



Australian Government



# Murray–Darling Basin sustainable diversion limit compliance outcomes 2019–20

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### Acknowledgement of the Traditional Owners of the Murray–Darling Basin

The Murray–Darling Basin Authority pays respect to the Traditional Owners and their Nations of the Murray–Darling Basin. We acknowledge their deep cultural, social, environmental, spiritual and economic connection to their lands and waters.

The guidance and support received from the Murray Lower Darling Rivers Indigenous Nations, the Northern Basin Aboriginal Nations and our many Traditional Owner friends and colleagues is very much valued and appreciated.

Aboriginal people should be aware that this publication may contain images, names or quotations of deceased persons.

### ERRATA

This report was updated on 8 September 2021 to correct the annual actual and permitted take of the Lower Darling SDL Resource Unit (SS18) in *Appendix B: 2019–20 Interim Register of Take* where both have increased by 5.95 GL. These changes affect the total Basin annual actual and permitted take by the same amount with no impact on the annual balance or compliance outcomes (published 1 October 2021)

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# Foreword from the Chair of the Murray–Darling Basin Authority



One of the primary objectives of the Basin Plan is to ensure the water resources of the Basin are shared between all water users in a sustainable way; striking a balance and maintaining a healthy and productive system to sustainably support industries, the environment and communities.

Fundamental to the success of this objective is compliance with the sustainable diversion limit, or SDLs. Accurate accounting of the Basin’s water resources is key to measuring the Basin Plan’s success. Thus, this SDL compliance report which presents the first Register of Take for the Murray–Darling Basin for water year 2019–20 represents a significant step towards demonstrating the Australian Government’s investment in water reforms.

Compliance with the SDLs during the 2019–20 water year for all but the Queensland Warrego-Paroo-Nebine surface and groundwater water resource plan (WRP) area were assessed under the bilateral agreements between Basin states and the MDBA. This is because WRPs for those areas had not been accredited prior to 1 July 2019.

NSW has claimed reasonable excuses for apparent SDL exceedances in three SDL resource units. These claims were assessed in accordance with the MDBA’s *SDL reporting and compliance framework* and highlighted that robust water use accounting and compliance is integral to providing assurance to the Basin states and Australian public that we have the controls and mechanisms in place to prevent, detect and/or mitigate compliance risks related to the SDLs. As 2019–20 was the first application of the *SDL Reporting and Compliance Framework*, the Authority requested the Independent Assurance Committee (IAC) to review its compliance assessment processes. The outcome of the IAC assessment is available on the MDBA website<sup>1</sup>.

I would like to thank each of the Basin states, the Department of Agriculture, Water and Environment and the Commonwealth Environmental Water Holder for their contribution to this important work.

The Australian Government’s efforts have increased to assure compliance with the resources of the Murray–Darling Basin. In September 2020, the Hon. Keith Pitt MP announced the establishment of a new Inspector-General of water compliance for the Murray–Darling Basin. The relevant legislative amendments to give effect to this announcement will soon take effect. As this occurs, the MDBA will continue to work with Basin states and Commonwealth agencies to identify, report and/or mitigate SDL compliance risks in the Basin.

A handwritten signature in black ink, appearing to read 'Angus Houston'.

**Air Chief Marshal Sir Angus Houston AK, AFC (Ret’d)  
Chair, Murray–Darling Basin Authority**

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<sup>1</sup> [www.mdba.gov.au](http://www.mdba.gov.au)

# 1 Introduction

The sustainable diversion limits (SDLs) expand on the Murray–Darling Basin Cap on diversions to explicitly cover all forms of water take defined in the Basin Plan<sup>2</sup>. These forms of take include take from watercourses and regulated rivers, by floodplain harvesting, runoff dams, commercial plantations (net take), under basic rights and groundwater. SDL compliance relates only to the water taken for consumptive use.

The SDL accounting system monitors water take over the long-term. Importantly this is not the system used for allocations, water sharing between the states, or daily river operations. The SDL accounts are assessed annually after the end of each water year and at the SDL resource unit scale.

Basin state governments are the regulators and the frontline for regulating water use in the Basin. Individual compliance with licence conditions and local rules is the responsibility of these governments. They are responsible for ensuring Basin state compliance systems are effective, and for enforcing the rules, many of which are outlined in water resource plans (WRPs). The Water Act<sup>3</sup> also requires Basin states to provide an annual report to the MDBA on the volumes of water take for each WRP area.

This compliance assessment has been split into two; an assessment under the Basin Plan for those SDL resource units where a WRP has been accredited and an assessment under a bilateral agreement between the Basin state and MDBA where a WRP was not accredited by 1 July 2019. In total it includes 29 surface water and 80 groundwater SDL resource units<sup>4</sup>.

The Authority is responsible for assessing and monitoring Basin state compliance with SDLs. The MDBA works with Basin states to ensure that any apparent SDL exceedances are investigated, and that appropriate mitigating action is taken if water use grows in excess of the SDLs over time.

Further information regarding Basin governments' roles and responsibilities and the MDBA's approach to compliance can be found in the *Sustainable diversion limit reporting and compliance framework* (2018)<sup>5</sup>.

This report provides a summary of SDL compliance outcomes for 2019–20. The MDBA intends to publish a follow up report including details of consumptive and environmental water use, climate, and observed trends for the 2019–20 water year.

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<sup>2</sup> *Basin Plan 2012 (Cth)* s 1.07

<sup>3</sup> *Water Act 2007 (Cth)* s 71

<sup>4</sup> *Water Act 2007 (Cth)* s 4 and *Basin Plan 2012 (Cth)* ch 3

<sup>5</sup> Murray Darling Basin Authority. (2018) *Sustainable diversion limit reporting and compliance framework* (publication no: 37/18) [Sustainable Diversion Limit Reporting and Compliance Framework \(mdba.gov.au\)](https://www.mdba.gov.au/publications/sustainable-diversion-limit-reporting-and-compliance-framework)

# 2 SDL compliance outcomes for 2019–20 water year

## 2.1 Status of water resource plans for 2019–20 water year

In late 2018 the Murray–Darling Basin Ministerial Council was updated on the progress with the development of state WRPs. The Ministerial Council agreed that key WRP commitments need to be in place from 1 July 2019. Consistent with this decision, Basin states agreed to enter into bilateral agreements with the Commonwealth to ensure key elements of the WRPs were given effect from 1 July 2019 where a WRP was not accredited by that date.

For the 2019–20 water year the SDL compliance assessment has been split into two: an assessment under the Basin Plan and an assessment under the bilateral agreements. For the accredited WRPs assessment of compliance with the SDL in accordance with the methods in Part 4 of Chapter 6 of the *Basin Plan 2012* (Cth) (the Basin Plan) commenced from 2019–20 and the outcomes provided in the Register of Take (Appendix A).

For the non-accredited WRPs an interim Register of Take (Appendix B) provides an assessment undertaken via the bilateral agreements between the Authority and the relevant Basin states. Pursuant to the bilateral agreements, the compliance report is intended to parallel the state’s reporting requirements under s 71 of the *Water Act 2007* (Cth) (the Water Act) and the compliance method in Part 4 of Chapter 6 of the *Basin Plan 2012* (Cth) (the Basin Plan) that will apply when a state’s water resource plan is accredited.

### 2.1.1 SDL compliance assessment under Basin Plan 2012 – accredited WRPs

At 1 July 2019 only one WRP was accredited, covering three surface and three groundwater SDL resource units in the Queensland Warrego–Paroo–Nebine WRP area. As such SDL compliance commenced for the six SDL resource units within the Queensland Warrego–Paroo–Nebine WRP area. Tables 1 and 2 provide the SDL compliance status for the surface and groundwater SDL resource units for the 2019–20 water year; the official registers are at Appendix A.

Table 1: Summary of surface water SDL compliance outcomes for 2019–20 .

State	Water resource plan area	SDL resource unit	SDL compliance status 2019–20
Queensland	Warrego–Paroo–Nebine	Paroo (SS29)	Compliant
		Warrego (SS28)	Compliant
		Nebine (SS27)	Compliant

Table 2: Summary of groundwater SDL compliance outcomes for 2019–20.

State	Water resource plan area	SDL resource unit	SDL compliance status 2019–20
Queensland	Warrego–Paroo–Nebine (GW22)	Sediments above the Great Artesian Basin: Warrego–Paroo–Nebine (GS60)	Compliant
		St George Alluvium: Warrego–Paroo–Nebine (GS63)	Compliant
		Warrego Alluvium (GS66)	Compliant

## 2.1.2 Assessment under bilateral agreements – non accredited WRPs

For all the remaining WRPs that were not accredited by 1 July 2019, this SDL compliance assessment has been determined using the methods and information from proposed WRPs or now accredited WRPs<sup>6</sup> (many of which were subsequently accredited during the 2019–20 water year). In cases where ambiguity existed in the proposed WRP package, a consistent approach was agreed with the relevant Basin state. Tables 3 and 4 provide the SDL compliance status (pursuant to the bilateral agreements) for the surface and groundwater SDL resource units for the 2019–20 water year; the interim register is at Appendix B.

Table 3: Summary of surface water SDL compliance outcomes for 2019–20 assessed in accordance with bilateral agreements.

