fixed price sale process[7] were decided, 5 January 2017, pursuant to the Burdekin Basin WP:
    a. Unallocated water could be granted from the general, strategic or SunWater reserve under a process in the Burdekin Basin Resource Operations Plan (Burdekin Basin ROP) under a process in the Burdekin Basin ROP;[8] and

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[6] See section 1256(1) of the Water Act, inserted by *Water Reform and Other Legislation Amendment Act 2014*, s 255 and schedule 2, which renamed the Burdekin Basin WP.

[7] See the document titled "Release of unallocated water in the Belyando-Suttor Subcatchment Area E of the *Water Plan (Burdekin Basin) 2007*, Strategic reserve, Terms of Sale for Carmichael Coal Mine and Rail Project (Adani Infrastructure Pty Ltd), January 2017 (Terms of Sale).

[8] See section 31 of the Burdekin Basin WP, current as at 6 December 2016.

b. In preparing and implementing the process, the chief executive was obliged to consider certain matters set out in section 32 of the Burdekin Basin WP.[9]

18. In this context, the delegate of the chief executive considered the matters set out in section 32 of the Burdekin Basin WP in deciding the Terms of Sale as follows:
    (a) the purpose for which the water is required;
    (b) the efficiency of existing and proposed water use practices;
    (c) the extent to which water is being taken under existing authorisations in the plan area;
    (d) the availability of an alternative water supply for the purpose for which the water is required;
    (e) the impact the proposed taking of, or interfering with, the water may have on existing water users in the plan area;
    (f) whether the proposed taking or interfering is likely to have a direct adverse effect on groundwater flows; and
    (g) the matters mentioned in section 23(1)(a) and (b) (of the Water Act).
19. On 3 February 2017, the Burdekin Basin WP was amended by the *Water Amendment Plan (Burdekin Basin) (No. 1) 2017* (Amendment Plan), under sections 51(2)(b) and 1259(7) of the Water Act.
20. The Amendment Plan amended the Burdekin Basin WP to include provisions of the kind mentioned in section 1264 (see section 1259(7)).
21. Clause 3(1) of the Amendment Plan states the sections of the water plan where amendments have been made in accordance with section 1259(7) of the Water Act to transition the relevant sections previously stated in a resource operations plan into the water plan.
22. The Amendment Plan[10] states that the insertion of sections 30 and 32 of the Burdekin Basin WP are amendments made for section 1259(7) of the Water Act.[11] The effect is that subsection 1259(2)(e) no longer applies to certain provisions, as the Burdekin Basin WP has been amended to include provisions of the kind mentioned in section 1264 of the Water Act.[12]
23. Section 32 of the Burdekin Basin WP states that 35 000 ML of unallocated water held as a strategic reserve may be released for a State purpose.
24. Schedule 10 of the Burdekin Basin WP defines 'State purpose' to mean:
    (a) a coordinated project; or
    (b) a project of regional significance; or
    (c) town water supply purposes.
25. Section 33A of the Burdekin Basin WP states that the process for releasing unallocated water held as a strategic reserve for a State purpose is the process stated in the Water Regulation, part 2, division 2, subdivision 2.
26. Part 2, division 2 of the Water Regulation provides processes for releasing unallocated water, including public auction, tender, fixed price sale or grant for a particular purpose. Relevantly, the chief executive may decide the terms of a sale of water or for granting unallocated water for a purpose. Where water is being sold by fixed price sale, the chief executive is not required to publish a notice about the availability of the water under part 2, division 2 of the Water Regulation.
27. The Burdekin Basin WP, current as at 6 December 2016, set out at section 32, matters the chief executive was obliged to consider in preparing and implementing a process for dealing with unallocated water under a resource operations plan.
28. Current section 32 of the Burdekin Basin WP is a new provision which relates to the volumes of unallocated water held as strategic reserve and the purposes for which it may be released.

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[9] Current as at 6 December 2016.
[10] See section 3 of the Amendment Plan.
[11] Those amendments were stated to be made for section 1259(7) of the Water Act. See s 3 of the Amendment Plan.
[12] Pursuant to section 1259(9) of the Water Act, those provisions are taken to be omitted from the Burdekin Basin ROP.

29. While the former section 32 of the Burdekin Basin WP has been removed and there is currently no equivalent provision in the current version of the Burdekin Basin WP,[13] the requirements of section 32 have been included in the Assessment against evaluation criteria as those criteria were in place previously.

Burdekin Basin ROP

30. As at the date that the terms of the fixed price sale process were decided, 5 January 2017, the processes for the release of unallocated water for a State purpose were as set out in the Burdekin Basin ROP,[14] chapter 2.[15]
31. Public notice of the proposed fixed-price sale of unallocated water for a State purpose was not required.[16] However, the Department decided to undertake a submission process to provide natural justice to downstream riparian landholders and/or water entitlement holders.
32. The provisions of the Burdekin Basin ROP were taken to be, or taken to have effect for, a number of other documents including the water plan or a water management protocol under the Water Act as amended.[17]
33. As outlined above, the Amendment Plan introduced amendments of the kind mentioned in section 1264 for the purpose of s 1259(7) of the Water Act. The Amendment Plan, section 3, states that certain amendments are made for section 1259(7) of the Act.
34. The Amendment Plan does not state that the insertion of section 33A of the Burdekin Basin WP is for the purposes of section 1259(7) of the Water Act. It may have been intended for the provisions of the Burdekin Basin ROP regarding the processes for the release of unallocated water to continue to apply.
35. However, the new part 5, division 2 of the Burdekin Basin WP, in material respects, mirrors the provisions of the Burdekin Basin ROP in terms of the processes for the release of unallocated water for a State purpose.[18] Therefore, relevantly, the processes for granting, refusing, amending or otherwise dealing with water licences and the volume or volumes of unallocated water reserved or available to be released are set out in part 5, division 2 of the Burdekin Basin WP.[19]

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[13] An equivalent to the former section 32 of the Burdekin Basin WP will be included in a new water management protocol for the Burdekin Basin WP which has not yet been made. However, the new provision will only apply to a process for the release of unallocated water from the strategic reserve for a purpose other than for a State purpose.

[14] That was the effect of s 31 of the Burdekin Baskin WP, current as at 6 December 2016.

[15] Chapter 2 of the Burdekin Basin ROP sets out the process for making available and dealing with unallocated water, including unallocated water held as strategic reserve for state purposes. Section 38 of the Burdekin Basin ROP states that the processes for making unallocated water available are described in part 2, division 1C of the *Water Regulation 2002*. Pursuant to s 145 of the *Water Regulation 2016*, a reference to the *Water Regulation 2002* may be taken to be a reference to the *Water Regulation 2016*. Therefore, the reference to the process under part 2, division 1C of the *Water Regulation 2002* in the Burdekin Basin ROP may be taken to be a reference to the provisions in part 2, division 2 of the *Water Regulation 2016*, as these provisions have been renumbered in part 2, division 2 of the Water Regulation with minimal changes.

[16] See part 2, division 2 of the Water Regulation (and its equivalents in part 2, division 1C of the *Water Regulation 2002*). Those provisions do not require the chief executive to publish a notice about the availability of water for a fixed price sale. They require notice of availability of water by auction nor tender to be published.

[17] See sections 1259(2)(e) and 1264 of the Water Act.

[18] That is, under both the Burdekin Basin WP and the Burdekin Basin ROP, 35,000 ML of unallocated water held as a strategic reserve may be released for a State purpose and that the process for releasing the unallocated water is the process stated in the *Water Regulation* (see footnote 13 above). 'State purpose' is also now defined in schedule 10 of the Burdekin Basin WP, whereas it was not clearly defined in the Burdekin Basin ROP.

[19] See section 1264 of the Water Act.

CTS: 00224/17
eDOCS:

Department of Natural Resources and Mines
DEPARTMENT BRIEFING NOTE

To: **Darren Moor**
Executive Director, Central Region, Department of Natural Resources and Mines

Approved / Not approved / Noted
s.49 - Signature
Signature.....
Name:
Position:
Business Unit: 5/1/17
Dated...../...../.....

SUBJECT: Approval to release unallocated water held as strategic reserve under the Water Plan (Burdekin Basin) 2007 (Burdekin Basin WP) and the Burdekin Basin Resource Operations Plan 2009 (Burdekin Basin ROP) for the Carmichael Coal Mine and Rail Project

TIMING: Approval to commence the fixed price sale of unallocated water in accordance with the recommendations below is requested as soon as possible to ensure Adani Infrastructure Pty Ltd (Adani Infrastructure) has the opportunity to obtain adequate water supply for its Carmichael Coal Project.

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RECOMMENDATION:
It is recommended that you:

a) **Approve** under Part 2, Division 2, Section 18(a) of the *Water Regulation 2016* (the Water Regulation) as delegated under the *Water Act Delegation (No. 1) 2016* from the chief executive and the *Water Act (Burdekin Basin Chief Executive) Delegation (No. 2) 2016* from the chief executive of the Department of Energy and Water Supply -

- the Terms of Sale outlined in **Attachment 1**, to release up to 10 800 megalitres (ML) of mean annual volume unallocated water held as strategic reserve from Subcatchment E (Belyando-Suttor) Burdekin Basin WP area for the state purpose of the Carmichael Coal Mine Project:
  i. through a fixed price sale process without public notice as outlined in further detail in **Attachment 2**;
  ii. for the price of $1 866 per ML identified in the terms of sale and outlined in further detail in **Attachment 3 & 4**; and

b) **Note** the department's review of the unallocated water product specification and the matters set out in section 32 of the Burdekin Basin WP at **Attachment 5.**

c) **Sign** the letter to Adani Infrastructure to accompany the terms of sale at **Attachment 6**.

KEY ISSUES:
Adani Infrastructure project and proposal

1. Adani Infrastructure has submitted a proposal dated 27 October 2016 seeking access to 10 800 ML of mean annual volume (equating to 12 500 ML of annual volumetric limit) of unallocated water held as strategic reserve from Subcatchment E (Belyando-Suttor) of the the Burdekin Basin WP to support its construction and ongoing operational needs for the Carmichael Coal Mine Project.

Author:	Recommended
Name: Kathy Batts Title/Business Group: A/Manager, Water Services Telephone: 07 4837 3481 Date: 07/12/2016	Name: Sam Tarlinton Title/Business Group: A/Regional Manager Water Services Telephone: 07 4999 6868 Date: 13/12/2016

2. The Carmichael Coal Mine and Rail Project was declared a significant project under the *State Development and Public Works Organisation Act 1971* (SDPWO Act) on 26 November 2010. The project proponent is Adani Mining Pty Ltd (Adani Mining), a related body corporate to Adani Infrastructure.
3. On 7 October 2016 the Adani Combined Project (comprising the Carmichael Coal Mine and Rail Project, the North Galilee Basin Rail Project and the North Galilee Water Scheme Project) was declared to be a prescribed project and a critical infrastructure project pursuant to section 76E(1) of the SDPWO Act.
4. Adani Mining completed an EIS, supplementary EIS and additional information to the EIS between 2012 and 2014. These documents assessed the environmental, social and economic impacts in developing the proposed coal mine in the northern Galilee Basin. The EIS process was subject to public submissions.

Statutory framework

5. On 6 December 2016, the *Water Reform and Other Legislation Amendment Act 2014* (WROLA) amended the *Water Act 2000* (Water Act) to provide for a new water planning framework.
6. New section 40 of the Water Act (as amended by WROLA) states that the chief executive may release unallocated water if a volume is stated in a water plan or prescribed by regulation. Under section 40(2) and (3), the chief executive must release unallocated water under the process prescribed by regulation, but section 40(2) doesn't apply to the extent that the water plan provides for an alternative process for the release of the unallocated water. Under section 40(4), the chief executive may set a price for the unallocated water.
7. New section 116 of the Water Act provides that where a water plan or regulation states a process for the allocation of water under a water licence, the chief executive may grant a water licence under section 116 in accordance with the process without the need for an application to be made for the water licence under section 107 of the Water Act.
8. Under section 31 of the Burdekin Basin WP, unallocated water may be granted from the general, strategic or SunWater reserve under a process in the Resource Operations Plan (i.e. the Burdekin Basin ROP).
9. Under section 32 of the Burdekin Basin WP, unallocated water may be dealt with under a process in the Burdekin Basin ROP and the chief executive must consider specified matters in implementing the process.
10. The Burdekin Basin ROP established establishes 20 000 ML mean annual volume of unallocated water held as strategic reserve for state purposes and 130 000 ML mean annual volume of unallocated water held in general reserve in Subcatchment E (Belyando-Suttor) of the Burdekin Basin WP area (see table 1 of the Burdekin Basin ROP).
11. Section 38 of the Burdekin Basin ROP states that the process for making unallocated water available from the strategic reserve for 'state purposes' is the process prescribed in Part 2, Division 1C of the *Water Regulation 2002*.
12. Section 39 (2) of the Burdekin Basin ROP states that in subcatchment area E, unallocated water from the strategic reserve for state purposes will be granted only under water licences.
13. The following transitional arrangements apply under WROLA:
    a. The Water Resource (Burdekin Basin) Plan 2007 continues in force as a 'water plan' and has been renamed the Water Plan (Burdekin Basin) 2007.[1]
    b. The provisions of the Burdekin Basin ROP are taken to be, or taken to have effect for, a number of other documents including the water plan or a water management protocol under the Water Act as amended.[2] Section 1266 of the Water Act allows references to resource operations plans to, where the context

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1 See new section 1256(1) of the Water Act inserted by WROLA, s 255 and schedule 2 of WROLA, which renames the Burdekin Basin WP.

2 See new sections 1259 and 1264 of the Water Act inserted by WROLA.

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permits, be taken to be a reference to the relevant document. Applying sections 1259 and 1264 of the Water Act, the provisions of the Burdekin Basin ROP set out above are taken to have effect for the purposes of the Burdekin Basin WP that the provisions were implementing, following 6 December 2016, and for these purposes are to be read and construed with the water plan.

14. The *Water Regulation 2002* has been replaced by the *Water Regulation 2016*, which also commenced on 6 December 2016. Section 145 of the *Water Regulation 2016* provides that a reference to the *Water Regulation 2002* can be taken to be a reference to the *Water Regulation 2016* where the context permits. In the current circumstances, the department considers that the context permits the reference to the process under Part 2, Division 1C of the *Water Regulation 2002* in the Burdekin Basin ROP to be taken to be a reference to the equivalent provisions in the *Water Regulation 2016*, as these provisions have been renumbered in the new *Water Regulation 2016* with minimal changes. Also, under sections 40(2) and 116 of the Water Act, the process in the new *Water Regulation 2016* would apply here anyway, to the extent the Burdekin WP doesn't provide for an alternative process.
15. Part 2, Division 2 of the *Water Regulation 2016* set out several processes for making unallocated water available, which are discussed in **Attachment 2**.

Recommended approach

16. The department recommends that up to 10 800 megalitres (ML) of mean annual volume unallocated water held as strategic reserve from Subcatchment E (Belyando-Suttor) of the Burdekin Basin WP area is released to Adani Infrastructure for the state purpose of the Carmichael Coal Mine Project through a fixed price sale process without public notice about the availability of water.
17. The release of unallocated water for the Carmichael Coal Mine project can be considered a release of water for a 'state purpose' for the purposes of the Burdekin ROP. Further, the Camichael Coal Mine and Rail Project is also a project for a 'state purpose' on the ordinary meaning of those words, as it is anticipated to benefit the State in terms of investment, royalties, infrastructure and business opportunities. It is therefore appropriate to release the water from the strategic reserve for this purpose.
18. The potential for demand from the Galilee Basin for water supply from the Burdekin Basin is considered high, however due to the incremental nature of mining developments, Adani Infrastructure is the only proponent with a development in the Galilee Basin to make a substantive proposal for the release of unallocated water from the strategic reserve of the Burdekin Basin WP at this point in time. As there is only one interested party at this time a fixed price sale process is considered the most appropriate.
19. No previous releases have been made from this subcatchment area. Further details about this are contained in **Attachment 2**.
20. The recommended fixed price is $1,866 per ML. A recommended fixed price of $1,866 per ML for unallocated water from strategic reserve in the Belyando-Suttor Subcatchment area E was made to support developments in the Galilee Basin. The recommendation was based on competition and scarcity of water and availability and reliability of water in the Belyando-Suttor and comparison with other water products in locations with similar characteristics. The Carmichael Coal Mine and Rail project is the first proposed development in the Galilee Basin that requires water from the Burdekin Basin unallocated water strategic reserve. The pricing benchmark of $1,866 per ML is considered consistent with the proposed release in terms of potential competition for and the scarcity of the water resource, water supply and reliability and comparative prices from sales of unsupplemented water entitlements elsewhere in the State. Further details are contained in **Attachments 3 and 4**.
21. The Terms of Sale at **Attachment 1** have been prepared on the basis that Adani Infrastructure must pay an 8% deposit by a stipulated due date if a water licence is offered to Adani Infrastructure. If a water licence is ultimately granted, a condition will be included in the water licence which will require payment of the balance of the total purchase price as follows:

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a. 92% of the total purchase price must be paid by 1 July 2018.

22. This is proposed because Adani Infrastructure has indicated that it may not be ready to take the water under the water licence immediately after grant, so deferred payment terms are considered appropriate in this instance.
23. In this context, it is also proposed that conditions will be included in any water licence granted to the effect that:
    a. water cannot be taken under the water licence until payment of the total purchase price is received in full; and
    b. if Adani Infrastructure fails to pay the balance of the purchase price on the specified due date, the chief executive may commence a show cause process under sections 132(1)(c) and 135 of the Water Act to determine whether the water licence should be cancelled.
24. Under section 17(4) of the Water Regulation, the chief executive may (not must) publish a notice about the availability of water by fixed price sale. The department considers that it is not necessary for you to publish a notice for this particular release of unallocated water, because Adani Infrastructure's project is currently the only advanced status project seeking to secure water from the strategic reserve in the Burdekin Basin WP and you are not obliged to publish a notice under section 17(4) of the Water Regulation in all events. As well as being the only advanced status project, the Carmichael Coal Mine and Rail project has also been subject to a full Environmental Impact Statement and public sumissions process. (**Attachment 2).**
25. It should also be noted that the public notice under section 17 of the Water Regulation about the availability of water by auction or tender or fixed price sale is a notice for persons who might wish to participate in the sale process. This is different from a public notice of an application for a water licence under Section 112 of the Water Act advising that written submissions may be made by any entity about the application.
26. In implementing a process for the release of water, you must consider the matters in section 32 of the Burdekin Basin WP. A review of the matters in section 32 of the Burdekin Basin WP are set out in **Attachment 5** for your consideration.
27. The department also recommends that the Terms of Sale outlined in **Attachment 1** are approved by you in accordance with section 18(a) of the Water Regulation, which have been prepared in the context of the considerations outlined in **Attachments 2, 3, 4 and 5**.

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BACKGROUND:

28. The department has been liaising with Adani for two years in relation to their water supply requirements for the Carmichael Coal Mine Project.
29. Temporary water permits to access 8 300 ML of water for construction of infrastructure such as the Carmichael Rail Line and North Galilee Basin Rail Project have been granted to Adani Mining.
30. The volume to be made available through the strategic release process is modelled as a mean annual volume (i.e. on average, if the licence is granted, the licensee will be able to access 10 800 ML per year). In any given year, the licensee may have access to less or more depending on the conditions of the catchment each year.
31. The terms of sale at **Attachment 1** specify that any licence granted will also include an annual volumetric limit which will be higher than the mean annual volume, in recognition of those years where the conditions allow a higher volume of take.
32. Queensland Treasury has been consulted on the pricing principles outlined in the pricing paper *'Pricing for unallocated water from the strategic reserve in the Belyando-Suttor subcatchment area E of the Water Plan (Burdekin Basin) 2007* (**Attachment 4**) and is supportive of the pricing considerations.

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ATTACHMENTS:

Attachment 1: Release of unallocated water in the Belyando-Suttor Subcatchment Area E of the *Water Plan (Burdekin Basin) 2007* Strategic reserve Terms of Sale for Carmichael Coal Mine and Rail Project (Adani Infrastructure Pty Ltd)

Attachment 2: Methods of sale to release unallocated water held as strategic reserve in Subcatchment E (Belyando Suttor) of the Water Plan (Burdekin Basin) 2007 for the State purpose of the Carmichael Coal Mine and Rail Project - Options paper December - 2016

Attachment 3: Pricing for unallocated water from the strategic reserve in the Belyando-Suttor subcatchment area E of the *Water Plan (Burdekin Basin) 2007* for the State purpose of the Carmichael Coal Mine and Rail Project - Briefing Paper - December 2016

Attachment 4: Pricing for unallocated water from the strategic reserve in the Belyando-Suttor subcatchment area E of the *Water Plan (Burdekin Basin) 2007* - Briefing Paper - December 2016

Attachment 5: Specification of Water Product for release of unallocated water from the strategic reserve in the Belyando Suttor subcatchment area e of the *Water Plan (Burdekin Basin) 2007* December 2016

Attachment 6: Letter to Adani Infrastructure Pty Ltd attaching terms of sale

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Attachment 1

Release of unallocated water in the Belyando-Suttor Subcatchment Area E of the *Water Plan (Burdekin Basin) 2007*

Strategic reserve

Terms of Sale for Carmichael Coal Mine and Rail Project (Adani Infrastructure Pty Ltd)

January 2017

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Release

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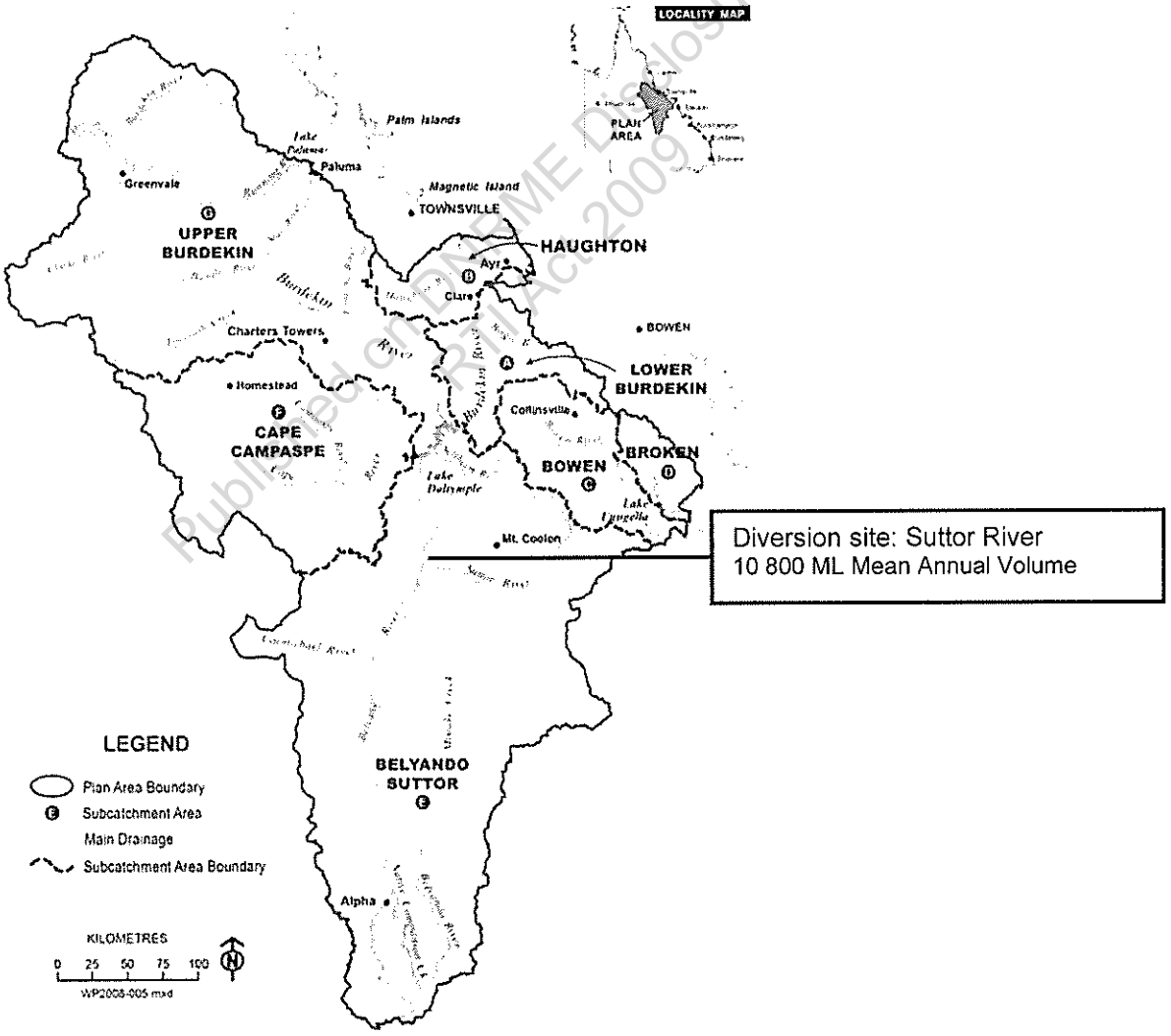
1 Process for fixed price sale of unallocated water held as strategic reserve

An authorised delegate of the chief executive under the *Water Act 2000* (Water Act) has decided to conduct a fixed price sale process for unallocated water held as strategic reserve totalling 10 800 megalitres (ML) mean annual volume in Subcatchment Area E (Belyando-Suttor) as prescribed under the Water Plan (Burdekin Basin) 2007 (Burdekin Basin WP).

The *Water Regulation 2016* (Water Regulation) prescribes a process for releasing unallocated water by fixed price sale. These Terms of Sale have been decided by the delegate of the chief executive in accordance with section 18 of the Water Regulation.

If successful, the applicant will be offered a water licence under the Water Act in accordance with these Terms of Sale.

Figure 1 – Map of area of release.



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2 Eligibility and restrictions

Adani Infrastructure Pty Ltd (ACN 606 764 827) is eligible to be the applicant for a water licence in response to these Terms of Sale. No other person or entity is eligible.

Section 116 of the Water Act does not require an application for a water licence to be made under section 107 of the Water Act if the process for allocation of water under a water licence is pursuant to a process under a water plan or regulation. However, to be eligible for a water licence an applicant must be either an owner of land or a prescribed entity listed in section 104 of the Water Act. Section 104 includes an entity prescribed by regulation as a prescribed entity.

Adani Infrastructure Pty Ltd is referred to in Schedule 4, item 39, of the Water Regulation and is therefore considered a prescribed entity which is eligible to apply for a water licence pursuant to section 107(4) of the Water Act and eligible to be granted a water licence under section 116 of the Water Act.

However, a water licence will only be granted from the strategic reserve if the application is consistent with the Burdekin Basin WP outcomes and objectives and these Terms of Sale.

The Burdekin Basin Resource Operations Plan 2009 (Burdekin Basin ROP)[1], deals with grants of strategic reserve water for state purposes, which includes for the purpose of a project of state significance or a project of regional significance. The Burdekin Basin ROP also provides that the process for releasing unallocated water for state purposes is the process set out in Part 2, Division 1C of the *Water Regulation 2002.*[2]

The Carmichael Coal Mine and Rail Project was declared a coordinated project under the *State Development and Public Works Organisation Act 1971* (SDPWO Act) on 26 November 2010 and is therefore considered to be a project for which water may be released for a state purpose. As well, on 7 October 2016, the Adani Combined Project (comprising the Carmichael Coal Mine and Rail Project, the North Galilee Basin Rail Project and the North Galilee Water Scheme Project) was declared a critical infrastructure project pursuant to section 76E(1) of the SDPWO Act. Further, the Carmichael Coal Mine and Rail Project is also a project for a 'state purpose' on the ordinary meaning of those words, as it is anticipated to benefit the State in terms of investment, royalties, infrastructure and business opportunities.

These Terms of Sale are for the release of unallocated water for the state purpose of the Carmichael Coal Mine and Rail Project only. Water will not be released for any other purpose under these Terms of Sale.

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1 From the commencement of the *Water Reform and Other Legislation Amendment Act 2014* (WROLA) on 6 December 2016, the Water Resource (Burdekin Basin) Plan 2007 continues in force as a 'water plan' and is renamed as the Water Plan (Burdekin Basin) 2007 (see section 1256(1) of the Water Act, s 255 and schedule 2 of WROLA). The provisions of the Burdekin ROP are taken to be, or to have effect for, a number of other documents under the Water Act as amended (see section 1259 of the Water Act). Section 1266 of the Water Act allows references to resource operations plans to, where the context permits, be taken to be a reference to the relevant document under the Water Act as amended by the WROLA on 6 December.

2 The *Water Regulation 2002* was repealed by the *Water Regulation 2016*. Section 145 of the *Water Regulation 2016* provides that references to the *Water Regulation 2002* in an Act or other document can be taken to be a reference to the *Water Regulation 2016* where the context permits. In the circumstances, the context permits the reference to the process under Part 2, Division 1C of the *Water Regulation 2002* in the Burdekin Basin ROP to be taken to be a reference to the process under the corresponding provisions in the *Water Regulation 2016*.

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3 Water availability, type and product specification

3.1 Water availability

The strategic reserve volume available for application under this fixed price sale process in the Burdekin Basin WP area is shown in Table 1.

Table 1 – Water availability

Subcatchment area	Mean Annual Volume (megalitres)
Belyando-Suttor (E)	10 800 ML

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3.2 Water type

Application to purchase may be made for the following water type:

WC	Water in a watercourse (surface water).

If successful, the applicant will be offered one or more licences for the type specified. Any water licence shall be granted in accordance with section 116 of the Water Act.

3.3 Water product specification

In accordance with section 39 of the Burdekin Basin ROP, in Subcatchment Area E, unallocated water granted from the strategic reserve will be granted only as water licences.

Under section 40 of the Burdekin Basin ROP, water licences granted from the strategic reserve for a project of State significance must include a condition on the licence that the authorisation to take water returns to the State on conclusion of the project of State significance. One water type and product is available through this fixed price sale process.

A total of 10 800 ML mean annual volume is available in Subcatchment Area E (Belyando-Suttor) of the Burdekin Basin WP area for this fixed price release process.

Table 2 – Limits and conditions

Geographical area	Water type	Licenced Nominal Entitlement (Maximum Annual Diversion) (ML)	Licenced Maximum Rate (litres per second)		Licenced Daily Volumetric Limit (Maximum Daily Diversion) (ML)	Mean Annual Volume (ML)
Suttor River at approximately AMTD 123km	WC	12 500	11 600		830	10 800
	Licence conditions for passing flow					

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	taking of water will be permitted when the flow in the Suttor River at St Anns Gauging Station (GS120303A) exceeds 2592 ML per day

A sample water licence containing the limits and conditions of the product type can be found at **Schedule 1**.

4 Closing date for receipt of application to purchase

The closing date for an application to purchase by the eligible applicant is 5pm on Friday 13th January 2017. The Department of Natural Resoruces and Mines (DNRM) must receive your application in writing submitted by either email, post or in person by the closing date.

5 Price

Fixed price: The fixed price per ML Mean Annual Volume for strategic reserve unallocated water is **$1866**

6 Planning your application

Independent advice: You should consider obtaining your own independent advice for your particular circumstances in planning and preparing your application.

Pre-lodgement information: If you have a query concerning this process you may contact DNRM identifying your query and any further information you require. DNRM will consider your request and respond in writing. Contact details are provided in Section 16.

Associated approvals: You are responsible for obtaining any approval, consent, notification or agreement required for your proposal and you should commence the process to obtain them at the earliest opportunity. DNRM reserves the right at its sole discretion to reject any application where relevant consents, notifications, approvals or agreements have not been sought or obtained.

No reliance on information or compensation: You are responsible for making your own investigation and assessment about all matters relevant to this application process, the Terms of Sale, the accuracy of all information and documents provided by DNRM and all other matters relevant to your application. DNRM is not liable to pay any compensation to any applicant in relation to their application or the release process in any circumstances, for any reason.

7 Completing an application

You must complete and submit your application in conformity with the following requirements before your application will be assessed against the evaluation criteria.

Fixed Price Application Form: The Fixed Price Application Form is available at **Schedule 3.** You must complete all relevant information fields in the Fixed Price Application Form in full.

Purpose for water: You must state in the Fixed Price Application Form the purpose for which the water is to taken.

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Existing works permit numbers: Where the proposed take of water is from existing works, you must state in your application the relevant permit number for the existing works.

Addressing the evaluation criteria: You must address all of the evaluation criteria in **Schedule 2** and provide sufficient supporting information in writing for your application to be assessed.

Signing formalities: All applicants must sign and date the Fixed Price Application Form.

A corporation:

- may affix its common seal prescribed by its articles of association, or otherwise have the Fixed Price Application Form executed in accordance with section 127 of the *Corporations Act 2001 (Cth);* and
- must forward with its application a copy of its certificate of incorporation.

Non-conforming applications
Failure to meet all of the above requirements means your application is non-conforming.
DNRM may, depending on the extent and nature of the non-conformance, decide to not assess your application, request further information or require you to submit an amended application.

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8 Lodgement of application

Application must be on the form provided (see Schedule 3) .

Email address for submitting your application:

centralwaterservices@dnrm.qld.gov.au

Postal address for submitting your application:

Private and Confidential
Application for Unallocated Water: Burdekin Basin Water Resource Plan
Chief Executive
Attention: Sam Tarlinton, A/Regional Manager, Water Services
Department of Natural Resources and Mines
PO Box 63
Mackay QLD 4740

Submitting your application in person:

Private and Confidential
Application for Unallocated Water: Burdekin Basin Water Resource Plan
Chief Executive
Attention: Sam Tarlinton, A/Regional Manager, Water Services
Department of Natural Resources and Mines
22-30 Wood Street
Mackay QLD 4740

Amending an application: Until the finalisation of DNRM's assessment of the application under Section 9, you may amend your application by contacting DNRM (by post or by email to centralwaterservices@dnrm.qld.gov.au) and DNRM will consider your changes and notify you of its decision. You must state the grounds for your requested amendment.

Resubmissions and requested information: DNRM may request further information from you regarding your application and may require you to resubmit your application as an **amended application**, by email or registered post on or before the due date as advised by DNRM.

Withdrawing an application: You may withdraw your application by notifying DNRM in writing (email centralwaterservices@dnrm.qld.gov.au). Upon receipt of your notification by DNRM your application will cease.

9 Assessment

Evaluation criteria: Your application and supporting information will be assessed by DNRM against the evaluation criteria in accordance with these Terms of Sale. The time period for assessment will be as DNRM determines.

10 Assessment notification

Where your application is:

- successful, DNRM will notify you in writing with an offer of a volume of water in accordance with Section 11;
- unsuccessful, DNRM will notify you in writing.

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11 Letter of offer

If your application is successful a letter of offer to you will:

- include the volume of water in megalitres nominal entitlement and mean annual volume being offered;
- enclose a draft licence including the conditions of licence that will apply if you accept the offer;
- enclose an Acceptance Form for you to complete and return if you accept the volume and licence as offered; and
- stipulate the deposit you must pay by the due date to accept the licence.

12 Licence conditions

Under section 118 of the Water Act, a water licence is subject to the conditions the chief executive (or their authorised delegate) may impose.

Under the Water Act, a licensee is subject to the conditions the chief executive may impose, which may include (without limitation):

- purpose of water take;
- maximum instantaneous extraction rate;
- daily volumetric limit;
- nominal entitlement;
- mean annual volume;
- passing flow conditions;

Release

- undertaking monitoring and reporting;
- return of the entitlement to the State upon conclusion of the project

Sample (indicative) licence (schedule 1): The sample licence in Schedule 1 provides an indication of the conditions that may be included, which is not intended to be exhaustive.

Payment conditions: Section 13 sets out further conditions which may be included in respect of payment of the purchase price.

13 Payment and acceptance of offer

To accept the offer of a licence you **must sign and return the Acceptance Form, and pay a non refundable deposit of 8% of the total purchase price,** by the due date stated in our letter of offer.

Purchase price: means the fixed price per megalitre multiplied by the mean annual volume in megalitres offered.

Grant of licence: Once DNRM receives your Acceptance Form and the deposit by the due date you will be granted a licence. DNRM will post the licence to the address included in your Fixed Price Application Form. A licence cannot be granted until the deposit is paid.

Cessation of offer: If the deposit is not paid in full by the stipulated date referred to above in the letter of offer to you, or as otherwise agreed in writing by the Chief Executive, DNRM may notify you that your deposit was not received and that the letter of offer has been rescinded. Any deposit paid will be non-refundable.

Payment of balance of purchase price: If the water licence is granted to you, a condition will be included in your water licence which will require payment of the balance of the total purchase price as follows:

- 92% of the total purchase price must be paid by 1 July 2018.

Conditions will also be included in your water licence to the effect that:

- water cannot be taken under the water licence until payment of the total purchase price is received in full; and
- if you fail to pay the balance of the purchase price on the specified due date, the chief executive may commence a show cause process under sections 132(1)(c) and 135 of the Water Act to determine whether the water licence should be cancelled.

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14 General terms of sale

Changes to the process: If the application process is cancelled, or the date for submission of an application is extended, or some or all of the total volume of water available under this process is withdrawn, DNRM will advise in writing the changes being made to the process.

Release and indemnity: By planning, making enquiries in relation to or submitting an application, all applicants agree to unconditionally release and indemnify the State of Queensland, DNRM, its officers, agents and representatives from and against all actions, claims, proceedings or demands and in respect of any loss, death, injury, illness or damage (whether personal or property, and whether special, direct, indirect or consequential, including consequential financial loss) arising from

or in connection with these Terms of Sale and the release process, including (without limitation) any related publication or announcement.

The State of Queensland, DNRM, its officers, agents and representatives will not in any circumstances (including for negligence) be liable for any loss of revenue, loss of profit, loss of anticipated savings or business, loss of opportunity (including opportunity to enter into or complete arrangements with third parties), loss of data or goodwill, loss of reputation or any indirect or consequential loss whether arising in contract, tort (including negligence) or otherwise, in connection with these Terms of Sale or the release process.

No warranties: You are responsible for making your own investigation and assessment about all matters relevant to this process, the Terms of Sale, the accuracy of all information and documents provided by DNRM and all other matters relevant to your application. DNRM is not liable to pay any compensation to any applicant in relation to their application or this process in any circumstances, for any reason. DNRM provides no warranty about the quality or availability of water which may be obtained by you as a result of this application process. You accept the risk as to quality and quantity of water that may be made available to you.

Documents: DNRM is under no obligation to return your application and will not return application documents at any point in the process. It is recommended that the applicant keep a copy of their application for their own records.

Subject to offer of licence: No rights of access to water will be deemed to have been granted until a water licence has been offered by DNRM, and accepted and paid for by you in accordance with these Terms of Sale.

Costs and expenses: You must meet all costs incurred in participating in this process, planning and making your application, and any associated approvals.

Jurisdiction: These Terms of Sale are governed by the laws and the courts of Queensland.

Public information: DNRM may make publicly available information about the application received, and the volume awarded to the successful applicant.

Right to information: Information contained in an application may be subject to third party disclosure under the *Right to Information Act 2009.*

Personal information consent: By signing the Fixed Price Application Form you permit DNRM to access or use your personal information in your application for the purpose of this process.

No fetter: Nothing in these Terms of Sale will fetter, act as an estoppel or as an agreement about the exercise of discretion or the making of a decision or subordinate legislation under any law by the State of Queensland, DNRM, its officers, employees, agents or representatives.

Chief Executive discretion: Other than as expressly provided for in these Terms of Sale, the Chief Executive reserves the right to make any changes to these Terms of Sale in its absolute discretion by notifying applicants in writing. Without limitation, DNRM may:

(a) add or change terms or requirements including as a result of changes to legislation;
(b) amend dates including extending the closing date or time;
(c) consider or reject an application received after the closing date or time;
(d) accept a non-conforming application;
(e) reject any or all applications;

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(f) amend the evaluation criteria stipulated in these Terms of Sale;
(g) exercise discretion in evaluating any subjective evaluation criteria;

(h) change the terms and conditions applicable to the licensing process, including the terms of any proposed water licence; or
(i) cancel the process by withdrawing the sale at any time prior to an agreement being entered into for the sale.

An applicant will not make any claim against DNRM or the State of Queensland in connection with a decision by DNRM to exercise or not to exercise any of its rights in relation to the release process.

15 Definitions

Application means your application for a water type made by submitting a Fixed Price Application Form (for the relevant water type) with your supporting information addressing the evaluation criteria.

Closing date means the date specified in Section 4 of these Terms of Sale.

Daily volumetric limit for a water entitlement, means the maximum volume of water that may be taken under a water entitlement in a day.

Evaluation criteria means the criteria in Schedule 2.

Fixed Price Application Form means the forms in Schedule 3 (surface water)

Mean Annual Volume is the long-term average annual volume share of the resource availability and is determined from the licence parameters (i.e. nominal entitlement, diversion rate, and passing flow conditions).

Nominal entitlement means the volumetric limit (cap) that can be taken during water year.

Passing flow conditions are conditions that permit taking water above a threshold and prohibit water being taken below a certain flow threshold.

Price means the price per ML as provided in these Terms of Sale.

Sample licence means the sample licence in Schedule 1.

Terms of Sale means this document inclusive of Schedules 1–3.

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16 DNRM contact details

Attention: Kathy Batts, A/Manager Major Projects
Water Services
Department of Natural Resources and Mines

Phone: 1800 822 100

Email: centralwaterservices@dnrm.qld.gov.au — please mark **Attn: Kathy Batts**

Release

16.1 Links

Water Plan (Burdekin Basin) 2007
http://www.legislation.qld.gov.au/Acts_SLs/Acts_SL_W.htm

Burdekin Basin Resource Operations Plan 2009
https://www.dnrm.qld.gov.au/water/catchments-planning/catchments/burdekin

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Terms of Sale, Department of Natural Resources and Mines, 2016
Release

Schedule 1 — Sample water licence

Watercourse water only

WATER LICENCE

Water Act 2000

Reference	******	**Expiry Date**	30/06/2111
Licensee	JOHN SMITH		
Authorised Activity	The taking of watercourse water from the Suttor River with the point of take on or adjacent to Lot 1 on RP11111 and from Belyando River anabranch		
Authorised Purpose	Any		
Nominal Entitlement	12,500 Megalitres		
Maximum Instantaneous Extraction Rate	11600 Litres per Second		

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

Under the *Sustainable Planning Act 2009* a development permit may be required for operational works to take or interfere with the water described in this licence. The licensee must ensure that the relevant development approvals have been obtained prior to installing or constructing new or additional operational works.

Given at Mackay this XX day of MM YYYY.

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DG Name Here
Director-General
Department of Natural Resources and Mines

Sample only

*Water Licence: ******

Expiry Date: 30/06/2111

Conditions: Schedule B

Interpretation

In this Licence:

a. A reference to a Condition shall be a reference to a Condition of this Licence;
b. Headings to conditions are for ease of reference only and shall not in any way affect the meaning of the conditions;
c. A reference to days or months is a reference to calendar days or calendar months;
d. A reference to the department is a reference to the Department of Natural Resources and Mines;
e. Reference to the conclusion of the Project is a reference to the surrender of Mining Lease 70441, Mining Lease 70505 and Mining Lease 70506;
f. The mean annual volume assigned from the strategic reserve for this water licence is 10,800 megalitres;
g. Words in the singular shall include the plural and vice versa;
h. ***Rate of take*** is a volume measured in litres per second; and
i. ***Published***, for the purposes of this licence is in accordance with the definition of *publish* in the *Water Act 2000*.

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Entitlement

1. The taking of water under this authorisation is permitted only when the flow of water exceeds 2952 megalitres per day at the Department's Gauging Station Sutter River at St Anns (120303A).
2. The daily volumetric limit may be taken under this licence is 830 megalitres.
3. Despite the expiry date specified on this authorisation, water granted under this authorisation is granted only for the life of the Carmichael Mine Project and the right to take the water returns to the State on the conclusion of the project.

Metering

4. Water must not be taken under this authorisation unless a measuring device (telemetric meter) of a type approved by the chief executive to measure the volume of water and taken and released is installed for:

    a. Water taken from the Suttor River under this authorisation; and
    b. Water released into the Belyando River Anabranch; and
    c. Water taken from the Belyando River Anabranch under this authorisation.

Releas

Monitoring Plan

5. On each occasion that water is taken from the Suttor River under this authorisation, the holder must record:

    a. the date and the time at the start and end of the period of take;
    b. the meter reading at the start and end of the period;
    c. the daily volume taken;
    d. the rate of take, and for each change in the rate of take:
        i. The date and time of the change; and
        ii. The new rate of take.
6. Such records must be published within 5 business days of the end of each month by the licence holder and made available upon request of the chief executive.
7. On each occasion that water is released into the Belyando River Anabranch for the purpose of relift under this authorisation, the holder must record:
    a. the date and the time at the start and end of the release period;
    b. the meter reading at the start and end of the period;
    c. the daily volume released;
    d. the release rate, and for each change in the release rate:
        iii. The date and time of the change; and
        iv. The new release rate
8. Such records must be published within 5 business days of the end of each month by the licence holder and made available upon request of the chief executive.
9. On each occasion that water is taken from the Belyando River Anabranch under this authorisation, the holder must record:
    a. the date and the time at the start and end of the period of take;
    b. the meter reading at the start and end of the period;
    c. the daily volume taken;
    d. the rate of take, and for each change in the rate of take:
        v. The date and time of the change; and
        vi. The new rate of take.
10. Such records must be published within 5 business days of the end of each month by the licence holder and made available upon request of the chief executive.

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Relift requirements

11. Water taken from the Belyando Anabranch under this authorisation may only be taken:
    a. after water has been released or is being released into the watercourse by the water entitlement holder; and
    b. until a volume has been reached up to that volume that is released, minus losses.
12. Water being released into the watercourse must not:
    a. cause watercourse bank erosion or riparian destruction; and
    b. be released at a rate or total volume that will cause significant adverse effects on the ambient flows in the watercourse.

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Note: Conditions above are an indication only, other conditions may be included, as required based on application and supporting information

Sample only

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Schedule 2 — Assessment criteria

Criteria	Head of power	What it means	Key issues needed to be addressed
Provide for the use of and protection for the probability of take of all water entitlements and other authorisations in the plan area Demonstrate how water is available to support: • population growth in towns and communities dependent on surface water resources in the plan area; and • growth in industries dependent on surface water resources in the plan area Support water availability in the Belyando-Suttor subcatchment to support growth in irrigated agriculture.	Burdekin Basin WP section 12 (a), (c), (d) and (g)	This criteria is to protect the value of and ability for existing entitlement holders to access their entitlements whilst ensuring there is sufficient water remaining available to support the growth of the agriculture, community and industries.	To address this criterion the applicant should include a detailed description identifying any adverse effects on future Water Allocation Security Objectives and effects on localised and downstream water users and ecosystems
Support water-related cultural values of Aboriginal and Torres Strait Islander communities in the plan area and ensure water is available to support natural ecosystem processes	Burdekin Basin WP section 12 (k) and (l)	The environmental flow objectives have been determined to ensure stream flow regimes to protect waterholes, stream connectivity, environmental outcomes and associated cultural activities.	To address this criterion the applicant should include a detailed description identifying any adverse effects on Environmental Flow Objectives
Maintain the natural variability of flows that support the habitats of native plants and animals and	Burdekin Basin WP section 13 (1) (a)	This criteria, along with criteria 13 (1) (b-f), aim to protect and maintain the ecological integrity of waterways within the Plan area	To address these criteria 13 (1) (a-f) the applicant must demonstrate, via an ecological risk assessment, that the natural variability of flows necessary to support the viability

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migratory birds in watercourses, floodplains, wetlands, lakes and springs		which are potentially at risk through water resource developments.	of natural ecosystems are not adversely effected. This must include assets with life-history requirements which are dependent on low, medium and high flows and include all aspects of the flow regime, such as the timing, duration, magnitude and frequency of the natural flow regime.
Provide for the continued capability of one part of a river system to be connected to another, including by maintaining flood flows that— • allow for the movement of native aquatic fauna between riverine, floodplain, wetland, estuarine and marine environments • deliver nutrients and organic matter throughout the plan area to support natural processes such as breeding, growth and migration in riverine, floodplain, wetland, estuarine and marine environments • deliver water and sediments throughout the plan area to support river-forming processes	Burdekin Basin WP section 13 (1) (b)		
Minimise changes to natural variability in water levels and to support natural ecological processes, including maintaining refugia associated with waterholes and lakes in the Belyando-Suttor subcatchment	Burdekin Basin WP section 13 (1) (c)		

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Promote improved understanding of the matters affecting the flow-related health of ecosystems in the plan area	Burdekin Basin WP section 13 (1) (d)		
maintain flooding in the Lower Burdekin and Haughton subcatchments to provide freshwater inputs to wetlands on the Burdekin Haughton floodplain;	Burdekin Basin WP section 13 (1) (e)		
provide a flow regime that • maintains delivery of fresh water to the estuaries of watercourses and the Great Barrier Reef Lagoon • maintains natural sedimentation processes to support the replenishment of beaches along the Burdekin Haughton floodplain and Cape Bowling Green • supports productivity in the receiving waters of the Great Barrier Reef and inshore reefs.	Burdekin Basin WP section 13 (1) (f)		
The purpose for which the water is required – is it for a 'state purpose'?	Burdekin Basin WP section 32 (2) (a) and Burdekin Basin ROP	The applicant provides a clear proposal for the volume of water required and its use	To address this criterion, the applicant should describe what the water is to be used for and whether it is for a 'state purpose', that is, a project which is likely to benefit the State of Queensland.

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The efficiency of existing and proposed water use practices.	Burdekin Basin WP section 32 (2) (b) and section 12 (j)	The applicant describes how current and proposed water use is not wasteful so that water is not allocated to inefficient uses.	To address this criteria the applicant should include a detailed description identifying: • demand management measures that achieve permanent and reliable reductions in the demand for water • the promotion of water conservation and appropriate water quality objectives for the intended use of water • water recycling, including, water reuse within a particular enterprise to gain the maximum benefit from available supply
The extent to which water is being taken under existing authorisations in the plan area.	Burdekin Basin WP section 32 (2) (c)	These criteria ensure the application proposal considers the extent of demand in the plan area	To address this criterion the applicant should provide information relating to water use under current authorisations
The availability of an alternative water supply for the purpose for which the water is required.	Burdekin Basin WP section 32 (2) (d)	The applicant describes whether alternative means are available to meet proposed water demands without the need for the unallocated water (e.g. sufficient entitlement is available to meet a proportion of their demand.	To address this criterion the applicant should describe whether there are alternative water supplies available on the land to which the application applies and identify the opportunities to make use of those supplies.
The impact the proposed taking of, or interfering with, the water may have on existing water users in the plan area.	Burdekin Basin WP section 32 (2) (e)	This criteria ensures the application proposal considers ways to minimise impacts on existing water users in the plan area including downstream water users	To address this criterion the applicant should include a detailed description identifying: • Any adverse effects on Water Allocation Security Objectives • Any adverse effects on downstream water users

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			It should also include any proposals to mitigate these effects.
Whether the proposed taking or interfering is likely to have a direct adverse effect on groundwater flows	Burdekin Basin WP section 32 (2) (f)	These criteria ensure that the application proposal considers ways to minimise the impacts on the physical integrity of the watercourse, the ecosystems reliant on the watercourse and the associated riverine environments. It also ensures impacts to groundwater flows and the recreational and cultural values of the watercourse are minimised	In addressing these criteria the applicant should include a detailed description identifying: • any adverse effects on the physical integrity of the watercourse. • ecosystems reliant on those watercourses • the associated riverine environments The applicant should also include any proposals to mitigate these affects. This description should also detail the impact on the recreational and cultural values of the watercourse and to groundwater flows as a result of the proposal and any strategies to mitigate these impacts. • To address these criteria you may need to consult with: • Indigenous groups • recreational groups • natural resources management bodies • government departments, especially in relation to fishery and vegetation management requirements.
The stream flows required to maintain the following: • the longitudinal connectivity of low flow habitats throughout river systems in the plan area; • the wetted habitats at riffles and other streambed features; • the natural seasonality of flows and zero flows; • the replenishment of refuge pools that enable movement of instream biota; • the lateral connectivity between rivers in the plan area and their adjacent riverine environments including floodplains	Burdekin Basin WP section 23 (1)(a)		

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The impact the taking of, or proposed taking of, or interfering with, water may have on the following: • water quality; • the natural movement of sediment; • the bed and banks of a watercourse or lake; • riparian vegetation; • habitats for native plants and animals; • the movement of fish and other aquatic species; • the recreation and aesthetic values of the plan area; • cultural values including, for example, cultural values of local Aboriginal or Torres Strait Islander communities.	Burdekin Basin WP section 23 (1)(b)		

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Schedule 3 — Fixed price application form

Queensland Government

Department of Natural Resources and Mines

ABN 59 020 847 551

Application for strategic reserve unallocated surface water available at a fixed price

Water Act 2000

Part A Applicant details

Name(s)

Specify the full name of all persons applying to purchase the unallocated water:

Title	First name	Middle name	Surname

Or

Corporation, trustee or entity name(s)	ACN (if a corporation)

Address

Street address

Suburb/Town	State	Postcode

Postal address

Suburb/Town	State	Postcode

Contact details

Title: ☐ Mr ☐ Mrs ☐ Ms ☐ Miss ☐ Other (specify)

Full name:

Preferred phone:	Alternative phone:	Facsimile:

Email:

Information Privacy Notice (*Information Privacy Act 2009*)

The information being collected in this form will be used by this department for the purpose of processing your application for strategic reserve unallocated water under the authority of Part 2 of the Water Regulation 2016. Your personal information will not be disclosed to any other parties unless authorised or required by law. The information collected will be retained as required by the *Public Records Act 2002* and may be stored in a departmental database. Information on the department's privacy commitment can be found on the department's website.

OFFICE USE ONLY	Application ref.	Fee received $				Office Stamp Only
	Client ref.	Receipt no.				
	Authorisation ref.	Date	/	/	Initials	

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Part B Volume of water

Water type

☐ Watercourse water

Amount of water

Mean annual volume of water required		megalitres
Maximum rate at which water is to be taken		litres per second

Part C Source and location of water

Source of water

Provide the name of the watercourse, lake or spring from which the water will be taken.

Location of take

Describe the parcels of land on or adjoining the place from which the water is to be taken. If water is to be taken from a point within the bed and banks of a watercourse which cannot be properly described in terms of a lot and plan, enter the property description of the nearest adjacent land and tick the 'Adjacent to' (√) box.

Lot	Plan	Adjacent to (✓)	Lot	Plan	Adjacent to (✓)
		☐			☐
		☐			☐
		☐			☐

To take water from a specific point(s) on the nominated land, provide the GPS latitude and longitude coordinates (Datum GDA 94 or WGS 84) for the proposed location of take.

1	°		'		"	S		°		'		"	E
2	°		'		"	S		°		'		"	E
3	°		'		"	S		°		'		"	E

Map / sketch

Please provide a sketch of proposed bore take locations including the distance of the proposed sites from property boundaries.

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Part D Purpose of water	
Outline the purpose for which the water will be taken, including whether the water will be taken a 'state purpose', that is, a project which is likely to benefit the State of Queensland?	
Part E Applicant Declaration	
If more signature space is required, copy or print a blank copy of this page, complete and attach. **I/we, the undersigned, declare that:** being a recognised entity under the *Water Act 2000*, I/we do hereby apply to purchase strategic reserve unallocated water and declare that the information and attachments contained in this application are true and correct. Upon our receipt of your Acceptance Form a legally binding agreement is formed between you and the Department comprising this application, the Licence - including any conditions, and the Terms of Sale (which includes your statement addressing the Evaluation Criteria).	
Individual	
Name:	Name:
Signature:	Signature:
Position/Title: (if applicable)	Position/Title: (if applicable)
Date: / /	Date: / /
Corporation Executed for and on behalf of	
Organisation name:	
ACN:	
By (name):	By (name):
Position:	Position:
Signature:	Signature:
Date: / /	Date: / /
Witnessed by:	Witnessed by:
Witness signature:	Witness signature:
Date: / /	Date: / /

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Attachment 2

Methods of sale to release unallocated water held as strategic reserve in Subcatchment E (Belyando Suttor) of the Water Plan (Burdekin Basin) 2007 for the State purpose of the Carmichael Coal Mine and Rail Project

Options paper

December 2016

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1. Scope

This paper has been prepared in the context of a proposal made to the Department of Natural Resources and Mines (the department) by Adani Infrastructure Pty Ltd (Adani Infrastructure) for release of strategic reserve unallocated water release from the Belyando-Suttor subcatchment area E of the *Water Plan (Burdekin Basin) 2007* (Burdekin Basin WP) for the State purpose of the Carmichael Coal Mine and Rail Project.

Adani Infrastructure's request can only be considered as a proposal at this stage, prior to the chief executive deciding whether or not to release the unallocated water in accordance with the Burdekin Basin WP and the process specified in the Burdekin Basin Resource Operations Plan 2009 (Burdekin Basin ROP) and Water Regulation 2016. If the chief executive decides to do so, then Adani Infrastructure will be required to submit an application for assessment in due course.

This paper will compare the legislated processes (methods of sale) available to the chief executive or delegate to release unallocated water for the State purpose of the Carmichael Coal Mine and Rail Project.

The recommended process will be determined taking into consideration the following factors:

- a request from Adani Infrastructure to access unallocated water from the strategic reserve for the State purpose of the Carmichael Coal Mine and Rail Project dated 27 October 2016;
- legislated processes (methods of sale) currently available for releasing unallocated water; and
- assessed advantages and disadvantages of each method that may apply to this particular sale.

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2. Background to proposed release of water

2.1 Overview of request to release water from the strategic reserve

Adani Infrastructure has submitted a proposal dated 27 October 2016 to secure a water supply from the Belyando-Suttor catchment which is regulated under the Burdekin Basin WP and the *Burdekin Basin Resource Operations Plan 2009* (Burdekin Basin ROP) and can be accessed from the unallocated water strategic reserve.

From the commencement of the *Water Reform and Other Legislation Amendment Act 2014* (WROLA) on 6 December 2016 the following applies:

1. The Water Resource (Burdekin Basin) Plan 2007 continues in force as a 'water plan'[1] and is renamed as the Water Plan (Burdekin Basin) 2007 (referred to as the Burdekin Basin WP in this document). The provisions of the Burdekin ROP are taken to be, or to have effect for, a number of other documents under the Water Act as amended.[2]

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1 See new section 1256(1) of the Water Act, s 255 and schedule 2 of the WROLA.
2 See new section 1259 of the Water Act inserted by WROLA.

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Section 1266 of the Water Act allows references to resource operations plans to, where the context permits, be taken to be a reference to the relevant document. This means the provisions of the Burdekin Basin ROP continue to have effect for the purposes of implementing the Burdekin Basin WP following 6 December 2016.

2. The *Water Regulation 2002* (Water Regulation) was repealed by the *Water Regulation 2016* (2016 Regulation). Section 145 of the 2016 Regulation states that a reference in an Act or other document to the repealed Water Regulation may, if the context permits, be taken to be a reference to the 2016 Regulation. Subdivision 2, division 2, part 2 of the 2016 Regulation sets out substantially identical provisions to Part 2, Division 1C of the Water Regulation. In this way, the context permits that the reference to Part 2, Division 1C of the Water Regulation in the Burdekin ROP may be taken to be a reference to the equivalent provisions in the 2016 Regulation.

Unallocated water held in a strategic reserve is water that may be granted for a 'State purpose', including projects that the chief executive considers are of regional significance for the plan area or projects of State significance, such as projects that have been declared to be coordinated projects under the *State Development and Public Works Organisation Act 1971* (SDPWO Act). The Carmichael Coal Mine and Rail Project is also a project for a 'state purpose' on the ordinary meaning of those words, as it is anticipated to benefit the State in terms of investment, royalties, infrastructure and business opportunities.

Adani Infrastructure has submitted a proposal to access 10 800 megalitres (ML) mean annual volume (MAV) from the Suttor River, in subcatchment area E. This subcatchment is a regulated area within the Burdekin Basin ROP. The proposed water is required for the State purpose of facilitating the construction and operation of the Carmichael Coal and Rail Project, which is a coordinated project under the SDWPO Act.

On 7 October 2016 the Adani Combined Project (comprising the Carmichael Coal Mine and Rail Project, the North Galilee Basin Rail Project and the North Galilee Water Scheme Project) was declared a critical infrastructure project pursuant to section 76E(1) of the SDPWO Act.

Potential water demands demonstrated through development approval processes indicate that competition for and scarcity of water in the Galilee Basin for high value productive industry water supplies will increase over time as developments are implemented. Water demands for Galilee Basin mines under full coal production is likely to be of the order of 100 000 ML per annum (Galilee Basin Coal Mining Development – water supply options study; unpublished, Department of Energy and Water Supply, 2012).

The potential for demand from the Galilee Basin for water supply from the Burdekin Basin is considered high, however due to the incremental nature of mining developments, Adani Infrastructure is the only proponent with a development in the Galilee Basin to make a substantive proposal for the release of unallocated water from the strategic reserve of the Burdekin Basin WP at this point in time.

No releases have previously been made from this subcatchment area.

3. Types of unallocated water

Unallocated water is reserved under water planning instruments and can be made available for future consumptive use without compromising the security of existing users or the environmental values within a catchment.

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Types of unallocated water include:

- **General reserve**: water that may be granted for any purpose
- **Strategic or state reserve**: water that may be granted for projects that the chief executive considers are of regional significance for the plan area or have been declared to be coordinated projects under the *State Development and Public Works Organisation Act 1971*
- **Strategic infrastructure**: water that may be granted to facilitate the development of particular water infrastructure projects (e.g. new dams) in the relevant water plan
- **Indigenous reserve**: water that may be granted for projects that advance the social and economic aspirations of indigenous people.

The Burdekin Basin ROP establishes volumes of unallocated water held in the general reserve, strategic reserve and SunWater reserve.

The strategic reserve of the Burdekin Basin ROP includes a volume of unallocated water for each of the following:

- State purposes;
- A future raising of the Burdekin Falls Dam of not more than 2 metres;
- Water infrastructure for the Bowen and Broken subcatchments, that is primarily intended for industrial use; and
- A SunWater reserve of water with a nominal volume of 8 744 ML.

The type of water being considered for the Adani Infrastructure proposal is strategic reserve unallocated water for State purposes, being the State purpose of the Carmichael Coal Mine and Rail Project.

The State purposes outlined in the Burdekin Basin ROP include projects of State significance. The Carmichael Coal Mine is considered to be a project of State significance as a coordinated project which is for the benefit of the State, because it advances investment, development of infrastructure and employment.

As it is proposed to release the water for this State purpose, this paper considers the various options which might be used for releasing the water.

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4. Methods of sale for releasing unallocated water

4.1 Overview

Section 38 of the Burdekin ROP states that the process for making unallocated water from the general reserve and strategic reserve available is the process prescribed in Part 2, Division 1C of the Water Regulation 2002.

As noted above, in accordance with section 145 of the 2016 Regulation, the context permits that the reference to Part 2, Division 1C of the Water Regulation 2002 in the Burdekin ROP may be taken to be a reference to the equivalent provisions in the 2016 Regulation.

Part 2, Division 2 of the 2016 Regulation prescribes the processes for releasing unallocated water by—

(a) public auction; or

Release

(b) tender; or

(c) fixed price sale; or

(d) grant for a particular purpose.

In accordance with section 18 of the 2016 Regulation, the chief executive may decide the terms—

(a) of a sale of water; or

(b) for granting water for a particular purpose.

4.2 Competitive process (tender or public auction)

An auction or tender (i.e. competitive) process could be used to release unallocated water held in either general or strategic reserves. However, a competitive process may be more appropriate for a release of unallocated water held in a general reserve, where there is likely to be a higher number of parties interested in the one water product, as opposed to a release of water to a single party for a coordinated project.

