

# Water Sharing Plan for the Lower Gwydir Groundwater Source 2003

[2003-189]



New South Wales

## Status Information

### Currency of version

Historical version for 12 April 2013 to 19 December 2013 (accessed 18 July 2024 at 3:39)

Legislation on this site is usually updated within 3 working days after a change to the legislation.

### Provisions in force

The provisions displayed in this version of the legislation have all commenced.

### Notes—

- **Does not include amendments by**  
[Local Land Services Act 2013 No 51](#) (not commenced — to commence on 1.1.2014)
- **Note**  
This Plan ceases to have effect on 30.6.2017 — see cl 3.

### Authorisation

This version of the legislation is compiled and maintained in a database of legislation by the Parliamentary Counsel's Office and published on the NSW legislation website, and is certified as the form of that legislation that is correct under section 45C of the [Interpretation Act 1987](#).

File last modified 1 July 2013

# Water Sharing Plan for the Lower Gwydir Groundwater Source 2003



New South Wales

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# Water Sharing Plan for the Lower Gwydir Groundwater Source 2003



New South Wales

## Part 1 Introduction

### 1 Name of Plan

This Plan is the *Water Sharing Plan for the Lower Gwydir Groundwater Source 2003* (hereafter **this Plan**).

### 2 Nature and status of this Plan

- (1) This Plan is made under section 50 of the *Water Management Act 2000* as amended (hereafter **the Act**).
- (2) This Plan covers the core provisions of section 20 of the Act for water sharing, and additional provisions of section 21 of the Act, and other relevant matters.

### 3 Date of commencement

This Plan takes effect on 1 October 2006, and ceases on the 30 June 2017.

### 4 Area to which this Plan applies

- (1) The area in respect of which this Plan is made is that area of land within the Gwydir and Border Rivers Water Management Areas known as the Lower Gwydir Groundwater Source (hereafter **this groundwater source**) as shown on the map in Schedule 2.

**Note—**

The Gwydir and Border Rivers Water Management Areas are shown on the map in Appendix 1.

### 5 Waters to which this plan applies

- (2) The water in this groundwater source includes all water contained in the unconsolidated alluvial sediment aquifers associated with the Gwydir River, its tributaries, and effluents downstream of Gravesend.

**Note—**

Maps referred to in this Plan may be inspected at offices of the Department of Land and Water Conservation

listed in Appendix 2.

**Note—**

Water supply works drilled through the unconsolidated sediments into the underlying Great Artesian Basin (GAB) are tapping a different resource. On plan, they may lie within the boundaries of the Lower Gwydir Groundwater Sources, however they are within the deeper GAB Groundwater Source and are not included as a part of this Plan.

## **6 Interpretation**

- (1) Terms that are defined in the Act have the same meaning in this Plan and the effect of these terms may be explained in Notes.
- (2) Additional terms to those identified in subclause (1) are defined in Schedule 1.
- (3) Notes in the text of this Plan do not form part of this Plan.
- (4) Schedules to this Plan form part of this Plan.
- (5) Appendices to this Plan do not form part of this Plan.

## **7 Effect on licences, authorities and permits under the [Water Act 1912](#)**

- (1) This Plan applies from the date of commencement to those matters that are administered under the Act at that time.
- (2) This Plan applies to other matters from the date the relevant provisions of the Act are commenced.

**Note—**

To the extent possible, the rules embodied in this Plan will apply to matters administered under the [Water Act 1912](#) in the interim.

## **8 State Water Management Outcomes Plan**

- (1) In accordance with section 16 (1) (a) of the Act, this Plan is consistent with the State Water Management Outcomes Plan published in the NSW Government Gazette on 20 December 2002 (hereafter **the SWMOP**).
- (2) Schedule 3 identifies the SWMOP targets applicable to this Plan and how this Plan contributes to those targets.

## **Part 2 Vision, objectives, strategies and performance indicators**

### **9 Vision, objectives, strategies and performance indicators**

This Part is made in accordance with section 35 (1) of the Act.

## **10 Vision**

The vision for this Plan is an ecologically sustainable groundwater resource that provides an assured supply of good quality groundwater for the social and economic benefit of the people in the Gwydir Catchment.

## **11 Objectives**

The objectives of this Plan are to:

- (a) protect and maintain groundwater dependent ecosystems by minimising the impacts of extraction,
- (b) manage and share the groundwater resources of the Gwydir Valley in a sustainable and equitable manner, while minimising negative local and regional impacts,
- (c) protect the structural integrity of the aquifer by ensuring extraction does not cause any aquifer compaction, aquitard compaction or land subsidence,
- (d) protect and maintain groundwater quality by ensuring extraction does not result in a change in the beneficial use of the aquifer,
- (e) provide opportunities for market based trading of groundwater rights within the extraction limit and interference constraints,
- (f) preserve basic landholder rights to this groundwater source,
- (g) ensure there are no long term declines in water levels by managing allocations and extractions within the extraction limit, and
- (h) protect and maintain cultural and heritage values through the management of this groundwater source.

## **12 Strategies**

The strategies of this Plan are to:

- (a) establish environmental water rules and manage access to groundwater consistent with those rules,
- (b) establish rules for the protection of basic landholder rights,
- (c) establish an extraction limit for this groundwater source, taking into account the requirements of the environment,
- (d) reduce the total share component of access licences to the final extraction limit,
- (e) establish rules for granting of access licences,
- (f) establish rules for determining the groundwater available from time to time under



access licences,

- (g) establish water allocation account management rules,
- (h) establish rules for minimising the local impacts of groundwater extraction on the environment, the aquifer itself, and between users,
- (i) establish the access licence dealing rules, and
- (j) establish the conditions that will apply to access licences and water supply work (bore) approvals.

### **13 Performance indicators**

For the purpose of section 35 (1) (b) of the Act, the following indicators are to be used to determine the performance of this Plan against its objectives.

- (a) change in groundwater extraction relative to the extraction limit,
- (b) change in climate adjusted groundwater levels,
- (c) change in water levels adjacent to identified groundwater dependent ecosystems,
- (d) change in groundwater quality,
- (e) change in the economic benefits derived from groundwater extraction and use,
- (f) change in structural integrity of the aquifer,
- (g) extent to which domestic and stock rights requirements have been met,
- (h) extent to which local water utility requirements have been met,
- (i) extent to which native title rights requirements have been met, and
- (j) extent of recognition of spiritual, social and customary values of groundwater to Aboriginal people.

**Note—**

Appendix 3 details the objectives to which these performance indicators relate and the methods for assessing these indicators.

## **Part 3 Basis for water sharing**

### **14 Basis for water sharing**

This Part is made in order to give effect to section 5 (3) of the Act, and in accordance with sections 20 (2) (c) and 21 (e) of the Act.

## **15 Climatic variability**

- (1) This Plan recognises climatic variability and therefore that the level of natural recharge to this groundwater source will vary.
- (2) To give effect to subclause (1), this Plan has provisions that manage:
  - (a) the sharing of water in this groundwater source within the limits of water availability on a long-term average basis, and
  - (b) water extractions to enable the protection of groundwater dependent ecosystems, aquifer integrity and water quality in this groundwater source.

## **16 Recharge**

- (1) The overall basis for water sharing in this Plan is the average annual recharge to this groundwater source, estimated to be 38,000 megalitres per year (hereafter **ML/yr**) plus the requirements for basic landholder rights at the commencement of this plan.
- (2) The Minister may under section 45 (1) (b) of the Act amend subclause (1) after 30 June 2010 to vary the average annual recharge value following further recharge studies undertaken by the Minister.

### **Note—**

The extent to which this change may impact on access licence holders is limited by clause 28.

## **Part 4 Environmental water provisions**

### **17 Environmental water provisions**

This Part is made in accordance with sections 5 (3) and 8 (1), 8 (2) and 20 (1) (a) of the Act.

### **18 Planned environmental water**

#### **Note—**

It is anticipated that the planned environmental water provisions in this Part and management of local impact provisions in Part 10 of this Plan will also protect the cultural and spiritual values of groundwater (see clause 11 (h)).

- (1) This Plan establishes the following planned environmental water rules:
  - (a) subject to Part 10 Division 2 of this Plan, the physical water contained in the storage component of this groundwater source, minus the amount required for supplementary water access permitted under clause 25, as varied by clause 29 will be reserved for the environment,
  - (b) subject to Part 10 Division 2 of this Plan, 15% of an amount that is equal to the long-term average annual recharge to this groundwater source minus basic

landholder rights requirements at the commencement of this plan, being 5,700 ML/yr, is reserved for the environment.

**Note—**

Access to water under supplementary water access licences in this water source will not be permitted after the 30 June 2015 and the physical water contained in the storage component of this groundwater source plus 15% of the long-term average annual recharge to this groundwater source minus an amount for basic landholder rights requirements at the commencement of this Plan will be reserved for the environment.

- (2) The Minister may under section 45 (1) (b) of the Act amend subclause (1) (b) after 30 June 2010 vary the proportion of recharge reserved as planned environmental water based on further studies of groundwater ecosystem dependency undertaken by the Minister.

**Note—**

The studies may recommend management options other than reservation of a portion of recharge to protect groundwater dependant ecosystems.

**Note—**

The extent to which this change may impact on access licence holders is limited by clause 28.

**19 (Repealed)**

**20 Adaptive environmental water**

- (1) Water may be committed in this water source for environment purposes by an adaptive environmental water condition pursuant to section 8B of the Act.
- (2) The holder of an access licence may request that the Minister impose an adaptive environmental water condition in respect of the whole or a part of the share component of the access licence.
- (3) The condition imposed under subclause (2) will continue until the holder requests its removal.
- (4) An access licence may be held by the Minister, a catchment management authority or other public body to the extent that the whole or part of that access licence has been surrendered as a result of on farm water savings made by works or other improvements, subject to:
- (a) the share component of the access licence held being equal to the value of the on-farm water savings made,
  - (b) the access licence held being the highest priority category in this water source, other than a specific purpose category, and
  - (c) an adaptive environmental water condition being imposed on the access licence and that condition not being removed.

