

Resource Operations Licence

Water Act 2000



Name of licence

St George Water Supply Scheme Resource Operations Licence.

Holder

SunWater Limited ACN 131 034 985.

Water plan

The licence relates to the Water Plan (Condamine and Balonne) 2004.

Water infrastructure

The water infrastructure to which the licence relates is detailed in attachment 1.

Authority to interfere with the flow of water

The licence holder is authorised to interfere with the flow of water to the extent necessary to operate the water infrastructure to which the licence relates.

Authority to use watercourses to distribute water

The licence holder is authorised to use the watercourses listed in table 1 for the distribution of supplemented water, including sections of tributaries where supplemented water is accessible.

Table 1 – Use of watercourses for distribution

Name	Description
Balonne River	From the upstream extent of the ponded area of EJ Beardmore Dam downstream to the bifurcation of the Culgoa River and the Balonne Minor (AMTD 305.0 km – 164.3 km)
Maranoa River	From the upstream extent of the ponded area of EJ Beardmore Dam downstream to the confluence of the Maranoa River with the Balonne River (AMTD 6.5 km – 0.0 km)
Thuraggi Watercourse	From the headworks of EJ Beardmore Dam to 400 metres along Thuraggi Watercourse (AMTD 0.0 km – 0.4 km)

Conditions

1. Requirement for operations manual

- 1.1. The licence holder must operate in accordance with an approved operations manual.
- 1.2. The approved operations manual must include—
 - 1.2.1. operating rules for water infrastructure;
 - 1.2.2. water sharing rules; and
 - 1.2.3. seasonal water assignment rules.

2. Flow event management rule

2.1. The licence holder must comply with the passing and storing water for environmental, stock and domestic purposes rule and other flow event management requirements as detailed in attachment 2.

3. Environmental management rule

3.1. The licence holder must maintain and operate the infrastructure in attachment 1 so that there is minimal adverse impact on water quality, bed and bank stability and fish.

3.2. The licence holder must monitor the impacts on aquatic ecosystems in accordance with attachment 3, part 1, division 2 of this licence.

4. Metering

4.1. The licence holder must meter the volume of water taken under all water allocations and seasonal water assignments managed under this licence that are located in zones LBS-01 (excluding water allocations distributed under a distribution operations licence), LBS-03 and LBS04.

4.2. The licence holder must meter the volume of water diverted from EJ Beardmore Dam to the Thuraggi Watercourse.

5. Monitoring and reporting requirements

5.1. The licence holder must carry out and report on the monitoring requirements as set out in attachment 3.

5.2. The licence holder must provide any monitoring data required under condition 5.1 to the chief executive within a stated time upon request.

5.3. The licence holder must ensure that the monitoring, including the measurement, collection, analysis and storage of data, is consistent with the Water Monitoring Data Collection Standards¹.

5.4. The licence holder must ensure that the transfer of data and reporting are consistent with the Water Monitoring Data Reporting Standards².

6. Other conditions

6.1. The operating and supply arrangements, and the monitoring requirements under this licence, do not apply in situations where implementing the rules or meeting the requirements would be unsafe to a person or persons. In these circumstances, the licence holder must comply with the requirements for operational or emergency reporting prescribed in attachment 3.

6.2. The licence holder may give the distribution operations licence holder for the St George channel scheme the required direction to operate Moolabah and Buckinbah weirs in a way that does not impact on the total conceptual storage volume for determining the continuous share volume.

¹ The Water Monitoring Data Collection Standards can be inspected at any of the department's offices or accessed online at: <www.dnrm.qld.gov.au>

² The Water Monitoring Data Reporting Standards can be inspected at any of the department's offices or accessed online at: <www.dnrm.qld.gov.au>

Commencement of licence

The licence took effect on 26 March 2010.