An auction or tender process may be planned following an expressions of interest period to determine the most in-demand area where water is sought. The department conducted a 'register of interest' process in 2014, receiving 101 expressions of interest from clients interested in gaining access to unallocated water held in general reserves across Queensland. This process informed a prioritised program to release unallocated water from general reserves in the Gulf, Great Artesian Basin, Burdekin, Fitzroy Basin and Whitsunday, Wet Tropics water resource plan areas, with a focus on supporting the irrigated agriculture sector.

A tender process has been used for general reserve unallocated water release processes where there is known high demand in the water resource plan area where water is being made available.

An auction could be used for a similar purpose. To date, the department has not undertaken any unallocated water releases using an auction process due to the level of information required to determine successful purchasers, and the inability to gain this information through a typical auction process.

The chief executive must publish a notice about the availability of the water by auction or tender under Part 2, Division 2 of the 2016 Regulation.

If the water is not sold under an auction or tender process, the State may sell all or part of the water on the terms decided by the chief executive under the 2016 Regulation.

4.2.1 Tender

Advantages for a tender process:

- With good advertising or promotion, the expected target market (i.e. industrial users) could be attracted to bid against each other, ensuring highest value return for this product. This is assuming that the release of water is being targeted to more than one party.

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- If the minimum (reserve) price under a tender process were not disclosed, tenderers that think the product is worth more than that determined by the department's assessment could bid higher and in turn return a higher price sale. This is particularly beneficial where there is known high demand for water in an area.
- A tender provides some indication as to the existing market value of the product. Tenders are assessed in order of bid price, therefore potentially providing a higher return to the State for water than if a lower (comparatively) fixed price were set.

Disadvantages for a tender process:

- A tender process typically assumes that the department is wanting to target more than one tenderer. Given this release is for a coordinated project, if a tender process were used, the applicant would likely tender at the minimum price knowing that there is no competition.
- There is a risk in not disclosing the reserve price for unallocated water volumes. There may be instances, particularly in areas of low demand, where tenders submitted may not reach the reserve price. If this occurs the release process will be abandoned at significant cost to the department.
- Again, assuming there is more than one tenderer, the length of a tender process may be longer as tenders are assessed in order of bid price as well as against evaluation criteria. This may lead to withdrawal or non-acceptance of offers if alternative supply is found in that time.

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4.2.2 Auction

Advantages for an auction:

- With good advertising or promotion, the expected target market (i.e. industrial users) could be attracted to bid against each other, ensuring highest value return for this product. This is assuming that the release of water is being targeted to more than one party.
- An auction could provide some immediate indication as to the current market value of the product.

Disadvantages for an auction:

- An auction process assumes that the department is wanting to target more than one party and that may not be the case when presented with individual coordinated or State project needs at different times.
- An auction process requires a high level of information on the product to facilitate successful purchasers, and there is an inability to gain this information through a typical auction process for various unallocated water reserve products available for release within and across catchments.
- The auction system is very public which often discourages sellers who wish to retain discretion and privacy.

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4.2.3 Consideration of competitive process

- While the potential water demand in the Burdekin Basin from proposed developments in the Galilee Basin remains high, Adani Infrastructure, as a related body corporate of the proponent of a co-ordinated project under the SDPWO Act, Adani Mining Pty Ltd, is the only such entity to have an existing formal request for release of unallocated strategic reserve water.
- The number of Galilee Basin proponents requiring water release at any one time from the Burdekin catchment will depend on the incremental process of mine development. At this point in time Adani Infrastructure appears to be the only entity sufficiently advanced and requesting water release.
- As there is only one interested party at this time, a tender process would not be considered appropriate.

4.3 Non-competitive process

4.3.1 Fixed price sale

A fixed price (i.e. non-competitive) sale process may be appropriate for catchment areas with low but known demand, particularly for unallocated water held in the general reserve. A fixed price sale may also be appropriate for a sale of unallocated water held in the strategic reserve for projects of State or regional significance.

The chief executive may (but is not required to) publish a notice about the availability of the water by fixed price sale under section 17(4) of the 2016 Regulation.

Advantages for a fixed price sale:

- Provides certainty to the applicant of the value of water prior to application, which is particularly advantageous for the development of projects of regional significance or coordinated projects.
- Allows potential applicants the ability to undertake a cost-benefit analysis to determine appropriate volume of water or product to make application for.
- More flexibility available in the sale process; depending on policy position, a fixed price process may be left 'open' (without a fixed end date) to enable water to remain for sale until available reserves are exhausted or, for a product tailored for a specific project and applicant.
- Applications are assessed against evaluation criteria only, as opposed to in order of bid price as well. For releases from the strategic reserve, this means the department is able to work with an applicant to determine if a particular water product is suitable for their requirements.

Disadvantages for a fixed price sale:

- May not reflect true market value if there is high demand for water in the area and a competitive aspect is absent from the process, particularly true in areas where the high demand outweighs the available product.

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4.3.2 Consideration of fixed price sale

Adani Infrastructure is a related body corporate of the proponent of a co-ordinated project under the SDPWO Act, Adani Mining Pty Ltd. In the absence of multiple Galilee Basin proponents having interests at this point in time for water in the Burdekin Basin catchment, a fixed price sale process would seem appropriate. Market value for water in the Burdekin Basin catchment under a fixed price would also set a benchmark for competitive processes that may be proposed in the future if there are simultaneous competing interests.

4.3.3 Grant for a particular purpose

A grant for a particular purpose may be appropriate for allocating town water supply, or unallocated water held in the indigenous reserve to advance the social and economic aspirations of indigenous people. The 2016 Regulation does not define the meaning of a 'particular purpose' and has been left open to the chief executive's discretion in setting the terms, including method of a sale of unallocated water.

A fixed price sale process can also be used for indigenous or town water supply purposes, where there is a 'fixed price' value. A grant for a particular purpose however, may be more appropriate where the release of water is at no cost to an applicant – hence the term 'grant'.

Advantages for a grant for a particular purpose:

- No price or a low price can be set due to a higher social and/or environmental value outweighing the economic value of the water in certain situations.
- Suitable for release processes where a price is not applicable.

Disadvantages for a grant for a particular purpose:

- It is difficult to justify the grant of water from the strategic reserve for a purpose other than 'town water' or 'indigenous' purpose (with clear public benefits) where there is little or no money paid for the water by the grantee when the department still incurs considerable cost to run the process.

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4.3.4 Consideration of grant for a particular purpose

Adani Infrastructure's proposal is for the release of strategic reserve for State purpose. In this case the State purpose is the Carmichael Coal Mine and Rail Project, which is a coordinated project under the SDPWO Act. The water required for this project is considered high value productive industries water with a reflective market value. To ensure consistency, it is considered that the grant of water for a particular purpose continue to be utilised for purposes with low or no price requirement, so it is not recommended that this method is utilised for the present purpose.

5 Terms of sale or grant

5.1 Chief executive discretion to decide terms of sale or grant

The 2016 Regulation allows the chief executive discretion to decide the terms of sale; it does not prescribe what must or may be included. However, as the method of sale chosen is a

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key part of the process and affects the type of submission required from an applicant, this should be clearly outlined in the Terms of Sale.

The Terms of Sale will usually outline:

- the method of sale;
- the product specification;
- price of water per ML;
- evaluation criteria; and
- general terms of the sale process such as due dates, confidentiality, and issuing of licences upon successful evaluation of applications.

Other terms may be included as appropriate for each release of unallocated water.

6 Public Notice

Section 17(1) of the 2016 Regulation provides that the chief executive must publish a notice about the availability of water by auction or tender.

Section 17(4) of the 2016 Regulation provides for discretion of the chief executive to publish a notice about the availability of water by fixed price sale.

Adani Infrastructure's project is currently the only advanced status project seeking to secure water from the strategic reserve in the Burdekin Basin WP and the project has also been subject to a full Environmental Impact Statement and public submission process. On this basis, it would be reasonable for the chief executive to undertake a fixed price process without public notice.

Further, even if the proposed sale were publicly notified, the department's position is that it is unlikely that another entity would be able to demonstrate a state purpose as significant as that of the Carmichael Coal Mine and Rail Project, which is anticipated to benefit the State of Queensland, including through investment, royalties, jobs and infrastructure and business opportunities.

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7 Chief executive delegation

The *Water Act Delegation (No.1) 2016* from the chief executive of the department and the *and the Water Act (Burdekin Basin Chief Executive) Delegation (No. 2) 2016* from the chief executive of the Department of Energy and Water Supply delegates the chief executive's decision of the Terms of Sale under Section 18 of the Water Regulation 2016, of which the method of sale is included, to both Executive Director and Regional Manager level.

8 Conclusion and recommendation

While there is a future potential demand in the Galilee Basin, at this time there is not current interest by an advanced development project for water from the unallocated water strategic reserve, other than the Carmichael Coal Mine and Rail Project. Due to the advanced status of Carmichael Coal Mine and Rail Project, it is considered appropriate to use a fixed price process without a public notice about the availability of the water.

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In the context of the above considerations, the recommended process for the proposed release of unallocated water held in the strategic reserve of Subcatchment E (Belyando Suttor) of the Burdekin Basin WP to Adani Infrastructure is a non-competitive fixed price sale without public notice about the availability of the water.

9 Related Documents

Terms of Sale 'Release of unallocated water in the Belyando-Suttor Subcatchment Area E of the Water Plan (Burdekin Basin) 2007 – Strategic Reserve – Terms of Sale for Carmichael Coal Mine and Rail Project (Adani Infrastructure Pty Ltd)', December 2016

Pricing for unallocated water from the strategic reserve in the Belyando-Suttor subcatchment area E of the *Water Plan (Burdekin Basin) 2007* for the State purpose of the Carmichael Coal Mine and Rail Project - Briefing Paper - December 2016

Pricing for unallocated water from the strategic reserve in the Belyando-Suttor subcatchment area E of the *Water Plan (Burdekin Basin) 2007* – Briefing Paper - December 2016

Specification of Water Product for release of unallocated water from the strategic reserve in the Belyando Suttor subcatchment area e of the *Water Plan (Burdekin Basin) 2007*', December 2016

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Attachment 3

Pricing for unallocated water from the strategic reserve in the Belyando-Suttor subcatchment area E of the *Water Plan (Burdekin Basin) 2007* for the State purpose of the Carmichael Coal Mine and Rail Project

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Briefing Paper

December 2016

Queensland Government

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1. Scope

This paper has been prepared in the context of a proposal made to the Department of Natural Resources and Mines for the release of unallocated water held as strategic reserve in the Belyando-Suttor subcatchment area E of the *Water Plan (Burdekin Basin) 2007* (Burdekin Basin WP) for the State purpose of the Carmichael Coal Mine and Rail Project.

If the authorised delegate of the chief executive decides that it is appropriate to release the water, a price per megalitre (ML) for this proposal is recommended based on consideration of the briefing paper *'Pricing for unallocated water from the strategic reserve in the Belyando –Suttor subcatchment area E of the Water Plan (Burdekin Basin) 2007' (Belyando-Suttor Pricing Paper).*

2. Background

2.1 Proposal for strategic reserve water

Adani Infrastructure has submitted a proposal dated 27 October to secure a water supply from the Belyando-Suttor catchment which is regulated under the Burdekin Basin WP and the Burdekin Basin Resource Operations Plan (Burdekin Basin ROP) and can be accessed from the unallocated water strategic reserve, for the purpose of the Carmichael Coal Mine and Rail Project.

From the commencement of the *Water Reform and Other Legislation Amendment Act 2014* (WROLA) on 6 December 2016, the Water Resource (Burdekin Basin) Plan 2007 continues in force as a 'water plan'[1] and is renamed as the Water Plan (Burdekin Basin) 2007 (referred to as the Burdekin Basin WP in this document). The provisions of the Burdekin ROP are taken to be, or to have effect for, a number of other documents under the Water Act as amended.[2] Section 1266 of the Water Act allows references to resource operations plans to, where the context permits, be taken to be a reference to the relevant document. This means the provisions of the Burdekin Basin ROP continue to have effect for the purposes of implementing the Burdekin Basin WP following 6 December 2016.

Unallocated water held in a strategic reserve is water that may be granted for a State purpose, which may include projects that the chief executive considers are of regional significance for the plan area or have been declared to be coordinated projects under the *State Development and Public Works Orgnisation Act 1971* (SDPWO Act).

The Carmichael Coal Mine and Rail Project is a co-ordinated project under the SDPWO Act (declared on 26 November 2010). Adani Infrastructure has submitted a proposal to access 10 800 megalitres (ML) mean annual volume (MAV) from the Suttor River, in subcatchment area E. This subcatchment is a regulated area within the Burdekin Basin ROP. The proposed water is required to facilitate the construction and operation of the Carmichael Coal and Rail Project.

On 7 October 2016 the Adani Combined Project (comprising the Carmichael Coal Mine and Rail Project, the North Galilee Basin Rail Project and the North Galilee Water Scheme Project) was declared a critical infrastructure project pursuant to section 76E(1) of the SDPWO Act.

The Carmichael Coal Mine and Rail Project will be a 60 million tonne per annum (Mtpa) open cut and underground coal mine with associated transport and support infrastructure. Off lease infrastructure includes mine worker accommodation, a permanent airport site, an industrial area, quarries, water supply infrastructure and 77km section of the Carmichael Rail Line.

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1 See new section 1256(1) of the Water Act inserted by WROLA.
2 See new sections 1259 of the Water Act inserted by WROLA.

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2.2 Water available for sale

The Burdekin Basin WP and Burdekin Basin ROP provide for a total of 35 000 ML of Strategic Reserve unallocated water with 20 000 ML of this strategic reserve available in subcatchment area E (Belyando-Suttor). Adani Infrastructure's proposal is for 10 800 ML MAV from subcatchment area E.

2.3 Competition for water and water availability

2.3.1 Competition and scarity

While the potential for demand from the Galilee Basin for water from the Burdekin Basin is high as outlined in the '*Pricing for unallocated water from the strategic reserve in the Belyando-Suttor subcatchment area E of the Water Plan (Burdekin Basin) 2007'* briefing paper, to date, Adani Infrastructure are the only proponent with a development in the Galillee Basin to make a formal proposal for the release of unallocated water from the strategic reserve of the Burdekin Basin WP. This proposal, being driven by one proponent would be considered low in terms of current demand, however the potential for high competition as incremental phasing of development in the Galilee Basin occurs should be a consideration for pricing.

2.3.2 Water availability

The Belyando-Suttor subcatchment area E represents a drier, variable and typically semi arid landscape with intermittent stream flows. The Adani Infratructure proposal is to take from the lower Belyando-Suttor where there is more reliability than in the upper and middle reaches. However, even with increased water availability compared to the upper and middle reaches it will not provide the security of supply required without development of infrastructure (off stream storage, pumps and pipelines). Infrastructure development proposed by the proponent includes off stream storages, gravity diversions, pumps and pipelines.

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3. Conclusion and recommendation

The *Pricing for unallocated water from the strategic reserve in the Belyando-Suttor subcatchment area E of the Water Plan (Burdekin Basin) 2007* paper provides a recommendation of $1866 per ML for unallocated water from the strategic reserve in the Belyando-Suttor Subcatchment area E.

The Adani Infrastructure proposal is the first of a number of proposed developments in the Galilee Basin that may require water from the Burdekin Basin unallocated water strategic reserve. The location of take of this proposal is from the the lower reaches of the Belyando-Suttor which provides for better reliability of flows than the upper and middle reaches, however does require the necessary infrastructure to provide water security for project construction and ongoing operations.

It is considered that the pricing benchmark for the Belyando-Suttor is consistent with Adani Infrastructure's request for the release of strategic reserve water from the Belyando-Suttor subcatchment area E in terms of potential competition for and the scarcity of the water resource, water supply reliability and comparative prices from sales of unsupplemented water entitlements elsewhere in the State.

The recommended fixed price for the proposed sale to Adani Infrastructure of unallocated water from the strategic reserve in the Belyando-Suttor Subcatchment area E of the Burdekin Basin WP is $1866 per ML as recommended in *'Pricing for unallocated water from the strategic*

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reserve in the Belyando-Suttor subcatchment area E of the Water Plan (Burdekin Basin) 2007' **dated September 2016.**

4. Related Documents

Terms of Sale 'Release of unallocated water in the Belyando-Suttor Subcatchment Area E of the Water Plan (Burdekin Basin) 2007 – Strategic Reserve – Terms of Sale for Carmichael Coal Mine and Rail Project (Adani Infrastructure Pty Ltd)', December 2016

Methods of sale to release unallocated water held as strategic reserve in Subcatchment E (Belyando Suttor) of the Water Plan (Burdekin Basin) 2007 for the State purpose of the Carmichael Coal Mine and Rail Project - Options paper - December 2016

Pricing for unallocated water from the strategic reserve in the Belyando-Suttor subcatchment area E of the *Water Plan (Burdekin Basin) 2007* – Briefing Paper - December 2016

Specification of Water Product for release of unallocated water from the strategic reserve in the Belyando Suttor subcatchment area e of the *Water Plan (Burdekin Basin) 2007'*, December 2016

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Attachment 4

Pricing for unallocated water from the strategic reserve in the Belyando-Suttor subcatchment area E of the *Water Plan (Burdekin Basin) 2007*

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1. Scope

This paper will consider criteria to determine a fixed price per megalitre of Strategic Reserve water available from the Belyando-Suttor subcatchment area E of the *Water Plan (Burdekin Basin) 2007 (Burdekin Basin WP)* to service the future development of the Galilee Basin.

The recommended price has been determined based on consideration of the following criteria:

- the potential competition for and the scarcity of the water resource;
- the water supply reliability of the unsupplemented water resource, and
- comparative prices from sales of unsupplemented water entitlements elsewhere in the state.

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2. Background

2.1 Proposal for strategic reserve water

A final proposal for the purchase of 10 800 megalitres (ML) (mean annual volume) of unallocated water for the intention of mining and industrial uses was received by the Department of Natural Resources and Mines (DNRM) from Adani Mining in October 2016. The water is to be sourced from upstream of the Belyando-Suttor River junction in subcatchment area E in the Burdekin Basin WP area. The Burdekin Basin Resource Operations Plan (Burdekin Basin ROP) is also in effect for the same area and provides processes for the granting of unallocated water from a general reserve and a strategic reserve for state purposes. This interest in unallocated water from strategic reserve to service the Galilee Basin, is the impetus for setting a price for water use in the Galilee Basin.

2.2 Legislation

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Section 30 and 31 of the Burdekin Basin WP establishes an unallocated water strategic reserve and refers the grant process to be administered under the Burdekin Basin ROP.

Section 39(2) of the Burdekin Basin ROP states that in subcatchment area E, unallocated water from the general reserve and strategic reserve for state purposes will be issued only as water licences.

Section 38 of the Burdekin Basin ROP states that the process for making unallocated water available from the strategic reserve for state purposes is the process prescribed in Part 2, Division 1C of the Water Regulation 2002 (Water Regulation).

Section 40 of the *Water Act 2000* (the Water Act) states that the chief executive may release unallocated water if a volume is stated in a water plan or prescribed by regulation. Section 40 also provides that the chief executive must release unallocated water in accordance with the process prescribed by regulation unless the relevant water plan provides an alternative process and that the chief executive may set a price for the unallocated water.

Section 116 of the Water Act provides that if a water plan, water management protocol or regulation states a process for the allocation of water, or interference with the flow of water, under a water licence, the chief executive may grant a water licence in accordance with the process without the need for an application to be made under section 107 of the Water Act.

Section 16 of the *Water Regulation 2016 (*which replaced the repealed *Water Regulation 2002*) states that Part 2, Division 2 prescribes the processes for releasing unallocated water by a number of methods, including public auction, tender, fixed price sale or grant for a particular purpose.

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From the commencement of Water Reform and Other Legislation Amendment Act 2014 (WROLA) on 6 December 2016 the following applies:

1. The Water Resource (Burdekin Basin) Plan 2007 continues in force as a 'water plan'[1] and is renamed as the Water Plan (Burdekin Basin) 2007 (referred to as the Burdekin Basin WP in this document). The provisions of the Burdekin ROP are taken to be, or to have effect for, a number of other documents under the Water Act as amended, including the relevant water plan or water management protocol.[2] Section 1266 of the Water Act allows references to resource operations plans to, where the context permits, be taken to be a reference to the relevant document. This means the provisions of the Burdekin Basin ROP continue to have effect for the purposes of implementing the Burdekin Basin WP following 6 December 2016.

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1 See new section 1256(1) of the Water Act inserted by WROLA.
2 See new sections 1259 of the Water Act inserted by WROLA.

Releas

2. The *Water Regulation 2002* (Water Regulation) was repealed by the *Water Regulation 2016* (2016 Regulation). Section 145 of the 2016 Regulation states that a reference in an Act or other document to the repealed Water Regulation may, if the context permits, be taken to be a reference to the 2016 Regulation. Subdivision 2, division 2, part 2 of the 2016 Regulation sets out substantially identical provisions to Part 2, Division 1C of the Water Regulation. In this way, the context permits that the reference to Part 2, Division 1C of the Water Regulation in the Burdekin ROP may be taken to be a reference to the equivalent provisions in the 2016 Regulation.

2.3 Water available for sale

The Burdekin Basin WP and the Burdekin Basin ROP specify the unallocated reserves as Mean Annual Volume (MAV). MAV is the long-term average annual volume share of the resource availability and is derived from the licence parameters (i.e. nominal entitlement, diversion rate, and passing flow conditions).

Nominal entitlement (NE) – the volumetric limit (cap) that can be taken during water year. The MAV cannot be greater than the nominal entitlement. The closer the ratio of MAV:NE is to one provides an indication of performance and variability in annual diversion.

Diversion rate – used to establish a daily volumetric limit (DVL) and based on the capacity of infrastructure (e.g. pump size).

Passing flow condition – applied to a licence in consideration of other entitlements and environmental requirements.

The Burdekin Basin WP and Burdekin Basin ROP provide for 35 000 ML of strategic reserve in total available, however only 20 000 ML of strategic reserve is available in subcatchment area E.

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2.4 Competition for water and water availability

Potential water demands demonstrated through development approval interest and processes indicate that competition for and scarcity of water in the Galilee Basin for high value productive industry water supplies will increase over time as developments are implemented. Water demands for Galilee Basin mines under full coal production is likely to be of the order of 100 000 ML per annum (Galilee Basin Coal Mining Development – water supply options study; unpublished, Department of Energy and Water Supply, 2012). The proposed mines in the Galilee Basin are located upstream of the Belyando-Suttor River junction in subcatchment area E (refer to the map in Figure 1 below). Potential competition for and scarcity of water in the Belyando River upstream of the junction with the Suttor River is likely to be high.

Releas

The Belyando-Suttor subcatchment area E forms part of the Burdekin River catchment as identified in the Burdekin Basin WP and represents a drier, more variable, and typically semi-arid landscape, producing intermittent storm-based stream flow (refer to map below). It contributes comparatively less to the overall discharge from the Burdekin Basin than the other subcatchments.

A hydrological model was developed by the Department of Science, Information Technology and Innovation to support the preparation of the Burdekin Basin WP and Burdekin Basin ROP; it takes into account the hydrological characteristics of this subcatchment. The model has been used to assess the likely availability of water in this region and may continue to be used to support water resource allocation decisions.

Access to water is opportunistic (waterharvesting) in the Belyando Suttor subcatchment E. Increase in reliability of supply is dependent on the infrastructure associated with storage and delivery of water. The majority of unallocated water reserve volume can only be achieved in the lower Belyando-Suttor subcatchment reaches, as the contributing flows from the lower reaches of the subcatchment are significantly larger and more reliable than those in the upper and middle reaches.

Large volumes of high reliability water are available from the Burdekin Falls Dam, however the costs for individual mining proponents to construct water delivery infrastructure is considered to be prohibitive as shown in previous analysis in Schedule 1.

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Figure 1- Map of the Burdekin Basin WP area including subcatcments

3 Pricing benchmark

3.3 Overview

During the 2012/13 financial year, DNRM liaised with both the Department of State Development and Queensland Treasury in establishing a market value for unallocated water reserved in the Burdekin Basin WP area that could be released to support local water supply solutions for emerging water needs of Galilee Basin coal mining projects.

It is important to note that there have been no releases of unallocated water from this reserve and the existing water licences in the subcatchment are not tradeable. Therefore market information (e.g. sales or trades) for the specific resource being sought does not exist.

In the absence of market information specific to the resource, the market value was informed by the following pricing parameters:

- the competition for and scarcity of the water resource
- the water supply reliability of the unsupplemented water resource, and
- the prices from sales of unsupplemented water entitlements elsewhere in the state.

These same parameters were collated for a range of unsupplemented water resources across the state to benchmark the market value identified for the unallocated water.

Whilst the purpose for use of unallocated water was not a factor specifically considered in recommending a price, it should be noted that the price set for strategic unallocated water reserve could affect the value of water entitlements elsewhere and undermine the setting of unallocated water prices state-wide if the Galilee Basin price is not reflective of the market value of water utilised for high value productive industries.

Once a price for this water has been set it is envisaged that, should the key parameters remain relatively static, indexation will apply to the price consistent with the government's official indexation policy of 3.5 percent. The price increase will be applied cumulatively every financial year unless the key parameters outlined above change substantially, warranting a price review outside of CPI.

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3.4 Comparisons

In February 2016 DNRM updated relevant data from the previous pricing benchmark, which is provided at Schedule 2.

Unsupplemented water trades are predominantly between agricultural water users rather than the resource sector and consequently the sales data available to DNRM is assumed to predominantly reflect water demand for agricultural purposes. To provide a broader suite of data for benchmarking, DNRM has also taken into consideration the latest sale of strategic unallocated water for mining and industrial related activities.

DNRM has examined the broader sales information for Queensland, collated in Schedule 2 and 3, noting that this pricing information is largely for agricultural sales.

DNRM investigated unsupplemented water allocation trading for the water resource plans throughout the state. It is considered that the Border Rivers catchment is the most comparative to the Belyando-Suttor subcatchment reflecting scarcity, competition and reliability of surface water. The weighted average price for water traded between July and December 2015 in the Border Rivers is $1 866 per ML.

Although not a factor directly considered in determining a recommended price, it should be noted that the recent release price of unallocated water to s.49 - Business Affairs from the Great Artesian Basin (GAB) is the most comparable with the purpose proposed for this release. The price for this water was $1 418 per ML and is consistent with the minimum price set for the recent general reserve release. It is noted that the reliability and demand for water from the GAB is not directly comparable to surface water in the Belyando-Suttor subcatchment.

Schedule 3 provides an overview of changes to the average weighted price per megalitre since the previous price benchmarking exercise in 2012/13 from private trades of unsupplemented water (mostly surface water), and some relevant unallocated water prices.

The pricing benchmark provides a comparison of the key parameters for active trading areas of Queensland using sales information for water entitlements that are not supplemented by water supply schemes, dams, and weirs.

The Shareholder and Structural Policy Division (SSPD) within Queensland Treasury considers, based on information in this discussion paper, that there is a strong case to use the upper price noted in the benchmark exercise, i.e. Border Rivers. This is largely based on the scarcity of the resource and the potential future benefit to the state of ensuring that the strategic reserve is not fully subscribed in the short term.

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4 Conclusion and Recommendation

Competition and scarcity of water in the Belyando River, upstream of the junction with the Suttor River, is considered to be high with the onset of mining developments in the Galilee Basin.

Availability and reliability of water in this location is considered to be low due to the hydrological characteristics of the catchment and the inability for trading of water entitlements. Developments could improve reliability of supply with infrastructure ie. offsteam storages, large pump diversion capacity and pipelines.

The most representative product of the high demand and scarcity and low availability and reliability characteristics can be found in recent water sales within the Border Rivers catchment. This is also consistent with the advice received from the Shareholder and Structural Policy Division within Queensland Treasury.

The recommended fixed price for proposed sale of unallocated water from the strategic reserve in the Belyando-Suttor Subcatchment area E of the Burdekin Basin WP is $1 866 per ML.

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5 Related Documents

Terms of Sale 'Release of unallocated water in the Belyando-Suttor Subcatchment Area E of the Water Plan (Burdekin Basin) 2007 – Strategic Reserve – Terms of Sale for Carmichael Coal Mine and Rail Project (Adani Infrastructure Pty Ltd)', December 2016

Methods of sale to release unallocated water held as strategic reserve in Subcatchment E (Belyando Suttor) of the Water Plan (Burdekin Basin) 2007 for the State purpose of the Carmichael Coal Mine and Rail Project - Options paper - December 2016

Pricing for unallocated water from the strategic reserve in the Belyando-Suttor subcatchment area E of the *Water Plan (Burdekin Basin) 2007* for the State purpose of the Carmichael Coal Mine and Rail Project - Briefing Paper - December 2016

Specification of Water Product for release of unallocated water from the strategic reserve in the Belyando Suttor subcatchment area e of the *Water Plan (Burdekin Basin) 2007*', December 2016

Releas

Schedule 2: Pricing benchmark

Comparative assessment of market factors across sample active trading areas of Queensland – updated Feb 2016 (unsupplemented water only)

Factors guiding market value	Border Rivers Water Resource Plan Area	Condamine and Balonne Water Resource Plan Area	Great Artesian Basin Water Resource Plan Area	Barron Water Resource Plan Area	Burnett Water Resource Plan Area	Fitzroy Water Resource Plan Area	Burdekin Basin Water Resource Plan Area		
							Lower Burdekin *(Subc. A)*	Belyando River Upstream of Junction with Suttor River (Reach of proposed Galilee mines) *(Subc. E–centre & south)*	Belyando-Suttor Downstream of Belyando and Suttor river junction *(Subc. E–north)*
Resource scarcity *(gathered 2013– minor updates made in 2016)*	High (near full allocation and trading is active)	High (fully allocated and trading is active)	High (high demands for unallocated water in mining, industrial, urban and rural sectors) A register of interest for unallocated water held as general reserve conducted in 2014 showed a high demand for water	Medium (near full allocation and trading is active)	Low in the area of trade prices reported to date (Recorded sales have been in areas of low water use with alternative water supplies of higher reliability - upper Burnett and Boyne-Stuart areas)	Low in the area of trading to date (Recorded sale has been in area of low water use and soil suitability issues constraining development - upper to middle Fitzroy River) A register of interest for unallocated water held as general reserve conducted in 2014 showed a high demand for water.	Medium (Some scope for additional allocations)	High (Hydrologic modelling supports the release of 30,000ML in this reach compared with 100,000ML of demand)	Low (mine water demands not currently in this reach, but could be accessed. Mines could install works to deliver the water to the mine site) However, while scarcity is currently low, a ramp up in Galilee coal production could increase demand substantially (depending on the economics of the alternative pipeline from Burdekin Falls/Fairbairn Dam options.

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Factors guiding market value	Border Rivers Water Resource Plan Area	Condamine and Balonne Water Resource Plan Area	Great Artesian Basin Water Resource Plan Area	Barron Water Resource Plan Area	Burnett Water Resource Plan Area	Fitzroy Water Resource Plan Area	Burdekin Basin Water Resource Plan Area		
							Lower Burdekin *(Subc. A)*	Belyando River Upstream of Junction with Suttor River (Reach of proposed Galilee mines) *(Subc. E–centre & south)*	Belyando-Suttor Downstream of Belyando and Suttor river junction *(Subc. E–north)*
Reliability of water supply *(gathered 2013)*	Medium Rainfall is moderate (660mm/year at Texas) and seasonal leading to reasonable reliability of supply.	Low Reliability is low in the lower Balonne River due to low rainfall (533mm/year at St George). Reliability is better upstream (rainfall is 630mm/year at Oakey).	High Extensive groundwater stores provide for year-round access	High Rainfall is high (1300mm/year) and groundwater naturally discharges into streams, which supplements streamflows giving year round access to water	Medium Rainfall is moderate (700mm/year at Mundubbera). Moderate seasonality in flows and some supplementation to natural flows.	High Rainfall is moderate (800mm/year at Rockhampton). Moderate seasonality in flows.	High Rainfall is high (1070mm/year at Ayr) and streamflows benefit from excess irrigation water discharges into waterways which provides a high reliability of supply.	Low Rainfall is low (562mm/year at Alpha), highly seasonal and variable. Supply reliability can be improved through investing in large pumps and storages to take large volumes of water when it is available)	Medium Rainfall is moderate (711mm/year at Collinsville) highly seasonal and variable. However, inflows from the Suttor River and Mistake Creek improve the reliability of supply in this reach.
Tradeability of the water entitlement *(gathered 2013)*	High (Water entitlements are tradeable)	High (Water entitlements are tradeable)	Medium (Water entitlements are tradeable but attach to land)	High (Water entitlements are tradeable)	High (Water entitlements are tradeable)	High (Water entitlements are tradeable)	High (Water entitlements are tradeable)	Low (Water entitlements are not tradeable)	Low (Water entitlements are not tradeable)

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Factors guiding market value	Border Rivers Water Resource Plan Area	Condamine and Balonne Water Resource Plan Area	Great Artesian Basin Water Resource Plan Area	Barron Water Resource Plan Area	Burnett Water Resource Plan Area	Fitzroy Water Resource Plan Area	Burdekin Basin Water Resource Plan Area		
							Lower Burdekin *(Subc. A)*	Belyando River Upstream of Junction with Suttor River (Reach of proposed Galilee mines) *(Subc. E–centre & south)*	Belyando-Suttor Downstream of Belyando and Suttor river junction *(Subc. E–north)*
Prices per ML achieved through private sales (trades) within the last 5 financial years (11/12 to 15/16 year to date) *(updated 2016)*	Weighted average* price through private sales for **2011/12 to date is $1,814** (56 transactions totalling 38,995ML) Weighted average price through private sales for **2015/16 to date is $1,866** (7 transactions totalling 1,469ML)	Weighted average price through private sales for **2011/12 to date is $1,451** (157 transactions totalling 189,384ML) Weighted average price through private sales for **2015/16 to date is $1,350** (34 transactions totalling 9,321ML)	Weighted average price* through private sale for **2014/15 is $1,500** Average price of unallocated water held as general reserve sale through a competitive tender process **in 2013/14 is $1,568** **Current price** of unallocated water held as state reserve through a non-competitive process in **2015/16 is $1,418**	Weighted average price through private sales for **2013/14 to date is $487** (14 transactions totalling 805ML) *(excludes 2 trades without price disclosed in 2012/13 and 2014/15)* Weighted average price through private sales for **2015/16 to date is $1,099** (6 transactions totalling 131ML) *2015/16 more reflective of current market value.*	Only 1 price ($500) listed for sales within the last 5 financial years totalling 422ML (11 transactions). Price ranges from $400 to $500 in areas where the demand for this form of water entitlement is low due to alternative and more reliable supplies being available, and a low level of existing and potential agricultural development. Those that can make use of the water already have water access. *Excludes trades without price disclosed in 2011/12 (15), 2012/13 (1) & 2014/15 (7)*	Weighted average price through private sales for **2012/13 to date is $952** (23 transactions totalling 15,872ML) Price doubled from previous calculations due to approx. 14,500ML traded in 2013/14	The only Burdekin WRP trades above $0/ML were in Haughton – **2011/12 price $2,778** (5 trades for 101ML), and 2012/13 price $1 (3 trades for 134ML) Weighted average price through private sales for **2011/12–2012/13 for Haughton is $1,195**	n/a	n/a

*A weighted average differs from an average in that a weighted average returns a price per ML that depends on the variables of both value (price paid) and weight (amount of water transferred at said price). This more accurately reflects instances where, for example, a large amount of water was transferred for a price that significantly differs to the rest of the trades in an area for low volumes.

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Schedule 3: Changes to weighted average prices of private water trades of unsupplemented water

The following trading data is taken from the DNRM monthly trading reports available on the department's website

Trading area	5 years (where available) to 2012/13 weighted average price per ML	5 years to 2015/16 weighted average price per ML *(incl. comparison with 2013 benchmark)*	2015/16 (Jul-Dec 2015) weighted average price per ML *(incl. comparison with 2013 benchmark)*	Potential factors for change
Border Rivers WRP area	$1,886	$1,814 (-$72)	$1,866 (-$20)	Relatively insignificant price difference.
Condamine and Balonne WRP area	$1,504	$1,451 (-$53)	$1,350 (-$154)	Last 5 years' prices range between $388 (Aug 2015) to $2,092. Most around or just above $1,500, however large trades of approx. 123,000ML in 2012/13 at average of $1,392 has lowered 5-year weighted average.
Great Artesian Basin WRP area	$2000 (1 private sale 2007/08) UAW sales of $800–830 for industrial use, not tradeable (2011/12)	$1,500 (private sales 2014/15) (-$500) UAW sales of $1,568 (2013/14) (+$730)	N/A UAW state reserve $1,418 (2015/16) (+$588)	Most recent private trade price around current reserve price for unallocated water in area.
Barron WRP area	$1,360	$487 (-$873)	$1,099 (-$261)	Current price more reflective of market value. Weighted average dropped price due to comparatively large transfer in 2013/14 for only $368/ML.
Burnett WRP area	$400–$500	$500	$500	No significant price change; 11 recent trades all at same price. Also no interest received for Burnett in recent register of interest as no UAW available.
Fitzroy WRP area	$480	$952 (+$472)	$289 (-$191)	5-year weighted average doubled from previous

Pricing for unallocated water from the strategic reserve in the Belyando-Suttor subcatchment area E of the *Water Plan (Burdekin Basin) 2007*

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				benchmarking exercise due to approx. 14,500ML traded in 2013/14 at $995.
Burdekin Basin WRP area	$2,778 (5 trades - Haughton)	$1,195 (8 trades - Haughton) (-$1,583)	N/A	Weighted average reduced significantly due to 2012/13 trades of 134ML at $1. Previous trades more reflective of market value. Also some small trades in Lower Burdekin (Subc. A) and Bowen (C) without price disclosed. Belyando-Suttor (E) has no trades recorded in last 5 financial years.

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Targeted environmental review for specification of a water product for release of unallocated water from the strategic reserve in the Belyando-Suttor subcatchment area E of the Water Plan (Burdekin Basin) 2007.

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Approvals Process (as per DNRM Science Publication Protocol)

Process	Delegated Officer	Date approved
Supervisors/Managers approval of intention to publish	Mr. Gary Jensen (A/Regional Manager, Water Services Central Region, DNRM),	3rd May 2016
Technical and Peer review#	Dr. Glenn McGregor (Principal Water Planning Ecology, DSITI)	2nd August 2016
Policy Review	Mr. David Crisp,(A/Senior Policy Officer, Water Planning, DNRM)	11th August 2016
Approved for release	Mr. Darren Moor (Executive Director, Central Region, DNRM)	
# any modifications to the report between the technical review and report finalisation were inconsequential to the technical content.		

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Executive Summary

Adani Infrastructure Pty Ltd (Adani Infrastructure) has provided a proposal to access unallocated water from the strategic reserve in the Belyando Suttor subcatchment area E of the Water Plan (Burdekin Basin) 2007 (Burdekin WP).[1] They propose to use this water for the construction and operation of the Carmichael Coal Project in the Galilee Basin and some rail construction (CDM Smith, 2015). Preliminary hydrological review by the Department of Natural Resources and Mines (DNRM) of Adani Infrastructure's originally proposed passflow thresholds (50ML/day and 200ML/day pass flow) indicated that there would be unacceptable adverse impacts on existing water entitlement holders downstream of the proposed point of take. DNRM has proposed specifications for a water product to be released that alleviates these adverse impacts.

The purpose of this report is to assess the potential risk to ecological processes of downstream floodplain lagoons from DNRM's proposed water product.

The primary outcomes from this targeted environmental review indicate that:

- The biodiversity values for the Scartwater wetland aggregation are unlikely to be adversely impacted by the proposed DNRM water product and therefore there is a low risk of impacting upon this wetlands DIWA listing as a wetland of national importance.
- Lagoons located in the lower parts of the floodplain show no increased risk through the DNRM proposed water product scenarios. Therefore there is unlikely to be any major changes to the environmental values these lagoons support.
- It has been identified that lagoons located higher on the floodplain will have a reduced number of filling opportunities and increased spells between these events with the DNRM proposed water product and further release of unallocated water (strategic and general) in the Suttor River below the Belyando junction. This location provides increased opportunity within subcatchment E and cumulative impacts of potential diversion are likely to impact lagoons located higher on the floodplain. This potentially indicates an additional risk not only to the lagoon aquatic ecosystems, but also to other long-lived floodplain water-dependent ecosystems (e.g. floodplain vegetation communities, including some of-concern and endangered remnant regional ecosystems). This potential risk is acceptable at this time, as the 130,000 ML/a general unallocated water reserve has not yet been accessed and the strategic reserve will also have a remaining volume (i.e. 9,200ML/a).

In any watercourse, the quality of refugial lagoons can be jeopardised due to extraction pressure associated with increasing water resource development without appropriate consideration of potential impacts. An increased risk of lagoon isolation during prolonged no-flow periods, and a decrease in filling flow would likely result in a reduced level and quality of available habitat, jeopardising the integrity of species which depend on the refuge. It is therefore recommended that any future release processes of unallocated water from this reach of the Belyando-Suttor subcatchment consider the risks highlighted in this review with mitigation strategies put into place.

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[1] From the commencement of the *Water Reform and Other Legislation Amendment Act 2014* (WROLA) on 6 December 2016, the Water Resource (Burdekin Basin) Plan 2007 continues in force as a 'water plan' (see section 1256(1) of the Water Act).

Relea

Future monitoring and assessment activities, which will feed into the broader WP and planning assessment framework, should include better definition of the lagoon cease-to-flow and filling thresholds, further calibration of lagoon persistence modelling using DNRM field-data, and updated risk profiles to include stock and domestic use during no-flow spells.

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1 Introduction

Adani Infrastructure has provided a proposal to access unallocated water from the strategic reserve in the Belyando-Suttor subcatchment area E of the Water Plan (Burdekin Basin) 2007. They propose to use this water for the construction and operation of the Carmichael Coal Project in the Galilee Basin and, some rail construction (CDM Smith, 2015). Adani Infrastructure proposes an average extraction of 10,800 ML/a (830 ML/day volumetric limit- DVL), with a maximum of 12,500 ML/a being sought from the Suttor River system from two extraction locations around the confluence of the Suttor River and the Belyando River Anabranch. Adani Infrastructure originally proposed that water extraction would initially commence at 50ML/day pass flow during the 1st wet season (1 December to 31 March the following year) and then with an increased passflow of 200ML/day from year 2 onwards. However, preliminary hydrological review by DNRM indicated that at these low passflow levels there would be unacceptable adverse impacts on existing water entitlement holders downstream of the proposed point of take. The majority of the existing entitlements are conditioned subject to a 2 cumec (175 ML/day) passflow at DNRM's Gauging Station 120303A Suttor River at St Anns. Allowing further access to water at lower passflow thresholds would adversely impact on the existing entitlement holder's ability to take water under their entitlement conditions. DNRM has proposed specifications for a water product to be released that alleviates these adverse impacts.

The DNRM proposed water product includes:

- Mean Annual Volume (MAV) - 10,800 ML/a
- Annual Volumetric Limit (AVL) - 12,500 ML/a
- DVL - 830 ML/day
- Max Rate 11,600 litres/second

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2 Scope

The purpose of this report is to assess the potential risk to ecological processes of downstream lagoons from DNRM's proposed water product.

This targeted environmental review looks at the potential for the proposed water product conditions to create a significantly increased risk to the environmental values of refugial lagoons (e.g. water quality, habitat persistence) in the lower Suttor catchment.

The report does not assess the risk to instream ecological processes downstream of the proposed point of take as the conditions for DNRM's proposed water product are at a level that the instream process will not be impacted upon more than they are under existing entitlement conditions.

This report does not investigate potential impacts that may have occurred as a result of Adani Infrastructure's low passflow proposals (50ML/day and 200ML/day) as it has already been determined, as stated above, that the lower passflows would have unacceptable adverse impacts on existing water entitlement holders.

This report does not assess Adani's current proposal dated 27 October 2016, however the proposal is used to inform the review and specification of the water product for release. Assessment of applications related to the release of unallocated strategic reserve water will occur once Terms of Sale have been released.

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3 Overview of existing ecological background

An initial DNRM desktop review of the potential impacts of the Adani Infrastructure proposal (50ML/day and 200ML/day pass flow) on downstream environmental assets (Appendix A) identified four (4) primary assets which are potentially at risk from the proposal. Of these, the floodplain wetlands and lagoons were prioritised for further assessment based upon their recognition as an ecological hotspot in what is a largely ephemeral river system and as the Scartwater Lagoon complex is listed as a DIWA nationally important wetland (EHP WetlandMaps, 2016). The reaches of the lower Suttor catchment are characterised by broad floodplains with anastomosing river channels and numerous permanent lagoons in anabranches and along off-river flood paths. Most of these lagoons have largely intact riparian vegetation assemblages and are an important permanent refuge for many aquatic species, such as fish, bird and invertebrate communities (Appendix A). These refugial lagoons are highly dependent on the flow regime to maintain ecologically significant processes and sustain environmental values (Figure 1). Flows are essential in maintaining lagoon volume and water quality, to flush and clear debris and sediment and provide longitudinal and lateral connectivity to facilitate dispersal of biota and trigger ecological responses (e.g. fish spawning). In any watercourse, the quality of refugial lagoons can be jeopardised due to extraction pressure associated with increasing water resource development without appropriate consideration of potential impacts. An increased risk of lagoon isolation during prolonged no-flow periods, and/or a decrease in filling flow would likely result in a reduced level and quality of available habitat, jeopardising the integrity of species which depend on the refuge (Figure 1).

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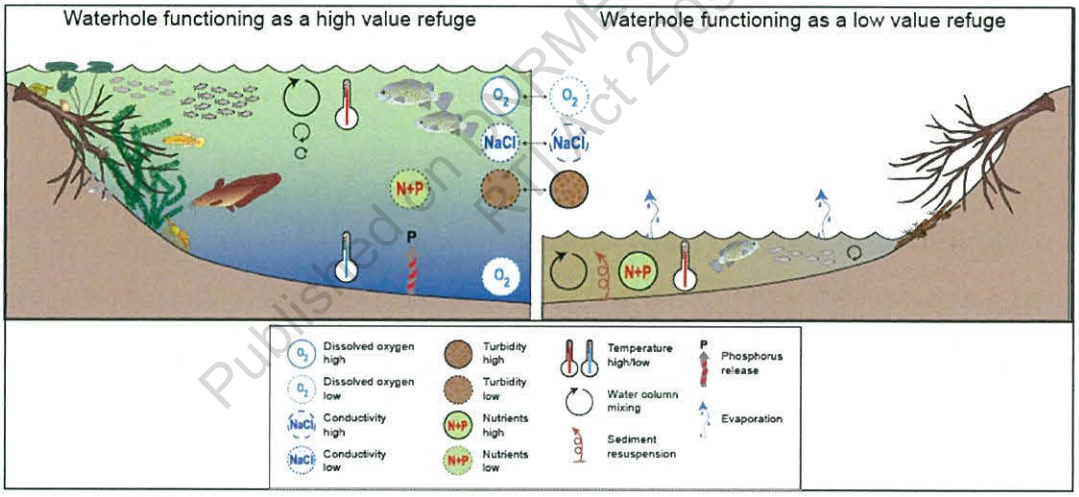


Figure 1: Conceptual model demonstrating the effects of flow on the environmental values of refugial waterholes (DSITI, 2016), which similarly applies to lagoons of the Lower Suttor.

Releas

4 Methods

The environmental risk assessment process used here characterises the risks from the DNRM's proposed water product scenario. This risk assessment will inform a broader assessment of Adani's preliminary proposal, which assesses the proposal against the assessment criteria and considerations under the Burdekin WP and Burdekin Basin Resource Operations Plan 2009[2] (Burdekin ROP) for the release of unallocated water.

The environmental assessment uses an ecohydraulic modelling approach, based on the principles of ecological risk assessment (ERA) to assess the risk to aquatic ecosystem components, processes, and services in these floodplain lagoons. The approach draws on existing information and knowledge of the ecological values of the lagoons as well as relevant flow-ecology information in the broader scientific domain.

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4.1 Selection of assessment lagoons

The selection of lagoons for assessment was undertaken following a literature review of Burdekin Basin WP Technical Advisory Panel reports (Brizga *et al.* 2004; Brizga *et al.* 2005 a & b), Burdekin Basin WP Environmental Flows Assessment Program (EFAP) asset selection reports (Pollard, 2013) and published literature (Burrows *et al* 1999; Burrows *et al* 2007; Burrows *et al* 2009; Loong *et al* 2005; Maughan *et al* 2007; Pusey et al 1996). These lagoons were further prioritised based upon their known significance (i.e. Scartwater DIWA listed wetlands), geomorphic and volumetric representativeness, relative locations within the floodplain network as a means to represent the potential risk to the various flood magnitudes and those with known (albeit anecdotally) flooding thresholds.

4.2 Developing lagoon bathymetry

Bathymetric surveys (CEESCOPE™, CEE HydroSystems) were undertaken according to DNRM Aquatic Ecosystems Field Method WMO015a -Bathymetric surveys of waterholes. General ecological habitat and hydrographic observations were made for four (4) prioritised lagoons (see photos in Appendix B), with significant effort directed towards estimating cease-to-flow and the maximum flooding heights from the 2015/16 wet season. Both flow heights were measured against marks on trees and other fixed structures at several locations around the lagoons by all field staff, with general consensus providing the final river heights. It was not possible to determine lagoon filling thresholds using on-ground GPS survey techniques; therefore lagoon filling thresholds were estimated by subtracting the 2015/16 maximum flood mark and the cease-to-flow lagoon height from the recorded maximum height at St Anns (11/2/2016- 5.106m) (Figure 2). These filling thresholds were compared and verified against the anecdotal records (e.g. White & Klijn v. Qld government, 1998) and surrounding station managers' personal observations. Depth/temperature loggers (CTD-Diver, Schlumberger Water Services) were installed in the deepest sections of the lagoon with subsequent real-time flow data supporting the qualitative assessment of flooding thresholds and calibrated persistence models. Temperature loggers (HOBO 64k Pendant, Onset) were also installed in the upper

[2] The provisions of the Burdekin ROP are taken to be, or to have effect for, a number of other documents under the Water Act as amended by Water Reform and Other Legislation Amendment Act 2014 (WROLA) (see sections 1259 and 1264 of the Water Act). Section 1266 of the Water Act allows references to resource operations plans to, where the context permits, be taken to be a reference to the document that is relevant to the reference as specified under the Water Act as amended by the WROLA on 6 December 2016.

0.5m section of the lagoon to enable future assessments of possible lagoon stratification and subsequent flows required for destratification and therefore lagoon mixing.

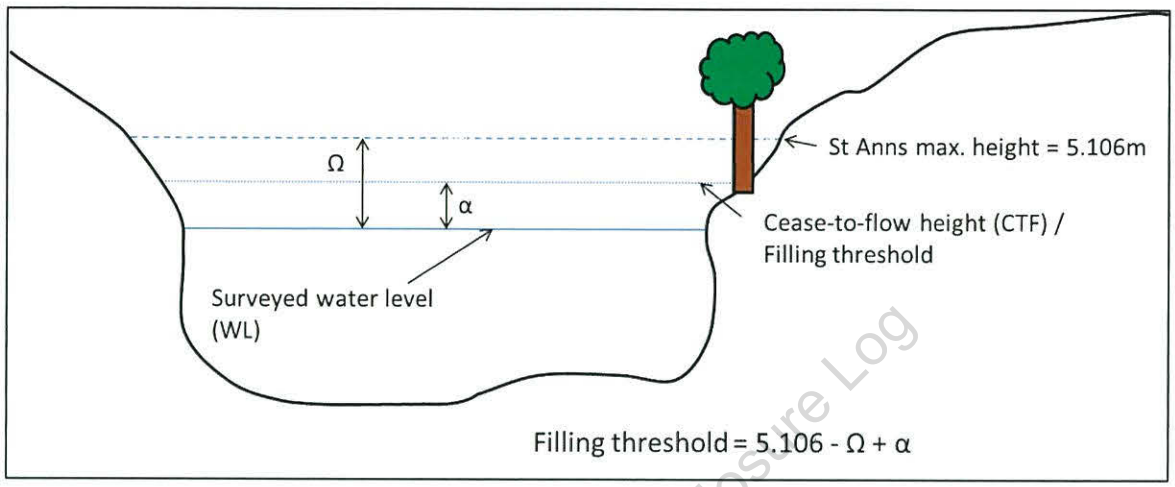


Figure 2: Conceptual diagram showing the method used to calculate the filling thresholds of each surveyed lagoon.

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The survey data was processed following DNRM Aquatic Ecosystem Method AEML013- Post processing waterhole bathymetric survey data. Data editing was undertaken in CEEDATA (CEE HydroSystems), HYPACK 2015 ® (CEE HydroSystems) and Microsoft Excel (2010) and bathymetry maps and storage curves produced using ArcMap (Vers. 10.3) (Appendix C). Lagoon storage curves were standardised to the cease-to-flow height for subsequent data analysis.

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4.3 Water use and licence scenario evaluation

The assessment followed the framework and methodologies outlined in the Water Planning Science Plan (DSITIA, 2014). Water use and licence scenarios were developed using IQQM for the pre-development, current entitlement, ROP base case and DNRM proposed water product at Node 306 (GS 120303a St Anns) (Table 1).

Table 1: Water entitlement scenarios tested.

Scenario (model number)	Description
Pre-development (001H#306)	Assumes no water resource development in the catchment.
Current Entitlement (CD_0R_X#306)	Includes full use of all entitlements current at the time of commencement of the Water Plan including the Burdekin/Haughton and Bowen/Broken water supply schemes, but does not include unallocated water reserves.
ROP Base (020R#306)	Includes full use of all entitlements current at the time of commencement of the Water Plan including the Burdekin/Haughton and Bowen/Broken water supply schemes and also includes all unallocated water reserves which are modelled as take at specified locations.
DNRM proposed water product (R_A3#306)	Includes full use of all entitlements current at the time of commencement of the Water Plan including the Burdekin/Haughton and Bowen/Broken water supply schemes and also includes all unallocated water reserves which are modelled as take at specified locations, including: • 10,800 ML/a MAV, 12,500 ML/a AVL a being modelled with 830 ML DVL and a passing rule at GS 120303A St. Anns passing flow rule of 2,592 ML/day. • 6,176 ML/a MAV and 8,050 ML/a AVL taken at 561.6 ML DVL with a passing flow rule at GS 120309a Mistake Ck at Twin Hills of 432 ML/d. • 206 ML/a MAV and 230 ML/a AVL taken at 3 ML DVL with a passing flow rule at GS 120301b Gregory Development Rd of 198.7 ML/d • The remaining 129,200 ML/a unallocated reserves are located immediately upstream of the St Anns (Node 306) at Node 335.

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Two assessment endpoints, which represent environmental aspects of lagoon integrity, were evaluated for each lagoon using EcoModeller (Vers. 2.0.9) and River Analysis Package (Vers. 3.0.7.0), and included:

1. Maintenance of the hydraulic connectivity regime between floodplain lagoons and the Suttor River
    - Measured by the spells between filling and inundation flows (maximum and average values for each lagoon).
2. Provision of refugial lagoon habitat across the assessment area
    - Measured at the individual lagoon and catchment scale, the frequency with which the lagoons cease to function as an effective refuge.
    - A Threshold of Concern (ToC) was developed for each of the individual lagoons to identify periods of limited and poor quality habitat. Generally periods of small lagoon size and very shallow water depths represent a higher risk to aquatic ecosystems through extreme water temperature fluctuations, concentrations of toxicants, increased predation, food limitation and disease transmission (Waltham *et al.* 2013).

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- At the individual lagoon scale, low risk periods occurred when lagoons contained more than 75% of their maximum size (i.e. surface area). Medium risk periods were between 25% and 75% of their maximum size; whilst high risk periods, when the lagoons cease to function as an aquatic refuge, were considered to be when less than 25% of the lagoon maximum size.
- At the catchment scale, low risk periods occurred when no lagoons were below 25% of their maximum size. Medium risk was when up to 2 lagoons were less 25% of their maximum size; whilst high risk periods at the catchment scale was when more than 2 lagoons were less than 25% of their maximum size.

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5 Results

5.1 Floodplain Lagoon Hydraulic Connectivity

Lagoon filling thresholds varied between 3,404 and 52,877 ML/day (Table 2). Minor changes were observed between modelled flow scenarios for each of the metrics for the lagoons located lower in the floodplain (i.e. Murdering and Upper Scartwater Lagoons), which suggests that these lagoons are largely unaffected under any of the flow scenarios (Table 2).

For the floodplain lagoons with higher filling thresholds (i.e. Blackwater and Longweed lagoons) there were negligible differences observed between the pre-development and current entitlement scenarios; and likewise between the ROP and DNRM proposed water product scenarios. Compared against current entitlement, the number of filling events for the ROP and DNRM proposed water product scenarios reduced by between 19 to 25%. Similarly the mean duration between filling events increased by between 25 to 30%. The maximum spell length (number of days between events) in both lagoons significantly increased, with a 32% and 84% increase in spell duration at Blackwater and Longweed Lagoons, respectively. It is expected that increases in the length and frequency of long spells as observed at Longweed and Blackwater Lagoons are likely to present threats to the persistence of localised aquatic ecosystems.

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Table 2: Number of events and the magnitude of spells between lagoon filling events under each of five (5) modelled flow scenarios. Percent change is relative to current entitlement.

Lagoon	Metrics	Modelled flow scenario			
		Pre-development	Current Entitlement	ROP base	DNRM proposed water product
Longweed (39,398 ML/day)	Number of filling events	135	133	101 (-24.1%)	100 (-24.8%)
	Mean spell (days)	304	309	395 (28%)	399 (29.3%)
	Max. spell (days)	2,413	2,413	4448 (84.3%)	4448 (84.3%)
Murdering (3,404 ML/day)	Number of filling events	455	438	438 (0%)	414 (-5.5%)
	Mean spell (days)	81	85	85 (0%)	91 (7.4%)
	Max. spell (days)	926	927	927 (0%)	1004 (8.3%)
Blackwater (52,877 ML/day)	Number of filling events	99	98	78 (-20.4%)	79 (-19.4%)
	Mean spell (days)	415	408	515 (26.3%)	509 (24.8%)
	Max. spell (days)	4,448	4,448	5850 (31.5%)	5850 (31.5%)
Upper Scartwater (15,552 ML/day)	Number of filling events	244	238	212 (-10.9%)	206 (-13.4%)
	Mean spell (days)	163	168	190 (13.1%)	195 (16.3%)
	Max. spell (days)	2,138	2,140	2141 (0%)	2141 (0%)

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5.2 Lagoons as refugia

A summary of the lagoons morphological and hydrological features are provided in Table 3.

Negligible differences in risk profiles were observed between the pre-development and current entitlement scenarios; and likewise between the ROP and DNRM proposed water product scenarios (Figure 3). It is also noteworthy that the pre-development flow regime poses high risk to lagoon refugial quality at both the catchment and lagoon scale.

At the catchment scale, a noticeable increase in risk to lagoon refugial quality was observed under the two development scenarios (Figure 3a). The shift in risk generally tended towards a medium risk profile, with a smaller increase in high risk events. This highlights that, for the majority of the modelling period, there will be some lagoon refugial habitat available for aquatic ecosystems to persist during the very dry times.

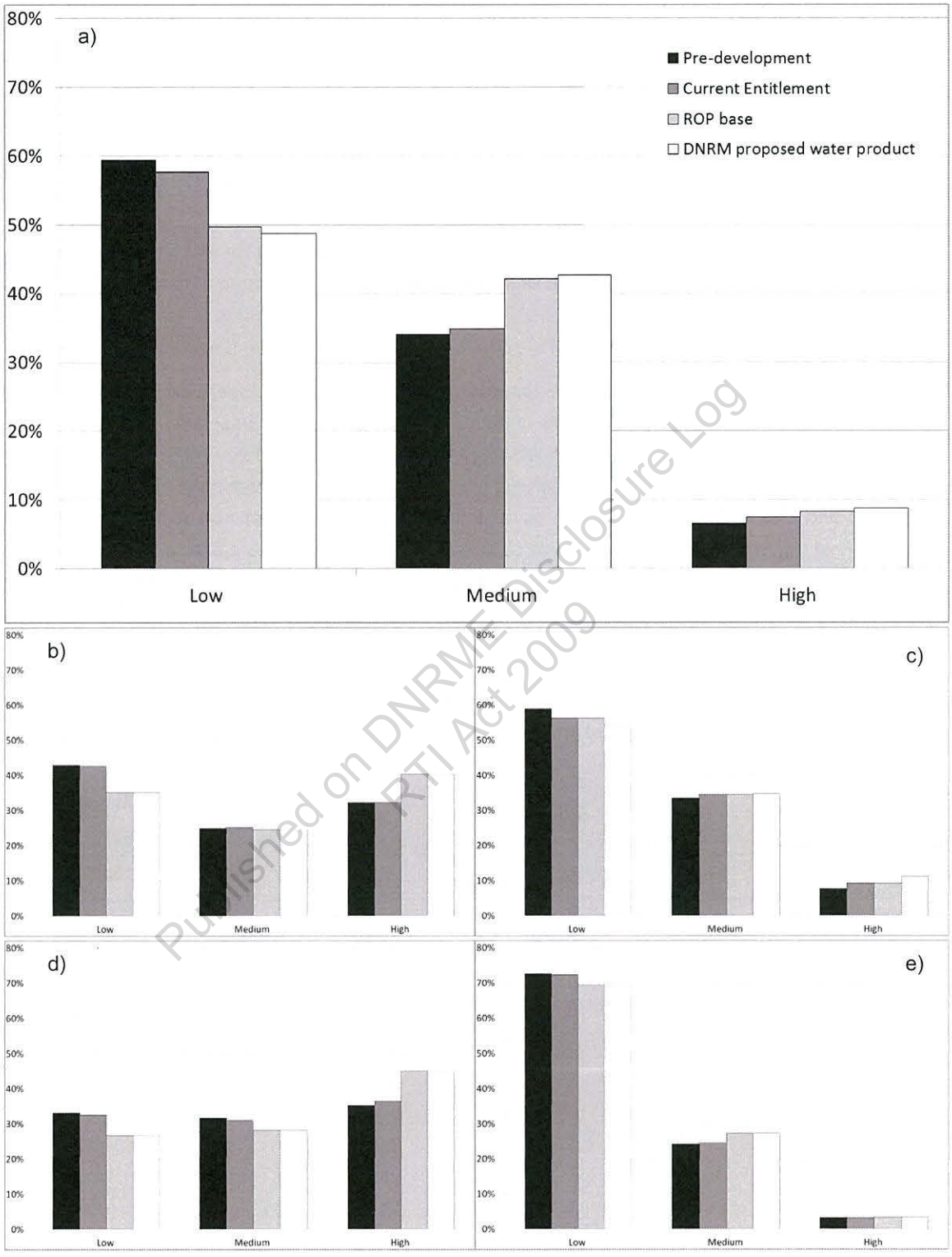
The refugial quality of lagoons lower in the floodplain (i.e. Murdering and Upper Scartwater Lagoons) were found to be under no greater risk under any of the development scenarios assessed (Figure 3c and e). These results agree with the hydraulic connectivity assessment whereby the number of and duration of spells between lagoon filling events were largely unchanged under the development scenarios. However, at Longweed and Blackwater lagoons, which have higher filling thresholds, an increase in risk profile from low to high risk was observed, with between 7 to 10% increase in risk (Figure 3 b and d). For the most part this increase in risk profile is due to a very dry modelled period between 1928 and 1940, whereby a refilling event was observed halfway during this dry spell under the pre-development and current entitlement scenarios and not under the two development scenarios tested.