State	Water resource plan area	SDL resource unit	SDL compliance status 2019–20
Queensland	Condamine–Balonne	Condamine–Balonne (SS26)	Compliant
	Queensland Border Rivers–Moonie	Moonie (SS25)	Compliant
		Queensland Border Rivers (SS24)	Compliant
New South Wales	Intersecting Streams	Intersecting Streams (SS17)	Compliant
	Barwon–Darling Watercourse	Barwon–Darling Watercourse (SS19)	Non-compliant <sup>7</sup>
	New South Wales Border Rivers	NSW Border Rivers (SS23)	Compliant
	Gwydir	Gwydir (SS22)	Compliant
	Namoi	Namoi (SS21)	Compliant
	Macquarie–Castlereagh	Macquarie–Castlereagh (SS20)	Compliant
	Lachlan	Lachlan (SS16)	Compliant
	Murrumbidgee	Murrumbidgee (SS15)	Compliant
	New South Wales Murray and Lower Darling	New South Wales Murray (SS14)	Compliant
Lower Darling (SS18)		Compliant	

<sup>6</sup> Murray–Darling Basin Authority. (2020) water resource plans retrieved from [Water resource plans | Murray–Darling Basin Authority \(mdba.gov.au\)](https://www.mdba.gov.au/water-resource-plans)

<sup>7</sup> NSW claim for reasonable excuse for most of the excess is assessed as not valid

State	Water resource plan area	SDL resource unit	SDL compliance status 2019–20
ACT	Australian Capital Territory	Australian Capital Territory (SS1)	Compliant
Victoria	Victorian Murray	Victorian Murray (SS2)	Compliant
		Kiewa (SS3)	Compliant
	Northern Victoria	Ovens (SS4)	Compliant
		Goulburn (SS6)	Compliant
		Broken (SS5)	Compliant
		Campaspe (SS7)	Compliant
	Loddon (SS8)	Compliant	
Wimmera–Mallee	Wimmera–Mallee (SS9)	Compliant	
South Australia	South Australian River Murray	South Australian Murray (SS11)	Compliant
	South Australian Murray Region	South Australian Non-Prescribed areas (SS10)	Compliant
	Eastern Mount Lofty Ranges	Eastern Mount Lofty Ranges (SS13)	Compliant
		Marne–Saunders (SS12)	Compliant

Table 4: Summary of groundwater SDL compliance outcomes for 2019–20 assessed in accordance with bilateral agreements.

State	Water resource plan area	SDL resource unit	SDL compliance status 2019–20
Queensland	Queensland Border Rivers–Moonie (GW19)	Queensland Border Rivers Alluvium (GS54)	Compliant
		Queensland Border Rivers Fractured Rock (GS55)	Compliant
		Sediments above the Great Artesian Basin: Border Rivers–Moonie (GS57)	Compliant
		St George Alluvium: Moonie (GS62)	Compliant
	Condamine–Balonne (GW21)	Condamine Fractured Rock (GS53)	Compliant
		Queensland MDB: deep (GS56)	Compliant
		Sediments above the Great Artesian Basin: Condamine–Balonne (GS58)	Compliant
		St George Alluvium: Condamine–Balonne (shallow) (GS61a)	Compliant
		St George Alluvium: Condamine–Balonne (deep) (GS61b)	Compliant
		Upper Condamine Alluvium (Central Condamine Alluvium) (GS64a)	Compliant
		Upper Condamine Alluvium (Tributaries) (GS64b)	Compliant
		Upper Condamine Basalts (GS65)	Compliant



State	Water resource plan area	SDL resource unit	SDL compliance status 2019–20
New South Wales	NSW Murray–Darling Basin Porous Rock (GW6)	Western Porous Rock (GS50)	Compliant
		Gunnedah–Oxley Basin MDB (GS17)	Compliant
		Sydney Basin MDB (GS41)	Compliant
		Oaklands Basin (GS38)	Compliant
	Darling Alluvium (GW7)	Upper Darling Alluvium (GS42)	Compliant
		Lower Darling Alluvium (GS23)	Compliant
	Murray Alluvium (GW8)	Billabong Creek Alluvium (GS13)	Compliant
		Lower Murray Shallow Alluvium (GS27a)	Compliant
		Lower Murray Deep Alluvium (GS27b)	Compliant
		Upper Murray Alluvium (GS46)	Compliant
	Murrumbidgee Alluvium (GW9)	Lake George Alluvium (GS21)	Compliant
		Lower Murrumbidgee Shallow Alluvium (GS28a)	Compliant
		Lower Murrumbidgee Deep Alluvium (GS28b)	Compliant with Reasonable Excuse <sup>8</sup>
		Mid–Murrumbidgee Alluvium (GS31)	Compliant
	Lachlan Alluvium (GW10)	Belubula Alluvium (GS12)	Compliant
		Lower Lachlan Alluvium (GS25)	Compliant
		Upper Lachlan Alluvium (GS44)	Compliant
	NSW Murray–Darling Basin Fractured Rock (GW11)	Adelaide Fold Belt MDB (GS10)	Compliant
		Kanmantoo Fold Belt MDB (GS19)	Compliant
		Lachlan Fold Belt MDB (GS20)	Compliant
		Orange Basalt (GS39)	Compliant
		Young Granite (GS51)	Compliant
		Inverell Basalt (GS18)	Compliant
		Liverpool Ranges Basalt MDB (GS22)	Compliant
		New England Fold Belt MDB (GS37)	Compliant
		Warrumbungle Basalt (GS49)	Compliant
	Macquarie–Castlereagh Alluvium (GW12)	Bell Valley Alluvium (GS11)	Compliant
		Castlereagh Alluvium (GS14)	Compliant
		Coolaburragundy–Talbragar Alluvium (GS15)	Compliant
		Cudgegong Alluvium (GS16)	Compliant
		Lower Macquarie Alluvium (GS26)	Compliant
Upper Macquarie Alluvium (GS45)		Compliant with Reasonable Excuse <sup>9</sup>	
	NSW GAB Surat Shallow (GS34)	Compliant	

<sup>8</sup> NSW claim for reasonable excuse is assessed as valid

State	Water resource plan area	SDL resource unit	SDL compliance status 2019–20
	NSW Great Artesian Basin Shallow (GW13)	NSW GAB Warrego Shallow (GS35)	Compliant
		NSW GAB Central Shallow (GS36)	Compliant
	Namoi Alluvium (GW14)	Lower Namoi Alluvium (GS29)	Compliant
		Manilla Alluvium (GS30)	Compliant
		Peel Valley Alluvium (GS40)	Compliant
		Upper Namoi Alluvium (GS47)	Compliant
		Upper Namoi Tributary Alluvium (GS48)	Compliant
	Gwydir Alluvium (GW15)	Lower Gwydir Alluvium (GS24)	Compliant
		Upper Gwydir Alluvium (GS43)	Compliant
	NSW Border Rivers Alluvium (GW18)	NSW Border Rivers Alluvium (GS32)	Compliant
		NSW Border Rivers Tributary Alluvium (GS33)	Compliant
ACT	Australian Capital Territory (GW1)	Australian Capital Territory (Groundwater) (GS52)	Compliant
Victoria	Goulburn Murray (GW2)	Goulburn–Murray: Shepparton Irrigation Region (GS8a)	Compliant
		Goulburn–Murray: Highlands (GS8b)	Compliant
		Goulburn–Murray: Sedimentary Plain (GS8c)	Compliant
		Goulburn–Murray: deep (GS8d)	Compliant
	Wimmera–Mallee (GW3)	Wimmera–Mallee: Highlands (GS9a)	Compliant
		Wimmera–Mallee: Sedimentary Plain (GS9b)	Compliant
		Wimmera–Mallee: deep (GS9c)	Compliant
South Australia	South Australian Murray Region (GW4)	Mallee (Pliocene Sands) (GS3a)	Compliant
		Mallee (Murray Group Limestone) (GS3b)	Compliant
		Mallee (Renmark Group) (GS3c)	Compliant
		Peake–Roby–Sherlock (unconfined) (GS5a)	Compliant
		Peake–Roby–Sherlock (confined) (GS5b)	Compliant
		SA Murray (GS6)	Compliant
		SA Murray Salt Interception Schemes (GS7)	Compliant
	Eastern Mount Lofty ranges (GW5)	Angas Bremer (Quaternary Sediments) (GS1a)	Compliant
		Angas Bremer (Murray Group Limestone) (GS1b)	Compliant
		Eastern Mount Lofty Ranges (GS2)	Compliant

State	Water resource plan area	SDL resource unit	SDL compliance status 2019–20
		Marne Saunders (Fractured Rock) (GS4a)	Compliant
		Marne Saunders (Murray Group Limestone) (GS4b)	Compliant
		Marne Saunders (Renmark Group) (GS4c)	Compliant

## 2.2 SDL compliance method

The Authority conducts an annual compliance test for each surface water and groundwater SDL resource unit based on a self-assessment by Basin states and by applying the methods for determining compliance with the SDL outlined in Chapter 6, Part 4 of the Basin Plan<sup>9</sup>. The purpose of this test is to check that use remains at the SDL level and determine if there is an excess 'growth-in-use', which is where water take is increasing and becomes greater than the SDL. The outcome of the SDL compliance assessment will result in an SDL resource unit being:

**Compliant:** the water resources have been managed within 20% of the SDL for that SDL resource unit.

**Compliant with a reasonable excuse** (Basin Plan 6.12 (3)(4) and 6.12C (3)(4)): there has been an exceedance and the Basin state has provided a report to the MDBA setting out the reasons for the excess and the steps it will take to reduce the cumulative balance of the register so that there is no excess. The MDBA may accept the reasonable excuse as being valid under the Basin Plan upon review of evidence provided as set out in the MDBA's *SDL reporting and compliance framework* (2018).

**Non-Compliant:** Further to s.71(1)(h) of the Water Act, a Basin state must advise the actions that it proposes to ensure that the SDL is complied with in the future. Appropriate compliance actions may also apply against the Basin state. The MDBA's approach to compliance is further outlined in the MDBA's *Compliance and Enforcement Policy 2018-21* (2020).

Summarised, the compliance test compares *actual take* to *permitted take* and determines the annual differences over time.