- (5) The adaptive environmental water condition specified in subclause (1) and the plan for implementation of that condition, as required by section 8E (7) of the Act:
  - (a) are to be established by the Minister, and
  - (b) shall be such as to ensure that there will be a contribution to the objectives of this Plan.
- (6) The allocation of water for access licences with an adaptive environmental water condition will be in accordance with the available water determination for the relevant category of access licence under this plan.
- (7) If the adaptive environmental water condition on an access licence requires the water to be left in the water source for environmental purposes, then the water allocation account is to be debited when the water is available in accordance with the adaptive environmental water condition on the access licence.
- (8) If the adaptive environmental water condition requires the environmental water to be taken from the water source then the water allocation account is to be debited when it is taken.
- (9) For the purposes of auditing compliance with the long-term extraction limit under this plan, the delivery of water pursuant to an access licence that has been committed as adaptive environmental water shall be accounted for as extraction where it occurs pursuant to a licence under subclause (2) or subclause (4).
- (10) To the extent that the water allocation of an access licence which is subject to an adaptive environmental water condition is not required to meet the requirement of the condition it may be the subject of an assignment dealing in accordance with the Dealings Rules in this plan.
- (11) Notwithstanding subclause (10) an access licence with an adaptive environmental water condition may be the subject of any other dealing permitted by the Dealing Rules in this plan, provided the benefit to the environment provided for in the adaptive environmental condition is not diminished.
- (12) At the commencement of this clause, there were no access licences with an adaptive environmental water condition in this water source.

## **Part 5 Basic landholder rights**

### **21 Basic landholder rights**

- (1) This Part is made in accordance with sections 5 (3) and 20 (1) (b) of the Act.
- (2) If a landholder is unable to exercise their basic landholder rights due to interference of their supply by extraction authorised by access licences:

- (a) the Minister may amend a water supply works approval to allow the landholder's affected bore to be replaced or deepened to ensure continuing access to water for basic landholder rights', or
  - (b) the Minister may amend another water supply works approval so that basic rights water may be supplied by an alternative water supply work means during critical times.
- (3) In accordance with the legislative requirements, the Minister may impose a charge on access licence holders in this groundwater source under section 114 of the Act, as a contribution to the costs of activities or works associated with subclause (2).
- (4) Basic landholders rights exercised under section 52 of the Act must be exercised in accordance with any guidelines established by the Minister with respect to the reasonable use of water for domestic consumption and stock watering by landholders authorised to use water for either or both of those purposes.

**Note—**

The Minister may, by order made under section 323 of the Act, impose temporary restrictions on basic landholder rights when it is necessary to do so in the public interest, such as to cope with a water shortage or threat to public health or safety.

**Note—**

The Minister may enforce any reasonable use guidelines by serving orders on individual landholders under section 325 of the Act. The Minister may also order individual landholders accessing basic landholder rights to take specified measures to protect the environment, to preserve basic landholder rights or to overcome a threat to public health under section 328 of the Act.

## **22 Domestic and stock rights**

**Note—**

It is not recommended that the water from this groundwater source be consumed without prior treatment. Land use activities may have polluted the groundwater in some areas.

- (1) At the commencement of this Plan the water requirements of holders of domestic and stock rights are estimated to be a total of 700 ML/yr.

**Note—**

The volumes of water identified in subclause (2) are the total volumes of water estimated for domestic and stock rights in this groundwater source. Refer to Appendix 4 for the calculation of domestic and stock rights.

- (2) This Plan recognises that the exercise of domestic and stock rights may increase during the term of this Plan.

**Note—**

Increase in use of domestic and stock rights may occur as a result of an increase in the number of landholdings overlying this groundwater source, or as a result of the increase in the exercise of domestic and stock rights by existing landholders.

### **23 Native title rights**

- (1) At the commencement of this Plan there are no holders of native title rights and therefore the water requirements for native title rights are a total of 0 ML/yr.
- (2) This Plan recognises that the exercise of native title rights may increase during the term of this Plan.

**Note—**

An increase in native title rights may occur as a result of the granting of native title rights under the Commonwealth's [Native Title Act 1993](#).

## **Part 6 Bulk access regime**

### **24 Bulk access regime**

- (1) This Part is made in accordance with section 20 (1) (e) of the Act.
- (2) This Plan establishes a bulk access regime for the extraction of water under access licences in this groundwater source having regard to:
  - (a) the environmental water provisions established under Part 4 of this Plan,
  - (b) the requirements for basic landholder rights identified under Part 5 of this Plan, and
  - (c) the requirements for water for extraction under access licences identified under Part 7 of this Plan.
- (3) The bulk access regime established in subclause (2):
  - (a) recognises the effect of climatic variability on the availability of water as provided for under Part 3 of this Plan,
  - (b) establishes rules according to which access licences are granted as provided for in Part 8 of this Plan,
  - (c) recognises and is consistent with limits to the availability of water as provided for in Part 9, Division 1 of this Plan,
  - (d) establishes rules according to which available water determinations are to be made as provided for in Part 9 Division 2 of this Plan,
  - (e) establishes rules according to which access licences are managed as provided for in Parts 9 and 10 of this Plan, and
  - (f) establishes rules with respect to the priorities according to which access licences are to be adjusted as a consequence of any reduction in the availability of water as provided for in Part 9 of this Plan.

## Part 7 Requirements for water for extraction under access licences

### 25 Requirements for water under access licences

This part is made in accordance with section 20 (1) (c) of the Act.

**Note—**

The amount of water specified in this Part represents the total volumes or total shares specified in the share components on access licence in this groundwater source. The actual volume of water available at any time will depend on climate, access licence priority and the rules in this Plan.

#### 25A Share components of domestic and stock access licences

It is estimated that at the time of commencement of this Plan, the share components of domestic and stock access licences authorised to extract water from this groundwater source will total 0 ML/yr.

#### 25B Share components of local water utility access licences

It is estimated that at the time of commencement of this Plan, the share components of local water utility access licences authorised to extract water from this groundwater source will total 3,581 ML/yr.

**Note—**

Clause 25B represents the total volumes specified on access licences in this groundwater source, it is not a commitment to supply that water.

**Note—**

The total 3,581 ML/yr for local water utility access licences is made up of 3,506 ML/yr for Moree, 73 ML/yr for Pallamallawa and 2 ML/yr for Ashley.

#### 25C Share components of aquifer access licences

- (1) For those *Water Act 1912* entitlements equal to or less than 50 ML that are to become aquifer access licences in this groundwater source at the commencement of this Plan, the share component is to be equal to the *Water Act 1912* entitlement.
- (2) For each entitlement referred to in Column 1 of Schedule 6 applying to the licences listed in Column 2 of Schedule 6 that are to become aquifer access licences in this groundwater source at the commencement of this Plan, the share component is to be equal to the share component in Column 3 of Schedule 6.
- (3) For those *Water Act 1912* entitlements not listed in Column 1 of Schedule 6 and greater than 50 ML that are to become aquifer access licences in this groundwater source at the commencement of this Plan, the share component will be established in accordance with the following formula:

$$SC_{AAL} = [AE/\Sigma AE \times (R - PEW - LWU - \Sigma SL - WAE_p - \Sigma EXC)] + 50$$

Where:

- (a) **SC<sub>AAL</sub>** is the share component of the aquifer access licence,
- (b) **AE** is the adjusted entitlement calculated from the following formula:

$$AE = (HOE_R \times 0.9) + ((WAE_R - HOE_R) \times 0.1)$$

Where:

- (i) **HOE<sub>R</sub>** = 0 where  $HOE \leq 50$ ,
  - (ii) **HOE<sub>R</sub>** =  $HOE - 50$  where  $HOE > 50$ ,
  - (iii) **HOE** is as defined in subclause (4),
  - (iiia) **WAE<sub>R</sub>** =  $WAE - 50$ , and
  - (iv) **WAE** is the [Water Act 1912](#) entitlement,
- (c) **ΣAE** is the total of all adjusted entitlements calculated under subclause (3) (b),
  - (d) **R** is the amount of recharge established in clause 16 (1),
  - (e) **PEW** is the volume of recharge reserved as planned environmental water in clause 18 (1) (b),
  - (f) **LWU** is the total of local water utility access licence share components in this groundwater source at the commencement of this Plan,
  - (h) **ΣSL** is the total of all [Water Act 1912](#) entitlements that are less than or equal to 50 ML as defined in clause (1),
  - (i) **WAE<sub>P</sub>** is the protected entitlement for entitlements where  $WAE \geq 50$  and is equal to the number of entitlements greater than 50 ML multiplied by 50,
  - (j) **ΣEXC** is the sum of share components specified in Column 3 of Schedule 6.
- (4) For the purposes of subclause (3) and clause 25D HOE is equal to the greater of:
- (a) the average extraction over the five water years from 1993/94 to 1997/98 not exceeding the [Water Act 1912](#) entitlement prior to the commencement of this Plan excluding zero and low extraction years prior to activation, or
  - (b) the average extraction over the five water years from 1997/98 to 2001/02 not exceeding the [Water Act 1912](#) entitlement prior to the commencement of this Plan and excluding zero and low extraction years prior to activation, or
  - (c) the average extraction over the six water years from 1997/98 to 2002/03 not exceeding the [Water Act 1912](#) entitlement prior to the commencement of this Plan



and excluding zero and low extraction years prior to activation.

**Note—**

The rules for determining HoE are contained in Appendix 6.

- (5) For the purposes of subclause (4) zero and low extraction years are years where extraction was less than 20% of the maximum volume of water extracted in any one year between 1993/94 and 2002/03.
- (6) For the purposes of subclause (5) activation is defined as the first year in which a licence holder extracted 20% or more of the maximum volume of water extracted in any one year between 1993/94 and 2002/03.
- (7) It is estimated that at the time of commencement of this Plan the share components of access licences established under this clause will total 28,719 megalitres.

**25D Share components of supplementary water access licences**

- (1) Those [Water Act 1912](#) entitlements that are to be converted to an aquifer access licence in this groundwater source under clause 25C (2) may also receive a supplementary water access licence.
- (2) The share component of a supplementary water access licence converted under subclause (1) will be established for those licences where  $HOE > SC_{AAL}$  in accordance with the following formula:

$$SC_{SWAL} = HOE - SC_{AAL}$$

where:

- (a) **HOE** is as defined in clause 25C (4),
  - (b) **SC<sub>AAL</sub>** is the share component of the aquifer access licence established under clause 25C (2) and clause 25C (3),
  - (c) **SC<sub>SWAL</sub>** is the share component for the supplementary water access licence.
- (3) It is estimated that at the time of commencement of this Plan the sum of supplementary water access licences established under subclause (1) will total 14,200 ML.

**Note—**

Not all aquifer access licences amended under clause 25C will receive a supplementary water access licences. Only those licences that have a HOE as defined in clause 25C (4) which is greater than their new Aquifer Access Licence Share component will receive a supplementary water access licences.

## 25E Changes to share components

- (1) This Plan recognises that the total requirements for water for extraction within this groundwater source may change during the term of this Plan as a result of:
  - (a) the granting, surrender or cancellation of access licences, or
  - (b) the variation of local water utility access licences under section 66 of the Act.
- (2) Pursuant to section 68A of the Act the share component of each supplementary water access licence will be reduced to 0 ML on 1 July 2015.
- (3) Pursuant to section 77A of the Act supplementary water access licences will be cancelled after 1 July 2015.

## Part 8 Rules for granting access licences

### 26 Rules for granting access licences

- (1) This Part is made in accordance with sections 20 (2) (b), 61 and 63 of the Act, having regard to the limits to water availability in this groundwater source and the need to protect groundwater dependent ecosystems, aquifer integrity and groundwater quality.
- (2) Applications for access licences may be made and access licences granted in this groundwater source if they are:
  - (a) a specific purpose access licence for which an application may be made under the [Water Management \(General\) Regulation 2011](#) (hereafter **the Regulation**) in accordance with section 61 (1) (a) of the Act, or

#### Notes—

- 1** Clause 10 of the Regulation provides for the following specific purpose access licences to be applied for:
  - (a) a local water utility access licence (subcategory “domestic and commercial”), for the purpose of domestic consumption and commercial activities,
  - (b) a domestic and stock access licence (subcategory “domestic”), for the purpose of domestic consumption,
  - (c) an aquifer access licence (subcategory “town water supply”), for the purpose of supply to communities for domestic consumption and commercial activities,
  - (d) any category of specific purpose access licence (subcategory “Aboriginal cultural”), for Aboriginal cultural purposes.
- 2** Pursuant to sections 66 (3) and 66 (4) of the Act, the Minister may also vary the share component of a local water utility access licence at 5 year intervals, or on application of the local water utility where there is rapid growth in population.

- (b) an access licence with a zero share component in accordance with sections 61 (1)

- (b) and 63 (5) of the Act, or
  - (c) an access licence that may be granted in accordance with a dealing that is permitted under Part 11 of this Plan, or
  - (d) a domestic and stock access licence, if the water taken under the licence is to be delivered via the Lower Gingham Pipeline.
- (3) In applying for a new access licence, the applicant must establish the purpose and circumstances relating to that access licence, and that the share and extraction component sought will be the minimum required to meet that purpose and circumstance.
- (4) Access licences granted under this Part cannot be used to extract water through a water supply work (bore) located in areas where the extraction authorised by the access licence plus the full extraction authorised by existing access licences nominating water supply works (bores) located in the area and the exercise of basic landholder rights, are likely to cause an adverse local impact, as outlined in Part 10 Division 2 of this Plan.
- (5) An access licences may be granted in this groundwater source where:
- (a) a [Water Act 1912](#) licence was not converted at the commencement of this plan, or
  - (b) a licence is found to be taking water from a water source in this plan but has been incorrectly identified as taking water from another groundwater source and the licence is cancelled in the other water source.
- (6) Aquifer access licences granted under subclause (5) shall be subject to the rules specified in clauses 25C and 25D.
- (7) An application may not be made for a domestic and stock access licence if the granting of the licence would cause the total share components of domestic and stock access licences granted under subclause (2) (d) to exceed 200 ML/yr.

## **Part 9 Limit to the availability of water**

### **Division 1 Long-term average extraction limit**

#### **27 Extraction limit**

- (1) This Division is made in accordance with section 20 (2) (a) of the Act.
- (2) The extraction limit for this groundwater source is initially 32,300 ML/yr, plus total water made available to supplementary water access licences under clause 29, plus the total requirements for basic landholder rights at the commencement of this plan.

## **28 Variation of extraction limits**

- (1) The Minister may under section 45 (1) (b) of the Act amend clause 27 after 30 June 2010 to vary the extraction limit in accordance with:
  - (a) any change to the average annual recharge arising from subclause 16 (2), and
  - (b) any change to the planned environmental water arising from subclause 18 (2).
- (2) If there is any change to the extraction limit arising from subclause (1) then:
  - (a) the extraction limit will not be greater than 38,760 ML/yr, plus total water made available to supplementary water access licences under clause 29, plus the total requirements for basic landholder rights at the commencement of this plan and,
  - (b) the extraction limit will not be less than 25,840 ML/yr, plus total water made available to supplementary water access licences under clause 29, plus the total requirements for basic landholder rights at the commencement of this plan.

## **28A Compliance with the extraction limit**

- (1) Water extraction in this groundwater source will be monitored each water year to determine if there is any growth in volume extracted above the extraction limit specified in clause 27, based a comparison of the extraction limit against the extraction within this groundwater source over that year and the preceding 2 years.
- (2) For the purposes of auditing compliance with the extraction limit, if water that:
  - (a) pursuant to an access licence is committed as adaptive environmental water to be left in the aquifer for environmental purposes, then extraction will be assumed to be equal to 100% of the available water determination made under clause 29, or
  - (b) pursuant to an access licence is committed as adaptive environmental water to be extracted for environmental purposes, then extraction will be that measured through the approved water supply work (bore).
- (3) If the 3 year average of extraction in this groundwater source exceeds the extraction limit established in clause 27 by 5% or greater, then the available water determination made for aquifer access licences under clause 29 (5) for the following water year, should be reduced by an amount that is assessed necessary by the Minister to return subsequent total water extraction to the extraction limit.

## **Division 2 Available water determinations**

### **29 Available water determinations**

- (1) This Division is made in accordance with section 20 (2) (b) of the Act.
- (2) Pursuant to section 58 (4) of the Act this plan amends the relative priorities of the

categories of aquifer access licence and supplementary water access licence to the extent necessary to legally make the available water determinations as set out in this clause.

- (3) All available water determinations in this groundwater source shall be expressed as either:
  - (a) a percentage of the share component for all access licences where share components are specified as megalitres per year, or
  - (b) megalitres per unit of share component for all access licences where share components are specified as a number of shares.
- (4) An available water determination for each category of access licence in this groundwater source should be made at the commencement of each water year.
- (5) The available water determinations made at the commencement of the water year for domestic and stock and local water utility access licences should be 100% of share components.
- (6) The available water determination made at the commencement of the water year for aquifer access licences should be such that the total of available water determinations under this clause equals the extraction limit set in clause 27 (2) as varied by clause 28 minus the total requirements for basic landholder rights, minus the total available water determinations for domestic and stock and local water utility access licences and supplementary water access licences, or such lower amount as results from the operation of clause 28A (3).
- (7) The available water determination made at the commencement of this plan and at the commencement of the 2007/08, and 2008/09 water years for supplementary water access licences should be 1 ML per unit of share component.
- (8) The available water determination made at the commencement of each year after the 2008/09 water year for supplementary water access licences will be reduced by a further 0.143 ML per unit of share component per year.
- (9) The available water determination for supplementary water access licences will be reduced to 0 ML per unit of share component at the commencement of the 2015/16 water year.

**Note—**

Subclause (8) means that allocations for supplementary water access licences will diminish each year by 0.143 ML per unit share after 2008/09 water year. For example, the available water determination for 1 October 2006 to 30 June 2007 is 1.0, 2007/08 water year is 1.0, 2008/09 water year is 1.0, 2009/10 water year is 0.857, 2010/11 water year is 0.714, 2011/12 water year is 0.571, 2012/13 water year is 0.429, 2013/14 water year is 0.286, 2014/15 water is 0.143, and 2015/16 water year is 0.

## **Part 10 Rules for managing access licences**

### **Division 1 General**

#### **30 Rules for managing access licences**

This Part is made in accordance with sections 20 (2) (b) and 21 (a) and 21 (c) of the Act, having regard to:

- (a) the environmental water rules established in Part 4 of this Plan,
- (b) requirements for water to satisfy basic landholder rights identified in Part 5 of this Plan, and
- (c) requirements for water for extraction under access licences in Part 7 of this Plan.

### **Division 2 Water allocation account management**

#### **31 Water allocation account management**

This Division is made in accordance with sections 20 (2) (b) and 21 (c) of the Act.

#### **32 Water allocation accounts**

In accordance with section 85 of the Act, a water allocation account shall be established for each access licence in this groundwater source.

**Note—**

Water allocation may be assigned to, or from, these accounts by a water allocation assignment made under section 71T of the Act, where these are allowed under rules specified in Part 11 of this Plan.

#### **33 Accrual of water allocations**

Water allocations will be accrued into water allocation accounts each water accounting year in accordance with the Minister's available water determinations as specified in clause 29.

#### **34 Annual accounting for water extraction**

- (1) Water taken from this groundwater source will be accounted for at least annually.
- (2) Water taken by a water supply work (bore) nominated by an access licence will be periodically debited against the access licence water allocation account.
- (3) A water allocation account shall remain at or above zero at all times.
- (4) Unused water allocations in the water allocation accounts of domestic and stock access licences or of local water utility access licences, cannot be carried over from one water year to the next.