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Table 3: Summary of morphological and bathymetric data for prioritised refugial lagoons (values at cease-to-flow level)

Waterhole	Location		Mean depth (m)	Max. Depth (m)	Surface Area (m^2)	Volume (ML)
Longweed lagoon	-21.401283°	146.864381°	1.7	4.0	138,945	214
Murdering lagoon	-21.367614°	146.880456°	1.5	3.6	83,464	79
Blackwater lagoon	-21.172577°	146.850358°	2	5.8	136,999	257
Upper Scartwater lagoon	-21.099898°	146.870024°	3.5	7.5	107,941	345

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Figure 3: Comparative risk profile under four flow management scenarios for the lagoons as refugia at the catchment scale (a), Longweed Lagoon (b), Murdering Lagoon (c), Blackwater Lagoon (d) and Upper Scartwater Lagoon (e), expressed as the percentage of years

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6 Summary

6.1 Primary outcomes

The primary outcomes from this targeted environmental review are:

- Current entitlement modelling, which is representative of full use of existing entitlements, is close to pre-development conditions and therefore poses little additional risk to the lagoon aquatic ecosystems.
- Lagoons located in the lower parts of the floodplain, namely Upper Scartwater and Murdering lagoons, showed no increased risk through the ROP and DNRM proposed water product scenarios; therefore there is unlikely to be any major changes to the environmental values these lagoons support.
- Importantly, the risk assessment highlights that the biodiversity values for the Scartwater wetland aggregation are unlikely to be adversely impacted by the proposed DNRM proposed water product and therefore there is a low risk of impacting upon this wetlands DIWA listing as a nationally important wetland.
- Under the ROP and DNRM proposed water product scenarios, lagoons in the upper parts of the floodplain, such as Blackwater and Longweed, will have a reduced number of filling opportunities and increased spells between these events. This potentially indicates an additional risk not only to the lagoon aquatic ecosystems, but potentially also to other long-lived floodplain water-dependent ecosystems (e.g. floodplain vegetation communities, including some of-concern and endangered remnant regional ecosystems).
- This potential risk is acceptable at this time, as the 130,000 ML/a general unallocated water reserve has not yet been accessed and the strategic reserve will also have a remaining volume (i.e. 9,200ML/a).

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6.2 Future monitoring and assessment

Future monitoring and assessment activities, which will feed into the broader WP and ROP assessment framework, includes:

- Further work is required to better define the lagoon cease-to-flow and filling thresholds. Due to the anastomosing nature of the floodplain channels this would be best achieved using high resolution aerial survey techniques, such as LIDAR.
- Each of the persistence modelling requires further calibration using the data collected by the installed depth loggers. DNRM research in waterholes in adjoining catchments (i.e. upper Cooper catchment) has shown that waterholes lose water at a much higher rate than by evaporation alone (e.g. seepage, evapotranspiration); therefore increasing the risk to lagoon aquatic ecosystems (Cockayne, in prep).
- Stock and domestic use during no-flow spells may pose a significant additive impact to the risk profiles; particularly given the surveyed lagoons provide a primary source of stock and domestic water. This rate of take will be incorporated into the updating of the persistence models.

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Appendix A: Desktop Review of potential impacts of proposal on downstream environmental assets[3]

General Description

(taken from the Burdekin Basin Technical Advisory Panel, 2004)

The reaches below the Belyando–Suttor confluence (hereafter referred to as the lower Suttor) are characterised by broad floodplains with anastomosing river channels (Figure 1). There is typically a dominant main channel accompanied by anabranches, which may be old river courses or actively eroding new channels that are likely to eventually capture the main flow and become the dominant channel. Under flood conditions, flows are also carried by the anabranches and spread broadly across the floodplain, which includes the inundation of a number of natural wetlands and lagoons (see below).

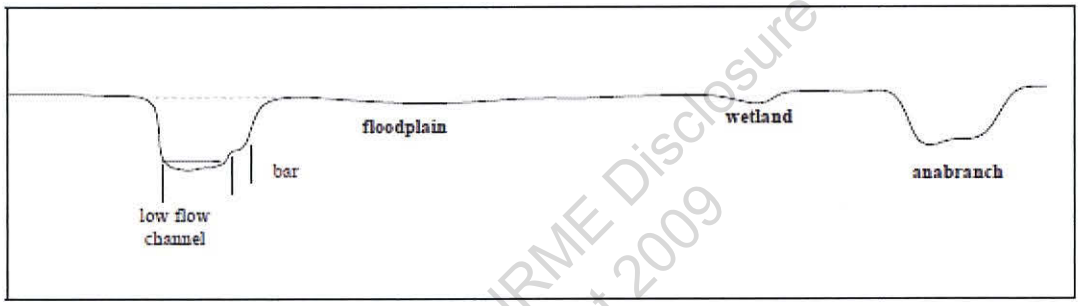


Figure 1: Typical cross-section of the channel type channel/floodplain below the Belyando/Suttor R. junction

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Groundwater Resources

(taken from the Burdekin Basin Technical Advisory Panel, 2004)

Groundwater occurs in shoestring sand aquifers within the alluvium of the lower Suttor. Groundwater flow in the aquifers closely conforms to surface water flow within the main channel. There is little groundwater resource development in this catchment and consequently few, if any, impacts on GDEs are expected.

Surface Water Resources

(taken from the Burdekin Basin Technical Advisory Panel, 2004)

The lower Suttor River is naturally intermittent and ephemeral. A large proportion of the annual discharge occurs as flood flows, mainly during the wet season between December and April. There is no major water infrastructure in this catchment upstream of the Burdekin Falls Dam pondage. Water is extracted from the rivers for stock and domestic use, and irrigation purposes. Extraction predominantly occurs as waterharvesting into off-stream storages during flood periods, although some extraction from waterholes and lagoons occurs during dry periods. The flow duration curve (Figure 2) highlights the ephemeral nature of the

[3] Note, this desktop assessment was completed pre-WROLA.

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lower Suttor River; under the ROP base case scenario, a reduction in river flow relative to pre-development conditions is evident.

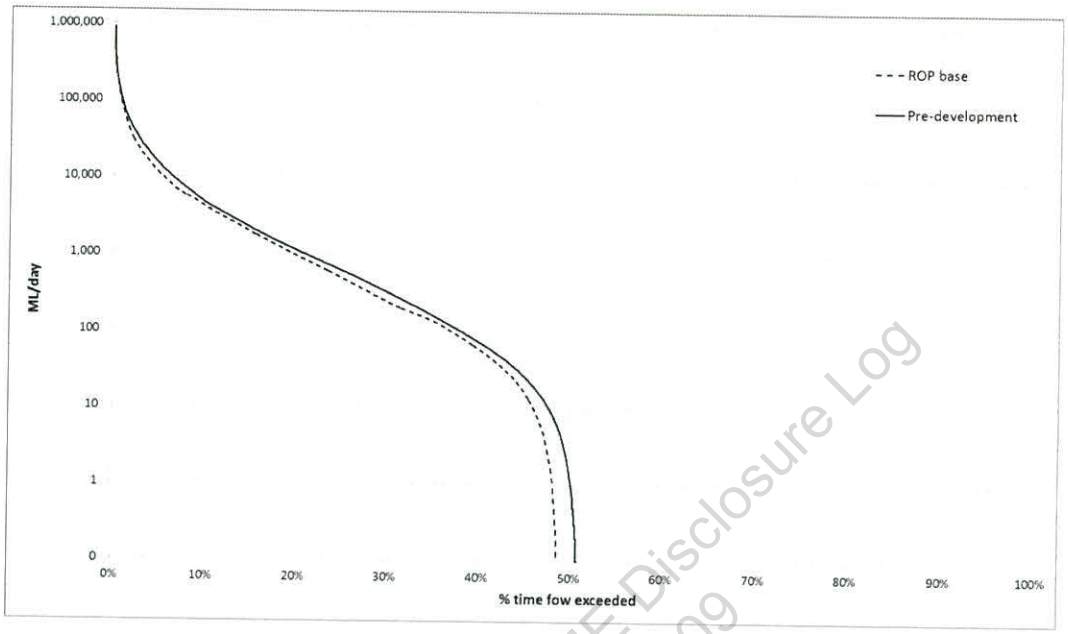


Figure 2: IQQM modelled flow duration curves for Suttor River at St Anns.

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Overall current environmental condition

(taken from the Burdekin Basin Technical Advisory Panel, 2004)

Current conditions of the lower Suttor show only minor change from reference condition for most ecosystem components, and moderate changes to water quality and macroinvertebrate assemblages, primarily as a result of land use pressures (although limited datasets offer low confidence in this assessment). The primary impacts of human activities include grazing within riparian zones and stream condition.

Potential downstream impacts to Environmental Assets

There have been few research programs undertaken on aquatic ecosystems in any of the Belyando/Suttor catchments, and as a result little is known about the critical flow requirements of environmental assets within the area. There is currently no Environmental Flows Assessment Program (EFAP) monitoring underway in the catchment. Despite this there are several environmental assets which are potentially at risk through future water resource developments, as detailed below.

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Floodplain Wetlands and Lagoons

The lower Suttor contains numerous permanent lagoons in anabranches and along off-river flood paths. Most of these lagoons have largely intact riparian vegetation assemblages and are productive fish habitats (Burrows et al 1999; Burrows et al 2009). The anabranches and off-river lagoons are characterized by different habitats to the main channels, usually consisting of different riparian vegetation assemblages (typically more coolabahs than paperbarks and river redgums), greater in-stream leaf litter inputs and more aquatic macrophytes, thus providing valuable diversification of habitat types in a system that is otherwise relatively uniform. The broad floodplains provide extensive temporary (albeit productive) wetland habitat during flood events.

There are no wetlands or lagoons within the lower Suttor listed under Ramsar as internationally important wetlands; however, the Scartwater wetland aggregation is listed as a DIWA nationally important wetland (EHP *WetlandMaps*, 2016). The Scartwater wetland aggregation (-21.096934, 146.870582) covers an area of approximately 332 hectares and includes Suttor River, seasonal and permanent lagoons and wetlands (e.g. upper and lower Scartwater Lagoons) and freshwater vegetated swamps (DotE, 2016). The Scartwater wetland aggregation was listed as a DIWA nationally important wetland as it provides a good example of a wetland type occurring within the Brigalow Belt North bioregion (DotE, 2016). Furthermore, it contains biodiversity values that are consistent with the criteria for listing an important DIWA wetland (DotE, 2016). Little quantitative data exists relating to the flows necessary for filling the Scartwater lagoons; however, a 1998 land court ruling highlighted that a flow at the St. Anns gauge of 2.22m (est. 140 cumecs) (3.6m at Scartwater crossing) was sufficient to fill Scartwater Lagoon and a height of 2.39m (est. 170 cumecs) at St. Anns would be sufficient to both fill and flush the lagoon (White & Klijn v. Qld government, 1998). These river height thresholds have not yet been verified by an on-ground field survey.

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Other notable floodplain lagoons and wetlands in the area include:

- Blackwater lagoon (-21.172384, 146.85039) - a large (approx. 15 ha) permanent floodplain lagoon located approx. 6km upstream of Scartwater Lagoon. Little is known of this lagoon, except that previous riparian vegetation condition surveys rated the lagoon in B (good) ecological condition (Burdekin Basin Technical Advisory Panel, 2004).
- Packsaddle Waterhole (-21.159152, 146.879261) – smaller waterhole (approx. 3ha) close to the main river channel and approx. 5km upstream of Scartwater lagoon. There's no published information relating to this waterhole; however long-term LandSat imagery indicates that the waterhole is mostly permanent.
- Longweed Lagoon (-21.39549, 146.86503) - located 10km downstream of the Belyando/Suttor junction, Longweed Lagoon is filled by overflow from the Suttor River or from its own catchment area on Vine Creek. The lagoon is likely to be important bird habitat as it's a permanent waterbody (Maughan *et al* 2007). This lagoon was studied as a part of a limnological assessment and benchmarking of key sentinel wetlands of the Burdekin catchment (Loong *et al* 2005), with the key findings showing the lagoon has a 2.1m maximum depth and was stratified for all measured WQ parameters (1.5-1.7m depth), with bottom waters appearing hypoxic.

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Summary

The little information which exists for the lower Suttor floodplain wetlands and lagoons suggests that they are an important part of the aquatic ecosystem as they represent the last potential refuge in what is a generally ephemeral river system. Protection of the filling and flushing frequency and volumes would be required for their long-term maintenance as an aquatic refuge, particularly given the larger lagoons which are likely to be stratified for most parts of the year. The preliminary risk assessment of the proposed water harvesting licence application found that the Scartwater lagoons were found to have less filling and flushing opportunities under the proposed 50 and 200 ML/day pass flow thresholds. There were 7 years over the IQQM simulation period where likely inundation events (i.e. equivalent to 170 cumecs) observed in the pre-development case did not occur in the proposed 200 ML/day pass flow threshold scenario. Given these wetlands and lagoons are ecological hotspots (i.e. centres of higher biodiversity within the broader landscape), it would be recommended that a precautionary approach be taken to minimise impacts to the ecological processes of the lagoons.

Immediate monitoring to develop and/or confirm filling and flushing thresholds are recommended (see further details below in Proposed Monitoring Program to address key knowledge gaps).

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Instream waterholes and other aquatic hydraulic habitat

A recent EFAP desktop assessment found that instream refugial waterholes were generally uncommon in the lower Suttor, with less than 3 waterholes considered permanent (pers. comm Michaelie Pollard). These included waterholes upstream and downstream of St Ann's gauging station and Murdering Lagoon, which occurs in a braided section of the Suttor River 22km upstream of St Ann's gauge. These waterholes were found to be generally smaller than the off-stream wetlands and lagoons, with their long-term persistence possibly influenced by alluvial groundwater inflow and impoundment due to small instream barriers (e.g. road causeways). Despite their low numbers and size, these waterholes have been identified as important habitats particularly for many of the larger fish species, such as the endemic small-headed grunter (*Scortum parviceps*), which has been found to only occur within instream waterholes (Burrows *et al* 1999).

Given the predominantly ephemeral nature of the lower Suttor River most other instream habitats, such as riffles, generally don't persist for significant lengths of time. However, when they do occur (gauged data at St Anns suggests it's for over 50% of time) they provide connectivity along the river channel, anabranches and floodplains, which have been identified as important for fish movement and the maintenance of fish communities (Burrows et al 2009). More details of the fish communities are provided below.

Summary

The Burdekin WRP General Ecological Outcomes specifically highlights the maintenance of Belyando/Suttor catchment waterholes and the importance of ensuring that river systems remain connected (both longitudinally and laterally) (Water Resource [Burdekin Basin] Plan 2007- Sections 13 and 23). There is however a paucity of data to enable an assessment of whether the proposed water harvesting licence application will affect flows required for instream environmental assets. It is probable that the proposed

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licence thresholds will impact upon many of the small flow events or pulses which occur early in the wet season (i.e. first wet-season flushing flow events), and as a result much of the lower Suttor River may not receive these expected flows until months later.

Immediate monitoring is recommended to develop and/or confirm the flows necessary for filling/flushing and river connecting flows (see further details below in Proposed Monitoring Program to address key knowledge gaps).

Fish communities

Fish are one of the most responsive ecological assets to changes in flow regimes and continue to be one of the most studied assets in the EFAP program. The extent of previous fish surveys in the Belyando-Suttor system is limited to samples at just 17 sites, 2 of which are in the lower Suttor catchment. Midgley (1977) surveyed 8 sites across the Burdekin catchment in 1976; however, none of these were in the lower Suttor. Burrows et al. (1999) surveyed fish as part of an investigation into a proposed dam at Mt. Douglas; again none of these sites were within the lower Suttor. Tim Marsden (QDPIF, 2000 unpublished data) also surveyed fish communities upstream of the study area. On several occasions from 1989-1992, Brad Pusey (Griffith University, unpublished data) sampled fish in a reach of the lower Suttor River impounded by the Burdekin Falls Dam; however, this data isn't referred to here as it essentially reflects the upper reaches of the Burdekin Falls Dam rather than the riverine Suttor River. Burrows *et al* (2009) has been the only study to sample fishes of the lower Suttor at waterholes above and below St Ann's gauging station.

Seventeen (17) fish species have been recorded during these fish surveys, including 15 native and 2 translocated-native species (i.e. golden perch and sleepy cod). Three (3) of these species have not been observed since the construction of Burdekin Falls Dam (long-finned eels, archer fish and flat-headed gudgeons). In addition, tilapia have been captured at sites upstream in Mistake Creek by local residents.

Fish diversity and abundance has generally been greatest in the permanent off-stream lagoons/wetlands, which further highlights the importance of their long-term maintenance as an aquatic refuge. Some species, however, were only found within instream waterholes, including the endemic small-headed grunter (*S. parviceps)*. Information of this species is very limited; however, like many of the *Scortum* grunters they do appear to have critical flow-spawning and recruitment requirements. Small-headed grunter spawning is thought to be stimulated by a rise in water levels between the months of October to November (Pusey *et al* 2004). It is also suggested that they will undertake upstream migrations prior to spawning, as has been shown for closely related species (*S.hillii*- Fitzroy Basin), which are compensated for by their pelagic, semi-bouyant eggs which also require flowing conditions for egg and larval development. Furthermore recruitment has been shown to be greatest in years when summer floods have occurred (Pusey *et al* 2004). Pusey et al (2004) further highlight that generally low abundance of *S. parviceps*, coupled with late maturity and expected low fecundity (compared with other sympatric grunters) may suggest high potential for populations to be easily and severely impacted in a short time, with little prospect for rapid recovery. These critical flow requirements further highlight the important role of the protecting instream flow events, particularly the first wet-season flushing flow events which would most likely be affected by the proposed water harvesting licence application.

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Summary

Obligate aquatic species, such as fish, are sensitive to changes in the flow regime. For some species these changes can be minor; however, for fish with critical flow requirements, such as the endemic small-headed grunter, the impacts on their long-term survival can be significant. Protection of the small-headed grunter flow-spawning requirements is imperative and further research is required in order to confirm their presence within the lower Suttor and determine what aspects of the flow regime must be maintained. Similar projects investigating the flow-spawning requirements of native species have been conducted under the EFAP program (e.g. Cockayne *et al.* 2013; 2015), although these were long-term projects conducted over several years. Notwithstanding this, it is probable that the proposed Adani licence water-take thresholds will impact upon on the first wet-season flushing flows and as a result the small-headed grunter flow-spawning requirements could be affected.

Water Quality

Whilst there have been numerous water quality monitoring programs undertaken in the Belyando-Suttor catchment, little information is available regarding the lower Suttor. In general terms the river system is characterised by high turbidity, high nutrients and neutral pH (Loong *et al* 2005). Electrical conductivity (EC) is generally low (i.e. <500 µS/cm), although gauging station data (St Ann's) has shown EC levels regularly exceed 1000 µS/cm, particularly since 2011 (Figure 3; more detail below). Although not monitored in any of the published literature, cyanobacteria (i.e. blue-green algae) are likely to dominate the phytoplankton communities due to its ability to float on or near the surface of turbid waters with high nutrient loads. Thermal and oxic stratification is also a common feature of these waterholes, wetlands and lagoons (Loong *et al* 2005).

Figure 3 provides an example of the response of water quality variables (i.e. EC) and river flows in the lower Suttor catchment, and the importance of maintaining a first wet-season flushing flow event of appropriate magnitude and duration. Electrical conductivity during this season was the highest recorded and was potentially as a result of high groundwater inflow from preceding wetter than average years and/or upstream mine-water releases. It's possible, however, that these EC concentrations may in fact be the future norm should dewatering practices be allowed at the proposed upstream Galilee Basin mines, as is currently the practice in the nearby Fitzroy Basin. Small flow events up to 500 ML/day occurring during July (event 1), August/September (event 2) and October (event 3) had no effect on the high (and rising) EC concentrations (Figure 3). Note that flow events of this magnitude are significantly higher than those listed in the proposed Adani water licence application (i.e. 50 and 200 ML/day). It wasn't until the first wet-season flushing flow event in December, with a magnitude up to 2,500 ML/day, that EC concentrations subsequently fell and remained at a low concentration. Magnitude of this flow event corresponds to the department's proposed 2,592 ML/day passing flow condition.

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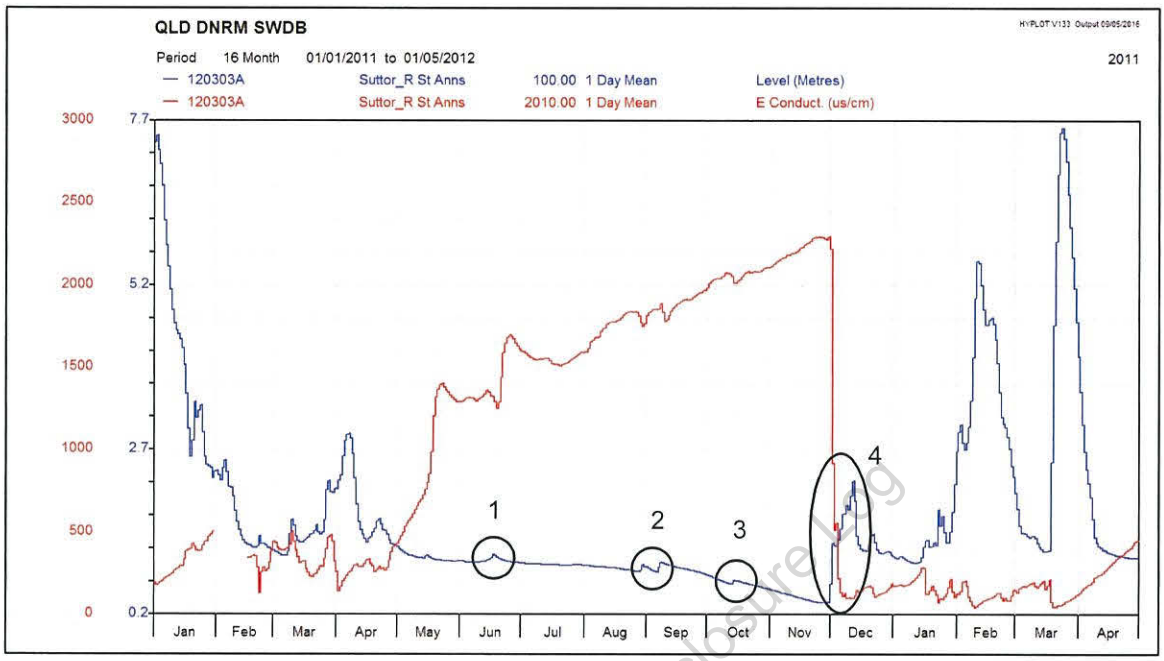


Figure 3: Electrical Conductivity (EC) (red line) and river height (m) (blue line) for the Suttor River at St Ann's gauge (120303a) from January 2011 to April 2012. The numbered black circles refer to periods throughout the dry season where flow pulses occurred (see text).

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Summary

Good water quality is essential to maintain a healthy ecosystem, both within the river channel (i.e. waterholes) and surrounding lagoons and wetlands. The data has shown that the proposed Adani passing flow thresholds are too low and would therefore affect the flows necessary to support the flushing of the instream waterholes. A higher flow threshold, as proposed by the department, would allow sufficient flows to pass to replenish the river system and maintain important ecological processes. This is particularly important should the mine-water releases occur at proposed upstream mines. There is some uncertainty about whether these proposed higher passing flow thresholds are of sufficient magnitude to maintain good water quality at waterholes further downstream.

Immediate monitoring is recommended to develop and/or confirm the flows necessary for flushing of downstream waterholes (see below).

Proposed Monitoring Program to address key knowledge gaps

The above review has highlighted some key environmental assets potentially under threat by the Adani water licence application; however, there is still a large amount of uncertainty surrounding what passing flows are required to ensure their protection and maintenance. It is therefore recommended that immediate on-ground monitoring be undertaken of both hydrological and ecosystem components.

Filling and flushing thresholds of the off-stream wetlands and lagoons and instream waterholes are required to verify what flows are necessary to ensure they remain an ecological hotspot in what is a largely

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ephemeral river system. The approach undertaken would be similar to that recently conducted in the Isaac/Connors catchment which assessed the potential impacts of unallocated water releases (see Appendix A) and would include:

- Identification of floodplain wetland and lagoon filling thresholds using Landsat (or other) time-series imagery. Initial requests through the GIS team has identified the Early Detection System (EDS) vegetation clearing tool may serve this purpose, although other imagery data sources are also being explored. Discussions with the hydrography unit will also be undertaken to identify other means of determining the filling thresholds of these wetlands and lagoons, such as through on-ground surveys.
- Installation of water level loggers within the floodplain lagoons (i.e. Blackwater Lagoon, Upper and Lower Scartwater Lagoons, Longweed Lagoon) to confirm these filling thresholds and measure persistence.
- Bathymetric surveys of key floodplain lagoons (as above) and instream waterholes (St Anns and Murdering Lagoon) to identify their volume and morphology. Note that both the bathy surveys and loggers will be surveyed into AHD to allow comparisons with gauged data (e.g. St Anns) and other hydrological sources (e.g. BOM Scartwater flood warning alert).
- Along with the water level loggers, installation of water temperature loggers to measure stratification and subsequent flows necessary for lagoon destratification (i.e. represents flushing flows).
- On-ground survey of other significant features (e.g. aquatic vegetation)

There is also a requirement to identify whether the proposed flow thresholds of both the Adani proposal and the department's alternative thresholds ensure that flows pass through the system to support a range of other ecosystem processes, such as flow-spawning fish (e.g. small-headed grunter) and water quality. Along with the lagoon and waterhole loggers, another will also be installed (and surveyed to AHD) at the Scartwater Road crossing, which represents the most accessible downstream point before the Burdekin Falls Dam pondage. A theoretical rating curve would also be developed to calculate river discharge.

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Appendix B: Photos of each of the surveyed lagoons

Longweed Lagoon



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Murdering Lagoon



Blackwater Lagoon



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Upper Scartwater Lagoon







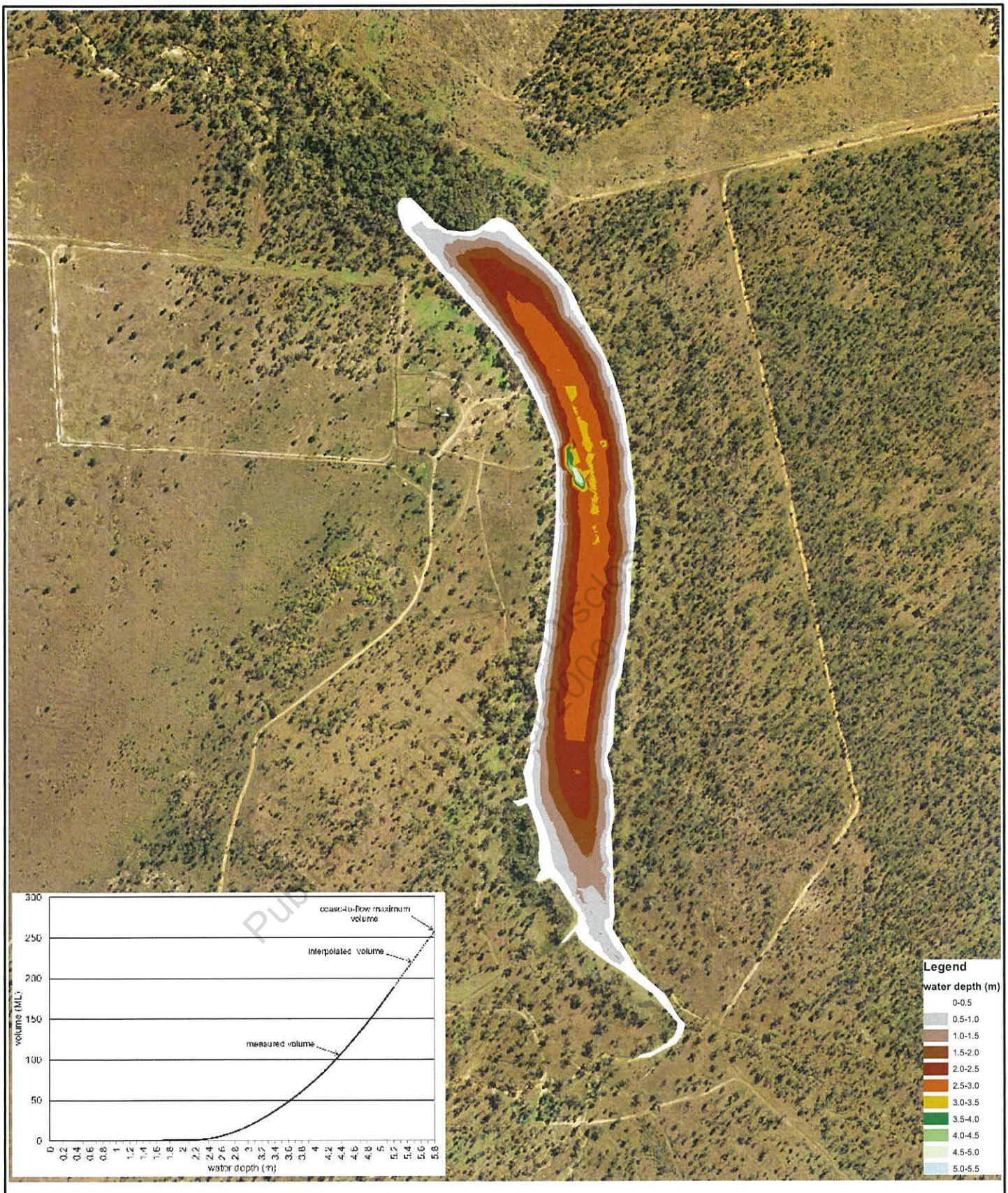
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Appendix C: Bathymetry maps of and storage rating table for each of the surveyed lagoon

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REGION: CENTRAL

LOCAL AUTHORITY OF CHARTERS TOWERS RC & WHITSUNDAY RC

LOCALITY OF Mount Coolon, Llanarth

Bathymetric Survey of Blackwater Lagoon

Surveyed: 26/5/2016

Scale 1:5000
at original size (A3)

Drawing No: 16/666/CEN

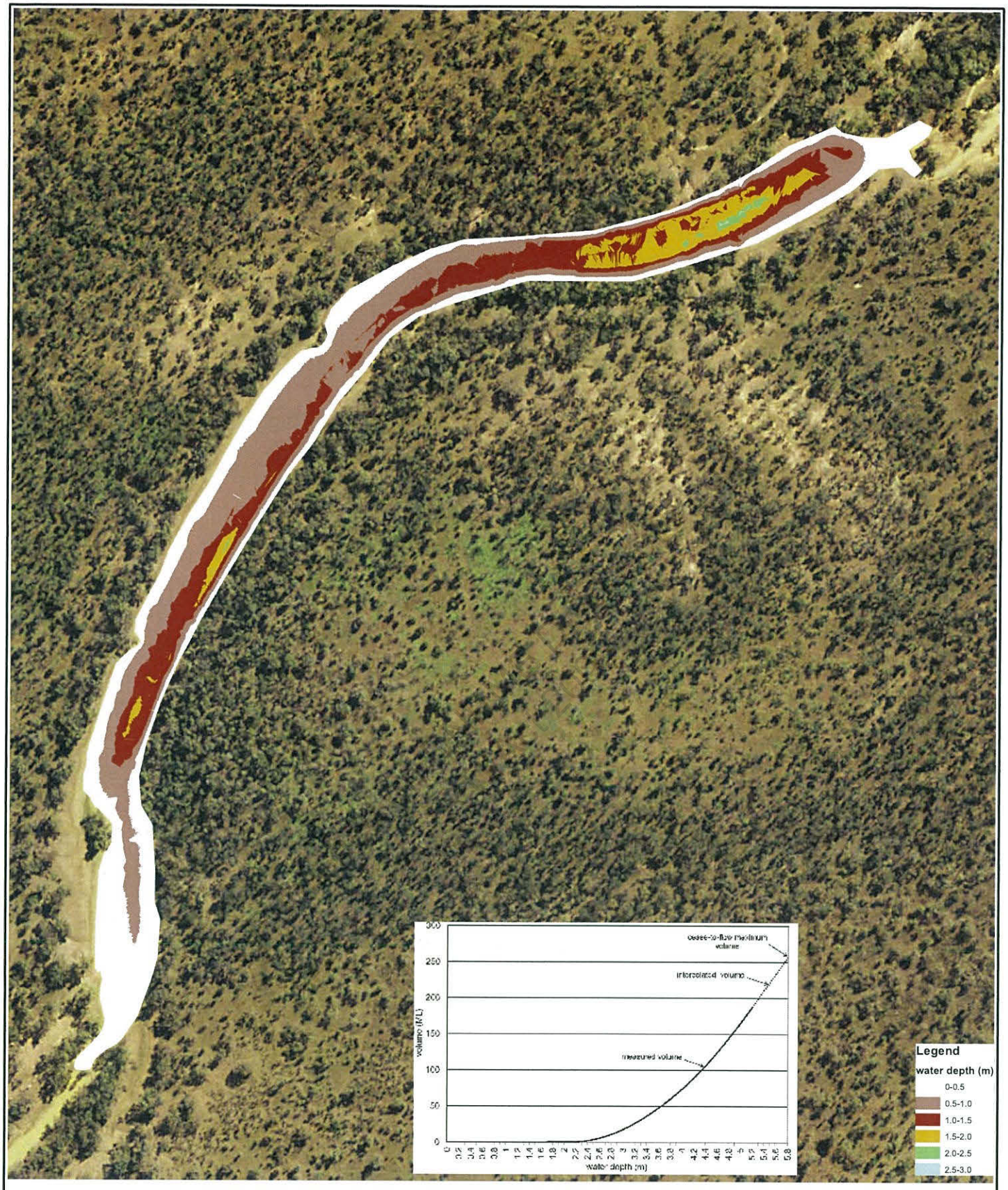
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NORTH

Prepared by: KJJ

Date: 16 Jun 2016

Released



REGION: CENTRAL

LOCAL AUTHORITY OF CHARTERS TOWERS RC & WHITSUNDAY RC

LOCALITY OF MOUNT COOLON, LLANARTH

Bathymetric Survey of Murdering Lagoon

Surveyed: 25/5/2016

Scale 1:3000
at original size (A3)

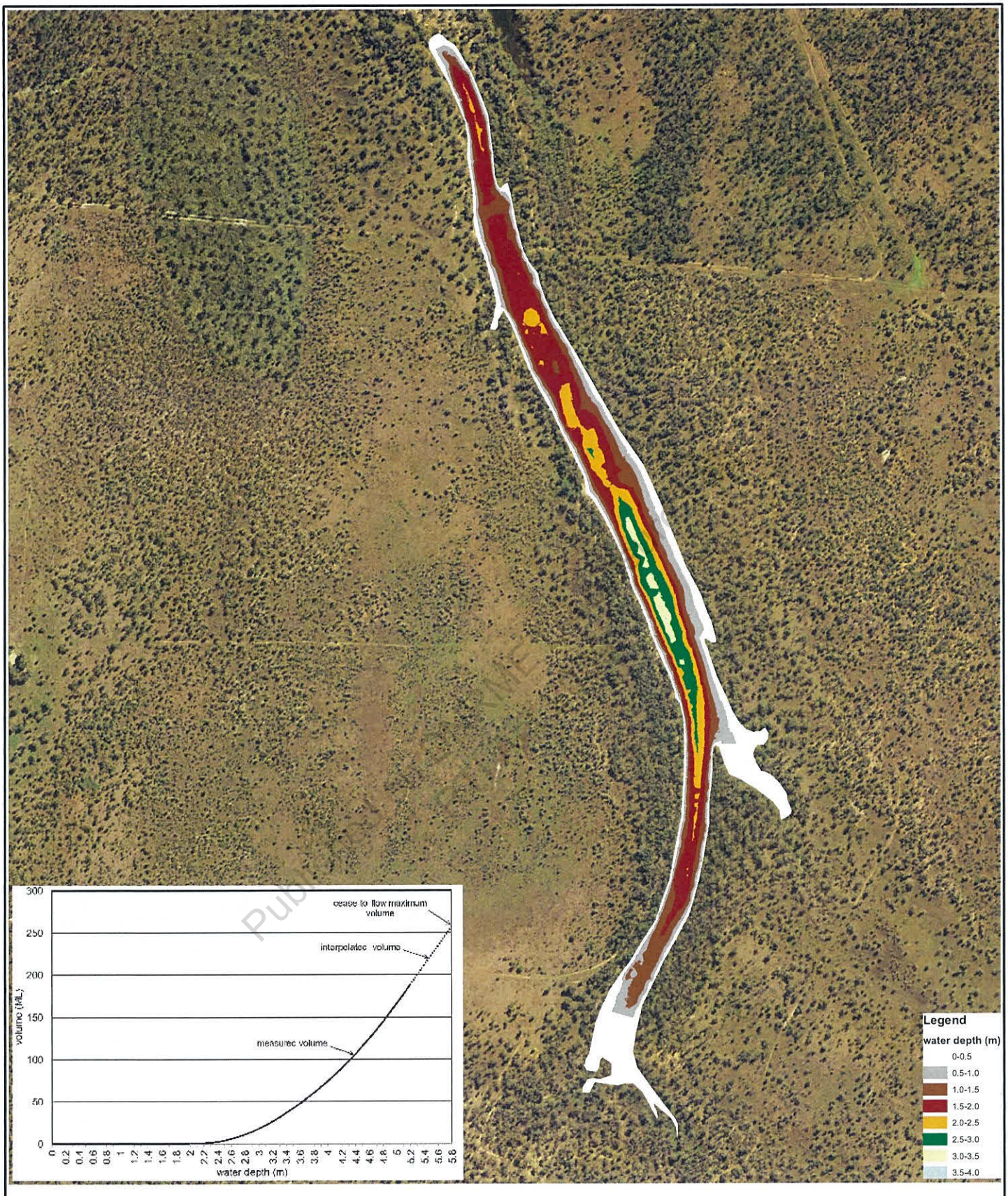
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Date: 16 Jun 2016

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REGION: CENTRAL

LOCAL AUTHORITY OF CHARTERS TOWERS RC

LOCALITY OF LLANARTH

Bathymetric Survey of Longweed Lagoon

Surveyed: 26/5/2016

Scale 1:6000
at original size (A3)

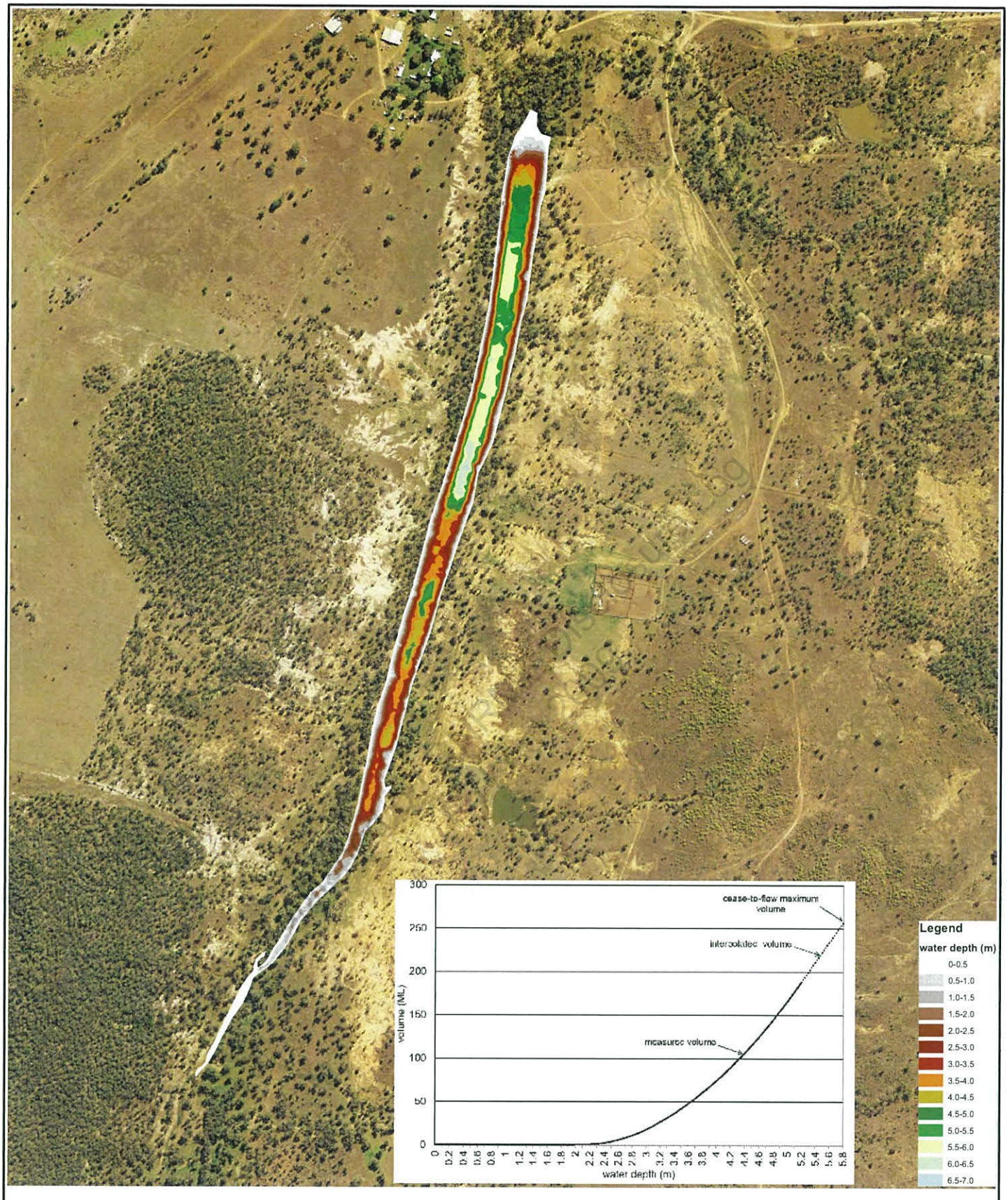
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NORTH

Prepared by: KJJ
Date: 16 Jun 2016

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RE/GION: /CENTRAL

LOCAL AUTHORITY OF WHITSUNDAY RC

LOCALITY OF MOUNT COOLON

Bathymetric Survey of Upper Scartwater Lagoon

Surveyed: 26/5/2016

Scale 1:7000
at original size (A3)

Drawing No: 16/669/CEN

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NORTH

Prepared by: KJJ
Date: 16 Jun 2016

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Hydrologic review for specification of a Water Product for release of unallocated water from the strategic reserve in the Belyando Suttor subcatchment area E of the Water Plan (Burdekin Basin) 2007

Impacts to Environmental Flow Objectives, Water Allocation Security Objectives and existing Suttor River entitlements

December 2016

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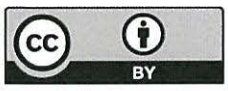
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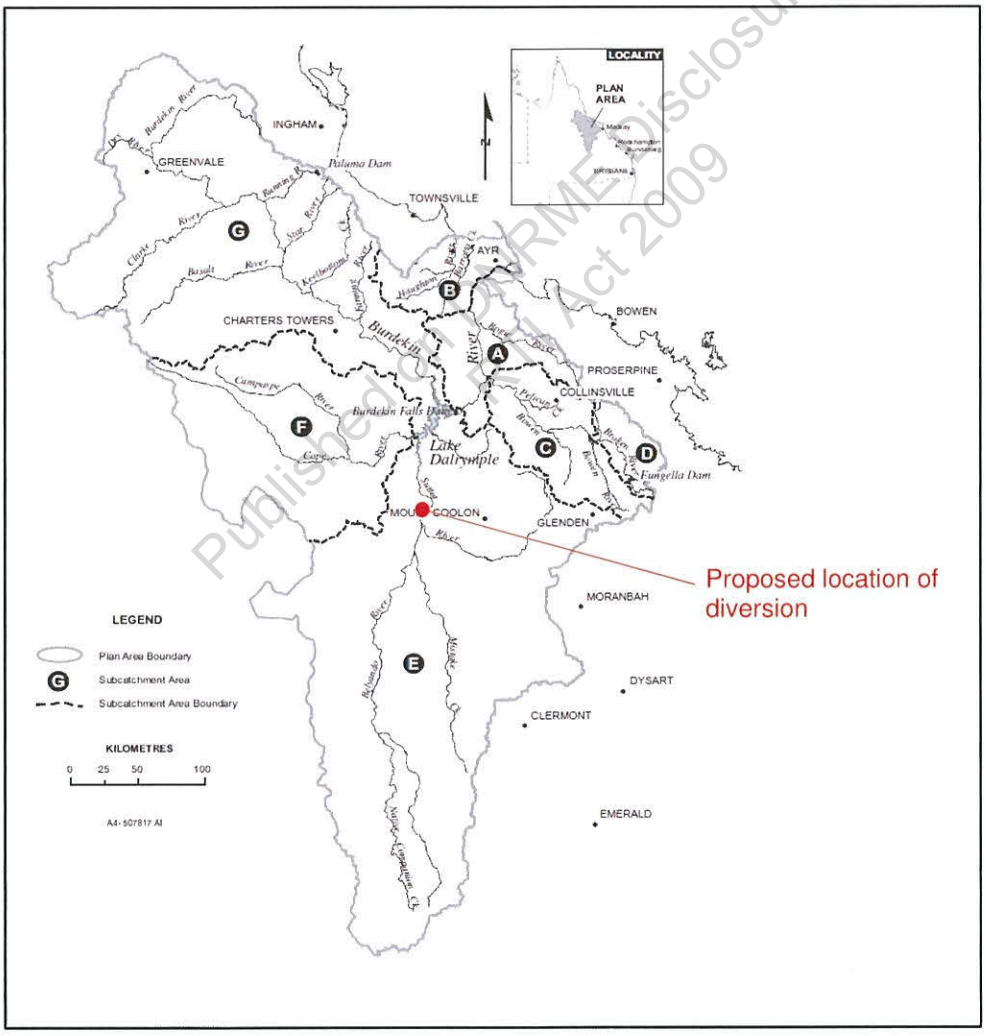
1 Introduction

Adani Infrastructure Pty Ltd (Adani Infrastructure) has provided a proposal to access unallocated water from the strategic reserve in the Belyando Suttor subcatchment area E of the Water Plan (Burdekin Basin) 2007[1].They propose to use this water for the construction and operation of the Carmichael Coal Project in the Galilee Basin and some rail construction in the Basin (CDM Smith, 2015). Adani Infrastructure has proposed to take water from the Suttor River as shown in Figure 1 with a nominal entitlement volume of 12 500 ML/a and a daily volumetric limit of 830 ML/day.

The proposed diversion includes a passing flow threshold of 2592 ML/day. Initial discussions included a passing flow threshold of 200 ML/day. The passing flow threshold is critical to the hydrological assessment for a proposed release of unallocated water as it has a high influence to ensure the water licence does not impact existing downstream entitlements and Water Plan (Burdekin Basin) 2007 (Burdekin WP) objectives are met. This hydrologic review report outlines how the passing flow threshold and other accompanying elements impact on downstream users and the Burdekin WP objectives.

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Figure 1 – Burdekin basin and proposed location of diversion



[1] From the commencement of the *Water Reform and Other Legislation Amendment Act 2014* (WROLA) on 6 December 2016, the Water Resource (Burdekin Basin) Plan 2007 continues in force as a 'water plan' (see section 1256(1) of the Water Act).

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2 Scope

The purpose of this report is to outline the potential impacts the proposed release of unallocated water in the form of a specified water product may have on existing downstream Suttor River entitlements. The strategic water release from subcatchment E must also meet the objectives outlined in the Burdekin WP.

To assess impacts the department's Integrated Quantity and Quality Modelling (IQQM) computer program has been used.

This report does not assess Adani's proposal, however the proposal is used to inform the review and specification of the water product for release. Assessment of applications related to the release of unallocated strategic reserve water will occur once Terms of Sale have been released.

3 Location of the Adani Infrastructure proposal

Adani Infrastructure's proposal is for the take of water from the Suttor River adjacent to property Lot 3 on SP278559 at an approximate AMTD 123 km just downstream from the junction of Suttor and Belyando Rivers.

Existing water licences on the Suttor River are conditioned with passflow requirements at St Anns gauging station 120303A at approximate AMTD 88.7 km.

Adani Infrastructure's proposal is approximately 34.3 km upstream from the St Anns gauging station.

3.1 Existing downstream entitlements

There are a total of six downstream existing water licences on the Suttor River that may be impacted by Adani Infrastructure's proposal. These entitlements are outlined in Appendix 1.

Water licence 55005A on the Belyando River Anabranch may be impacted depending on final approved diversion works. If Adani Infrastructure's proposal operates without interference in the Belyando River Anabranch, water licence 55005A will not be impacted in any way by the proposed works and diversion. However, if the approved works will cause interference with the Belyando River Anabranch, conditions can be applied to any water licence issued to ensure impacts to water licence 55005A will not occur.

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4 Hydrologic assessment

The hydrologic assessment for the proposed diversion has been undertaken using the Integrated Quality Quantity Model (IQQM) and the simulation period 1890 to 2004 (114 years).

This report outlines the hydrologic results and potential impacts as determined using the IQQM.

4.1 IQQM representation of existing entitlements

The Suttor River entitlements downstream of the proposed diversion have been represented in the IQQM Base Scenario as detailed in Table 1. The IQQM node-link diagram of the assessed section of Suttor River is shown in Appendix 2.

Water licence 55005A with a nominal entitlement of 560 ML/yr has been represented as though the diversion is on the Suttor River.

Water licence 45019A with a nominal entitlement 430 ML/yr is only represented by an increased diversion rate in conjunction with water licence 96640A in IQQM node no. 292.

The existing entitlement representation in Burdekin ROP scenario *BH020R_A0* is considered appropriate for the assessment of impacts to Suttor River entitlements and no further modifications to the model representation were made. As the assessed scenarios have been derived from the Burdekin ROP Scenario *BH020R_A0* it is also considered appropriate for the assessment of the Burdekin WP water allocation security objectives (WASOs) and environmental flow objectives (EFOs).

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Table 1 – IQQM existing Suttor River entitlement parameters

IQQM Node No.	Water licence No.	Nominal entitlement (ML per year)	Daily volumetric limit (ML per day)	Flow conditions[1]
291	*55005A*	*560*	*17.3*	*Nil*
292	*96640A*	*5570*	*484.0*[2]	*14 688 ML/day Or 2592 ML/day and Burdekin Falls Dam greater than 1 000 000 ML*[3]
293	*52401A*	*2750*	*241.9*	*172.8 ML/day*
300	*52426A*	*3888*	*45.0*	*172.8 ML/day*
302	*57382A, 57383A & 57220A*	*1150*	*56.2*	*172.8 ML/day*

[1] All flow conditions for Suttor River diversions use the St Anns gauging station represented by IQQM node no. 306

[2] Includes rate of take for water licence 45019A.

[3] The condition has been simplified from the actual water licence condition for inclusion into the IQQM.

4.2 Other IQQM parameters

It is important to recognise the limitations of IQQM and how entitlements are represented to appreciate the results for specification of a water product for release.

Subcatchment streamflow routing and lag

Streamflow routing and lag time is typically only calibrated to a single link of an IQQM subcatchment reach. This occurs at the beginning of each subcatchment calibration reach and represents the entire subcatchment.

For this assessment, there are no routing or lag parameters represented in the IQQM Suttor River reach between the proposed diversion, downstream Suttor River entitlements and St Anns gauging station. Physically, this Suttor River reach is about 35 km long but the IQQM does not include any parameters to attenuate or lag the streamflow within this reach. The decision maker should consider physical routing and lag of streamflow that may occur within the reach being assessed in conjunction with results detailed in this review.

Subcatchment inflows

Similar to routing and lag of streamflow, subcatchment inflows are aggregated spatially and occur at specific locations within the model, and may not represent the actual spatial and temporal variance of inflows.

4.3 IQQM assessment scenarios

To assess the impacts of the proposed diversion, the IQQM scenario developed for the Burdekin ROP **BH020R_A0** was used. This scenario was modified to represent all existing entitlements in subcatchment E. This includes two water permits as outlined in Table 2 to establish a Base Scenario **BH020R_X0**.

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Table 2 – Current water permits in Burdekin

IQQM Node No.	Watercourse	Water permit No.	Nominal entitlement *(ML per year)*	Daily volumetric limit *(ML per day)*	Flow conditions
362	*Belyando River*	*614136*	*250*	*3*	*The taking of water under this authorisation for construction purposes is permitted only during those periods when the flow of water in the Belyando River exceeds 2.3 cubic metres per second as indicated by the chief executive's gauging station at Gregory Development Road (120301B) on the Belyando River.*
363	*Mistake Creek*	*614017*	*8050*	*561.6*	*Pumping under the authority of this permit at the location adjacent to Lot 4 on SP116046 referred to as the Disney property, is prohibited whenever the flow in Mistake Creek downstream of the diversion sill authorised by water licence 57847F is less than 5 cubic metres per second. A flow of 5 cubic metres per second is equivalent to a diversion sill height of EL193.74. The sill height may be altered from time to time by the Chief Executive to reflect more accurately the prescribed surface flow.*

The proposed diversion scenarios for three different passflow conditions (200 ML, 1296 ML and 2592 ML) were assessed to provide indicative impacts to the existing Suttor River entitlements, WASOs and EFOs.

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Table 3 – IQQM scenarios for assessment

Scenario ID	Reference name	Description		
BH020R_A0	ROP Scenario	Burdekin ROP scenario and base case for impact assessment to downstream entitlements.		
BH020R_X0	Base Scenario	Burdekin ROP scenario updated to represent current existing entitlements in subcatchment E with current water permits		
Inclusion of proposed diversion		**Nominal entitlement volume**	**Daily volumetric limit**	**Passflow conditions**
BH020R_X1	200 ML/day passflow	12 500 ML/yr	830 ML/day	200 ML
BH020R_X2	1296 ML/day passflow			1296 ML
BH020R_X3	2592 ML/day passflow			2592 ML

5 Results

5.1 Unallocated water reserve

The total unallocated water reserve (150 000 ML) for Burdekin subcatchment E is represented in the IQQM at the end of the Belyando-Suttor subcatchment system and can access streamflow occurring at St Anns gauging station. The location of the proposed diversion does not include contributing catchment from the Cape or Sellheim Rivers and is represented by IQQM node no. 335 as shown in Appendix 2.

As demonstrated by the plot shown in Figure 2 the proposed diversion exceeds the performance of the modelled total reserve;

- in about 25% of years to divert 50% of the mean annual volume

and

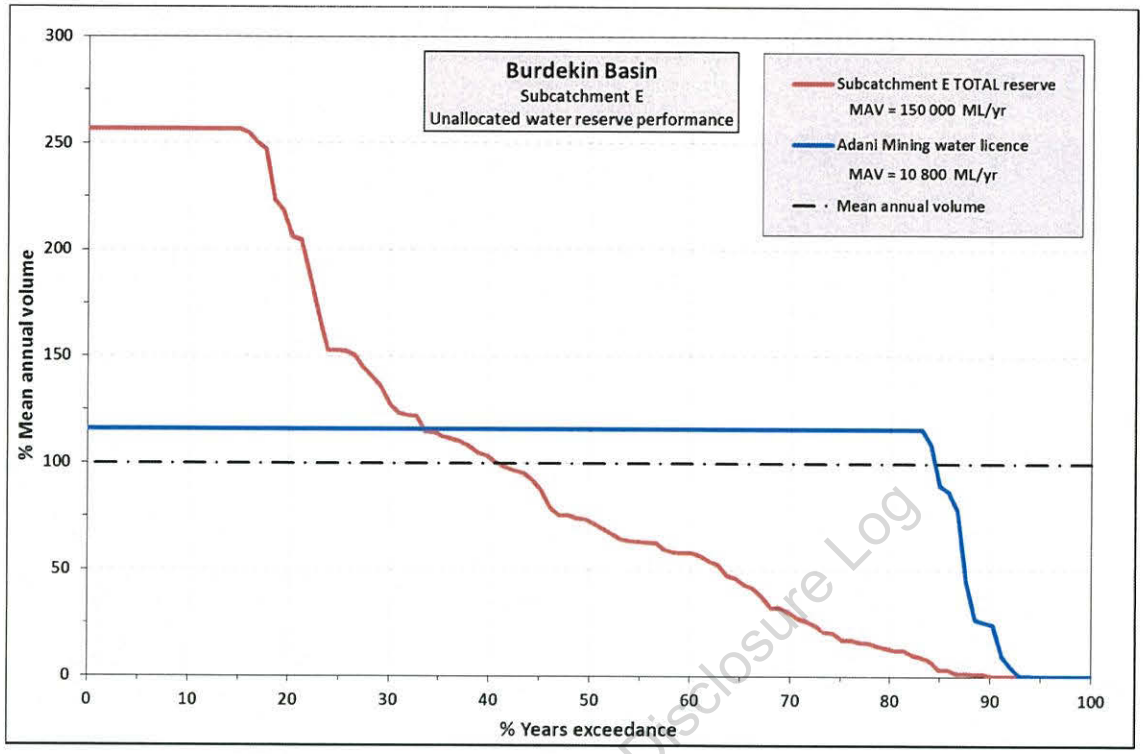
- in about 43% of years to divert 100% of the mean annual volume.

Further releases of unallocated water in subcatchment E will not be able to continue with performances that exceed the performance of the planned reserve. This will reduce current margins of hydrologic performance that allow the plan objectives to be met.

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Figure 2 – Percentage of mean annual volume of diversion exceedance probability



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5.2 Environmental flow objectives

The proposed diversion will mostly impact on environmental flow objectives (EFOs) at Node 11 which is the nearest downstream reporting node. The Burdekin WP reporting nodes are illustrated in Schedule 1.

The low flow objectives and assessment for the proposed diversion are reported in

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Table 4 below.

The medium to high flow objectives and assessment for the proposed diversion are reported in Table 5 below.

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Table 4 – Low flow objectives

Node 11 **Suttor River at its confluence with the Burdekin River (AMTD 0.0km)** **Low flow objectives**			
Objective		**ROP Scenario**	**Proposed 2592 ML/day passflow scenario**
The percentage of the total number of days in the simulation period that the ***50% non-zero daily flow*** is equalled or exceeded be at least:-	32%	33%	33% ✓
The percentage of the total number of days in the simulation period that the ***80% non-zero daily flow*** is equalled or exceeded be at least:-	52%	53%	53% ✓
The percentage of the total number of days in the simulation period that the ***daily flow*** is zero be not more than:-	35%	33%	33% ✓
The number of ***periods of no flow*** of more than 1 month but not more than 6 months in the simulation period be not more than:-	118	118	118 ✓
The number of ***periods of no flow*** of more than 6 months in the simulation period be not more than:-	1	1	1 ✓

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Definitions for low flow objectives

50% non-zero daily flow, for a node, means the daily flow, at the node, that is equalled or exceeded on 50% of the days on which there is a flow in the simulation period for the pre-development flow pattern.

80% non-zero daily flow, for a node, means the daily flow, at the node, that is equalled or exceeded on 80% of the days on which there is a flow in the simulation period for the pre-development flow pattern.

daily flow, for a node, means the volume of water that flows past the node in a day.

period of no flow, for a node, means a period in which the watercourse has ceased to flow at the node.

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Table 5 – Medium to high flow objectives

Node 11 **Suttor River at its confluence with the Burdekin River (AMTD 0.0km)** **Medium to high flow objectives**				
Objective		**ROP Scenario**	**Proposed 2592 ML/day passflow scenario**	
The ***mean annual flow*** in the simulation period, expressed as a percentage of the mean annual flow for the pre-development flow pattern, be at least:-	92%	93%	93%	✓
The ***median annual flow*** in the simulation period, expressed as a percentage of the median annual flow for the pre-development flow pattern, be at least:-	88%	89%	88%	✓
The ***1.5 year daily flow volume*** in the simulation period, expressed as a percentage of the 1.5 year daily flow volume for the pre-development flow pattern, be at least:-	94%	95%	95%	✓
The ***5 year daily flow volume*** in the simulation period, expressed as a percentage of the 5 year daily flow volume for the pre-development flow pattern, be at least:-	96%	97%	97%	✓
The ***20 year daily flow volume*** in the simulation period, expressed as a percentage of the 20 year daily flow volume for the pre-development flow pattern, be at least:-	98%	98%	98%	✓
The ***annual proportional flow deviation*** be not more than:-	1.0	1.0	1.0	✓

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Definitions for medium to high flow objectives

mean annual flow, for a node, means the total volume of flow, at the node, in the simulation period divided by the number of years in the simulation period.

median annual flow, for a node, means the annual flow volume, at the node, that is equalled or exceeded in 50% of years in the simulation period.

1.5 year daily flow volume, for a node, means the daily flow, at the node, that has a 67% probability of being reached at least once a year.

5 year daily flow volume, for a node, means the daily flow, at the node, that has a 20% probability of being reached at least once a year.

20 year daily flow volume, for a node, means the daily flow, at the node, that has a 5% probability of being reached at least once a year.

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annual proportional flow deviation, for a node, means the statistical measure of changes to flow season and volume in the simulation period, at the node, calculated using the formula;

$$APFD = \sum_{j=1}^{p} \frac{\sqrt{\sum_{i=1}^{12} \left(\frac{c_{ij} - n_{ij}}{\bar{n}_i} \right)^2}}{p}$$

where—

p means the number of years.

c_{ij} means the modelled flow for month i in year j.

n_{ij} means the modelled natural flow for month i in year j.

$\bar{n}_i$ means the modelled natural flow for month i across p years.

5.3 Water allocation security objectives

The proposed diversion is upstream of the Burdekin Falls Dam and is highly likely to not have any impact on water allocation security objectives (WASOs) which are all located downstream of the dam or in disconnected systems. However, the WASOs have been assessed for the hydrologically connected Burdekin Haughton Water Supply Scheme (Supplemented) and the A1 (Lower Burdekin) water allocation group.

The supplemented water WASOs for Burdekin Haughton water Supply Scheme are reported in

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Table 6 below.

The unsupplemented water WASOs for A1 (Lower Burdekin) water allocation group are reported in Table 7 below.

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Table 6 – Supplemented water

Burdekin Haughton Water Supply Scheme			
Objective		**ROP Scenario**	**Proposed 2592 ML/day passflow scenario**
For water allocations in the high priority group, the ***annual supplemented water sharing index*** be:-	100%	100%	100% ✓
For water allocations in the medium priority group, the ***annual supplemented water sharing index*** be at least:-	90%	90%	90% ✓
For water allocations in the medium priority group, the ***monthly supplemented water sharing index*** be at least:-	95%	96%	96% ✓

Definitions for supplemented water allocation security objectives

annual supplemented water sharing index, for water allocations to take supplemented water in a particular priority group, means the percentage of years in the simulation period in which the allocations are fully supplied.

monthly supplemented water sharing index, for water allocations to take supplemented water in a particular priority group, means the percentage of months in the simulation period in which the allocations are fully supplied.

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Table 7 – Unsupplemented water

Water allocation group - A1 (Lower Burdekin)			
Objective		**ROP Scenario**	**Proposed 2592 ML/day passflow scenario**
The ***30% unsupplemented water sharing index*** be at least:-	107%	107%	107% ✓
The ***50% unsupplemented water sharing index*** be at least:-	107%	107%	107% ✓
The ***70% unsupplemented water sharing index*** be at least:-	107%	107%	107% ✓
The annual volume probability be at least:-	85%	89%	89% ✓

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Definitions for unsupplemented water allocation security objectives

30% unsupplemented water sharing index, for a group of water allocations, means the total volume of water simulated to have been taken annually under the allocations in at least 30% of years in the simulation period, if the allocations were in existence for the whole of the simulation period, expressed as a percentage of the simulated mean annual diversion for the allocations.

50% unsupplemented water sharing index, for a group of water allocations, means the total volume of water simulated to have been taken annually under the allocations in at least 50% of years in the simulation period, if the allocations were in existence for the whole of the simulation period, expressed as a percentage of the simulated mean annual diversion for the allocations.

