

# Resource Operations Licence

## Water Act 2000



### Name of licence

Bundaberg Water Supply Scheme Resource Operations Licence

### Holder

Sunwater Limited

### Water plan

The licence relates to the Water Plan (Burnett Basin) 2014.

### 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**

Watercourse	Description
Kolan River	The part of the Kolan River extending from the Kolan Barrage (AMTD 14.7 km) upstream to the ponded limits of Fred Haigh Dam (AMTD 117 km).
Burnett River	The part of the Burnett River extending from the Ben Anderson Barrage (AMTD 25.9 km) to within the ponded area of Paradise Dam (AMTD 162.8 km).
Sheepstation Creek	The part of Sheepstation Creek extending from the confluence of Sheepstation Creek and the Burnett River at AMTD 0 km upstream to the Gin Gin Main Channel outlet at AMTD 8.6 km
St Agnes Creek	The part of St Agnes Creek extending from the confluence of St Agnes Creek and the Burnett River at AMTD 0.0km upstream to the St Agnes main channel outfall into the St Agnes Creek crossing on Walla Road at AMTD 1.5 km
Welcome Creek	The part of Welcome Creek extending from the declared downstream limit of Welcome Creek upstream to the Welcome Creek crossing on Tolls Road

## 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—
  - 1.1.1. operating rules for water infrastructure;
  - 1.1.2. water sharing rules; and
  - 1.1.3. seasonal water assignment rules.

### 2. Environmental management rules

- 2.1. The licence holder must comply with the requirements as detailed in Attachment 2.

### 3. Metering

- 3.1. The licence holder must meter the taking of water under those water allocations and seasonal water assignments managed under this licence.

#### **4. Monitoring and reporting requirements**

- 4.1.** The licence holder must carry out and report on the monitoring requirements as set out in Attachment 3.
- 4.2.** The licence holder must provide any monitoring data required under condition 4.1 to the chief executive within a stated time upon request.
- 4.3.** 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 Standards<sup>1</sup>.
- 4.4.** The licence holder must ensure that the transfer of data and reporting are consistent with the Water Monitoring Data Reporting Standards<sup>1</sup>.

#### **5. Other conditions**

- 5.1.** The operating and supply arrangements, and the monitoring required 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 operational or emergency reporting requirements prescribed in Attachment 3.
- 5.2.** The licence holder is required to collect and make publicly available through an industry accepted digital channel, updated at least monthly, details of each seasonal water assignment managed under this licence, including the sale price, the volume of water assigned and the location of where the water was assigned to and from.
- 5.3.** The licence holder must provide the chief executive information about seasonal water assignments as directed by the chief executive within the stated time upon request<sup>1</sup>.
- 5.4.** From the date of commissioning of the replacement Paradise Dam at AMTD 131.3 km, the Paradise Dam infrastructure details in Attachment 1 Table 4 subsection River inlet/outlet, are superseded by the Paradise Dam infrastructure details in Attachment 4 subsection River inlet/outlet.

This Resource Operations Licence is subject to the conditions attached.

#### **Commencement of licence**

The licence took effect on 13 July 2006.

#### **Granted on 13 July 2006.**

**Amended under section 186 of the Water Act 2000 on 10 January 2022.**

**Amended under section 186 of the Water Act 2000 on 17 December 2025.**



Gary Jensen  
**Director, Water Management & Use**  
**Water Resource Management**  
**South Region**

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<sup>1</sup> The Water Monitoring Data Collection Standards and the Water Monitoring Data Reporting Standards can be accessed online at [www.business.qld.gov.au](http://www.business.qld.gov.au)