- (5) In any water year, subject to local impact management restrictions arising from Part 10, Division 2 of this Plan, water taken from this groundwater source under a local water utility access licence or a domestic and stock access licence may not exceed a volume equal to:
  - (a) 100% of the share component of the access licence,
  - (b) plus any water allocations assigned from another access licence under section 71T of the Act in that year,
  - (c) plus any water allocations re-credited in accordance with section 76 of the Act in that year, and
  - (d) minus any water allocations assigned to another licence under section 71T of the Act in that year.
- (6) Unused water allocations in the water allocation accounts of aquifer access licences may be carried over from one water year to the next, subject to subclause (7).
- (7) The maximum amount of unused water allocations that can be carried over under subclause (6) is equal to 2 ML per unit of share component.
- (8) In any water year, subject to local impact management restrictions arising from Part 10, Division 2 of this Plan, water taken from this groundwater source under an aquifer access licence may not exceed a volume that is equal to:
  - (a) 2 ML per unit of aquifer access licence share component,
  - (b) plus any water allocations assigned from another access licence under section 71T of the Act in that year, and
  - (c) minus any water allocations assigned to another access licence under section 71T of the Act in that year.
- (9) Unused water allocations in the water allocation accounts of supplementary water access licences, cannot be carried over from one water year to the next.
- (10) In any water year, subject to local impact management restrictions arising from Part 10, Division 2 of this Plan, water taken from any of this groundwater source under a supplementary water access licence, may not exceed the allocation resulting from the available water determination.
- (11) Where both an aquifer access licence and a supplementary water access licence nominate the same water supply works and use approval, water allocations will be debited from a supplementary water access licence water allocation account before water is debited from an aquifer access licence water allocation account.
- (12) Subclauses (4) to (11) do not apply to any access licence specified in Schedule 4 of

this Plan.

- (13) Any access licence specified in Schedule 4 will be subject to the water allocation account management rules specified in that Schedule, in addition to clauses 31, 32, 33, 34 (1) to (3) and 34 (11).

## **Division 3 Management of local impacts**

### **35 Management of local impacts**

This Division is made in accordance with section 21 (a) of the Act.

### **36 Extraction interference between neighbouring bores**

- (1) The minimum allowable distance between a property boundary and extraction from new and replacement water supply works (bores) authorised to extract equal to or greater than 20 ML/yr is 200 metres.
- (2) New and replacement water supply works (bores) authorised to extract less than 20 ML/yr which are within 100 metres of any basic rights water supply work, will require an investigation of potential impacts on neighbouring water supply works (bores).
- (3) The Minister may, upon application by an access licence holder, vary the distance restrictions specified in subclause (1) if:
- (a) an hydrogeological study undertaken by the licence holder, and assessed as adequate by the Minister, demonstrates minimal potential for any adverse impact on existing licensed extraction,
  - (b) all potentially affected access licence holders, and adjacent landholders have been notified by the proponent, and

**Note—**

Potentially affected access licence holders are typically neighbouring access licence holders and/or those in the near vicinity.

- (c) there is a process for remediation in the event that any adverse impact occurs in the future, specified as conditions on the licence.
- (4) Subclause (1) does not apply to extraction under existing access licences until such time as the nominated water supply work (bore) is replaced.

**Note—**

The intention of this clause is to minimise the impact of extraction under new access licences on extraction under existing access licences. It is intended to develop models to support hydrogeological assessment of the adverse impacts of new groundwater extractions on existing licensed extraction.



### **37 Water level management**

- (1) The Minister may declare that, in order to maintain water levels within this groundwater source, local access rules are to apply in a defined area known as a local impact area.
- (2) If water levels in any part of a groundwater source have declined to such an extent that, in the opinion of the Minister, an adverse impact is occurring, or is likely to occur, extraction from all water supply works (bores) within a local impact area declared under subclause (1) that are nominated by an access licence will be restricted to such an extent and for such time as is required to reinstate water levels to such a degree as to mitigate or avoid that impact.

**Note—**

This clause recognises that in some locations, at certain periods of high groundwater demand, critical water level declines may occur, and that additional extraction limitations may be required. The Department of Land and Water Conservation will identify monitoring bores, specify the target levels, and determine the method for specifying an affected area.

### **38 Water quality management**

- (1) The beneficial uses of this groundwater source are raw water for drinking, and irrigation, based on beneficial use classes identified in the Australian and New Zealand Environment and Conservation Council *Water Quality Guidelines 2001*, and the National Health and Medical Research Council *Raw Water for Drinking Purposes Guidelines 1996*.

**Note—**

It is not recommended that the water from this groundwater source be consumed without prior treatment. Land use activities may have polluted the groundwater in some areas.

- (2) Water quality decline will be deemed unacceptable if extraction is likely to cause water quality to decline to a lower beneficial use class.
- (3) The Minister may declare that, in order to protect water quality within this groundwater source, local access rules are to apply in a defined area known as a local impact area.
- (4) If unacceptable water quality declines are resulting from extraction, extraction from all water supply works (bores) within a local impact area declared under subclause (3) that are nominated by an access licence will be restricted to such an extent and for such time as required to halt that decline, or restore the beneficial use of this groundwater source.
- (5) Extraction under local water utility access licences shall be subject to restrictions under this Part, but not to such an extent as access is denied.

### **39 Protection of groundwater dependent ecosystems**

- (1) Extraction of groundwater from a new or replacement water supply work (bore) is excluded within 100 metres of high priority groundwater dependent ecosystems, or any creek or river, for those exercising basic landholder rights, and 200 metres for extraction authorised by all other access licences unless the water supply work (bore):
  - (a) only draws water from an aquifer at depths greater than 50 metres, and
  - (b) has an impermeable seal, constructed within the annulus of the water supply work (bore), as specified by the Minister, to isolate aquifers above 50 metres depth, and to prevent water ingress from the shallow aquifers.

**Note—**

Subclause (1) will not apply to extraction from an existing water supply work (bore) until such time as the work is replaced.

- (2) High priority groundwater dependent ecosystems are those listed in Schedule 5.
- (3) Pursuant to section 42 (2) of the Act, the Minister may identify further high priority groundwater dependent ecosystems and include them in Schedule 5 at any time, based on further studies of groundwater ecosystems dependency undertaken by the Minister.
- (4) The Minister should consult with the Minister for the Environment before adding further high priority groundwater dependent ecosystems to Schedule 5.

**Note—**

At the commencement of this Plan, there is not sufficient information to identify high priority groundwater dependent ecosystems within the Lower Gwydir Groundwater Source.

### **40 Protection of aquifer integrity**

- (1) The Minister may declare that, in order to protect the integrity of the aquifers within this groundwater source, local access restrictions are to apply in a defined area known as a local impact area.
- (2) The Minister may, on presentation of evidence of land subsidence or aquifer compaction, restrict extraction from all water supply works (bores) nominated by an access licence within a local impact area declared under subclause (1), to such an extent and for such time as to stabilise that subsidence or compaction.

**Note—**

This clause recognises that damage of aquifers through excessive water storage loss is irreversible, and destroys the resource for future water users, including the environment.

#### **41 Extraction Restrictions**

The Minister may, in the event of local impacts restrictions arising from this Division, impose, by Order, a reduction in annual, quarterly, weekly or daily extraction rates from water supply works (bores) in the local impact area.

**Note—**

The Minister will attempt to give licence holders prior notice of any local impact restrictions so as to minimise the impacts of such restrictions on access within a season.

#### **42 Group registration**

This Plan allows for the formation of a group of access licences with respect to the sharing of local impact restrictions arising from this Division, subject to the following rules:

- (a) the group register will be maintained by the Minister,
- (b) holders of access licences must make a request to the Minister to form a group,
- (c) total extraction by all access licences within a group will be assessed as a whole against their combined restricted extraction and must not exceed that amount,
- (d) no access licence holder within the group may extract more than is permitted by Division 2 of this Part in any one water accounting year as a result of participation in a group,
- (e) an access licence holder may apply to be removed by the Minister from the group and the extraction by the group will be reduced by the extraction restriction of that access licence,
- (f) an access licence holder may apply to be added by the Minister to the group and the combined restricted extraction of the group will be increased by the extraction restriction of that access licence, and
- (g) the Minister reserves the right to remove a licence holder from a group where that individual causes the group extraction restriction to be exceeded, or to dissolve a group where its members exceed their combined extraction restriction.

#### **43 Infrastructure failure**

- (1) The operational rules relating to local impact management may rely on water levels at specified monitoring bores.
- (2) In the event of a monitoring bore failure the Minister may:
  - (a) continue with the current access rules until the monitoring bore is reinstated,
  - (b) adjust the current access rules based on climatic conditions and any other monitoring bore information, until the monitoring bore is reinstated, or

- (c) rely on another monitoring bore in the area to provide information.

## **Part 11 Access licence dealing rules**

### **44 Access licence dealing rules**

- (1) This Part is made in accordance with section 20 (1) (d) of the Act and with the Minister's access licence dealing principles gazetted under section 71Z of the Act.
- (2) Applications for access licence dealings may be granted subject to the Minister's access licence dealing principles gazetted from time to time under section 71Z of the Act and the rules in this Part.

**Note—**

There are a number of mechanisms within the Act, called access licence dealings, to change either the ownership of all or part of an access licence, or the location within a water source at which all or part of the share and extraction components of access licences can be exercised. These dealings are governed by the principles in section 5 of the Act, Minister's access licence dealing principles, and the rules in this Part.

**Note—**

Where there is an inconsistency between access licence dealing rules established in this Plan and Minister's access licence dealing principles gazetted subsequent to the commencement of this Plan, section 71Z of the Act provides for the Minister's access licence dealing principles to prevail.