70% unsupplemented water sharing index, for a group of water allocations, means the total volume of water simulated to have been taken annually under the allocations in at least 70% of years in the simulation period, if the allocations were in existence for the whole of the simulation period, expressed as a percentage of the simulated mean annual diversion for the allocations.

annual volume probability, for a group of water allocations, means the percentage of years in the simulation period in which the volume of water that may be taken by the group is at least the total of the nominal volumes for the allocations in the group.

5.4 Impacts to downstream Suttor River existing entitlements

Mean annual volume of diversion results from IQQM assessments are shown in Appendix 3.

Table 9 details the mean annual volume of the proposed diversion and downstream Suttor River entitlements for each scenario.

Table 10 details the annual probability of the proposed diversion and downstream Suttor River entitlements to achieve the mean annual volume diversion relative to each diversion and scenario.

Annual days of diversion opportunity results from IQQM assessments are shown in Appendix 5.

Table 11 details the mean annual number of days diversion opportunity for the proposed diversion and downstream Suttor River entitlements for each scenario.

Table 12 details the annual number of days diversion opportunity for the 80th percentile year for the proposed diversion and downstream Suttor River entitlements for each scenario. The 80th percentile year provides similar annual number of day opportunity for the Suttor River entitlements to achieve their nominal entitlement volume.

5.4.1 Discussion of impact assessment results

As expected, the 200 ML/day passflow threshold impacts on all of the downstream Suttor River entitlements. This is because the 200 ML/day passflow threshold intersects the streamflow opportunity of those downstream entitlements that have a passflow condition of 172.8 ML/day with a total daily diversion capacity of 343.1 ML/day of which only 27.2 ML/day (8%) is not impacted by the proposed upstream diversion. At this passflow threshold the proposed diversion could divert up to the full daily rate before the downstream water licence 96640A is permitted to access any flow and therefore there is some measured impact to mean annual volume of diversion. The impacts to the mean annual volume of diversion are low (less than 5%) due the typical high volume of water availability and due to the function of the nominal entitlement capping the annual diversions of each

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entitlement. Measurable differences to annual volume of diversion generally only occur in years with a percentile of exceedance greater than 80%.

A proposed diversion with a passflow threshold of 1296 ML/day only indicates an impact to water licence 96640A. At this passflow threshold, it is above the combined 172.8 ML/day passflow condition and diversion capacity of the downstream entitlements. The impacts to the mean annual volume of diversion to water licence 96640A are very low (less than 1%). Interestingly, for water licence 96640A this scenario has a very minor improvement to the mean annual volume of diversion compared to the 200 ML/day passflow scenario. This is due to the function of the nominal entitlement capping of annual diversion volumes. In the 200 ML/d passflow scenario, the proposed diversion would reach the nominal entitlement earlier in a water year and cease diversion for the remainder of the year leaving water licence 96640A with opportunity to divert without available streamflow reduction from the upstream proposed diversion.

A proposed diversion with a passflow threshold of 2592 ML/day only indicates a very minor (less than 0.5%) impact to water licence 96640A. This minor difference is a result of the differences to the conditions between water licences 96640A and the proposed diversion. Water licence 96640A has additional conditions that further restrict diversion opportunity before diversion can occur at a common passflow condition of 2592 ML/day.

It is important to be aware that the IQQM annual volume of diversion results may not indicate impacts to diversion opportunity for downstream entitlements. All entitlements including the proposed diversion are represented in the scenarios as full entitlement or fully activated without further limitation. Diversion occurs at all times when the passflow conditions are met up to the nominal entitlement (annual volumetric limit) and daily volumetric limit. There is no representation of water use infrastructure (e.g. off stream storages and crop areas) that are likely to vary diversion behaviour in reality. Annual volume totals do not reflect the variations in time when water may be taken during the year and may not indicate impacts of opportunity to divert. To provide a measure of impacts to diversion opportunity the same scenarios were assessed with the nominal entitlement or annual cap of diversion volume removed from all Suttor River entitlements. The results of these scenarios are reported using annual number of days of diversion. These results outline that the impact of the proposed diversion may be perceived to be greater significant than the mean annual volumes of diversion indicate.

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Similar to the mean annual volume of diversion results, a 200 ML/day passflow threshold for the proposed diversion impacts on all downstream Suttor River water licences. Up to an average of 26 annual days of pumping opportunity could be impacted for those downstream entitlements with a passflow condition of 172.8 ML/day and water licence 96640A could be impacted up to an average of 4 pumping days per year.

At both the 1296 ML/day and 2592 ML/day passflow conditions for the proposed diversion, the impacts only occur to water licence 96640A. On average up to 4 annual days of pumping opportunity will be impacted for the 1296 ML/day passflow threshold. On average up to 1 annual days of pumping opportunity will be impacted for the 2592 ML/day passflow threshold.

6 Recommendations for DNRM

1. The conditions of water licence 96640A should be revised before water is taken under any water licence (with a condition of 2592 ML/day) that is granted as a result of the proposed release of unallocated water from the strategic reserve. This could be done during the review of the Burdekin WP and ROP or through an alternate mechanism (eg. water permit) to ensure

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the holder of water licence 96640A has equitable access to Suttor River flows. This review highlights that the additional conditions above the 2592 ML/day passflow condition could be removed without compromise to the Burdekin WP objectives. These additional conditions were included to protect the supply security of Burdekin Falls Dam and supply scheme entitlements at a time prior to establishment of the Burdekin WP objectives and the IQQM hydrological model. The IQQM can now be used to ensure the Burdekin WP objectives can be met with a 2592 ML/day passflow condition. A simplified passflow condition will also assist development of potential future water trading options.

2. The volumetric limit of diversion for water licence 52426A should be revised during the review of the Burdekin WP & ROP. This review does not indicate any impacts to water licence 52426A for a water product with a passflow condition of 2592 ML/day. However, for a water product with a 200 ML/day passflow condition, this review indicated that impacts to water licence 52426A were much greater than the other water licences with a 172.8 ML/day passflow condition. This is because water licence 52426A has a much lower ratio of daily volumetric diversion to nominal entitlement, requiring 86 annual days of diversion opportunity to achieve the nominal entitlement. Further release of strategic or general reserve unallocated water upstream in subcatchment E is likely to impact on water licence 52426A.

3. The department should consider developing guidelines for hydrologic assessment of strategic reserve unallocated water release. Assessment of impacts outside of the prescribed water allocation security objectives and environmental flow objectives can be subjective when addressing criteria in the general plan objectives. Results of this assessment highlight that impacts to existing downstream entitlements mean annual volumes of diversion may not present clear decisive differences as a result of high annual water availability in the majority of years. Guidelines for hydrologic assessment should assist proponents to address a variety of hydrologic water management criteria to ensure potential impacts to existing entitlements or environmental requirements are adequately assessed.

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7 Conclusion

A summary of the water product proposed to be released and the performance as determined from IQQM modelling is shown in Table 8.

This review concludes that the Burdekin WP water allocation security objectives are met.

This review concludes that the Burdekin WP environmental flow objectives are met.

The proposed water product will have an impact on one downstream Suttor River water licence of 96640A. The impact is minimal however perceptually occurs as the licence conditions for the proposed water product provide greater access to occurring Suttor River flows than water licence 96640A. The passflow condition of 2592 ML/day is adequate in meeting downstream water requirements. It is therefore considered appropriate to support a passing flow condition of 2592 ML/day. However, in doing so the department should review how water licence 96640A can divert water with the same opportunity as the proposed water product as discussed in section 6 above.

Table 8 – Proposed water product summary

Location	Suttor River Lot 3 on SP278559 approximate AMTD 123 km
Nominal entitlement volume	12 500 ML
Daily volumetric limit	830 ML
Passflow condition at St Anns gauging station 120303A	2592 ML/day
Assessed mean annual volume	10 890 ML/year
Assessed annual probability to achieve mean annual volume	84.2%

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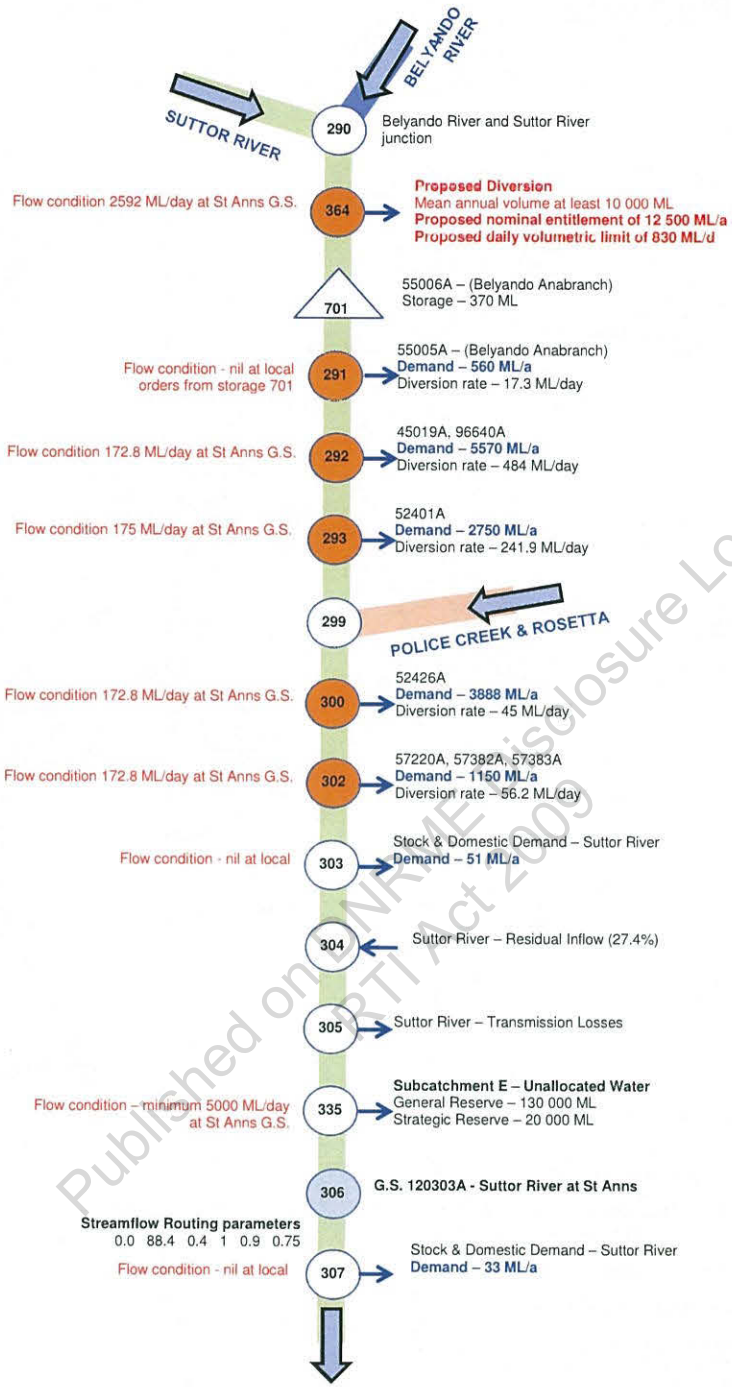
Appendix 1 Existing Suttor River entitlements

Licence No.	Water course and location	Nominal entitlement (ML per year)	Maximum rate (L per second)	Daily volumetric limit (ML per day)	Conditions
55005A	Belyando River Anabranch Lot 3 on SP278559	560	200	17.3	Water taken under this authorisation must only be water that has been impounded under the authority of water licence 55006A.
45019A	Suttor River Lot 3 on SP278559	430	70	6	Taking water from the impoundment authorised by licence 96644A is permitted only when the level in the impoundment is above the entrance to the outlet pipe.
96640A	Suttor River Lot 3 on SP278559	5570	5530	478	The taking of water under this authorisation is permitted only when the flow of water exceeds 14,688 megalitres per day at the Department's Gauging Station Suttor River at St Anns (120303A) or at such other times as the chief executive may permit. 1. Before commencing to take water at any time you are required to check the flow rate at St Anns gauging station with the chief executive and gain authorisation to take water. 2. Notwithstanding Schedule A condition 2.44, permission to take water at a lower flow level than 14,688 megalitres per day will be given only if all the following apply: a. There is continuous flow from the pump site to the storage of Burdekin Falls Dam; and b. The surface flow exceeds 2592 megalitres per day at St Anns gauging station; and c. In excess of 500,000 megalitres has passed St Anns gauging station in the preceding 12 months, or the Burdekin Falls Dam is full from other sources; and d. The Burdekin Falls Dam is storing more than 1,000,000 megalitres (54% of Stage 1 capacity); and e. Irrigators in the Burdekin Haughton Water Supply Scheme are not on less than 100% announced allocation; and f. Taking water will not adversely affect beneficial flooding on properties downstream to the Burdekin Falls Dam. 3. Notwithstanding the above conditions, taking of water from the impoundment authorised by licence 96644A is permitted provided that: a. There is no flow into the impoundment; and b. The preceding flow event exceeded a rate at which taking of water is permitted under this licence; and c. The storage level is not below the entrance to the outlet pipe on the impoundment. 4. Notwithstanding the above conditions, taking of water from the impoundment authorised by licence 55006A is permitted provided that there is no flow into the impoundment from the Belyando River.
52401A	Suttor River Lot 5078 on PH955	2750	2800	242	The taking of water under this authorisation is permitted only when the flow of water in the Suttor River exceeds 175 megalitres per day at the department's gauging station at St Anns (120303A).
52426A	Suttor River Lot 22 on SP218335	Nil	500	-	The taking of water under this authorisation for water harvesting purposes is permitted only during those periods when the flow of water in Suttor River at the pump site exceeds 2.0 cubic metres per second as indicated by the 1.04 metre mark on the gauge board at St Anns Gauging Station or at such other times as the chief executive or his district representative may permit..
57382A	Mining Lease 1095	Nil	100	-	The taking of water under this authorisation for water harvesting purposes is permitted only during those periods when the flow of water in Suttor River at St. Anns Gauge Station 120303A exceeds two (2) cubic metres per second as indicated by the mark established or to be established by the Chief Executive.
57383A	Mining Lease 1095	Nil	100	-	The taking of water under this authorisation for water harvesting purposes is permitted only during those periods when the flow of water in Suttor River at St. Anns Gauge Station 120303A exceeds two (2) cubic metres per second as indicated by the mark established or to be established by the Chief Executive.
57220A	Mining Lease 1095	Nil	450	-	The taking of water under this authorisation for water harvesting purposes is permitted only during those periods when the flow of water in Suttor River at Anns Gauge Station 120303A exceeds two (2) cubic metres per second as indicated by the mark established or to be established by the Chief Executive.

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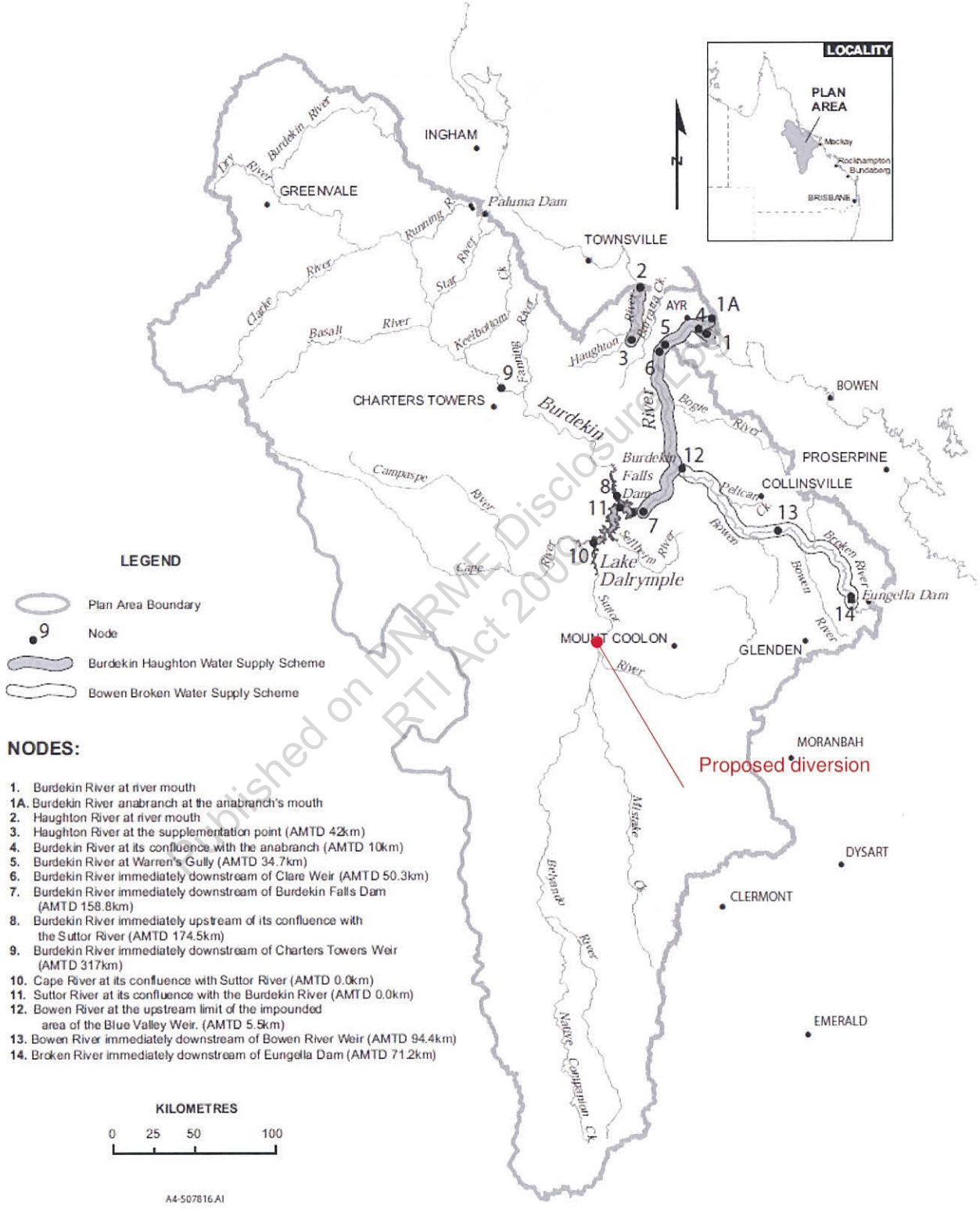
Appendix 2 IQQM Model – Node diagram for Suttor River



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Appendix 3 Plan area



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Appendix 4 IQQM results – Mean annual volume of diversion

Table 9 – Hydrologic assessment results – mean annual volume of diversion

Water product details			Base scenario	200 ML/day passflow condition		1296 ML/day passflow condition		2592 ML/day passflow condition	
IQQM Node No.	Suttor River water licence	Nominal entitlement volume (ML/water year)	Mean annual volume (ML/water year)	Mean annual volume (ML/water year)	change from Base scenario %	Mean annual volume (ML/water year)	change from Base scenario %	Mean annual volume (ML/water year)	change from Base scenario %
364	proposed diversion	12500	-	11925	-	11250	-	10890	-
291	55005A *Belyando anabranch*	560	555	555	0.0%	555	0.0%	555	0.0%
292	96640A	5570	4810	4780	-0.6%	4770	-0.8%	4795	-0.3%
293	52401A	2750	2685	2655	-1.1%	2685	0.0%	2685	0.0%
300	52426A	3888	3515	3445	-2.0%	3515	0.0%	3515	0.0%
302	57382A, 57383A & 57220A	1150	1120	1100	-1.8%	1120	0.0%	1120	0.0%

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Table 10 – Hydrologic assessment results – mean annual volume of diversion probability

Water product details			Base scenario	200 ML/day passflow condition		1296 ML/day passflow condition		2592 ML/day passflow condition	
IQQM Node No.	Suttor River water licence	Nominal entitlement volume (ML/water year)	Mean annual volume probability (ML/water year)	Mean annual volume probability (ML/water year)	change from Base scenario %	Mean annual volume probability (ML/water year)	change from Base scenario %	Mean annual volume probability (ML/water year)	change from Base scenario %
364	proposed diversion	12500	-	93.9%	-	86.8%	-	84.2%	-
291	55005A *Belyando anabranch*	560	96.5%	96.5%	0.0%	96.5%	0.0%	96.5%	0.0%
292	96640A;	5570	84.2%	84.2%	0.0%	83.3%	-0.9%	84.2%	0.0%
293	52401A	2750	95.6%	94.7%	-0.9%	95.6%	0.0%	95.6%	0.0%
300	52426A	3888	82.5%	78.1%	-4.4%	82.5%	0.0%	82.5%	0.0%
302	57382A, 57383A & 57220A	1150	94.7%	94.7%	0.0%	94.7%	0.0%	94.7%	0.0%

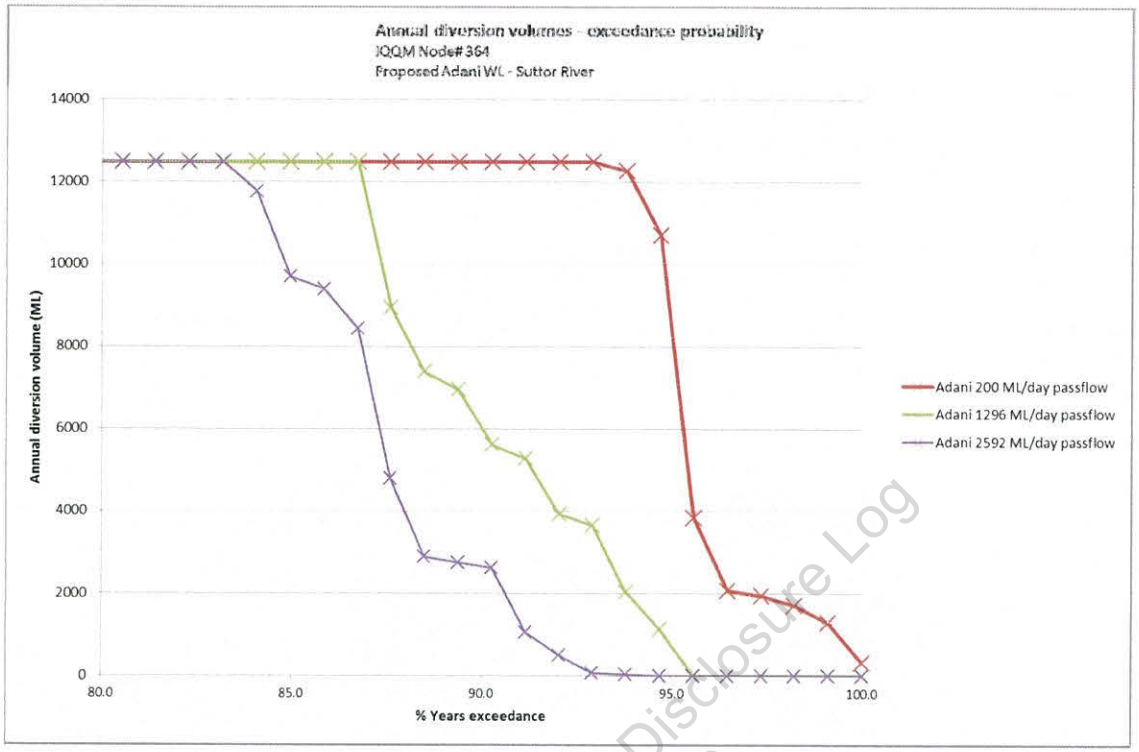
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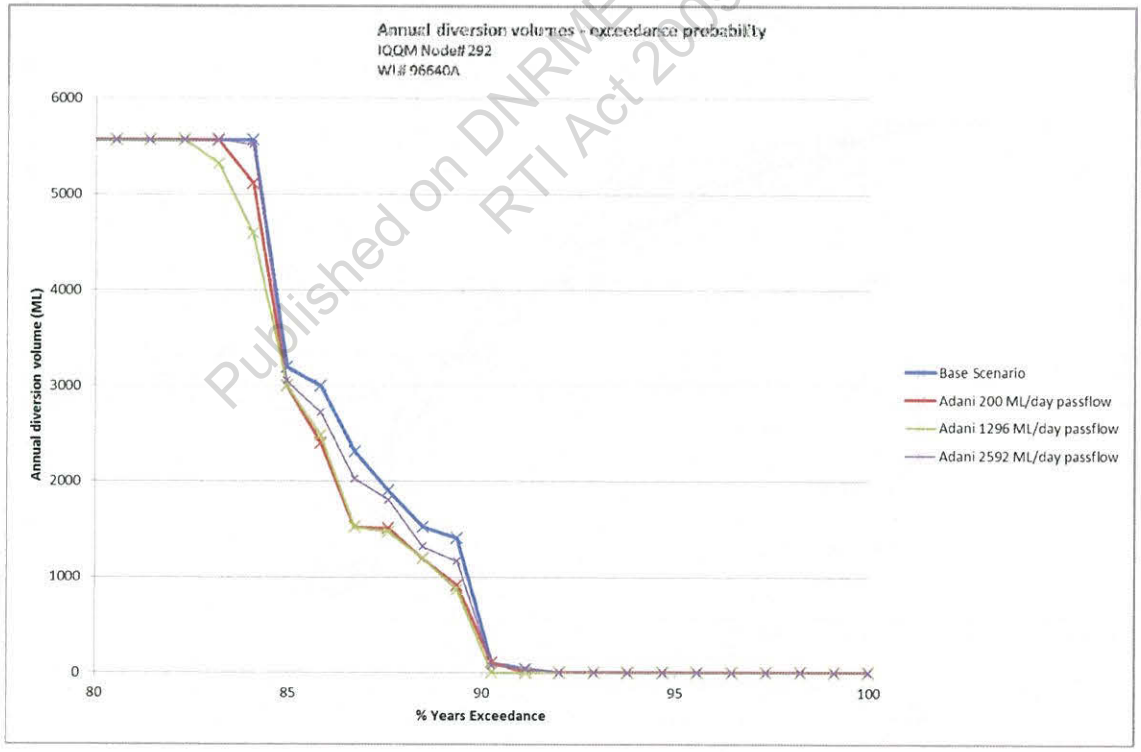
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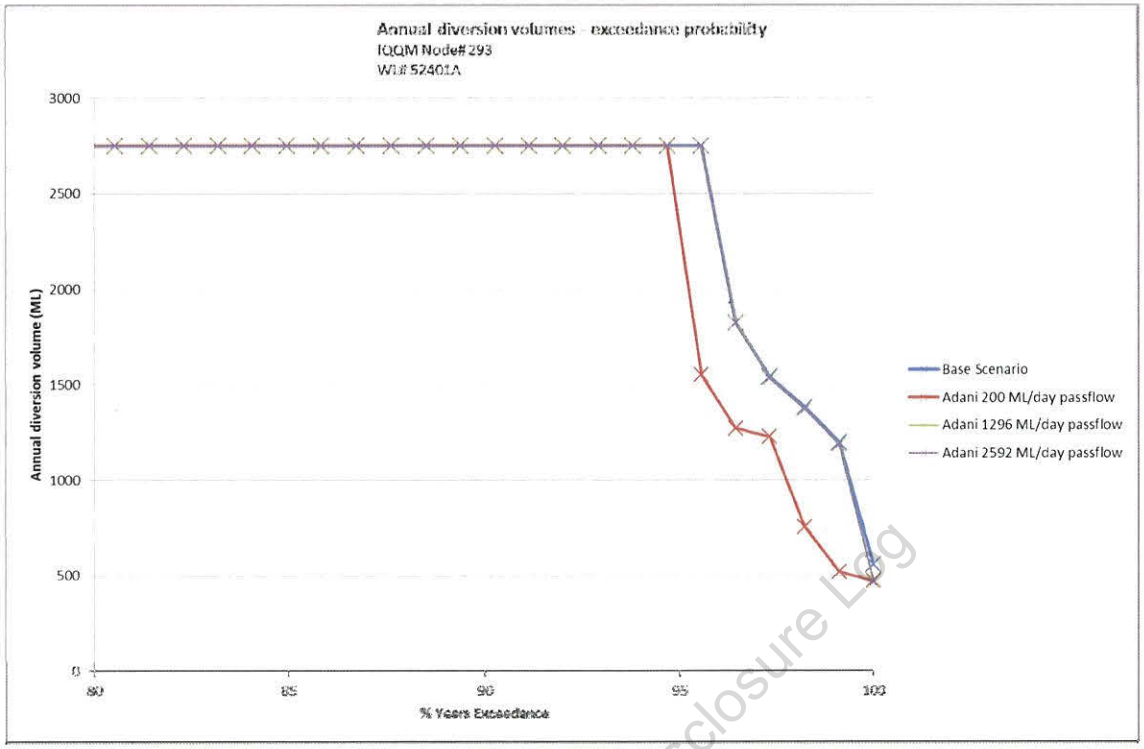
Figure 3 – Mean annual volume of diversion plots

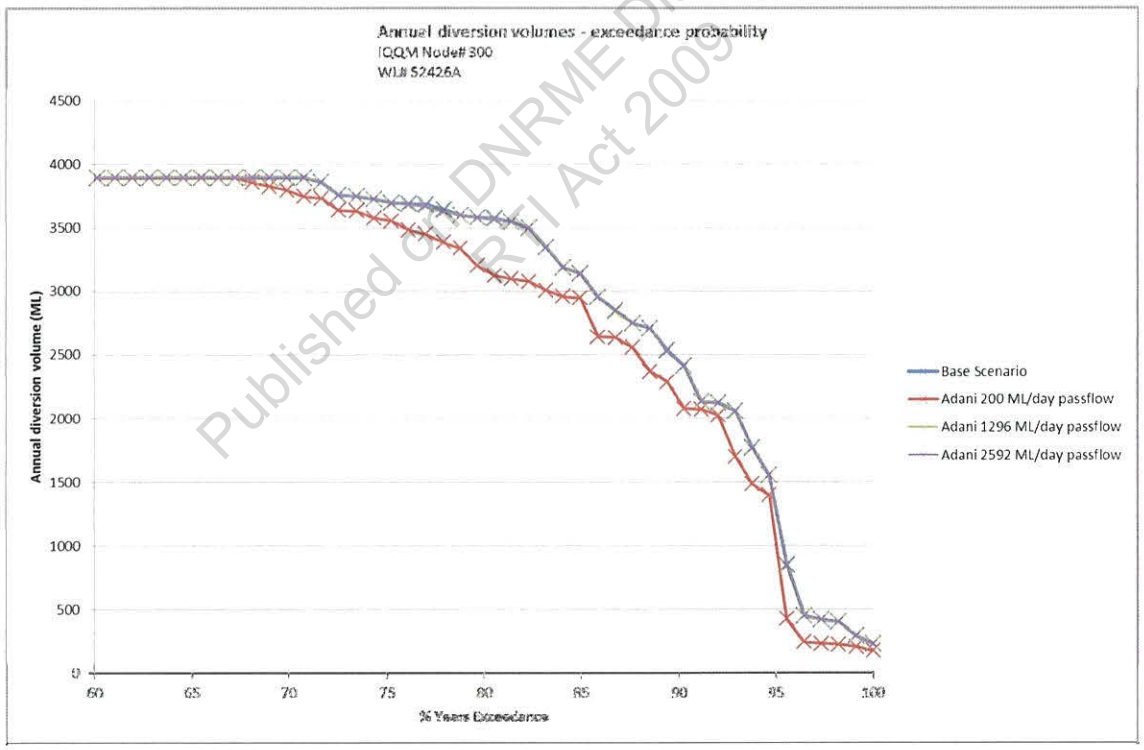




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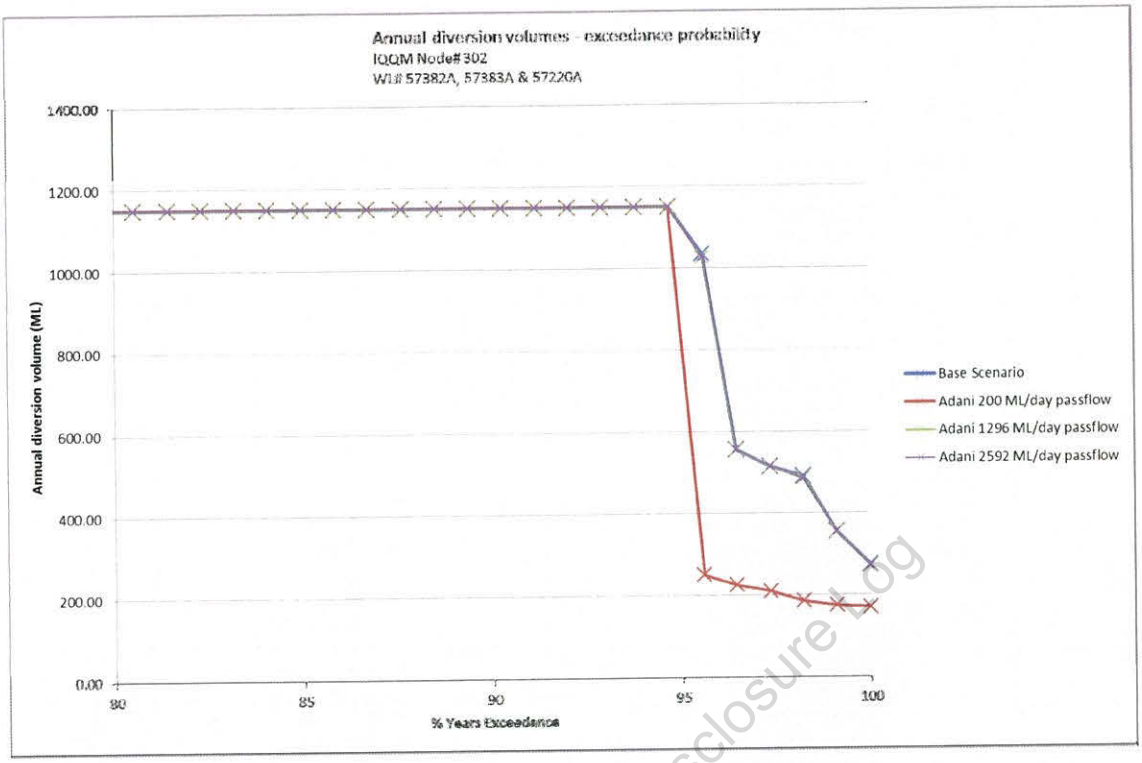
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Appendix 5 IQQM results – Annual number of days diversion opportunity

Table 11 - Hydrologic assessment results – mean annual days of diversion opportunity

Water product details			Base scenario	200 ML/day passflow condition		1296 ML/day passflow condition		2592 ML/day passflow condition	
IQQM Node No.	Suttor River water licence	Nominal entitlement volume (ML/water year)	Number of day of diversion opportunity	Number of day of diversion opportunity	change from Base scenario	Number of day of diversion opportunity	change from Base scenario	Number of day of diversion opportunity	change from Base scenario
364	proposed diversion	12500	-	70		48		37	
291	55005A *Belyando anabranch*	560	25	25	0	25	0	25	0
292	96640A	5570	37	33	-4	33	-4	36	-1
293	52401A	2750	94	85	-9	94	0	94	0
300	52426A	3888	109	90	-19	109	0	109	0
302	57382A, 57383A & 57220A	1150	108	82	-26	108	0	108	0

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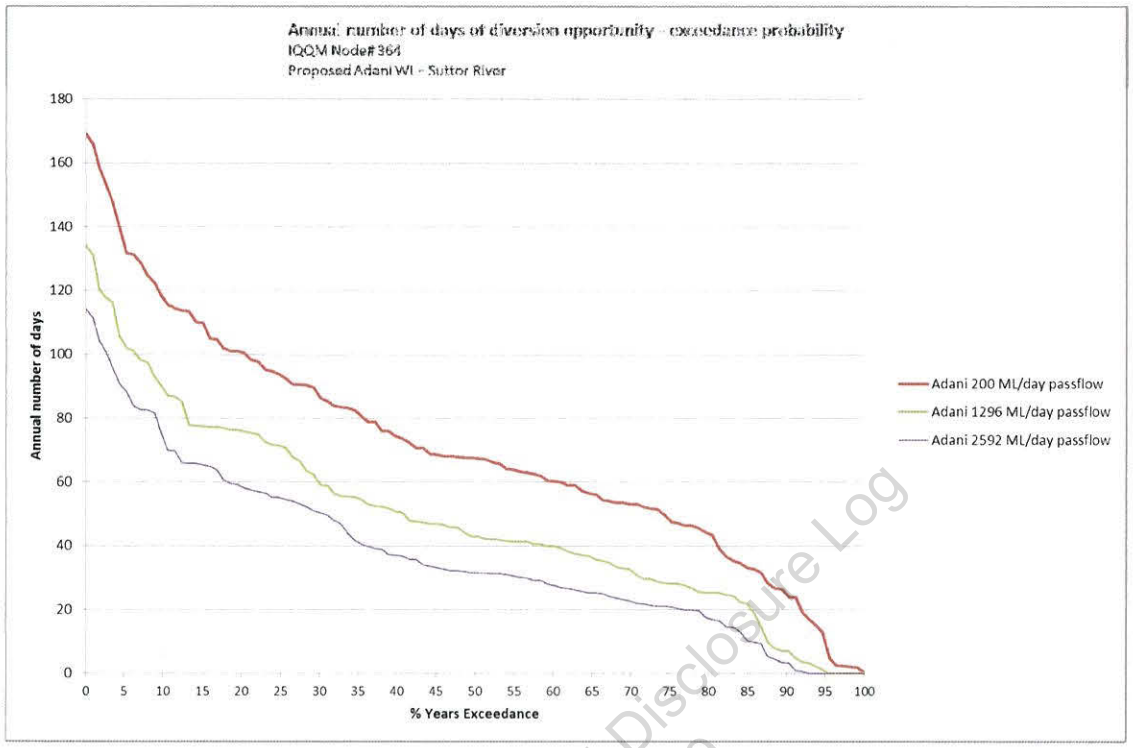
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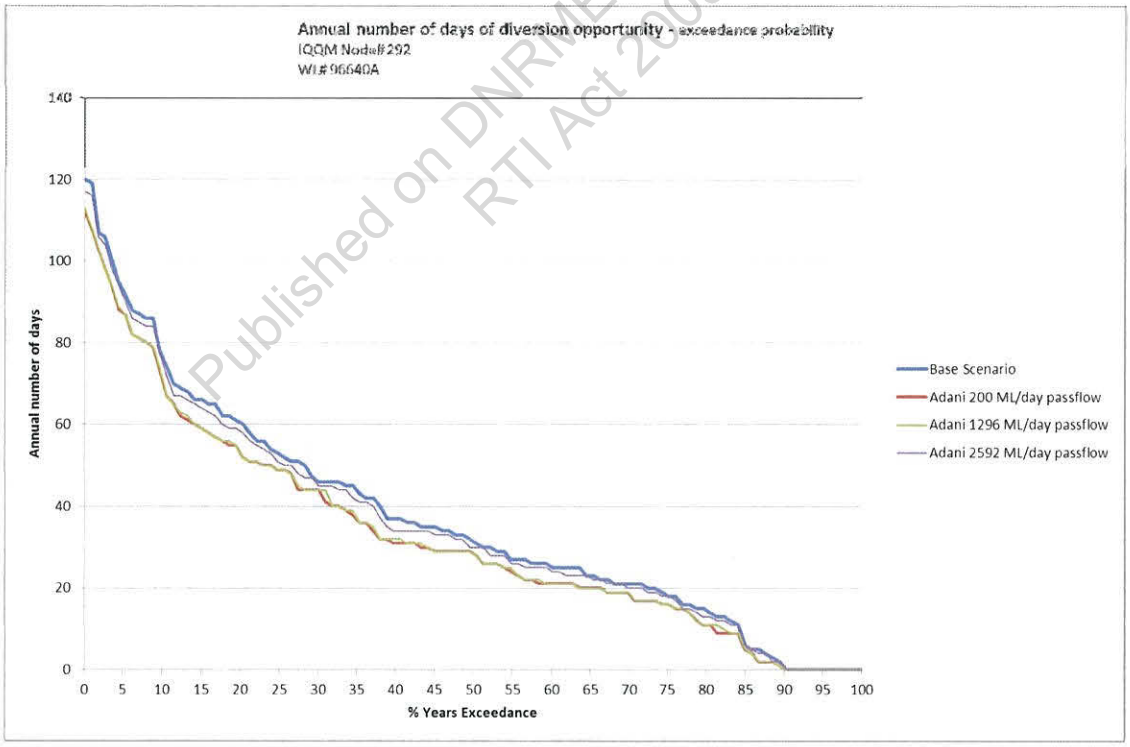
Table 12 - Hydrologic assessment results – 80th percentile annual days of diversion opportunity

Water product details			Base scenario	200 ML/day passflow condition		1296 ML/day passflow condition		2592 ML/day passflow condition	
IQQM Node No.	Suttor River water licence	Nominal entitlement volume (ML/water year)	Mean annual volume (ML/water year)	Mean annual volume (ML/water year)	% difference from Base	Mean annual volume (ML/water year)	% difference from Base	Mean annual volume (ML/water year)	% difference from Base
364	proposed diversion	12500	-	43		25		16	
291	55005A *Belyando anabranch*	560	26	26	0	26	0	26	0
292	96640A	5570	14	11	-3	11	-3	13	-1
293	52401A	2750	61	54	-7	61	0	61	0
300	52426A	3888	74	57	-17	74	0	74	0
302	57382A, 57383A & 57220A	1150	73	52	-21	73	0	73	0

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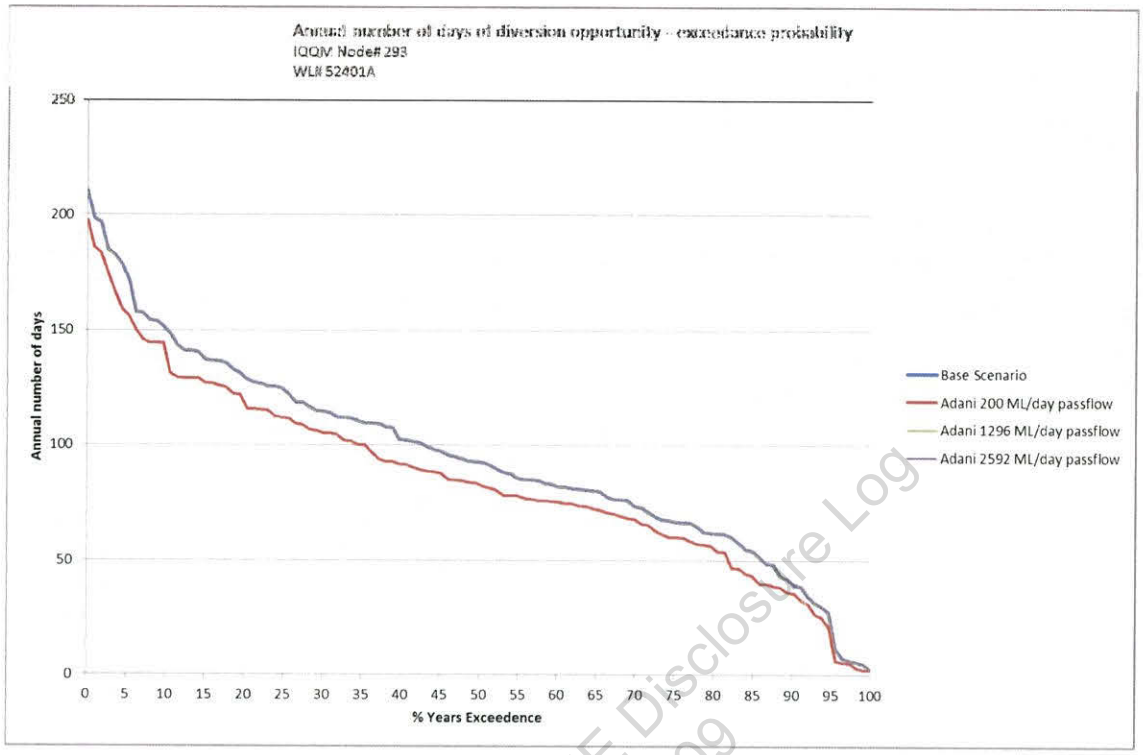
Figure 4 – Annual number of days of diversion plots

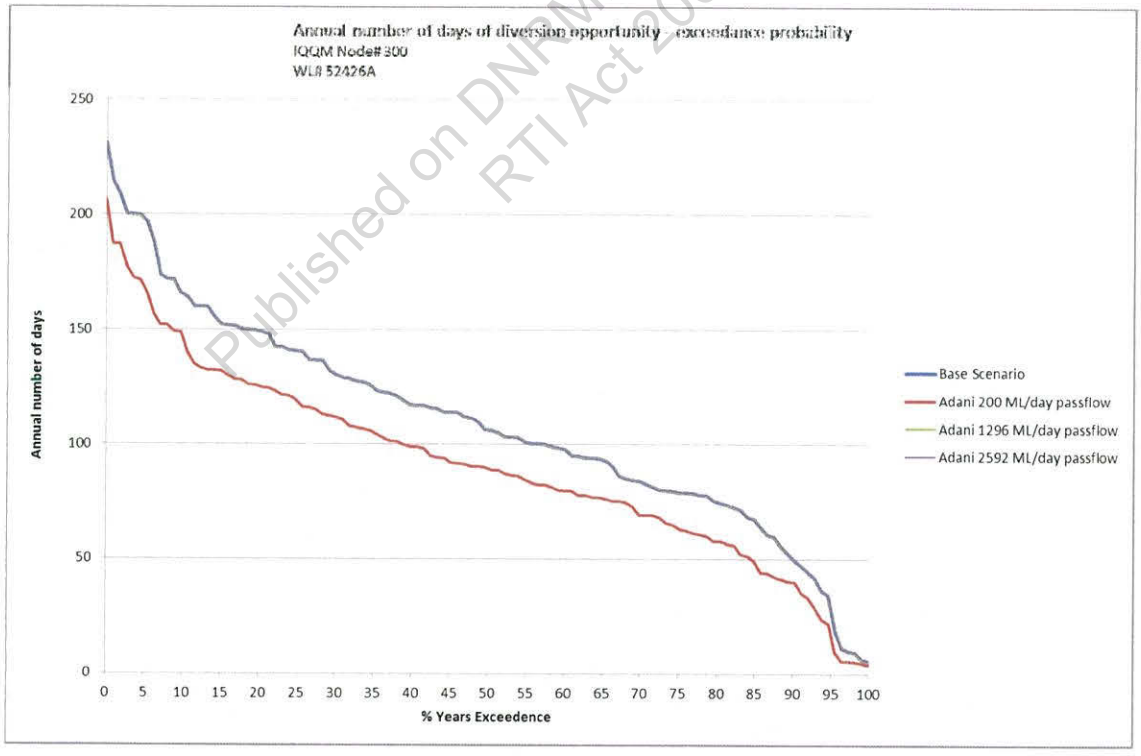




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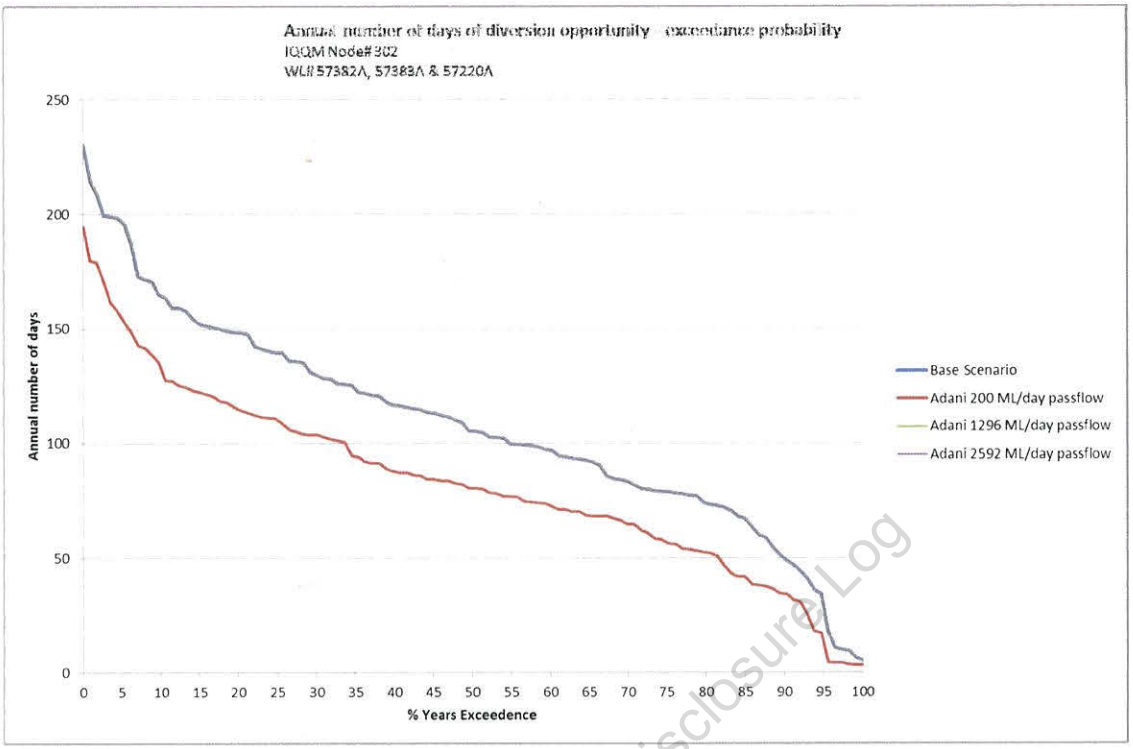
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Specification of water product for release of unallocated water from the strategic reserve in the Belyando-Suttor subcatchment area E of the *Water Plan (Burdekin Basin) 2007*

December 2016

Queensland Government

5/1/17

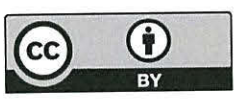
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1. Scope

The purpose of this document is to inform the Terms of Sale which may be decided by the chief executive (or authorised delegate) under section 18 of the Water Regulation 2016 (Water Regulation) to release unallocated water from the strategic reserve from subcatchment E of the Water Plan (Burdekin Basin) 2007 (Burdekin Basin WP). It provides for:

1. A review of matters under section 32 of the Burdekin Basin WP that the chief executive must consider in implementing a process to release unallocated water from the strategic reserve in the Belyando-Suttor subcatchment area E; and
2. Considers the specification of a water licence product to be included in the Terms of Sale for the water release process.

The following documents inform the review and the specification of the water product for release:

- The document submitted to the Department of Natural Resources and Mines (DNRM) by Adani Infrastructure Pty Ltd (Adani Infrastructure) titled, '*Supporting Information for an Application for a Water Licence to Take Unallocated Water from the strategic reserve in Sub-Catchment E of the Burdekin Basin',* published by CDM Smith, dated 27 October 2016 (Adani's Proposal);

- *'Targeted environmental review for specification of a water product for release of unallocated water from the strategic reserve in the Belyando-Suttor subcatchment area E of the Water Plan (Burdekin Basin) 2007*, Bernie Cockayne, David Sternberg and Gary Luck, DNRM. December 2016. (DNRM Targeted Environmental Review Report)[1]; and

- *'Hydrologic review for specification of a water product for release of unallocated water from the strategic reserve in the Belyando-Suttor subcatchment area E of the Water Plan (Burdekin Basin) 2007 (Impacts to Environmental Flow Objectives, Water Allocation Security Objectives and existing Suttor River entitlements)'*, Clayton Vale, DNRM. December 2016. (DNRM Hydrologic Review Report)[2].

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This document does not make an assessment of Adani's proposal, however the proposal is used with the other documents outlined to inform the review and specification of the water product for release. Assessment of any application received for the release of unallocated strategic reserve water will only occur if the chief executive or authorised delegate decides to issue Terms of Sale and an application is received in response.

[1] Technical review by Dr. Glenn McGregor, Principal Water Planning Ecology, Department of Science Information Technology Innovation (DSITI). Note, any changes made to the report between the technical review and report finalisation, were inconsequential to the technical content.
[2] Technical review by Dieu Phun, Senior Hydrologist, DSITI. Note, any changes made to the report between the technical review and report finalisation, were inconsequential to the technical content.

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2. Summary

Table 1 Summary of water product specification for release

Extraction Volume	12,500 ML per year (annual volumetric limit) 10,800 ML per year (mean annual volume)
Extraction Rate	830 ML per day (9600L/s)
Proposed Flow Thresholds	A 2,592 ML/day passflow threshold at St Anns gauging station 120303A

As part of the water planning process, water plans are developed through technical and scientific assessment as well as extensive community consultation, to determine the appropriate balance between the economic, social and environmental demands on the state's water resources. In developing a water plan, the size and nature of the resource is assessed to ensure that water is allocated within sustainable limits. Unallocated water is reserved under water planning instruments and can be made available for future consumptive use without compromising the security of existing users or the environmental values within a catchment. The total reserve mean annual volume in the Belyando-Suttor subcatchment E is 150,000 ML. This total reserve is made up of a general reserve of 130,000 ML and a strategic reserve for state purposes of 20,000 ML.

In determining a specified water product for release, DNRM has run multiple scenarios for hydrological and ecological review. Consideration of matters under section 32(2) of the Burdekin Basin WP (see Table 4) has determined that the criteria has been addressed for a water licence product specified in Table 1. The passflow threshold of 2,592 ML/day was determined by consideration of potential impacts to existing passflow thresholds of downstream entitlements on the Suttor River above the impounded area of Burdekin Falls Dam.

Using the parameters in Table 1 above, integrated water quantity and quality simulation model (IQQM) modelling has determined a Mean Annual Volume (MAV) of 10,800 ML/year using the hydrologic assessment period of 1890 to 2004. The annual probability to achieve this MAV is 84.2%.

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3.Background

3.1 Adani Infrastructure Pty Ltd

The proponent for the Carmichael Coal Project is Adani Mining Pty Ltd (Adani Mining), which is an Australian subsidiary of Adani Enterprises Ltd. All approvals, including current *Water Act 2000* (Water Act) approvals, are held in the name of Adani Mining. All previous consultation regarding the proposal to take unallocated water from the Belyando/Suttor Rivers has been with Adani Mining.

DNRM has been advised that it will be Adani Infrastructure who will be applying for water if unallocated water is released. Adani Infrastructure is also an Australian subsidiary of Adani Enterprises Ltd. Adani Infrastructure is a prescribed entity under Schedule 4 of the Water Regulation.

3.2 Adani Infrastructure Proposal

Adani Infrastructure has submitted a proposal to access unallocated water from the strategic reserve in the Belyando-Suttor subcatchment area E of the Burdekin Basin WP.

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Adani Infrastructure has indicated that its request for water is for the mine, off-lease infrastructure and construction of the 77 km reach of rail link to the North Galilee Basin Rail Project. Water for the North Galilee Basin Rail Project and Port of Abbot Point will be sought separately.

Adani Infrastructure proposes that it would need to take water from the Suttor River adjacent to Lot 3/SP278559 at AMTD 123 km, which is located downstream from the confluence of the Suttor and Belyando Rivers. The proposed location of take is approximately 34.3 km upstream from the St Anns Gauging Station, which is located at AMTD 88.7 km. Refer to Figure 1 for these locations. Refer to Table 1 for details on Adani's proposal.

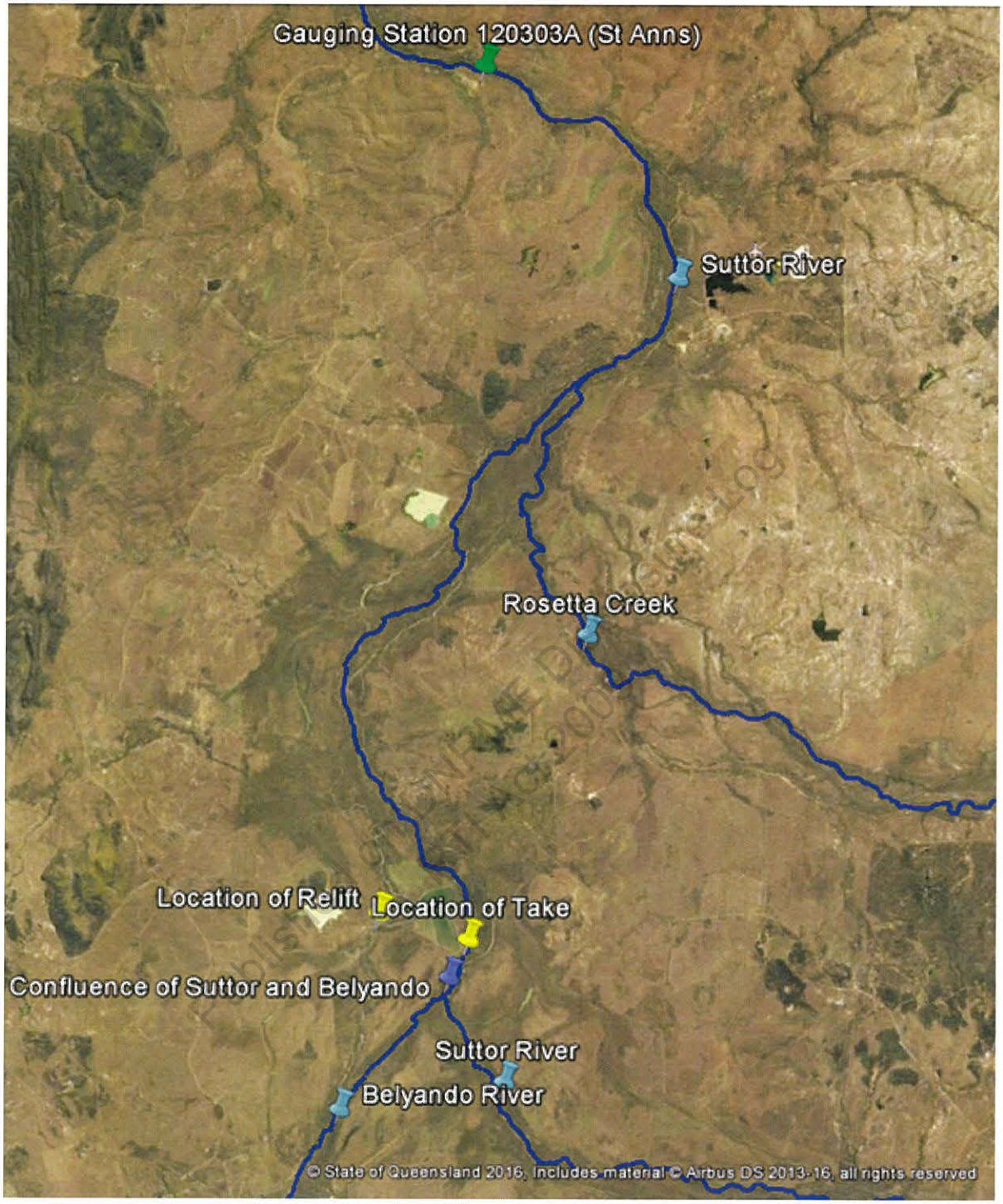
New water infrastructure is required to take water from the Suttor River and supply it to the required destinations. This infrastructure is referred to as the North Galilee Water Scheme Project. The below is an extract from Section 4.3.2 of Adani's proposal.

> *The proposed Suttor River intake channel will include a weir, constructed parallel to the existing bank, that will control inflow from the river and create a basin where water is lifted to an open channel via the Suttor River Pump Station. Water will then travel through an open channel approximately 2.8 km in length to a discharge location on the Belyando River Anabranch. An existing in-stream weir on the Belyando River Anabranch impounds water whereby a second intake channel, constructed at the Belyando River Anabranch invert level, will allow ingress of water to a basin where a second pump station is proposed. The Belyando River Anabranch Pump Station will lift water to the upgraded Belyando Junction Dam via dual buried Mild Steel Concrete Lined (MSCL) 1,626 mm diameter pipes, approximately 1.5 km in length and traversing a stock route (Lot A/A3529). Both pump stations will be powered by diesel and thus diesel storage tanks are required at each of the two pump station locations.*
>
> *The upgrade of the storage will involve increasing the capacity of the existing dam to a nominal 10 GL by adding an additional 5 GL cell adjacent to the south-west of the existing dam, and increasing the height of the existing north-eastern embankment.*

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Figure 1 Location of the proposed take and the St Anns Gauging Station



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Table 2 Adani's proposal

Proposal Details	
Proponent	Adani Infrastructure Pty Ltd
Proposed Activity details	The taking of water from the Suttor River with the point of take adjacent to Lot 3/SP278559. Transfer of water from the Suttor River to the Belyando River anabranch via the Suttor River pump station through a gravity channel. The Belyando River anabranch pump station will relift the water to the proposed offstream storage.
Proposed Purpose	Construction and operation of the Carmichael Coal Project and associated infrastructure.
Proposed Attached land	No attached land. Proponent is a prescribed entity under Schedule 4 of the Water Regulation. Proposal includes storage of water on Lot 3/SP278559 with distribution to Carmichael mine through infrastructure to be constructed.
Proposed Nominal Entitlement (ML or Ha)	12,500 ML annual volumetric limit to achieve 10,000 ML MAV. Note, the 10,000 ML MAV is referenced in Adani's Proposal. The 10,800 ML MAV is DNRM's reviewed volume.
Proposed Extraction rate	830 ML/day (equivalent to 9600 l/s)
Proposed passflow threshold	2,592 ML/day at St Anns gauging station 120303A
Documentation in support of proposal	Supporting Information for an Application for a Water Licence to Take Unallocated Water from the strategic reserve in Sub-Catchment E of the Burdekin Basin, published by CDM Smith, dated 27 October 2016 (Adani's proposal).

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4. Legislative Framework

4.1 *Water Act 2000*

The Water Act provides a framework for the sustainable management of Queensland's water resources by establishing a system for the planning, allocation and use of water (see section 2 of the Water Act).

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Chapter 2, Part 2 of the Water Act provides for the planning for the sustainable management of Queensland's water through, among other things, the preparation and implementation of water plans.

Chapter 2, Part 2, Division 3 of the Water Act provides for water plans that apply to parts of the State and advances the sustainable management of Queensland's water.

The Burdekin Basin WP is a plan for the sustainable management of water in the Burdekin Basin plan area.

Section 40 of the Water Act provides that the chief executive may release unallocated water if a volume is stated in a water plan or prescribed by regulation. If the chief executive decides to release unallocated water, then the release must be under the process prescribed by regulation, unless a water plan provides for an alternative process.

Section 116 of the Water Act provides that the chief executive may grant a water licence in accordance with a process for the allocation of water stated in a water plan, water management protocol or regulation without the need for an application to be made under section 107 of the Water Act.

4.2 Water Regulation 2016

Part 2 Division 2 Subdivision 2 of the Water Regulation prescribes the processes for release of unallocated water.

Section 16 of the Water Regulation prescribes the process for releasing unallocated water by public auction, or tender, or fixed price sale or grant for a particular purpose. It is recommended that the proposed release of unallocated water from the strategic reserve in the Belyando-Suttor subcatchment area E of the Burdekin Basin WP is to be completed through a fixed price sale. Refer to the 'Methods of Sale Briefing Paper' for further details.

Section 17 of the Water Regulation prescribes the process for public notice of availability of water. The chief executive may publish a notice about the availability of the water by fixed price sale, under section 17(4).

Section 18 of the Water Regulation provides that the chief executive may decide the terms of a sale of water or for granting water for a particular purpose. Refer to the 'Terms of Sale Briefing Paper' for further details.

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4.3 Water Plan (Burdekin Basin) 2007

The Burdekin Basin WP[3] applies to water in the plan area from a watercourse, lake or spring (not connected to water to which the Water Plan (Great Artesian Basin) Plan 2006 applies) and overland flow water (other than water in springs not connected to water to which the Water Plan (Great Artesian Basin) Plan 2006 applies.[4]

The Burdekin Basin WP provides that:

- Unallocated water may be granted from the general, strategic or SunWater reserve under a process in the resource operations plan (see section 31).
- Unallocated water may be dealt with under a process in the resource operations plan (see section 32).
- In preparing and implementing the process, the chief executive must consider certain matters which are set out in section 32.