# Attachment 1 Infrastructure details for Bundaberg Water Supply Scheme

**Table 1 – Fred Haigh Dam—Kolan River AMTD 76.4 km**

<b>Description of water infrastructure</b>	
Main embankment	Earth and rock fill dam
Full supply level	EL 75.56m AHD
Saddle dam(s)	Nil
Fabridams	Nil
Gates	Nil
<b>Storage volume and surface area</b>	
Full supply volume	562 000 ML
Dead storage volume	4390 ML
Surface area/elevation and storage volume/ elevation relationship	Drawing no: A3-208867
<b>Spillway arrangement</b>	
Description of works	Reinforced concrete crest and chute
Spillway level	EL 75.56 m AHD.
Spillway width	47.24 m
Discharge characteristics	Drawing no: HYDSYS Rating Curve #82 for GS 135009A
<b>River inlet/outlet works</b>	
Description of works	River outlet – A single 1066mm MS pipe with a bellmouth centreline EL 36.08 m AHD coming from the plug in the diversion tunnel. This pipe separates into two 915 mm MS pipes at the reinforced concrete valve house. The right-hand pipe (looking downstream) has a 305 mm offtake. Each of the 915 mm pipes has a butterfly valve and a 760 mm discharge regulator. The 305 mm pipe has a gate valve and a 305 mm discharge regulator.
Multilevel inlet	Single level inlet – Rectangular reinforced concrete inlet tower. Two RC slotted inlets for a 4.57 m diameter reinforced concrete diversion tunnel to outlet pipes at the valve and inlet pipe for the pump station. Two inlets 9.14 m high x 1.98 m wide on the upstream face with a sill EL 42.64 m AHD with two 1.3 m high x 2.36 m wide slotted openings on each side.
Cease to flow level	Sill of outlet tower is at EL 42.64 m AHD. Invert of diversion tunnel is EL 33.54 m AHD.
Discharge characteristics	The estimated maximum discharge capacity of the river outlet is 1 600 ML/day.
<b>Fish transfer system</b>	
Description of works	Nil

**Table 2 – Bucca Weir—Kolan River AMTD 38 km**

<b>Description of water infrastructure</b>	
Main embankment	Roller compacted concrete
Full supply level	EL 16.2 m AHD
Saddle dam(s)	Nil
Fabridams	Nil
Gates	Nil
<b>Storage volume and surface area</b>	
Full supply volume	11 600 ML
Dead storage volume	930 ML
Surface area/elevation and storage volume/ elevation relationship	Drawing no: A3-209007
<b>Spillway arrangement</b>	
Description of works	130.8 m central section with embankments on either side
Spillway level	EL 16.2 m AHD
Spillway width	130.8 m
Discharge characteristics	Drawing no: HYDSYS rating curve #1 for GS 135008A
<b>River inlet/outlet works</b>	
Description of works	Reinforced concrete outlet box with a floor EL 4.45 m AHD and a sill of EL 5.3 m AHD.
Multi-level inlet	Three 2.25 m wide × 1.04 m high openings at each of three different levels on both left bank and right bank sides of the outlet structure.
Cease to flow level	Outlet works: Sill EL 5.3 m AHD, Sill EL 8.96 m AHD, Sill EL 11.96 m AHD, and Sill EL 14.96 m AHD.
Discharge characteristics	Estimated maximum discharge capacity of outlet 1791 ML/day
<b>Fish transfer system</b>	
Description of works	Nil

**Table 3 – Kolan Barrage—Kolan River AMTD 14.7 km**

<b>Description of water infrastructure</b>	
Main embankment	Tidal barrage
Full supply level	EL 2.32 m AHD
Saddle dam(s)	Nil
Fabridams	Nil
Gates	Nil
<b>Storage volume and surface area</b>	
Full supply volume	4020 ML
Dead storage volume	1630 ML
Surface area/elevation and storage volume/ elevation relationship	Drawing no: A3-216333
<b>Spillway arrangement</b>	
Description of works	Central section with embankments on either side
Spillway level	EL 2.32 m AHD
Spillway width	Approximately 305 m
Discharge characteristics	Drawing no: HYDSYS Rating Curve #90 for GS 135010A
<b>River inlet/outlet works</b>	
Description of works	No inlet works. Fish ladder operation only
Multi-level inlet	Nil
Cease to flow level	Nil
Discharge characteristics	No outlet. Pump down to EL 0.89 m AHD
<b>Fish transfer system</b>	
Description of works	Vertical slot fish ladder

**Table 4 – Paradise Dam—Burnett River AMTD 131.4 km**

<b>Description of water infrastructure</b>	
Main embankment	Roller Compacted Concrete Gravity Dam
Full supply level	EL 67.6 m AHD
Saddle dam(s)	Nil
Fabridams	Nil
Gates	Nil
<b>Storage volume and surface area</b>	
Full supply volume	300 000 ML
Dead storage volume	13 309 ML
Surface area/elevation and storage volume/ elevation relationship	Drawing no: 219168
<b>Spillway arrangement</b>	
Description of works	Straight approach channel to a mass concrete ogee crest
Spillway level	EL 67.6 m AHD
Spillway width	Primary: 315 m Secondary: 485 m
Discharge characteristics	Drawing no: 245836-A
<b>River inlet/outlet works</b>	
Description of works	River Inlet/Outlet: A multilevel intake tower. Gates for environmental releases
Multi-level inlet	Shutters to allow variable level releases between FSL and EL42 m AHD
Cease to flow level	River Outlet: EL 42 m AHD
Discharge characteristics	The estimated maximum discharge capacity of the outlets: Environmental flow outlet is 23 300 ML/day at EL 68 m AHD. Irrigation outlet is 1555 ML/day at EL 46 m AHD.
<b>Fish transfer system</b>	
Description of works	Fish lift for upstream movement Fish lock for downstream movement

**Table 5 – Ned Churchward Weir—Burnett River AMTD 74.5 km**

<b>Description of water infrastructure</b>	
Main embankment	Weir
Full supply level	EL 19 m AHD
Saddle dam(s)	One ancillary weir
Fabridams	Nil
Gates	Nil
<b>Storage volume and surface area</b>	
Full supply volume	29 500 ML
Dead storage volume	2600 ML
Surface area/elevation and storage volume/ elevation relationship	Drawing no: 106904
<b>Spillway arrangement</b>	
Description of works	Full width weir mass concrete with crest EL 19 m AHD
Spillway level	Crest EL 19 m AHD
Spillway width	185.3 m
Discharge characteristics	Drawing no: HYDSYS Rating Curve #90 for GS 136023A
<b>River inlet/outlet works</b>	
Description of works	Outlet works: Two outlet conduits 6 500 mm long × 5 000 mm wide × 3 900 mm high.
Multi-level inlet	Primary inlets: Double inlets each with four inlets (1.5 m vertical × 3 m horizontal) controlled by vertical bulkhead gates. Each inlet has a separate conduit controlled by a fixed wheel slide gate. Secondary inlets: Double inlets 1.5 m <sup>2</sup> at EL 10.5 m AHD dropping vertical to EL 4.75 m AHD (1.5 m × 2 m) then horizontal(1.5 m <sup>2</sup> ) to separate outlet boxes.
Cease to flow level	Outlet works: Floor of outlet EL 4 m AHD. Sill of outlet EL 4.75 m AHD. Sill levels for primary inlets: EL 10.5 m AHD, EL 13.5 m AHD, EL 16.5 m AHD and EL 19.5 m AHD. Sill level for secondary inlets: EL 10.5 m AHD.
Discharge characteristics	Maximum design discharge capacity of single outlet is 750 ML/day. With both outlets = 1500 ML/day
<b>Fish transfer system</b>	
Description of works	Fish lock

**Table 6 – Ben Anderson Barrage—Burnett River AMTD 25.9 km**

<b>Description of water infrastructure</b>	
Main embankment	Tidal Barrage
Full supply level	EL 3.97 m AHD
Saddle dam(s)	Nil
Fabridams	Nil
Gates	Yes
<b>Storage volume and surface area</b>	
Full supply volume	30 300 ML
Dead storage volume	6650 ML
Surface area/elevation and storage volume/ elevation relationship	Drawing no: A3-213264
<b>Spillway arrangement</b>	
Description of works	110 Shutter spillway 1.83 m high
Spillway level	EL 3.97 m AHD
Spillway width	265 m
Discharge characteristics	Drawing no: BA3 - 4188
<b>River inlet/outlet works</b>	
Description of works	Six 2.13 m × 2.13 m fixed wheel gates
Multi-level inlet	Nil
Cease to flow level	EL -0.03 m AHD
Discharge characteristics	Maximum derived discharge from the six sluice gates is 10 080 ML/day (the estimated maximum discharge from each gate is 1680 ML/day).
<b>Fish transfer system</b>	
Description of works	Vertical slot fish ladder

# Attachment 2 Environmental management rules

## 1 Quality of water released

When making a release from water infrastructure that incorporates multilevel inlets, the licence holder must draw water from the inlet that optimises the quality of water released.

## 2 Environmental releases

- (1) The licence holder must, in any 7 day period, release (as the combined controlled and uncontrolled release) a minimum of 35ML from Bucca Weir.
- (2) However, subsection (1) does not apply if the current storage level in Kolan Barrage is more than 2.32m AHD.
- (3) For each day from 1 September to 31 December the licence holder must release (as the combined controlled and uncontrolled release) —
  - (a) from Paradise Dam—the lesser of the daily inflow of water to Paradise Dam and 14 000ML; and
  - (b) from Ned Churchward Weir—the lesser of the natural daily inflow to Ned Churchward Weir and 200ML.
- (4) However—
  - (a) subsection (3)(a) does not apply if the current storage level in Paradise Dam is 63.45m AHD or less; and
  - (b) subsection (3)(b) does not apply if—
    - (i) the natural daily inflow to Ned Churchward Weir is less than 85ML; or
    - (ii) the current storage level for Ned Churchward Weir is less than the EL13.5 m AHD for the storage.
  - (c) if the release identified in subsection (3)(a) exceeds the capacity of the Paradise Dam environmental outlet, then the licence holder must store the residual volume of inflow for release in Paradise Dam, record the volume in the environmental management rule water account and release this volume continuously up to the available capacity of the outlet until the account balance is exhausted.

(5) In this section—

**natural daily inflow**, in relation to Ned Churchward Weir, means the daily inflow of water to the storage, including water from a release of water under subsection (3)(a), but does not include other water from a release of water upstream from the storage.

## 3 Change in rate of release

- (1) The licence holder must prepare and maintain operating procedures for Fred Haigh Dam, Bucca Weir, Paradise Dam and Ned Churchward Weir.
- (2) The operating procedures must ensure that any increase or decrease in the rate of release of water from the storages occurs incrementally to minimise the occurrence of adverse environmental impacts.

# 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 storage water level and volume, daily inflow and flow data in accordance with Attachment 3, Table 1.
- (2) Tailwater flows may be obtained from gauging station data, or where there is no gauging station, tailwater flows may be calculated using the release curve developed for the discharge works and for the headwater discharge.

*Table 1 – Locations where continuous time series height and volume data and daily flow data are required*

Location	Gauging Station Site Identification	AMTD km	Water level and volume data	Daily inflow data	Daily flow data
Fred Haigh Dam headwater	GS 135009A	76.7	✓	✓	
Fred Haigh Dam tailwater <sup>2</sup>	GS 135012A	76.6			✓
Sheepstation Creek	GS 136018A	8.6			✓
Ned Churchward Weir headwater	GS 136023A	74.5	✓		
Ned Churchward Weir tailwater	GS 136008C	74.4			✓
Bucca Weir headwater	GS 135008A	38	✓	✓	
Bucca Weir tailwater	NA	NA			✓
Kolan River Barrage (Gooburrum Pump Station)	GS 135010B	20.8	✓		
Ben Anderson Barrage (Woongarra Pump Station)	GS 136020A	36.6	✓		
Paradise Dam headwater	GS 136024A	131.4	✓	✓	
Paradise Dam tailwater	NA	NA			✓

#### 2 Releases from storages

The licence holder must record for each release of water from storages mentioned in Attachment 1—

- (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

<sup>2</sup> This gauging station only measures release water. Total tailwater discharge will need to be calculated from headwater discharge data and any releases.

- (c) the reason for each release and the component volumes<sup>3</sup> for each release; and
- (d) for storages with a multilevel outlet, the water level from which the release was made.

### **3 Water diversions**

- (1) The licence holder must measure and record the daily total volumes of water delivered to—
  - (a) Burnett River via St Agnes Creek;
  - (b) Abbotsford Water Supply Network via the Abbotsford Pump Station on the Kolan River;
  - (c) Gin Gin and Bingera Water Supply Network via the Monduran Pump Station at Fred Haigh Dam;
  - (d) Gooburrum Water Supply Network via the Gooburrum Pump Station on the Kolan River;
  - (e) Isis Water Supply Network via the Isis Pump Station on the Burnett River;
  - (f) Woongarra Water Supply Network via the Woongarra Pump Station on the Burnett River; and
  - (g) Welcome Creek via the Gooburrum Water Supply Network.
- (2) The methodology for determining the volume delivered must be approved by the chief executive.

### **4 Announced allocations**

The licence holder must record details—

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

### **5 Transfer of water between water years**

The licence holder must record details of the total volume of water—

- (a) carried over to the current water year from the previous water year; and
- (b) brought forward to the current water year from the next water year.