### **45 Rules relating to constraints within a groundwater source**

- (1) This clause applies to any relevant dealings under sections 71Q, 71S, and 71W of the Act, and section 71T of the Act with respect to allocation assignments within this groundwater source.
- (2) Dealings are prohibited under this clause if:
  - (a) any of the access licences or water allocations involved are not within this groundwater source,
  - (b) the dealing would result in the total extraction under access licences through nominated works in the area, plus basic landholder rights extraction, causing any adverse local impact in accordance with Part 10 Division 3 of this Plan,
  - (c) the dealing would result in any increase in the total access licence share components nominating works within the Gwydir Watercourse Plan of Management area, as shown in Schedule 2,
  - (d) the dealing would result in any increase in the total water allocations credited to access licences nominating works within the Gwydir Watercourse Plan of Management area, as shown in Schedule 2,
  - (e) the dealing involves a supplementary water access licence, or any water

allocation credited to a supplementary water access licence water allocation account,

- (f) the dealing involves any assignment of access rights from any access licence specified in Schedule 4,
- (g) the dealing involves any water allocation assignments from any access licence specified in Schedule 4, or
- (h) the dealing involves any nomination of works by any access licence specified in Schedule 4, other than those nominated by the licence at the commencement of this Plan.

#### **46 Rules for change of water source**

- (1) This clause relates to dealings under section 71R of the Act.

**Note—**

Section 71R dealings are the mechanism by which access licences can move from one water source to another. Once the change in water source has been effected, if permitted, the new licence will have to nominate specified works (by a dealing under section 71W of the Act) in the receiving water source before extraction can commence.

- (2) Dealings under section 71R of the Act that change the water source to which an access licence applies are prohibited in this groundwater source.

#### **47 Rules for conversion of access licence category**

- (1) This clause relates to dealings under section 71O of the Act.
- (2) Dealings that result in conversion of an access licence of one category to an access licence of another category are prohibited in this groundwater source.

#### **48 Rules for interstate access licence transfer**

- (1) This clause relates to dealings under section 71U of the Act.
- (2) Dealings that result in an interstate access licence transfer into or out of this groundwater source are prohibited.

#### **49 Rules for water allocation assignments between water sources**

- (1) This clause relates to dealings under section 71T of the Act.
- (2) Dealings that assign water allocations between access licences in other water sources and access licences in this groundwater source are prohibited.

#### **50 Rules for interstate assignment of water allocations**

- (1) This clause relates to dealings under section 71V of the Act.

- (2) Dealings that result in an interstate assignment of water allocations to or from this groundwater source are prohibited.

## **Part 12 Mandatory conditions**

### **51 Mandatory conditions on access licences**

This Part is made in accordance with sections 17 (c) and 20 (2) (e) of the Act.

### **52 Access licence conditions**

- (1) All access licences shall have mandatory conditions in relation to the following:
  - (a) the specification of the share component of the access licence,
  - (b) the specification of the extraction component of the access licence,
  - (c) the requirement that all taking of water under the access licence will be subject to the available water determinations,
  - (d) the requirement that all taking of water under the access licence will be subject to any local impact management restrictions established in this Plan,
  - (e) the requirement that all taking of water under the access licence will be subject to the water allocation account management rules established in this Plan,
  - (f) the requirement that water may only be taken under the access licence by the water supply work (bore) nominated by the access licence,
  - (g) the taking of water in accordance with the access licence may only occur if the resulting debit from the access licence water allocation account will not exceed the volume of water allocation remaining in the account, and
  - (h) any other conditions required to implement the provisions of this Plan.
- (2) All supplementary water access licences shall have mandatory conditions to give effect to clause 25E (2) and (3), in relation to the amendment of access licence share components and cancellation of supplementary water access licences.
- (3) All supplementary water access licences shall have mandatory conditions to give effect to clause 25, in relation to the amendment of access licence share components.
- (4) All local water utility access licences shall have mandatory conditions that only allow the taking of water for the exercise of a water supply function of the local water utility or for other such purpose provided for under the Act.
- (5) Any access licence specified in Schedule 4 will have addition mandatory conditions applied, as specified in that Schedule.

### **53 Mandatory conditions on water supply work (bore) approvals**

All approvals for a water supply work (bore) to which this Plan applies shall have mandatory conditions in relation to the following:

- (a) the water supply work (bore) is only to be constructed by a driller licensed under section 349 of the Act,
- (b) the water supply work (bore) must comply with drilling standards as specified by the Minister,
- (c) construction of a water supply work (bore) must prevent contamination between aquifers through proper bore construction,
- (d) a water supply work (bore) approval holder must ensure decommissioning procedures comply with applicable standards as specified by the Minister,
- (e) a new or replacement water supply work (bore) to access water for basic rights will be required, as a condition of approval, to be constructed to sufficient depth to maintain access to the water source for the life of the work,
- (f) the water supply work (bore) approval holder is, within 2 months of completion of the work, or after the issue of the approval if the water supply work (bore) is existing, to provide the Minister with:
  - (i) details of the work on the prescribed form,
  - (ii) a plan showing accurately the location of the work in relation to portion and property boundaries, and
  - (iii) details of any water analysis and/or pumping tests required by the Minister,
- (g) if during the construction of the water supply work (bore), saline or contaminated water is encountered above the producing aquifer, such water is to be sealed off by:
  - (i) inserting the appropriate length(s) of casing to a depth sufficient to exclude the saline or contaminated water from the work, and
  - (ii) placing an impermeable seal between the casing(s) and the walls of the bore hole from the bottom of the casing to ground level, as specified by the Minister,
- (h) if a water supply work (bore) is abandoned, the water supply work (bore) approval holder is to:
  - (i) notify the Minister that the work has been abandoned, and
  - (ii) seal off the aquifer by backfilling the work to ground level after withdrawing the casing (lining), as specified by the Minister,

- (i) an extraction measurement device shall be installed and maintained on each water supply work (bore) used for extraction of water under an access licence, and such devices shall be of a type and shall be maintained in a manner, which is acceptable to the Minister,
- (j) a water supply work (bore) must comply with the relevant local impact management rules in Part 10 of this Plan,
- (k) notwithstanding the available water determination, it is the responsibility of the water supply work (bore) approval holder to ascertain from the Minister whether or not there are in place any local impact restrictions before commencing to take water from this groundwater source,
- (l) extraction under an access licence through the approved water supply work (bore) is only authorised with respect to the access licences specified on the water supply work (bore) approval,
- (m) a water supply work (bore) approval holder must supply to the Minister on request, and to the required standards, a report pertaining to the quality of the water obtained from the water supply work (bore), and
- (n) any other conditions required to implement the provisions of this Plan.

**Note—**

It is recommended that the Minister also apply conditions to water use approvals requiring the supply of information on an annual basis on types and areas of irrigated crops.

## **Part 13 Monitoring and reporting**

### **54 Monitoring**

The monitoring of the performance indicators specified in clause 13 shall be undertaken by the Minister.

**Note—**

Review and Audit of this Plan

In accordance with section 43A of the Act, the Natural Resources Commission must undertake a review of this Plan prior to any decision to extend its term or to make a new plan. The review must consider the extent to which the Plan's water sharing provisions have contributed to achieving or not achieving the relevant natural resource management standards and targets in the catchment management area (as referred to in section 5 of the [Catchment Management Authorities Act 2003](#)).

When undertaking this review the Natural Resources Commission is required to call for public submissions. The Commission will take into consideration any submission received as well as any other relevant State-wide or regional government policies or agreements that apply to the catchment management area.

In accordance with section 44 of the Act, this Plan will be audited at intervals of no more than five years, for the purpose of ascertaining whether its provisions are being given effect to. This audit is to be carried out by an audit panel appointed by the Minister in consultation with a water management committee where one exists.



**Note—**

The Implementation Program

In accordance with section 51 of the Act, the Minister may establish an Implementation Program that sets out the means by which the provisions of this Plan are to be achieved.

It is proposed that the Minister establish an Implementation Program for this Plan. Pursuant to section 51 (5) of the Act, the implementation program is to be reviewed annually by the Minister to determine whether it is effective in implementing this Plan.

The results of the review of the Implementation Program will be included in the annual report for the Department.

## **Part 14 Amendment of this Plan**

### **55 Amendment of this Plan**

- (1) This Part is made in accordance with section 45 (1) (b) of the Act.
- (2) This Plan can be amended in accordance with the following clauses of this Plan:
  - (a) clause 16 in respect to the average annual recharge,
  - (b) clause 18 in respect to planned environmental water,
  - (c) clause 28 in respect to the extraction limit,
  - (d) clause 39 in respect to high priority groundwater dependent ecosystems.

### **56 Amendment relating to planned environmental water**

- (1) The Minister may amend this Plan to provide for the recovery of planned environmental water as follows:
  - (a) the recovery is only to apply where the Minister has cancelled an access licence held by the Minister in accordance with section 8A of the Act,
  - (b) the amount of additional water to be provided as planned environmental water is to be equivalent to the annual average extraction of water under the cancelled licence over the long-term,
  - (c) the average annual long-term availability of water for the remaining access licences that relate to the water source concerned is to be reduced by the average annual long-term extraction of water under the cancelled licence.
- (2) The Minister may amend this Plan to specify the purposes for which planned environmental water committed under section 8A of the Act is to be used.

## **Dictionary**

The following definitions apply to this Plan in addition to the definitions set out in the Act:

**abandoned** (work) refers to a water supply work (bore) that is no longer being used.

**aquifer compaction** refers to the reduction in the porosity (pore spaces) of an aquifer, and may result from over pumping the aquifer

**available water** in relation to a water management area or water source, is the water that is available in that area or water source in accordance with an available water determination that is in force in respect of that area or water source.

**available water determination** is a written Order by the Minister as to the availability of water for the various categories of access licence in relation to a specified water management area or water source.

**Note—**

An available water determination gives rise to a water allocation that is credited to a water allocation account for each licensed holder.

**buffer zone** is an area surrounding a groundwater dependent ecosystem or other feature (such as an area of low quality) within which extraction, or the impact of extraction, is restricted.

