

# Department of Health

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## Environmental Health Practitioner Manual: A resource manual for Environmental Health Practitioners working with Aboriginal and Torres Strait Islander Communities

### 11 Sewage lagoons

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A **sewage lagoon** is a large pond into which the sewage or effluent from the sewage system flows. Sewage lagoons are also called **effluent ponds**.

The sewage and effluent are broken down by germs in the lagoon. The sun and wind play an important role in the working of the lagoon. They provide light, warmth and oxygen to the water. This is necessary for the growth of the bacteria in the water.

The light, warmth and oxygen also aid the growth of algae in the water. The algae give the lagoon its greenish flecked colour. The algae helps the bacteria to break down the sewage and effluent.

The wind helps with the evaporation of the water and serves to get oxygen into the water. It also creates waves which help stop insects from breeding and living in the water. Disease-causing mosquitoes, for example, need still water to breed.

For a lagoon to be able to break down the sewage or effluent properly and to be a healthy place it must meet the following requirements:

- It must not be more than 1 m deep
- The banks need to be sloped at approximately 15 to 20 degrees and made of concrete, gravel or rock. This stops the wave action from eroding (breaking down) the banks
- There must be no grass, trees or other vegetation on the banks or surrounding area which would stop the sun and wind action needed by the lagoon
- The water must be free of vegetation or objects which stop the lagoon's surface wave action or create still patches
- It must be surrounded by a high fence with a lockable gate to keep children and animals out

#### 11.1 Lagoon overflows

Where there is only one lagoon in the sewage disposal system, it will have an **overflow** situated directly opposite where the pipe carrying the sewage or effluent enters the lagoon. If there is more than one lagoon in the system, the overflow will be in the last lagoon.

The overflow releases water from the lagoon system which has not been removed by evaporation. New lagoon systems are required to be designed so disposal occurs by evaporation only. They should not rely on overflow, except during very heavy rainfall periods. However, where an existing lagoon system uses an overflow method, the overflow should not create a flooded or swampy area suitable for mosquito breeding, or where it may contaminate drinking water or the environment.



Fig. 2.41: This is how the overflow from sewage lagoon contaminates the community drinking water supply. This is the wrong way.

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## 11.2 Lagoon maintenance

Lagoons which are not working properly or are poorly maintained or damaged may be dangerous to health. Signs of a lagoon which is not working properly are heavy overflow, mosquito breeding or a bad smell.

Signs of a lagoon which is poorly maintained or damaged include broken fences and gates, trees, shrubs or grass on the banks, grass growing and other objects in the water causing still patches.

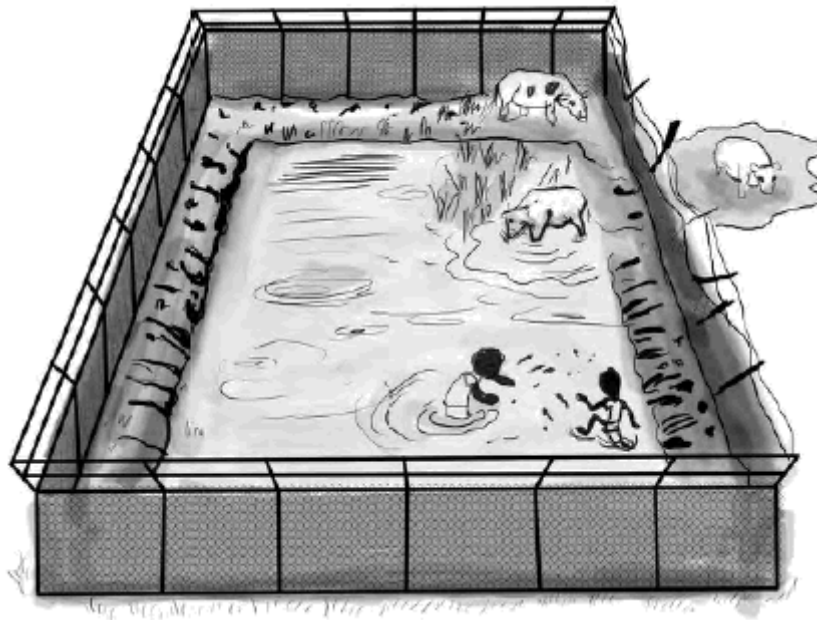


Fig. 2.42: Unsafe sewage lagoon.

To be properly maintained the lagoon should be checked frequently and any problems reported to the authority responsible for providing the maintenance.

It is important to report any of the following:

- eroded or broken lagoon banks
- lagoon banks which are not angled at 15-20 degrees
- trees and/or other vegetation growing in the lagoon, on its banks or in the area around the lagoon
- bad smells given off by the lagoon
- water which is not a light, flecked green colour
- still areas on the surface of the lagoon
- signs of mosquitoes breeding in the water
- damaged fences or gates that cannot be locked properly to keep out animals and children
- rubbish in the water
- a swampy situation near the lagoon (possibly caused by the overflow) which could provide mosquito breeding areas
- grass on the banks of lagoons, particularly growing at the edge of water, which can provide ideal mosquito breeding areas

Fig. 2.43: Properly maintained lagoon.