### **6 Water taken by water users**

The licence holder must record the total volume of water taken by each water user for each zone as follows—

- (a) the total volume of water taken each quarter;
- (b) the total volume of water entitled to be taken at any time;

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<sup>3</sup> Component volumes comprise of the following:

- passing flows under the environmental rules in Attachment 2;
- volume released for water supply in the storage's local supply area;
- an estimate of the volume released to meet transmission and operating losses in the storage's local supply area;
- volume released to maintain the water level in the next downstream storage;
- volume released through fishways;
- total volume released from the storage.

- (c) the basis for determining the total volume of water entitled to be taken at any time; and
- (d) the basis for determining the total volume of water entitled to be taken, including adjustments for volumes moved into or out of the water year and seasonal water assignments.

## **7 Seasonal water assignment of a water allocation**

The licence holder that approves a seasonal water assignment 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;
- (d) the effective date of the assignment; and
- (e) the sale price.

# **Division 2 Impact of infrastructure operation on natural ecosystems**

## **8 Water quality**

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

## **9 Bank condition**

- (1) The licence holder must inspect banks for evidence of collapse and/or erosion 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 storage, or
  - (c) other occasions when collapse and/or erosion of banks may be likely.
- (2) For subsection (1), downstream of each storage means the distance of influence of infrastructure operations.

## **10 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.

# Part 2 Reporting requirements

## 11 Reporting requirements

The licence holder must provide—

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

## Division 1 Quarterly reporting

### 12 Quarterly report

- (1) The licence holder must submit a quarterly report to the chief executive after the end of each quarter of every water year.
- (2) The quarterly report must include—
  - (a) verified stream flow, storage inflow and water level required under section 1;
  - (b) releases from storages as required under section 2;
  - (c) water diversions as required under section 3;
  - (d) water quality as required under section 8; and
  - (e) a summary of bank condition monitoring and instances of slumping carried out as required under section 9.

## Division 2 Annual reporting

### 13 Annual report

- (1) The licence holder must submit an annual report to the chief executive after the end of each water year.
- (2) The annual report must include—
  - (a) water quantity monitoring results required section 14;
  - (b) details of the impact of storage operation on natural ecosystems as required under section 15;
  - (c) a discussion on any issues that arose as a result of the implementation and application of the rules and requirements of this licence; and
  - (d) a summary of sale price disclosure information and other seasonal water assignment information as per Attachment 3, Part 1, Division 1(7)

### 14 Water quantity monitoring

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) details of seasonal water assignments, including—

- (i) the total number of seasonal water assignments; and
- (ii) the total volume of water seasonally assigned;
- (c) for the water year, a summary of water taken by all water users, specified by zone, as follows—
  - (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 volume of water entitled to be taken
- (d) for the water year, the total annual volume of water taken by each ~~water~~ user, specified by zone, as follows—
  - (i) the total volume of water taken for each zone;
  - (ii) the total volume entitled to be taken for each zone; and
  - (iii) the basis for determining the total volume of water entitled to be taken;
- (e) all details of changes to storages and delivery infrastructure or the operation of storages and delivery infrastructure that may impact on compliance with rules and requirements of this licence;
- (f) details of any new monitoring devices used, such as equipment to measure stream flow.

## 15 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; and
- (d) a discussion and assessment of the following water quality issues—
  - (i) water quality in each storage;
  - (ii) thermal and chemical stratification in the storage;
  - (iii) the impact of the storage and its management on the quality of water released;
  - (iv) cumulative effect of successive storages on water quality;
  - (v) cyano-bacterial population changes in response to stratification in the storage; and
  - (vi) any proposed changes to the monitoring program as a result of evaluation of the data.