**drawdown** refers to a lowering of the level to which water will rise in cased bores. Natural drawdown may occur due to seasonal climatic changes. Groundwater pumping may also result in seasonal and long-term drawdown.

**extraction limit** is the amount of the long-term average annual recharge and storage that can be extracted, on average, each water accounting year.

**Great Artesian Basin** is a 'confined' groundwater basin comprised of a complex multi-layered system of water bearing strata (porous sandstone aquifers) separated by largely impervious rock units, underlying largely arid and semi-arid landscapes to the west of the Great Dividing Range, and extending from Queensland through New South Wales and the Northern Territory, to South Australia.

**groundwater** is water that occurs beneath the ground surface in the saturated zone.

**groundwater dependent ecosystems** are ecosystems which have their species composition and natural ecological processes wholly or partially determined by groundwater.

**long term average storage component** is the volume of water in the aquifer less the combined average annual recharge and requirements for basic rights at the commencement of this plan, and exceeds the requirements for supplementary access provided for in this Plan.

**monitoring bore** refers to a bore constructed for the purpose of measuring water levels and/or taking samples for water quality analysis.

**recharge** is the addition of water, usually by infiltration, to an aquifer.

**sandstone** is sedimentary rock formed by the consolidation of sand grains, the sand component is often predominantly quartz and cemented by a fine grained matrix.

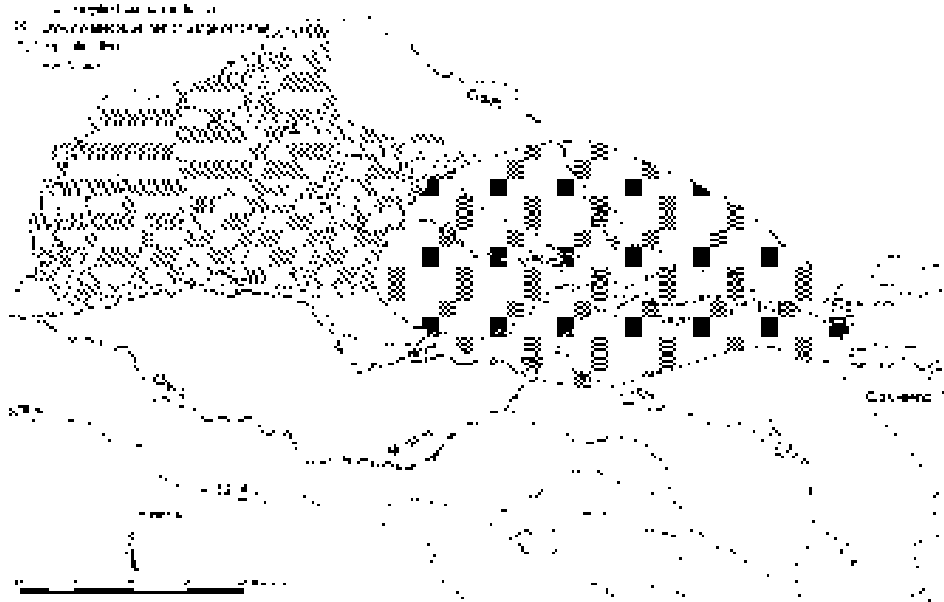
**share component** is the share component of an access licence.

**unconsolidated alluvium/sediment** is sediment deposited by the action of flowing water in

particular along river beds and floodplains, but not including lakes and seas.

**water year** is a 12 month period from 1 July to 30 June.

## Schedule 2 Lower Gwydir Groundwater Source



## Schedule 3 Contribution to relevant targets in the December 2002 State Water Management Outcomes Plan

### Levels of assessed contribution:

FULL—contributes to target in full

HIGH—while not fully contributing to target, there is a good level of contribution

PARTIAL—goes some way to contributing to the target

LOW—only small degree of contribution to the target

Relevant target	Level of contribution	Comments
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**Target 1e** The long term average annual extractions for groundwater limited (or being phased down) to an ecologically sustainable level (the Sustainable Yield) as determined by detailed assessment of each groundwater source and consultation with the relevant management committee. In the absence of such an assessment, the following to apply: 100 percent of average annual recharge for a groundwater source where there is no significant ecosystem dependency; 70 percent of average annual recharge where there is significant ecosystem dependency

PARTIAL

- This Plan clearly sets out the final extraction limit as 85% of estimated recharge.
- While detailed assessment of groundwater dependent ecosystems was not undertaken, preliminary studies suggest that there may not be significant groundwater dependent ecosystems in this groundwater source.
- This Plan provides for the extraction limit to be reviewed by 30 June 2010 and the extraction limit revised by up to 20%.

**Target 1f** Rules for adjustments to future available water determinations in the event that the extraction limits are exceeded, clearly prescribed in consultation with the relevant management committee, and acted upon

FULL

- Rules set out in Part 9.
- While detailed assessment of groundwater dependent ecosystems was not undertaken, preliminary studies suggest that there may not be significant groundwater dependent ecosystems in this area and the Lower Gwydir is a losing river.

**Target 2** All management plans incorporating mechanisms to protect and restore aquatic habitats, and the diversity and abundance of native animals and plants, with particular reference to threatened species, populations and communities and key threatening processes

HIGH

- This Plan prohibits new or replacement extraction bores within 200 metres of any designated high priority dependent groundwater ecosystems and 100 metres for basic rights bores, but these are not likely to be identified before 30 June 2010.
- This Plan recognises the Minister’s right to take action to prevent local groundwater level declines, groundwater quality impacts, and to protect aquifer integrity.
- This Plan provides for an assessment of groundwater dependency and variation in environmental health water by up to 20% before 30 June 2010.

<p><b>Target 5</b> Access rights for water access licensees clearly and legally specified in terms of share and extraction components</p>	<p>HIGH</p>	<ul style="list-style-type: none"> <li>• This Plan establishes a transparent extraction limit and water allocation account rules.</li> <li>• This Plan embargos new licence applications.</li> <li>• Access rights are tradeable.</li> <li>• The local extraction rules means that future rights will not be exclusive but affected by the future location of works. Licences with existing bores will have priority over licences requiring new bores.</li> </ul>
<p><b>Target 6a</b> For groundwater sources, the total volume of water specified on access licences reduced over the term of a water sharing plan to no more than 125 percent of the Sustainable Yield</p>	<p>FULL</p>	<ul style="list-style-type: none"> <li>• The total aquifer access licence share components for this groundwater source will be reduced to 100% of the final extraction limit at the commencement of this Plan.</li> </ul>
<p><b>Target 10</b> Degree of connectivity between aquifers and rivers assessed, and zones of high connectivity mapped to enable baseflows to the river to be maintained or improved</p>	<p>HIGH</p>	<ul style="list-style-type: none"> <li>• While detailed assessment of connectivity was not undertaken, preliminary information suggests that the aquifer gains water from the Lower Gwydir River and the river is not therefore dependent on any groundwater baseflow. The top end of the Gwydir regulated river around Gravesend is a gaining river but with low dependency on groundwater baseflows.</li> <li>• Groundwater extraction should not have significant impacts on discharges to the river and creeks.</li> <li>• While detailed assessment of groundwater dependent ecosystems was not undertaken, preliminary studies suggest that there may not be significant groundwater dependent ecosystems in this groundwater source.</li> </ul>
<p><b>Target 11</b> Groundwater dependent ecosystems identified and mapped for all priority aquifers, and the ecological water requirements assessed to enable local groundwater extraction rates and/or Sustainable Yields to be reviewed</p>	<p>PARTIAL</p>	<ul style="list-style-type: none"> <li>• This Plan prohibits new or replacement extraction bores within 200 metres of any designated high priority dependent groundwater ecosystems and 100 metres for basic rights bores, but these are not likely to be identified before 30 June 2010.</li> <li>• This Plan provides for an assessment of groundwater dependency and variation in environmental health water by up to 20% before 30 June 2010.</li> </ul>

<p><b>Target 12</b> Measures in place in all water sources subject to a gazetted water sharing plan to protect domestic and stock rights from the impact of other water access and use</p>	<p>HIGH</p>	<ul style="list-style-type: none"> <li>• This Plan has identified the volumes necessary to meet basic domestic and stock requirements.</li> <li>• It also protects domestic and stock bores from interference from higher yielding bores.</li> </ul>
<p><b>Target 13</b> The knowledge sharing, training and resources necessary to ensure that Aboriginal people have the capacity to be effectively involved in water management identified and addressed</p>	<p>PARTIAL</p>	<ul style="list-style-type: none"> <li>• 1 Aboriginal community representative has been involved in development of this Plan.</li> <li>• No Aboriginal cultural or traditional sites or requirements have been identified.</li> <li>• This Plan includes a general objective for protection of cultural values.</li> <li>• This Plan prohibits new or replacement extraction bores within 200 metres of any designated high priority dependent groundwater ecosystems and 100 metres for basic rights bores, but these are not likely to be identified before 30 June 2010.</li> </ul>
<p><b>Target 14</b> Water sources, ecosystems and sites of cultural or traditional importance to Aboriginal people identified, plans of management prepared, and measures put in place to protect and improve them</p>	<p>PARTIAL</p>	<ul style="list-style-type: none"> <li>• Aquifer access licence share components and water allocations are tradeable.</li> </ul>
<p><b>Target 16a</b> All share components of access licences tradeable</p>	<p>HIGH</p>	<ul style="list-style-type: none"> <li>• This Plan does not establish zones but does restrict transfers into the areas covered by the Gwydir Watercourse Plan of Management.</li> </ul>
<p><b>Target 16f</b> Zones established where necessary for environmental protection and limits/constraints on water dealings in them made explicit</p>	<p>FULL</p>	<ul style="list-style-type: none"> <li>• This Plan includes a general water quality objective.</li> <li>• This Plan establishes rules to protect water quality.</li> <li>• This Plan is explicit about the beneficial uses and criteria.</li> </ul>
<p><b>Target 35</b> All management plans incorporating water quality objectives that have considered Government approved Interim Environmental Objectives, the current Australian and New Zealand Environment and Conservation Council Guidelines and the recommendations of relevant Healthy Rivers Commission Inquiries</p>	<p>HIGH</p>	<ul style="list-style-type: none"> <li>• No vulnerability mapping of area is referenced.</li> <li>• This Plan provides rules for managing lateral movement of poor quality water.</li> </ul>
<p><b>Target 38</b> Aquifer water quality vulnerability zones mapped and extraction limits reviewed to reduce the risk of lateral intrusion of poor quality water</p>	<p>PARTIAL</p>	<ul style="list-style-type: none"> <li>• No vulnerability mapping of area is referenced.</li> <li>• This Plan provides rules for managing lateral movement of poor quality water.</li> </ul>