*Permitted take* is how much water was expected to be used under the SDL, based on the climate and water patterns of that water year. It is often determined using a hydrological model. It should be noted that *permitted take* is not the same as water 'allocated' or made legally accessible for take.

<sup>9</sup> Noting that in 2019–20 formal compliance under the Basin Plan is only relevant to the surface and groundwater Warrego–Paroo–Nebine SDL resource units

*Actual take* is how much water was actually diverted or extracted from the SDL resource unit in a given water year. It is measured or otherwise estimated.

The test uses the permitted and actual take volumes summed for all forms of take, relevant to the SDL resource unit. The volumes for permitted and actual take are determined using the methods set out in accredited water resource plans and bilateral agreements.

The data for each SDL resource unit is recorded in the Register of Take (Appendix A: 2019–20 Register of and Appendix B: 2019–20 Interim Register of Take). The purpose of the Register of Take is to assist with determining, for each water accounting period and over time since the start of the SDL compliance, whether there has been compliance with the long-term average annual diversion limit for an SDL resource unit and the extent of any exceedance with that limit. There is a separate Register of Take and compliance test for surface and groundwater, consistent with Basin Plan chapter 6 part 4. The SDLs and baseline diversion limits (BDLs) used for the 2019–20 SDL compliance assessment at Appendix C: 2019–20 BDLs and SDLs.

SDL compliance commenced from 1 July 2019 and following accreditation of Basin state water resource plans, noting that in the absence of an accredited WRP on 1 July 2019 bilateral agreements are in place for SDL compliance to commence (see Section 2.1: Status of water resource plans). As 2019–20 is the first year of SDL compliance, and the cumulative balance in the Registers of Take starts at zero. The trial accounts kept from 2012–19 (known as the transition period and summarised in the transition period water take reports<sup>10</sup>) do not form part of the formal SDL accounts from 2019–20 onwards. The purpose of the trial accounting was to set up and ensure that processes and procedures were in place prior to the commencement of formal SDL compliance.

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<sup>10</sup> Murray–Darling Basin Authority. (2020) Transition period water take reports retrieved from [Transitional SDL water take reports | Murray–Darling Basin Authority \(mdba.gov.au\)](https://www.mdba.gov.au/transition-period-water-take-reports)

# 3 Compliance issues 2019–20

As part of s71 reporting, Basin states conduct a self-assessment of compliance. In 2019–20, Queensland, the Australian Capital Territory, Victoria, and South Australia reported compliance with all SDL resource unit limits.

NSW advised of apparent SDL exceedances in the surface water Barwon–Darling Watercourse, and the groundwater Upper Macquarie Alluvium and Lower Murrumbidgee Deep Alluvium SDL resource units. It subsequently submitted claims for reasonable excuse for each of these SDL resource units under the Basin Plan and consistent with the bilateral agreement in place with NSW. Compliance with the SDL in each of these cases is being assessed for the 2019–20 year under the bilateral agreement between NSW and the MDBA<sup>11</sup>.

The following sections provide information on assessment outcomes, factors behind the apparent exceedances, and ‘make good’ actions.

## 3.1 Compliant with reasonable excuse and non-compliance

Under the Basin Plan s.6.12 and s.6.12C, Basin states may make a claim for a ‘reasonable excuse’ if the SDL compliance test is exceeded. The claim for reasonable excuse must include an explanation of the reasons why the test has been exceeded and the steps the Basin state will take to bring use back into compliance.

As the regulator, the Authority confirms the compliance balances (through the Register of Take) and determines whether a reasonable excuse should be granted. This determination is based on the evidence provided by the Basin state and any supplementary evidence acquired by the MDBA in accordance with the *SDL reporting and compliance framework (2018)*.

A reasonable excuse may be accepted by the Authority if an exceedance occurs, for example, due to the operation of an accredited water resource plan (WRP) or due to circumstances beyond a Basin state’s control. If the Authority accepts a reasonable excuse, a state is considered to be *compliant with reasonable excuse*. A Basin state may be found non-compliant on either its own assessment or if the reasonable excuse is not deemed valid by the Authority.

Regardless of whether a Basin state is *compliant with a reasonable excuse* or *non-compliant*, steps are required to be taken to ‘make good’, that is to bring water take back within the SDL.

### 3.1.1 Barwon–Darling Watercourse

In the 2019–20 water year NSW reported an apparent exceedance of SDL compliance in the Barwon–Darling Watercourse surface water SDL resource unit and claimed reasonable excuses due to:

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<sup>11</sup> Murray–Darling Basin Authority. (2020) Interagency agreement MDBA and NSW, retrieved from [Bilateral agreements with Basin state and territory governments | Murray–Darling Basin Authority \(mdba.gov.au\)](https://www.mdba.gov.au/bilateral-agreements-with-basin-state-and-territory-governments)

- the operation of the water resource plan for the SDL resource unit<sup>12</sup> and
- circumstances beyond a state's control (incomplete water recovery) as per s.6.12(4)(a) and (b) of the Basin Plan.

The cumulative balance was -32%, and thus debit a greater than the 20% compliance threshold.

With respect to NSW's claim of reasonable excuse due to the operation of the proposed water resource plan, the Authority found that NSW did not operate in a manner fully consistent with the submitted water resource plan in the 2019–20 water year. As such, **the Authority determined this claim for reasonable excuse (made for the majority of the SDL exceedance) is not valid and is therefore not accepted.** In particular, NSW did not deliver on commitments under the bilateral agreement and its own water sharing plan to assess and report compliance with its own take limit, the long term annual average extraction limit, which it has submitted as part of the mechanisms it relies on to ensure that take will remain within the SDL.

While the Authority has found claim the claim for reasonable excuse is not valid, it agrees with NSW that the annual permitted take method needs to be revised and that this would provide a better understanding of how use is tracking relative to the SDL. Analysis of past water use trends in the Barwon–Darling Watercourse indicates that this apparent exceedance is consistent with the high variability of the system and water use trends of the past and does not – in the first year – represent conclusive evidence of growth in use associated with the watercourse diversions.

The Authority considers that recommending implementation of growth in use response provisions at this stage would be premature. The risk of perverse outcomes by implementing growth in use response provisions to Barwon–Darling Watercourse users is disproportionate to the risk that the apparent exceedance represents to the SDL. As this is the first year of reporting against the SDL, more time is required for NSW to implement the 'make good' actions, and for further data and evidence to be gathered to better understand the issue, before action is taken to reduce use.

With respect to the NSW claim owing to circumstances beyond the state's control, due to incomplete water recovery at 1 July 2019, the **Authority determined this claim for reasonable excuse is valid under the Basin Plan and is accepted.** This applies only to the portion of the excess (2 GL) that is attributable to the incomplete water recovery. In August 2020, the Authority accepted advice from the Department of Agriculture, Water and the Environment that the incomplete water recovery in the 2019–20 water year was due to circumstances beyond NSW' control. As set out in the Basin Plan, this allows for an adjustment to the Register of Take in the 2020–21 water year. However, this is not sufficient to change the overall finding for this SDL resource unit.

The NSW reasonable excuse report *Barwon–Darling Watercourse: 2019–20 SDL compliance*, and the Authority's *Assessment of the reasonable excuse claim for compliance with the sustainable diversion limit – Barwon–Darling watercourse 2019–20* are available on the MDBA website. These reports detail the reasons for the claim and the Authority's assessment.

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<sup>12</sup> Note that for the 2019–20 water year the NSW Barwon–Darling Watercourse WRP was not accredited, and compliance was measured against permitted take methods within the proposed WRP submitted to the MDBA June 2020. Further information is within section 2.1 of this report.

NSW have committed to ‘make good’ actions to address the apparent exceedance, these include:

- Updating the Barwon–Darling Watercourse annual permitted take model to better reflect current water management practices in relation to application of restrictions.
- Recalibrating the Barwon–Darling Watercourse models to reflect data from updated flow meters that record different diversions than previous meters over equivalent pumping events. This is to correct inconsistencies between the current recorded actual take volumes and those which were originally used to calibrate the model. This recalibration of the models will lead to updates of the estimates of the Cap, BDL and SDL volumes.

The Authority agrees that these actions are required.

In addition, it notes that there are a number of actions in relation to the measurement, management and regulation of water resources in the SDL resource unit that NSW has committed to for an extended period of time, but not yet fully implemented, that would have improved the management and regulation of water resources in the SDL resource unit. These include accreditation of the WRP; regulation of floodplain harvesting; implementation of modelling upgrades and roll out of meters that meet Australian Standards (AS4747).

While delayed, the supporting material provided by NSW in relation to the 2019–20 water year follows the process for a claim for reasonable excuse set out in the Water Act (s71), the Basin Plan (Chapter 6 Part 4) and the MDBA’s *SDL reporting and compliance framework*. NSW will by 31 October 2021 provide an update regarding take in the 2020–21 water year, outlining its progress in further investigating the issue and bringing the usage back into compliance with the SDL.

The Authority notes that upon accreditation of the NSW water resource plans the surface water Register of Take will formally commence and, pursuant to s 6.08 of the Basin Plan, on its commencement must record a cumulative balance of zero.

### 3.1.2 Upper Macquarie Alluvium

In the 2019–20 water year NSW reported an apparent exceedance of SDL compliance in the Upper Macquarie Alluvium groundwater SDL resource unit and submitted a claim for reasonable excuse due to operation of the water resource plan for the SDL resource unit<sup>13</sup>, as per s.6.12C(4)(a) of the Basin Plan.

#### **The Authority has assessed and accepted NSW’ claim for reasonable excuse in the upper Macquarie alluvium SDL resource unit as being valid under the Basin Plan.**

The NSW reasonable excuse report, *The Upper Macquarie Alluvium: 2019–20 SDL compliance*, and the Authority’s *Assessment of the reasonable excuse claim for compliance with the sustainable diversion limit – Upper Macquarie Alluvium 2019–20* are available on the MDBA website.