The below are considerations regarding the unallocated water process in the Burdekin Basin WP and the relevant sections for these are included in Table 4:

- Outcomes for the sustainable management of water,
- Environmental management rules,
- A process for granting unallocated water from the strategic reserve under a process defined in the Burdekin Basin ROP,
- Preparation and implementation of an unallocated water process under the Burdekin Basin ROP,
- Minimum parameters that must be stated on a water licence to take or interfere with unsupplemented water from a watercourse, lake or spring.

Refer to Table 4 for specific criteria to be considered under the Burdekin Basin WP outlining the review of the proposed release against the criteria and considerations.

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4.4 Burdekin Basin Resource Operations Plan 2009 (amended 2010)

Chapter 2 of the Burdekin Basin ROP[5] sets out the process for making available and dealing with unallocated water, including unallocated water held as strategic reserve for state purposes[6]. Section

---

[3] From the commencement of the *Water Reform and Other Legislation Amendment Act 2014* (WROLA) on 6 December 2016, the Water Resource (Burdekin Basin) Plan 2007 continues in force as a 'water plan' (see section 1256(1) of the Water Act).

[4] See s 10 of the Burdekin Basin WP.

[5] The provisions of the Burdekin Basin ROP are taken to be, or to have effect for, a number of other documents under the Water Act as amended by WROLA (see sections 1259 and 1264 of the Water Act). Section 1266 of the Water Act allows references to resource operations plans to, where the context permits, be taken to be a reference to the document that is relevant to the reference as specified under the Water Act as amended by the WROLA on 6 December 2016.

[6] While sections 1256 and 1259 of the Water Act transitions the Burdekin Basin WP into a water plan and the Burdekin Basin Resource Operations Plan 2009 into a water plan, water management protocol, operations manuals, resource operations licences and distribution operations licences respectively, the Burdekin Basin ROP has not been republished in this new form. Therefore references to section numbers in the planning instruments reflect numbering under the current published format.

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38 of the Burdekin Basin ROP states that the process for making unallocated water available is the process described in Part 2, Division 1C of the Water Regulation 2002[7].

In preparing and implementing a process under the ROP, the chief executive must consider the matters set out in section 32 (2) of the Burdekin Basin WP.

The Burdekin Basin ROP determines the strategic reserve, including a volume of unallocated water for state purposes, raising Burdekin Falls Dam and water infrastructure for the Bowen and Broken subcatchments, primarily intended for industrial use.

Section 32 of the Burdekin Basin ROP defines the general and strategic reserves for each subcatchment in the plan area which are outlined in Table 3. The proposed activity location for this proposal is within subcatchment E, as can be seen in Figure 2 which has a strategic reserve mean annual volume of 20,000 ML.

Refer to Table 4 for specific criteria to be considered under the Burdekin Basin ROP outlining the review of the proposed release against the criteria and considerations.

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Table 3 Reserve volumes that may be granted as a water allocation or a water licence

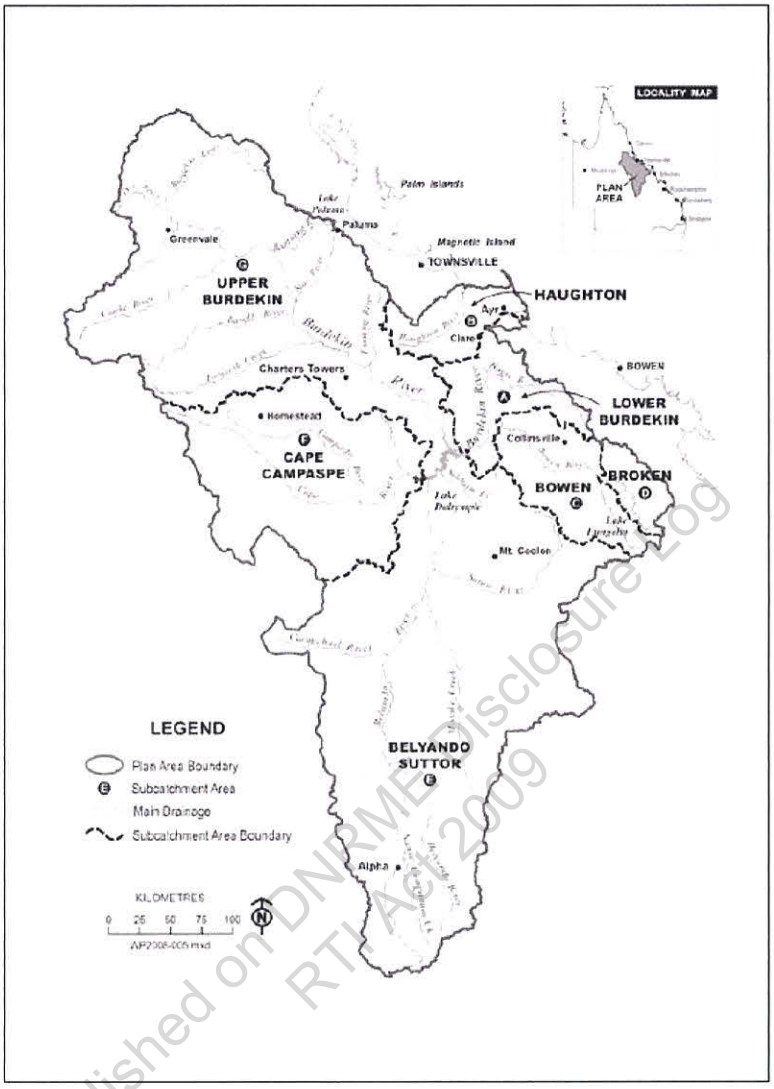
Reserved purpose	Mean annual volume (ML) by subcatchment area							
	A	B	C	D	E	F	G	Total
General reserve	50 000	5000	0	0	130 000	5000	10 000	200 000
Strategic reserve for state purposes	0	0	0	0	20 000	5000	10 000	35 000
TOTAL								235 000

Figure 2 Burdekin Basin Plan Area and Subcatchment Area Boundaries

[7] The *Water Regulation 2002* was repealed by the Water Regulation 2016 (2016 Regulation) on 6 December 2016. Section 145 of the 2016 Regulation states that a reference in an Act or other document to the repealed *Water Regulation 2002* may, if the context permits, be taken to be a reference to the 2016 Regulation. Part 2, division 2, subdivision 2 of the 2016 Regulation sets out substantially identical provisions to Part 2, Division 1C of the *Water Regulation 2002*. In this way, the context permits that the reference to Part 2, Division 1C of the *Water Regulation 2002* in the Burdekin ROP may be taken to be a reference to the equivalent provisions in the 2016 Regulation.

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Plan Area and Subcatchment Area Boundary



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5. Review under the Burdekin Basin WP and ROP

Table 4 below lists each criteria to be considered under the Burdekin Basin WP and Burdekin Basin ROP for the proposed release of a specified water product from the strategic reserve of the Belyando-Suttor subcatchment E.

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Table 4 Review of proposed release against legislative criteria

Burdekin Basin WP considerations:			
WP Section	**Criteria**	**Sub-Criteria**	**Review of proposed release against criteria**
Section 11	**Outcomes for water in plan area** Water is to be allocated and sustainably managed in a way that—	(a) recognises the natural state of watercourses, lakes and springs has changed because of water infrastructure, flow supplementation and the taking of water; and	The Burdekin Basin WP manages the allocation of water from a watercourse and provides for the grant of unallocated strategic reserve water under a process defined in the Burdekin Basin ROP. The below criteria are required to be considered under section 32 of the Burdekin Basin WP in preparation for and implementation of a release process. The Burdekin Basin ROP provides the availability of strategic reserve water in subcatchment E of Burdekin Basin WP. The location of take of interest to Adani Infrastructure is below the confluence of the Belyando and Suttor Rivers, located in subcatchment E. Impacts on the take of water and the natural state of the watercourse have been considered in the criteria below, in particular the consideration of ecological outcomes. The allocation of strategic reserve water is temporary in that section 40 of the Burdekin Basin ROP requires that water licences granted from the strategic reserve for state purposes must include a condition on the licence that the authorisation to take the water returns to the State on the conclusion of the project of State significance.
		(b) seeks to achieve a balance in the following outcomes— (i) the general outcomes mentioned in section 12;	Refer to section 12 below for considerations.
		(b) seeks to achieve a balance in the following outcomes— (ii) the general ecological outcomes mentioned in section 13;	Refer to section 13 below for considerations.

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		(b) seeks to achieve a balance in the following outcomes— (iii) the specific ecological outcomes mentioned in section 14	Refer to section 14 below for considerations.
Section 12	**General outcomes** Each of the following is a general outcome for water in the plan area—	(a) to provide for the use of all water entitlements and other authorisations in the plan area;	The intent of the general outcomes of the Burdekin Basin WP involve protecting river health, protecting existing water user access, promoting water use efficiency and providing for future water requirements. Hydrological review of impacts to downstream entitlements on the Suttor River has been undertaken by both Adani Infrastructure in their proposal and DNRM's Hydrologic Review Report, which is included as Appendix 1. This review concluded that downstream users were not impacted by the passflow threshold of 2,592 ML/day, except for water licence 96640A. The impacts identified are minimal (<1% MAV). It is recommended that the conditions of water licence 96640A are reviewed during the Burdekin Basin WP amendment that will further mitigate the impacts. Refer to Section 32(2)(e) of this Table for further information on the background relating to the development of conditions for water licence 96640A. All downstream Suttor River entitlement holder's opportunity to divert is not impacted with a passflow threshold of 2,592 ML/day, except for water licence 96640A, which has an impact of on average up to 1 annual day of pumping opportunity. Refer to Section 32(2)(e) of this Table for further information on how diversion opportunity was reviewed. The proposed take of water was included in the Burdekin Basin ROP scenario where all water security objectives (WASOs) and environmental flow objectives (EFOs) were assessed to be met. The Burdekin Basin ROP scenario includes existing entitlements and unallocated water reserves.

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		(b) to provide for the continued use of all existing overland flow works;	The proposed take of water is from the Suttor River and the Belyando Anabranch, which are both determined to be watercourses under the Water Act (therefore not considered overland flow). The Belyando Junction Property, Lot 3/SP278559, in which the storage (including the proposed upgrade works) and channel associated with the take is located, is riparian to the Suttor River and is traversed by the Belyando Anabranch i.e. there are no other properties between the works and these watercourses, therefore there is no impact to any existing overland flow interference or capture.
		(c) to protect the probability of being able to take water under a water allocation;	There are currently no water allocations granted in the Belyando-Suttor subcatchment E of the Burdekin Basin WP. A Statement of Proposals for a proposed targeted amendment to the Burdekin Basin WP has been released for public consultation. The proposed amendment will focus on the subcatchments upstream of Burdekin Falls Dam—namely the Belyando-Suttor, Cape-Campaspe, and Upper Burdekin subcatchments. The proposed amendment will better define entitlements and establish tradeable water allocations aimed at providing security of access for existing water users while allowing for creation and potential future expansion in water markets. The targeted amendment will not impact on the decision to release unallocated water from the Belyando-Suttor subcatchment E of the Burdekin Basin WP. The passflow threshold of 2,592 ML/day is considered sufficient to allow other water users to access their current entitlements and is unlikely to have an effect on the probability of being able to take water under a water allocation in the future. The passflow threshold of 2,592 ML/day ensures the opportunity to divert is not impacted on for all downstream Suttor River entitlements, except for water licence 96640A, which has an impact of on average up to 1 annual day of pumping opportunity.

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			The allocation of strategic reserve water in this location is temporary of nature, in that section 40 of the Burdekin Basin ROP requires that any water licences granted from the strategic reserve for state purposes must include a condition on the licence that the authorisation to take the water returns to the State on the conclusion of the project of State significance.
		(d) to make water available to support— (i) population growth in towns and communities dependent on surface water resources in the plan area; and	The proposed location of take from the Suttor River is adjacent to the Belyando Junction Property, Lot 3/SP278559, which is located in the Charters Towers Regional Council local government area. IQQM modelling shows that the proposed take would not adversely impact the capacity of the Burdekin Falls Dam. The populations in the Belyando-Suttor subcatchment are situated predominantly on pastoral holdings with only a few small urban communities existing. There are currently no immediate demands for unallocated water for town water supplies and from the primary urban centres of Alpha, Moranbah and Nebo. If there were, specific water supply solutions could be investigated, as the proposed release would only make up a portion of the strategic reserve in this subcatchment and therefore there will be remaining reserve available for town water supply.
		(d) to make water available to support— (ii) growth in industries dependent on surface water resources in the plan area;	There are various coal mining developments being explored in the Galilee Basin by prospective mining companies, including Adani Mining. These potential developments are progressing at different rates with each company seeking independent solutions for the provision of secure and reliable water supplies. The total reserve mean annual volume in the Belyando-Suttor subcatchment E is 150,000 ML. This total reserve is made up of a general reserve of 130,000 ML and a strategic reserve for state purposes of 20,000 ML. These reserves have been identified by industry as a possible water supply option. The proposed release would only make up a portion of the

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			strategic reserve in this subcatchment and therefore there will be remaining reserve available. Adani Infrastructure is the only current proponent that has a project deemed to be of state significance formally seeking a grant from the strategic reserve. Adani's proposal is to access a mean annual volume of 10,000 ML of the strategic reserve volume in order to meet the Project's operational demand. DNRM's review of a nominal entitlement of 12,500 ML will provide for a mean annual volume of 10,800 ML, with an annual probability of 84.2%.
		(e) to make water available in the Lower Burdekin and Haughton subcatchments to support— (i) water supplies for Townsville and Thuringowa; and (ii) growth in irrigated agriculture in the Lower Burdekin, Gumlu and Bowen areas; and (iii) water supplies for other urban, industrial and mining uses; and (iv) the natural and artificial recharge of the Lower Burdekin delta groundwater system;	The proposed release of unallocated water is located upstream of Burdekin Falls Dam. Modelling results support there is no change to WASO performance. Refer to Figure 2 to show the location of the Lower Burdekin and Haughton subcatchments A and B with respect to the Belyando-Suttor subcatchment E.
		(f) to make water available in the Upper Burdekin subcatchment to support— (i) growth in irrigated agriculture; and (ii) water supplies for Charters Towers, Dalrymple Shire and the mining industry;	The Upper Burdekin subcatchment is not hydrologically connected to the Belyando-Suttor subcatchment and therefore this criteria is not applicable to the proposed release of unallocated water in the Belyando-Suttor subcatchment E. Refer to Figure 2 to show the location of the Upper Burdekin subcatchment G with respect to the Belyando-Suttor subcatchment E.
		(g) to make water available in the Belyando-Suttor subcatchment to support growth in irrigated agriculture;	The total reserve MAV in the Belyando-Suttor subcatchment E is 150,000 ML. The total reserve is made up of a general reserve of 130,000 ML and a strategic reserve for state purposes of 20,000 ML. The general reserve is

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			available as a possible water supply option for irrigators. DNRM has previously provided an online state-wide registration of interest in general reserve unallocated water, where people could register an interest directly. This process provided information to assess the demand for unallocated water across the state with the intention of a prioritisation program to be developed for future releases of unallocated water. For the Burdekin Basin, there is currently no mechanism in place for the release of water from the general reserve. It should be noted that in other release processes, DNRM has applied an agricultural strategy, where caps have been set on industrial access to the general reserve, to ensure water is available for agriculture. The proposed release of unallocated water will be from the strategic reserve.
		(h) to make water available in the Bowen and Broken subcatchments to support water supplies for urban, industrial, mining and other uses at Collinsville and in neighbouring areas;	The Bowen and Broken subcatchments are not hydrologically connected to the Belyando-Suttor subcatchment and therefore this criteria is not applicable to the proposed release of unallocated water in the Belyando-Suttor subcatchment E. Refer to Figure 2 to show the location of the Bowen and Broken subcatchments C and D with respect to the Belyando-Suttor subcatchment E.
		(i) to manage access to water to support the ongoing management of the Lower Burdekin delta groundwater system;	The proposed release of unallocated water is located upstream of Burdekin Falls Dam. Therefore, there should not be impacts of the proposed take of water on the Lower Burdekin delta groundwater system which is located downstream of the Dam. This criteria is therefore not applicable to the proposed release of unallocated water in the Belyando-Suttor subcatchment E.

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		(j) to encourage continual improvement in the efficient use of water;	Water use efficiency has been identified, through section 4.2.1 of Adani's Proposal which has sufficiently considered their water use efficiency practices to inform the chief executive that the request for the release of strategic reserve water has a basis that provides for efficient use of the resource. Efficient use of water will be thoroughly assessed through the application process after the chief executive releases the unallocated strategic reserve water.
		(k) to support water-related cultural values of Aboriginal and Torres Strait Islander communities in the plan area;	This criteria will be considered along with Criteria (l) below as requiring the same outcomes for the ongoing supply of water to support natural ecosystem processes. The health of rivers and associated floodplains is intimately linked to cultural values.
		(l) to ensure water is available to support natural ecosystem processes	Adani Infrastructure has provided a range of scenarios about the release of unallocated water, and in determining a specified water product for release, DNRM have run multiple scenarios to address these. Adani's proposal identifies ecological outcomes in sections 5.5-5.8 using WP Node 11 (i.e. Suttor River confluence with Burdekin River) as the reporting node. DNRM does not believe that Adani Infrastructure's use of Node 11 truly reflected the potential localised ecosystem effects and therefore reviewed this further at the upstream Node 306 (St Anns Gauging Station 120303A). DNRM considered the potential risk to ecological processes of downstream lagoons regarding Adani's proposal. The outcomes are included in the DNRM Targeted Environmental Review Report and is included as Appendix 2, and primarily conclude that: • The biodiversity values for the Scartwater wetland aggregation are unlikely to be adversely impacted by the 2,592ML passflow

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			threshold and therefore there is a low risk of impacting upon these wetland listed on the Directory of Important Wetlands in Australia (DIWA). • Lagoons located in the lower parts of the floodplain show no increased risk through the Adani development scenarios. Therefore there is unlikely to be any major changes to the environmental values these lagoons support. • It has been identified that lagoons located higher on the floodplain will have a reduced number of filling opportunities and increased spells between these events with the Adani development scenario and further release of unallocated water (strategic and general) in the Suttor River below the Belyando junction. This location provides increased opportunity within subcatchment E and cumulative impacts of potential diversion are likely to impact lagoons located higher on the floodplain. This potentially indicates an additional risk not only to the lagoon aquatic ecosystems, but also to other long-lived floodplain water-dependent ecosystems (e.g. floodplain vegetation communities, including some of-concern and endangered remnant regional ecosystems). • This potential risk is acceptable at this time, as the general reserve has not yet been accessed and the strategic reserve will also have a remaining volume. However, DNRM will have to further review the reliability offered for any water products as part of any future release process proposed from this reach of the Belyando-Suttor subcatchment. DNRM's ecological review of the proposed water product for release demonstrated a low risk to most of the lagoons and most of the remaining assets (e.g. instream habitats, WQ, etc.) being unduly affected. A 2,592 ML/day pass flow would ensure continuation of natural flow variability to the downstream environment.

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Section 13	**13 General ecological outcomes** (1) Each of the following is a general ecological outcome for water in the plan area—	(a) to maintain the natural variability of flows that support the habitats of native plants and animals and migratory birds in watercourses, floodplains, wetlands, lakes and springs;	Refer to section 12(l) above for consideration.
		(b) to provide for the continued capability of one part of a river system to be connected to another, including by maintaining flood flows that— (i) allow for the movement of native aquatic fauna between riverine, floodplain, wetland, estuarine and marine environments; and (ii) deliver nutrients and organic matter throughout the plan area to support natural processes such as breeding, growth and migration in riverine, floodplain, wetland, estuarine and marine environments; and (iii) deliver water and sediments throughout the plan area to support river-forming processes;	Refer to section 12(l) above for consideration.
		(c) to minimise changes to natural variability in water levels and to support natural ecological processes, including maintaining refugia associated with waterholes and lakes particularly in the Belyando-Suttor subcatchment;	Refer to section 12(l) above for consideration.
		(d) to promote improved understanding of the matters affecting the flow-related health of ecosystems in the plan area;	Refer to section 12(l) above for consideration.

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		(e) to maintain flooding in the Lower Burdekin and Haughton subcatchments to provide freshwater inputs to wetlands on the Burdekin Haughton floodplain;	The proposed release of unallocated water is located upstream of Burdekin Falls Dam. The Lower Burdekin and Haughton subcatchments are contained within the Burdekin Basin ROP IQQM however are not impacted by extractions from the Suttor River due to the volume of the Dam and the contribution of other catchments providing inflows. Therefore, it is considered that any proposed release of unallocated water from the Belyando-Suttor subcatchment E will not impact on the flooding regime required to provide freshwater inputs to wetlands on the Burdekin Haughton floodplain. Refer to Figure 2 to show the location of the Lower Burdekin and Haughton subcatchments A and B with respect to the Belyando-Suttor subcatchment E.
		(f) to provide a flow regime that— (i) maintains delivery of fresh water to the estuaries of watercourses and the Great Barrier Reef Lagoon; and (ii) maintains natural sedimentation processes to support the replenishment of beaches along the Burdekin Haughton floodplain and Cape Bowling Green; and (iii) supports productivity in the receiving waters of the Great Barrier Reef and inshore reefs.	Refer to section 12(e) above for consideration.
	(2) In this section—	***refugia*** means the habitat required by a species during a time of stress, including, for example, drought.	
Section 14	**Specific ecological outcomes** Each of the following is a specific ecological outcome for water in the	(a) to maintain the natural continuity of flow from immediately downstream of the Charters Towers Weir to the upstream limit of the impounded area of the Burdekin Falls Dam;	The Upper Burdekin subcatchment is not hydrologically connected to the Belyando-Suttor subcatchment and therefore this criteria is not applicable to the proposed release of unallocated water in the Belyando-Suttor subcatchment E. Refer to Figure 2 to show the location of the Upper Burdekin subcatchment G with respect to the Belyando-Suttor

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	plan area—		subcatchment E.
		(b) to maintain connectivity between Mistake Creek and its adjacent floodplain system during floods;	Mistake Creek is located in the upper Belyando-Suttor subcatchment and enters the Belyando River upstream of the proposed point of the release. Therefore, it is not considered that the proposed release of unallocated water in this particular location of the Belyando-Suttor subcatchment will impact on the connectivity between Mistake Creek and the adjacent floodplain system during floods. Refer to Figure 2 to show the location of Mistake Creek with respect to the confluence of the Belyando and Suttor Rivers within subcatchment E.
		(c) to minimise adverse impacts on the morphology of watercourses, waterholes, lakes and springs, used for taking supplemented water, in the Burdekin Haughton Water Supply Scheme;	The proposed release of unallocated water is located upstream of Burdekin Falls Dam. The Lower Burdekin and Haughton subcatchments are contained within the Burdekin ROP IQQM however are not impacted by extractions from the Suttor River due to the volume of the Dam and the contribution of other catchments providing inflows. Therefore, the proposed release of unallocated water in the Belyando-Suttor subcatchment E will not impact on the morphology of watercourses, waterholes, lakes and springs used for taking supplemented water in the Burdekin Haughton Water Supply Scheme. Refer to Figure 2 to show the location of the Lower Burdekin and Haughton subcatchments A and B with respect to the Belyando-Suttor subcatchment E.
		(d) to ensure there are no further impacts on natural creek flows in the Barratta Creek system;	The Haughton/Barratta creeks are not hydrologically connected to the Belyando-Suttor subcatchment and therefore this criteria is not applicable to the proposed release of unallocated water in the Belyando-Suttor subcatchment E. Refer to Figure 2 to show the location of the Barratta Creek System with respect to the Belyando-Suttor subcatchment E.

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		(e) to provide a flow regime that supports fish passage in the river reaches from the Clare Weir impoundment to the mouth of the Burdekin River;	The proposed release of unallocated water is located upstream of Burdekin Falls Dam. The reach from the Clare Weir impoundment to the mouth of the Burdekin River is not impacted by extractions from the Suttor River due to the volume of the Dam and the contribution of other catchments providing inflows. The proposed release of unallocated water from the Belyando-Suttor subcatchment E does not impact on a flow regime that supports fish passage in the river reaches from the Clare Weir impoundment to the mouth of the Burdekin River.
		(f) to provide a flow regime that supports fish passage in the river reaches to the mouth of the Haughton River.	The proposed release of unallocated water is located upstream of Burdekin Falls Dam. The river reaches to the mouth of the Haughton River is not impacted by extractions from the Suttor River due to the volume of the Dam and contribution of other catchments providing inflows. This proposed release of unallocated water from the Belyando-Suttor subcatchment E will not impact on a flow regime that supports fish passage in the river reaches to the mouth of the Haughton River.
Section 32	**Preparing and implementing process under the resource operations plan generally** (1)Unallocated water may be dealt with under a process in the resource operations plan.		Section 38 of the Burdekin Basin ROP (see below in the Burdekin Basin ROP considerations of this Table) refers to the process for making unallocated water available.
	(2)In preparing and implementing the process, the chief executive must consider the following—	(a) the purpose for which the water is required;	Section 4.2 of Adani's Proposal indicates the water required is for the purpose of construction and operational stages of the Carmichael Coal Mine and Rail Project. The purpose for which this water is required has been sufficiently defined by Adani Infrastructure and is consistent with the volumes requested for release. It is considered that Adani's proposal is sufficient to inform the purpose that would be attributed to the Terms of Sale by the chief executive

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		(b) the efficiency of existing and proposed water use practices;	Water use efficiency has been identified, through Section 4.2.1 of Adani's Proposal which has sufficiently considered their water use efficiency practices to inform the chief executive that the request for the release of strategic reserve water has a basis that provides for efficient use of the resource. Efficient use of water will be thoroughly assessed through the application process after the chief executive releases the unallocated strategic reserve water.
		(c) the extent to which water is being taken under existing authorisations in the plan area;	Both Adani's Proposal and the DNRM Hydrologic Review Report have taken into consideration the extent to which water is being taken under existing authorisations in the plan area. While there is no metered use records for specific entitlements, the IQQM Modelling undertaken assumes that all existing entitlements are being fully utilised.
		(d) the availability of an alternative water supply for the purpose for which the water is required;	Section 4.2.2 of Adani's Proposal addresses alternative supply options in relation to the Carmichael Coal Mine and Rail Project. A summary of the information is included below. Adani Infrastructure has undertaken analysis of various water supply options including local (Belyando River, Mistake Creek and Groundwater) and regional supplies (Suttor River, access to Burdekin Moranbah pipeline and access to Burdekin Falls Dam). Adani Infrastructure states that the most reliable and economically viable water supply was from Mistake Creek, Belyando River, groundwater supplies and Suttor River. Adani Infrastructure advised that they considered various extraction points along the Belyando River, Suttor River and Mistake Creek. From IQQM modelling undertaken, two points from sources adjacent to the Belyando Junction property (Lot 3/SP278559) found to be the most economic and flexible operating scenarios. Scenarios produced for the

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			Suttor River as a location provided a higher yield. The Moranbah to Burdekin Pipeline was considered as a fall back option, however would cause at least a 12 month delay in the project and an additional 126 km of pipeline. Adani Infrastructure has sufficiently defined where alternative sources of water may be available and why they have chosen to request a release of unallocated strategic reserve water from subcatchment E of the Burdekin Basin.
		(e) the impact the proposed taking of, or interfering with, the water may have on existing water users in the plan area;	Hydrological review of impacts to downstream entitlements on the Suttor River has been completed by both Adani Infrastructure (Adani's Proposal) and DNRM (DNRM Hydrologic Review Report). The purpose of DNRM's Hydrologic Review Report was to determine a proposed water product for release that meets the objectives outlined in the Burdekin Basin WP, and consider the potential impacts on existing downstream Suttor River entitlements. DNRM considered a number of passflow thresholds, however the 2,592 ML/day passflow threshold was considered to be the most appropriate for the location of take proposed. Modelling confirms that this passflow threshold allows access to flows for downstream entitlements and stock and domestic use. <u>WASOs and EFOs</u> The hydrological review concludes that both the Burdekin Basin WP WASOs and the Burdekin Basin WP EFOs are met. <u>MAV</u> A passflow condition of 2,592 ML/day only indicates a very minor (<1%) impact to one downstream entitlement, water licence 96640A. This minor difference is a result of the differences to the conditions between water

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			licences 96640A and the proposed water product for release. Water licence 96640A has additional conditions that further restrict diversion opportunity before the take of water can occur at a common passflow condition of 2,592 ML/day. It must be noted that the passflow condition on water licence 96640A was imposed to mitigate potential impacts to downstream lagoons and the Burdekin Haughton Water Supply Scheme prior to the development of the Burdekin Basin WP. DNRM's Hydrologic Review Report use of the IQQM shows that when flow volumes in the Suttor River reach at least 2,592 ML/day it is highly probable that much larger daily flow volumes will occur supporting beneficial flooding to the downstream lagoons. A recommendation out of the DNRM Hydrologic Review Report is to revise the conditions of water licence 96640A to ensure the holder of this licence has equitable access to Suttor River flows. In addition, a simplified passflow condition will also assist development of potential future water trading options. <u>Diversion Opportunity</u> The IQQM annual volume of diversion results may not indicate impacts to diversion opportunity for downstream entitlements i.e. annual volume totals do not indicate variance of when water was taken during the year and may not indicate impacts of opportunity to divert. To provide a measure of impacts to diversion opportunity of Suttor River entitlements, the IQQM was used to review the diversions with the nominal entitlement volume (annual cap of diversion) removed. The results are reported using annual number of days of diversion. These results outline that the impact of the proposed water product for release may be perceived to be greater than the mean annual volumes of diversion indicate. Under the 2,592 ML/day passflow condition, the impacts only occur to water licence 96640A. On average up to 1 annual day of pumping opportunity will be impacted for the 2592 ML/day passflow condition.

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		(f) whether the proposed taking or interfering is likely to have a direct adverse effect on groundwater flows;	Under a passflow threshold of 2,592 ML/day, flow in the Suttor River will be maintained during extraction periods. During these times, recharge of shallow alluvial groundwater systems associated with the Suttor River is unlikely to be impacted by the extraction. Therefore it is not considered that the take of water from the Suttor River under this passflow threshold will have an adverse impact on groundwater flows.
		(g) the matters mentioned in section 23(1)(a) and (b).	See section 23 (1) (a) and (b) further below in this Table.
	(3) The resource operations plan must state that use, for irrigation, of water taken under a water licence granted under the process requires a land and water management plan approved under section 77 of the Act.		The proposed release is of unallocated water from the strategic reserve of the Belyando-Suttor subcatchment E for state purposes. This criteria does not apply.
	(4) Subsection (2) does not limit the matters the chief executive may consider.		No other matters have been considered.

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Section 23	(1) In deciding the environmental management rules to be included in the resource operations plan, the chief executive must consider—	(a) the streamflows required to maintain the following— (i) the longitudinal connectivity of low flow habitats throughout river systems in the plan area; (ii) the wetted habitats at riffles and other streambed features; (iii) the natural seasonality of flows and zero flows; (iv) the replenishment of refuge pools that enable movement of instream biota; (v) the lateral connectivity between rivers in the plan area and their adjacent riverine environments including floodplains.	As mentioned previously in section 12 (l), Adani Infrastructure identifies ecological outcomes in sections 5.5-5.8 of Adani's proposal. Adani Infrastructure does not specifically address the matters in section 23 (1) (a), instead referring to EFOs for the Burdekin Basin WP Node 11. The use of the Burdekin Basin WP Node 11 does not reflect the potential localised effects at the Suttor River between the Suttor/Belyando junction and the Burdekin Falls Dam impoundment. Both the work undertaken by Adani Infrastructure and DNRM have shown that the 2,592 ML/day passflow threshold will have negligible impact to the filling and flushing of Scartwater Lagoon, a DIWA listed wetland. There is, however, a modelled higher risk to the replenishment of lagoons in the upper floodplain, such as Blackwater and Longweed Lagoons, with a reduced number of filling opportunities and increased spells between these events. It is to be noted that the potential risk is based on the scenario of the unallocated water reserves being fully allocated. This potential risk is acceptable at this time, as the general reserve has not yet been accessed and the strategic reserve will also have a remaining volume. However, DNRM will have to further review this potential risk as part of any future release process for any water products proposed from this location. While further monitoring and data review will reveal the streamflow requirements to maintain longitudinal connectivity (section 23 (1) (a) (i)) and risk to associated habitats (section 23 (1) (a) (ii – iv)), there is sufficient evidence from a water quality perspective which supports the 2,592 ML/day passflow threshold.

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		(b) the impact the taking of, or proposed taking of, or interfering with, water may have on the following— (i) water quality; (ii) the natural movement of sediment; (iii) the bed and banks of a watercourse or lake; (iv) riparian vegetation; (v) habitats for native plants and animals; (vi) the movement of fish and other aquatic species; (vii) the recreation and aesthetic values of the plan area; (viii) cultural values including, for example, cultural values of local Aboriginal or Torres Strait Islander communities.	DNRM's review of potential impacts on downstream environmental assets found a 2,592 ML/day passflow threshold to be sufficient to flush and maintain water quality at St Anns gauging station, particularly during the early wet season when water quality is at its poorest. DNRM notes Adani Infrastructure proposes water quality monitoring in accordance with the Guidelines for Water Quality Monitoring and Report. For section 23 (1) (b) (ii) to (v), the potential impact of taking water is considered lower risk. Adani Infrastructure highlighted potential loss in some riparian vegetation and habitat at the pump site, potentially impacting on local fish species. However, as noted by Adani Infrastructure, such impacts are likely to be localised and temporary. Likewise, as no instream structures are proposed (other than in the off-stream intake channel) movement of fish and other aquatic species is unlikely to be impacted. For section 23 (1) (b) (vii) and (viii) likely impact on recreation (other than linked to fish) and aesthetic values have not been able to be reviewed. Similarly, likely impact on cultural values has not been specifically reviewed, however, the responsibility for duty of care to Aboriginal and Torres Strait Islander community cultural values is the responsibility of Adani Infrastructure under the *Aboriginal Cultural Heritage Act 2003* and the *Torres Strait Islander Cultural Heritage Act 2003*. This criteria was considered along with the same outcomes for the ongoing supply of water to support natural ecosystem processes.

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Burdekin Basin ROP considerations:			
ROP Section	**Criteria**	**Review of proposed release of the specified water product against criteria**	
Section 29	**Record of volume of unallocated water** (1) The chief executive may develop a register of the		DNRM maintains a register of unallocated water available for each reserve and each subcatchment.

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	volume of unallocated water available. (2) This register must be updated after the granting of a water entitlement.		
Section 32	**32 Unallocated water reserves** (1) Unallocated water is reserved in the following reserves— (a) general reserve; (b) strategic reserve; and (c) SunWater reserve. (2) The strategic reserve includes a volume of unallocated water for each of the following— (a) state purposes; (b) a future raising of the Burdekin Falls Dam of not more than 2 metres; and (c) water infrastructure for the Bowen and Broken subcatchments, that is primarily intended for industrial use. (3) At the time of plan commencement, the total volume of each reserve for each subcatchment area detailed in schedule 2 of the Water Resource (Burdekin Basin) Plan 2007 is shown in— (a) for reserves from which the chief executive may grant a water allocation or a water licence under Part 2, Division 3—Table 1; (b) otherwise—Table 2.		The Burdekin Basin WP manages and provides for the granting of unallocated water from the strategic reserve under a process in the Burdekin Basin ROP. The Burdekin Basin ROP defines the general and strategic reserves for each subcatchment in the plan area. There is currently 20,000 ML of strategic reserve for State purpose set aside under Part 2, Division 3, Table 1 of the Burdekin Basin ROP
Section 37	**Scope of Division 3** This division applies to— (a) unallocated water held as general reserve; and (b) unallocated water held as strategic reserve for		The proposed release of unallocated water relates to unallocated water in the strategic reserve to be used for state purposes.

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	state purposes.		
Section 38	**Process for granting unallocated water held as general reserve and strategic reserve for state purposes** The process for making unallocated water available is the process prescribed in Part 2, Division 1C of the Water Regulation 2002[8].		DNRM is undertaking the process in accordance with Part 2, Division 2 Subdivision 2 of the Water Regulation 2016.
Section 39	**Unallocated water product specification** (1) In subcatchment areas A and B unallocated water to which this division applies will be granted only under water allocations. (2) In subcatchment areas E, F and G, unallocated water to which this division applies will be granted only under water licences.		Any authorisations to be granted as a result of the proposed release of unallocated water in the strategic reserve from subcatchment area E will be granted only under a water licence.
Section 40	**Additional condition for water licences granted for particular state purposes** Water licences granted from the strategic reserve for the following state purposes must include a condition on the licence that the authorisation to take the water returns to the State on the conclusion of — (a) a project of State significance; or (b) a project of regional significance.		Any resultant water licence will be conditioned that the authorisation to take water will return to the State upon conclusion of the project of State significance.

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[8] On 6 December 2016 the Water Regulation 2016 commenced, which replaced the previous Water Regulation 2002. Section 145 of the Water Regulation 2016 allows a reference in an Act or other document to the previous Water Regulation 2002 to be, if the context permits, be taken to be a reference to the Water Regulation 2016.

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6. Conclusion and Specification

6.1 Conclusion of Review

A review of the matters under section 32 of the Burdekin Basin WP that the chief executive must consider in making a decision to release unallocated water from the strategic reserve in the Belyando-Suttor subcatchment area E, is set out above. The proposed water product specification for release has been informed by both hydrological and ecological review, based on the outcomes in the Burdekin Basin WP.

Based on these findings, the department considers that it is open for the chief executive (or authorised delegate) to find that they should decide terms of sale to release the unallocated water by a fixed price process, under Part 2, Division 2, Section 18 of the *Water Regulation 2016*, having regard to section 32 of the Burdekin Basin WP.

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6.2 Water Product Specification

The water product specification for release and associated water licence conditions detailed below are for the purposes of the Terms of sale only i.e. these are specifications and conditions that are to be included in the terms of sale for the release of a specified water product.

Table 5 Water product specification for release of unallocated water

Licence Holder	Adani Infrastructure Pty Ltd ACN 606 764 827
Licence Duration:	The life of the Carmichael Mine project (upon surrender of Mining Leases 70441, 70505 and 70506)
Water Name:	The Suttor River (including the Belyando River Anabranch)
Water Code	120.01.06- Suttor River 120.01.06.25A- Belyando Anabranch
Nominal Entitlement (annual volumetric limit)	12,500 megalitres
Mean annual volume	10,800 megalitres
Maximum rate of take:	11,600 litres/second
Passflow threshold	2,592 ML/day at St Anns gauging station 120303A
Purpose:	Any
Activity Location:	Lot 3/SP278559

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Schedule A conditions:

NIL

Schedule B conditions:

Interpretation

In this Licence:

a. A reference to a Condition shall be a reference to a Condition of this Licence;
b. Headings to conditions are for ease of reference only and shall not in any way affect the meaning of the conditions;
c. A reference to days or months is a reference to calendar days or calendar months;
d. A reference to the department is a reference to the Department of Natural Resources and Mines;
e. Reference to the conclusion of the Project is a reference to the surrender of Mining Lease 70441, Mining Lease 70505 and Mining Lease 70506;
f. The mean annual volume assigned from the strategic reserve for this water licence is 10,800 megalitres;
g. Words in the singular shall include the plural and vice versa;
h. ***Rate of take*** is a volume measured in litres per second; and
i. ***Published***, for the purposes of this licence is in accordance with the definition of *publish* in the *Water Act 2000*.

Entitlement

1. The taking of water under this authorisation is permitted only when the flow of water exceeds 2,952 megalitres per day at the Department's Gauging Station Suttor River at St Anns (120303A).
2. The daily volumetric limit may be taken under this licence is 830 megalitres.
3. Despite the expiry date specified on this water licence, water granted under this water licence is granted only for the life of the Carmichael Mine Project and the right to take the water returns to the State on the conclusion of the Project.

Metering

4. Water must not be taken under this authorisation unless a measuring device (telemetric meter) of a type approved by the chief executive to measure the volume of water taken and released is installed for:
    a. water taken from the Suttor River under this authorisation; and
    b. water released into the Belyando River Anabranch; and

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c. water taken from the Belyando River Anabranch under this authorisation.

Monitoring Plan

5. On each occasion that water is taken from the Suttor River under this authorisation, the holder must record:
    a. the date and the time at the start and end of the period of take;
    b. the meter reading at the start and end of the period;
    c. the daily volume taken;
    d. the rate of take, and for each change in the rate of take:
        i. The date and time of the change; and
        ii. The new rate of take.
6. Such records must be published within 5 business days of the end of each month by the licence holder and made available upon request of the chief executive.
7. On each occasion that water is released into the Belyando River Anabranch for the purpose of relift under this authorisation, the holder must record:
    a. the date and the time at the start and end of the release period;
    b. the meter reading at the start and end of the period;
    c. the daily volume released;
    d. the release rate, and for each change in the release rate:
        i. The date and time of the change; and
        ii. The new release rate
8. Such records must be published within 5 business days of the end of each month by the licence holder and made available upon request of the chief executive.
9. On each occasion that water is taken from the Belyando River Anabranch under this authorisation, the holder must record:
    a. the date and the time at the start and end of the period of take;
    b. the meter reading at the start and end of the period;
    c. the daily volume taken;
    d. the rate of take, and for each change in the rate of take:
        i. The date and time of the change; and
        ii. The new rate of take.

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10. Such records must be published within 5 business days of the end of each month by the licence holder and made available upon request of the chief executive.

Relift requirements

11. Water taken from the Belyando Anabranch under this authorisation may only be taken:
    a. after water has been released or is being released into the watercourse by the water entitlement holder; and
    b. until a volume has been reached up to that volume that is released, minus losses.
12. Water being released into the watercourse must not:
    a. cause watercourse bank erosion or riparian destruction; and
    b. be released at a rate or total volume that will cause significant adverse effects on the ambient flows in the watercourse.

Appendix 1 DNRM Hydrologic Review Report

Appendix 2 DNRM Targeted Environmental Review Report

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Attachment 1

Release of unallocated water in the Belyando-Suttor Subcatchment Area E of the *Water Plan (Burdekin Basin) 2007*

Strategic reserve

Terms of Sale for Carmichael Coal Mine and Rail Project (Adani Infrastructure Pty Ltd)

January 2017

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1 Process for fixed price sale of unallocated water held as strategic reserve

An authorised delegate of the chief executive under the *Water Act 2000* (Water Act) has decided to conduct a fixed price sale process for unallocated water held as strategic reserve totalling 10 800 megalitres (ML) mean annual volume in Subcatchment Area E (Belyando-Suttor) as prescribed under the Water Plan (Burdekin Basin) 2007 (Burdekin Basin WP).

The *Water Regulation 2016* (Water Regulation) prescribes a process for releasing unallocated water by fixed price sale. These Terms of Sale have been decided by the delegate of the chief executive in accordance with section 18 of the Water Regulation.

If successful, the applicant will be offered a water licence under the Water Act in accordance with these Terms of Sale.

Figure 1 – Map of area of release.



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2 Eligibility and restrictions

Adani Infrastructure Pty Ltd (ACN 606 764 827) is eligible to be the applicant for a water licence in response to these Terms of Sale. No other person or entity is eligible.

Section 116 of the Water Act does not require an application for a water licence to be made under section 107 of the Water Act if the process for allocation of water under a water licence is pursuant to a process under a water plan or regulation. However, to be eligible for a water licence an applicant must be either an owner of land or a prescribed entity listed in section 104 of the Water Act. Section 104 includes an entity prescribed by regulation as a prescribed entity.

Adani Infrastructure Pty Ltd is referred to in Schedule 4, item 39, of the Water Regulation and is therefore considered a prescribed entity which is eligible to apply for a water licence pursuant to section 107(4) of the Water Act and eligible to be granted a water licence under section 116 of the Water Act.

However, a water licence will only be granted from the strategic reserve if the application is consistent with the Burdekin Basin WP outcomes and objectives and these Terms of Sale.

The Burdekin Basin Resource Operations Plan 2009 (Burdekin Basin ROP)[1], deals with grants of strategic reserve water for state purposes, which includes for the purpose of a project of state significance or a project of regional significance. The Burdekin Basin ROP also provides that the process for releasing unallocated water for state purposes is the process set out in Part 2, Division 1C of the *Water Regulation 2002*.[2]

The Carmichael Coal Mine and Rail Project was declared a coordinated project under the *State Development and Public Works Organisation Act 1971* (SDPWO Act) on 26 November 2010 and is therefore considered to be a project for which water may be released for a state purpose. As well, on 7 October 2016, the Adani Combined Project (comprising the Carmichael Coal Mine and Rail Project, the North Galilee Basin Rail Project and the North Galilee Water Scheme Project) was declared a critical infrastructure project pursuant to section 76E(1) of the SDPWO Act. Further, the Carmichael Coal Mine and Rail Project is also a project for a 'state purpose' on the ordinary meaning of those words, as it is anticipated to benefit the State in terms of investment, royalties, infrastructure and business opportunities.

These Terms of Sale are for the release of unallocated water for the state purpose of the Carmichael Coal Mine and Rail Project only. Water will not be released for any other purpose under these Terms of Sale.

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1 From the commencement of the *Water Reform and Other Legislation Amendment Act 2014* (WROLA) on 6 December 2016, the Water Resource (Burdekin Basin) Plan 2007 continues in force as a 'water plan' and is renamed as the Water Plan (Burdekin Basin) 2007 (see section 1256(1) of the Water Act, s 255 and schedule 2 of WROLA). The provisions of the Burdekin ROP are taken to be, or to have effect for, a number of other documents under the Water Act as amended (see section 1259 of the Water Act). Section 1266 of the Water Act allows references to resource operations plans to, where the context permits, be taken to be a reference to the relevant document under the Water Act as amended by the WROLA on 6 December.

2 The *Water Regulation 2002* was repealed by the *Water Regulation 2016.* Section 145 of the *Water Regulation 2016* provides that references to the *Water Regulation 2002* in an Act or other document can be taken to be a reference to the *Water Regulation 2016* where the context permits. In the circumstances, the context permits the reference to the process under Part 2, Division 1C of the *Water Regulation 2002* in the Burdekin Basin ROP to be taken to be a reference to the process under the corresponding provisions in the *Water Regulation 2016*.

3 Water availability, type and product specification

3.1 Water availability

The strategic reserve volume available for application under this fixed price sale process in the Burdekin Basin WP area is shown in Table 1.

Table 1 – Water availability

Subcatchment area	Mean Annual Volume (megalitres)
Belyando-Suttor (E)	10 800 ML

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3.2 Water type

Application to purchase may be made for the following water type:

WC	Water in a watercourse (surface water).

If successful, the applicant will be offered one or more licences for the type specified. Any water licence shall be granted in accordance with section 116 of the Water Act.

3.3 Water product specification

In accordance with section 39 of the Burdekin Basin ROP, in Subcatchment Area E, unallocated water granted from the strategic reserve will be granted only as water licences.

Under section 40 of the Burdekin Basin ROP, water licences granted from the strategic reserve for a project of State significance must include a condition on the licence that the authorisation to take water returns to the State on conclusion of the project of State significance. One water type and product is available through this fixed price sale process.

A total of 10 800 ML mean annual volume is available in Subcatchment Area E (Belyando-Suttor) of the Burdekin Basin WP area for this fixed price release process.

Table 2 – Limits and conditions

Geographical area	Water type	Licenced Nominal Entitlement (Maximum Annual Diversion) (ML)	Licenced Maximum Rate (litres per second)		Licenced Daily Volumetric Limit (Maximum Daily Diversion) (ML)	Mean Annual Volume (ML)
Suttor River at approximately AMTD 123km	WC	12 500	11 600		830	10 800
	Licence conditions for passing flow					

	taking of water will be permitted when the flow in the Suttor River at St Anns Gauging Station (GS120303A) exceeds 2592 ML per day

A sample water licence containing the limits and conditions of the product type can be found at **Schedule 1**.

4 Closing date for receipt of application to purchase

The closing date for an application to purchase by the eligible applicant is 5pm on Friday 13th January 2017. The Department of Natural Resoruces and Mines (DNRM) must receive your application in writing submitted by either email, post or in person by the closing date.

5 Price

Fixed price: The fixed price per ML Mean Annual Volume for strategic reserve unallocated water is **$1866**

6 Planning your application

Independent advice: You should consider obtaining your own independent advice for your particular circumstances in planning and preparing your application.

Pre-lodgement information: If you have a query concerning this process you may contact DNRM identifying your query and any further information you require. DNRM will consider your request and respond in writing. Contact details are provided in Section 16.

Associated approvals: You are responsible for obtaining any approval, consent, notification or agreement required for your proposal and you should commence the process to obtain them at the earliest opportunity. DNRM reserves the right at its sole discretion to reject any application where relevant consents, notifications, approvals or agreements have not been sought or obtained.

No reliance on information or compensation: You are responsible for making your own investigation and assessment about all matters relevant to this application process, the Terms of Sale, the accuracy of all information and documents provided by DNRM and all other matters relevant to your application. DNRM is not liable to pay any compensation to any applicant in relation to their application or the release process in any circumstances, for any reason.

7 Completing an application

You must complete and submit your application in conformity with the following requirements before your application will be assessed against the evaluation criteria.

Fixed Price Application Form: The Fixed Price Application Form is available at **Schedule 3.** You must complete all relevant information fields in the Fixed Price Application Form in full.

Purpose for water: You must state in the Fixed Price Application Form the purpose for which the water is to taken.

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Existing works permit numbers: Where the proposed take of water is from existing works, you must state in your application the relevant permit number for the existing works.

Addressing the evaluation criteria: You must address all of the evaluation criteria in **Schedule 2** and provide sufficient supporting information in writing for your application to be assessed.

Signing formalities: All applicants must sign and date the Fixed Price Application Form.

A corporation:

- may affix its common seal prescribed by its articles of association, or otherwise have the Fixed Price Application Form executed in accordance with section 127 of the *Corporations Act 2001 (Cth);* and
- must forward with its application a copy of its certificate of incorporation.

Non-conforming applications

Failure to meet all of the above requirements means your application is non-conforming.

DNRM may, depending on the extent and nature of the non-conformance, decide to not assess your application, request further information or require you to submit an amended application.

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8 Lodgement of application

Application must be on the form provided (see Schedule 3) .

Email address for submitting your application:

centralwaterservices@dnrm.qld.gov.au

Postal address for submitting your application:

Private and Confidential
Application for Unallocated Water: Burdekin Basin Water Resource Plan
Chief Executive
Attention: Sam Tarlinton, A/Regional Manager, Water Services
Department of Natural Resources and Mines
PO Box 63
Mackay QLD 4740

Submitting your application in person:

Private and Confidential
Application for Unallocated Water: Burdekin Basin Water Resource Plan
Chief Executive
Attention: Sam Tarlinton, A/Regional Manager, Water Services
Department of Natural Resources and Mines
22-30 Wood Street
Mackay QLD 4740

Amending an application: Until the finalisation of DNRM's assessment of the application under Section 9, you may amend your application by contacting DNRM (by post or by email to centralwaterservices@dnrm.qld.gov.au) and DNRM will consider your changes and notify you of its decision. You must state the grounds for your requested amendment.

Resubmissions and requested information: DNRM may request further information from you regarding your application and may require you to resubmit your application as an **amended application**, by email or registered post on or before the due date as advised by DNRM.

Withdrawing an application: You may withdraw your application by notifying DNRM in writing (email centralwaterservices@dnrm.qld.gov.au). Upon receipt of your notification by DNRM your application will cease.

9 Assessment

Evaluation criteria: Your application and supporting information will be assessed by DNRM against the evaluation criteria in accordance with these Terms of Sale. The time period for assessment will be as DNRM determines.

10 Assessment notification

Where your application is:

- successful, DNRM will notify you in writing with an offer of a volume of water in accordance with Section 11;
- unsuccessful, DNRM will notify you in writing.

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11 Letter of offer

If your application is successful a letter of offer to you will:

- include the volume of water in megalitres nominal entitlement and mean annual volume being offered;
- enclose a draft licence including the conditions of licence that will apply if you accept the offer;
- enclose an Acceptance Form for you to complete and return if you accept the volume and licence as offered; and
- stipulate the deposit you must pay by the due date to accept the licence.

12 Licence conditions

Under section 118 of the Water Act, a water licence is subject to the conditions the chief executive (or their authorised delegate) may impose.

Under the Water Act, a licensee is subject to the conditions the chief executive may impose, which may include (without limitation):

- purpose of water take;
- maximum instantaneous extraction rate;
- daily volumetric limit;
- nominal entitlement;
- mean annual volume;
- passing flow conditions;

- undertaking monitoring and reporting;
- return of the entitlement to the State upon conclusion of the project

Sample (indicative) licence (schedule 1): The sample licence in Schedule 1 provides an indication of the conditions that may be included, which is not intended to be exhaustive.

Payment conditions: Section 13 sets out further conditions which may be included in respect of payment of the purchase price.

13 Payment and acceptance of offer

To accept the offer of a licence you **must sign and return the Acceptance Form, and pay a non refundable deposit of 8% of the total purchase price,** by the due date stated in our letter of offer.

Purchase price: means the fixed price per megalitre multiplied by the mean annual volume in megalitres offered.

Grant of licence: Once DNRM receives your Acceptance Form and the deposit by the due date you will be granted a licence. DNRM will post the licence to the address included in your Fixed Price Application Form. A licence cannot be granted until the deposit is paid.

Cessation of offer: If the deposit is not paid in full by the stipulated date referred to above in the letter of offer to you, or as otherwise agreed in writing by the Chief Executive, DNRM may notify you that your deposit was not received and that the letter of offer has been rescinded. Any deposit paid will be non-refundable.

Payment of balance of purchase price: If the water licence is granted to you, a condition will be included in your water licence which will require payment of the balance of the total purchase price as follows:

- 92% of the total purchase price must be paid by 1 July 2018.

Conditions will also be included in your water licence to the effect that:

- water cannot be taken under the water licence until payment of the total purchase price is received in full; and
- if you fail to pay the balance of the purchase price on the specified due date, the chief executive may commence a show cause process under sections 132(1)(c) and 135 of the Water Act to determine whether the water licence should be cancelled.

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14 General terms of sale

Changes to the process: If the application process is cancelled, or the date for submission of an application is extended, or some or all of the total volume of water available under this process is withdrawn, DNRM will advise in writing the changes being made to the process.

Release and indemnity: By planning, making enquiries in relation to or submitting an application, all applicants agree to unconditionally release and indemnify the State of Queensland, DNRM, its officers, agents and representatives from and against all actions, claims, proceedings or demands and in respect of any loss, death, injury, illness or damage (whether personal or property, and whether special, direct, indirect or consequential, including consequential financial loss) arising from

or in connection with these Terms of Sale and the release process, including (without limitation) any related publication or announcement.

The State of Queensland, DNRM, its officers, agents and representatives will not in any circumstances (including for negligence) be liable for any loss of revenue, loss of profit, loss of anticipated savings or business, loss of opportunity (including opportunity to enter into or complete arrangements with third parties), loss of data or goodwill, loss of reputation or any indirect or consequential loss whether arising in contract, tort (including negligence) or otherwise, in connection with these Terms of Sale or the release process.

No warranties: You are responsible for making your own investigation and assessment about all matters relevant to this process, the Terms of Sale, the accuracy of all information and documents provided by DNRM and all other matters relevant to your application. DNRM is not liable to pay any compensation to any applicant in relation to their application or this process in any circumstances, for any reason. DNRM provides no warranty about the quality or availability of water which may be obtained by you as a result of this application process. You accept the risk as to quality and quantity of water that may be made available to you.

Documents: DNRM is under no obligation to return your application and will not return application documents at any point in the process. It is recommended that the applicant keep a copy of their application for their own records.

Subject to offer of licence: No rights of access to water will be deemed to have been granted until a water licence has been offered by DNRM, and accepted and paid for by you in accordance with these Terms of Sale.

Costs and expenses: You must meet all costs incurred in participating in this process, planning and making your application, and any associated approvals.

Jurisdiction: These Terms of Sale are governed by the laws and the courts of Queensland.

Public information: DNRM may make publicly available information about the application received, and the volume awarded to the successful applicant.

Right to information: Information contained in an application may be subject to third party disclosure under the *Right to Information Act 2009.*

Personal information consent: By signing the Fixed Price Application Form you permit DNRM to access or use your personal information in your application for the purpose of this process.

No fetter: Nothing in these Terms of Sale will fetter, act as an estoppel or as an agreement about the exercise of discretion or the making of a decision or subordinate legislation under any law by the State of Queensland, DNRM, its officers, employees, agents or representatives.

Chief Executive discretion: Other than as expressly provided for in these Terms of Sale, the Chief Executive reserves the right to make any changes to these Terms of Sale in its absolute discretion by notifying applicants in writing. Without limitation, DNRM may:

(a) add or change terms or requirements including as a result of changes to legislation;
(b) amend dates including extending the closing date or time;
(c) consider or reject an application received after the closing date or time;
(d) accept a non-conforming application;
(e) reject any or all applications;

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(f) amend the evaluation criteria stipulated in these Terms of Sale;
(g) exercise discretion in evaluating any subjective evaluation criteria;

(h) change the terms and conditions applicable to the licensing process, including the terms of any proposed water licence; or
(i) cancel the process by withdrawing the sale at any time prior to an agreement being entered into for the sale.

An applicant will not make any claim against DNRM or the State of Queensland in connection with a decision by DNRM to exercise or not to exercise any of its rights in relation to the release process.

15 Definitions

Application means your application for a water type made by submitting a Fixed Price Application Form (for the relevant water type) with your supporting information addressing the evaluation criteria.

Closing date means the date specified in Section 4 of these Terms of Sale.

Daily volumetric limit for a water entitlement, means the maximum volume of water that may be taken under a water entitlement in a day.

Evaluation criteria means the criteria in Schedule 2.

Fixed Price Application Form means the forms in Schedule 3 (surface water)

Mean Annual Volume is the long-term average annual volume share of the resource availability and is determined from the licence parameters (i.e. nominal entitlement, diversion rate, and passing flow conditions).

Nominal entitlement means the volumetric limit (cap) that can be taken during water year.

Passing flow conditions are conditions that permit taking water above a threshold and prohibit water being taken below a certain flow threshold.

Price means the price per ML as provided in these Terms of Sale.

Sample licence means the sample licence in Schedule 1.

Terms of Sale means this document inclusive of Schedules 1–3.

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16 DNRM contact details

Attention: Kathy Batts, A/Manager Major Projects
Water Services
Department of Natural Resources and Mines

Phone: 1800 822 100

Email: centralwaterservices@dnrm.qld.gov.au — please mark **Attn: Kathy Batts**

16.1 Links

Water Plan (Burdekin Basin) 2007
http://www.legislation.qld.gov.au/Acts_SLs/Acts_SL_W.htm

Burdekin Basin Resource Operations Plan 2009
https://www.dnrm.qld.gov.au/water/catchments-planning/catchments/burdekin

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Schedule 1 — Sample water licence

Watercourse water only

WATER LICENCE

Water Act 2000

Reference	******	**Expiry Date**	30/06/2111
Licensee	JOHN SMITH		
Authorised Activity	The taking of watercourse water from the Suttor River with the point of take on or adjacent to Lot 1 on RP11111 and from Belyando River anabranch		
Authorised Purpose	Any		
Nominal Entitlement	12,500 Megalitres		
Maximum Instantaneous Extraction Rate	11600 Litres per Second		

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

Under the *Sustainable Planning Act 2009* a development permit may be required for operational works to take or interfere with the water described in this licence. The licensee must ensure that the relevant development approvals have been obtained prior to installing or constructing new or additional operational works.

Given at Mackay this XX day of MM YYYY.

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DG Name Here
Director-General
Department of Natural Resources and Mines

Sample only

*Water Licence: ******

Expiry Date: 30/06/2111

Conditions: Schedule B

Interpretation

In this Licence:

a. A reference to a Condition shall be a reference to a Condition of this Licence;
b. Headings to conditions are for ease of reference only and shall not in any way affect the meaning of the conditions;
c. A reference to days or months is a reference to calendar days or calendar months;
d. A reference to the department is a reference to the Department of Natural Resources and Mines;
e. Reference to the conclusion of the Project is a reference to the surrender of Mining Lease 70441, Mining Lease 70505 and Mining Lease 70506;
f. The mean annual volume assigned from the strategic reserve for this water licence is 10,800 megalitres;
g. Words in the singular shall include the plural and vice versa;
h. ***Rate of take*** is a volume measured in litres per second; and
i. ***Published***, for the purposes of this licence is in accordance with the definition of *publish* in the *Water Act 2000*.

Entitlement

1. The taking of water under this authorisation is permitted only when the flow of water exceeds 2952 megalitres per day at the Department's Gauging Station Sutter River at St Anns (120303A).
2. The daily volumetric limit may be taken under this licence is 830 megalitres.
3. Despite the expiry date specified on this authorisation, water granted under this authorisation is granted only for the life of the Carmichael Mine Project and the right to take the water returns to the State on the conclusion of the project.

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Metering

4. Water must not be taken under this authorisation unless a measuring device (telemetric meter) of a type approved by the chief executive to measure the volume of water and taken and released is installed for:

    a. Water taken from the Suttor River under this authorisation; and
    b. Water released into the Belyando River Anabranch; and
    c. Water taken from the Belyando River Anabranch under this authorisation.

Monitoring Plan

5. On each occasion that water is taken from the Suttor River under this authorisation, the holder must record:

    a. the date and the time at the start and end of the period of take;
    b. the meter reading at the start and end of the period;
    c. the daily volume taken;
    d. the rate of take, and for each change in the rate of take:
        i. The date and time of the change; and
        ii. The new rate of take.
6. Such records must be published within 5 business days of the end of each month by the licence holder and made available upon request of the chief executive.
7. On each occasion that water is released into the Belyando River Anabranch for the purpose of relift under this authorisation, the holder must record:
    a. the date and the time at the start and end of the release period;
    b. the meter reading at the start and end of the period;
    c. the daily volume released;
    d. the release rate, and for each change in the release rate:
        iii. The date and time of the change; and
        iv. The new release rate
8. Such records must be published within 5 business days of the end of each month by the licence holder and made available upon request of the chief executive.
9. On each occasion that water is taken from the Belyando River Anabranch under this authorisation, the holder must record:
    a. the date and the time at the start and end of the period of take;
    b. the meter reading at the start and end of the period;
    c. the daily volume taken;
    d. the rate of take, and for each change in the rate of take:
        v. The date and time of the change; and
        vi. The new rate of take.
10. Such records must be published within 5 business days of the end of each month by the licence holder and made available upon request of the chief executive.

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Relift requirements

11. Water taken from the Belyando Anabranch under this authorisation may only be taken:
    a. after water has been released or is being released into the watercourse by the water entitlement holder; and
    b. until a volume has been reached up to that volume that is released, minus losses.
12. Water being released into the watercourse must not:
    a. cause watercourse bank erosion or riparian destruction; and
    b. be released at a rate or total volume that will cause significant adverse effects on the ambient flows in the watercourse.