## **Schedule 4 Special access licence rules and conditions**

### **1 General**

- (1) This Schedule applies to [Water Act 1912](#) bore licence numbers 90BL017406, 90BL031080, 90BL031082, 90BL031083, 90BL031085, 90BL031089, 90BL031092, 90BL031093, 90BL031096, 90BL031097, 90BL031098, 90BL031099, 90BL031104, 90BL031106, 90BL031107, 90BL031109, 90BL031110, 90BL031112, 90BL132841, 90BL132843, 90BL132846, 90BL247831, 90BL247832, 90BL247833, 90BL247834, 90BL247835, 90BL247836, 90BL247837, 90BL247838, 90BL247839, 90BL247840, 90BL247841, 90BL247842, 90BL247843, 90BL247844, 90BL247845, 90BL247846, 90BL247847, 90BL247848, 90BL247849, 90BL247850, 90BL247941, 90BL247942, 90BL247943, 90BL247944, 90BL247945, 90BL247946, 90BL247949, 90BL247950, 90BL247951, 90BL247952 and 90BL247953 granted under the [Water Act 1912](#), being associated with property account number 90PT981567, and any aquifer access licence arising from these at the commencement of Part 2 of Chapter 3 of the Act.
- (2) If any access licence specified in subclause (1) is subject to a dealing under sections 71Q, 71R, 71S, 71W, or 71T of the Act, and that dealing results in the assignment of access rights or water allocations to or from the licence specified in subclause (1), or the nomination of a water supply work at a location other than that specified on the licence, then the licence will be removed from Schedule 4, and any special mandatory conditions attached to the access licence arising from this Schedule removed from the licence.

### **2 Additional annual accounting for water extraction rules**

- (1) In any one water accounting year, subject to local impact management restrictions arising from Part 10, Division 3 of this Plan, water taken from this groundwater source under an aquifer access licence listed in this Schedule may not exceed a volume equal to 41.2 ML per unit of share component.
- (2) (Repealed)
- (3) A maximum amount equal to 41.2 ML per unit of share component may be carried forward in a water allocation account of an access licence listed in this Schedule, from one water accounting year to the next.

### **3 Additional mandatory conditions**

The aquifer access licences listed in this Schedule shall have mandatory conditions in relation to the following:

- (a) water may only be taken if the available water determination for regulated river (high security) access licences in the Gwydir Regulated River water source is less than 1 ML per unit of share component,

- (b) water may only be taken if there is no allocation remaining in the water allocation account of licence number WAL8966 granted under the *Water Management Act 2000*, and any regulated river (high security) access licence arising from this at the commencement of Part 2 of Chapter 3 of the Act, unless the *Water Sharing Plan for the Gwydir Regulated River Water Source 2002* is suspended under section 60 (2) of the Water Management Act.
- (c) water may not be taken in any water year that the licence specified in subclause (3) (b) has been or is subject to a dealing under sections 71Q, 71R, 71S, 71W, or 71T of the Act, and that dealing results in the assignment of access rights or water allocations from the licence specified in subclause (3) (b), or the nomination of a water supply work at a location other than that specified on the licence, and
- (d) notwithstanding clause 2 of this Schedule, the total water that may be taken in a water accounting year under this access licence, and the regulated river (high security) access licence specified in subclause (3) (b), shall not exceed 13,325 megalitres, plus any water allocations assigned to these access licences in that year.

## Schedule 5 High priority groundwater dependant ecosystems

To be inserted by the Minister in accordance with clause 39 (3).

**Note—**

The offices of the Department of Land and Water Conservation, shown in Appendix 2, should be contacted for details applicable to this Schedule.

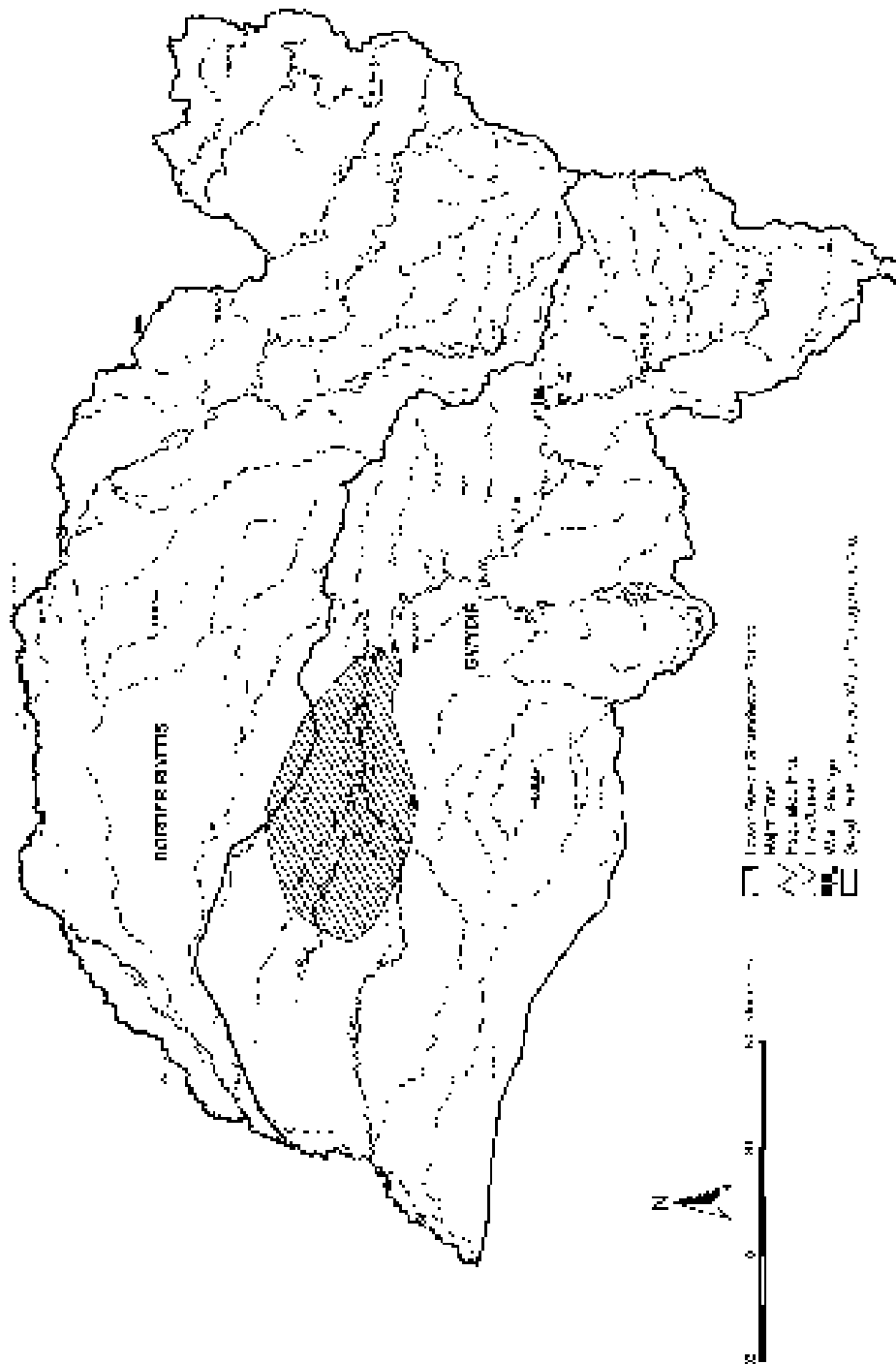
## Schedule 6 Aquifer access licence share component

(Clauses 25C (2) and 25C (3))

<b>Column 1</b>	<b>Column 2</b>	<b>Column 3</b>
<b>Water Act Entitlement</b>	<b>Licence</b>	<b>Aquifer Access Licence Share Component</b>
90PT980064	90BL021579, 90BL153751	84
90PT980125	90BL123547	178
90PT980177	90BL250365	134
90PT982174	90BL016804, 90BL021748	157
90PT982642	90BL009410, 90BL251556	259



## Appendix 1 Gwydir and Border Rivers Water Management Areas



## Appendix 2 Location of maps

The maps in relation to this Plan may be inspected at:

District Office  
Department of Land and Water Conservation

66-68 Frome Street  
 MOREE NSW 2400

Regional Office  
 Department of Land and Water Conservation  
 155-157 Marius Street  
 TAMWORTH NSW 2340