Granted on 26 March 2010, amended on 3 August 2012 and 18 August 2014

Amended under section 1259 of the *Water Act 2000* on 19 June 2018

David Wiskar

Executive Director, Water Policy

Attachment 1 Infrastructure details for St George Water Supply Scheme

Table 1 – EJ Beardmore Dam–Balonne River AMTD 251.4 km

Description of water infrastructure	
Main embankment	Mass concrete
Full supply level	EL 207.12 m AHD
Minimum operating level	EL 196.15 m AHD
Saddle dam(s)	Nil
Fabridams	Nil
Gates	Vertical lift gates
Storage volume and surface area	
Full supply volume	81 700 ML
Minimum operating volume	3120 ML
Storage curves/tables	Drawing No. 103975
Spillway arrangement	
Description of works	Spillway: Mass concrete 'Ogee' type crest centrally located in embankment. Twelve vertical lift gates (Dimensions: 13.1 m wide x 6.55 m high) operated by individual hoists. Stand by alternator and air operated backup.
Spillway crest level	EL 201.03 m AHD
Spillway width	180.8 m (including piers)
Discharge characteristics	532 224 ML/day (6160 m ³ /s) at dam crest flood (source Emergency Action Plan, Issue 2-1)
River inlet/outlet works	
Description of works	River outlet: 1200 mm square in left bank abutment controlled by 1220 mm x 1200 mm Armco gate. A 305 mm pipe regulated by a 305 mm regulated by a 305 mm regulating cone valve. Thuraggi Watercourse: Two 1500 mm x 1500 mm box culverts in left bank wing wall. Inlet controlled by two 1525 mm x 1525 mm Armco gates.
Multi-level inlet	Single level off-takes only
Cease to flow level	River outlet – Inlet invert: EL 196.15 m AHD Thuraggi Watercourse – Inlet EL 199.50 m AHD
Discharge characteristics	River outlet – Estimated maximum of 1000 ML/day can be released when the storage is full. Thuraggi outlet – Estimated maximum of 1300 ML/day can be released when both gates are open and the storage is full.
Fish transfer system	
Description of works	None installed

Table 2 – Jack Taylor Weir–Balonne River AMTD 229.6 km

Description of water infrastructure	
Main embankment	Reinforced concrete
Full supply level	EL 194.02 m AHD
Minimum operating level	EL 187.24 m AHD
Saddle dam(s)	Nil
Fabridams	Nil
Gates	Vertical slide gates
Storage volume and surface area	
Full supply volume	10 270 ML.
Minimum operating volume	200 ML.
Storage curves/tables	Drawing No. 223660.
Spillway arrangement	
Description of works	13 vertical gates on spillway
Spillway level	Original spillway level EL 191.88 m AHD (excluding gates)
Spillway width	Approximately 119 m including piers (Drawing number 17925)
Discharge characteristics	See below under outlet discharge
River inlet/outlet works	
Description of works	Vertical slide gates: 13 vertical slide gates 2135 mm high x 8155 mm long are fitted above the weir crest. Of these, 10 gates are non-controlled and three gates are controlled. Outlet valves: two separate outlet pipes controlled by 457 mm butterfly valves in outlet boxes which are cast-in spillway monoliths.
Multi-level inlet	Single level off-takes only
Levels	Vertical slide gates: Bottom of gates when closed: EL 191.88 m AHD Bottom of gates when fully opened: EL 201.03 m AHD Outlet valves: Invert level of 457 mm outlet pipes is EL 187.24 m AHD.
Cease to flow level	187.24 m AHD
Discharge characteristics	Up to 245 ML/day by using pipe outlet valves. Up to 14 670 ML/day by raising three central gates. Up to approx. 60 000 ML/day with all gates raised.
Fish transfer system	
Description of works.	None installed

Attachment 2 Flow event management rules

1 Passing and storing water for environmental, stock and domestic purposes

- (1) The licence holder must pass inflow into E J Beardmore Dam up to 730 megalitres per day for environmental, stock and domestic purposes unless directed by the chief executive to store this water.
- (2) If the chief executive directs the licence holder to store the inflows up to 730 megalitres per day, then the licence holder must store the water in the environmental, stock and domestic water account.