Note: Conditions above are an indication only, other conditions may be included, as required based on application and supporting information

Sample only

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Schedule 2 — Assessment criteria

Criteria	Head of power	What it means	Key issues needed to be addressed
Provide for the use of and protection for the probability of take of all water entitlements and other authorisations in the plan area Demonstrate how water is available to support: • population growth in towns and communities dependent on surface water resources in the plan area; and • growth in industries dependent on surface water resources in the plan area Support water availability in the Belyando-Suttor subcatchment to support growth in irrigated agriculture.	Burdekin Basin WP section 12 (a), (c), (d) and (g)	This criteria is to protect the value of and ability for existing entitlement holders to access their entitlements whilst ensuring there is sufficient water remaining available to support the growth of the agriculture, community and industries.	To address this criterion the applicant should include a detailed description identifying any adverse effects on future Water Allocation Security Objectives and effects on localised and downstream water users and ecosystems
Support water-related cultural values of Aboriginal and Torres Strait Islander communities in the plan area and ensure water is available to support natural ecosystem processes	Burdekin Basin WP section 12 (k) and (l)	The environmental flow objectives have been determined to ensure stream flow regimes to protect waterholes, stream connectivity, environmental outcomes and associated cultural activities.	To address this criterion the applicant should include a detailed description identifying any adverse effects on Environmental Flow Objectives
Maintain the natural variability of flows that support the habitats of native plants and animals and	Burdekin Basin WP section 13 (1) (a)	This criteria, along with criteria 13 (1) (b-f), aim to protect and maintain the ecological integrity of waterways within the Plan area	To address these criteria 13 (1) (a-f) the applicant must demonstrate, via an ecological risk assessment, that the natural variability of flows necessary to support the viability

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migratory birds in watercourses, floodplains, wetlands, lakes and springs		which are potentially at risk through water resource developments.	of natural ecosystems are not adversely effected. This must include assets with life-history requirements which are dependent on low, medium and high flows and include all aspects of the flow regime, such as the timing, duration, magnitude and frequency of the natural flow regime.
Provide for the continued capability of one part of a river system to be connected to another, including by maintaining flood flows that— • allow for the movement of native aquatic fauna between riverine, floodplain, wetland, estuarine and marine environments • deliver nutrients and organic matter throughout the plan area to support natural processes such as breeding, growth and migration in riverine, floodplain, wetland, estuarine and marine environments • deliver water and sediments throughout the plan area to support river-forming processes	Burdekin Basin WP section 13 (1) (b)		
Minimise changes to natural variability in water levels and to support natural ecological processes, including maintaining refugia associated with waterholes and lakes in the Belyando-Suttor subcatchment	Burdekin Basin WP section 13 (1) (c)		

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promote improved understanding of the matters affecting the flow-related health of ecosystems in the plan area	Burdekin Basin WP section 13 (1) (d)		
maintain flooding in the Lower Burdekin and Haughton subcatchments to provide freshwater inputs to wetlands on the Burdekin Haughton floodplain;	Burdekin Basin WP section 13 (1) (e)		
provide a flow regime that • maintains delivery of fresh water to the estuaries of watercourses and the Great Barrier Reef Lagoon • maintains natural sedimentation processes to support the replenishment of beaches along the Burdekin Haughton floodplain and Cape Bowling Green • supports productivity in the receiving waters of the Great Barrier Reef and inshore reefs.	Burdekin Basin WP section 13 (1) (f)		
The purpose for which the water is required – is it for a 'state purpose'?	Burdekin Basin WP section 32 (2) (a) and Burdekin Basin ROP	The applicant provides a clear proposal for the volume of water required and its use	To address this criterion, the applicant should describe what the water is to be used for and whether it is for a 'state purpose', that is, a project which is likely to benefit the State of Queensland.

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The efficiency of existing and proposed water use practices.	Burdekin Basin WP section 32 (2) (b) and section 12 (j)	The applicant describes how current and proposed water use is not wasteful so that water is not allocated to inefficient uses.	To address this criteria the applicant should include a detailed description identifying: • demand management measures that achieve permanent and reliable reductions in the demand for water • the promotion of water conservation and appropriate water quality objectives for the intended use of water • water recycling, including, water reuse within a particular enterprise to gain the maximum benefit from available supply
The extent to which water is being taken under existing authorisations in the plan area.	Burdekin Basin WP section 32 (2) (c)	These criteria ensure the application proposal considers the extent of demand in the plan area	To address this criterion the applicant should provide information relating to water use under current authorisations
The availability of an alternative water supply for the purpose for which the water is required.	Burdekin Basin WP section 32 (2) (d)	The applicant describes whether alternative means are available to meet proposed water demands without the need for the unallocated water (e.g. sufficient entitlement is available to meet a proportion of their demand.	To address this criterion the applicant should describe whether there are alternative water supplies available on the land to which the application applies and identify the opportunities to make use of those supplies.
The impact the proposed taking of, or interfering with, the water may have on existing water users in the plan area.	Burdekin Basin WP section 32 (2) (e)	This criteria ensures the application proposal considers ways to minimise impacts on existing water users in the plan area including downstream water users	To address this criterion the applicant should include a detailed description identifying: • Any adverse effects on Water Allocation Security Objectives • Any adverse effects on downstream water users

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			It should also include any proposals to mitigate these effects.
Whether the proposed taking or interfering is likely to have a direct adverse effect on groundwater flows	Burdekin Basin WP section 32 (2) (f)	These criteria ensure that the application proposal considers ways to minimise the impacts on the physical integrity of the watercourse, the ecosystems reliant on the watercourse and the associated riverine environments. It also ensures impacts to groundwater flows and the recreational and cultural values of the watercourse are minimised	In addressing these criteria the applicant should include a detailed description identifying: • any adverse effects on the physical integrity of the watercourse. • ecosystems reliant on those watercourses • the associated riverine environments The applicant should also include any proposals to mitigate these affects. This description should also detail the impact on the recreational and cultural values of the watercourse and to groundwater flows as a result of the proposal and any strategies to mitigate these impacts. • To address these criteria you may need to consult with: • Indigenous groups • recreational groups • natural resources management bodies • government departments, especially in relation to fishery and vegetation management requirements.
The stream flows required to maintain the following: • the longitudinal connectivity of low flow habitats throughout river systems in the plan area; • the wetted habitats at riffles and other streambed features; • the natural seasonality of flows and zero flows; • the replenishment of refuge pools that enable movement of instream biota; • the lateral connectivity between rivers in the plan area and their adjacent riverine environments including floodplains	Burdekin Basin WP section 23 (1)(a)		

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The impact the taking of, or proposed taking of, or interfering with, water may have on the following: • water quality; • the natural movement of sediment; • the bed and banks of a watercourse or lake; • riparian vegetation; • habitats for native plants and animals; • the movement of fish and other aquatic species; • the recreation and aesthetic values of the plan area; • cultural values including, for example, cultural values of local Aboriginal or Torres Strait Islander communities.	Burdekin Basin WP section 23 (1)(b)		

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Schedule 3 — Fixed price application form

Department of Natural Resources and Mines

ABN 59 020 847 551

Application for strategic reserve unallocated surface water available at a fixed price

Water Act 2000

Part A Applicant details

Name(s)

Specify the full name of all persons applying to purchase the unallocated water:

Title	First name	Middle name	Surname

Or

Corporation, trustee or entity name(s)	ACN (if a corporation)

Address

Street address

Suburb/Town	State	Postcode

Postal address

Suburb/Town	State	Postcode

Contact details

Title: ☐ Mr ☐ Mrs ☐ Ms ☐ Miss ☐ Other (specify)

Full name:

Preferred phone:	Alternative phone:	Facsimile:

Email:

Information Privacy Notice (*Information Privacy Act 2009*)

The information being collected in this form will be used by this department for the purpose of processing your application for strategic reserve unallocated water under the authority of Part 2 of the Water Regulation 2016. Your personal information will not be disclosed to any other parties unless authorised or required by law. The information collected will be retained as required by the *Public Records Act 2002* and may be stored in a departmental database. Information on the department's privacy commitment can be found on the department's website.

OFFICE USE ONLY	Application ref.	Fee received $				Office Stamp Only
	Client ref.	Receipt no.				
	Authorisation ref.	Date	/	/	Initials	

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Part B Volume of water

Water type

☐ Watercourse water

Amount of water

Mean annual volume of water required		megalitres
Maximum rate at which water is to be taken		litres per second

Part C Source and location of water

Source of water

Provide the name of the watercourse, lake or spring from which the water will be taken.

Location of take

Describe the parcels of land on or adjoining the place from which the water is to be taken. If water is to be taken from a point within the bed and banks of a watercourse which cannot be properly described in terms of a lot and plan, enter the property description of the nearest adjacent land and tick the 'Adjacent to' (√) box.

Lot	Plan	Adjacent to (✓)	Lot	Plan	Adjacent to (✓)
		☐			☐
		☐			☐
		☐			☐

To take water from a specific point(s) on the nominated land, provide the GPS latitude and longitude coordinates (Datum GDA 94 or WGS 84) for the proposed location of take.

1	°		'		"	S		°		'		"	E
2	°		'		"	S		°		'		"	E
3	°		'		"	S		°		'		"	E

Map / sketch

Please provide a sketch of proposed bore take locations including the distance of the proposed sites from property boundaries.

N

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Part D Purpose of water
Outline the purpose for which the water will be taken, including whether the water will be taken a 'state purpose', that is, a project which is likely to benefit the State of Queensland?

Part E Applicant Declaration	
If more signature space is required, copy or print a blank copy of this page, complete and attach. **I/we, the undersigned, declare that:** being a recognised entity under the *Water Act 2000*, I/we do hereby apply to purchase strategic reserve unallocated water and declare that the information and attachments contained in this application are true and correct. Upon our receipt of your Acceptance Form a legally binding agreement is formed between you and the Department comprising this application, the Licence - including any conditions, and the Terms of Sale (which includes your statement addressing the Evaluation Criteria).	
Individual	
Name:	Name:
Signature:	Signature:
Position/Title: (if applicable)	Position/Title: (if applicable)
Date: / /	Date: / /
Corporation Executed for and on behalf of	
Organisation name:	
ACN:	
By (name):	By (name):
Position:	Position:
Signature:	Signature:
Date: / /	Date: / /
Witnessed by:	Witnessed by:
Witness signature:	Witness signature:
Date: / /	Date: / /

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Release of unallocated water in the Belyando-Suttor subcatchment area E of the *Water Plan (Burdekin Basin) 2007*, Terms of Sale, Department of Natural Resources and Mines, 2016

Attachment 1

Assessment Report
s116 *Water Act 2000* (the Water Act)
Application for a Water Licence
Report date: 8 March 2017

File Reference –	TROC0036 Water Management Mining Adani Infrastructure Pty Ltd Strategic Reserve Unallocated Water

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Application Details

Applicant	Adani Infrastructure Pty Ltd ACN 606 764 827
Activity details	The taking of water from the Suttor River and relift from the Belyando River Anabranch with the point of take on or adjacent to Lot 3/SP278559
Purpose	State purpose of the Carmichael Coal Mine and Rail Project (Project)
Nominal Entitlement	12,500 megalitres (ML)
Mean annual Volume (MAV)	10,800 ML
Extraction rate	830 ML/day
Maximum rate of take	11,600 litres per second (l/s)
Passflow threshold	2,592 ML/day at St Anns Gauging Station 120303A

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1 PURPOSE OF REPORT

The purpose of this report is to set out the Department of Natural Resources and Mines (Department's) assessment of the above water licence application, to assist the chief executive (or authorised delegate) under the *Water Act 2000* (Water Act), in deciding whether or not a water licence should be offered to the applicant in accordance with the Terms of Sale for the Carmichael Coal Mine and Rail Project (Adani Infrastructure Pty Ltd), January 2017 for the release of unallocated water from the strategic reserve in the Belyando-Suttor Subcatchment Area E of the *Water Plan (Burdekin Basin) 2007* (**Attachment 2**).

Release

2 APPLICATION

2.1 Release of Unallocated Water

On 5 January 2017, the authorised delegate of the chief executive under the *Water Act Delegation (No. 1) 2016* and the *Water Act (Burdekin Basin Chief Executive) Delegation (No. 2) 2016* decided to conduct a fixed price sale process to release up to 10,800 ML of strategic reserve unallocated water as mean annual volume (MAV) from Subcatchment Area E (Belyando-Suttor) of the Water Plan (Burdekin Basin) 2007[1] (Burdekin Basin WP) and the Burdekin Basin Resource Operations Plan 2007[2] (Burdekin Basin ROP) for the State purpose of the Project.

The process for making unallocated water available is the process described in part 2, division 2 of the *Water Regulation 2016.* This is described in more detail in the 'Department briefing note – Subject – Approve the offer of a Water Licence to Adani Infrastructure Pty Ltd for the State purpose of the Carmichael Mine and Rail Project' (Briefing note).

The Terms of Sale entitled *Release of unallocated water in the Belyando-Suttor Subcatchment Area E of the Water Plan (Burdekin Basin) 2007 Strategic reserve, Terms of Sale for Carmichael Coal Mine and Rail Project (Adani Infrastructure Pty Ltd), January 2017* (**Attachment 2**), outlined the release as detailed above, without public notice.

As set out in the Briefing note, public notice of the proposed fixed-price sale unallocated water was not required, however, as described in more detail below, the Department decided to undertake a submission process to provide natural justice to downstream riparian landholders and/or water entitlement holders.

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2.2 Application Details

On 10 January 2017, Adani Infrastructure Pty Ltd (Adani Infrastructure) made an application for a water licence seeking to authorise the take of watercourse water from the Suttor River in accordance with the Terms of Sale (**Attachment 2**) (Application). Refer to Table 1 below for the water product specification that was included in the Terms of Sale. Supporting the application was a report titled, '*Adani Infrastructure Pty Ltd, Supporting Information for an Application for a Water Licence to Take Unallocated Water from the Strategic Reserve in Sub-Catchment E of the Burdekin Basin*', published by CDM Smith, dated 10 January 2017 (supporting information) (**Attachment 14**).

Table 1 Water Product Specification

[1] From the commencement of the *Water Reform and Other Legislation Amendment Act 2014* (WROLA) on 6 December 2016, the Water Resource (Burdekin Basin) Plan 2007 continues in force as a 'water plan' and was renamed the Water Plan (Burdekin Basin) 2007 (see section 1256(1) of the Water Act and section 255 and schedule 2 of WROLA).

[2] The provisions of the Burdekin Basin ROP are taken to be, or to have effect for, a number of other documents under the Water Act as amended by WROLA (see sections 1259 and 1264 of the Water Act). Section 1266 of the Water Act allows references to resource operations plans to, where the context permits, be taken to be a reference to the document that is relevant to the reference as specified under the Water Act as amended by the WROLA on 6 December 2016.

Release

Geographical area	Water type	Licenced Nominal Entitlement (Maximum Annual Diversion) (ML)	Licenced Maximum Rate (litres per second)	Licenced Daily Volumetric Limit (Maximum Daily Diversion) (ML)	Mean Annual Volume (ML)
Suttor River at approximately AMTD 123km	WC	12,500	11,600	830	10,800
Licence conditions for passing flow					
Taking of water will be permitted when the flow in the Suttor River at St Anns Gauging Station (GS120303A) exceeds 2,592 ML per day					

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2.3 Reason for Application

Adani Infrastructure is seeking a secure water supply from the strategic reserve in the Belyando Suttor subcatchment area E of the Burdekin Basin WP for the construction and operation of the Project and associated infrastructure including off lease infrastructure and the SP1 (part of the Project).

Specifically, Adani Infrastructure has indicated in its supporting information that the water it is seeking will be used for the following:

- Construction of off-lease and on-lease infrastructure, for example mine access road, mine workers accommodation, airport, quarries, rail, dust suppression, washdown, earthworks, civil works, firewater system, and commissioning;
- Potable water supply to meet the needs of the workers; and
- Operation of the mine, for example dust suppression (stockpiles, transfer stations, and roads), tailings cell management, coal washing and processing, equipment and vehicle washdown, and longwall mining equipment cooling water.

Adani Infrastructure has advised that during the construction phase and the first years of operation, the Project is reliant on external water supplies. Adani Infrastructure has determined that multiple water supply sources need to be secured to supply the initial construction period and long term operation. Combinations of the following sources are proposed to be used to satisfy the water requirements:

- Take of 8,300 ML[3] of water from Mistake Creek and Belyando River (currently authorised under water permits);
- Take of 12,500 ML[4] (nominal entitlement) of water from the Suttor River (the subject of this Application); and

[3] This volume is a total take over the currency of the water permits i.e. 2 years.
[4] This volume is an annual volumetric limit.

Release

- Groundwater reuse[5] (associated water licence application currently subject to assessment).

New water infrastructure is required to transfer water from the above sources to supply it to the required destinations. This infrastructure is referred to as the North Galilee Water Scheme Project (Scheme Project). The part of the Scheme Project associated with the proposed Suttor River take and Belyando River Anabranch relift is further detailed in Section 6 of this assessment report.

2.4 Legislative Framework

The Water Act provides a framework for the sustainable management of Queensland's water resources by establishing a system for the planning, allocation and use of water (see section 2 of the Water Act).The legislative framework is set out in more detail in the Briefing note.

Section 116 of the Water Act provides that the chief executive may grant a water licence in accordance with a process for the allocation of water stated in a water plan, water management protocol or regulation without the need for an application to be made under section 107 of the Water Act. Adani Infrastructure's application for a water licence for the release of unallocated water for a State purpose is pursuant to section 116 of the Water Act.

On 5 January 2017, unallocated water held as strategic reserve in Subcatchment Area E (Belyando-Suttor) as prescribed under the Burdekin Basin WP, was released in accordance with the relevant provisions of the Water Act and associated statutory instruments.

As set out in more detail in the Briefing note, the chief executive considered the matters set out in section 32 of the Burdekin Basin WP (current as at 6 December 2016) in deciding the Terms of Sale.

As detailed in the Briefing note, on 3 February 2017, the Burdekin Basin WP was amended by the *Water Amendment Plan (Burdekin Basin) (No. 1) 2017* (Subordinate Legislation 2017 No. 7).

As set out in more detail in the Briefing note, the Burdekin Basin WP currently provides that:

- 35,000 ML of unallocated water from the general reserve may be released for State purposes (see section 32 of the Burdekin Basin WP).
- Unallocated water may be released from the general, strategic or SunWater reserve under section 33A of the Burdekin Basin WP.
- The process for releasing the unallocated water held as a strategic reserve for a State purpose is the process stated in the *Water Regulation 2016*, part 2, division 2, subdivision 2 (see section 33A(2) of the Burdekin Basin WP).

3 BACKGROUND INFORMATION

3.1 The Proponent

The proponent for the Carmichael Coal Mine and Rail Project is Adani Mining Pty Ltd (Adani Mining), which is an Australian subsidiary of Adani Enterprises Ltd. All

[5] A volume is not specified on this type of approval, the take is a volume that is considered necessary to allow safe working conditions to access the coal resource.

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approvals referenced in section 3.2 below, and all current Water Act approvals, are held in the name of Adani Mining.

Adani Infrastructure applied for the water released by the chief executive's delegate on 5 January 2017. Adani Infrastructure is also an Australian subsidiary of Adani Enterprises Ltd. Adani Infrastructure is a prescribed entity under Schedule 4 of the Water Regulation 2016 (Water Regulation), for the purposes of section 26 of the Water Regulation 2016 and section 104 of the Water Act.

3.2 State and Federal Approvals Relevant to this Application

The Project was declared a coordinated project by the Office of the Coordinator General (OCG) under the *State Development and Public Works Organisation Act 1971* (SDPWO Act) on 26 November 2010.

Between 2012 and 2014, Adani Mining completed an EIS, Supplementary EIS (SEIS) and Additional information for the EIS (AEIS) which outlined the environmental, social and economic impacts for the project.

The EIS, SEIS and AEIS were assessed under a bilateral Commonwealth and State process and the project received conditional approval from the Queensland Government under the SDPWO Act on 7 May 2014. Commonwealth approval was then given for controlled matters under the *Environmental Protection and Biodiversity Conservation Act 1999* (EPBC Act) on 24 July 2014 and re-approved on 14 October 2015 after a legal challenge.

The Department has been in consultation with Adani Mining and the OCG since the public release of the Environmental Impact Statement (EIS) in Adani Mining's proposal to secure the appropriate mining approvals, State land tenure and water supply.

The infrastructure associated with the proposed extraction of water from the Suttor River and Belyando River anabranch was granted development approval with conditions by the Department of Infrastructure, Local Government and Planning under the *Sustainable Planning Act 2009* on 5 November 2015. The approval included advice by the Department that an authorisation must be obtained under the Water Act, prior to the take of water through the works authorised under the development approval.

The mining lease and Environmental Authority (EA) applications were subject to a Land Court hearing with a decision handed down in December 2015.[6]

The Environmental Authority for the mine was issued by the Department of Environment and Heritage Protection under the *Environmental Protection Act 1994* on 2 February 2016.

The three mining lease applications (ML70441, ML70505 and ML70506) made by Adani Mining for the Project were granted by the Minister for Natural Resources and Mines under the *Mineral Resources Act 1989* on 3 April 2016.

On 7 October 2016, the Minister for State Development declared the Project, the North Galilee Basin Rail Project and the Scheme Project to be a critical infrastructure project under the SDPWO Act.

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[6] *Adani Mining Pty Ltd v Land Services of Coast and Country Inc & Ors* [2015] QLC 48.

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3.3 Attached Land

The applicant is listed in Schedule 4, item 39, of the Water Regulation as a prescribed entity for the purpose of applying the provisions of Chapter 2 of the Water Act. As such, any water licence, if granted to the applicant, will not be attached to land in accordance with section 106(2) of the Water Act.

3.4 Activity (Location) Land

The parcel on which the proposed take of water (activity) is to be located is Lot 3/SP278559. The owner of Lot 3/SP278559 is Claver William and John Edward Kenny. Neither owner is the applicant. Refer to ATS Dealing (**Attachment 3**). The tenure of the land is Freehold.

Under section 107(3)(a) of the Water Act, an application may be for taking from a watercourse where the watercourse does not adjoin any of the applicant's land or the proposed point of taking water is not on the applicant's land.

As set out in the decision brief, Adani Infrastructure is referred to in schedule 4, item 39, of the *Water Regulation 2016* and is therefore a prescribed entity, eligible to apply for a water licence pursuant to section 107(4) of the Water Act. Adani Infrastructure is therefore eligible to be granted a water licence under section 116 of the Water Act, without the need to apply under section 107 of the Water Act.

3.5 Native Title

Advice was sought from Aboriginal and Torres Strait Islander Land Services (ATSILS) regarding the Native Title assessment for the proposed dealing. Advice was received on 13 January 2017, recommending relevant Native Title representative bodies to be notified. A 101 decision form was completed (**Attachment 4**). Notification was sent to the relevant parties on 16 January 2017 with comments required by 17 February 2017 (**Attachment 5**).

No response was received.

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4 ASSESSMENT OF APPLICATION

4.1 Requirements of Water Act

The Department has assessed the Application against the criteria in the *Water Act 2000*, the *Water Regulation 2016*, the Burdekin Basin WP and the Burdekin Basin ROP, as set out in the Briefing note.

4.2 Purposes of the Water Act

The Department assessed the Application against the evaluation criteria in **Attachment 6.**

The Department has also assessed the application's proposed sustainable management of Queensland's water resources, which is a purpose of the Water Act as set out in section 2. This includes management that:

- incorporates the principles of ecologically sustainable development
- allows for the allocation and use of water resources within limits that can be sustained indefinitely
- sustains the health of ecosystems, water quality, water dependent ecological processes and biological diversity and other natural water systems
- recognises the interests of Aboriginal people and Torres Strait Islanders and their connection with water resources

Release

- enables water resources to be obtained through fair, transparent and orderly processes to support the economic development of Queensland
- builds confidence regarding the availability, security and value of water entitlements and other authorisations
- promotes the efficient use of water
- facilitates the community taking an active part in planning for the management and allocation of water

The Department is satisfied that the Application advances the purpose of the Water Act as set out above.

4.3 Eligibility

Adani Infrastructure Pty Ltd is referred to in Schedule 4, item 39, of the Water Regulation as a prescribed entity and is therefore eligible to apply for a water licence pursuant to section 107(4) of the Water Act and eligible to be granted a water licence under section 116 of the Water Act.

On 7 October 2016, the Adani Combined Project (comprising the Project, the North Galilee Basin Rail Project and the Scheme Project) was declared a critical infrastructure project pursuant to section 76E(1) of the SDPWO Act.

The Project was declared a coordinated project under the SDPWO Act on 26 November 2010. Therefore, unallocated water released for the Project will be for a State purpose.[7] (See Attachment 7, table 4. See also the Briefing note).

Further, the Project is also a project for a 'State purpose' on the ordinary meaning of those words, as it is anticipated to benefit the State in terms of investment, royalties, infrastructure and business opportunities.

4.4 Water availability, type and product specification

As per the Terms of Sale, the strategic reserve volume available for application under the fixed price sale process in the Burdekin Basin WP is the mean annual volume of 10,800 ML of surface water from the Belyando-Suttor Subcatchment Area (E).

The application made by Adani Infrastructure on 10 January 2017 was made on the approved form (as per Schedule 3 of the Terms of Sale) and supporting information was consistent with the water product specification in the Terms of Sale.

4.5 Lodgement of application

The application was received via email (centralwaterservices@dnrm.qld.gov.au) on 10 January 2017, which was before the closing date specified in the Terms of Sale (5pm on Friday 13 January 2017).

4.6 Evaluation criteria

Attachment 6 provides an assessment of the application and supporting information against the evaluation criteria included as Schedule 2 in the Terms of Sale.

On the basis set out in **Attachment 6,** the Department considers that the application and supporting information received from Adani Infrastructure on 10 January 2017

[7] The Department proposes to grant a water licence to Adani Infrastructure for unallocated water held as a strategic reserve for a 'State purpose' under part 5, division 2 of the Burdekin Basin WP. See the definitions of 'State purpose' and 'coordinated project' in schedule 10 of the Burdekin Basin WP.

Release

has appropriately addressed the evaluation criteria included in the Terms of Sale. In particular, the Department notes that:

- The IQQM results for environmental flow objectives (EFO) and WASO (water allocation security objectives) have been assessed to be met.
- Impacts to localised downstream water users and the downstream Scartwater and Blackwater Lagoons have been assessed.
- The passflow threshold of 2,592 ML/day allows access to flows for downstream entitlements and stock and domestic use.
- The passflow condition of 5,592ML/day only indicates a very minor (<1%) impact to one downstream entitlement, water licence 96640A. This minor difference is a result of the differences to conditions between water licence 96640A and the water product that is subject of this Application. Water licence 96640A has additional conditions that further restrict diversion opportunity before the take of water can occur at a common passflow condition of 2, 592ML/day.
- The passflow condition on water licence 96640A was imposed to mitigate potential impacts to downstream lagoons and the Burdekin Haughton Water Supply Scheme prior to the development of the Burdekin Basin WP. Given this, it may be appropriate to consider revising the conditions of water licence 96640A to be consistent with current water plan objectives.
- The passflow threshold of 2,592 ML/day is unlikely to have an effect on the probability of being able to take water under a water allocation in the future.
- There is reserve available for town water supply to support population growth in towns and communities.
- There is reserve available for industries to support growth in this area, including other mining projects.
- There is reserve available for irrigators to support growth in irrigated agriculture.
- Adani Infrastructure has responsibilities under *Native Title Act 1993* and the *Aboriginal Cultural Heritage Act 2003*.
- Consideration has been given to ongoing supply of water to support natural ecosystem processes, including the health of rivers and associated floodplains is linked to cultural values.
- The proposed water product (proposed water licence including conditions) demonstrated a low risk to most of the downstream lagoons and most of the remaining assets.
- A 2,592 ML/day pass flow ensures continuation of natural flow variability to the downstream environment.
- The Lower Burdekin and Haughton subcatchments are contained within the IQQM however are not impacted by extractions from the Suttor River due to the volume of the Dam and the contribution of other catchments providing inflows.
- The purpose the water is to be used for and volumes required have been described.
- The Project can be considered a project for which water may be granted for a State purpose, as it is anticipated to benefit the State in terms of investment, royalties, and infrastructure and business opportunities
- The purposes and associated timeframes for which the water is required has been identified.

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- The proposed volumes are fit for purpose.
- Design and construction of storages have considered efficiency measures.
- Environmental Authority conditions (issued by the Department of Environment and Heritage Protection under the *Environmental Protection Act 1994* on 2 February 2016) require the development of a water management plan that includes a water balance model and a water management system for the site.
- Details relating to downstream user location and licence conditions, including an IQQM schematic showing the location of these authorisations, have been provided.
- Alternative water supplies to meet the proposed water demands have been included and justification has been included as to why unallocated water is required.
- Recharge to groundwater systems should not be impacted by the proposed surface water extraction.
- The 2,592 ML/day passflow threshold will have negligible impact to the filling and flushing of Scartwater Lagoon.
- There is sufficient evidence from a water quality perspective which supports a water licence with a 2,592 ML/day passflow threshold.
- The 2,592 ML/day passflow threshold allows for sufficient flow of water in the Suttor River during periods of low flow.
- Potential environmental impacts have been identified and management measures for these potential impacts have been proposed.
- Water quality monitoring is proposed in accordance with the Guidelines for Water Quality Monitoring and Reporting.
- Impacts to fish due to riparian vegetation destruction are likely to be localised and temporary.
- A 2,592 ML/day passflow threshold to be sufficient to flush and maintain water quality at St Anns gauging station, particularly during the early wet season when water quality is at its poorest.

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4.7 Other material considered

The following documents were also considered for the purpose of the assessment of the application.

The departmental document entitled, '*Specification of water product for release of unallocated water from the strategic reserve in the Belyando-Suttor subcatchment area E of the Water Plan (Burdekin Basin) 2007*', dated December 2016 (**Attachment 7**):

- considers matters under former section 32 of the Burdekin Basin WP (prior to its amendment in February 2017)[8] that the chief executive was required to consider in implementing a process to release unallocated water from the strategic reserve in the Belyando-Suttor subcatchment area E; and
- identifies the specification of a water licence product to be included in the Terms of Sale for the water release process.

[8] On 3 February 2017, the Burdekin Basin WP was amended by the *Water Amendment Plan (Burdekin Basin) (No. 1) 2017* (Subordinate Legislation 2017 No. 7). Section 1259(7) of the Water Act provides that section 1259(2) (e) continues to apply for the purposes of a water plan until the plan is amended to include provisions of the kind mentioned in section 1264. For further details, see the Briefing note.

Release

The following technical documents were used to inform the above document for the review and the specification of the water product for the release.

- *'Targeted environmental review for specification of a water product for release of unallocated water from the strategic reserve in the Belyando-Suttor subcatchment area E of the Water Plan (Burdekin Basin) 2007*, Bernie Cockayne, David Sternberg and Gary Luck, DNRM. December 2016. (DNRM Targeted Environmental Review Report)[9] (**Attachment 8**); and

- *'Hydrologic review for specification of a water product for release of unallocated water from the strategic reserve in the Belyando-Suttor subcatchment area E of the Water Plan (Burdekin Basin) 2007 (Impacts to Environmental Flow Objectives, Water Allocation Security Objectives and existing Suttor River entitlements)'*, Clayton Vale, DNRM. December 2016. (DNRM Hydrologic Review Report)[10] (**Attachment 9**).

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5 CONSIDERATION OF SUBMISSIONS FROM DOWNSTREAM RIPARIAN LANDOWNERS AND EXISTING WATER LICENCE HOLDERS

5.1 Submission Process

A submission process to provide natural justice to downstream riparian landholders and/or water entitlement holders was undertaken. The process was to advise these downstream riparian landholders and/or water entitlement holders of the application made by Adani Infrastructure for the taking of 10,800 ML of mean annual volume unallocated water held as strategic reserve from Subcatchment Area E (Belyando-Suttor) of the Burdekin Basin WP for State purposes for the Carmichael Coal Mine and Rail Project, and to provide opportunity for comments in relation to the application.

The following downstream riparian landholders and/or water entitlement holders were identified for this process:

s.49 - Confidential Communications

- Whitsunday Regional Council

- Charters Towers Regional Council

The Department attempted to contact the above people/entities via phone calls on 7 February 2017, advising that they would be receiving written correspondence from

[9] Technical review by Dr. Glenn McGregor, Principal Water Planning Ecology, Department of Science Information Technology Innovation (DSITI). Note, any changes made to the report between the technical review and report finalisation, were inconsequential to the technical content.

[10] Technical review by Dieu Phun, Senior Hydrologist, DSITI. Note, any changes made to the report between the technical review and report finalisation, were inconsequential to the technical content.

the Department and to confirm that the Department had the correct email addresses for them. The following recipients were uncontactable via phone:

s.49 - Confidential Communications

The following recipients were emailed letters advising of the submission opportunity on 8 February 2017:

s.49 - Confidential Communications

- Whitsunday Regional Council
- Charters Towers Regional Council

The following recipients were sent a hard copy of the letter via Toll Priority due on 8 February 2017 as they could not be contacted via phone:

s.49 - Confidential Communications

The following recipient was sent a hard copy of the letter via Toll Priority on 9 February 2017 after receiving a phone call from a family member who received the email sent on 8 February 2017. advised the best way to reach the was through the mail and she provided the correct address.

s.49 - Confidential Communications

The following recipient was sent a hard copy of the letter via registered post on 8 February 2017 as the address was a PO Box number and was unable to be contacted via phone:

s.49 - Confidential Communications

The closing date for submissions was 24 February 2017.

A typographical error in the letters was rectified by providing advice to all the downstream riparian landholders and water entitlement holders on the 21 February 2017. The error was the number provided as the passflow threshold. It was stated as 2952ML/say instead of 2592ML/day. The submission period was not extended as the nature of the error would not have required further time for preparation of a submission.

Two submissions were received from:

s.49 - Confidential Communications

An analysis of submitters' responses can be found in **Attachment 10.**

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5.2 Summary of submission comments

Both submitters were concerned with the volume of water that would left for future use, especially for agricultural purposes. The Department confirmed that there is general reserve water available in the Belyando Suttor Subcatchment. General reserve water is available as a possible water supply option for irrigators and there is a framework in place for the release of general reserve water in the future.

In other release processes in the State, the Department has applied an agricultural strategy where volumetric limits have been set on access to the general reserve for activities other than agriculture. Future water availability has been considered as part of the assessment against criteria provided for in the Terms of Sale.

Submitters also questioned the types of monitoring and reporting that would be required and the need for transparency to the public. Monitoring and reporting are considered as part of the assessment process and the proposed licence conditions include monitoring of extraction times, volumes and rates and publication of the data. The Department also has the ability to conduct compliance checks on the installed works and meter devices at any time. The proposed conditions will also require the meters to be approved by an independent meter validator.

With regards to streamflow comments, s.49 - Confidential Communications advised that it had received a refusal of an application for irrigation water which was a lesser volume than that of Adani Infrastructure's. s.49 - Confidential Communications s.49 - Confidential Communications A moratorium was imposed during the period of development of the water resource plans so the application was held until the Burdekin Basin WP and Burdekin Basin ROP were released. The application was refused on 10 February 2011 in accordance with s185 of the Burdekin Basin ROP. However, s.49 - Confidential Communications may apply to access irrigation water through a general reserve release process.

A number of environmental concerns were expressed. However, these fell outside of the considerations under chapter 2 of the Water Act and were related to administration of Local Government, Department of Water Energy and Safety and the Department of Environment and Heritage Protection. Another concern included price of the water and pricing policies of the Department. It is considered that these queries are outside of the scope of what the department is required to consider for this application.

It is considered that all submitters' comments have been considered and issues have either been dealt with as part of the assessment of the Application and/or have been catered for in the conditions of the proposed licence.

6 WORKS

6.1 Approved works

New water infrastructure is required to take water from the Suttor River and supply it to the required destinations. This infrastructure is referred to as part of the Scheme Project.

The works to take water from the Suttor River have been subject to development assessment under the *Sustainable Planning Act 2009*, resulting in a development approval being granted on 5 November 2015.

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The approved works include a gravity diversion from a watercourse, watercourse pumps and an open intake channel (works classified as high impact earthworks that traverse a mapped wetland protection area).

The below text is an extract from Section 4.3.2 of Adani Infrastructure's supporting information, describing the works to be constructed as part of the Scheme Project:

> *The proposed Suttor River intake channel will include a weir, constructed parallel to the existing bank that will control inflow from the river and create a basin where water is lifted to an open channel via the Suttor River Pump Station. Water will then travel through an open channel approximately 2.8 km in length to a discharge location on the Belyando River Anabranch. An existing in-stream weir on the Belyando River Anabranch impounds water whereby a second intake channel, constructed at the Belyando River Anabranch invert level, will allow ingress of water to a basin where a second pump station is proposed. The Belyando River Anabranch Pump Station will lift water to the upgraded Belyando Junction Dam via dual buried Mild Steel Concrete Lined (MSCL) 1,626 mm diameter pipes, approximately 1.5 km in length and traversing a stock route (Lot A/A3529). Both pump stations will be powered by diesel and thus diesel storage tanks are required at each of the two pump station locations.*
>
> *The upgrade of the storage will involve increasing the capacity of the existing dam to a nominal 10 GL by adding an additional 5 GL cell adjacent to the south-west of the existing dam, and increasing the height of the existing north-eastern embankment.*

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Due to this operation, it is recommended that relift conditions applying to the Belyando River anabranch are implemented on the water licence, if granted.

6.2 Maximum rate of take

The maximum rate of take in litres per second (l/s) for the water product included within the Terms of Sale is 11,600 l/s. This rate was calculated using Schedule 8 (Rates and Pump Sizes) of the Burdekin Basin WP, as a guide. A straight conversion from a daily volumetric limit (ML/day) to rate of take (l/s) would be limiting to achieve the required 830 ML/day as the diversion would need to operate at 9,600 l/s for a 24hr period, which is not practical due to variations in river heights during pumping impacting on pump efficiencies and maintaining a constant rate. A higher authorised rate of take provides flexibility to the operation. It is important to note that all modelling and associated resource assessment were completed using the daily volumetric limit of 830 ML/day. Refer to the formula below which shows how the proposed rate of take of 11,600 l/s was determined (using parameters from Schedule 8 of the Burdekin Basin WP).

$$\frac{830\ ML/day}{200\ ML/day} \times 2{,}800\ l/s = 11{,}600\ l/s$$

Figure 1 Extract of Figure 1-3 from Adani Infrastructure's supporting information showing the authorised works to be constructed as part of the North Galilee Water Scheme Project

Release

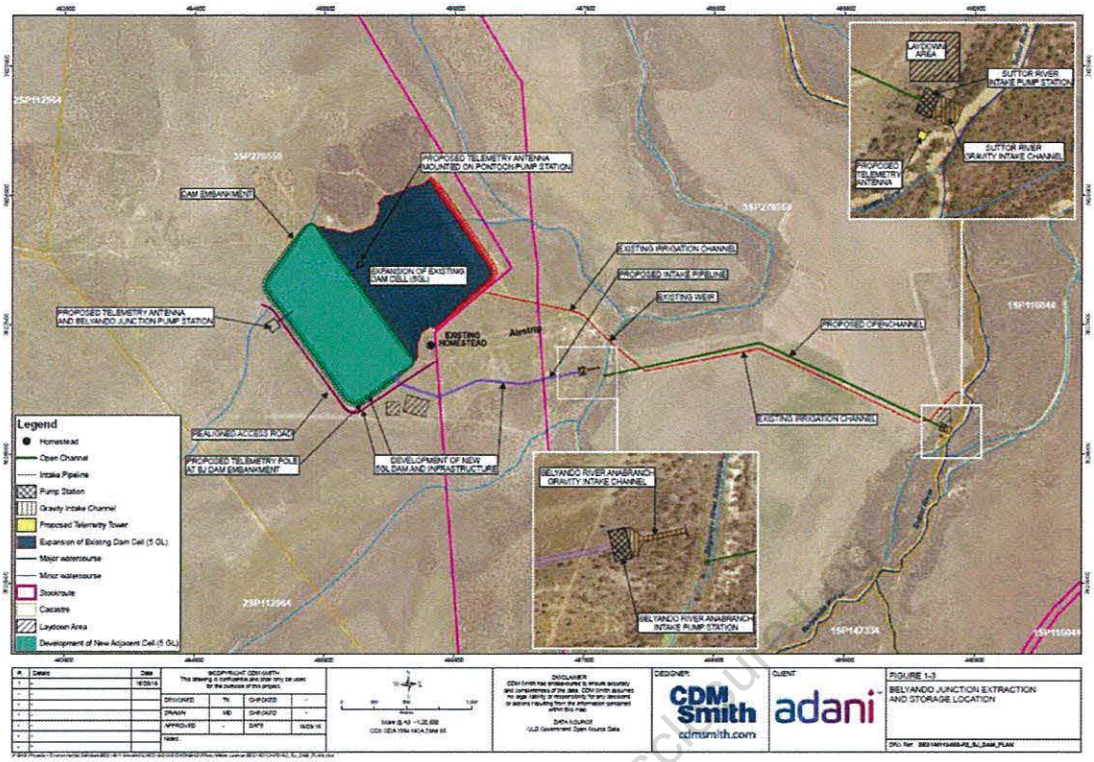


Table 2 Works details associated with development approval no. 614916

Development Permit	Works No.	Type	Water Account	Installed	Location of Works
614916	573256	Gravity Diversion Channel	430426	No	3/SP112964
	573257	Pump			
	573258	Gravity Diversion Channel	430427		
	573259	Pump			

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7 METERING

The take of water under any water licence, if granted, will be subject to metering requirements to ensure compliance with the conditions of the licence.

8 RECOMMENDATION

The Department considers that it is open for the chief executive (or authorised delegate) to find that he or she should decide to offer a water licence (draft water licence with conditions included as **Attachment 11**) to Adani Infrastructure in accordance with section 11 of the Terms of Sale, for the reasons set out in section 8.1.

Note, in accordance with the Terms of Sale, a water licence will not be granted under section 116 of the Water Act until the Acceptance Form is completed by the proposed water licence holder, and the non-refundable deposit of 8% of the total purchase price is paid. If it is decided to offer a water licence, a letter of offer

Release

(**Attachment 12**) and an invoice for this deposit to be sent to the proposed water licence holder.

8.1 Reasons for the recommendation

8.1.1 Material reviewed and considered by the department to support recommendations

The decision made on 5 January 2017 by the State to release 10,800 megalitres of strategic reserve unallocated water as mean annual volume from Subcatchment Area E (Belyando-Suttor) of the Burdekin Basin WP and the Burdekin Basin ROP, adjacent to Lot 3/SP278559, for the State purpose of the Carmichael Coal Mine and Rail Project.

Terms of Sale entitled *Release of unallocated water in the Belyando-Suttor Subcatchment Area E of the Water Plan (Burdekin Basin) 2007 Strategic reserve, Terms of Sale for Carmichael Coal Mine and Rail Project (Adani Infrastructure Pty Ltd), January 2017.*

The fixed price application form submitted by Adani Infrastructure Pty Ltd and received by the Department on 10 January 2017.

A report supporting the fixed price application form entitled, '*Adani Infrastructure Pty Ltd, Supporting Information for an Application for a Water Licence to Take Unallocated Water from the Strategic Reserve in Sub-Catchment E of the Burdekin Basin*', published by CDM Smith, dated 10 January 2017.

Native Title Notification letter and form under the Commonwealth *Native Title Act 1993*, dated 16 January 2017.

Submissions provided by the following downstream landowners and/or existing entitlement holders:

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Part 3 and Part 5, Division 2 of the Burdekin Basin WP.

Part 2 Division 2 Subdivision 2 of the Water Regulation.

Chapter 2 Part 3 Division 2 of the Water Act and section 2 of the Water Act.

8.1.2 Recommendations as to material questions of fact

The release of unallocated water by the State on 5 January 2017 was undertaken in accordance with the process under Part 2 Division 2 Subdivision 2 of the *Water Regulation 2016*.

Adani Infrastructure is referred to in Schedule 4, item 39, of the Water Regulation 2016 and is therefore considered a prescribed entity which is eligible to apply for

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a water licence pursuant to section 107(4) of the Water Act and eligible to be granted a water licence under section 116 of the Water Act.

The application made by Adani Infrastructure on 10 January 2017 was made in the approved form (as per Schedule 3 of the Terms of Sale), before the specified closing date and the supporting information was consistent with the water product specification in the Terms of Sale.

The supporting information accompanying the application received by the Department from Adani Infrastructure on 10 January 2017 has appropriately addressed the evaluation criteria included in the Terms of Sale.

No responses were received in relation to the Native Title Notification letter and form under the *Commonwealth Native Title Act 1993*, dated 16 January 2017.

The issues raised by downstream landowners and/or existing entitlement holders in submissions received on 17 February 2017 and 18 February 2017 have been reviewed (see Attachment 10) and it is considered that issues have either been dealt with as part of the assessment of the application and/or have been catered for in the conditioning of a proposed licence. These include:

- Inclusion of conditions to ensure monitoring and reporting of extraction of water is undertaken and publicly available.
- Inclusion of a condition to require installed monitoring equipment to be authorised by an approved independent meter validator.
- The water licence will be granted for the purpose of the Carmichael Coal Mine and Rail Project only.

Section 118(1) (b) of the Water Act allows the chief executive to impose conditions for a particular licence. In this instance, the Department has concluded that it is appropriate to impose conditions on the proposed water licence to be offered to Adani Infrastructure to:

- define the water product;
- ensure the water returns to the Strategic Reserve as unallocated water to be released for State purposes in accordance with section 33B of the Burdekin Basin WP;
- ensure full payment prior to any water taken;
- ensure that the water taken is measured, recorded and published for the administration and/or enforcement of the licence;
- ensure that the water taken from the Belyando River anabranch is only water that has been transferred from the Suttor River; and
- ensure that any impacts regarding erosion under the relift requirements[11] is monitored and remediated.

8.1.3 Reasons for recommendation

The assessment of the application and supporting information completed by the Department, as set out in this report, found that the application meet the requirements specified for the chief executive (or authorised delegate) to offer a water licence to the applicant under the Terms of Sale.

[11] See proposed condition 20 of the water licence, Attachment 11.

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CTS: 06171/17
eDOCS:

Department of Natural Resources and Mines
DEPARTMENT BRIEFING NOTE

SUBJECT: Approve the offer of a Water Licence to Adani Infrastructure Pty Ltd for the State purpose of the Carmichael Coal Mine and Rail Project

TIMING: Approval as soon as possible

Approved / Not approved / Noted
s.49 - Signature
Signature: .....
Name: Darren Moor
Position: Executive Director, Central Region
Business Unit:
Dated 9 / 3 / 2017

RECOMMENDATION:
It is recommended that you:

a) Approve the offer of a Water Licence with conditions authorising the take of 12 500 megalitres (ML) nominal entitlement (10 800ML mean annual diversion) watercourse water from the Suttor River for the purpose of water supply for the Carmichael Coal and Rail Project (Project) to Adani Infrastructure Pty Ltd (Adani Infrastructure) ACN 606 764 827 (Recommendation).

b) Note:

a. the Application **Attachment 13** and Supporting Information **Attachment 14**
b. the Department of Natural Resources and Mine's Terms of Sale for the Carmichael Coal Mine and Rail Project **Attachment 2**
c. the Assessment Report **Attachment 1**
d. the Assessment against evaluation criteria **Attachment 6**
e. the submitters's responses and analysis of submitters' responses to application by Adani Infrastructure **Attachment 10**
f. the Draft Water Licence **Attachment 11**
g. Crown Law has reviewed and advised on the documentation (see **Attachment 15**)

c) Sign the letter of offer to Adani Infrastructure. **Attachment 12**.

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KEY ISSUES:

1. On 5 January 2017, an authorised delegate of the chief executive, under the *Water Act 2000* (Water Act) and the *Water Regulation 2016* (Water Regulation), decided the Terms of Sale (**Attachment 2**) for a fixed price sale process for the release of unallocated water held as strategic reserve in Subcatchment Area E (Belyando-Suttor) as prescribed under the Burdekin Basin Water Plan (Burdekin Basin WP).
2. The Terms of Sale for a fixed price sale process were approved by a delegate of the Chief Executive (**Attachment 2**).
3. Adani infrastructure submitted an application to the Department on 10 January 2017 for a water licence in response to the Terms of Sale (see **Attachment 13** and **Attachment 14**) (**Application**).
4. The Application has been assessed against the evaluation criteria, which were informed by the relevant legislative provisions, as discussed further below.

BACKGROUND:

5. The Project was declared a co-ordinated project under the *State Development and Public Works Organisation Act 1971* (SDPWO Act) on 26 November 2010. The Project proponent is Adani Mining Pty Ltd (Adani Mining), a related body corporate to Adani Infrastructure.

Author:	Recommended
Name: Kathy Batts Title/Business Group: A/Manager, Water Services Telephone: 07 4837 3481 Date: 8 March 2017	Name: Sam Tarlinton Title/Business Group: A/Regional Manager Water Services Telephone: 07 4999 6868 Date: 8 March 2017

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6. On 7 October 2016 the Adani Combined Project (comprising the Project, the North Galilee Basin Rail Project and the North Galilee Water Scheme Project) was declared to be a prescribed project and a critical infrastructure project pursuant to section 76E(1) of the SDPWO Act.
7. Adani Mining completed an Environmental Impact Statement (EIS), supplementary EIS and additional information to the EIS between 2012 and 2014, as required under the SDPWO Act. These documents assessed the environmental, social and economic impacts in developing the proposed coal mine in the northern Galilee Basin. The EIS process was subject to public submissions.
8. The volume to be made available through the strategic release process is modelled as a mean annual volume (i.e. on average, if the licence is granted, the licensee will be able to access 10 800 ML per year). In any given year, the licensee may have access to less or more depending on the conditions of the catchment each year.
9. The Terms of Sale at **Attachment 2** specify that any licence granted will also include an annual volumetric limit which will be higher than the mean annual volume, in recognition of those years where the conditions allow a higher volume of take.
10. Queensland Treasury has been consulted on the pricing principles outlined in the pricing paper *'Pricing for unallocated water from the strategic reserve in the Belyando-Suttor subcatchment area E of the Water Plan (Burdekin Basin) 2007'* and is supportive of the pricing considerations.

LEGISLATIVE BACKGROUND:

11. The Water Act provides a framework for the sustainable management of Queensland's water resources by establishing a system for the planning, allocation and use of water (see section 2 of the Water Act).
12. Significant changes were introduced into the Water Act in December 2016.
13. The new water planning documents include the Water Regulation,[1] water plans and water management protocols.
14. The relevant legislative provisions are discussed further below, under relevant subheadings for each legislative instrument.

Water Act

15. Section 40 of the Water Act states that the chief executive may release unallocated water if a volume is stated in a water plan or prescribed by regulation. Under section 40(2) and (3), the chief executive must release unallocated water under the process prescribed by regulation. However, section 40(2) does not apply to the extent that the water plan provides for an alternative process for the release of the unallocated water. Under section 40(4), the chief executive may set a price for the unallocated water.
16. Section 116 of the Water Act provides that the chief executive may grant a water licence in accordance with a process for the allocation of water stated in a water plan, water management protocol or regulation without the need for an application to be made under section 107 of the Water Act.
17. Section 118(1) (b) of the Water Act allows the chief executive to impose conditions for a particular licence. In the circumstances, the Department considers it appropriate to impose conditions on the proposed water licence to be offered to Adani Infrastructure to:
    - define the water product;
    - ensure the water returns to the strategic reserve[2] as unallocated water to be released for a State purpose[3] in accordance with section 33B of the Burdekin Basin WP;

[1] The *Water Regulation 2002* has been repealed. The *Water Regulation 2016* commenced on 6 December 2016.
[2] See section 116 of the Water Act and section 31 of the Burdekin Basin WP.
[3] Pursuant to section 33B of the Burdekin Basin WP, and the definitions of 'State purpose' and 'coordinated project' in schedule 10, the Project has been declared a coordinated project under the *State Development and Public Works Organisation Act 1971*.

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- ensure full payment prior to any water being taken;
- ensure that the water taken is measured, recorded and published for the administration and/or enforcement of the licence;
- ensure that the water taken from the Belyando River anabranch is only water that has been transferred from the Suttor River; and
- ensure that any impacts regarding erosion under the relift requirements[4] are monitored and remediated.

18. Chapter 9 of the Water Act contains transitional arrangements for projects that have proceeded part way or completely through the approval process.
19. Section 1259 of the Water Act provides transitional arrangements for provisions stated in a resource operations plan to be included in, or to be read and construed with, other documents if the resource operations plan was in force immediately before the commencement.[5] It states as follows:

> **1259 Stated provisions of a resource operations plan are taken to be, or are included in, or to be read and construed with, other documents**
> (1) This section applies to a resource operations plan in force immediately before the commencement.
> (2) On the commencement, the provisions of the resource operations plan—
> ...
> (e) if section 1264 applies—cease to have effect for the resource operations plan but are taken to have effect for the purposes of the water plan (previously the water resources plan) the provisions were implementing and, for those purposes, are to be read and construed with the water plan, with necessary changes; or
> ...
> (7) Subsection (2) (e) continues to apply for the purposes of a water plan until the plan is amended to include provisions of the kind mentioned in section 1264.
> ...
>
> (emphasis added).

20. For a water plan, these transitional arrangements continue until an amendment is made to the water plan under section 1259(7) to transition provisions relevant to section 1264 of the Water Act into the water plan.
21. Pursuant to section 1259(9) of the Water Act, on amendment of the water plan as mentioned in subsection 1259(7), the provisions of the resource operations plan mentioned in section 1264 are taken to be omitted from the resource operations plan.
22. Section 1264 of the Water Act provides as follows:

> **1264 Provisions of resource operations plan taken to be included in a water plan**
> For section 1259(2) (e), the provisions are the provisions that are relevant to—
> (a) resource operations plan zones, including water management area zones and water supply scheme zones; or
> (b) water management areas, subcatchment areas or subartesian areas; or
> (c) the criteria and process for granting, refusing, amending or otherwise dealing with water licences, other than the criteria and process for deciding applications for a seasonal water assignment or for relocation of a water licence; or
> (d) the volume or volumes of unallocated water reserved or available to be released.
>
> (emphasis added).

Water Regulation

23. The *Water Regulation 2002* has been repealed and the Water Regulation commenced on 6 December 2016. Its relevant provisions are discussed further below.

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[4] See proposed condition 20 of the water licence, Attachment 11.
[5] 'Commencement' is defined in section 1250 of the Water Act to mean the commencement of section 1250, which was 6 December 2016.

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Burdekin Basin WP

24. The *Water Resource (Burdekin Basin) Plan 2007* has been renamed the *Water Plan (Burdekin Basin) 2007*.[6]
25. The Burdekin Basin WP, part 5, division 2 states a process for the allocation of water.
26. Section 31 of the Burdekin Basin WP states that unallocated water may be granted from the general, strategic or SunWater reserve under a process in the resource operations plan.
27. As at the date that the terms of the fixed price sale process were decided, 5 January 2017, (see paragraph 1 above), pursuant to the Burdekin Basin WP:
    a. Unallocated water could be granted from the general, strategic or SunWater reserve under a process in the Burdekin Basin Resource Operations Plan (Burdekin Basin ROP) under a process in the Burdekin Basin ROP;[7] and
    b. In preparing and implementing the process, the chief executive was obliged to consider certain matters set out in section 32 of the Burdekin Basin WP.[8]
28. In this context, the chief executive considered the matters set out in section 32 of the Burdekin Basin WP in deciding the Terms of Sale as follows (see Attachment 6):
    (a) the purpose for which the water is required;
    (b) the efficiency of existing and proposed water use practices;
    (c) the extent to which water is being taken under existing authorisations in the plan area;
    (d) the availability of an alternative water supply for the purpose for which the water is required;
    (e) the impact the proposed taking of, or interfering with, the water may have on existing water users in the plan area;
    (f) whether the proposed taking or interfering is likely to have a direct adverse effect on groundwater flows; and
    (g) the matters mentioned in section 23(1)(a) and (b) (of the Water Act).
29. On 3 February 2017, the Burdekin Basin WP was amended by the *Water Amendment Plan (Burdekin Basin) (No. 1) 2017* (Amendment Plan), under sections 51(2)(b) and 1259(7) of the Water Act.
30. The Amendment Plan amended the Burdekin Basin WP to include provisions of the kind mentioned in section 1264 (see section 1259(7)).
31. Clause 3(1) of the Amendment Plan states the sections of the water plan where amendments have been made in accordance with section 1259(7) of the Water Act to transition the relevant sections previously stated in a resource operations plan into the water plan.
32. The Amendment Plan[9] states that the insertion of sections 30 and 32 of the Burdekin Basin WP are amendments made for section 1259(7) of the Water Act.[10] The effect is that subsection 1259(2)(e) no longer applies to certain provisions, as the Burdekin Basin WP has been amended to include provisions of the kind mentioned in section 1264 of the Water Act.[11]
33. Section 32 of the Burdekin Basin WP states that 35 000 ML of unallocated water held as a strategic reserve may be released for a State purpose.
34. Schedule 10 of the Burdekin Basin WP defines 'State purpose' to mean:
    (a) a coordinated project; or
    (b) a project of regional significance; or

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[6] See section 1256(1) of the Water Act, inserted by *Water Reform and Other Legislation Amendment Act 2014*, s 255 and schedule 2, which renamed the Burdekin Basin WP.
[7] See section 31 of the Burdekin Basin WP, current as at 6 December 2016.
[8] Current as at 6 December 2016.
[9] See section 3 of the Amendment Plan.
[10] Those amendments were stated to be made for section 1259(7) of the Water Act. See s 3 of the Amendment Plan.
[11] Pursaunt to section 1259(9) of the Water Act, those provisions are taken to be omitted from the Burdekin Basin ROP.

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(c) town water supply purposes.

35. Section 33A of the Burdekin Basin WP states that the process for releasing unallocated water held as a strategic reserve for a State purpose is the process stated in the Water Regulation, part 2, division 2, subdivision 2.
36. Part 2, division 2 of the Water Regulation provides processes for releasing unallocated water, including public auction, tender, fixed price sale or grant for a particular purpose. Relevantly, the chief executive may decide the terms of a sale of water or for granting unallocated water for a purpose. Where water is being sold by fixed price sale, the chief executive is not required to publish a notice about the availability of the water under part 2, division 2 of the Water Regulation.
37. The Burdekin Basin WP, current as at 6 December 2016, set out at section 32, matters the chief executive was obliged to consider in preparing and implementing a process for dealing with unallocated water under a resource operations plan.
38. Current section 32 of the Burdekin Basin WP is a new provision which relates to the volumes of unallocated water held as strategic reserve and the purposes for which it may be released.
39. While the former section 32 of the Burdekin Basin WP has been removed and there is currently no equivalent provision in the current version of the Burdekin Basin WP,[12] the requirements of section 32 have been included in the Assessment against evaluation criteria (Attachment 6) as those criteria were in place previously.

Burdekin Basin ROP

40. As at the date that the terms of the fixed price sale process were decided, 5 January 2017, (see paragraph 1 above), the processes for the release of unallocated water for a State purpose were as set out in the Burdekin Basin ROP,[13] chapter 2.[14]
41. Public notice of the proposed fixed-price sale of unallocated water for a State purpose was not required.[15] However, the Department decided to undertake a submission process to provide natural justice to downstream riparian landholders and/or water entitlement holders. This is described in more detail in Attachment 1.
42. The provisions of the Burdekin Basin ROP were taken to be, or taken to have effect for, a number of other documents including the water plan or a water management protocol under the Water Act as amended.[16]
43. As outlined above, the Amendment Plan introduced amendments of the kind mentioned in section 1264 for the purpose of s 1259(7) of the Water Act. The Amendment Plan, section 3, states that certain amendments are made for section 1259(7) of the Act.
44. The Amendment Plan does not state that the insertion of section 33A of the Burdekin Basin WP is for the purposes of section 1259(7) of the Water Act. It may have been intended for the provisions of the Burdekin Basin ROP regarding the processes for the release of unallocated water to continue to apply.

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[12] An equivalent to the former section 32 of the Burdekin Basin WP will be included in a new water management protocol for the Burdekin Basin WP which has not yet been made. However, the new provision will only apply to a process for the release of unallocated water from the strategic reserve for a purpose other than for a State purpose.

[13] That was the effect of s 31 of the Burdekin Baskin WP, current as at 6 December 2016.

[14] Chapter 2 of the Burdekin Basin ROP sets out the process for making available and dealing with unallocated water, including unallocated water held as strategic reserve for state purposes. Section 38 of the Burdekin Basin ROP states that the processes for making unallocated water available are described in part 2, division 1C of the *Water Regulation 2002*. Pursuant to s 145 of the *Water Regulation 2016*, a reference to the *Water Regulation 2002* may be taken to be a reference to the *Water Regulation 2016*. Therefore, the reference to the process under part 2, division 1C of the *Water Regulation 2002* in the Burdekin Basin ROP may be taken to be a reference to the provisions in part 2, division 2 of the *Water Regulation 2016*, as these provisions have been renumbered in part 2, division 2 of the Water Regulation with minimal changes.

[15] See part 2, division 2 of the Water Regulation (and its equivalents in part 2, division 1C of the *Water Regulation 2002*). Those provisions do not require the chief executive to publish a notice about the availability of water for a fixed price sale. They require notice of availability of water by auction nor tender to be published.

[16] See sections 1259(2)(e) and 1264 of the Water Act.

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45. However, the new part 5, division 2 of the Burdekin Basin WP, in material respects, mirrors the provisions of the Burdekin Basin ROP in terms of the processes for the release of unallocated water for a State purpose.[17] Therefore, relevantly, the processes for granting, refusing, amending or otherwise dealing with water licences and the volume or volumes of unallocated water reserved or available to be released are set out in part 5, division 2 of the Burdekin Basin WP.[18]

QUESTIONS OF FACT

46. The release of unallocated water by the State on 5 January 2017 was undertaken in accordance with the process under part 2, division 2, subdivision 2 of the Water Regulation.
47. Adani Infrastructure is referred to in schedule 4, item 39, of the Water Regulation and is therefore a prescribed entity which is eligible to apply for a water licence pursuant to section 107(4) of the Water Act and eligible to be granted a water licence under section 116 of the Water Act, without the need to apply under section 107 of the Water Act.
48. The Application made by Adani Infrastructure on 10 January 2017 was made in the approved form (as per Schedule 3 of the Terms of Sale), before the specified closing date and the supporting information was consistent with the water product specification in the Terms of Sale.
49. The supporting information accompanying the application received by the Department from Adani Infrastructure on 10 January 2017 has appropriately addressed the evaluation criteria included in the Terms of Sale, on the basis set out in **Attachment 6** and in the assessment report at **Attachment 1**.
50. No responses were received in relation to the Native Title Notification letter and form under the *Commonwealth Native Title Act 1993*, dated 13 and 16 January 2017 (**Attachments 4 and 5**).
51. The issues raised by downstream landowners and/or existing entitlement holders in submissions received on 17 February 2017 and 18 February 2017 have been reviewed in **Attachment 10** and it is considered that issues have either been dealt with as part of the assessment of the application and/or have been catered for in the conditioning of a proposed licence. These include:
    - Inclusion of conditions to ensure monitoring and reporting of extraction of water is undertaken and publicly available;
    - Inclusion of a condition to require installed monitoring equipment to be authorised by an approved independent meter validator; and
    - The water licence will be granted for the purpose of the Project only.
52. On 10 January 2017, Adani Infrastructure submitted an application in response to the Terms of Sale.

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RECOMMENDATION

53. It is **recommended t**hat you approve the offer of a Water Licence with conditions authorising the take of 12 500 ML nominal entitlement (10 800ML mean annual diversion) watercourse water from the Suttor River for the purpose of water supply for the Project to Adani Infrastructure pursuant to s 116 of the Water Act.
54. The Department has assessed the Application (see the assessment report at **Attachment 1)** and recommends that a water licence is offered to Adani Infrastructure in accordance with the Terms of Sale to take up to 12 500ML (10 800ML mean annual volume) of unallocated water held as strategic reserve from Subcatchment E (Belyando-Suttor) of the Burdekin Basin WP for the State purpose of the Project, for the reasons set out below.

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[17] That is, under both the Burdekin Basin WP and the Burdekin Basin ROP, 35,000 ML of unallocated water held as a strategic reserve may be released for a State purpose and that the process for releasing the unallocated water is the process stated in the *Water Regulation* (see footnote 13 above). 'State purpose' is also now defined in schedule 10 of the Burdekin Basin WP, whereas it was not clearly defined in the Burdekin Basin ROP.
[18] See section 1264 of the Water Act.