## Appendix 3 Performance indicators

### Performance indicators for the Lower Gwydir Groundwater Source Water Sharing Plan

Performance indicator	Related objective	As measured by	Commentary
(a) Change in groundwater extraction relative to the extraction limit.	11 (a), (b), (c), (d), (f), and (g).	<ul style="list-style-type: none"> <li>Average annual extraction volume for the groundwater as a percentage of the extraction limit (commonly known as the sustainable yield).</li> </ul>	<ul style="list-style-type: none"> <li>Plan provisions will set the mechanism to remain within the sustainable yield over the long-term.</li> </ul>
(b) Change in climate adjusted groundwater levels.	11 (a), (b), (c), (d), (f), and (g).	<ul style="list-style-type: none"> <li>Average annual frequency and duration (in days) of water level drawdown below pre-plan hydrographs.</li> <li>Density of extraction in critical areas.</li> <li>Identification of groundwater dependent ecosystems (GDEs).</li> <li>Assessment of the relationship between selected GDEs and local groundwater levels in terms of the water requirements of these GDEs.</li> </ul>	<ul style="list-style-type: none"> <li>Water levels will fluctuate with climate and resultant variable recharge. Some level declines will be expected during dry times, just as level rises are expected during wetter periods.</li> </ul>
(c) Change in water levels adjacent to identified groundwater dependent ecosystems.	11 (a) and (g).	<ul style="list-style-type: none"> <li>Assessment of the adequacy of buffer zones or local impact restrictions by comparison of water levels near in or GDEs compared to plan baseline.</li> <li>Frequency and duration of water level drawdown below critical levels.</li> </ul>	<ul style="list-style-type: none"> <li>Groundwater dependent ecosystems should be identified in the water sharing plans.</li> </ul>

(d) Change in groundwater quality.	11 (b), (d), (f), and (h).	<ul style="list-style-type: none"> <li>• Trends in selected water quality parameters at selected monitoring bores that are likely to be affected by groundwater extraction.</li> </ul>	<ul style="list-style-type: none"> <li>• Many water quality issues are a function of contamination by land based activities, rather than extraction.</li> </ul>
(e) Change in economic benefits derived from groundwater extraction and use.	11 (b), (e), and (h).	<ul style="list-style-type: none"> <li>• Change in regional gross margins.</li> <li>• Change in unit price of water transferred.</li> </ul>	<ul style="list-style-type: none"> <li>• Note that there are many factors affecting economic status of a region, for example commodity prices, other sources of water (i.e. surface water) etc.</li> <li>• Assessment undertaken as part of plan performance monitoring will make assumptions to attempt to identify the impact of the plan's provisions.</li> </ul>
(f) Change in structural integrity of the aquifer.	11 (b) and (c).	<ul style="list-style-type: none"> <li>• Annual number of reports of new land subsidence and reduced bore yields.</li> <li>• Survey if necessary.</li> <li>• Monitor increase in applications for water supply work (bore) approvals.</li> </ul>	
(g) Extent to which domestic and stock rights requirements have been met.	11 (j) and (g).	<ul style="list-style-type: none"> <li>• Number of reports of interference between high yield extraction and basic rights, or number of domestic and stock water supply works deepened.</li> <li>• Assess frequency and duration of water level drawdown below critical thresholds.</li> </ul>	<ul style="list-style-type: none"> <li>• Basic rights usage figures in water sharing plans are estimated (not actual use).</li> <li>• Increases in licences may be due to past unlicensed works.</li> </ul>
(h) Extent to which local water utility requirements have been met.	11 (b), (e), (f), (g), and (h).	<ul style="list-style-type: none"> <li>• Monitor increase in access by local water utilities.</li> <li>• Monitor impact of interference between high yield extraction and local water utility extraction.</li> </ul>	

- |  |   |   |
|--|---|---|
| <p>(i) Extent to which native title rights requirements have been met.</p>                                       | <p>11 (f), (g), and (h).</p>                    | <ul style="list-style-type: none"> <li>• Monitor increase in applications for water supply work (bore) approvals for native title basic rights.</li> <li>• Number of reports of interference between high yield extraction and native title rights holders, or number of water supply works deepened.</li> <li>• Assess frequency and duration of water level drawdown below critical thresholds.</li> </ul>  |
| <p>(j) Extent of recognition of spiritual, social, and customary values of groundwater to Aboriginal people.</p> | <p>11 (a), (b), (c), (d), (f), (g) and (h).</p> | <ul style="list-style-type: none"> <li>• Assessment of amount and type of information collected to identify the range of values of water to Aboriginal people.</li> <li>• The collection of information on the values associated with water is considered the first step in addressing the objects of the Act.</li> <li>• It would be expected that at the end of five years there should be relevant information collected for each water source, as a minimum requirement.</li> </ul> |

## Appendix 4 Calculation of domestic and stock rights

### Requirements for Lower Gwydir Groundwater Source

A component of the Lower Gwydir Groundwater Source Water Sharing Plan is the provision of basic landholder rights to groundwater for domestic and stock purposes.

The domestic and stock requirements for the Lower Gwydir Groundwater Source was calculated for water supply works identified within the Lower Gwydir Groundwater Source. These domestic and stock water supply works are those that are not within the boundaries of a property with a groundwater access licence, and do not form part of a local water utility access licence.

It is difficult to measure extraction from these water supply works as their use is not metered. The domestic and stock requirements in this Plan of 694 ML/yr is likely to be an overestimate, the Gwydir Groundwater Management Committee agreed that this figure be included in this Plan and understood the process used in estimating this figure.

The following assumptions were made to calculate the requirements for basic rights domestic and stock extraction:

- each property has an equivalent domestic use irrelevant of the size of the property,
- drinking, cooking, bathing, washing of clothes and cars and other domestic purposes is 0.064 ML/yr per person,

- the average house hold has 4 residents,
- average garden usage is 2 ML/yr,
- stock use is assumed to be the Dry Sheep Equivalent, and the average consumption per head per day is 6 litres (*Management options during a drought*, NSW Agriculture, 1986),
- at a carrying capacity of 4 head/hectare, and
- there may be other sources of water including water from creeks/rivers, dams and tanks.

### Calculations

#### Domestic—A per property usage

$$4 \times 0.064 = 0.256 \text{ ML/yr}$$

$$\text{Garden} = 2.000 \text{ ML/yr}$$

$$\text{Total Domestic Use} = 2.250 \text{ ML/yr}$$

#### Stock

$$6\text{L/d} \times 365 \text{ days} \times 4 \text{ (sheep/ha)} / 1,000,000\text{L} = 0.0088 \text{ ML/yr/ha}$$

### Total Domestic and Stock Requirements

214 properties, with a total area of 26,484 hectares were identified in the Lower Gwydir Groundwater Source as having domestic and stock water supply work(s). The total domestic and stock demand is therefore 694 ML/yr, with 482 ML/yr and 212 ML/yr for domestic use and stock use respectively.

### Future Development

Based on historical development of stock and domestic water supply works in the Lower Gwydir Groundwater Source it is estimated that there will be a growth rate of 21% over the period of the water sharing plan, an additional 42 domestic and stock water supply works to access basic landholder rights.

It is assumed that all new domestic and stock water supply works will be drilled and constructed on separate properties. The existing data indicates that the average size of these properties would be 81.5 hectares. The total additional stock and domestic requirements for the period of this Plan will be 125 ML/yr. This is 94.5 ML/yr and 30.5 ML/yr for domestic use and stock use respectively.

## Appendix 5 Rules for determining History of Extraction

(Clause 25C (4))

### Rule 1

The history of extraction for each entitlement is calculated separately, irrespective of ownership.

### Rule 2

When meter failure has prevented the measurement of actual extraction, extraction will be estimated

on the basis of:

- (a) the extraction that was estimated at the time of meter failure held on record by the Department, or
- (b) pump running times held on record by the Department, or
- (c) areas of crops grown and water usage for similar crops.

**Rule 3**

Estimates made under Rule 2 will be capped at licensed access to water for the entitlement for the year in question.

**Rule 4**

Where non-volumetric entitlement have been converted to volumetric entitlement during or after the period being used to calculate HOE, any relevant historical extraction or other data used in converting the entitlements will be used to calculate HOE.

**Rule 5**

In the event of zero or reduced extraction resulting from bore failure the year in which the bore failed will be excluded in calculating HOE.

If a licence holder substantiates a case that the failure of a bore had a greater impact on extraction in the water year following bore failure, then this year rather than the year in which the failure occurred, will be the year excluded.

The licence holder must provide documented evidence of the bore failure.

**Rule 6**

Failure of associated bore equipment (eg motor, gearbox etc) will not be considered bore failure for the purpose of calculating HOE.

**Rule 7**

Reduced levels of extraction from a bore due to lower aquifer levels will not be considered bore failure for the purpose of determining HOE.

**Rule 8**

In the event of lower extraction resulting from crop failure no allowance will be made in calculating the HOE.

**Rule 9**

Water extracted pursuant to a temporary transfer of entitlement will be accounted in the HOE of the seller or transferor.

**Rule 10**

Where properties have been amalgamated, all extraction prior to amalgamation will be combined and

together with extraction occurring after amalgamation will be used to calculate HOE.

Where entitlement is subdivided extraction under the original entitlement is allocated to the new entitlements.

**Rule 11**

When new entitlements have been created due to subdivision, extractions under the original entitlement will be apportioned to each new entitlement in proportion to the entitlement at the commencement of the plan and together with extraction occurring after subdivision will be used to calculate HOE.

Alternately, where all the new entitlement holders unanimously agreed, extraction under the original entitlement will be calculated for each bore licence and together with extraction occurring after the subdivision will be used to calculate HOE.

**Rule 12**

Where extractions have not been metered extraction will be assessed on the basis of (in priority order):

- (a) any relevant historical extraction data used in converting non - volumetric entitlement to volumetric entitlement,
- (b) recorded pump usage hours if available, and
- (c) areas of crops grown and water usage for similar crops each year.

**Rule 13**

Where an entitlement holder is unable to or does not provide information on which to base an assessment for a year the extraction for that year will be assessed as zero megalitres.

**Rule 14**

All extractions that a licence holder 'carried over' and/or 'borrowed' that were in accordance with management rules applying at the time will be included as extraction for determining history of extraction.

**Rule 15**

Metered extraction will first be allocated to:

- (a) groundwater only extraction capped at the allocation for that year, then,
- (b) conjunctive groundwater allocation (where applicable) capped at the conjunctive groundwater entitlement for that year, then,
- (c) carry over within management rule limits and then,
- (d) borrowing within management rule limits.

The sum of extraction from groundwater only entitlement, conjunctive groundwater entitlement, carryover & borrowing provision and temporary transfers will be used to calculate the HOE. Any

remaining extraction will not be used to calculate HOE.