The Authority agreed that the Upper Macquarie Alluvium was operated by NSW in a manner consistent with the submitted water resource plan in the 2019–20 water year. As part of its s. 71

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<sup>13</sup> Note that for the 2019–20 water year the NSW Macquarie–Castlereagh Alluvium WRP was not accredited, and compliance was measured against permitted take methods within the proposed WRP submitted to the MDBA June 2020. Further information is within section 2.1 of this report.

reporting, NSW provided its self-assessment of compliance identifying the exceedance and, consistent with Basin Plan s6.12C(3) and (5), submitted a report setting out its understanding of the reasons for the excess and the steps it will take to reach the point where there is no excess.

The Authority agrees that the circumstances that occurred did arise due to the operation of the proposed WRP in the 2019–20 water year. Further, while delayed relative to original timelines, the supporting material provided by NSW meet the requirements for a claim for reasonable excuse set out in the Water Act (s71), the Basin Plan (Chapter 6 Part 4) and the MDBA's *SDL reporting and compliance framework*.

The proposed Macquarie–Castlereagh Alluvium Water Resource Plan sets out the methodology for the annual permitted take in the Upper Macquarie Alluvium SDL resource unit and this is discussed further below. The SDL resource unit had an exceedance due to the annual actual take (22.98 GL) exceeding the annual permitted take (by 4.2 GL) that led to a volumetric exceedance of the SDL compliance threshold by 0.62 GL (or 2.8 %). The annual permitted take method in the Upper Macquarie Alluvium SDL resource unit is determined by the total annual rainfall (at Dubbo, NSW). The method allows a higher annual permitted take volume in dry years (when surface water is scarce) and a lower permitted take volume in wetter years (when there is greater surface water availability); with the determination of 'dry' and 'wet' years being relative to the average annual rainfall. However, it does not consider the variability of rainfall throughout the year.

Below average rainfall was recorded from July 2019 through February 2020 coinciding with the irrigation season where general security surface water allocations were zero. As such, groundwater utilisation increased during this period. From February 2020 rainfall increased. By the water year end in June 2020, the year's rainfall was slightly below average. Permitted take was calculated at the end of the water year and was lower than anticipated given the wetter conditions of the latter half of the year.

As part of the reasonable excuse claim, NSW has committed to monitoring extraction in this SDL resource unit and will assess whether there is any growth-in-use associated with new development. NSW will manage take in accordance with the permitted take method in the proposed WRP. NSW acknowledges that the permitted take method is only the first step in establishing a variable permitted take method and as such, will conduct a five-year review and evaluation of effectiveness.

Based on the groundwater take data from the transitional reporting period, NSW have stated in their supporting documentation that they expect cumulative extraction over the next two or three water years will return take to below the compliance trigger. NSW also notes that the rainfall for the 2020–21 water year so far, and the Bureau of Meteorology's seasonal outlook, indicate higher than average rainfall which is likely to result in reduced demand for groundwater for the current water year.

NSW will provide an updated report by 31 October 2021 regarding take in the 2020–21 water year and outlining its progress in further investigating the issue and bringing the usage back into compliance with the SDL.

While endorsing the claims for reasonable excuse in the Upper Macquarie Alluvium, the Authority noted that the demand for groundwater take is likely to remain high in dry years and that NSW has commenced discussions with stakeholders regarding how it will reduce use, if required, to ensure



that take remains within the SDL and its own take limit (the long-term average annual extraction limit or LTAAEL).

In endorsing the reasonable excuse claim, the Authority noted that it is essential that NSW delivers on the commitments it has made. This includes the implementation of its own legislation, which will assist in achieving SDL compliance. That is, if the trend of high use over recent years has continued in 2020–21 and the NSW limit is exceeded (expected to be known by the end of the 2020/21 water year), the Authority would expect that NSW would implement the actions it has foreshadowed to restrict use and reduce take to within the NSW limit.

### 3.1.3 Lower Murrumbidgee Deep Alluvium

In the 2019–20 water year NSW reported an exceedance of SDL compliance in the Lower Murrumbidgee Deep Alluvium groundwater SDL resource unit and claimed a reasonable excuse due to operation of the water resource plan for the SDL resource unit<sup>14</sup> as per s. 6.12C (4a) of the Basin Plan.

#### **The Authority has assessed and accepted NSW' claim for reasonable excuse in the upper Macquarie alluvium SDL resource unit as being valid under the Basin Plan.**

The NSW reasonable excuse report, *The Lower Murrumbidgee Deep Alluvium: 2019–20 SDL compliance*, and the Authority's *Assessment of the reasonable excuse claim for compliance with the sustainable diversion limit – Lower Murrumbidgee Deep Alluvium 2019–20* are available on the MDBA website.

The Authority agreed that the Lower Murrumbidgee Deep Alluvium was operated by NSW in a manner consistent with the submitted water resource plan in the 2019–20 water year. As part of its s.71 reporting, NSW provided its self-assessment of compliance identifying the exceedance and consistent with Basin Plan s6.12C(3) and (5), submitted a report setting out its understanding of the reasons for the excess and the steps it will take to reach the point where there is no excess.

The Authority considers that the circumstances that occurred did arise due to the operation of the proposed WRP in the 2019–20 water year. Further, while delayed relative to original timelines, the supporting material provided by NSW meet the requirements for a claim for reasonable excuse set out in the Water Act (s71), the Basin Plan (Chapter 6 Part 4) and the MDBA's *SDL reporting and compliance framework*.

The SDL resource unit had an exceedance due to the annual actual take (329.5 GL) exceeding the annual permitted take (by 55.9 GL) that led to a volumetric exceedance of the SDL compliance threshold by 1.14 GL (or 0.35 %).

The annual permitted take method in the Lower Murrumbidgee Deep Alluvium SDL resource unit is determined by the total annual rainfall (at Coleambally, NSW), in the same manner as the method for the Upper Macquarie Alluvium.

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<sup>14</sup> Note that for the 2019–20 water year the NSW Murrumbidgee Alluvium WRP was not accredited, and compliance was measured against permitted take methods within the proposed WRP submitted to the MDBA June 2020. Further information is within section 2.1 of this report.

Below average rainfall was recorded from July 2019 through December 2019 coinciding with the irrigation season when general security surface water allocations were at low levels of availability. As such, groundwater utilisation increased during this period. From January 2020 rainfall increased. Permitted take was calculated at the end of the water year and was lower than anticipated given the wetter conditions of the latter half of the year.

Extraction during the 2019–20 water year also exceeded the limit in the water sharing plan rules. As a result, on 1 July 2020, NSW announced an available water determination of 0.65 ML/share to try and reduce extraction to below the limit.

As part of the reasonable excuse claim, NSW have outlined other steps it will take to reduce the cumulative balance of the register to within the SDL. NSW have committed to monitoring extraction in this SDL resource unit and will assess whether reduced available water determinations are required in subsequent years. NSW will manage take in accordance with the permitted take method in the proposed WRP. NSW acknowledges that the permitted take method is only the first step in establishing a variable permitted take method and as such, they will conduct a five-year review and evaluation of effectiveness.

Based on the groundwater take data from the transitional reporting period and the reduced water available determination, NSW have stated in their supporting documentation that they expect cumulative extraction over the next two or three water years will return take to below the compliance trigger. NSW also notes that the rainfall received for the 2020–21 water year so far, and the Bureau of Meteorology's seasonal outlook, indicate average rainfall which is likely to result in reduced demand for groundwater for the current water year.

NSW will provide an updated report to the MDBA by 31 October 2021 regarding take in the 2020–21 water year and outlining its progress in further investigating the issue and bringing the usage back into compliance with the SDL.

While accepting the claim for reasonable excuse in the Lower Murrumbidgee Deep Alluvium the Authority noted that the demand for groundwater take is likely to remain high in dry years and that NSW has already taken steps to reduce use to ensure that it remains within its own take limit (the long-term average annual extraction limit or LTAAEL).

In accepting the reasonable excuse claim, it is essential that NSW delivers on the commitments it has made. This includes the implementation of its own legislation, which will assist in achieving SDL compliance. That is, if the trend of high use over recent years has continued in 2020/21 and the NSW limit is exceeded (expected to be known by the end of the 2020/21 water year), the Authority would expect that NSW would continue to implement the actions it has foreshadowed to restrict use and reduce take to within the NSW limit.

## 3.2 Notes for the 2019–20 compliance assessment

### 3.2.1 Floodplain harvesting

In Queensland, there are five SDL resource units where floodplain harvesting (overland flow) is captured and used. These include the Queensland Border Rivers, Moonie, Condamine–Balonne, Nebine and Warrego. In NSW, there are five SDL resource units where floodplain harvesting is

captured and used. These include the Barwon–Darling watercourse, NSW Border Rivers, Gwydir, Namoi, and Macquarie–Castlereagh.

During 2019–20 licensing programs were underway in NSW and Queensland to account for take more accurately by floodplain harvesting. These projects are not complete and as such the SDL compliance assessment uses interim floodplain harvesting methods and volumes that are:

- for Queensland – as set out in WRPs accredited during the 2019–20 water year and
- for NSW – as agreed with NSW under the bilateral agreement, drawing on the information set out in the proposed WRPs. Interim BDL estimates for floodplain harvesting in NSW were submitted to the MDBA as part of WRPs on 30 June 2020. These WRPs are being assessed by the MDBA and a number have been withdrawn by NSW prior to resubmission. However, under the bilateral agreement with NSW, these interim numbers have been used for the assessment of SDL compliance for the 2019–20 water year.

