



SMARTCANE BMP REGISTRATION

Business Information

Business Name:	
Contact Name:	
Phone:	
Email:	
Address:	
Locality / Town / City:	
Post Code:	
State:	

Farm Information

Farm 1 Name:	
Farm 1 Lot Plans:	
Farm 2 Name:	
Farm 2 Lot Plans:	
Farm 3 Name:	
Farm 3 Lot Plans:	
Farm 4 Name:	
Farm 4 Lot Plans:	
Others:	

Irrigation and Drainage Management

Introduction

Irrigation is vital for crop production in many areas. For the Mareeba and Burdekin areas crops could not be grown without irrigation and in most of the other districts (excluding the Wet Tropics) irrigation is used to stabilise and improve yields.

Best practice irrigation management should aim to apply sufficient water for crop growth without applying excess water that is lost as either run-off or deep drainage.

Irrigation water is also the conduit for the movement of pesticides, nutrients and sediments off farm. A well designed and managed system that reduces run-off and captures it for reuse will substantially reduce the potential losses.

Irrigation requirements and practices will vary by region depending on local climate, water availability and the application method used. Not all of the following areas will be applicable to all irrigation farmers.

Key Area: Irrigation Scheduling

2.1.1 Calculating the amount of water to apply

Practices:

	<i>Below Industry Standard</i>	The water holding capacity of farm soils is not known. The volume of water being applied is not matched to the water holding capacity.
	<i>Industry Standard</i>	Water holding capacity of farm soils has been determined from soils maps or published data and irrigation application amounts are matched accordingly
	<i>Above Industry Standard</i>	Water holding capacity of farm soils has been measured and irrigation application amounts are matched accordingly
	NA	

Action Plans:

2.1.2 Calculating How Often To Apply Water

Practices:

	<i>Below Industry Standard</i>	Water is applied on a set cycle without regard to the amount of water used by the crop.
	<i>Industry Standard</i>	Water is applied to match crop demand based on simple crop growth monitoring or district evaporation figures and crop factors. Weather and climate forecasting is used when making irrigation decisions
	<i>Above Industry Standard</i>	Water is applied to match crop demand based on infield measurements with soil moisture monitoring equipment. Weather and climate forecasting is used when making irrigation decisions
	<i>NA</i>	

Action Plans:

2.1.3 Seasonal Allocation Management

Practices:

	<i>Below Industry Standard</i>	Irrigation water use is unplanned; allocation is kept 'just in case'
	<i>Industry Standard</i>	Historical rainfall data and climate forecasts are used to determine the best time to use irrigation water. The application time and the allocation is matched to cane growth stage
	<i>Above Industry Standard</i>	Crop water requirements are known and annual effective rainfall is understood so that a whole of season irrigation allocation is determined. If extra water is required leasing and temporary allocation transfers are investigated, though they may not be feasible to implement
	NA	

Action Plans:

Key Area: Managing runoff and deep drainage

2.2.1 Run-off And Deep Drainage Management

Practices:

	<i>Below Industry Standard</i>	No management of irrigation run-off or deep drainage is practiced.
	<i>Industry Standard</i>	Irrigation is managed to minimize run-off and deep drainage by matching application volumes to soil water deficit
	<i>Above Industry Standard</i>	Irrigation is managed to minimize run-off and deep drainage; run-off is captured in tail water systems and recycled on farm
	NA	

Action Plans:

2.2.2 Recycle Pits

Practices:

	<i>Below Industry Standard</i>	Pit capacity is too small and it cannot capture irrigation run-off; or Capacity is sufficient but the pumping capacity is too low; or Pit has been poorly sited and leaks or access the groundwater table
	<i>Industry Standard</i>	Pit has been designed to capture irrigation run-off and some rainfall run-off; and Pumping capacity is sufficient to re-use the water quickly; and The pit is well sited and does not leak or access the groundwater table
	NA	

Action Plans:

Key Area: Irrigation Water Quality and Using Recycled Effluent Water

2.3.1 Irrigation Water Quality Testing

Practices:

	<i>Below Industry Standard</i>	Irrigation water quality has not been tested for suitability as an irrigation source
	<i>Industry Standard</i>	Irrigation water quality has been tested. The results have been used to make decisions on the best management of that water e.g. application of ameliorants, mixing water supplies
	NA	

