RESOURCE OPERATIONS LICENCE

Water Act 2000

NAME OF LICENCE

Upper Burnett Water Supply Scheme Resource Operations Licence

Queensland Government
Natural Resources and Water

HOLDER

Name of Holder:	SunWater
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RESOURCE OPERATIONS PLAN

The licence relates to the Burnett Basin Resource Operations Plan.

AUTHORITY TO INTERFERE

The licence authorises the licence holder to interfere with the flow of water, in the Upper Burnett Water Supply Scheme, detailed in the Burnett Basin Resource Operations Plan Chapter 4, to the extent necessary to operate the water infrastructure to which the licence applies.

WATER INFRASTRUCTURE

The water infrastructure to which the licence applies is detailed in the Burnett Basin Resource Operations Plan in Attachment 4.2D Upper Burnett Water Supply Scheme: Infrastructure Details.

OPERATING ARRANGEMENTS AND SUPPLY REQUIREMENTS

The operating arrangements and supply requirements that relate to the licence holder are detailed in the Burnett Basin Resource Operations Plan Chapter 4 and apply in accordance with the Attachment 9.1 Implementation Schedule.

In accordance with section 110 of the *Water Act 2000*, the licence holder must comply with the operating arrangements and supply requirements in the Burnett Basin Resource Operations Plan, for the Upper Burnett Water Supply Scheme.

OTHER LICENCE CONDITIONS

1. The licence permits the destruction of vegetation by inundation up to the full supply level of Kirar Weir.
2. The licence holder must revegetate the Burnett River:
   (a) between the full supply level and the high bank on the western bank for a distance of approximately 700 metres upstream of the main embankment of Kirar Weir and in accordance with the Eidsvold Weir Revegetation Program dated 23 December 2004 submitted by the licence holder; and
   (b) report on sections 3 to 8 of the 23 December 2004 Eidsvold Weir Revegetation Program.
3. From 1 June 2007 until 30 June 2008 or until Kirar Weir fills (EL 153m AHD) for the first time before 30 June 2008, the licence holder must comply with the operating arrangements and supply requirements in Schedule 1.
4. Notwithstanding condition 3, from 1 June 2007 until the maximum discharge capacity of the outlet on Claude Wharton Weir returns to the specification in Attachment 4.2D of the Burnett ROP, the licence holder must also comply with the operating arrangements and supply requirements in Schedule 2.
5. To the extent that the arrangements specified in Schedule 2 are inconsistent with the arrangements specified in Schedule 1, the Schedule 2 arrangements prevail.
6. The licence holder must carry out and report on the stated monitoring program set out in the Burnett Basin Resource Operations Plan (the ROP) Chapter 4 and in accordance with the ROP Chapter 3.

COMMENCEMENT OF LICENCE

The licence takes effect on 1 June 2007

GRANTED ON 1 June 2007

Graeme Milligan
General Manager, Water Accounting and Management

SCHEDULE 1

1 Operation of John Goleby Subscheme

For all periods the operation of John Goleby Subscheme is to be consistent with the current Burnett Basin Resource Operations Plan (ROP).

2 Upper Burnett Water Supply Scheme (UBWSS) Operating Rules During Period 1 (Storage Filling Stage of Kirar Weir)

2.1 Definition of Period 1

a) Period 1 is the storage filling stage of Kirar Weir.
b) Period 1 commences at the start of the water year on 1st July 2005.
c) Period 1 ends when the water allocations associated with Kirar Weir are granted.

2.2 Operations During Period 1

a) The May 2003 ROP operating rules and supply arrangements apply to users along the Nogo River from AMTD 50.9km to AMTD 0.0km, Burnett River from AMTD 333.9km to AMTD 97.6km and Auburn River from AMTD 6km to 0.0km.
b) Kirar Weir storage will be utilised as a balancing storage during this filling stage.

2.3 Infrastructure Associated with UBWSS for Period 1

Refer to chapter 4.2.4 of the November 2005 ROP.