The MDBA’s *SDL reporting and compliance framework* prescribes that where methods are improved, (once the projects are completed) the SDL accounts will be retrospectively updated for the purposes of informing for future water accounting and compliance assessments.

### 3.2.2 Register of Take adjustments

The following points describe various adjustments to the surface water Register of Take and Interim Register of Take, and their status.

- *Acquisition and disposal of held environmental water (implemented in 2019–20 registers of take, where relevant)*  
The Basin Plan (s 10.12(3)) requires a WRP to account for the disposal and acquisition of water held by the environment (Held Environmental Water – or HEW) separately and in a way that does not affect the permitted take method. Such trade in HEW must be accounted for in a manner that is neutral and does not impact on either consumptive or environmental use. For example, if an owner of HEW sells water for consumptive use in a given year, an adjustment is made to the cumulative balance for the SDL resource unit, after the difference between the annual permitted take and actual take for that year has been determined.
- *Adjustment for incomplete recovery (to be applied from 2020–21, where relevant)*  
There has been significant effort by the Australian Government to acquire held environmental water to ‘bridge the gap’ between the BDL and SDL. For the 2019–20 water year there were 11 surface water SDL resource units and two groundwater SDL resource units where there was incomplete water recovery that the Authority agreed was beyond the relevant Basin state’s control.  
The Basin Plan provides for an adjustment to the cumulative balance if there has been incomplete water recovery beyond a state’s control in an SDL resource unit in the previous water accounting period (Basin Plan s 6.11(5)). The adjustment is made by adding to cumulative balance the annual equivalent of the volume of incomplete recovery.  
Adjustments for the incomplete recovery volumes in 2019–20 will be applied to the 2020–21 cumulative balance under s6.11(5).

- *Adjustment for excess environmental water recovery (under consideration for future application)*

Consistent with the incomplete recovery approach, an SDL accounting approach for excess recovery is being considered by the MDBA. This approach is under discussion with the state governments and therefore has not been applied to the 2019–20 registers of take. If such an adjustment had been made for the 2019–20 water year, it would not have changed any of the compliance outcomes in the 2019–20 water year.

## 4 Basin state compliance reporting

The Water Act s 71 outlines the obligations of Basin states to provide an annual report to the MDBA on the volumes of water take for each WRP area within four months of the end of the water year. It also outlines the information the report must include.

As the 2019–20 water year is the first of SDL compliance, there were a number of delays that affected the Basin states in the reporting timeline (see Table 5). Initial delays occurred with the MDBA providing updated reporting templates to Basin states; instead of delivery by 1 July 2019, templates were provided as listed in Table 5.

As this is the first year of applying the WRP model runs to determine annual permitted take, there have been a number of issues and concerns. These include model initialisation and sequencing of model runs (i.e. outputs from upstream models are required as inputs for downstream models). This work is important to resolve as it helps to ensure the input data is as accurate as possible, so models are providing the best available information.

NSW experienced delays in providing annual outputs for its permitted take models (also known as ‘clunk runs’) to the MDBA. This led to subsequent delays in determining the annual permitted take for the Victorian, NSW and South Australian Murray SDL resource units; as the upstream NSW data is needed to run the MDBA’s Source Murray Model (SMM) for these SDL resource units. The output of the SMM run was provided to states on 10 December 2020, and a process followed to check and confirm model outputs.

Table 5: Compliance reporting dates and Basin state data provision

State	Date template provided to State	Reporting date as per Water Act s71	Extension date given by MDBA	Date of first data submission	Date of final data submission
<b>Queensland</b>	26 August 2020	31 October 2020	not requested	29 October 2020	13 January 2021
<b>New South Wales</b>	1 October 2020	31 October 2020	15 December 2020	15 December 2020	19 April 2021 <sup>15</sup>
<b>ACT</b>	18 September 2020	31 October 2020	22 December 2020	22 December 2020	2 March 2021
<b>Victoria</b>	14 September 2020	31 October 2020	15 January 2021	19 January 2021	9 June 2021
<b>South Australia</b>	18 September 2020	31 October 2020	not requested	30 October 2020	14 January 2021

<sup>15</sup> Final reasonable excuse claim report received 11 June 2021

# Appendix A: 2019–20 Register of Take

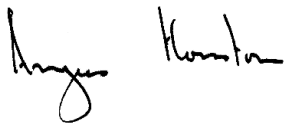
## 2019–20 Register of Take

Compliance with Murray–Darling Basin sustainable diversion limits for the 2019–20 water year.

Declaration of accuracy:

On behalf of the Murray–Darling Basin Authority, I declare that the Authority has reviewed relevant evidence and contents of the Register of Take and to the best of our knowledge:

- the Register of Take and assessment of compliance has been prepared in accordance with all relevant conditions of Basin Plan chapter 6 part 4;
- the findings of the Register of Take and assessment of compliance are reported truthfully, accurately and completely;
- due diligence and professional judgement have been exercised in preparing the Register of Take and assessment of compliance; and
- the Register of Take and assessment of compliance are an accurate summary of the compliance status of the sustainable diversion limits.



**Air Chief Marshal Sir Angus Houston AK,  
AFC (Ret'd)  
Chair, Murray–Darling Basin Authority  
August 2021**

Table 6: Surface water Register of Take for 2019–20 under accredited Water Resource Plans (WRPs). All numbers are in GL (1 gigalitre = 1 billion litres)

State	SDL resource unit	SDL resource unit code	SDL	Annual Permitted Take <sup>1</sup>	Annual Actual Take	Annual Balance	Cumulative Balance – Start of Year	Cumulative Balance – End of Year	HEW Adjustments <sup>2</sup>	Adjusted Cumulative Balance <sup>3</sup>	Compliance Trigger (-20% of SDL)	Is a Reasonable Excuse claimed? (Yes/No)	Compliance status
QLD	Nebine	SS27	17.1	16.1	11.1	4.92	0.00	4.92	0.00	4.92	-3.41	No	Compliant
QLD	Warrego	SS28	55.5	61.2	36.8	24.4	0.00	24.4	0.00	24.4	-11.1	No	Compliant
QLD	Paroo	SS29	11.8	10.9	10.9	0.08	0.00	0.08	0.00	0.08	-2.36	No	Compliant

**Notes:**

1. Annual Permitted Take:

The annual permitted take method set out in WRPs for surface water regulated rivers is generally determined by hydrological models. Post modelling adjustments are generally made to the output volumes of these models to allow for components not processed within the model. These adjustments allow for a more accurate determination of the permitted take volumes. The adjustments include:

- *Adjustments for bridging the gap held environmental water (HEW) to SDL setting.* The models used to generate annual permitted take do not explicitly model HEW entitlements. This means that all of the entitlements within the model are represented as one pool, and an adjustment is required to remove the proportion of the annual target attributed to entitlements that have since been recovered and are now HEW. The methods used by each Basin state for this process are set out in their accredited WRPs or proposed WRPs.
- *Trade adjustment.* As allocation trade (i.e. including tagged trade) is not modelled in the annual permitted take, an adjustment is required for trade between SDL resource units. Not adjusting for this trade could lead to actual take exceeding permitted take despite irrigators have legal rights to use more water under water markets. Consumptive to environmental or vice versa trade is separately adjusted in the cumulative balance (see note 2).

2. HEW adjustments are for the net HEW acquisition and disposal in the SDL resource unit in that year.

3. Cumulative balance does not include adjustments for incomplete HEW recovery under s6.11(5), as these are not applicable in 2019–20 water year

Table 7: Groundwater Register of Take for 2019–20 under accredited Water Resource Plans (WRPs). All numbers are in GL (gigaliter = 1 billion liters).

State	SDL resource unit code	SDL resource unit	SDL	Total Annual Permitted Take	Total Annual Actual Take	Cumulative Permitted Take – Start of Year*	Cumulative Actual Take – Start of Year	20% of SDL	Cumulative Permitted Take	Cumulative Actual Take	Reasonable excuse claim (Yes/No)?	Difference between cumulative permitted take +20% of the SDL and cumulative actual take	Compliance Status
QLD	GS60	Sediments above the Great Artesian Basin: Warrego–Paroo–Nebine	99.2	0.74	0.74	0.00	0.00	19.8	0.74	0.74	No	19.8	Compliant
QLD	GS63	St George Alluvium: Warrego–Paroo–Nebine	24.6	0.08	0.08	0.00	0.00	4.92	0.08	0.08	No	4.92	Compliant
QLD	GS66	Warrego Alluvium	10.2	0.77	0.77	0.00	0.00	2.04	0.77	0.77	No	2.04	Compliant

# Appendix B: 2019–20 Interim Register of Take

The following tables represent the interim Register of Take for both surface water and ground water for all SDL Resource Units as assessed in accordance with bilateral agreements for WRPs accredited after 1 July 2019. In these areas, compliance with the sustainable diversion limit (SDL) for the following SDL resource units is being assessed for the 2019–20 year under the bilateral agreement between the relevant Basin state and the MDBA.

The Bilateral Agreement reflects a commitment to the provision of information and reporting which parallels the requirements of s 71 of the *Water Act 2007* (Cth) and an assessment of compliance with the SDL in accordance with the methods in Part 4 of Chapter 6 of the *Basin Plan 2012* (Cth) (the Basin Plan) and consistent with the [SDL Reporting and Compliance Framework \(2018\)](#) (the Framework).

The Authority's role is to assess that material consistent with Part 4 of Chapter 6 of the Basin Plan and the Framework.

The Authority notes that upon accreditation of the water resource plans the surface water Register of Take will formally commence and, pursuant to s 6.08 of the Basin Plan, on its commencement must record a cumulative balance of zero. It is also noted the compliance method for groundwater SDL resource units is different to surface water and that the groundwater register does not reset to zero with the accreditation of a WRP.