Action Plans:

2.3.2 Using Effluent Water For Irrigation

Practices:

	<i>Below Industry Standard</i>	Recycled water is used, but there is no knowledge of the regulatory requirements regarding its use.
	<i>Industry Standard</i>	The recycled water has been tested for nutrient and salt levels. A management plan that takes into account nutrients supplied by the water and aims to minimize the risk of salinity occurring has been developed. Irrigation is managed so that run-off does not occur
		Recycled water is appropriately signed and measures have been taken to control access to the water source
	<i>Above Industry Standard</i>	The recycled water has been tested for nutrient and salt levels. A management plan that takes into account nutrients supplied by the water and aims to minimize the risk of salinity occurring has been developed. An ongoing monitoring program has been put in place Tail water recycling has been implemented
	NA	

Action Plans:

Key Area: Irrigation System Management

2.4.1 System Management - Furrow

Practices:

	<i>Below Industry Standard</i>	Furrow <ul style="list-style-type: none">• row length and profile are not matched to soil type• inflow rate is too low or high leading to deep drainage or run-off
	<i>Industry Standard</i>	Furrow <ul style="list-style-type: none">• row length and profile are matched to soil type• inflow rate is managed to ensure soakage while minimising drainage and run-off losses
	<i>NA</i>	

Action Plans:

2.4.2 System Management - Overhead high pressure

Practices:

	<i>Below Industry Standard</i>	Overhead high pressure <ul style="list-style-type: none">• tow path spacing is too wide or narrow leading to poor application patterns – dry areas or excessive overlap• application rate is not matched to soil infiltration rate• irrigators are operated regardless of wind conditions• no check is made of the nozzle or application pattern
	<i>Industry Standard</i>	Overhead high pressure <ul style="list-style-type: none">• tow path spacing is matched to the machine and operating conditions• application rate is matched to soil type• irrigators are only operated in low wind conditions• nozzles are checked to ensure they aren't worn and are operating correctly
	NA	

Action Plans:

System Management - Overhead low pressure

Practices:

	<i>Below Industry Standard</i>	Overhead low pressure <ul style="list-style-type: none">• end of pivot instantaneous application rate exceeds soil infiltration rate• application rate is not matched to soil infiltration rate• sprinklers are never checked
	<i>Industry Standard</i>	Overhead low pressure <ul style="list-style-type: none">• end of pivot instantaneous application rate does not exceed soil infiltration rate• application rate is matched to soil infiltration rate• sprinklers are regularly checked to see if they are operating correctly
	NA	

Action Plans:

System Management - Drip

Practices:

	<i>Below Industry Standard</i>	Drip <ul style="list-style-type: none">• emitter spacing and output are not matched to soil type or crop requirement• filtration system is inadequate
	<i>Industry Standard</i>	Drip <ul style="list-style-type: none">• emitter spacing and output are matched to soil type and crop requirement• filtration system is adequate
	NA	

Action Plans:

Key Area: Surface and Subsurface Drainage Design

Surface Drainage System Design

Practices:

	<i>Below Industry Standard</i>	The farm has no surface drainage system and water pools on farm; or Water drains too quickly and causes erosion and downstream flooding
	<i>Industry Standard</i>	A whole of farm (or area) drainage plan has been developed – water is removed from the farm within 72 hours (or as quickly as possible given local conditions) while minimising erosion and downstream flooding.
	<i>Above Industry Standard</i>	As above with a sediment retention basin to filter sediment and chemicals
	<i>NA</i>	

Action Plans:

Subsurface Drainage System Design

Practices:

	<i>Below Industry Standard</i>	No subsurface drainage has been installed even though high water tables or soakage areas are affecting yield
	<i>Industry Standard</i>	A drainage system that removes excess water from the root zone has been implemented. Acid sulphate soils should be considered. Saline drainage water is disposed of appropriately
	NA	

Action Plans:

Key Area: Erosion Management

Erosion management

Practices:

	<i>Below Industry Standard</i>	Headlands and drains are sprayed out or cultivated No wet season fallow cover
	<i>Industry Standard</i>	Grass is maintained on headlands and drains Cover is maintained on fallow ground
	<i>Above Industry Standard</i>	Grass is maintained on headlands and drains Cover is maintained on fallow ground Sediment traps have been constructed and used
	NA	

Action Plans: