

# The purpose of these Guidelines

Guideline No 2.



- *The groundwater system in the South East is a very valuable resource and sustains many productive and profitable industries. It is therefore important to minimise the impact that industries such as the dairy industry may place upon it.*
- *A study on nitrate pollution in groundwater, in relation to land use, was conducted in 1998. The results indicated that land used for dairying recorded the highest maximum level of Nitrates; almost double that of urban areas.*
- *The South East Dairy Effluent Guidelines aim to provide dairy farmers with information so that they can select and implement an effluent system best suited to their circumstances.*

## Preserving a Precious Resource

The groundwater resource in the South East of South Australia is very valuable. In a large part of this area the water is of a high quality, suitable for human consumption. Over much of the remainder of the South East the water quality is suitable for agricultural uses such as stock water, irrigation, or for other industrial uses. To achieve sustainable development, the quality of the groundwater must be maintained so that its potential use is not jeopardised. However, due to the high water tables, the shallow, permeable soils and the extremely porous limestone containing the groundwater in this region, the potential for degradation of the groundwater is high.

Several studies have indicated that there is already extensive contamination of the groundwater in the South East from nitrates, some of which are derived from animal wastes such as faeces and urine. This indicates that some current agricultural practices are resulting in the contamination of groundwater with nitrates. One of the long-term aims of sustainable water resource management is the development and adoption of better management practices by rural industries so that groundwater pollution is prevented.

**The cost of cleaning up contaminated groundwater, even if this is possible, far exceeds the cost of implementing pollution prevention measures.**

## The Evidence is in the Water

The dairy industry is a major contributor to the economy in the South East but past and current management practices from some dairies have resulted in pollution of the groundwater.

A survey of dairy water supply bores carried out in the region in late 1994 showed that about half the bores carry some evidence of nitrate contamination, and about 30% of the bores had nitrate levels which exceeded the drinking water guidelines set by the National Health and Medical Research Council.



A study determining nitrate pollution of groundwater in relation to land use was conducted in 1998. This study showed that land used for irrigated dairy production, urban areas, viticulture and market gardens were associated with the highest levels of nitrate-N in groundwater. Within these land uses dairy showed the highest maximum level of nitrate-N, almost double that for urban areas.

The evidence suggests that current and past practices on many dairy farms are polluting the groundwater. These practices are no longer acceptable as they are not sustainable and are damaging a valuable resource.

It is illegal to pollute groundwater or surface water and measures must be taken by the dairy industry to ensure that its activities do not cause pollution. Individual farmers are responsible for preventing pollution on their properties and they may be liable for any pollution that may occur.

### **So what are these guidelines all about and how are they going to impact on me?**

The South East Dairy Effluent Guidelines are part of a program which has been set up to assist dairy farmers to decide on the most effective waste management system for their property and to implement management practices which will minimise the potential for groundwater pollution. They are an update of the first guidelines for the South East, which were released in 1995 and reflect the requirements of new legislation and codes of practice. The revised guidelines also contain new and up-to-date information on dairy shed waste management.

Dairy farmers in the South East must have an effluent/waste water management system installed at their dairies. Those dairies which fail to meet these requirements may have an environment protection order (EPO) placed on them to carry out certain works, or be prosecuted, depending on the pollution problems that they are causing.



**The dairy industry is a major contributor to the economy in the South East**

## Aims of South East Dairy Effluent Guidelines

The South East Guidelines are a tool to enable dairy producers to select, design and implement an effluent management system which is most suitable for their particular circumstances.

### Objectives

The principle objectives of these Guidelines are:

- To demonstrate the financial and environmental benefits of correct effluent management
- To indicate the minimum standards required to be met in order to minimise groundwater contamination
- To provide information on the advantages, disadvantages and labour requirements of different types of effluent management systems
- To provide the specifications and indicative costs for the components of effluent management systems
- To provide information on management strategies that can be used to minimise the workload required for good effluent management

The South East Dairy Effluent Guidelines concentrate on the management of dairy shed wastes. While it is recognised that there are other potential sources of groundwater pollution such as silage leachate, farm tracks, disposal of mortalities and intensive feeding or high intensity stocking practices they are beyond the scope of these guidelines. These guidelines will not address pollution arising from these sources.

### What support will I have to implement the Guidelines?

The South East Dairy Effluent Guidelines, together with newsletters, demonstration sites and field days seek to provide dairy farmers with sufficient information so that they can make decisions on which effluent management systems would best suit their particular circumstances. The final decisions on which choices to make lie with each individual farmer and the Guidelines should be used in conjunction with this other information to help make these decisions.

The Guidelines will provide information on a number of effluent management systems and the conditions to which they are most suited. If these systems are effectively installed and managed correctly, they should reduce the risk of pollution to water resources, and farmers should meet their obligations under the [Environment Protection \(Water Quality\) Policy 2003](#) and the [Code of Practice for Milking Shed Effluent 2003](#).

However, whichever system you install, there will be some time and effort required to operate and maintain the system. These Guidelines contain improved management practices that will help to reduce the time required to operate and maintain the system. These include reducing the amount of water used in washing down the yard and installing storage tanks so that effluent can be recycled. Good planning and design can considerably reduce the amount of time and effort required for effluent management.

The South East Dairy Effluent Guidelines have been prepared as a series of "fact sheets". This allows the most up-to-date information to be incorporated quickly and easily. Information is therefore easy to find and it allows relevant information from other sources in Australia to be included.

An Excel spreadsheet model has been produced to help dairy farmers calculate sustainable effluent spreading rates based on the balance of Nitrogen removed in produce with the nitrogen added in effluent. If you are unable to run the model you should contact the EPA in Mount Gambier, the SE Catchment Water Management Board or your Dairy Company Field Officer who will be able to run your data for you.