Table 8: Surface water interim Register of Take for 2019–20 under accredited Water Resource Plans (WRPs) and Bilateral Agreements. All numbers are in GL (1 gigalitre = 1 billion litres) as per BP 6.08 – formalise the presentation of the RoT

State	SDL resource unit	SDL resource unit code	SDL	Annual Permitted Take <sup>1</sup>	Annual Actual Take	Annual Balance	Cumulative Balance – Start of Year	Cumulative Balance – End of Year	HEW Adjustments <sup>2</sup>	Adjusted Cumulative Balance <sup>3</sup>	Compliance Trigger (-20% of SDL)	Is a Reasonable Excuse claimed? (Yes/No)	Compliance status
QLD	Queensland Border Rivers	SS24	363.6	193.0	189.9	3.10	0.00	3.10	0.00	3.10	-72.7	No	Compliant
QLD	Moonie	SS25	89.9	114.3	86.1	28.2	0.00	28.2	0.00	28.2	-18.0	No	Compliant
QLD	Condamine-Balonne	SS26	919.0	1096.4	1004.8	91.5	0.00	91.5	0.00	91.5	-183.8	No	Compliant
NSW	Intersecting Streams	SS17	119.3	119.3	119.3	0.00	0.00	0.00	0.00	0.00	-23.9	No	Compliant
NSW	NSW Border Rivers	SS23	320.1	162.9	129.1	33.8	0.00	33.8	0.00	33.8	-64.0	No	Compliant
NSW	Gwydir	SS22	530.2	258.9	173.1	85.8	0.00	85.8	0.10	85.9	-106.0	No	Compliant
NSW	Namoi	SS21	490.3	320.7	281.0	39.7	0.00	39.7	0.00	39.7	-98.1	No	Compliant
NSW	Macquarie-Castlereagh	SS20	633.8	412.8	412.3	0.47	0.00	0.47	0.00	0.47	-126.8	No	Compliant
NSW	Lachlan	SS16	578.3	397.1	408.0	-10.9	0.00	-10.9	1.05	-9.88	-115.7	No	Compliant
NSW	Murrumbidgee	SS15	2209.4	1532.9	1052.9	480.0	0.00	480.0	5.48	485.5	-441.9	No	Compliant
NSW	Barwon–Darling Watercourse	SS19	176.2	202.2	259.9	-57.7	0.00	-57.7	0.00	-57.7	-35.2	Yes (not valid)	Non-compliant
NSW	NSW Murray	SS14	1512.2	607.1	493.4	113.7	0.00	113.7	3.72	117.4	-302.4	No	Compliant
NSW	Lower Darling	SS18	35.4	11.8	7.68	4.16	0.00	4.16	0.00	4.16	-7.08	No	Compliant
ACT	Australian Capital Territory (surface water)	SS1	53.4	53.7	31.4	22.3	0.00	22.3	0.00	22.3	-10.7	No	Compliant
VIC	Victorian Murray	SS2	1319.7	1374.4	1023.1	351.3	0.00	351.3	-0.10	351.2	-263.9	No	Compliant
VIC	Kiewa	SS3	27.7	29.6	23.0	6.58	0.00	6.58	0.00	6.58	-5.54	No	Compliant
VIC	Ovens	SS4	85.8	93.5	79.0	14.6	0.00	14.6	-0.04	14.5	-17.2	No	Compliant
VIC	Broken	SS5	49.0	44.7	40.8	3.95	0.00	3.95	0.00	3.95	-9.80	No	Compliant
VIC	Goulburn	SS6	1277.8	1049.8	848.0	201.8	0.00	201.8	-0.17	201.6	-255.6	No	Compliant
VIC	Campaspe	SS7	111.7	72.3	50.4	21.9	0.00	21.9	0.00	21.9	-22.3	No	Compliant
VIC	Loddon	SS8	127.7	121.6	65.2	56.4	0.00	56.4	0.00	56.4	-25.5	No	Compliant
VIC	Wimmera-Mallee (surface water)	SS9	76.1	74.8	48.3	26.5	0.00	26.5	0.00	26.5	-15.2	No	Compliant
SA	South Australian Murray	SS11	542.8	610.2	580.1	30.1	0.00	30.1	-1.04	29.1	-108.6	No	Compliant
SA	South Australian Non-Prescribed Areas	SS10	55.2	55.2	23.3	31.9	0.00	31.9	0.00	31.9	-11.0	No	Compliant
SA	Marne-Saunders	SS12	3.00	1.76	1.31	0.46	0.00	0.46	0.00	0.46	-0.60	No	Compliant
SA	Eastern Mount Lofty Ranges	SS13	28.3	23.9	13.9	9.95	0.00	9.95	0.00	9.95	-5.66	No	Compliant
VIC	Goulburn-Broken-Campaspe-Loddon <sup>4</sup>		1566.2	1288.4	1004.4	284.0	0.00	284.0	-0.17	283.8	-313.2	No	Compliant
VIC	Victorian Murray–Kiewa–Ovens <sup>^</sup>		1433.2	1497.5	1125.1	372.4	0.00	372.4	-0.13	372.3	-286.6	No	Compliant
<b>Basin</b>	<b>Total<sup>5</sup></b>		11820.3	9123.1	7504.2	1618.9	0.00	1618.9	9.01	1628.0	-2364.1		

**Notes:**

1. Annual Permitted Take:

The annual permitted take method set out in WRPs for surface water regulated rivers is generally determined by hydrological models. Post modelling adjustments are generally made to the output volumes of these models to allow for components not processed within the model. These adjustments allow for a more accurate determination of the permitted take volumes. The adjustments include:

- *Adjustments for bridging the gap held environmental water (HEW) to SDL setting.* The models used to generate annual permitted take do not explicitly model HEW entitlements. This means that all of the entitlements within the model are represented as one pool, and an adjustment is required to remove the proportion of the annual target attributed to entitlements that have since been recovered and are now HEW. The methods used by each Basin state for this process are set out in their accredited WRPs or proposed WRPs.
- *Trade adjustment.* As allocation trade (i.e. including tagged trade) is not modelled in the annual permitted take, an adjustment is required for trade between SDL resource units. Not adjusting for this trade could lead to actual take exceeding permitted take despite irrigators have legal rights to use more water under water markets. Consumptive to environmental or vice versa trade is separately adjusted in the cumulative balance (see note 2).

2. HEW adjustments are for the net HEW acquisition and disposal in the SDL resource unit in that year.

3. Cumulative balance does not include adjustments for incomplete HEW recovery under s6.11(5), as these are not applicable in 2019–20 water year.

4. The annual permitted take (and as a result the cumulative balance) has been updated relative to the data used in the reasonable excuse submission and assessments, further to discussion with NSW. This matches with the final NSW s71 data submission, provided on the date given in Table 5. This update does not change the compliance assessment.

5. 'Goulburn–Broken–Campaspe–Loddon' and 'Victorian Murray–Kiewa–Ovens' SDL resource units may be treated as a single SDL resource unit for the purposes of the compliance assessment (Basin Plan Clause 6.12(2) (a) & (b)).

6. Basin total includes SDL resource units with accredited Water Resource Plans from Appendix A.

Table 9: Groundwater interim Register of Take for 2019–20 under accredited Water Resource Plans (WRPs) and Bilateral Agreements All numbers are in GL (gigaliter = 1 billion liters).

State	SDL resource unit code	SDL resource unit	SDL	Total Annual Permitted Take	Total Annual Actual Take	Cumulative Permitted Take – Start of Year	Cumulative Actual Take – Start of Year	20% of SDL	Cumulative Permitted Take	Cumulative Actual Take	Difference between cumulative permitted take +20% of the SDL and cumulative actual take	Reasonable excuse claim (Yes/No)?	Compliance Status
QLD	GS54	Queensland Border Rivers Alluvium	14.0	14.0	13.5	0.00	0.00	2.80	14.0	13.5	3.32	No	Compliant
QLD	GS55	Queensland Border Rivers Fractured Rock	10.5	10.5	8.95	0.00	0.00	2.10	10.5	8.95	3.65	No	Compliant
QLD	GS57	Sediments above the Great Artesian Basin: Border Rivers–Moonie	46.9	46.9	0.51	0.00	0.00	9.38	46.9	0.51	55.8	No	Compliant
QLD	GS62	St George Alluvium: Moonie	0.69	0.69	0.02	0.00	0.00	0.14	0.69	0.02	0.81	No	Compliant
QLD	GS53	Condamine Fractured Rock	1.48	1.48	0.69	0.00	0.00	0.30	1.48	0.69	1.08	No	Compliant
QLD	GS56	Queensland MDB: deep	100.0	100.0	0.00	0.00	0.00	20.0	100.0	0.00	120.0	No	Compliant
QLD	GS58	Sediments above the Great Artesian Basin: Condamine–Balonne	18.1	18.1	0.44	0.00	0.00	3.62	18.1	0.44	21.3	No	Compliant
QLD	GS61a	St George Alluvium: Condamine–Balonne (shallow)	27.7	27.7	0.54	0.00	0.00	5.54	27.7	0.54	32.7	No	Compliant
QLD	GS61b	St George Alluvium: Condamine–Balonne (deep)	12.6	12.6	11.5	0.00	0.00	2.52	12.6	11.5	3.62	No	Compliant
QLD	GS64a	Upper Condamine Alluvium (Central Condamine Alluvium)	46.0	46.0	43.5	0.00	0.00	9.20	46.0	43.5	11.7	No	Compliant
QLD	GS64b	Upper Condamine Alluvium (Tributaries)	40.5	40.5	29.3	0.00	0.00	8.10	40.5	29.3	19.3	No	Compliant
QLD	GS65	Upper Condamine Basalts	79.0	79.0	51.5	0.00	0.00	15.8	79.0	51.5	43.3	No	Compliant
NSW	GS50	Western Porous Rock	226.0	226.0	30.0	0.00	0.00	45.2	226.0	30.0	241.2	No	Compliant
NSW	GS17	Gunnedah–Oxley Basin MDB	127.5	127.5	14.3	0.00	0.00	25.5	127.5	14.3	138.7	No	Compliant
NSW	GS41	Sydney Basin MDB	19.1	19.1	3.55	0.00	0.00	3.82	19.1	3.55	19.4	No	Compliant
NSW	GS38	Oaklands Basin	2.50	2.50	0.00	0.00	0.00	0.50	2.50	0.00	3.00	No	Compliant
NSW	GS42	Upper Darling Alluvium	6.59	6.59	3.15	0.00	0.00	1.32	6.59	3.15	4.76	No	Compliant
NSW	GS23	Lower Darling Alluvium	2.23	2.23	0.86	0.00	0.00	0.45	2.23	0.86	1.82	No	Compliant
NSW	GS13	Billabong Creek Alluvium	7.50	7.50	3.92	0.00	0.00	1.50	7.50	3.92	5.08	No	Compliant
NSW	GS27a	Lower Murray Shallow Alluvium	81.9	81.9	8.95	0.00	0.00	16.4	81.9	8.95	89.3	No	Compliant
NSW	GS27b	Lower Murray Deep Alluvium	88.9	88.9	93.3	0.00	0.00	17.8	88.9	93.3	13.4	No	Compliant
NSW	GS46	Upper Murray Alluvium	14.1	14.8	17.5	0.00	0.00	2.82	14.8	17.5	0.08	No	Compliant
NSW	GS21	Lake George Alluvium	1.27	1.27	0.48	0.00	0.00	0.25	1.27	0.48	1.04	No	Compliant
NSW	GS28a	Lower Murrumbidgee Shallow Alluvium	26.9	26.9	14.5	0.00	0.00	5.38	26.9	14.5	17.7	No	Compliant