55. In accordance with the Terms of Sale, the total purchase price required to be paid by Adani Infrastructure for strategic reserve water is $20,152,800.
56. The letter of offer includes the requirement that Adani Infrastructure must pay an 8% deposit ($1,612,224) by the date specified.
57. Conditions on the draft Water Licence require payment of the balance of the total purchase price ($18,540,576) by 1 July 2018 and prior to the physical take of the water under the authorisation.

REASON FOR RECOMMENDATION

58. The assessment of the Application and supporting information completed by the Department, dated 8 March 2017 as set out in **Attachment 1**, found that Adani Infrastructure's application meets the requirements specified in the Terms of Sale for the chief executive (or authorised delegate) to offer a water licence.

MATERIAL REVIEWED AND CONSIDERED BY THE DEPARTMENT TO SUPPORT RECOMMENDATION

59. The decision made on 5 January 2017 by the State to release 10,800 megalitres of strategic reserve unallocated water as mean annual volume from Subcatchment Area E (Belyando-Suttor) of the Burdekin Basin WP and the Burdekin Basin ROP, adjacent to Lot 3/SP278559, for the State purpose of the Carmichael Coal Mine and Rail Project.
60. Terms of Sale entitled *Release of unallocated water in the Belyando-Suttor Subcatchment Area E of the Water Plan (Burdekin Basin) 2007 Strategic reserve, Terms of Sale for Carmichael Coal Mine and Rail Project (Adani Infrastructure Pty Ltd), January 2017* (**Attachment 2**).
61. The fixed price application form submitted by Adani Infrastructure Pty Ltd and received by DNRM on 10 January 2017 (**Attachment 13**).
62. A report supporting the fixed price application form entitled, '*Adani Infrastructure Pty Ltd, Supporting Information for an Application for a Water Licence to Take Unallocated Water from the Strategic Reserve in Sub-Catchment E of the Burdekin Basin*', published by CDM Smith, dated 10 January 2017 (**Attachment 14**).
63. Native Title Notification letter and form under the Commonwealth *Native Title Act 1993*, dated 13 and 16 January 2017 (**Attachments 4 and 5**).
64. Submissions provided by the following downstream landowners and/or existing entitlement holders and the analysis of these submissions (**Attachment 10**):

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65. The assessment report completed by DNRM, dated 8 March 2017 (**Attachment 1**) and the assessment against the evaluation criteria (**Attachment 6**).
66. Relevant legislation, including:
    a. Part 3 and part 5, division 2 of the Burdekin Basin WP.
    b. Part 2, division 2, subdivision 2 of the Water Regulation.
    c. Chapter 2, part 3, division 2 of the Water Act.

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s.49 - Signature

ATTACHMENTS:

Attachment 1: Assessment Report s116 Water Act Application for a Water Licence

Attachment 2: Release of unallocated water in the Belyando-Suttor Subcatchment Area E of the *Water Plan (Burdekin Basin) 2007* Strategic reserve Terms of Sale for Carmichael Coal Mine and Rail Project (Adani Infrastructure Pty Ltd)

Attachment 3: Title Search

Attachment 4: Native Title 101 Form

Attachment 5: Native Title 104 Notification

Attachment 6: Assessment against evaluation criteria

Attachment 7: Specification of water product for release of unallocated water from the strategic reserve in the Belyando-Suttor subcatchment area E of the Water Plan (Burdekin Basin) 2007

Attachment 8: Targeted Environmental review for specification of a water product for release of unallocated water from the strategic reserve in the Belyando-Suttor subcatchment area E of the Water Plan (Burdekin Basin) 2007

Attachment 9: Hydrologic Review for specification of a water product for release of unallocated water from the strategic reserve in the Belyando Suttor subcatchment area E of the Water Plan (Burdekin Basin) 2007

Attachment 10: Submitters' responses and analysis of submitters' responses to application by Adani Infrastructure.

Attachment 11: Draft Water Licence

Attachment 12: Letter of Offer

Attachment 13: Application for Strategic Reserve Unallocated Surface Water available at a fixed price

Attachment 14: '*Adani Infrastructure Pty Ltd, Supporting Information for an Application for a Water Licence to Take Unallocated Water from the Strategic Reserve in Sub-Catchment E of the Burdekin Basin*', published by CDM Smith, dated 10 January 2017.

Attachment 15: Crown Law Advice – email dated 7 March 2017

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Attachment 1

Assessment Report
s116 *Water Act 2000* (the Water Act)
Application for a Water Licence
Report date: 8 March 2017

File Reference –	TROC0036 Water Management Mining Adani Infrastructure Pty Ltd Strategic Reserve Unallocated Water

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Application Details

Applicant	Adani Infrastructure Pty Ltd ACN 606 764 827
Activity details	The taking of water from the Suttor River and relift from the Belyando River Anabranch with the point of take on or adjacent to Lot 3/SP278559
Purpose	State purpose of the Carmichael Coal Mine and Rail Project (Project)
Nominal Entitlement	12,500 megalitres (ML)
Mean annual Volume (MAV)	10,800 ML
Extraction rate	830 ML/day
Maximum rate of take	11,600 litres per second (l/s)
Passflow threshold	2,592 ML/day at St Anns Gauging Station 120303A

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1 PURPOSE OF REPORT

The purpose of this report is to set out the Department of Natural Resources and Mines (Department's) assessment of the above water licence application, to assist the chief executive (or authorised delegate) under the *Water Act 2000* (Water Act), in deciding whether or not a water licence should be offered to the applicant in accordance with the Terms of Sale for the Carmichael Coal Mine and Rail Project (Adani Infrastructure Pty Ltd), January 2017 for the release of unallocated water from the strategic reserve in the Belyando-Suttor Subcatchment Area E of the *Water Plan (Burdekin Basin) 2007* (**Attachment 2**).

Release

2 APPLICATION

2.1 Release of Unallocated Water

On 5 January 2017, the authorised delegate of the chief executive under the *Water Act Delegation (No. 1) 2016* and the *Water Act (Burdekin Basin Chief Executive) Delegation (No. 2) 2016* decided to conduct a fixed price sale process to release up to 10,800 ML of strategic reserve unallocated water as mean annual volume (MAV) from Subcatchment Area E (Belyando-Suttor) of the Water Plan (Burdekin Basin) 2007[1] (Burdekin Basin WP) and the Burdekin Basin Resource Operations Plan 2007[2] (Burdekin Basin ROP) for the State purpose of the Project.

The process for making unallocated water available is the process described in part 2, division 2 of the *Water Regulation 2016.* This is described in more detail in the 'Department briefing note – Subject – Approve the offer of a Water Licence to Adani Infrastructure Pty Ltd for the State purpose of the Carmichael Mine and Rail Project' (Briefing note).

The Terms of Sale entitled *Release of unallocated water in the Belyando-Suttor Subcatchment Area E of the Water Plan (Burdekin Basin) 2007 Strategic reserve, Terms of Sale for Carmichael Coal Mine and Rail Project (Adani Infrastructure Pty Ltd), January 2017* (**Attachment 2**), outlined the release as detailed above, without public notice.

As set out in the Briefing note, public notice of the proposed fixed-price sale unallocated water was not required, however, as described in more detail below, the Department decided to undertake a submission process to provide natural justice to downstream riparian landholders and/or water entitlement holders.

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2.2 Application Details

On 10 January 2017, Adani Infrastructure Pty Ltd (Adani Infrastructure) made an application for a water licence seeking to authorise the take of watercourse water from the Suttor River in accordance with the Terms of Sale (**Attachment 2**) (Application). Refer to Table 1 below for the water product specification that was included in the Terms of Sale. Supporting the application was a report titled, '*Adani Infrastructure Pty Ltd, Supporting Information for an Application for a Water Licence to Take Unallocated Water from the Strategic Reserve in Sub-Catchment E of the Burdekin Basin*', published by CDM Smith, dated 10 January 2017 (supporting information) (**Attachment 14**).

Table 1 Water Product Specification

[1] From the commencement of the *Water Reform and Other Legislation Amendment Act 2014* (WROLA) on 6 December 2016, the Water Resource (Burdekin Basin) Plan 2007 continues in force as a 'water plan' and was renamed the Water Plan (Burdekin Basin) 2007 (see section 1256(1) of the Water Act and section 255 and schedule 2 of WROLA).

[2] The provisions of the Burdekin Basin ROP are taken to be, or to have effect for, a number of other documents under the Water Act as amended by WROLA (see sections 1259 and 1264 of the Water Act). Section 1266 of the Water Act allows references to resource operations plans to, where the context permits, be taken to be a reference to the document that is relevant to the reference as specified under the Water Act as amended by the WROLA on 6 December 2016.

Release

Geographical area	Water type	Licenced Nominal Entitlement (Maximum Annual Diversion) (ML)	Licenced Maximum Rate (litres per second)	Licenced Daily Volumetric Limit (Maximum Daily Diversion) (ML)	Mean Annual Volume (ML)
Suttor River at approximately AMTD 123km	WC	12,500	11,600	830	10,800
Licence conditions for passing flow					
Taking of water will be permitted when the flow in the Suttor River at St Anns Gauging Station (GS120303A) exceeds 2,592 ML per day					

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2.3 Reason for Application

Adani Infrastructure is seeking a secure water supply from the strategic reserve in the Belyando Suttor subcatchment area E of the Burdekin Basin WP for the construction and operation of the Project and associated infrastructure including off lease infrastructure and the SP1 (part of the Project).

Specifically, Adani Infrastructure has indicated in its supporting information that the water it is seeking will be used for the following:

- Construction of off-lease and on-lease infrastructure, for example mine access road, mine workers accommodation, airport, quarries, rail, dust suppression, washdown, earthworks, civil works, firewater system, and commissioning;
- Potable water supply to meet the needs of the workers; and
- Operation of the mine, for example dust suppression (stockpiles, transfer stations, and roads), tailings cell management, coal washing and processing, equipment and vehicle washdown, and longwall mining equipment cooling water.

Adani Infrastructure has advised that during the construction phase and the first years of operation, the Project is reliant on external water supplies. Adani Infrastructure has determined that multiple water supply sources need to be secured to supply the initial construction period and long term operation. Combinations of the following sources are proposed to be used to satisfy the water requirements:

- Take of 8,300 ML[3] of water from Mistake Creek and Belyando River (currently authorised under water permits);
- Take of 12,500 ML[4] (nominal entitlement) of water from the Suttor River (the subject of this Application); and

[3] This volume is a total take over the currency of the water permits i.e. 2 years.
[4] This volume is an annual volumetric limit.

Release

- Groundwater reuse[5] (associated water licence application currently subject to assessment).

New water infrastructure is required to transfer water from the above sources to supply it to the required destinations. This infrastructure is referred to as the North Galilee Water Scheme Project (Scheme Project). The part of the Scheme Project associated with the proposed Suttor River take and Belyando River Anabranch relift is further detailed in Section 6 of this assessment report.

2.4 Legislative Framework

The Water Act provides a framework for the sustainable management of Queensland's water resources by establishing a system for the planning, allocation and use of water (see section 2 of the Water Act).The legislative framework is set out in more detail in the Briefing note.

Section 116 of the Water Act provides that the chief executive may grant a water licence in accordance with a process for the allocation of water stated in a water plan, water management protocol or regulation without the need for an application to be made under section 107 of the Water Act. Adani Infrastructure's application for a water licence for the release of unallocated water for a State purpose is pursuant to section 116 of the Water Act.

On 5 January 2017, unallocated water held as strategic reserve in Subcatchment Area E (Belyando-Suttor) as prescribed under the Burdekin Basin WP, was released in accordance with the relevant provisions of the Water Act and associated statutory instruments.

As set out in more detail in the Briefing note, the chief executive considered the matters set out in section 32 of the Burdekin Basin WP (current as at 6 December 2016) in deciding the Terms of Sale.

As detailed in the Briefing note, on 3 February 2017, the Burdekin Basin WP was amended by the *Water Amendment Plan (Burdekin Basin) (No. 1) 2017* (Subordinate Legislation 2017 No. 7).

As set out in more detail in the Briefing note, the Burdekin Basin WP currently provides that:

- 35,000 ML of unallocated water from the general reserve may be released for State purposes (see section 32 of the Burdekin Basin WP).
- Unallocated water may be released from the general, strategic or SunWater reserve under section 33A of the Burdekin Basin WP.
- The process for releasing the unallocated water held as a strategic reserve for a State purpose is the process stated in the *Water Regulation 2016*, part 2, division 2, subdivision 2 (see section 33A(2) of the Burdekin Basin WP).

3 BACKGROUND INFORMATION

3.1 The Proponent

The proponent for the Carmichael Coal Mine and Rail Project is Adani Mining Pty Ltd (Adani Mining), which is an Australian subsidiary of Adani Enterprises Ltd. All

[5] A volume is not specified on this type of approval, the take is a volume that is considered necessary to allow safe working conditions to access the coal resource.

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approvals referenced in section 3.2 below, and all current Water Act approvals, are held in the name of Adani Mining.

Adani Infrastructure applied for the water released by the chief executive's delegate on 5 January 2017. Adani Infrastructure is also an Australian subsidiary of Adani Enterprises Ltd. Adani Infrastructure is a prescribed entity under Schedule 4 of the Water Regulation 2016 (Water Regulation), for the purposes of section 26 of the Water Regulation 2016 and section 104 of the Water Act.

3.2 State and Federal Approvals Relevant to this Application

The Project was declared a coordinated project by the Office of the Coordinator General (OCG) under the *State Development and Public Works Organisation Act 1971* (SDPWO Act) on 26 November 2010.

Between 2012 and 2014, Adani Mining completed an EIS, Supplementary EIS (SEIS) and Additional information for the EIS (AEIS) which outlined the environmental, social and economic impacts for the project.

The EIS, SEIS and AEIS were assessed under a bilateral Commonwealth and State process and the project received conditional approval from the Queensland Government under the SDPWO Act on 7 May 2014. Commonwealth approval was then given for controlled matters under the *Environmental Protection and Biodiversity Conservation Act 1999* (EPBC Act) on 24 July 2014 and re-approved on 14 October 2015 after a legal challenge.

The Department has been in consultation with Adani Mining and the OCG since the public release of the Environmental Impact Statement (EIS) in Adani Mining's proposal to secure the appropriate mining approvals, State land tenure and water supply.

The infrastructure associated with the proposed extraction of water from the Suttor River and Belyando River anabranch was granted development approval with conditions by the Department of Infrastructure, Local Government and Planning under the *Sustainable Planning Act 2009* on 5 November 2015. The approval included advice by the Department that an authorisation must be obtained under the Water Act, prior to the take of water through the works authorised under the development approval.

The mining lease and Environmental Authority (EA) applications were subject to a Land Court hearing with a decision handed down in December 2015.[6]

The Environmental Authority for the mine was issued by the Department of Environment and Heritage Protection under the *Environmental Protection Act 1994* on 2 February 2016.

The three mining lease applications (ML70441, ML70505 and ML70506) made by Adani Mining for the Project were granted by the Minister for Natural Resources and Mines under the *Mineral Resources Act 1989* on 3 April 2016.

On 7 October 2016, the Minister for State Development declared the Project, the North Galilee Basin Rail Project and the Scheme Project to be a critical infrastructure project under the SDPWO Act.

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[6] *Adani Mining Pty Ltd v Land Services of Coast and Country Inc & Ors* [2015] QLC 48.

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3.3 Attached Land

The applicant is listed in Schedule 4, item 39, of the Water Regulation as a prescribed entity for the purpose of applying the provisions of Chapter 2 of the Water Act. As such, any water licence, if granted to the applicant, will not be attached to land in accordance with section 106(2) of the Water Act.

3.4 Activity (Location) Land

The parcel on which the proposed take of water (activity) is to be located is Lot 3/SP278559. The owner of Lot 3/SP278559 is s.49 - Personal Information s.49 - Personal Information Neither owner is the applicant. Refer to ATS Dealing (**Attachment 3**). The tenure of the land is Freehold.

Under section 107(3)(a) of the Water Act, an application may be for taking from a watercourse where the watercourse does not adjoin any of the applicant's land or the proposed point of taking water is not on the applicant's land.

As set out in the decision brief, Adani Infrastructure is referred to in schedule 4, item 39, of the *Water Regulation 2016* and is therefore a prescribed entity, eligible to apply for a water licence pursuant to section 107(4) of the Water Act. Adani Infrastructure is therefore eligible to be granted a water licence under section 116 of the Water Act, without the need to apply under section 107 of the Water Act.

3.5 Native Title

Advice was sought from Aboriginal and Torres Strait Islander Land Services (ATSILS) regarding the Native Title assessment for the proposed dealing. Advice was received on 13 January 2017, recommending relevant Native Title representative bodies to be notified. A 101 decision form was completed (**Attachment 4**). Notification was sent to the relevant parties on 16 January 2017 with comments required by 17 February 2017 (**Attachment 5**).

No response was received.

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4 ASSESSMENT OF APPLICATION

4.1 Requirements of Water Act

The Department has assessed the Application against the criteria in the *Water Act 2000*, the *Water Regulation 2016*, the Burdekin Basin WP and the Burdekin Basin ROP, as set out in the Briefing note.

4.2 Purposes of the Water Act

The Department assessed the Application against the evaluation criteria in **Attachment 6.**

The Department has also assessed the application's proposed sustainable management of Queensland's water resources, which is a purpose of the Water Act as set out in section 2. This includes management that:

- incorporates the principles of ecologically sustainable development
- allows for the allocation and use of water resources within limits that can be sustained indefinitely
- sustains the health of ecosystems, water quality, water dependent ecological processes and biological diversity and other natural water systems
- recognises the interests of Aboriginal people and Torres Strait Islanders and their connection with water resources

- enables water resources to be obtained through fair, transparent and orderly processes to support the economic development of Queensland
- builds confidence regarding the availability, security and value of water entitlements and other authorisations
- promotes the efficient use of water
- facilitates the community taking an active part in planning for the management and allocation of water

The Department is satisfied that the Application advances the purpose of the Water Act as set out above.

4.3 Eligibility

Adani Infrastructure Pty Ltd is referred to in Schedule 4, item 39, of the Water Regulation as a prescribed entity and is therefore eligible to apply for a water licence pursuant to section 107(4) of the Water Act and eligible to be granted a water licence under section 116 of the Water Act.

On 7 October 2016, the Adani Combined Project (comprising the Project, the North Galilee Basin Rail Project and the Scheme Project) was declared a critical infrastructure project pursuant to section 76E(1) of the SDPWO Act.

The Project was declared a coordinated project under the SDPWO Act on 26 November 2010. Therefore, unallocated water released for the Project will be for a State purpose.[7] (See Attachment 7, table 4. See also the Briefing note).

Further, the Project is also a project for a 'State purpose' on the ordinary meaning of those words, as it is anticipated to benefit the State in terms of investment, royalties, infrastructure and business opportunities.

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4.4 Water availability, type and product specification

As per the Terms of Sale, the strategic reserve volume available for application under the fixed price sale process in the Burdekin Basin WP is the mean annual volume of 10,800 ML of surface water from the Belyando-Suttor Subcatchment Area (E).

The application made by Adani Infrastructure on 10 January 2017 was made on the approved form (as per Schedule 3 of the Terms of Sale) and supporting information was consistent with the water product specification in the Terms of Sale.

4.5 Lodgement of application

The application was received via email (centralwaterservices@dnrm.qld.gov.au) on 10 January 2017, which was before the closing date specified in the Terms of Sale (5pm on Friday 13 January 2017).

4.6 Evaluation criteria

Attachment 6 provides an assessment of the application and supporting information against the evaluation criteria included as Schedule 2 in the Terms of Sale.

On the basis set out in **Attachment 6,** the Department considers that the application and supporting information received from Adani Infrastructure on 10 January 2017

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[7] The Department proposes to grant a water licence to Adani Infrastructure for unallocated water held as a strategic reserve for a 'State purpose' under part 5, division 2 of the Burdekin Basin WP. See the definitions of 'State purpose' and 'coordinated project' in schedule 10 of the Burdekin Basin WP.

Release

has appropriately addressed the evaluation criteria included in the Terms of Sale. In particular, the Department notes that:

- The IQQM results for environmental flow objectives (EFO) and WASO (water allocation security objectives) have been assessed to be met.
- Impacts to localised downstream water users and the downstream Scartwater and Blackwater Lagoons have been assessed.
- The passflow threshold of 2,592 ML/day allows access to flows for downstream entitlements and stock and domestic use.
- The passflow condition of 5,592ML/day only indicates a very minor (<1%) impact to one downstream entitlement, water licence 96640A. This minor difference is a result of the differences to conditions between water licence 96640A and the water product that is subject of this Application. Water licence 96640A has additional conditions that further restrict diversion opportunity before the take of water can occur at a common passflow condition of 2, 592ML/day.
- The passflow condition on water licence 96640A was imposed to mitigate potential impacts to downstream lagoons and the Burdekin Haughton Water Supply Scheme prior to the development of the Burdekin Basin WP. Given this, it may be appropriate to consider revising the conditions of water licence 96640A to be consistent with current water plan objectives.
- The passflow threshold of 2,592 ML/day is unlikely to have an effect on the probability of being able to take water under a water allocation in the future.
- There is reserve available for town water supply to support population growth in towns and communities.
- There is reserve available for industries to support growth in this area, including other mining projects.
- There is reserve available for irrigators to support growth in irrigated agriculture.
- Adani Infrastructure has responsibilities under *Native Title Act 1993* and the *Aboriginal Cultural Heritage Act 2003*.
- Consideration has been given to ongoing supply of water to support natural ecosystem processes, including the health of rivers and associated floodplains is linked to cultural values.
- The proposed water product (proposed water licence including conditions) demonstrated a low risk to most of the downstream lagoons and most of the remaining assets.
- A 2,592 ML/day pass flow ensures continuation of natural flow variability to the downstream environment.
- The Lower Burdekin and Haughton subcatchments are contained within the IQQM however are not impacted by extractions from the Suttor River due to the volume of the Dam and the contribution of other catchments providing inflows.
- The purpose the water is to be used for and volumes required have been described.
- The Project can be considered a project for which water may be granted for a State purpose, as it is anticipated to benefit the State in terms of investment, royalties, and infrastructure and business opportunities
- The purposes and associated timeframes for which the water is required has been identified.

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- The proposed volumes are fit for purpose.
- Design and construction of storages have considered efficiency measures.
- Environmental Authority conditions (issued by the Department of Environment and Heritage Protection under the *Environmental Protection Act 1994* on 2 February 2016) require the development of a water management plan that includes a water balance model and a water management system for the site.
- Details relating to downstream user location and licence conditions, including an IQQM schematic showing the location of these authorisations, have been provided.
- Alternative water supplies to meet the proposed water demands have been included and justification has been included as to why unallocated water is required.
- Recharge to groundwater systems should not be impacted by the proposed surface water extraction.
- The 2,592 ML/day passflow threshold will have negligible impact to the filling and flushing of Scartwater Lagoon.
- There is sufficient evidence from a water quality perspective which supports a water licence with a 2,592 ML/day passflow threshold.
- The 2,592 ML/day passflow threshold allows for sufficient flow of water in the Suttor River during periods of low flow.
- Potential environmental impacts have been identified and management measures for these potential impacts have been proposed.
- Water quality monitoring is proposed in accordance with the Guidelines for Water Quality Monitoring and Reporting.
- Impacts to fish due to riparian vegetation destruction are likely to be localised and temporary.
- A 2,592 ML/day passflow threshold to be sufficient to flush and maintain water quality at St Anns gauging station, particularly during the early wet season when water quality is at its poorest.

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4.7 Other material considered

The following documents were also considered for the purpose of the assessment of the application.

The departmental document entitled, '*Specification of water product for release of unallocated water from the strategic reserve in the Belyando-Suttor subcatchment area E of the Water Plan (Burdekin Basin) 2007*', dated December 2016 (**Attachment 7**):

- considers matters under former section 32 of the Burdekin Basin WP (prior to its amendment in February 2017)[8] that the chief executive was required to consider in implementing a process to release unallocated water from the strategic reserve in the Belyando-Suttor subcatchment area E; and
- identifies the specification of a water licence product to be included in the Terms of Sale for the water release process.

[8] On 3 February 2017, the Burdekin Basin WP was amended by the *Water Amendment Plan (Burdekin Basin) (No. 1) 2017* (Subordinate Legislation 2017 No. 7). Section 1259(7) of the Water Act provides that section 1259(2) (e) continues to apply for the purposes of a water plan until the plan is amended to include provisions of the kind mentioned in section 1264. For further details, see the Briefing note.

Release

The following technical documents were used to inform the above document for the review and the specification of the water product for the release.

- *'Targeted environmental review for specification of a water product for release of unallocated water from the strategic reserve in the Belyando-Suttor subcatchment area E of the Water Plan (Burdekin Basin) 2007*, Bernie Cockayne, David Sternberg and Gary Luck, DNRM. December 2016. (DNRM Targeted Environmental Review Report)[9] (**Attachment 8**); and

- *'Hydrologic review for specification of a water product for release of unallocated water from the strategic reserve in the Belyando-Suttor subcatchment area E of the Water Plan (Burdekin Basin) 2007 (Impacts to Environmental Flow Objectives, Water Allocation Security Objectives and existing Suttor River entitlements)'*, Clayton Vale, DNRM. December 2016. (DNRM Hydrologic Review Report)[10] (**Attachment 9**).

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5 CONSIDERATION OF SUBMISSIONS FROM DOWNSTREAM RIPARIAN LANDOWNERS AND EXISTING WATER LICENCE HOLDERS

5.1 Submission Process

A submission process to provide natural justice to downstream riparian landholders and/or water entitlement holders was undertaken. The process was to advise these downstream riparian landholders and/or water entitlement holders of the application made by Adani Infrastructure for the taking of 10,800 ML of mean annual volume unallocated water held as strategic reserve from Subcatchment Area E (Belyando-Suttor) of the Burdekin Basin WP for State purposes for the Carmichael Coal Mine and Rail Project, and to provide opportunity for comments in relation to the application.

The following downstream riparian landholders and/or water entitlement holders were identified for this process:

s.49 - Confidential Communications

- Whitsunday Regional Council

- Charters Towers Regional Council

The Department attempted to contact the above people/entities via phone calls on 7 February 2017, advising that they would be receiving written correspondence from

[9] Technical review by Dr. Glenn McGregor, Principal Water Planning Ecology, Department of Science Information Technology Innovation (DSITI). Note, any changes made to the report between the technical review and report finalisation, were inconsequential to the technical content.

[10] Technical review by Dieu Phun, Senior Hydrologist, DSITI. Note, any changes made to the report between the technical review and report finalisation, were inconsequential to the technical content.

the Department and to confirm that the Department had the correct email addresses for them. The following recipients were uncontactable via phone:

s.49 - Confidential Communications

The following recipients were emailed letters advising of the submission opportunity on 8 February 2017:

s.49 - Confidential Communications

- Whitsunday Regional Council
- Charters Towers Regional Council

The following recipients were sent a hard copy of the letter via Toll Priority due on 8 February 2017 as they could not be contacted via phone:

s.49 - Confidential Communications

The following recipient was sent a hard copy of the letter via Toll Priority on 9 February 2017 after receiving a phone call from a family member who received the email sent on 8 February 2017. advised the best way to reach the was through the mail and she provided the correct address.

s.49 - Confidential Communications

s.49 - Confidential Communications

The following recipient was sent a hard copy of the letter via registered post on 8 February 2017 as the address was a PO Box number and was unable to be contacted via phone:

s.49 - Confidential Communications

The closing date for submissions was 24 February 2017.

A typographical error in the letters was rectified by providing advice to all the downstream riparian landholders and water entitlement holders on the 21 February 2017. The error was the number provided as the passflow threshold. It was stated as 2952ML/say instead of 2592ML/day. The submission period was not extended as the nature of the error would not have required further time for preparation of a submission.

Two submissions were received from:

s.49 - Confidential Communications

An analysis of submitters' responses can be found in **Attachment 10.**

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5.2 *Summary of submission comments*

Both submitters were concerned with the volume of water that would left for future use, especially for agricultural purposes. The Department confirmed that there is general reserve water available in the Belyando Suttor Subcatchment. General reserve water is available as a possible water supply option for irrigators and there is a framework in place for the release of general reserve water in the future.

In other release processes in the State, the Department has applied an agricultural strategy where volumetric limits have been set on access to the general reserve for activities other than agriculture. Future water availability has been considered as part of the assessment against criteria provided for in the Terms of Sale.

Submitters also questioned the types of monitoring and reporting that would be required and the need for transparency to the public. Monitoring and reporting are considered as part of the assessment process and the proposed licence conditions include monitoring of extraction times, volumes and rates and publication of the data. The Department also has the ability to conduct compliance checks on the installed works and meter devices at any time. The proposed conditions will also require the meters to be approved by an independent meter validator.

With regards to streamflow comments, s.49 - Confidential Communications advised that it had received a refusal of an application for irrigation water which was a lesser volume than that of Adani Infrastructure's. s.49 - Confidential Communications A moratorium was imposed during the period of development of the water resource plans so the application was held until the Burdekin Basin WP and Burdekin Basin ROP were released. The application was refused on 10 February 2011 in accordance with s185 of the Burdekin Basin ROP. However, s.49 - Confidential Communications may apply to access irrigation water through a general reserve release process.

A number of environmental concerns were expressed. However, these fell outside of the considerations under chapter 2 of the Water Act and were related to administration of Local Government, Department of Water Energy and Safety and the Department of Environment and Heritage Protection. Another concern included price of the water and pricing policies of the Department. It is considered that these queries are outside of the scope of what the department is required to consider for this application.

It is considered that all submitters' comments have been considered and issues have either been dealt with as part of the assessment of the Application and/or have been catered for in the conditions of the proposed licence.

6 WORKS

6.1 *Approved works*

New water infrastructure is required to take water from the Suttor River and supply it to the required destinations. This infrastructure is referred to as part of the Scheme Project.

The works to take water from the Suttor River have been subject to development assessment under the *Sustainable Planning Act 2009*, resulting in a development approval being granted on 5 November 2015.

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The approved works include a gravity diversion from a watercourse, watercourse pumps and an open intake channel (works classified as high impact earthworks that traverse a mapped wetland protection area).

The below text is an extract from Section 4.3.2 of Adani Infrastructure's supporting information, describing the works to be constructed as part of the Scheme Project:

> *The proposed Suttor River intake channel will include a weir, constructed parallel to the existing bank that will control inflow from the river and create a basin where water is lifted to an open channel via the Suttor River Pump Station. Water will then travel through an open channel approximately 2.8 km in length to a discharge location on the Belyando River Anabranch. An existing in-stream weir on the Belyando River Anabranch impounds water whereby a second intake channel, constructed at the Belyando River Anabranch invert level, will allow ingress of water to a basin where a second pump station is proposed. The Belyando River Anabranch Pump Station will lift water to the upgraded Belyando Junction Dam via dual buried Mild Steel Concrete Lined (MSCL) 1,626 mm diameter pipes, approximately 1.5 km in length and traversing a stock route (Lot A/A3529). Both pump stations will be powered by diesel and thus diesel storage tanks are required at each of the two pump station locations.*
>
> *The upgrade of the storage will involve increasing the capacity of the existing dam to a nominal 10 GL by adding an additional 5 GL cell adjacent to the south-west of the existing dam, and increasing the height of the existing north-eastern embankment.*

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Due to this operation, it is recommended that relift conditions applying to the Belyando River anabranch are implemented on the water licence, if granted.

6.2 Maximum rate of take

The maximum rate of take in litres per second (l/s) for the water product included within the Terms of Sale is 11,600 l/s. This rate was calculated using Schedule 8 (Rates and Pump Sizes) of the Burdekin Basin WP, as a guide. A straight conversion from a daily volumetric limit (ML/day) to rate of take (l/s) would be limiting to achieve the required 830 ML/day as the diversion would need to operate at 9,600 l/s for a 24hr period, which is not practical due to variations in river heights during pumping impacting on pump efficiencies and maintaining a constant rate. A higher authorised rate of take provides flexibility to the operation. It is important to note that all modelling and associated resource assessment were completed using the daily volumetric limit of 830 ML/day. Refer to the formula below which shows how the proposed rate of take of 11,600 l/s was determined (using parameters from Schedule 8 of the Burdekin Basin WP).

$$\frac{830\ ML/day}{200\ ML/day} \times 2{,}800\ l/s = 11{,}600\ l/s$$

Figure 1 Extract of Figure 1-3 from Adani Infrastructure's supporting information showing the authorised works to be constructed as part of the North Galilee Water Scheme Project

Release

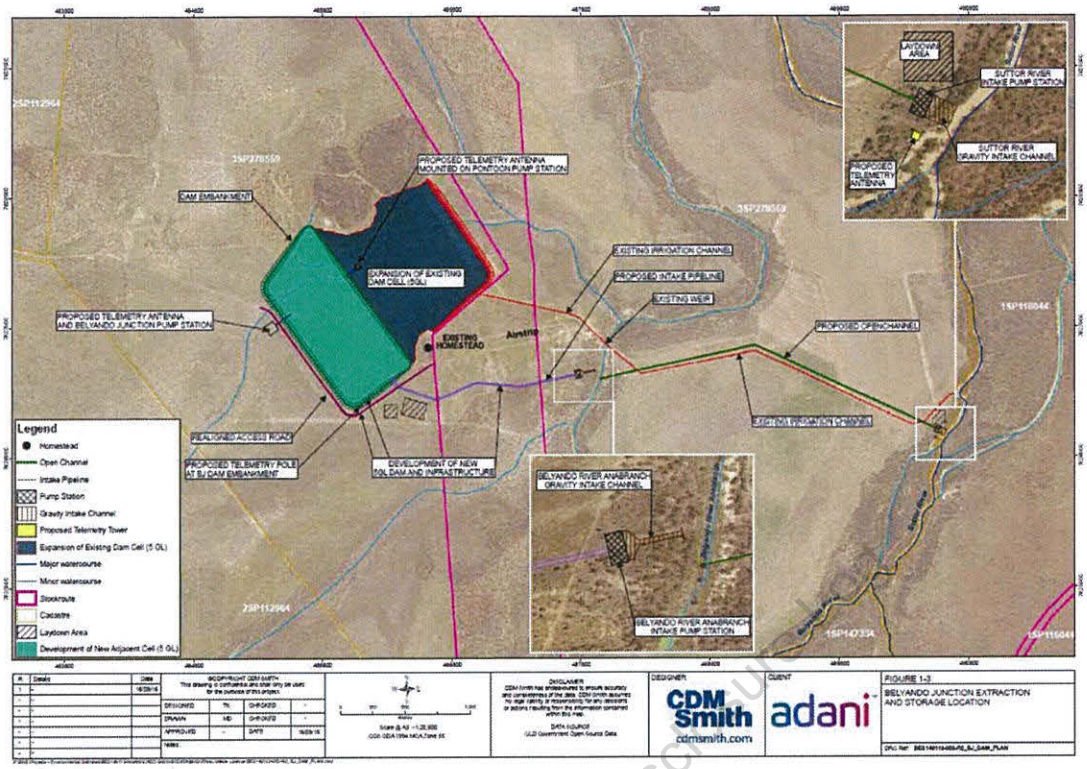


Table 2 Works details associated with development approval no. 614916

Development Permit	Works No.	Type	Water Account	Installed	Location of Works
614916	573256	Gravity Diversion Channel	430426	No	3/SP112964
	573257	Pump			
	573258	Gravity Diversion Channel	430427		
	573259	Pump			

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7 METERING

The take of water under any water licence, if granted, will be subject to metering requirements to ensure compliance with the conditions of the licence.

8 RECOMMENDATION

The Department considers that it is open for the chief executive (or authorised delegate) to find that he or she should decide to offer a water licence (draft water licence with conditions included as **Attachment 11**) to Adani Infrastructure in accordance with section 11 of the Terms of Sale, for the reasons set out in section 8.1.

Note, in accordance with the Terms of Sale, a water licence will not be granted under section 116 of the Water Act until the Acceptance Form is completed by the proposed water licence holder, and the non-refundable deposit of 8% of the total purchase price is paid. If it is decided to offer a water licence, a letter of offer

Releas

(**Attachment 12**) and an invoice for this deposit to be sent to the proposed water licence holder.

8.1 Reasons for the recommendation

8.1.1 Material reviewed and considered by the department to support recommendations

The decision made on 5 January 2017 by the State to release 10,800 megalitres of strategic reserve unallocated water as mean annual volume from Subcatchment Area E (Belyando-Suttor) of the Burdekin Basin WP and the Burdekin Basin ROP, adjacent to Lot 3/SP278559, for the State purpose of the Carmichael Coal Mine and Rail Project.

Terms of Sale entitled *Release of unallocated water in the Belyando-Suttor Subcatchment Area E of the Water Plan (Burdekin Basin) 2007 Strategic reserve, Terms of Sale for Carmichael Coal Mine and Rail Project (Adani Infrastructure Pty Ltd), January 2017.*

The fixed price application form submitted by Adani Infrastructure Pty Ltd and received by the Department on 10 January 2017.

A report supporting the fixed price application form entitled, '*Adani Infrastructure Pty Ltd, Supporting Information for an Application for a Water Licence to Take Unallocated Water from the Strategic Reserve in Sub-Catchment E of the Burdekin Basin*', published by CDM Smith, dated 10 January 2017.

Native Title Notification letter and form under the Commonwealth *Native Title Act 1993*, dated 16 January 2017.

Submissions provided by the following downstream landowners and/or existing entitlement holders:

- s.49 - Confidential Communications
-

Part 3 and Part 5, Division 2 of the Burdekin Basin WP.

Part 2 Division 2 Subdivision 2 of the Water Regulation.

Chapter 2 Part 3 Division 2 of the Water Act and section 2 of the Water Act.

8.1.2 Recommendations as to material questions of fact

The release of unallocated water by the State on 5 January 2017 was undertaken in accordance with the process under Part 2 Division 2 Subdivision 2 of the *Water Regulation 2016*.

Adani Infrastructure is referred to in Schedule 4, item 39, of the Water Regulation 2016 and is therefore considered a prescribed entity which is eligible to apply for

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a water licence pursuant to section 107(4) of the Water Act and eligible to be granted a water licence under section 116 of the Water Act.

The application made by Adani Infrastructure on 10 January 2017 was made in the approved form (as per Schedule 3 of the Terms of Sale), before the specified closing date and the supporting information was consistent with the water product specification in the Terms of Sale.

The supporting information accompanying the application received by the Department from Adani Infrastructure on 10 January 2017 has appropriately addressed the evaluation criteria included in the Terms of Sale.

No responses were received in relation to the Native Title Notification letter and form under the *Commonwealth Native Title Act 1993*, dated 16 January 2017.

The issues raised by downstream landowners and/or existing entitlement holders in submissions received on 17 February 2017 and 18 February 2017 have been reviewed (see Attachment 10) and it is considered that issues have either been dealt with as part of the assessment of the application and/or have been catered for in the conditioning of a proposed licence. These include:

- Inclusion of conditions to ensure monitoring and reporting of extraction of water is undertaken and publicly available.
- Inclusion of a condition to require installed monitoring equipment to be authorised by an approved independent meter validator.
- The water licence will be granted for the purpose of the Carmichael Coal Mine and Rail Project only.

Section 118(1) (b) of the Water Act allows the chief executive to impose conditions for a particular licence. In this instance, the Department has concluded that it is appropriate to impose conditions on the proposed water licence to be offered to Adani Infrastructure to:

- define the water product;
- ensure the water returns to the Strategic Reserve as unallocated water to be released for State purposes in accordance with section 33B of the Burdekin Basin WP;
- ensure full payment prior to any water taken;
- ensure that the water taken is measured, recorded and published for the administration and/or enforcement of the licence;
- ensure that the water taken from the Belyando River anabranch is only water that has been transferred from the Suttor River; and
- ensure that any impacts regarding erosion under the relift requirements[11] is monitored and remediated.

8.1.3 Reasons for recommendation

The assessment of the application and supporting information completed by the Department, as set out in this report, found that the application meet the requirements specified for the chief executive (or authorised delegate) to offer a water licence to the applicant under the Terms of Sale.

[11] See proposed condition 20 of the water licence, Attachment 11.

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Attachment 1

Release of unallocated water in the Belyando-Suttor Subcatchment Area E of the *Water Plan (Burdekin Basin) 2007*

Strategic reserve

Terms of Sale for Carmichael Coal Mine and Rail Project (Adani Infrastructure Pty Ltd)

January 2017

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RTI Act 2009

Queensland Government

s.49 - Signature

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1 Process for fixed price sale of unallocated water held as strategic reserve

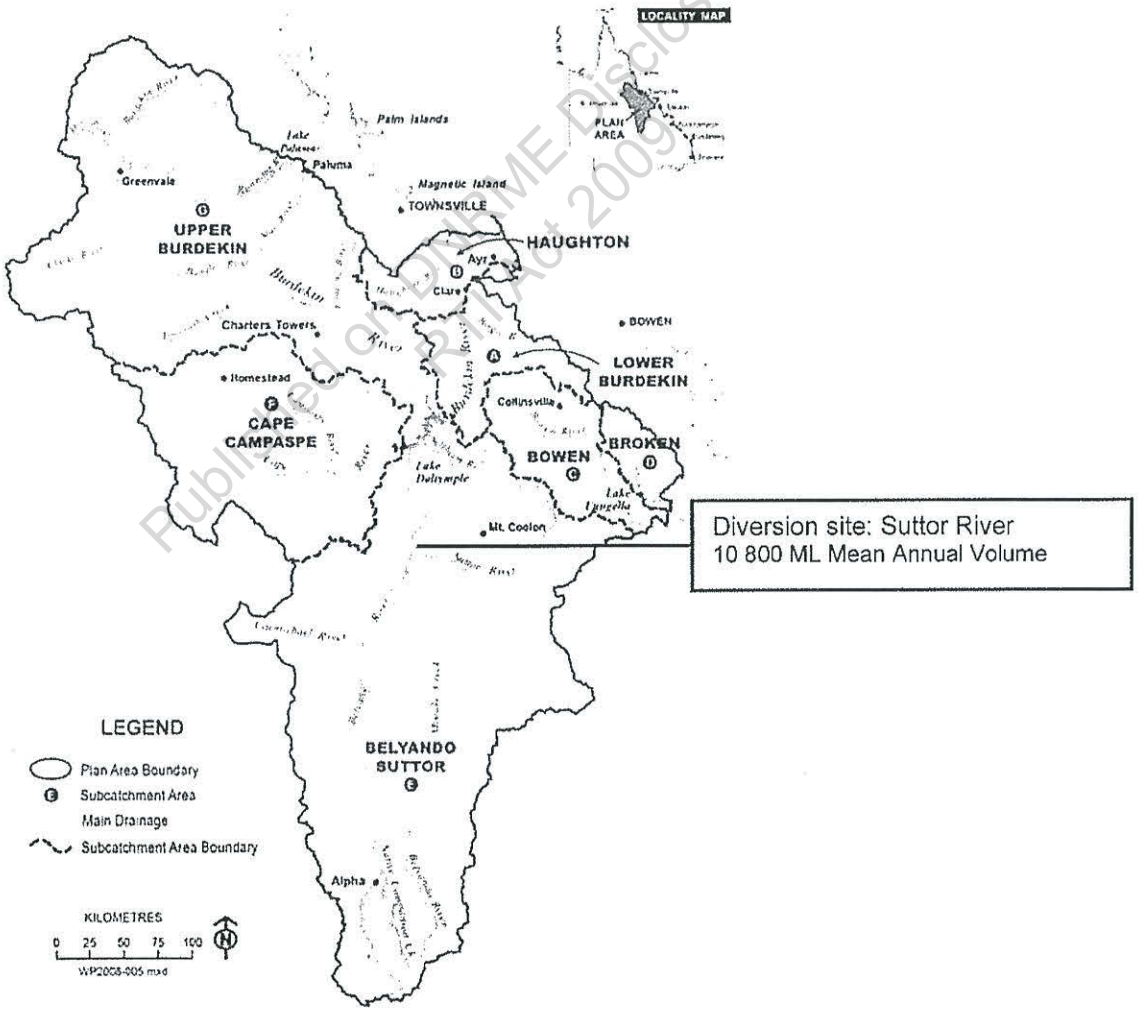
An authorised delegate of the chief executive under the *Water Act 2000* (Water Act) has decided to conduct a fixed price sale process for unallocated water held as strategic reserve totalling 10 800 megalitres (ML) mean annual volume in Subcatchment Area E (Belyando-Suttor) as prescribed under the Water Plan (Burdekin Basin) 2007 (Burdekin Basin WP).

The *Water Regulation 2016* (Water Regulation) prescribes a process for releasing unallocated water by fixed price sale. These Terms of Sale have been decided by the delegate of the chief executive in accordance with section 18 of the Water Regulation.

If successful, the applicant will be offered a water licence under the Water Act in accordance with these Terms of Sale.

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Figure 1 – Map of area of release.



Release

2 Eligibility and restrictions

Adani Infrastructure Pty Ltd (ACN 606 764 827) is eligible to be the applicant for a water licence in response to these Terms of Sale. No other person or entity is eligible.

Section 116 of the Water Act does not require an application for a water licence to be made under section 107 of the Water Act if the process for allocation of water under a water licence is pursuant to a process under a water plan or regulation. However, to be eligible for a water licence an applicant must be either an owner of land or a prescribed entity listed in section 104 of the Water Act. Section 104 includes an entity prescribed by regulation as a prescribed entity.

Adani Infrastructure Pty Ltd is referred to in Schedule 4, item 39, of the Water Regulation and is therefore considered a prescribed entity which is eligible to apply for a water licence pursuant to section 107(4) of the Water Act and eligible to be granted a water licence under section 116 of the Water Act.

However, a water licence will only be granted from the strategic reserve if the application is consistent with the Burdekin Basin WP outcomes and objectives and these Terms of Sale.

The Burdekin Basin Resource Operations Plan 2009 (Burdekin Basin ROP)[1], deals with grants of strategic reserve water for state purposes, which includes for the purpose of a project of state significance or a project of regional significance. The Burdekin Basin ROP also provides that the process for releasing unallocated water for state purposes is the process set out in Part 2, Division 1C of the *Water Regulation 2002*.[2]

The Carmichael Coal Mine and Rail Project was declared a coordinated project under the *State Development and Public Works Organisation Act 1971* (SDPWO Act) on 26 November 2010 and is therefore considered to be a project for which water may be released for a state purpose. As well, on 7 October 2016, the Adani Combined Project (comprising the Carmichael Coal Mine and Rail Project, the North Galilee Basin Rail Project and the North Galilee Water Scheme Project) was declared a critical infrastructure project pursuant to section 76E(1) of the SDPWO Act. Further, the Carmichael Coal Mine and Rail Project is also a project for a 'state purpose' on the ordinary meaning of those words, as it is anticipated to benefit the State in terms of investment, royalties, infrastructure and business opportunities.

These Terms of Sale are for the release of unallocated water for the state purpose of the Carmichael Coal Mine and Rail Project only. Water will not be released for any other purpose under these Terms of Sale.

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1 From the commencement of the *Water Reform and Other Legislation Amendment Act 2014* (WROLA) on 6 December 2016, the Water Resource (Burdekin Basin) Plan 2007 continues in force as a 'water plan' and is renamed as the Water Plan (Burdekin Basin) 2007 (see section 1256(1) of the Water Act, s 255 and schedule 2 of WROLA). The provisions of the Burdekin ROP are taken to be, or to have effect for, a number of other documents under the Water Act as amended (see section 1259 of the Water Act). Section 1266 of the Water Act allows references to resource operations plans to, where the context permits, be taken to be a reference to the relevant document under the Water Act as amended by the WROLA on 6 December.

2 The *Water Regulation 2002* was repealed by the *Water Regulation 2016*. Section 145 of the *Water Regulation 2016* provides that references to the *Water Regulation 2002* in an Act or other document can be taken to be a reference to the *Water Regulation 2016* where the context permits. In the circumstances, the context permits the reference to the process under Part 2, Division 1C of the *Water Regulation 2002* in the Burdekin Basin ROP to be taken to be a reference to the process under the corresponding provisions in the *Water Regulation 2016*.

Releas

3 Water availability, type and product specification

3.1 Water availability

The strategic reserve volume available for application under this fixed price sale process in the Burdekin Basin WP area is shown in Table 1.

Table 1 – Water availability

Subcatchment area	Mean Annual Volume (megalitres)
Belyando-Suttor (E)	10 800 ML

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3.2 Water type

Application to purchase may be made for the following water type:

WC	Water in a watercourse (surface water).

If successful, the applicant will be offered one or more licences for the type specified. Any water licence shall be granted in accordance with section 116 of the Water Act.

3.3 Water product specification

In accordance with section 39 of the Burdekin Basin ROP, in Subcatchment Area E, unallocated water granted from the strategic reserve will be granted only as water licences.

Under section 40 of the Burdekin Basin ROP, water licences granted from the strategic reserve for a project of State significance must include a condition on the licence that the authorisation to take water returns to the State on conclusion of the project of State significance. One water type and product is available through this fixed price sale process.

A total of 10 800 ML mean annual volume is available in Subcatchment Area E (Belyando-Suttor) of the Burdekin Basin WP area for this fixed price release process.

Table 2 – Limits and conditions

Geographical area	Water type	Licenced Nominal Entitlement (Maximum Annual Diversion) (ML)	Licenced Maximum Rate (litres per second)		Licenced Daily Volumetric Limit (Maximum Daily Diversion) (ML)	Mean Annual Volume (ML)
Suttor River at approximately AMTD 123km	WC	12 500	11 600		830	10 800
	Licence conditions for passing flow					

Release

	taking of water will be permitted when the flow in the Suttor River at St Anns Gauging Station (GS120303A) exceeds 2592 ML per day

A sample water licence containing the limits and conditions of the product type can be found at **Schedule 1**.

4 Closing date for receipt of application to purchase

The closing date for an application to purchase by the eligible applicant is 5pm on Friday 13th January 2017. The Department of Natural Resoruces and Mines (DNRM) must receive your application in writing submitted by either email, post or in person by the closing date.

5 Price

Fixed price: The fixed price per ML Mean Annual Volume for strategic reserve unallocated water is **$1866**

6 Planning your application

Independent advice: You should consider obtaining your own independent advice for your particular circumstances in planning and preparing your application.

Pre-lodgement information: If you have a query concerning this process you may contact DNRM identifying your query and any further information you require. DNRM will consider your request and respond in writing. Contact details are provided in Section 16.

Associated approvals: You are responsible for obtaining any approval, consent, notification or agreement required for your proposal and you should commence the process to obtain them at the earliest opportunity. DNRM reserves the right at its sole discretion to reject any application where relevant consents, notifications, approvals or agreements have not been sought or obtained.

No reliance on information or compensation: You are responsible for making your own investigation and assessment about all matters relevant to this application process, the Terms of Sale, the accuracy of all information and documents provided by DNRM and all other matters relevant to your application. DNRM is not liable to pay any compensation to any applicant in relation to their application or the release process in any circumstances, for any reason.

7 Completing an application

You must complete and submit your application in conformity with the following requirements before your application will be assessed against the evaluation criteria.

Fixed Price Application Form: The Fixed Price Application Form is available at **Schedule 3.** You must complete all relevant information fields in the Fixed Price Application Form in full.

Purpose for water: You must state in the Fixed Price Application Form the purpose for which the water is to taken.

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Existing works permit numbers: Where the proposed take of water is from existing works, you must state in your application the relevant permit number for the existing works.

Addressing the evaluation criteria: You must address all of the evaluation criteria in **Schedule 2** and provide sufficient supporting information in writing for your application to be assessed.

Signing formalities: All applicants must sign and date the Fixed Price Application Form.

A corporation:

- may affix its common seal prescribed by its articles of association, or otherwise have the Fixed Price Application Form executed in accordance with section 127 of the *Corporations Act 2001 (Cth);* and
- must forward with its application a copy of its certificate of incorporation.

Non-conforming applications
Failure to meet all of the above requirements means your application is non-conforming.
DNRM may, depending on the extent and nature of the non-conformance, decide to not assess your application, request further information or require you to submit an amended application.

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8 Lodgement of application

Application must be on the form provided (see Schedule 3).

Email address for submitting your application:

centralwaterservices@dnrm.qld.gov.au

Postal address for submitting your application:

Private and Confidential
Application for Unallocated Water: Burdekin Basin Water Resource Plan
Chief Executive
Attention: Sam Tarlinton, A/Regional Manager, Water Services
Department of Natural Resources and Mines
PO Box 63
Mackay QLD 4740

Submitting your application in person:

Private and Confidential
Application for Unallocated Water: Burdekin Basin Water Resource Plan
Chief Executive
Attention: Sam Tarlinton, A/Regional Manager, Water Services
Department of Natural Resources and Mines
22-30 Wood Street
Mackay QLD 4740

Amending an application: Until the finalisation of DNRM's assessment of the application under Section 9, you may amend your application by contacting DNRM (by post or by email to centralwaterservices@dnrm.qld.gov.au) and DNRM will consider your changes and notify you of its decision. You must state the grounds for your requested amendment.

Release

Resubmissions and requested information: DNRM may request further information from you regarding your application and may require you to resubmit your application as an **amended application**, by email or registered post on or before the due date as advised by DNRM.

Withdrawing an application: You may withdraw your application by notifying DNRM in writing (email centralwaterservices@dnrm.qld.gov.au). Upon receipt of your notification by DNRM your application will cease.

9 Assessment

Evaluation criteria: Your application and supporting information will be assessed by DNRM against the evaluation criteria in accordance with these Terms of Sale. The time period for assessment will be as DNRM determines.

10 Assessment notification

Where your application is:

- successful, DNRM will notify you in writing with an offer of a volume of water in accordance with Section 11;
- unsuccessful, DNRM will notify you in writing.

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11 Letter of offer

If your application is successful a letter of offer to you will:

- include the volume of water in megalitres nominal entitlement and mean annual volume being offered;
- enclose a draft licence including the conditions of licence that will apply if you accept the offer;
- enclose an Acceptance Form for you to complete and return if you accept the volume and licence as offered; and
- stipulate the deposit you must pay by the due date to accept the licence.

12 Licence conditions

Under section 118 of the Water Act, a water licence is subject to the conditions the chief executive (or their authorised delegate) may impose.

Under the Water Act, a licensee is subject to the conditions the chief executive may impose, which may include (without limitation):

- purpose of water take;
- maximum instantaneous extraction rate;
- daily volumetric limit;
- nominal entitlement;
- mean annual volume;
- passing flow conditions;

Release

- undertaking monitoring and reporting;
- return of the entitlement to the State upon conclusion of the project

Sample (indicative) licence (schedule 1): The sample licence in Schedule 1 provides an indication of the conditions that may be included, which is not intended to be exhaustive.

Payment conditions: Section 13 sets out further conditions which may be included in respect of payment of the purchase price.

13 Payment and acceptance of offer

To accept the offer of a licence you **must sign and return the Acceptance Form, and pay a non refundable deposit of 8% of the total purchase price,** by the due date stated in our letter of offer.

Purchase price: means the fixed price per megalitre multiplied by the mean annual volume in megalitres offered.

Grant of licence: Once DNRM receives your Acceptance Form and the deposit by the due date you will be granted a licence. DNRM will post the licence to the address included in your Fixed Price Application Form. A licence cannot be granted until the deposit is paid.

Cessation of offer: If the deposit is not paid in full by the stipulated date referred to above in the letter of offer to you, or as otherwise agreed in writing by the Chief Executive, DNRM may notify you that your deposit was not received and that the letter of offer has been rescinded. Any deposit paid will be non-refundable.

Payment of balance of purchase price: If the water licence is granted to you, a condition will be included in your water licence which will require payment of the balance of the total purchase price as follows:

- 92% of the total purchase price must be paid by 1 July 2018.

Conditions will also be included in your water licence to the effect that:

- water cannot be taken under the water licence until payment of the total purchase price is received in full; and
- if you fail to pay the balance of the purchase price on the specified due date, the chief executive may commence a show cause process under sections 132(1)(c) and 135 of the Water Act to determine whether the water licence should be cancelled.

14 General terms of sale

Changes to the process: If the application process is cancelled, or the date for submission of an application is extended, or some or all of the total volume of water available under this process is withdrawn, DNRM will advise in writing the changes being made to the process.

Release and indemnity: By planning, making enquiries in relation to or submitting an application, all applicants agree to unconditionally release and indemnify the State of Queensland, DNRM, its officers, agents and representatives from and against all actions, claims, proceedings or demands and in respect of any loss, death, injury, illness or damage (whether personal or property, and whether special, direct, indirect or consequential, including consequential financial loss) arising from

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or in connection with these Terms of Sale and the release process, including (without limitation) any related publication or announcement.

The State of Queensland, DNRM, its officers, agents and representatives will not in any circumstances (including for negligence) be liable for any loss of revenue, loss of profit, loss of anticipated savings or business, loss of opportunity (including opportunity to enter into or complete arrangements with third parties), loss of data or goodwill, loss of reputation or any indirect or consequential loss whether arising in contract, tort (including negligence) or otherwise, in connection with these Terms of Sale or the release process.

No warranties: You are responsible for making your own investigation and assessment about all matters relevant to this process, the Terms of Sale, the accuracy of all information and documents provided by DNRM and all other matters relevant to your application. DNRM is not liable to pay any compensation to any applicant in relation to their application or this process in any circumstances, for any reason. DNRM provides no warranty about the quality or availability of water which may be obtained by you as a result of this application process. You accept the risk as to quality and quantity of water that may be made available to you.

Documents: DNRM is under no obligation to return your application and will not return application documents at any point in the process. It is recommended that the applicant keep a copy of their application for their own records.

Subject to offer of licence: No rights of access to water will be deemed to have been granted until a water licence has been offered by DNRM, and accepted and paid for by you in accordance with these Terms of Sale.

Costs and expenses: You must meet all costs incurred in participating in this process, planning and making your application, and any associated approvals.

Jurisdiction: These Terms of Sale are governed by the laws and the courts of Queensland.

Public information: DNRM may make publicly available information about the application received, and the volume awarded to the successful applicant.

Right to information: Information contained in an application may be subject to third party disclosure under the *Right to Information Act 2009.*

Personal information consent: By signing the Fixed Price Application Form you permit DNRM to access or use your personal information in your application for the purpose of this process.

No fetter: Nothing in these Terms of Sale will fetter, act as an estoppel or as an agreement about the exercise of discretion or the making of a decision or subordinate legislation under any law by the State of Queensland, DNRM, its officers, employees, agents or representatives.

Chief Executive discretion: Other than as expressly provided for in these Terms of Sale, the Chief Executive reserves the right to make any changes to these Terms of Sale in its absolute discretion by notifying applicants in writing. Without limitation, DNRM may:

(a) add or change terms or requirements including as a result of changes to legislation;
(b) amend dates including extending the closing date or time;
(c) consider or reject an application received after the closing date or time;
(d) accept a non-conforming application;
(e) reject any or all applications;

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(f) amend the evaluation criteria stipulated in these Terms of Sale;
(g) exercise discretion in evaluating any subjective evaluation criteria;

(h) change the terms and conditions applicable to the licensing process, including the terms of any proposed water licence; or
(i) cancel the process by withdrawing the sale at any time prior to an agreement being entered into for the sale.

An applicant will not make any claim against DNRM or the State of Queensland in connection with a decision by DNRM to exercise or not to exercise any of its rights in relation to the release process.

15 Definitions

Application means your application for a water type made by submitting a Fixed Price Application Form (for the relevant water type) with your supporting information addressing the evaluation criteria.

Closing date means the date specified in Section 4 of these Terms of Sale.

Daily volumetric limit for a water entitlement, means the maximum volume of water that may be taken under a water entitlement in a day.

Evaluation criteria means the criteria in Schedule 2.

Fixed Price Application Form means the forms in Schedule 3 (surface water)

Mean Annual Volume is the long-term average annual volume share of the resource availability and is determined from the licence parameters (i.e. nominal entitlement, diversion rate, and passing flow conditions).

Nominal entitlement means the volumetric limit (cap) that can be taken during water year.

Passing flow conditions are conditions that permit taking water above a threshold and prohibit water being taken below a certain flow threshold.

Price means the price per ML as provided in these Terms of Sale.

Sample licence means the sample licence in Schedule 1.

Terms of Sale means this document inclusive of Schedules 1–3.

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16 DNRM contact details

Attention: Kathy Batts, A/Manager Major Projects
Water Services
Department of Natural Resources and Mines

Phone: 1800 822 100

Email: centralwaterservices@dnrm.qld.gov.au — please mark **Attn: Kathy Batts**

Release

16.1 Links

Water Plan (Burdekin Basin) 2007
http://www.legislation.qld.gov.au/Acts_SLs/Acts_SL_W.htm

Burdekin Basin Resource Operations Plan 2009
https://www.dnrm.qld.gov.au/water/catchments-planning/catchments/burdekin

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Schedule 1 — Sample water licence

Watercourse water only

WATER LICENCE

Water Act 2000

Reference	******	**Expiry Date**	30/06/2111
Licensee	JOHN SMITH		
Authorised Activity	The taking of watercourse water from the Suttor River with the point of take on or adjacent to Lot 1 on RP11111 and from Belyando River anabranch		
Authorised Purpose	Any		
Nominal Entitlement	12,500 Megalitres		
Maximum Instantaneous Extraction Rate	11600 Litres per Second		

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

Under the *Sustainable Planning Act 2009* a development permit may be required for operational works to take or interfere with the water described in this licence. The licensee must ensure that the relevant development approvals have been obtained prior to installing or constructing new or additional operational works.

Given at Mackay this XX day of MM YYYY.

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DG Name Here
Director-General
Department of Natural Resources and Mines

Sample only

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*Water Licence: ******

Expiry Date: 30/06/2111

Conditions: Schedule B

Interpretation

In this Licence:

a. A reference to a Condition shall be a reference to a Condition of this Licence;
b. Headings to conditions are for ease of reference only and shall not in any way affect the meaning of the conditions;
c. A reference to days or months is a reference to calendar days or calendar months;
d. A reference to the department is a reference to the Department of Natural Resources and Mines;
e. Reference to the conclusion of the Project is a reference to the surrender of Mining Lease 70441, Mining Lease 70505 and Mining Lease 70506;
f. The mean annual volume assigned from the strategic reserve for this water licence is 10,800 megalitres;
g. Words in the singular shall include the plural and vice versa;
h. ***Rate of take*** is a volume measured in litres per second; and
i. ***Published***, for the purposes of this licence is in accordance with the definition of *publish* in the *Water Act 2000*.

Entitlement

1. The taking of water under this authorisation is permitted only when the flow of water exceeds 2952 megalitres per day at the Department's Gauging Station Sutter River at St Anns (120303A).
2. The daily volumetric limit may be taken under this licence is 830 megalitres.
3. Despite the expiry date specified on this authorisation, water granted under this authorisation is granted only for the life of the Carmichael Mine Project and the right to take the water returns to the State on the conclusion of the project.

Metering

4. Water must not be taken under this authorisation unless a measuring device (telemetric meter) of a type approved by the chief executive to measure the volume of water and taken and released is installed for:

    a. Water taken from the Suttor River under this authorisation; and
    b. Water released into the Belyando River Anabranch; and
    c. Water taken from the Belyando River Anabranch under this authorisation.

