

Making the most of your water - *Recording your water use*

Factsheet 3 | Version 1 | April 2015

New conditions are being added to all water licences that will require you to keep records to demonstrate compliance. DPIPWWE has developed some factsheets to assist you in understanding how planning, recording and reviewing your water use can assist you in being compliant with your water licence.

The second key step in managing your water is to record the amount that you use. Where significant amounts of water will be used or where situations are complex then detailed recording techniques may be required. This may involve regular monitoring and recording of the water you use against your allocations.

Recording the water you use may be further complicated if restrictions occur over the summer period so different sources of water need to be accessed to meet crop requirements and be compliant.

DPIPWE is not prescriptive in the types of records that should be kept, but does require that you collect enough detail to be able to demonstrate:

- the amount of water you have used;
- that you have not used more water than you are allocated;
- that you have taken that water in the periods detailed on your licence; and
- that you have complied with any restrictions.

If you have undertaken a water budgeting process (as outlined in Factsheet 2: Planning your water use), then the information in Table 1: Water Available and Table 2: Water Needed can be used in your recording system. You can use the reference numbers and letters for your crops and water sources to reduce the amount of detail needed in your record system.

There are a number of ways that you can record and keep track of the water you use, and this factsheet provides three examples that may be helpful:

1. Recording water use from irrigation amount
2. Recording water use from meter readings
3. Recording water use from pumping rates

I. Recording water use from irrigation amounts

Many farmers will record the amount of water that is applied to a crop at each irrigation. This makes it easy for you to calculate the amount of water you have used per irrigation and record it against your crop and water source.

If your irrigator does not record the output, then simply using rain gauges strategically placed across your crop to catch irrigation water will give you an estimate of the amount used. This will also identify any issues you may have with inconsistent application of water.

A simple table could be used to record crop irrigations by date, amount and water source.

¹ Crop	Date	Amount (mm/ha)	Area (ha)	² Total ML	³ Water Source
1	15 October	25	20	5	A
2	17 October	20	10	2	A
1	1 December	20	20	4	B
3	14 January	25	10	2.5	C
	Total			13.5	

¹ From the Water Budget in Factsheet 2: Planning Your Water Use

²A 100mm of water applied on one hectare of land equals 1ML.

So Total ML = Area (ha) x amount (mm/ha) / 100

³From the Water Budget in Factsheet 2: Planning Your Water Use

Including both the crop and the water source will assist you in not only knowing if you have complied with your water allocations, but also in knowing how much water you have applied to each crop. This information may be useful in future planning or benchmarking activities.

More information on planning and managing irrigation is available from the Water for Profit Program at <http://dpiwwe.tas.gov.au/about-the-department/water-for-profit>. This four year initiative, starting in 2015, is aimed at helping Tasmanian farmers maximise their returns from investment in irrigation.

2. Recording water use from meter readings

If you have meters installed, then it is possible to record your water use by reading the meters at particular intervals. Generally, you should read your meter:

- At the start of the season;
- Each time you change your water source;
- At the beginning and end of each restriction period;
- At the end of the season.

The table below provides an example of how meter readings could be recorded and the data that may be useful. There should be a separate record sheet for each meter.

Table 5: Meter Reading Record					
Meter name/number:		Western Pumphouse			
⁴ Crop	Date	Meter Reading	Reason	⁵ Amount (ML)	⁶ Water Source
1	15 October	2017	start of season	-	A
1	1 December	2023	changing source	6	C
3	14 January	2026	restrictions starting on C	3	B
	Total			9	

⁴ From the Water Budget in Factsheet 2: Planning Your Water Use

⁵ This must be in ML, and as different meters may have different readings this may require a calculation

⁶ From the Water Budget in Factsheet 2: Planning Your Water Use

Other situations that meters may be read and recorded include:

- Tracking of any unlicensed water that may go through the meter (eg Stock and Domestic);
- Recording of internal movements of water passing through the same meter to ensure that the same water is not accounted for twice;
- Anything else that may be used to explain how water was used.

3. Recording water use from pumping rates

Whilst this is not a preferred option by DPIPWE due to the level of variability in systems and a large margin for error, under certain circumstances you may be able to determine your water use from pumping hours.

To use this method, you will need to know the capacity of your pump, be operating a fixed irrigation system and regularly check your flow rate. Even then, there are generally inconsistencies in flow rates in many systems that make this system difficult.

This method would require readings to be taken at every irrigation with each pump having its own record sheet. The table below provides an example that may be useful.

Table 6: Pumping Hours Record							
Meter name/number:		Western Pumphouse					
⁷ Crop	Date	Start Time	Finish Time	Pumping time (hours)	⁸ Pumping rate (litres/sec)	⁹ Amount (ML)	¹⁰ Water Source
1	15 October	20:00	07:00	11	90	3.6	A
2	17 October	20:00	04:00	8	90	2.6	A
1	1 December	21:00	07:00	10	90	3.2	B
3	14 January	20:00	07:00	11	90	3.6	C
Total							

⁷ From the Water Budget in Factsheet 2: Planning Your Water Use

⁸ Pumping rates can be determined from Pump Curves, which should be supplied with your pump. Contact your irrigation supplier for more information.

⁹ This is calculated using the following formula:

$$\text{Amount (ML)} = \text{pump rate (litres/sec)} \times 3600 \times \text{pump hours} / 1\,000\,000$$

If you are operating a fixed system, you may have already calculated your output at ML/hour so this will simplify any calculations you need to make.

Template 4: Irrigation Water Used Record			Season Date:		
¹ Crop	Date	Amount (mm/ha)	Area (ha)	² Total ML	³ Water Source
	Total				

¹ From the Water Budget in Factsheet 2: Planning Your Water Use
² A 100mm of water applied on one hectare of land equals 1ML. So Total ML = Area (ha) x amount (mm/ha) / 100
³ From the Water Budget in Factsheet 2: Planning Your Water Use