2 Releasing water stored for environmental, stock and domestic purposes

The licence holder must release water stored for environmental, stock and domestic purposes if directed by the chief executive.

3 Flow event management rules—managing low flows

If the chief executive directs the licence holder to release a specified volume of water up to 10 per cent of inflow that would otherwise have been stored for use under water allocations in the St George Water Supply Scheme, then the licence holder must release this water.

Attachment 3 Licence holder monitoring and reporting

Part 1 Monitoring requirements

Division 1 Water quantity

1 Stream flow and storage water level data

- (1) The licence holder must record water level and volume data, and stream flow data in accordance with attachment 3, table 1.
- (2) Storage inflows may be determined based upon an inflow derivation technique supplied by the licence holder and approved by the chief executive.
- (3) For the purposes of subsection (2) 'storage' refers to the total conceptual storage volume for the water supply scheme.
- (4) For this section—

total conceptual storage volume is the sum of the respective full supply volumes for E J Beardmore Dam, Jack Taylor Weir, Moolabah Weir and Buckinbah Weir minus their respective minimum operating volumes.

Table 1 – Locations where continuous time series storage water level data and daily flow data are required

Location	Continuous time series storage water level data	Daily flow data
EJ Beardmore Dam headwater	✓	
EJ Beardmore Dam inflow		✓
Jack Taylor Weir headwater	✓	

2 Releases from storages

- (1) This section applies to—
 - (a) EJ Beardmore Dam; and
 - (b) Jack Taylor Weir.
- (2) The licence holder must measure and record for each storage outlet—
 - (a) the daily volume released; and
 - (b) the release rate, and for any change in release rate—
 - (i) the date and time of the change; and
 - (ii) the new release rate; and
 - (c) the reason for each release.

3 Accounting for supplemented water released under low flow event management rules

- (1) The licence holder must measure and record—
 - (a) the details of water released under attachment 2, section 3 in accordance with attachment 3, section 2;

- (b) the total volume of water released; and
 - (c) a record of the share of the volume recorded under subsection 1(b) that would have been distributed to each continuous share water account had a release not been made.
- (2) If directed by the chief executive that water released under low flow event management rules has been replaced, the licence holder must—
- (a) measure and record the total volume of water replaced;
 - (b) measure and record the share of the volume under subsection (a) that was shared to each continuous share water account; and
 - (c) record the date the water was replaced.

4 Water exchange agreements for flow event management

If the chief executive enters into a water exchange agreement with the holder of a water allocation, the licence holder must maintain a record of—

- (a) the name of the exchanger;
- (b) the name of the exchangee;
- (c) the volume of water exchanged; and
- (d) the effective date of the water exchange.

5 Bulk water diversions

The licence holder must measure and record the daily volume of water diverted from EJ Beardmore Dam through the Thuraggi Watercourse Off-take for the delivery of—

- (a) supplemented water allocations;
- (b) unsupplemented water allocations; and
- (c) relocation water.

6 Announced allocations

The licence holder must record—

- (a) details of announced allocation determinations for—
 - (i) high priority allocations; and
 - (ii) medium priority allocations;
- (b) the date announced allocations are determined; and
- (c) the value of each parameter applied for calculating the announced allocation.

7 Carry over determinations

The licence holder must record details of carry over determinations, including all of the following—

- (a) the total carry over volume made available in each water year;
- (b) the carry over made available for each water allocation;
- (c) all parameters used to determine carry over for each water year.

8 Forward draw determinations

The licence holder must record details of forward draw determinations, including all of the following—

- (a) the total forward draw made available in the water year:
- (b) for each water allocation, the total forward draw—
 - (i) made available in each water year; and
 - (ii) taken in each water year.

9 Water taken by water users

The licence holder must measure and record for each water allocation for each zone—

- (a) the total volume of water taken;
- (b) the total volume of water entitled to be taken; and
- (c) the basis for determining the total volume of water entitled to be taken.

10 Seasonal water assignment of a water allocation

The licence holder must record details of seasonal water assignment arrangements, including—

- (a) the name of the assignee and the assignor;
- (b) the volume of the assignment;
- (c) the location—
 - (i) from which it was assigned; and
 - (ii) to which it was assigned; and
- (d) the effective date of the seasonal water assignment.

11 Seasonal water assignments of annual resource cap

The licence holder must record details of each seasonal water assignment of annual resource cap made, including all of the following—

- (a) name of the assignee and the assignor;
- (b) volume of the assignment;
- (c) location—
 - (i) from which it was assigned; and
 - (ii) to which it was assigned;
- (d) effective date of the seasonal assignment.

12 Water assignments

The licence holder must record details of each water assignment including all of the following—

- (a) name of the assignee and the assignor;
- (b) volume of the assignment;
- (c) location—
 - (i) from which it was assigned; and
 - (ii) to which it was assigned.
- (d) effective date of the water assignment.

13 Continuous share water account reconciliations

The licence holder must record details of each continuous share water account reconciliation determination, including all of the following—

- (a) the date of the reconciliation;
- (b) the reason for the reconciliation;
- (c) the value of each parameter applied for calculating the reconciliation;
- (d) how the water volume difference was applied to continuous share water accounts; and
- (e) the volume of water in each continuous share water account—
 - (i) immediately prior to the reconciliation; and
 - (ii) immediately after the reconciliation.

14 Continuous share volume determinations

The licence holder must record for each water allocation all the values of each parameter applied in determining the continuous share volume.

Division 2 Impact of infrastructure operation on natural ecosystems

15 Water quality

The licence holder must monitor and record water quality data in relation to relevant infrastructure listed in attachment 1.

16 Bank condition

- (1) The licence holder must inspect banks for evidence of collapse and/or erosion identified within the ponded areas and downstream of each storage listed in attachment 1, following instances of—
 - (a) rapid water level changes; or
 - (b) large flows through storages; or
 - (c) other occasions when collapse and/or erosion of banks may be likely.
- (2) For subsection (1), downstream of the relevant infrastructure means the distance of influence of infrastructure operations.

17 Fish stranding

The licence holder must record and assess reported instances of fish stranding in watercourses and ponded areas associated with the operation of the infrastructure listed in attachment 1 to determine if any instance is associated with the operation of that infrastructure.

Division 3 Data transfer

18 Transfer of data

The licence holder must, when requested by the distribution operations licence holder for the St George channel scheme, transfer all data measured, collected and recorded to the distribution operations licence holder—

- (a) that is reasonably required for the distribution operations licence holder to comply with the rules and requirements of attachment 2, part 2 of the distribution operations licence; and

- (b) within 15 business days of a request being made, or another timeframe if agreed to by the licence holder and distribution operations licence holder.

Part 2 Reporting requirements

19 Reporting requirements

The licence holder must provide—

- (a) quarterly reports;
- (b) annual reports for the previous water year; and
- (c) when required—an operational or emergency report.

Division 1 Quarterly reporting

20 Quarterly report

- (1) The licence holder must submit a quarterly report to the chief executive within—
 - (a) three months after the end of each of the first three quarters of every water year;
 - (b) and two months after the end of the final quarter of every water year.
- (2) The report must contain the following data—
 - (a) stream flow and storage water level—all records referred to in section 1;
 - (b) releases from storage—all records referred to in section 2;
 - (c) water diversions—all records referred to in section 5;
 - (d) the total quarterly volume of water taken under each water allocation — all records referred in section 9;
 - (e) water quality—all records referred to in section 15; and
 - (f) a summary of bank condition monitoring and instances of slumping carried out in accordance with section 16.

Division 2 Annual reporting

21 Annual report

- (1) The licence holder must submit an annual report to the chief executive within three months after the end of the water year.
- (2) The annual report must include—
 - (a) water quantity as described in attachment 3, section 22;
 - (b) details of the impact of storage operation on natural ecosystems, as required under attachment 3, section 23; and
 - (c) a discussion on any issues that arose as a result of the implementation and application of the rules and requirements of this licence.

22 Water quantity reporting

- (1) The licence holder must include in the annual report—
 - (a) a summary of announced allocation determinations, including—

- (i) an evaluation of the announced allocation procedures and outcomes; and
 - (ii) the date and value for each announced allocation;
 - (b) the total annual volume of water taken by all water users, specified by zone and for the scheme, including—
 - (i) the total volume of supplemented water taken;
 - (ii) the total volume of supplemented water entitled to be taken; and
 - (iii) the basis for determining the total volume entitled to be taken;
 - (c) details of seasonal water assignments, including—
 - (i) the total number of seasonal water assignments; and
 - (ii) the total volume of water seasonally assigned;
 - (d) carry over determinations, including all of the following—
 - (i) the total carry over volume to the water year from the previous water year; and
 - (ii) the total carry over from the water year to the next water year;
 - (e) forward draw volume determinations, including all of the following—
 - (i) the total forward draw volume to the water year from the next water year; and
 - (ii) the total forward draw volume from the water year to the previous water year;
 - (f) seasonal water assignments of annual resource cap including all of the following—
 - (i) the total number of seasonal water assignment arrangements; and
 - (ii) the total volume of annual resource cap seasonally assigned.
- (2) The annual report must also include—
- (a) all details of changes to the storage and delivery infrastructure or the operation of the storage and infrastructure that may impact on compliance with this licence;
 - (b) details of any new monitoring devices used, such as equipment to measure stream flow;
 - (c) a discussion on any other issues that arose as a result of the implementation and application of the resource operations licence.

23 Impact of infrastructure operation on natural ecosystems

The licence holder must include in their annual report—

- (a) a summary of the environmental considerations made by the licence holder in making operational and release decisions;
- (b) a summary of the environmental outcomes of the decision, including any adverse environmental impacts;
- (c) a summary of bank condition and fish stranding monitoring and assessment, including—
 - (i) results of investigations of bank slumping and/or erosion identified in the ponded areas and/or downstream of the storages;
 - (ii) results of any investigations of fish stranding downstream of the storages; and

- (iii) changes to the operation of the storage to reduce instances of bank slumping and/or erosion or fish stranding;
- (d) a discussion and assessment of the following water quality issues—
 - (i) thermal and chemical stratification in the storage;
 - (ii) contribution of the storage and its management to the quality of water released;
 - (iii) cyanobacterial population changes in response to stratification in the storage; and
 - (iv) any proposed changes to the monitoring program as a result of evaluation of the data.

Division 3 Operational or emergency reporting

24 Operational or emergency reporting³

- (1) The licence holder must notify the chief executive within one business day—
 - (a) upon becoming aware of any of the following operational incidents—
 - (i) a non-compliance by the licence holder with the operating and supply arrangements in the approved operations manual for this licence; and
 - (ii) instances of fish stranding or bank slumping within ponded areas associated with the infrastructure of the licence holder or downstream of the infrastructure to which this licence relates.
 - (b) upon determining an initial announced allocation and/or its revisions;
 - (c) upon becoming aware of instances where the take of supplemented water from a waterhole results in the waterholes being drawn down to more than 0.5 metres below its natural cease to flow level;
 - (d) upon an emergency where, as a result of the emergency, the licence holder cannot comply with the conditions of this licence.
- (2) The licence holder must provide to the chief executive upon request, and within the timeframe requested a report which includes details of—
 - (i) the incident or emergency;
 - (ii) the conditions under which the incident or emergency occurred;
 - (iii) any responses or activities carried out as a result of the incident or emergency; and
 - (iv) in relation to an emergency only, any requirements under this licence that the licence holder is either permanently or temporarily unable to comply with due to the emergency.