State	SDL resource unit code	SDL resource unit	SDL	Total Annual Permitted Take	Total Annual Actual Take	Cumulative Permitted Take – Start of Year	Cumulative Actual Take –Start of Year	20% of SDL	Cumulative Permitted Take	Cumulative Actual Take	Difference between cumulative permitted take +20% of the SDL and cumulative actual take	Reasonable excuse claim (Yes/No)?	Compliance Status
NSW	GS28b	Lower Murrumbidgee Deep Alluvium	273.6	273.6	329.5	0.00	0.00	54.7	273.6	329.5	-1.14	Yes (valid)	Compliant with Reasonable Excuse
NSW	GS31	Mid-Murrumbidgee Alluvium	53.5	61.4	49.2	0.00	0.00	10.7	61.4	49.2	23.0	No	Compliant
NSW	GS12	Belubula Alluvium	2.88	2.88	2.75	0.00	0.00	0.58	2.88	2.75	0.71	No	Compliant
NSW	GS25	Lower Lachlan Alluvium	117.0	112.0	113.5	0.00	0.00	23.4	112.0	113.5	21.9	No	Compliant
NSW	GS44	Upper Lachlan Alluvium	94.2	94.2	96.6	0.00	0.00	18.8	94.2	96.6	16.5	No	Compliant
NSW	GS10	Adelaide Fold Belt MDB	6.90	6.90	2.77	0.00	0.00	1.38	6.90	2.77	5.51	No	Compliant
NSW	GS19	Kanmantoo Fold Belt MDB	18.7	18.7	8.37	0.00	0.00	3.74	18.7	8.37	14.1	No	Compliant
NSW	GS20	Lachlan Fold Belt MDB	259.0	259.0	89.0	0.00	0.00	51.8	259.0	89.0	221.8	No	Compliant
NSW	GS39	Orange Basalt	10.7	10.7	1.76	0.00	0.00	2.14	10.7	1.76	11.1	No	Compliant
NSW	GS51	Young Granite	7.11	7.11	2.60	0.00	0.00	1.42	7.11	2.60	5.93	No	Compliant
NSW	GS18	Inverell Basalt	4.15	4.15	1.42	0.00	0.00	0.83	4.15	1.42	3.56	No	Compliant
NSW	GS22	Liverpool Ranges Basalt MDB	2.16	2.16	1.95	0.00	0.00	0.43	2.16	1.95	0.64	No	Compliant
NSW	GS37	New England Fold Belt MDB	55.1	55.1	23.4	0.00	0.00	11.0	55.1	23.4	42.7	No	Compliant
NSW	GS49	Warrumbungle Basalt	0.55	0.55	0.56	0.00	0.00	0.11	0.55	0.56	0.10	No	Compliant
NSW	GS11	Bell Valley Alluvium	3.29	3.29	0.33	0.00	0.00	0.66	3.29	0.33	3.62	No	Compliant
NSW	GS14	Castlereagh Alluvium	0.62	0.62	0.08	0.00	0.00	0.12	0.62	0.08	0.66	No	Compliant
NSW	GS15	Coolaburragundy–Talbragar Alluvium	3.47	3.47	2.88	0.00	0.00	0.69	3.47	2.88	1.28	No	Compliant
NSW	GS16	Cudgegong Alluvium	2.53	2.78	2.32	0.00	0.00	0.51	2.78	2.32	0.96	No	Compliant
NSW	GS26	Lower Macquarie Alluvium*	52.7	52.7	39.0	0.00	0.00	10.5	52.7	39.0	24.3	No	Compliant
NSW	GS45	Upper Macquarie Alluvium	17.9	18.8	23.0	0.00	0.00	3.58	18.8	23.0	-0.62	Yes (valid)	Compliant with Reasonable Excuse
NSW	GS34	NSW GAB Surat Shallow	15.5	15.5	2.50	0.00	0.00	3.10	15.5	2.50	16.1	No	Compliant
NSW	GS35	NSW GAB Warrego Shallow	33.4	33.4	0.65	0.00	0.00	6.68	33.4	0.65	39.4	No	Compliant
NSW	GS36	NSW GAB Central Shallow	8.83	8.83	1.16	0.00	0.00	1.77	8.83	1.16	9.43	No	Compliant
NSW	GS29	Lower Namoi Alluvium	88.3	92.7	93.9	0.00	0.00	17.7	92.7	93.9	16.4	No	Compliant
NSW	GS30	Manilla Alluvium	1.23	1.23	0.15	0.00	0.00	0.25	1.23	0.15	1.33	No	Compliant
NSW	GS40	Peel Valley Alluvium	9.34	9.84	5.41	0.00	0.00	1.87	9.84	5.41	6.30	No	Compliant
NSW	GS47	Upper Namoi Alluvium	123.4	136.4	87.3	0.00	0.00	24.7	136.4	87.3	73.8	No	Compliant
NSW	GS48	Upper Namoi Tributary Alluvium	1.77	1.77	0.08	0.00	0.00	0.35	1.77	0.08	2.04	No	Compliant
NSW	GS24	Lower Gwydir Alluvium	33.0	36.2	29.0	0.00	0.00	6.60	36.2	29.0	13.8	No	Compliant
NSW	GS43	Upper Gwydir Alluvium	0.72	0.72	0.46	0.00	0.00	0.14	0.72	0.46	0.40	No	Compliant
NSW	GS32	NSW Border Rivers Alluvium	8.40	8.40	8.08	0.00	0.00	1.68	8.40	8.08	2.00	No	Compliant
NSW	GS33	NSW Border Rivers Tributary Alluvium	0.41	0.41	0.16	0.00	0.00	0.08	0.41	0.16	0.33	No	Compliant
ACT	GS52	Australian Capital Territory (groundwater)	3.16	3.16	0.34	0.00	0.00	0.63	3.16	0.34	3.45	No	Compliant
VIC	GS8a	Goulburn–Murray: Shepparton Irrigation Region	244.1	244.1	109.2	0.00	0.00	48.8	244.1	109.2	183.7	No	Compliant
VIC	GS8b	Goulburn–Murray: Highlands	68.7	68.7	14.6	0.00	0.00	13.7	68.7	14.6	67.8	No	Compliant
VIC	GS8c	Goulburn–Murray: Sedimentary Plain	223.0	223.0	129.4	0.00	0.00	44.6	223.0	129.4	138.3	No	Compliant
VIC	GS8d	Goulburn–Murray: deep	20.0	20.0	1.10	0.00	0.00	4.00	20.0	1.10	22.9	No	Compliant
VIC	GS9a	Wimmera–Mallee: Highlands	2.75	2.75	1.09	0.00	0.00	0.55	2.75	1.09	2.22	No	Compliant
VIC	GS9b	Wimmera–Mallee: Sedimentary Plain	186.9	186.9	7.20	0.00	0.00	37.4	186.9	7.20	217.1	No	Compliant