## Division 2      Operational or emergency reporting

### 16      Operational or emergency reporting<sup>4</sup>

- (1) The licence holder must notify the chief executive—
  - (a) within one business day of becoming aware of any of the following operational incidents—
    - (i) non-compliance by the licence holder with the conditions of this licence;
    - (ii) instances when a waterhole is drawn down 0.5 m below flow level;
    - (iii) instances of fish stranding, cyanobacterial growth or bank slumping within the ponded areas or downstream of the water infrastructure to which this licence relates; and
    - (iv) a decision being made to introduce a reduced full supply level under section 399B of the *Water Supply (Safety and Reliability) Act 2008*;
  - (b) of an emergency where, as a result of the emergency, the licence holder cannot comply with the conditions of the licence.
- (2) The licence holder must provide to the chief executive upon request, and within the timeframe requested, a report which includes details of—
  - (a) the incident or emergency;
  - (b) the conditions under which the incident or emergency occurred;
  - (c) any responses or activities carried out as a result of the incident or emergency; and
  - (d) 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.
- (3) The licence holder must—
  - (a) notify the chief executive within one business day—
    - (i) upon setting an initial announced allocation or resetting an announced allocation during the water year;
    - (ii) with details of any arrangements for addressing circumstances where they are unable to supply water allocations; and
  - (b) provide the chief executive with relevant supporting information used in making any decision under subsection (a)(i) and (ii).
- (4) The licence holder must provide the chief executive within 10 business days of cessation of take, a report of supplemented water being taken through an unsupplemented water user's water meter. The licence holder must report the meter readings at the start and finish of the taking of water and the approved quantities of supplemented water taken.

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<sup>4</sup> This does not preclude requirements for dam safety under the *Water Supply (Safety and Reliability) Act 2008*, *Water Act 2000* and any other applicable legislation.

## Attachment 4

## Applicable infrastructure details following commissioning of the replacement Paradise Dam.

**Table 1: Paradise Dam – Burnett River AMTD 131.3 km**

<b>River inlet/outlet works</b>	
Description of works	River Inlet/Outlet: A multilevel intake tower. Gates for environmental releases
Multi-level inlet	Shutters to allow variable level releases between FSL and EL42 m AHD
Cease to flow level	River Outlet: EL 42 m AHD
Discharge characteristics	The estimated maximum discharge capacity of the outlets: Environmental flow outlet is 7,000 ML/day at EL 63.45 m AHD. Irrigation outlet is 1555 ML/day at EL 46 m AHD.

# Glossary

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 the watercourse, that a specific point in the watercourse is from the watercourse's mouth; or—if the watercourse is not a main watercourse—the watercourse's confluence with its main watercourse.
Announced allocation	For a water allocation managed under a resource operations licence, 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.
Cease to flow level	For a waterhole, the level at which water stops flowing from a waterhole over its downstream control.
Confluence	The point where two or more watercourses meet.
Dead storage volume	For a storage, means the dead storage volume stated in the infrastructure details for the storage in Attachment 1.
Discharge	Discharge is the rate at which a volume of water passes a point in a stream or pipeline per unit of time. This could be measured in litres per second (L/s), cubic meters per second ( $m^3/s$ ) or in megalitres per day (ML/day).
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.
Full supply volume	For a storage, means the full supply volume of the storage stated in the infrastructure details for the storage in Attachment 1.
Inlet	Infrastructure comprised of an entrance channel, intake structure, and gate or valve which allow for water to be taken from the ponded area of a dam or weir and discharged via an outlet into the watercourse downstream of the storage.
Licence holder	The holder of the resource operations licence for the Bundaberg Water Supply Scheme.
Location	For a water allocation, means the zone from which water under the water allocation can be taken.
Megalitre (ML)	One million litres.
Multi-level inlet	An inlet arrangement on a dam or weir that allows stored water to be released downstream from selected levels below the stored water surface.
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.
Release	Water from a dam or weir that passes downstream from the dam or weir through the dam or weir outlet works.
Supplemented water	Water supplied under a resource operations licence or other authority to operate water infrastructure.
Stream flow	The total daily flow in megalitres measured at a given point along a watercourse. This includes both natural stream flow and water released from an upstream storage, which contributes to flow at that point.
Tailwater	The flow of water immediately downstream of a dam or weir. Tailwater includes all water passing the infrastructure – for example, controlled releases and uncontrolled overflows.
Unsupplemented water	Water that is not supplemented water.
Waterhole	A part of a watercourse that contains water after the watercourse ceases to flow, other than a part of a watercourse that is within the storage area of a dam on the watercourse.

<b>Term</b>	<b>Definition</b>
Water user	The holder of a valid water entitlement.
Zone	A geographic location defined by a reach of a watercourse. Zones are for defining the location of a water allocation and operational arrangements under an operations manual. Zones are defined in the Water Plan (Burnett Basin) 2014.