25 Additional operational reporting requirements

- (1) The licence holder must notify the chief executive within one business day upon—
 - (a) releasing water from E J Beardmore Dam stored for environmental, stock and domestic purposes;
 - (b) releasing water from E J Beardmore Dam that would otherwise have been stored for use under water allocations;
 - (c) consenting to a water exchange agreement; and
 - (d) replacing the water released from E J Beardmore Dam that would otherwise have been stored for use under water allocations.

³ This does not preclude requirements for dam safety under the *Water Act 2000* and any other applicable legislation.

- (2) The licence holder must provide the chief executive within five business days of notification—
- (a) where the notification relates to subsection (1)(a)—all records referred to under section 2;
 - (b) where the notification relates to subsection (1)(b)—all records referred to under section 2;
 - (c) where the notification relates to subsection (1)(c)—all records referred to under section 4; and
 - (d) where the notification relates to subsection (1)(d)—all records referred to under section 3(2).

Attachment 5 Dictionary

Term	Definition
AHD	The Australian Height Datum, which references a level or height to a standard base level.
AMTD	Adopted Middle Thread Distance, is the distance in kilometres, measured along the middle of a watercourse, from a specific point in the watercourse to the watercourse's mouth, the watercourse's junction with the main watercourse or the border between the State and New South Wales.
Announced allocation	For a water allocation managed under a resource operations licence, announced allocation means a number, expressed as a percentage, which is used to determine the maximum volume of water that may be taken in a water year under the authority of a water allocation.
Assignee	The person or entity to whom an interest or right to water is being transferred – for example, seasonally assigned.
Assignor	The person or entity who transfers an interest or right in water to an assignee – for example, a seasonal assignment.
Carry over	The volume of water permitted to be carried over from the unused portion of the entitlement at the end of the previous water year.
Cease to flow level	For a waterhole, the level at which water stops flowing from a waterhole over its downstream control.
Distributions operations licence holder	Distributions operations licence holder for the St George Channel Scheme.
EL	Elevation level.
Fish stranding	When fish are stranded or left out of the water on the bed or banks of a watercourse, on infrastructure such as spillways and causeways or left isolated in small and/or shallow pools, from which they cannot return to deeper water. This also applies to other aquatic species such as platypus and turtles.
Flow event	Means a flow of a volume above the threshold for water harvesting.
Full supply volume	This is the volume of water in storage that corresponds to the full supply level.
Inlet	Infrastructure comprised of an entrance channel, intake structure and gate or valve, which allows for water to be taken from the ponded area of a dam, weir or barrage and discharged via an outlet into the watercourse downstream of the storage.
Licence holder	The holder of the resource operations licence for the St George Water Supply Scheme
Location	For a water allocation, means— (a) the zone from which water under the water allocation can be taken; and/or (b) an AMTD within a zone, from which water under the water allocation can be taken.
Megalitre (ML)	One million litres.
Minimum operating volume	For a dam or weir, the specified minimum volume of water within the ponded area of the storage that cannot be released or used from the storage under normal operating conditions.
Outlet	An arrangement on a dam or weir that allows stored water to be released downstream.
Ponded area	Area of inundation at full supply level of a storage.

Term	Definition
Priority group	A grouping of water allocations for taking supplemented water from a water supply scheme with the same water allocation security objective (WASO).
Publish	Means published in a newspaper circulating generally throughout the area or published on the resource operations licence holder's internet site for the applicable water supply scheme.
Release	Water from a dam or weir that passes downstream from the dam or weir through the dam or weir outlet works.
Storage inflow derivation technique	A basic quantitative model that uses inflows from gauging stations combined with actual levels in scheme storages to determine the volume of inflow into a water supply scheme.
Water assignment	A transaction where a volume of water alone is moved from one continuous share water account to another continuous share water account without any associated change in annual resource cap for either the transferor or the transferee. Therefore a water assignment does not include a commensurate increase in the authority to take water (defined by the annual resource cap).
Water user	The holder of a valid water entitlement.
Water year	The water year for water managed in the St George Water Supply Scheme is the 12 month period beginning 1 July and ending 30 June.