State	SDL resource unit code	SDL resource unit	SDL	Total Annual Permitted Take	Total Annual Actual Take	Cumulative Permitted Take – Start of Year	Cumulative Actual Take –Start of Year	20% of SDL	Cumulative Permitted Take	Cumulative Actual Take	Difference between cumulative permitted take +20% of the SDL and cumulative actual take	Reasonable excuse claim (Yes/No)?	Compliance Status
VIC	GS9c	Wimmera–Mallee: deep	20.0	20.0	0.06	0.00	0.00	4.00	20.0	0.06	23.9	No	Compliant
SA	GS3a	Mallee (Pliocene Sands)	41.4	41.4	0.00	0.00	0.00	8.28	41.4	0.00	49.7	No	Compliant
SA	GS3b	Mallee (Murray Group Limestone)	63.6	63.6	35.7	0.00	0.00	12.7	63.6	35.7	40.7	No	Compliant
SA	GS3c	Mallee (Renmark Group)	2.00	2.00	0.00	0.00	0.00	0.40	2.00	0.00	2.40	No	Compliant
SA	GS5a	Peake–Roby–Sherlock (unconfined)	3.41	3.41	0.19	0.00	0.00	0.68	3.41	0.19	3.90	No	Compliant
SA	GS5b	Peake–Roby–Sherlock (confined)	2.58	2.58	1.10	0.00	0.00	0.52	2.58	1.10	2.00	No	Compliant
SA	GS6	SA Murray	64.8	64.8	1.80	0.00	0.00	13.0	64.8	1.80	76.0	No	Compliant
SA	GS7	SA Murray Salt Interception Schemes	28.6	28.6	12.7	0.00	0.00	5.72	28.6	12.7	21.6	No	Compliant
SA	GS1a	Angas Bremer (Quaternary Sediments)	1.09	0.25	0.00	0.00	0.00	0.22	0.25	0.00	0.47	No	Compliant
SA	GS1b	Angas Bremer (Murray Group Limestone)	6.57	6.57	1.57	0.00	0.00	1.31	6.57	1.57	6.31	No	Compliant
SA	GS2	Eastern Mount Lofty Ranges	38.5	38.5	10.2	0.00	0.00	7.70	38.5	10.2	36.0	No	Compliant
SA	GS4a	Marne Saunders (Fractured Rock)	2.09	2.09	0.54	0.00	0.00	0.42	2.09	0.54	1.97	No	Compliant
SA	GS4b	Marne Saunders (Murray Group Limestone)	2.38	2.34	1.37	0.00	0.00	0.48	2.34	1.37	1.45	No	Compliant
SA	GS4c	Marne Saunders (Renmark Group)	0.50	0.50	0.00	0.00	0.00	0.10	0.50	0.00	0.60	No	Compliant
Basin		<b>Basin Total <sup>1</sup></b>	3472.4	3365.0	1700.6								

**Notes:**

1. Basin total includes SDL resource units with accredited Water Resource Plans from Appendix A

## Appendix C: 2019–20 surface water SDL and BDLs

SDL Resource Unit (within zones)	Baseline Diversion Limit <sup>(1)</sup> (GL/y)	local reduction amount <sup>(2)</sup> (GL/y)	shared reduction amount <sup>(3)</sup> (GL/y)	SDL adjustment amount at 30 June 2019 <sup>(4)</sup> (GL/y)	SDL – after SDLAM adjustment at 30 June 2019 <sup>(5)</sup> (GL/y)
<b>NORTHERN BASIN</b>					
<b>Queensland</b>					
Condamine–Balonne	1,019.0	100.0	-	-	919.000
Moonie	92.0	-	2.1	-	89.938
Nebine	20.9	1.0	2.8	-	17.058
Paroo	11.8	-	-	-	11.800
Queensland Border Rivers	377.6	14.0	-	-	363.600
Warrego	75.6	8.0	12.1	-	55.504
<b>total northern Basin Queensland zone</b>	<b>1,596.9</b>	<b>123.0</b>	<b>17.0</b>	<b>-</b>	<b>1,456.900</b>
<b>Northern New South Wales</b>					
Barwon–Darling Watercourse	208.2	32.0	-	-	176.228
Gwydir	579.8	42.0	7.6	-	530.200
NSW Border Rivers	327.1	7.0	-	-	320.100
Intersecting Streams	133.1	-	13.8	-	119.300
Namoi	510.3	20.0	-	-	490.300
Macquarie–Castlereagh	691.4	55.0	2.6	-	633.800
<b>total northern Basin New South Wales zone</b>	<b>2,449.9</b>	<b>156.0</b>	<b>24.0</b>	<b>-</b>	<b>2,269.928</b>
<b>total northern Basin</b>	<b>4,046.8</b>	<b>279.0</b>	<b>41.0</b>	<b>-</b>	<b>3,726.828</b>
<b>SOUTHERN BASIN</b>					
<b>Southern New South Wales</b>					
Lower Darling	57.7	8.0	14.3	-	35.400
Murrumbidgee – NSW	2,661.6	320.0	277.9	145.7	2,209.400
NSW Murray	1,827.7	262.0	165.8	112.3	1,512.200
<b>total southern Basin NSW zone</b>	<b>4,547.0</b>	<b>590.0</b>	<b>458.0</b>	<b>258.0</b>	<b>3,757.000</b>
<b>ACT</b>					
ACT (surface water)	58.3	-	4.9	-	53.400
<b>total southern Basin ACT zone</b>	<b>58.3</b>	<b>-</b>	<b>4.9</b>	<b>-</b>	<b>53.400</b>
<b>VICTORIA</b>					
Broken	49.3	-	1.3	1.0	49.000
Campaspe	140.6	18.0	13.2	2.3	111.700
Goulburn	1,651.2	344.0	186.4	157.0	1,277.800
Kiewa	27.7	-	1.1	1.2	27.700
Loddon	139.7	12.0	9.8	9.8	127.700
Ovens	85.8	-	2.7	2.7	85.800



Victorian Murray	1,718.0	253.0	210.8	65.5	1,319.700
<b>total southern Basin Victoria zone</b>	<b>3,812.3</b>	<b>627.0</b>	<b>425.3</b>	<b>239.5</b>	<b>2,999.500</b>
<b>SOUTH AUSTRALIA</b>					
Eastern Mount Lofty Ranges	28.3	-	-	-	28.300
South Australian Murray	681.1	101.0	82.8	45.5	542.800
Marne Saunders	3.0	-	-	-	3.000
SA Non-Prescribed Areas	55.2	-	-	-	55.200
<b>total southern Basin South Australia zone</b>	<b>767.6</b>	<b>101.0</b>	<b>82.8</b>	<b>45.5</b>	<b>629.300</b>
<b>total southern Basin (ex disconnected)</b>	<b>9,185.2</b>	<b>1,318.0</b>	<b>971.0</b>	<b>543.0</b>	<b>7,439.200</b>
<b>DISCONNECTED TRIBUTARIES</b>					
Lachlan	626.3	48.0	-	-	578.300
Wimmera–Mallee (surface water)	99.1	23.0	-	-	76.100
<b>TOTAL</b>	<b>13,957.4</b>	<b>1,668.0</b>	<b>1,012.0</b>	<b>543.0</b>	<b>11,820.328</b>

#### Notes

The Basin Plan (Schedule 2) expresses the SDL for surface water SDL resource units as:

$$\text{SDL} = \text{BDL} - \text{local reduction amount} - \text{shared reduction amount} + \text{SDL adjustment amount}$$

#### (1) Baseline diversion limit (BDL)

- where a water resource plan has been accredited by 30 June 2020, the estimates are from that WRP.  
- For NSW the BDL is as per WRPs submitted by 30 June 2020. Note that if the WRP assessment results in a change to the proposed WRP, following the accreditation of the recommended WRP the revised BDL estimate will be applied for the relevant water year (2020–21).  
- For NSW floodplain harvesting NSW and MDBA have agreed, where inconsistencies exist in the WRP package, to use the Annual Permitted Take (APT) method, as presented in the APT scenario report.  
More detail about BDLs can be found at: <https://www.mdba.gov.au/basin-plan-roll-out/sustainable-diversion-limits>, under More Information

(2) Local reduction amount as set out in Basin Plan Schedule 2. This includes amendments to the Basin Plan that commenced in law on 3 July 2018 to increase the northern Basin local reduction amount from 247 GL/y to 279 GL/y, as a result of the Northern Basin Review (Basin Plan Amendment Instrument (No.1) 2018).

(3) Shared reduction amount as set out in Basin Plan s6.05. This includes amendments to the Basin Plan that commenced in law on 3 July 2018 to decrease the northern Basin shared reduction amount from 143 GL/y to 41 GL/y, as a result of the Northern Basin Review (Basin Plan Amendment Instrument (No.1) 2018). The amendment also extended the time for a Basin state to request a re-allocation of the shared reduction amount within a Basin zone, to 31 December 2018. New South Wales, Queensland, South Australia and Victoria made requests to re-allocate the shared reduction amount in their zones. Following consultation with Department of Agriculture and Water Resources, the Authority agreed to these requests (where relevant) on 12 March 2019. All shared reduction amount requests are now applied in the table.


(4) SDL adjustment amount as per Basin Plan Schedule 6A. Calculated by the MDBA based on the Sustainable Diversion Limit Adjustment Mechanism (SDLAM) amendment instrument that commenced in law on the 13 January 2018. The SDL reflects supply contributions, efficiency contributions and the application of the net 5% limit rule. As efficiency projects are completed and entitlements are registered with the Commonwealth Environmental Water Holder, the SDL adjustment amount will change. This column reflects the SDL adjustment amount as determined on the basis of efficiency entitlements held at 30 June 2019 (Table B) with the updated South Australian long-term diversion limit equivalent (LTDLE) factors applied. Further information about supply and efficiency projects can be found at <https://www.mdba.gov.au/basin-plan-roll-out/sustainable-diversion-limits/sdlam>, including the *register of sustainable diversion limit adjustment measures* (Table B) available at <https://www.mdba.gov.au/basin-plan-roll-out/sustainable-diversion-limits/sdl-adjustment-proposals-state-projects>.


(5) SDL after SDLAM adjustment. This is the sustainable diversion limit (SDL) volume at 30 June 2019 calculated by deducting from the BDL, the local reduction amount, shared reduction amount, and adding the SDL adjustment amount. The SDL value is expected to change through to 2024, as efficiency projects deliver environmental entitlements, and improved estimates of BDLs are adopted when a WRP is accredited.


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