2.4 Water Allocations Associated with UBWSS During Period 1

As per chapter 4.2.2 of the May 2003 ROP, including any changes to those water allocations since publication of the May 2003 ROP.

The definitive list of water allocations will be as per the Water Allocation Register at the commencement of Period 1.

2.5 Infrastructure Operating Rules During Period 1

Operations during Period 1 are as per chapter 4.2.5 of the May 2003 ROP.

2.6 Operating Principles for Kirar Weir During Period 1

a) SunWater makes announced allocations defining available water for its customers. In undertaking this assessment inflows into the system are considered.
b) Under the *Water Resource (Burnett Basin) Plan 2000* individual irrigators in the Upper Burnett Water Supply Scheme have a defined water allocation security objective (WASO) or reliability.
c) Through its Resource Operations Licence (ROL) and subsequently the Burnett Basin Resource Operations Plan (ROP), SunWater has a legal obligation to provide its customers with their allocation and meet its customers WASO's
d) Schedule 6 of the Resource Operations Licence (Burnett River Dam) – construction and storage of water, outlines operating arrangements regarding release of unsupplemented water and supplemented water through Burnett River Dam.
e) Burnett Water Pty Ltd has a requirement to fill Kirar Weir to EL 151.6m being a volume of approximately 7,000ML to allow for complete commissioning.
f) Inflows into the Kirar Weir impoundment equivalent to that of existing air space in SunWater's downstream storages, at the time of the inflow event, is deemed to be SunWater's water and will be stored in and released from Kirar Weir by Burnett Water as determined and requested by SunWater operators.

2.7 Operating Rules for Kirar Weir Storage During Period 1

a) All supplemented inflows released from SunWater storages upstream (Wuruma Dam) must be released through the outlet works.
b) All unsupplemented inflows received into the storage less than or equal to the combined volume of air space in SunWaters downstream storages (Jones Weir and Claude Wharton Weir) at the time of the inflow event, is considered to be SunWater's water and shall be

stored in Kirar Weir and released as directed by SunWater Operators. These directed releases can be used for the purpose of commissioning.

c) All unsupplemented inflows received into the storage greater than the combined volume of air space in SunWater's downstream storages (Jones Weir and Claude Wharton Weir) at the time of the inflow event, shall be stored in Kirar Weir.

2.8 Water Sharing Rules During Period 1

Refer to chapter 4.2.6 of the May 2003 ROP. The announced allocation determined through 4.2.6 is $\mathbf{AA_{M1}}$.

2.9 Water Allocation Change Rules During Period 1

Refer to chapter 4.2.7 of the November 2005 ROP.

2.10 Monitoring Program During Period 1

Refer to chapter 4.2.8 of the November 2005 ROP.

3 Upper Burnett Water Supply Scheme (UBWSS) Operating Rules During Period 2 (Initial Operation of Kirar Weir)

3.1 Definition of Period 2

a) Period 2 is the initial operation of Kirar Weir.

b) Period 2 commences when Kirar Weir becomes operational, and when the water allocations associated with Kirar Weir are granted.

c) Period 2 ends at the end of the water year 30 June 2008 or when Kirar Weir fills (EL 153m AHD) for the first time before 30 June 2008.

3.2 Operations During Period 2

Operations during Period 2 include the following:

a) The infrastructure referenced in chapter 4.2.4 of the current ROP.

b) Associated storages operating rules and supply arrangements apply to users along the Nogo River from AMTD 44.5km to AMTD 0.0km, Burnett River from AMTD 333.9km to AMTD 162.8km and Auburn River from AMTD 6km to 0.0km.

c) The additional 20,000ML/a of medium priority water allocations in the Upper Burnett WSS granted (as a result of operation of Kirar Weir) in 2005.

3.3 Infrastructure Associated with UBWSS for Period 2

Refer to chapter 4.2.4 of the current ROP.

3.4 Water Allocations Associated with UBWSS During Period 2

The definitive list of water allocations is as per the Water Allocation Register.

3.5 Infrastructure Operating Rules During Period 2

Refer to chapter 4.2.5 of the current ROP.

3.6 Water Sharing Rules During Period 2

Water sharing rules must be used to determine the announced allocation percentages throughout the year. There are two types of water allocations to be supplied to water allocation holders in the Upper Burnett Water Supply Scheme, namely high priority and medium priority water allocations. The Water Resource (Burnett Basin) Plan 2000 specifies the performance indicators (WASO's) for these priority groups in Schedule 6.

The water sharing rules specify the way the water resources of the Upper Burnett Water Supply Scheme will be shared between the water allocation priority groups.

3.6.1 General Rules During Period 2

A resource assessment procedure must be used to determine the announced allocation percentages for medium and high priority water allocations in the subschemes. The resource assessment procedure must use the following rules:

(a) Announced allocation percentages must be determined at the start of Period 2.

(b) The announced allocation is expressed as a percentage from 0% to 100%. Announced allocation percentages of greater than 100 are not permitted.
(c) Announced allocation percentages, for both high and medium priority, are to be rounded down to the nearest 1%.
(d) Announced allocation percentages must be reviewed within 10 working days of when a major inflow occurs. If the announced allocation percentage increases by more than five percent, then a revised announced allocation percentage must be announced.
(e) When the announced allocation is re-calculated during a water year owing to inflows, if the formula gives a value below what was previously announced in the same water year, then the previously announced allocation percentage is to be maintained.
(f) The percentages computed for each subscheme is to be applied equally to all medium priority water allocations in the respective subscheme. Each medium priority water allocation receives an announced allocation volume equal to the percentage multiplied by the water allocation volume.
(g) When releases cease being made for water allocation holders downstream of storages, or storage levels drop so that on-pond users no longer have access to water ponded behind the dam or weir walls, then those water allocation holders without access to above-ground supplies may access water from bed sands. When accessing bed sands announced allocations do not apply for these subschemes, however water allocation holders in these subschemes are not permitted to extract more than their water allocation.

3.6.2 Storages Included In the Announced Allocation Calculation During Period 2

The volumes of Wuruma Dam, Kirar Weir, Jones Weir and Claude Wharton Weir are included in the resource assessment.

3.6.3 Calculation of Medium Priority Announced Allocation Percentages for Wuruma-Kirar, Jones & Claude Wharton Subschemes During Period 2

The announced allocation percentage for medium priority water allocations for the Wuruma – Kirar Subscheme is to be determined using the following formula. The parameters in this formula are defined in following sections.

$$AA_{M2} = \left\{ \frac{UV + IN - HPA + DIV - VIWY - TOL - RE - TO_{WE}}{MPA_2} \right\} \times 100$$

The announced allocation percentage for medium priority water allocations for the Jones Subscheme is to be determined using the following formula. The parameters in this formula are defined in following sections.

$$AA_{M2} = \left\{ \frac{UV + IN - HPA + DIV - VIWY - TOL - RE + TI_J}{MPA_2} \right\} \times 100$$

The announced allocation percentage for medium priority water allocations for the Claude Wharton Subscheme is to be determined using the following formula. The parameters in this formula are defined in following sections.

$$AA_{M2} = \left\{ \frac{UV + IN - HPA + DIV - VIWY - TOL - RE + TI_{CW}}{MPA_2} \right\} \times 100$$

3.6.4 High Priority Announced Allocation During Period 2

Announced allocation percentages for high priority water allocations will be 100%, unless the announced allocation percentage for medium priority water allocation is zero, in which

case the announced allocation percentage for high priority water allocations for each subscheme must be determined using the following formula. The parameters in this formula are defined below.

$$AA_H = \left\{ \frac{UV - TOL + VIWY + DIV}{HPA} \right\} \times 100$$

This percentage is to be applied equally to all high priority water allocations in the respective subscheme. Each high priority water allocation receives an announced allocation volume equal to the percentage multiplied by the water allocation volume.