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Monitoring Plan

5. On each occasion that water is taken from the Suttor River under this authorisation, the holder must record:
    a. the date and the time at the start and end of the period of take;
    b. the meter reading at the start and end of the period;
    c. the daily volume taken;
    d. the rate of take, and for each change in the rate of take:
        i. The date and time of the change; and
        ii. The new rate of take.
6. Such records must be published within 5 business days of the end of each month by the licence holder and made available upon request of the chief executive.
7. On each occasion that water is released into the Belyando River Anabranch for the purpose of relift under this authorisation, the holder must record:
    a. the date and the time at the start and end of the release period;
    b. the meter reading at the start and end of the period;
    c. the daily volume released;
    d. the release rate, and for each change in the release rate:
        iii. The date and time of the change; and
        iv. The new release rate
8. Such records must be published within 5 business days of the end of each month by the licence holder and made available upon request of the chief executive.
9. On each occasion that water is taken from the Belyando River Anabranch under this authorisation, the holder must record:
    a. the date and the time at the start and end of the period of take;
    b. the meter reading at the start and end of the period;
    c. the daily volume taken;
    d. the rate of take, and for each change in the rate of take:
        v. The date and time of the change; and
        vi. The new rate of take.
10. Such records must be published within 5 business days of the end of each month by the licence holder and made available upon request of the chief executive.

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Relift requirements

11. Water taken from the Belyando Anabranch under this authorisation may only be taken:
    a. after water has been released or is being released into the watercourse by the water entitlement holder; and
    b. until a volume has been reached up to that volume that is released, minus losses.
12. Water being released into the watercourse must not:
    a. cause watercourse bank erosion or riparian destruction; and
    b. be released at a rate or total volume that will cause significant adverse effects on the ambient flows in the watercourse.

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Note: Conditions above are an indication only, other conditions may be included, as required based on application and supporting information

Sample only

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Schedule 2 — Assessment criteria

Criteria	Head of power	What it means	Key issues needed to be addressed
Provide for the use of and protection for the probability of take of all water entitlements and other authorisations in the plan area Demonstrate how water is available to support: • population growth in towns and communities dependent on surface water resources in the plan area; and • growth in industries dependent on surface water resources in the plan area Support water availability in the Belyando-Suttor subcatchment to support growth in irrigated agriculture.	Burdekin Basin WP section 12 (a), (c), (d) and (g)	This criteria is to protect the value of and ability for existing entitlement holders to access their entitlements whilst ensuring there is sufficient water remaining available to support the growth of the agriculture, community and industries.	To address this criterion the applicant should include a detailed description identifying any adverse effects on future Water Allocation Security Objectives and effects on localised and downstream water users and ecosystems
Support water-related cultural values of Aboriginal and Torres Strait Islander communities in the plan area and ensure water is available to support natural ecosystem processes	Burdekin Basin WP section 12 (k) and (l)	The environmental flow objectives have been determined to ensure stream flow regimes to protect waterholes, stream connectivity, environmental outcomes and associated cultural activities.	To address this criterion the applicant should include a detailed description identifying any adverse effects on Environmental Flow Objectives
Maintain the natural variability of flows that support the habitats of native plants and animals and	Burdekin Basin WP section 13 (1) (a)	This criteria, along with criteria 13 (1) (b-f), aim to protect and maintain the ecological integrity of waterways within the Plan area	To address these criteria 13 (1) (a-f) the applicant must demonstrate, via an ecological risk assessment, that the natural variability of flows necessary to support the viability

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migratory birds in watercourses, floodplains, wetlands, lakes and springs		which are potentially at risk through water resource developments.	of natural ecosystems are not adversely effected. This must include assets with life-history requirements which are dependent on low, medium and high flows and include all aspects of the flow regime, such as the timing, duration, magnitude and frequency of the natural flow regime.
Provide for the continued capability of one part of a river system to be connected to another, including by maintaining flood flows that— • allow for the movement of native aquatic fauna between riverine, floodplain, wetland, estuarine and marine environments • deliver nutrients and organic matter throughout the plan area to support natural processes such as breeding, growth and migration in riverine, floodplain, wetland, estuarine and marine environments • deliver water and sediments throughout the plan area to support river-forming processes	Burdekin Basin WP section 13 (1) (b)		
Minimise changes to natural variability in water levels and to support natural ecological processes, including maintaining refugia associated with waterholes and lakes in the Belyando-Suttor subcatchment	Burdekin Basin WP section 13 (1) (c)		

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Promote improved understanding of the matters affecting the flow-related health of ecosystems in the plan area	Burdekin Basin WP section 13 (1) (d)		
maintain flooding in the Lower Burdekin and Haughton subcatchments to provide freshwater inputs to wetlands on the Burdekin Haughton floodplain;	Burdekin Basin WP section 13 (1) (e)		
provide a flow regime that • maintains delivery of fresh water to the estuaries of watercourses and the Great Barrier Reef Lagoon • maintains natural sedimentation processes to support the replenishment of beaches along the Burdekin Haughton floodplain and Cape Bowling Green • supports productivity in the receiving waters of the Great Barrier Reef and inshore reefs.	Burdekin Basin WP section 13 (1) (f)		
The purpose for which the water is required – is it for a 'state purpose'?	Burdekin Basin WP section 32 (2) (a) and Burdekin Basin ROP	The applicant provides a clear proposal for the volume of water required and its use	To address this criterion, the applicant should describe what the water is to be used for and whether it is for a 'state purpose', that is, a project which is likely to benefit the State of Queensland.

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The efficiency of existing and proposed water use practices.	Burdekin Basin WP section 32 (2) (b) and section 12 (j)	The applicant describes how current and proposed water use is not wasteful so that water is not allocated to inefficient uses.	To address this criteria the applicant should include a detailed description identifying: • demand management measures that achieve permanent and reliable reductions in the demand for water • the promotion of water conservation and appropriate water quality objectives for the intended use of water • water recycling, including, water reuse within a particular enterprise to gain the maximum benefit from available supply
The extent to which water is being taken under existing authorisations in the plan area.	Burdekin Basin WP section 32 (2) (c)	These criteria ensure the application proposal considers the extent of demand in the plan area	To address this criterion the applicant should provide information relating to water use under current authorisations
The availability of an alternative water supply for the purpose for which the water is required.	Burdekin Basin WP section 32 (2) (d)	The applicant describes whether alternative means are available to meet proposed water demands without the need for the unallocated water (e.g. sufficient entitlement is available to meet a proportion of their demand.	To address this criterion the applicant should describe whether there are alternative water supplies available on the land to which the application applies and identify the opportunities to make use of those supplies.
The impact the proposed taking of, or interfering with, the water may have on existing water users in the plan area.	Burdekin Basin WP section 32 (2) (e)	This criteria ensures the application proposal considers ways to minimise impacts on existing water users in the plan area including downstream water users	To address this criterion the applicant should include a detailed description identifying: • Any adverse effects on Water Allocation Security Objectives • Any adverse effects on downstream water users

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			It should also include any proposals to mitigate these effects.
Whether the proposed taking or interfering is likely to have a direct adverse effect on groundwater flows	Burdekin Basin WP section 32 (2) (f)	These criteria ensure that the application proposal considers ways to minimise the impacts on the physical integrity of the watercourse, the ecosystems reliant on the watercourse and the associated riverine environments. It also ensures impacts to groundwater flows and the recreational and cultural values of the watercourse are minimised	In addressing these criteria the applicant should include a detailed description identifying: • any adverse effects on the physical integrity of the watercourse. • ecosystems reliant on those watercourses • the associated riverine environments The applicant should also include any proposals to mitigate these affects. This description should also detail the impact on the recreational and cultural values of the watercourse and to groundwater flows as a result of the proposal and any strategies to mitigate these impacts. • To address these criteria you may need to consult with: • Indigenous groups • recreational groups • natural resources management bodies • government departments, especially in relation to fishery and vegetation management requirements.
The stream flows required to maintain the following: • the longitudinal connectivity of low flow habitats throughout river systems in the plan area; • the wetted habitats at riffles and other streambed features; • the natural seasonality of flows and zero flows; • the replenishment of refuge pools that enable movement of instream biota; • the lateral connectivity between rivers in the plan area and their adjacent riverine environments including floodplains	Burdekin Basin WP section 23 (1)(a)		

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The impact the taking of, or proposed taking of, or interfering with, water may have on the following: • water quality; • the natural movement of sediment; • the bed and banks of a watercourse or lake; • riparian vegetation; • habitats for native plants and animals; • the movement of fish and other aquatic species; • the recreation and aesthetic values of the plan area; • cultural values including, for example, cultural values of local Aboriginal or Torres Strait Islander communities.	Burdekin Basin WP section 23 (1)(b)		

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Schedule 3 — Fixed price application form

Queensland Government

Department of Natural Resources and Mines

ABN 59 020 847 551

Application for strategic reserve unallocated surface water available at a fixed price

Water Act 2000

Part A Applicant details

Name(s)

Specify the full name of all persons applying to purchase the unallocated water:

Title	First name	Middle name	Surname

Or

Corporation, trustee or entity name(s)	ACN (if a corporation)

Address

Street address

Suburb/Town	State	Postcode

Postal address

Suburb/Town	State	Postcode

Contact details

Title: ☐ Mr ☐ Mrs ☐ Ms ☐ Miss ☐ Other (specify)

Full name:

Preferred phone:	Alternative phone:	Facsimile:

Email:

Information Privacy Notice (*Information Privacy Act 2009*)

The information being collected in this form will be used by this department for the purpose of processing your application for strategic reserve unallocated water under the authority of Part 2 of the Water Regulation 2016. Your personal information will not be disclosed to any other parties unless authorised or required by law. The information collected will be retained as required by the *Public Records Act 2002* and may be stored in a departmental database. Information on the department's privacy commitment can be found on the department's website.

OFFICE USE ONLY	Application ref.	Fee received $				Office Stamp Only
	Client ref.	Receipt no.				
	Authorisation ref.	Date	/	/	Initials	

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Part B Volume of water

Water type

☐ Watercourse water

Amount of water

Mean annual volume of water required		megalitres
Maximum rate at which water is to be taken		litres per second

Part C Source and location of water

Source of water

Provide the name of the watercourse, lake or spring from which the water will be taken.

Location of take

Describe the parcels of land on or adjoining the place from which the water is to be taken. If water is to be taken from a point within the bed and banks of a watercourse which cannot be properly described in terms of a lot and plan, enter the property description of the nearest adjacent land and tick the 'Adjacent to' (√) box.

Lot	Plan	Adjacent to (✓)	Lot	Plan	Adjacent to (✓)
		☐			☐
		☐			☐
		☐			☐

To take water from a specific point(s) on the nominated land, provide the GPS latitude and longitude coordinates (Datum GDA 94 or WGS 84) for the proposed location of take.

1	°		'		"	S		°		'		"	E
2	°		'		"	S		°		'		"	E
3	°		'		"	S		°		'		"	E

Map / sketch

Please provide a sketch of proposed bore take locations including the distance of the proposed sites from property boundaries.

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Part D Purpose of water
Outline the purpose for which the water will be taken, including whether the water will be taken a 'state purpose', that is, a project which is likely to benefit the State of Queensland?

Part E Applicant Declaration	
If more signature space is required, copy or print a blank copy of this page, complete and attach. **I/we, the undersigned, declare that:** being a recognised entity under the *Water Act 2000*, I/we do hereby apply to purchase strategic reserve unallocated water and declare that the information and attachments contained in this application are true and correct. Upon our receipt of your Acceptance Form a legally binding agreement is formed between you and the Department comprising this application, the Licence - including any conditions, and the Terms of Sale (which includes your statement addressing the Evaluation Criteria).	
Individual	
Name:	Name:
Signature:	Signature:
Position/Title: (if applicable)	Position/Title: (if applicable)
Date: / /	Date: / /
Corporation Executed for and on behalf of	
Organisation name:	
ACN:	
By (name):	By (name):
Position:	Position:
Signature:	Signature:
Date: / /	Date: / /
Witnessed by:	Witnessed by:
Witness signature:	Witness signature:
Date: / /	Date: / /

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Attachment 3

INTERNAL CURRENT TITLE SEARCH
DEPT OF NATURAL RESOURCES AND MINES, QUEENSLAND

Search Date: 13/01/2017 12:37 Title Reference: 51052442
Date Created: 26/08/2016

Previous Title: 40072505

REGISTERED OWNER

Dealing No: 717471035 26/08/2016

s.49 - Personal Information JOINT TENANTS

ESTATE AND LAND

Estate in Fee Simple

LOT 3 SURVEY PLAN 278559
Local Government: CHARTERS TOWERS

EASEMENTS, ENCUMBRANCES AND INTERESTS

1. Rights and interests reserved to the Crown by
Deed of Grant No. 40072505 (Lot 3 on SP 278559)

2 s.49 - Personal Information

ADMINISTRATIVE ADVICES

Dealing	Type	Lodgement Date	Status	Location
711349456	VEG NOTICE VEGETATION MANAGEMENT ACT 1999	16/01/2008 13:37	CUR	RN-GEN -00

UNREGISTERED DEALINGS - NIL

CERTIFICATE OF TITLE ISSUED - No

Caution - Charges do not necessarily appear in order of priority

** End of Current Title Search **

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RTI Act 2009

ATTACHMENT 101 **DOCUMENTED DECISION FOR DEALINGS UNDER THE *WATER ACT 2000* AND *SUSTAINABLE PLANNING ACT 2009***

PROPOSED DEALING AREA/S

Unallocated water released under the Water Plan (Burdekin Basin) 2007
Land\Watercourse Description: Adjacent to Lot 3 on SP278559 – Suttor River & Belyando River Anabranch
Local Authority: Llanarth **Current Tenure/s:** USL – boundary watercourse

PROPOSED DEALING/S: New Water Licence

Dealing under section 116 of the *Water Act 2000* for the grant of a water licence for unallocated surface water from the strategic reserve in the Belyando-Suttor subcatchment area E of the Water Plan (Burdekin Basin) 2007. The application is to Take Water from the Suttor River and Belyando River Anabranch adjacent to Lot 3 on SP278559 with a mean annual volume of 10,800 Megalitres.

DECISION (Please select one option)

☐ Proceed without notification ☑Notify and consider comments
☐ Refer to AAT

REASON FOR DECISION (Please select one option)
NOTIFICATION
☑ Proposed dealing requires notification - Module H

WATER PROCEDURE ASSESSMENT

☐ Dealing may proceed without further reference to native title - Water Mod AB
☐ Proposed dealing area is covered by an ILUA, refer dealing to AAT - Water Mod AC
☐ Proposed dealing area covered by native title determination (native title does not exist) - Water Mod AD
☐ Proposed dealing to proceed due to previous extinguishing grant - Water Mod BA
☐ Proposed dealing to proceed due to previous public works - Water Mod CA
☐ Proposed dealing to proceed due to valid dedicated road - Water Mod CB
☐ Proposed dealing relates to a primary production activity on a non-exclusive pastoral/agricultural lease – Module GB
☐ Proposed dealing to proceed as a renewal/amendment action - Module IC

NB: Attach relevant evidence for assessments recorded under Modules BA, CA, CB, GB & IC.

Name of Decision Maker: Kathy Batts

Position: A/Manager Major Projects

Signature: s.49 - Signature **Date**: 13/01/2017

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Notification Form A

Notification under the Commonwealth *Native Title Act 1993*

To: BALGANUNNA ABORIGINAL CORPORATION RNTBC, TRUSTEE BODY CORPORATE, C/- DILLON BOWERS LAWYER, PO BOX 626, TOWNSVILLE QLD 4810

To: NORTH QUEENSLAND LAND COUNCIL NATIVE TITLE REPRESENTATIVE BODY ABORIGINAL CORPORATION, PO BOX 679N, CAIRNS, QLD, 4870

To: QUEENSLAND SOUTH NATIVE TITLE SERVICES LTD, PO BOX 10832 ADELAIDE ST, LEVEL 10, 370 QUEEN STREET, BRISBANE, QLD, 4000

Date of Issue: 16 January 2017

SECTION OF NTA	s24HA

DEPARTMENT/AGENCY	Department of Natural Resources and Mines

CONTACT NAME	Kathy Batts
E-MAIL	centralwaterservices@dnrm.qld.gov.au
TELEPHONE NO. **FAX NO.**	1800 822 100 4999 6904
REFERENCE NO.	Application for strategic reserve unallocated surface water available at a fixed price (Water Plan (Burdekin Basin) 2007)

An application has been received by Department of Natural Resources And Mines for the following approval:

TYPE OF APPROVAL/S	Application is to purchase unallocated surface water from the strategic reserve of the Water Plan (Burdekin Basin) 2007. If the application is successful it will result in a water licence being issued for the period of the project.
UNDER WHAT STATE ACT	*Water Act 2000*

The approval, if granted, will permit the following activity to happen:

NATURE OF ACTIVITY	The application is to Take Water from the Suttor River and Belyando River Anabranch adjacent to Lot 3 on SP278559 with a mean annual volume of 10,800 Megalitres. The application for the water licence must be consistent with the provisions of the *Water Act 2000*, the Water Plan (Burdekin Basin) 2007 and the Terms of Sale approved under the Water Regulation 2016. Applications are assessed in accordance with the provisions of the *Water Act 2000*, Water Regulation 2016 and Water Plan (Burdekin Basin) 2007 and the Burdekin Water Management Protocol. A decision on the application can include granting with conditions, or refusing to grant. If the decision on the application subject to this notification is to grant with conditions, a letter of offer including a draft water licence with conditions will be issued.

Published on DNRME Disclosure Log
May 2019

Release

The above activity will be located within:

LOCATION OF ACTIVITY	Adjacent to Lot 3 on SP278559 located at LLanarth,
MAPS/PLANS	Attached are maps of the locality.
NAME OF REGISTERED NATIVE TITLE CLAIMANT GROUP/S OR NAME OF REGISTERED NATIVE TITLE BODY CORPORATE	Nil
NAME OF NATIVE TITLE REPRESENTATIVE BODY	Bulganunna Aboriginal Corporation RNTBC North Queensland Land Council Native Title Representative Body Aboriginal corporation Queensland South Native Title Services Ltd

The activity, if approved, will commence only after notification and consideration of all comments. In addition, if approved, the activity will be approved for the following period of time:

DURATION OF APPROVAL	Water licence will be issued for the term of the project.

You are invited to comment upon the proposed future act outlined above.

Any comments must be **IN WRITING** and must be received no later than 17 February 2017.

Please send your comments via post to:
Kathy Batts
A/Manager Major Projects
Water Services
Department of Natural Resources and Mines
PO Box 1762
ROCKHAMPTON QLD 4700

Or via email to:
centralwaterservices@dnrm.qld.gov.au
(attention to Kathy Batts)

Published on DNRME Disclosure Log
RTI Act 2009

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Date of Issue: 16 January 2017

SECTION OF NTA	s24HA

DEPARTMENT/AGENCY	Department of Natural Resources and Mines

CONTACT NAME	Kathy Batts
E-MAIL	centralwaterservices@dnrm.qld.gov.au
TELEPHONE NO. **FAX NO.**	1800 822 100 4999 6904
REFERENCE NO.	Application for strategic reserve unallocated surface water available at a fixed price (Water Plan (Burdekin Basin) 2007)

An application has been received by Department of Natural Resources And Mines for the following approval:

TYPE OF APPROVAL/S	Application is to purchase unallocated surface water from the strategic reserve of the Water Plan (Burdekin Basin) 2007. If the application is successful it will result in a water licence being issued for the period of the project.
UNDER WHAT STATE ACT	*Water Act 2000*

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MAPS/PLANS	Attached are maps of the locality.
NAME OF REGISTERED NATIVE TITLE CLAIMANT GROUP/S OR NAME OF REGISTERED NATIVE TITLE BODY CORPORATE	Nil
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Please send your comments via post to:
Kathy Batts
A/Manager Major Projects
Water Services
Department of Natural Resources and Mines
PO Box 1762
ROCKHAMPTON QLD 4700

Or via email to:
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(attention to Kathy Batts)

Published on DNRME Disclosure Log
RTI Act 2009

Release

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Date of Issue: 16 January 2017

SECTION OF NTA	s24HA

DEPARTMENT/AGENCY	Department of Natural Resources and Mines

CONTACT NAME	Kathy Batts
E-MAIL	centralwaterservices@dnrm.qld.gov.au
TELEPHONE NO. **FAX NO.**	1800 822 100 4999 6904
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TYPE OF APPROVAL/S	Application is to purchase unallocated surface water from the strategic reserve of the Water Plan (Burdekin Basin) 2007. If the application is successful it will result in a water licence being issued for the period of the project.
UNDER WHAT STATE ACT	*Water Act 2000*

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NATURE OF ACTIVITY	The application is to Take Water from the Suttor River and Belyando River Anabranch adjacent to Lot 3 on SP278559 with a mean annual volume of 10,800 Megalitres. The application for the water licence must be consistent with the provisions of the *Water Act 2000*, the Water Plan (Burdekin Basin) 2007 and the Terms of Sale approved under the Water Regulation 2016. Applications are assessed in accordance with the provisions of the *Water Act 2000*, Water Regulation 2016 and Water Plan (Burdekin Basin) 2007 and the Burdekin Water Management Protocol. A decision on the application can include granting with conditions, or refusing to grant. If the decision on the application subject to this notification is to grant with conditions, a letter of offer including a draft water licence with conditions will be issued.

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The activity, if approved, will commence only after notification and consideration of all comments. In addition, if approved, the activity will be approved for the following period of time:

DURATION OF APPROVAL	Water licence will be issued for the term of the project.

You are invited to comment upon the proposed future act outlined above.

Any comments must be **IN WRITING** and must be received no later than 17 February 2017.

Please send your comments via post to:
Kathy Batts
A/Manager Major Projects
Water Services
Department of Natural Resources and Mines
PO Box 1762
ROCKHAMPTON QLD 4700

Or via email to:
centralwaterservices@dnrm.qld.gov.au
(attention to Kathy Batts)

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Attachment 5

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Specification of water product for release of unallocated water from the strategic reserve in the Belyando-Suttor subcatchment area E of the *Water Plan (Burdekin Basin) 2007*

December 2016

Queensland Government

Published on DNRME Disclosure Log
RTI Act 2009

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Release

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1. Scope

The purpose of this document is to inform the Terms of Sale which may be decided by the chief executive (or authorised delegate) under section 18 of the Water Regulation 2016 (Water Regulation) to release unallocated water from the strategic reserve from subcatchment E of the Water Plan (Burdekin Basin) 2007 (Burdekin Basin WP). It provides for:

1. A review of matters under section 32 of the Burdekin Basin WP that the chief executive must consider in implementing a process to release unallocated water from the strategic reserve in the Belyando-Suttor subcatchment area E; and
2. Considers the specification of a water licence product to be included in the Terms of Sale for the water release process.

The following documents inform the review and the specification of the water product for release:

- The document submitted to the Department of Natural Resources and Mines (DNRM) by Adani Infrastructure Pty Ltd (Adani Infrastructure) titled, *'Supporting Information for an Application for a Water Licence to Take Unallocated Water from the strategic reserve in Sub-Catchment E of the Burdekin Basin'*, published by CDM Smith, dated 27 October 2016 (Adani's Proposal);

- *'Targeted environmental review for specification of a water product for release of unallocated water from the strategic reserve in the Belyando-Suttor subcatchment area E of the Water Plan (Burdekin Basin) 2007*, Bernie Cockayne, David Sternberg and Gary Luck, DNRM. December 2016. (DNRM Targeted Environmental Review Report)[1]; and

- *'Hydrologic review for specification of a water product for release of unallocated water from the strategic reserve in the Belyando-Suttor subcatchment area E of the Water Plan (Burdekin Basin) 2007 (Impacts to Environmental Flow Objectives, Water Allocation Security Objectives and existing Suttor River entitlements)'*, Clayton Vale, DNRM. December 2016. (DNRM Hydrologic Review Report)[2].

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This document does not make an assessment of Adani's proposal, however the proposal is used with the other documents outlined to inform the review and specification of the water product for release. Assessment of any application received for the release of unallocated strategic reserve water will only occur if the chief executive or authorised delegate decides to issue Terms of Sale and an application is received in response.

[1] Technical review by Dr. Glenn McGregor, Principal Water Planning Ecology, Department of Science Information Technology Innovation (DSITI). Note, any changes made to the report between the technical review and report finalisation, were inconsequential to the technical content.
[2] Technical review by Dieu Phun, Senior Hydrologist, DSITI. Note, any changes made to the report between the technical review and report finalisation, were inconsequential to the technical content.

Release

2. Summary

Table 1 Summary of water product specification for release

Extraction Volume	12,500 ML per year (annual volumetric limit) 10,800 ML per year (mean annual volume)
Extraction Rate	830 ML per day (9600L/s)
Proposed Flow Thresholds	A 2,592 ML/day passflow threshold at St Anns gauging station 120303A

As part of the water planning process, water plans are developed through technical and scientific assessment as well as extensive community consultation, to determine the appropriate balance between the economic, social and environmental demands on the state's water resources. In developing a water plan, the size and nature of the resource is assessed to ensure that water is allocated within sustainable limits. Unallocated water is reserved under water planning instruments and can be made available for future consumptive use without compromising the security of existing users or the environmental values within a catchment. The total reserve mean annual volume in the Belyando-Suttor subcatchment E is 150,000 ML. This total reserve is made up of a general reserve of 130,000 ML and a strategic reserve for state purposes of 20,000 ML.

In determining a specified water product for release, DNRM has run multiple scenarios for hydrological and ecological review. Consideration of matters under section 32(2) of the Burdekin Basin WP (see Table 4) has determined that the criteria has been addressed for a water licence product specified in Table 1. The passflow threshold of 2,592 ML/day was determined by consideration of potential impacts to existing passflow thresholds of downstream entitlements on the Suttor River above the impounded area of Burdekin Falls Dam.

Using the parameters in Table 1 above, integrated water quantity and quality simulation model (IQQM) modelling has determined a Mean Annual Volume (MAV) of 10,800 ML/year using the hydrologic assessment period of 1890 to 2004. The annual probability to achieve this MAV is 84.2%.

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3.Background

3.1 Adani Infrastructure Pty Ltd

The proponent for the Carmichael Coal Project is Adani Mining Pty Ltd (Adani Mining), which is an Australian subsidiary of Adani Enterprises Ltd. All approvals, including current *Water Act 2000* (Water Act) approvals, are held in the name of Adani Mining. All previous consultation regarding the proposal to take unallocated water from the Belyando/Suttor Rivers has been with Adani Mining.

DNRM has been advised that it will be Adani Infrastructure who will be applying for water if unallocated water is released. Adani Infrastructure is also an Australian subsidiary of Adani Enterprises Ltd. Adani Infrastructure is a prescribed entity under Schedule 4 of the Water Regulation.

3.2 Adani Infrastructure Proposal

Adani Infrastructure has submitted a proposal to access unallocated water from the strategic reserve in the Belyando-Suttor subcatchment area E of the Burdekin Basin WP.

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Adani Infrastructure has indicated that its request for water is for the mine, off-lease infrastructure and construction of the 77 km reach of rail link to the North Galilee Basin Rail Project. Water for the North Galilee Basin Rail Project and Port of Abbot Point will be sought separately.

Adani Infrastructure proposes that it would need to take water from the Suttor River adjacent to Lot 3/SP278559 at AMTD 123 km, which is located downstream from the confluence of the Suttor and Belyando Rivers. The proposed location of take is approximately 34.3 km upstream from the St Anns Gauging Station, which is located at AMTD 88.7 km. Refer to Figure 1 for these locations. Refer to Table 1 for details on Adani's proposal.

New water infrastructure is required to take water from the Suttor River and supply it to the required destinations. This infrastructure is referred to as the North Galilee Water Scheme Project. The below is an extract from Section 4.3.2 of Adani's proposal.

> *The proposed Suttor River intake channel will include a weir, constructed parallel to the existing bank, that will control inflow from the river and create a basin where water is lifted to an open channel via the Suttor River Pump Station. Water will then travel through an open channel approximately 2.8 km in length to a discharge location on the Belyando River Anabranch. An existing in-stream weir on the Belyando River Anabranch impounds water whereby a second intake channel, constructed at the Belyando River Anabranch invert level, will allow ingress of water to a basin where a second pump station is proposed. The Belyando River Anabranch Pump Station will lift water to the upgraded Belyando Junction Dam via dual buried Mild Steel Concrete Lined (MSCL) 1,626 mm diameter pipes, approximately 1.5 km in length and traversing a stock route (Lot A/A3529). Both pump stations will be powered by diesel and thus diesel storage tanks are required at each of the two pump station locations.*
>
> *The upgrade of the storage will involve increasing the capacity of the existing dam to a nominal 10 GL by adding an additional 5 GL cell adjacent to the south-west of the existing dam, and increasing the height of the existing north-eastern embankment.*

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Figure 1 Location of the proposed take and the St Anns Gauging Station



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Table 2 Adani's proposal

Proposal Details	
Proponent	Adani Infrastructure Pty Ltd
Proposed Activity details	The taking of water from the Suttor River with the point of take adjacent to Lot 3/SP278559. Transfer of water from the Suttor River to the Belyando River anabranch via the Suttor River pump station through a gravity channel. The Belyando River anabranch pump station will relift the water to the proposed offstream storage.
Proposed Purpose	Construction and operation of the Carmichael Coal Project and associated infrastructure.
Proposed Attached land	No attached land. Proponent is a prescribed entity under Schedule 4 of the Water Regulation. Proposal includes storage of water on Lot 3/SP278559 with distribution to Carmichael mine through infrastructure to be constructed.
Proposed Nominal Entitlement (ML or Ha)	12,500 ML annual volumetric limit to achieve 10,000 ML MAV. Note, the 10,000 ML MAV is referenced in Adani's Proposal. The 10,800 ML MAV is DNRM's reviewed volume.
Proposed Extraction rate	830 ML/day (equivalent to 9600 l/s)
Proposed passflow threshold	2,592 ML/day at St Anns gauging station 120303A
Documentation in support of proposal	Supporting Information for an Application for a Water Licence to Take Unallocated Water from the strategic reserve in Sub-Catchment E of the Burdekin Basin, published by CDM Smith, dated 27 October 2016 (Adani's proposal).

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4. Legislative Framework

4.1 *Water Act 2000*

The Water Act provides a framework for the sustainable management of Queensland's water resources by establishing a system for the planning, allocation and use of water (see section 2 of the Water Act).

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Chapter 2, Part 2 of the Water Act provides for the planning for the sustainable management of Queensland's water through, among other things, the preparation and implementation of water plans.

Chapter 2, Part 2, Division 3 of the Water Act provides for water plans that apply to parts of the State and advances the sustainable management of Queensland's water.

The Burdekin Basin WP is a plan for the sustainable management of water in the Burdekin Basin plan area.

Section 40 of the Water Act provides that the chief executive may release unallocated water if a volume is stated in a water plan or prescribed by regulation. If the chief executive decides to release unallocated water, then the release must be under the process prescribed by regulation, unless a water plan provides for an alternative process.

Section 116 of the Water Act provides that the chief executive may grant a water licence in accordance with a process for the allocation of water stated in a water plan, water management protocol or regulation without the need for an application to be made under section 107 of the Water Act.

4.2 Water Regulation 2016

Part 2 Division 2 Subdivision 2 of the Water Regulation prescribes the processes for release of unallocated water.

Section 16 of the Water Regulation prescribes the process for releasing unallocated water by public auction, or tender, or fixed price sale or grant for a particular purpose. It is recommended that the proposed release of unallocated water from the strategic reserve in the Belyando-Suttor subcatchment area E of the Burdekin Basin WP is to be completed through a fixed price sale. Refer to the 'Methods of Sale Briefing Paper' for further details.

Section 17 of the Water Regulation prescribes the process for public notice of availability of water. The chief executive may publish a notice about the availability of the water by fixed price sale, under section 17(4).

Section 18 of the Water Regulation provides that the chief executive may decide the terms of a sale of water or for granting water for a particular purpose. Refer to the 'Terms of Sale Briefing Paper' for further details.

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4.3 Water Plan (Burdekin Basin) 2007

The Burdekin Basin WP[3] applies to water in the plan area from a watercourse, lake or spring (not connected to water to which the Water Plan (Great Artesian Basin) Plan 2006 applies) and overland flow water (other than water in springs not connected to water to which the Water Plan (Great Artesian Basin) Plan 2006 applies.[4]

The Burdekin Basin WP provides that:

- Unallocated water may be granted from the general, strategic or SunWater reserve under a process in the resource operations plan (see section 31).
- Unallocated water may be dealt with under a process in the resource operations plan (see section 32).
- In preparing and implementing the process, the chief executive must consider certain matters which are set out in section 32.

The below are considerations regarding the unallocated water process in the Burdekin Basin WP and the relevant sections for these are included in Table 4:

- Outcomes for the sustainable management of water,
- Environmental management rules,
- A process for granting unallocated water from the strategic reserve under a process defined in the Burdekin Basin ROP,
- Preparation and implementation of an unallocated water process under the Burdekin Basin ROP,
- Minimum parameters that must be stated on a water licence to take or interfere with unsupplemented water from a watercourse, lake or spring.

Refer to Table 4 for specific criteria to be considered under the Burdekin Basin WP outlining the review of the proposed release against the criteria and considerations.

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4.4 Burdekin Basin Resource Operations Plan 2009 (amended 2010)

Chapter 2 of the Burdekin Basin ROP[5] sets out the process for making available and dealing with unallocated water, including unallocated water held as strategic reserve for state purposes[6]. Section

[3] From the commencement of the *Water Reform and Other Legislation Amendment Act 2014* (WROLA) on 6 December 2016, the Water Resource (Burdekin Basin) Plan 2007 continues in force as a 'water plan' (see section 1256(1) of the Water Act).

[4] See s 10 of the Burdekin Basin WP.

[5] The provisions of the Burdekin Basin ROP are taken to be, or to have effect for, a number of other documents under the Water Act as amended by WROLA (see sections 1259 and 1264 of the Water Act). Section 1266 of the Water Act allows references to resource operations plans to, where the context permits, be taken to be a reference to the document that is relevant to the reference as specified under the Water Act as amended by the WROLA on 6 December 2016.

[6] While sections 1256 and 1259 of the Water Act transitions the Burdekin Basin WP into a water plan and the Burdekin Basin Resource Operations Plan 2009 into a water plan, water management protocol, operations manuals, resource operations licences and distribution operations licences respectively, the Burdekin Basin ROP has not been republished in this new form. Therefore references to section numbers in the planning instruments reflect numbering under the current published format.

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38 of the Burdekin Basin ROP states that the process for making unallocated water available is the process described in Part 2, Division 1C of the Water Regulation 2002[7].

In preparing and implementing a process under the ROP, the chief executive must consider the matters set out in section 32 (2) of the Burdekin Basin WP.

The Burdekin Basin ROP determines the strategic reserve, including a volume of unallocated water for state purposes, raising Burdekin Falls Dam and water infrastructure for the Bowen and Broken subcatchments, primarily intended for industrial use.

Section 32 of the Burdekin Basin ROP defines the general and strategic reserves for each subcatchment in the plan area which are outlined in Table 3. The proposed activity location for this proposal is within subcatchment E, as can be seen in Figure 2 which has a strategic reserve mean annual volume of 20,000 ML.

Refer to Table 4 for specific criteria to be considered under the Burdekin Basin ROP outlining the review of the proposed release against the criteria and considerations.

Table 3 Reserve volumes that may be granted as a water allocation or a water licence

Reserved purpose	Mean annual volume (ML) by subcatchment area							
	A	B	C	D	E	F	G	Total
General reserve	50 000	5000	0	0	130 000	5000	10 000	200 000
Strategic reserve for state purposes	0	0	0	0	20 000	5000	10 000	35 000
TOTAL								235 000

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Figure 2 Burdekin Basin Plan Area and Subcatchment Area Boundaries

[7] The *Water Regulation 2002* was repealed by the Water Regulation 2016 (2016 Regulation) on 6 December 2016. Section 145 of the 2016 Regulation states that a reference in an Act or other document to the repealed *Water Regulation 2002* may, if the context permits, be taken to be a reference to the 2016 Regulation. Part 2, division 2, subdivision 2 of the 2016 Regulation sets out substantially identical provisions to Part 2, Division 1C of the *Water Regulation 2002*. In this way, the context permits that the reference to Part 2, Division 1C of the *Water Regulation 2002* in the Burdekin ROP may be taken to be a reference to the equivalent provisions in the 2016 Regulation.

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Plan Area and Subcatchment Area Boundary



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5. Review under the Burdekin Basin WP and ROP

Table 4 below lists each criteria to be considered under the Burdekin Basin WP and Burdekin Basin ROP for the proposed release of a specified water product from the strategic reserve of the Belyando-Suttor subcatchment E.

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Table 4 Review of proposed release against legislative criteria

Burdekin Basin WP considerations:			
WP Section	**Criteria**	**Sub-Criteria**	**Review of proposed release against criteria**
Section 11	**Outcomes for water in plan area** Water is to be allocated and sustainably managed in a way that—	(a) recognises the natural state of watercourses, lakes and springs has changed because of water infrastructure, flow supplementation and the taking of water; and	The Burdekin Basin WP manages the allocation of water from a watercourse and provides for the grant of unallocated strategic reserve water under a process defined in the Burdekin Basin ROP. The below criteria are required to be considered under section 32 of the Burdekin Basin WP in preparation for and implementation of a release process. The Burdekin Basin ROP provides the availability of strategic reserve water in subcatchment E of Burdekin Basin WP. The location of take of interest to Adani Infrastructure is below the confluence of the Belyando and Suttor Rivers, located in subcatchment E. Impacts on the take of water and the natural state of the watercourse have been considered in the criteria below, in particular the consideration of ecological outcomes. The allocation of strategic reserve water is temporary in that section 40 of the Burdekin Basin ROP requires that water licences granted from the strategic reserve for state purposes must include a condition on the licence that the authorisation to take the water returns to the State on the conclusion of the project of State significance.
		(b) seeks to achieve a balance in the following outcomes— (i) the general outcomes mentioned in section 12;	Refer to section 12 below for considerations.
		(b) seeks to achieve a balance in the following outcomes— (ii) the general ecological outcomes mentioned in section 13;	Refer to section 13 below for considerations.

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		(b) seeks to achieve a balance in the following outcomes— (iii) the specific ecological outcomes mentioned in section 14	Refer to section 14 below for considerations.
Section 12	**General outcomes** Each of the following is a general outcome for water in the plan area—	(a) to provide for the use of all water entitlements and other authorisations in the plan area;	The intent of the general outcomes of the Burdekin Basin WP involve protecting river health, protecting existing water user access, promoting water use efficiency and providing for future water requirements. Hydrological review of impacts to downstream entitlements on the Suttor River has been undertaken by both Adani Infrastructure in their proposal and DNRM's Hydrologic Review Report, which is included as Appendix 1. This review concluded that downstream users were not impacted by the passflow threshold of 2,592 ML/day, except for water licence 96640A. The impacts identified are minimal (<1% MAV). It is recommended that the conditions of water licence 96640A are reviewed during the Burdekin Basin WP amendment that will further mitigate the impacts. Refer to Section 32(2)(e) of this Table for further information on the background relating to the development of conditions for water licence 96640A. All downstream Suttor River entitlement holder's opportunity to divert is not impacted with a passflow threshold of 2,592 ML/day, except for water licence 96640A, which has an impact of on average up to 1 annual day of pumping opportunity. Refer to Section 32(2)(e) of this Table for further information on how diversion opportunity was reviewed. The proposed take of water was included in the Burdekin Basin ROP scenario where all water security objectives (WASOs) and environmental flow objectives (EFOs) were assessed to be met. The Burdekin Basin ROP scenario includes existing entitlements and unallocated water reserves.

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		(b) to provide for the continued use of all existing overland flow works;	The proposed take of water is from the Suttor River and the Belyando Anabranch, which are both determined to be watercourses under the Water Act (therefore not considered overland flow). The Belyando Junction Property, Lot 3/SP278559, in which the storage (including the proposed upgrade works) and channel associated with the take is located, is riparian to the Suttor River and is traversed by the Belyando Anabranch i.e. there are no other properties between the works and these watercourses, therefore there is no impact to any existing overland flow interference or capture.
		(c) to protect the probability of being able to take water under a water allocation;	There are currently no water allocations granted in the Belyando-Suttor subcatchment E of the Burdekin Basin WP. A Statement of Proposals for a proposed targeted amendment to the Burdekin Basin WP has been released for public consultation. The proposed amendment will focus on the subcatchments upstream of Burdekin Falls Dam—namely the Belyando-Suttor, Cape-Campaspe, and Upper Burdekin subcatchments. The proposed amendment will better define entitlements and establish tradeable water allocations aimed at providing security of access for existing water users while allowing for creation and potential future expansion in water markets. The targeted amendment will not impact on the decision to release unallocated water from the Belyando-Suttor subcatchment E of the Burdekin Basin WP. The passflow threshold of 2,592 ML/day is considered sufficient to allow other water users to access their current entitlements and is unlikely to have an effect on the probability of being able to take water under a water allocation in the future. The passflow threshold of 2,592 ML/day ensures the opportunity to divert is not impacted on for all downstream Suttor River entitlements, except for water licence 96640A, which has an impact of on average up to 1 annual day of pumping opportunity.

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			The allocation of strategic reserve water in this location is temporary of nature, in that section 40 of the Burdekin Basin ROP requires that any water licences granted from the strategic reserve for state purposes must include a condition on the licence that the authorisation to take the water returns to the State on the conclusion of the project of State significance.
		(d) to make water available to support— (i) population growth in towns and communities dependent on surface water resources in the plan area; and	The proposed location of take from the Suttor River is adjacent to the Belyando Junction Property, Lot 3/SP278559, which is located in the Charters Towers Regional Council local government area. IQQM modelling shows that the proposed take would not adversely impact the capacity of the Burdekin Falls Dam. The populations in the Belyando-Suttor subcatchment are situated predominantly on pastoral holdings with only a few small urban communities existing. There are currently no immediate demands for unallocated water for town water supplies and from the primary urban centres of Alpha, Moranbah and Nebo. If there were, specific water supply solutions could be investigated, as the proposed release would only make up a portion of the strategic reserve in this subcatchment and therefore there will be remaining reserve available for town water supply.
		(d) to make water available to support— (ii) growth in industries dependent on surface water resources in the plan area;	There are various coal mining developments being explored in the Galilee Basin by prospective mining companies, including Adani Mining. These potential developments are progressing at different rates with each company seeking independent solutions for the provision of secure and reliable water supplies. The total reserve mean annual volume in the Belyando-Suttor subcatchment E is 150,000 ML. This total reserve is made up of a general reserve of 130,000 ML and a strategic reserve for state purposes of 20,000 ML. These reserves have been identified by industry as a possible water supply option. The proposed release would only make up a portion of the

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			strategic reserve in this subcatchment and therefore there will be remaining reserve available. Adani Infrastructure is the only current proponent that has a project deemed to be of state significance formally seeking a grant from the strategic reserve. Adani's proposal is to access a mean annual volume of 10,000 ML of the strategic reserve volume in order to meet the Project's operational demand. DNRM's review of a nominal entitlement of 12,500 ML will provide for a mean annual volume of 10,800 ML, with an annual probability of 84.2%.
		(e) to make water available in the Lower Burdekin and Haughton subcatchments to support— (i) water supplies for Townsville and Thuringowa; and (ii) growth in irrigated agriculture in the Lower Burdekin, Gumlu and Bowen areas; and (iii) water supplies for other urban, industrial and mining uses; and (iv) the natural and artificial recharge of the Lower Burdekin delta groundwater system;	The proposed release of unallocated water is located upstream of Burdekin Falls Dam. Modelling results support there is no change to WASO performance. Refer to Figure 2 to show the location of the Lower Burdekin and Haughton subcatchments A and B with respect to the Belyando-Suttor subcatchment E.
		(f) to make water available in the Upper Burdekin subcatchment to support— (i) growth in irrigated agriculture; and (ii) water supplies for Charters Towers, Dalrymple Shire and the mining industry;	The Upper Burdekin subcatchment is not hydrologically connected to the Belyando-Suttor subcatchment and therefore this criteria is not applicable to the proposed release of unallocated water in the Belyando-Suttor subcatchment E. Refer to Figure 2 to show the location of the Upper Burdekin subcatchment G with respect to the Belyando-Suttor subcatchment E.
		(g) to make water available in the Belyando-Suttor subcatchment to support growth in irrigated agriculture;	The total reserve MAV in the Belyando-Suttor subcatchment E is 150,000 ML. The total reserve is made up of a general reserve of 130,000 ML and a strategic reserve for state purposes of 20,000 ML. The general reserve is

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			available as a possible water supply option for irrigators. DNRM has previously provided an online state-wide registration of interest in general reserve unallocated water, where people could register an interest directly. This process provided information to assess the demand for unallocated water across the state with the intention of a prioritisation program to be developed for future releases of unallocated water. For the Burdekin Basin, there is currently no mechanism in place for the release of water from the general reserve. It should be noted that in other release processes, DNRM has applied an agricultural strategy, where caps have been set on industrial access to the general reserve, to ensure water is available for agriculture. The proposed release of unallocated water will be from the strategic reserve.
		(h) to make water available in the Bowen and Broken subcatchments to support water supplies for urban, industrial, mining and other uses at Collinsville and in neighbouring areas;	The Bowen and Broken subcatchments are not hydrologically connected to the Belyando-Suttor subcatchment and therefore this criteria is not applicable to the proposed release of unallocated water in the Belyando-Suttor subcatchment E. Refer to Figure 2 to show the location of the Bowen and Broken subcatchments C and D with respect to the Belyando-Suttor subcatchment E.
		(i) to manage access to water to support the ongoing management of the Lower Burdekin delta groundwater system;	The proposed release of unallocated water is located upstream of Burdekin Falls Dam. Therefore, there should not be impacts of the proposed take of water on the Lower Burdekin delta groundwater system which is located downstream of the Dam. This criteria is therefore not applicable to the proposed release of unallocated water in the Belyando-Suttor subcatchment E.

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		(j) to encourage continual improvement in the efficient use of water;	Water use efficiency has been identified, through section 4.2.1 of Adani's Proposal which has sufficiently considered their water use efficiency practices to inform the chief executive that the request for the release of strategic reserve water has a basis that provides for efficient use of the resource. Efficient use of water will be thoroughly assessed through the application process after the chief executive releases the unallocated strategic reserve water.
		(k) to support water-related cultural values of Aboriginal and Torres Strait Islander communities in the plan area;	This criteria will be considered along with Criteria (l) below as requiring the same outcomes for the ongoing supply of water to support natural ecosystem processes. The health of rivers and associated floodplains is intimately linked to cultural values.
		(l) to ensure water is available to support natural ecosystem processes	Adani Infrastructure has provided a range of scenarios about the release of unallocated water, and in determining a specified water product for release, DNRM have run multiple scenarios to address these. Adani's proposal identifies ecological outcomes in sections 5.5-5.8 using WP Node 11 (i.e. Suttor River confluence with Burdekin River) as the reporting node. DNRM does not believe that Adani Infrastructure's use of Node 11 truly reflected the potential localised ecosystem effects and therefore reviewed this further at the upstream Node 306 (St Anns Gauging Station 120303A). DNRM considered the potential risk to ecological processes of downstream lagoons regarding Adani's proposal. The outcomes are included in the DNRM Targeted Environmental Review Report and is included as Appendix 2, and primarily conclude that: • The biodiversity values for the Scartwater wetland aggregation are unlikely to be adversely impacted by the 2,592ML passflow

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			threshold and therefore there is a low risk of impacting upon these wetland listed on the Directory of Important Wetlands in Australia (DIWA). • Lagoons located in the lower parts of the floodplain show no increased risk through the Adani development scenarios. Therefore there is unlikely to be any major changes to the environmental values these lagoons support. • It has been identified that lagoons located higher on the floodplain will have a reduced number of filling opportunities and increased spells between these events with the Adani development scenario and further release of unallocated water (strategic and general) in the Suttor River below the Belyando junction. This location provides increased opportunity within subcatchment E and cumulative impacts of potential diversion are likely to impact lagoons located higher on the floodplain. This potentially indicates an additional risk not only to the lagoon aquatic ecosystems, but also to other long-lived floodplain water-dependent ecosystems (e.g. floodplain vegetation communities, including some of-concern and endangered remnant regional ecosystems). • This potential risk is acceptable at this time, as the general reserve has not yet been accessed and the strategic reserve will also have a remaining volume. However, DNRM will have to further review the reliability offered for any water products as part of any future release process proposed from this reach of the Belyando-Suttor subcatchment. DNRM's ecological review of the proposed water product for release demonstrated a low risk to most of the lagoons and most of the remaining assets (e.g. instream habitats, WQ, etc.) being unduly affected. A 2,592 ML/day pass flow would ensure continuation of natural flow variability to the downstream environment.

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Section 13	**13 General ecological outcomes** (1) Each of the following is a general ecological outcome for water in the plan area—	(a) to maintain the natural variability of flows that support the habitats of native plants and animals and migratory birds in watercourses, floodplains, wetlands, lakes and springs;	Refer to section 12(l) above for consideration.
		(b) to provide for the continued capability of one part of a river system to be connected to another, including by maintaining flood flows that— (i) allow for the movement of native aquatic fauna between riverine, floodplain, wetland, estuarine and marine environments; and (ii) deliver nutrients and organic matter throughout the plan area to support natural processes such as breeding, growth and migration in riverine, floodplain, wetland, estuarine and marine environments; and (iii) deliver water and sediments throughout the plan area to support river-forming processes;	Refer to section 12(l) above for consideration.
		(c) to minimise changes to natural variability in water levels and to support natural ecological processes, including maintaining refugia associated with waterholes and lakes particularly in the Belyando-Suttor subcatchment;	Refer to section 12(l) above for consideration.
		(d) to promote improved understanding of the matters affecting the flow-related health of ecosystems in the plan area;	Refer to section 12(l) above for consideration.

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		(e) to maintain flooding in the Lower Burdekin and Haughton subcatchments to provide freshwater inputs to wetlands on the Burdekin Haughton floodplain;	The proposed release of unallocated water is located upstream of Burdekin Falls Dam. The Lower Burdekin and Haughton subcatchments are contained within the Burdekin Basin ROP IQQM however are not impacted by extractions from the Suttor River due to the volume of the Dam and the contribution of other catchments providing inflows. Therefore, it is considered that any proposed release of unallocated water from the Belyando-Suttor subcatchment E will not impact on the flooding regime required to provide freshwater inputs to wetlands on the Burdekin Haughton floodplain. Refer to Figure 2 to show the location of the Lower Burdekin and Haughton subcatchments A and B with respect to the Belyando-Suttor subcatchment E.
		(f) to provide a flow regime that— (i) maintains delivery of fresh water to the estuaries of watercourses and the Great Barrier Reef Lagoon; and (ii) maintains natural sedimentation processes to support the replenishment of beaches along the Burdekin Haughton floodplain and Cape Bowling Green; and (iii) supports productivity in the receiving waters of the Great Barrier Reef and inshore reefs.	Refer to section 12(e) above for consideration.
	(2) In this section—	***refugia*** means the habitat required by a species during a time of stress, including, for example, drought.	
Section 14	**Specific ecological outcomes** Each of the following is a specific ecological outcome for water in the	(a) to maintain the natural continuity of flow from immediately downstream of the Charters Towers Weir to the upstream limit of the impounded area of the Burdekin Falls Dam;	The Upper Burdekin subcatchment is not hydrologically connected to the Belyando-Suttor subcatchment and therefore this criteria is not applicable to the proposed release of unallocated water in the Belyando-Suttor subcatchment E. Refer to Figure 2 to show the location of the Upper Burdekin subcatchment G with respect to the Belyando-Suttor

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	plan area—		subcatchment E.
		(b) to maintain connectivity between Mistake Creek and its adjacent floodplain system during floods;	Mistake Creek is located in the upper Belyando-Suttor subcatchment and enters the Belyando River upstream of the proposed point of the release. Therefore, it is not considered that the proposed release of unallocated water in this particular location of the Belyando-Suttor subcatchment will impact on the connectivity between Mistake Creek and the adjacent floodplain system during floods. Refer to Figure 2 to show the location of Mistake Creek with respect to the confluence of the Belyando and Suttor Rivers within subcatchment E.
		(c) to minimise adverse impacts on the morphology of watercourses, waterholes, lakes and springs, used for taking supplemented water, in the Burdekin Haughton Water Supply Scheme;	The proposed release of unallocated water is located upstream of Burdekin Falls Dam. The Lower Burdekin and Haughton subcatchments are contained within the Burdekin ROP IQQM however are not impacted by extractions from the Suttor River due to the volume of the Dam and the contribution of other catchments providing inflows. Therefore, the proposed release of unallocated water in the Belyando-Suttor subcatchment E will not impact on the morphology of watercourses, waterholes, lakes and springs used for taking supplemented water in the Burdekin Haughton Water Supply Scheme. Refer to Figure 2 to show the location of the Lower Burdekin and Haughton subcatchments A and B with respect to the Belyando-Suttor subcatchment E.
		(d) to ensure there are no further impacts on natural creek flows in the Barratta Creek system;	The Haughton/Barratta creeks are not hydrologically connected to the Belyando-Suttor subcatchment and therefore this criteria is not applicable to the proposed release of unallocated water in the Belyando-Suttor subcatchment E. Refer to Figure 2 to show the location of the Barratta Creek System with respect to the Belyando-Suttor subcatchment E.

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		(e) to provide a flow regime that supports fish passage in the river reaches from the Clare Weir impoundment to the mouth of the Burdekin River;	The proposed release of unallocated water is located upstream of Burdekin Falls Dam. The reach from the Clare Weir impoundment to the mouth of the Burdekin River is not impacted by extractions from the Suttor River due to the volume of the Dam and the contribution of other catchments providing inflows. The proposed release of unallocated water from the Belyando-Suttor subcatchment E does not impact on a flow regime that supports fish passage in the river reaches from the Clare Weir impoundment to the mouth of the Burdekin River.
		(f) to provide a flow regime that supports fish passage in the river reaches to the mouth of the Haughton River.	The proposed release of unallocated water is located upstream of Burdekin Falls Dam. The river reaches to the mouth of the Haughton River is not impacted by extractions from the Suttor River due to the volume of the Dam and contribution of other catchments providing inflows. This proposed release of unallocated water from the Belyando-Suttor subcatchment E will not impact on a flow regime that supports fish passage in the river reaches to the mouth of the Haughton River.
Section 32	**Preparing and implementing process under the resource operations plan generally** (1)Unallocated water may be dealt with under a process in the resource operations plan.		Section 38 of the Burdekin Basin ROP (see below in the Burdekin Basin ROP considerations of this Table) refers to the process for making unallocated water available.
	(2)In preparing and implementing the process, the chief executive must consider the following—	(a) the purpose for which the water is required;	Section 4.2 of Adani's Proposal indicates the water required is for the purpose of construction and operational stages of the Carmichael Coal Mine and Rail Project. The purpose for which this water is required has been sufficiently defined by Adani Infrastructure and is consistent with the volumes requested for release. It is considered that Adani's proposal is sufficient to inform the purpose that would be attributed to the Terms of Sale by the chief executive

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		(b) the efficiency of existing and proposed water use practices;	Water use efficiency has been identified, through Section 4.2.1 of Adani's Proposal which has sufficiently considered their water use efficiency practices to inform the chief executive that the request for the release of strategic reserve water has a basis that provides for efficient use of the resource. Efficient use of water will be thoroughly assessed through the application process after the chief executive releases the unallocated strategic reserve water.
		(c) the extent to which water is being taken under existing authorisations in the plan area;	Both Adani's Proposal and the DNRM Hydrologic Review Report have taken into consideration the extent to which water is being taken under existing authorisations in the plan area. While there is no metered use records for specific entitlements, the IQQM Modelling undertaken assumes that all existing entitlements are being fully utilised.
		(d) the availability of an alternative water supply for the purpose for which the water is required;	Section 4.2.2 of Adani's Proposal addresses alternative supply options in relation to the Carmichael Coal Mine and Rail Project. A summary of the information is included below. Adani Infrastructure has undertaken analysis of various water supply options including local (Belyando River, Mistake Creek and Groundwater) and regional supplies (Suttor River, access to Burdekin Moranbah pipeline and access to Burdekin Falls Dam). Adani Infrastructure states that the most reliable and economically viable water supply was from Mistake Creek, Belyando River, groundwater supplies and Suttor River. Adani Infrastructure advised that they considered various extraction points along the Belyando River, Suttor River and Mistake Creek. From IQQM modelling undertaken, two points from sources adjacent to the Belyando Junction property (Lot 3/SP278559) found to be the most economic and flexible operating scenarios. Scenarios produced for the

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			Suttor River as a location provided a higher yield. The Moranbah to Burdekin Pipeline was considered as a fall back option, however would cause at least a 12 month delay in the project and an additional 126 km of pipeline. Adani Infrastructure has sufficiently defined where alternative sources of water may be available and why they have chosen to request a release of unallocated strategic reserve water from subcatchment E of the Burdekin Basin.
		(e) the impact the proposed taking of, or interfering with, the water may have on existing water users in the plan area;	Hydrological review of impacts to downstream entitlements on the Suttor River has been completed by both Adani Infrastructure (Adani's Proposal) and DNRM (DNRM Hydrologic Review Report). The purpose of DNRM's Hydrologic Review Report was to determine a proposed water product for release that meets the objectives outlined in the Burdekin Basin WP, and consider the potential impacts on existing downstream Suttor River entitlements. DNRM considered a number of passflow thresholds, however the 2,592 ML/day passflow threshold was considered to be the most appropriate for the location of take proposed. Modelling confirms that this passflow threshold allows access to flows for downstream entitlements and stock and domestic use. <u>WASOs and EFOs</u> The hydrological review concludes that both the Burdekin Basin WP WASOs and the Burdekin Basin WP EFOs are met. <u>MAV</u> A passflow condition of 2,592 ML/day only indicates a very minor (<1%) impact to one downstream entitlement, water licence 96640A. This minor difference is a result of the differences to the conditions between water

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			licences 96640A and the proposed water product for release. Water licence 96640A has additional conditions that further restrict diversion opportunity before the take of water can occur at a common passflow condition of 2,592 ML/day. It must be noted that the passflow condition on water licence 96640A was imposed to mitigate potential impacts to downstream lagoons and the Burdekin Haughton Water Supply Scheme prior to the development of the Burdekin Basin WP. DNRM's Hydrologic Review Report use of the IQQM shows that when flow volumes in the Suttor River reach at least 2,592 ML/day it is highly probable that much larger daily flow volumes will occur supporting beneficial flooding to the downstream lagoons. A recommendation out of the DNRM Hydrologic Review Report is to revise the conditions of water licence 96640A to ensure the holder of this licence has equitable access to Suttor River flows. In addition, a simplified passflow condition will also assist development of potential future water trading options. <u>Diversion Opportunity</u> The IQQM annual volume of diversion results may not indicate impacts to diversion opportunity for downstream entitlements i.e. annual volume totals do not indicate variance of when water was taken during the year and may not indicate impacts of opportunity to divert. To provide a measure of impacts to diversion opportunity of Suttor River entitlements, the IQQM was used to review the diversions with the nominal entitlement volume (annual cap of diversion) removed. The results are reported using annual number of days of diversion. These results outline that the impact of the proposed water product for release may be perceived to be greater than the mean annual volumes of diversion indicate. Under the 2,592 ML/day passflow condition, the impacts only occur to water licence 96640A. On average up to 1 annual day of pumping opportunity will be impacted for the 2592 ML/day passflow condition.

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		(f) whether the proposed taking or interfering is likely to have a direct adverse effect on groundwater flows;	Under a passflow threshold of 2,592 ML/day, flow in the Suttor River will be maintained during extraction periods. During these times, recharge of shallow alluvial groundwater systems associated with the Suttor River is unlikely to be impacted by the extraction. Therefore it is not considered that the take of water from the Suttor River under this passflow threshold will have an adverse impact on groundwater flows.
		(g) the matters mentioned in section 23(1)(a) and (b).	See section 23 (1) (a) and (b) further below in this Table.
	(3) The resource operations plan must state that use, for irrigation, of water taken under a water licence granted under the process requires a land and water management plan approved under section 77 of the Act.		The proposed release is of unallocated water from the strategic reserve of the Belyando-Suttor subcatchment E for state purposes. This criteria does not apply.
	(4) Subsection (2) does not limit the matters the chief executive may consider.		No other matters have been considered.

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Section 23	(1) In deciding the environmental management rules to be included in the resource operations plan, the chief executive must consider—	(a) the streamflows required to maintain the following— (i) the longitudinal connectivity of low flow habitats throughout river systems in the plan area; (ii) the wetted habitats at riffles and other streambed features; (iii) the natural seasonality of flows and zero flows; (iv) the replenishment of refuge pools that enable movement of instream biota; (v) the lateral connectivity between rivers in the plan area and their adjacent riverine environments including floodplains.	As mentioned previously in section 12 (l), Adani Infrastructure identifies ecological outcomes in sections 5.5-5.8 of Adani's proposal. Adani Infrastructure does not specifically address the matters in section 23 (1) (a), instead referring to EFOs for the Burdekin Basin WP Node 11. The use of the Burdekin Basin WP Node 11 does not reflect the potential localised effects at the Suttor River between the Suttor/Belyando junction and the Burdekin Falls Dam impoundment. Both the work undertaken by Adani Infrastructure and DNRM have shown that the 2,592 ML/day passflow threshold will have negligible impact to the filling and flushing of Scartwater Lagoon, a DIWA listed wetland. There is, however, a modelled higher risk to the replenishment of lagoons in the upper floodplain, such as Blackwater and Longweed Lagoons, with a reduced number of filling opportunities and increased spells between these events. It is to be noted that the potential risk is based on the scenario of the unallocated water reserves being fully allocated. This potential risk is acceptable at this time, as the general reserve has not yet been accessed and the strategic reserve will also have a remaining volume. However, DNRM will have to further review this potential risk as part of any future release process for any water products proposed from this location. While further monitoring and data review will reveal the streamflow requirements to maintain longitudinal connectivity (section 23 (1) (a) (i)) and risk to associated habitats (section 23 (1) (a) (ii – iv)), there is sufficient evidence from a water quality perspective which supports the 2,592 ML/day passflow threshold.

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		(b) the impact the taking of, or proposed taking of, or interfering with, water may have on the following— (i) water quality; (ii) the natural movement of sediment; (iii) the bed and banks of a watercourse or lake; (iv) riparian vegetation; (v) habitats for native plants and animals; (vi) the movement of fish and other aquatic species; (vii) the recreation and aesthetic values of the plan area; (viii) cultural values including, for example, cultural values of local Aboriginal or Torres Strait Islander communities.	DNRM's review of potential impacts on downstream environmental assets found a 2,592 ML/day passflow threshold to be sufficient to flush and maintain water quality at St Anns gauging station, particularly during the early wet season when water quality is at its poorest. DNRM notes Adani Infrastructure proposes water quality monitoring in accordance with the Guidelines for Water Quality Monitoring and Report. For section 23 (1) (b) (ii) to (v), the potential impact of taking water is considered lower risk. Adani Infrastructure highlighted potential loss in some riparian vegetation and habitat at the pump site, potentially impacting on local fish species. However, as noted by Adani Infrastructure, such impacts are likely to be localised and temporary. Likewise, as no instream structures are proposed (other than in the off-stream intake channel) movement of fish and other aquatic species is unlikely to be impacted. For section 23 (1) (b) (vii) and (viii) likely impact on recreation (other than linked to fish) and aesthetic values have not been able to be reviewed. Similarly, likely impact on cultural values has not been specifically reviewed, however, the responsibility for duty of care to Aboriginal and Torres Strait Islander community cultural values is the responsibility of Adani Infrastructure under the *Aboriginal Cultural Heritage Act 2003* and the *Torres Strait Islander Cultural Heritage Act 2003*. This criteria was considered along with the same outcomes for the ongoing supply of water to support natural ecosystem processes.

Burdekin Basin ROP considerations:

ROP Section	Criteria	Review of proposed release of the specified water product against criteria	
Section 29	**Record of volume of unallocated water** (1) The chief executive may develop a register of the		DNRM maintains a register of unallocated water available for each reserve and each subcatchment.

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