3.6.5 Parameters used in Calculating Announced Allocation Percentages for Wuruma – Kirar, Jones and Claude Wharton Subschemes During Period 2

This section defines the parameters to be used in the resource assessment calculation for these subschemes.

UV = *useable volume*

UV is the sum of the useable volume of the storages in each subscheme. UV is determined by computing the useable volume of each storage in the respective subscheme, and then summing the relevant volumes together, as per the following equations:

$$\text{If } (CV - DSV - SL) > 0 \text{ then } UV_{storage} = CV - DSV - SL$$
$$\text{Else } UV_{storage} = 0$$
$$UV = \Sigma\ (UV_{storage})$$

Where:

CV is the Current Volume of the storage (at the time of the resource assessment).
DSV is the Dead Storage Volume of the storage (values as per A4.2D of the current ROP).
SL is the Storage Losses (values as per Table 1 of Attachment 4.2F of the current ROP) - SL is the projected storage losses from the storages for the remainder of the water year. Storage losses include lake evaporation plus seepage. The storage loss volume is calculated by using the value next to the current month multiplied by the current surface area of the storage.

IN = *inflow*

IN is the allowance for inflows used in the resource assessment (values as per Table 2 of Attachment 4.2F of the current ROP).

DIV = *total diversions*

DIV is the total volume of water taken by water allocation holders in each Subscheme in the current water year up to the time of the resource assessment.

HPA = *high priority water allocations*

HPA is the total high priority water allocation in each subscheme.

RE = *reserve volumes*

RE is an allowance set aside in the resource assessment for supply of users and operations in future water years (values as per Table 3 of Attachment 4.2F of the current ROP).

TOL = *transmission and operational loss allowance*

TOL is an allowance for the river transmission and operational losses expected to occur in running the system to the end of the water year. TOL varies with the announced allocation for medium priority water allocations (values as per Table 4 of Attachment 4.2F of the current ROP, except for the Jones Subscheme for the months February to May for 0% and 25% announced allocations, where the values will be as per the below table),

Announced Allocation %	February	March	April	May
0	25	20	15	10
25	426	353	281	208

***VIWY** = net total volume of water allocation moved into current water year*

MPA_2 is the total medium priority water allocation in the Water Allocation Register for each subscheme, minus, for each respective subscheme, the volume of the 20,000 ML of medium priority water allocation granted (as a result of operation of Kirar Weir) in 2005 that SunWater predicts will not be sold, leased, seasonally assigned or transferred in any way to any other party by the end of the water year.

***AA_{M2}** = announced allocation percentage of medium priority water allocations*

AA_{M2} is the announced allocation percentage of the medium priority water allocations in each subscheme.

***TO_{WE}, TI_J and TI_{CW}** = transfer volumes for resource assessment*

Some of the water in Wuruma Dam is apportioned to the Jones Subscheme and to the Claude Wharton Subscheme for resource assessment purposes. The following method must be used to determine TO_{WE}, TI_J and TI_{CW}.

The volume to be transferred to the Jones Subscheme for resource assessment purposes, TI_J, is determined by the following method:

1. Determine the Desired Volume available for the Jones Subscheme, DV_J, by interpolating from Table 5 of Attachment 4.2F of the current ROP
2. Determine the Volume Available in Jones Weir, VA_J, from the following equation

$$\mathbf{VA_J = max\ \{(CV_{JW} - DSV_{JW}), 0\}}$$

Where: CV_{JW} is the Current Volume of Jones Weir
DSV_{JW} is the Dead Storage Volume of Jones Weir

3. Determine the Transfer Volume into the Jones Subscheme, TI_J, from the following equation

$$\mathbf{TI_J = max\ \{(DV_J - VA_J), 0\}}$$

The volume to be transferred to the Claude Wharton Subscheme for resource assessment purposes, TI_{CW}, is determined by the following method:

1. Determine the Desired Volume available for the Claude Wharton Weir Subscheme, DV_{CW}, by interpolating from Table 5 of Attachment 4.2F of the current ROP
2. Determine the Volume Available in Claude Wharton Weir, VA_{CW}, from the following equation

$$\mathbf{VA_{CW} = max\ \{(CV_{CWW} - DSV_{CWW}), 0\}}$$

Where: CV_{CWW} is the Current Volume of Claude Wharton Weir
DSV_{CWW} is the Dead Storage Volume of Claude Wharton Weir

3. Determine the Transfer Volume into the Claude Wharton Subscheme, TI_{CW}, from the following equation

$$\mathbf{TI_{CW} = max\ \{(DV_{CW} - VA_{CW}), 0)\}}$$

The volume to be transferred out of the Wuruma - Kirar Subscheme, TO_{WE} , is equal to the sum of the volumes transferred to the other two schemes, that is, the following equation is to be used

$$\mathbf{TO_{WE} = TI_J + TI_{CW}}$$

3.7 Monitoring Program During Period 2

Refer to chapter 4.2.8 of the current ROP.

3.8 Water Allocation Change Rules During Period 2

Refer to chapter 4.2.7 of the current ROP.

Schedule 2

Definitions for Schedule 2

Period 1a: The period from 1 June 2007 until 30 June 2007.

Period 1b: The period from 1 July 2007 until the fabridams can be operated in accordance with s2.5 of Attachment 4.2E of the Burnett Basin Resource Operations Plan (Burnett ROP).

Period 2: The period from the end of Period 1b until the maximum discharge capacity of the outlet on Claude Wharton Weir returns to the specification in Attachment 4.2D of the Burnett ROP.

Effect of Schedule 2

1. Schedule 2 has effect from:
   (i) 1 June 2007 until the end of Period 1a; and
   (ii) The end of Period 1a until the end of Period 2, subject to the approval of the chief executive for changed operating arrangements in accordance with Chapter 4, section 4.3 of the Burnett ROP.

Operating Arrangements for Specified Periods

2. Operating Rules for Claude Wharton Weir during Period 1a:

   2.1 Claude Wharton Weir fabridams must be kept at a fully deflated position.
   2.2 The discharge capacity of the outlet may be restricted to a maximum of approximately 65ML/day (at fixed crest level).
   2.3 Low flow releases must be made from Claude Wharton Weir if conditions stated in s 2.6.1 of Attachment 4.2E of the Burnett ROP are met. These releases are subject to outlet restrictions and may be used to meet requirements of entitlement holders during the period.

3. Operating Rules for Claude Wharton Weir during Period 1b:

   3.1 Claude Wharton Weir fabridams must be kept at a fully deflated position.
   3.2 The discharge capacity of the outlet may be restricted to a maximum of approximately 65ML/day (at fixed crest level).
   3.3 Low flow releases must be made from Claude Wharton Weir if conditions stated in s 2.6.1 of Attachment 4.2E of the Burnett ROP are met. These releases are subject to outlet restrictions and may be used to meet requirements of entitlement holders during the period.

4. Operating Rules for Claude Wharton Weir Period 2:

   4.1 Claude Wharton Weir fabridams must be fully operational and must be operated in accordance with s2.5 of Attachment 4.2E of the Burnett ROP.
   4.2 The discharge capacity of the outlet may be restricted to a maximum of approximately 80ML/day (at full supply level).
   4.3 Low flow releases must be made from Claude Wharton Weir if conditions stated in s2.6.1 of attachment 4.2E of the Burnett ROP are met. These releases are subject to outlet restrictions and may be used to meet requirements of entitlement holders during the period.

Critical Water Supply Arrangements

5. If critical water supply arrangements are activated during Periods 1a, 1b or 2, then the low flow releases must be subject to the rules contained in the Critical Water Supply Arrangements for the Upper Burnett Water Supply Scheme.