

## Introduction

From time to time, a Tanker Operator may wish to clean or disinfect a water tanker and its delivery lines. This may be for such reasons that the tanker has been used to carry another product, the tanker has become odorous, there is concern about growth of biofilm in the tanker (including lines and fittings) or there is concern about the build up of solids in the tanker.

## Disinfection

Sodium hypochlorite (pool chlorine) is a reasonably effective and economical disinfectant but like all disinfectants it must come in contact with pathogens before it can inactivate them. Furthermore, the contact time required to kill organisms varies greatly, with protozoans such as Giardia being amongst the most resistant. Cryptosporidium cysts are difficult to inactivate, at a level of 15 mg/L free chlorine, it would take about 12 hours to adequately disinfect the tank.

Because the disinfecting material must contact the pathogen, the presence of solid residues can shield organisms from the disinfectant. To minimise this, the operator should attempt to dislodge solids by pressure flushing before applying the disinfectant.

When the solids have been removed apply the disinfectant to the tank and delivery lines. There are many combinations of dose and detention time that could prove effective and it is difficult to be specific.

Nevertheless as a guide, about 600mls of pool chlorine into a 5000L tank would be a dose of about 15 mg/L. For better mixing, the chlorine should be added first. If left overnight, this dose should provide a reasonable level of disinfection. One way to check if enough chlorine has been added would be to check for a residual after say 1 hour. A pool chlorine kit is suitable for this task. If the DPD #1 tablet (as used in pools) yields a pink colour, then active chlorine is present. If no pink colour appears, this indicates the chlorine that was dosed has been used up. A problem occurs if chlorine has been heavily dosed. In such cases, the DPD tablet will momentarily turn pink before quickly turning colourless. This indicates excessive chlorine is present. Diluting the sample with un-chlorinated water will enable a calculation of the actual level present.

## Conversion to potable water carrying

Unitywater does not support the conversion of recycled water tankers back to potable water for domestic purposes. However, the registration and regulation of potable water carriers is the responsibility of the relevant Council in your business area.

Council licenses domestic water carriers under the Food Hygiene Regulation to ensure that water trucks are suitable to carry water for public consumption. As water is classed as a food under the Food Act, water carriers are bound by the same duty of care to protect the health of the public as are operators of any other food business.

In order for both Council and the Tanker Operator to display due diligence in the conversion process, a series of tests would have to be undertaken. Tests for the presence of viruses, bacteria and protozoans would be required. These tests can be expensive and the cost would be borne by the tanker owner.

Furthermore, these tests are likely to involve surrogate organisms where the absence of the test organisms (say a virus) is meant to infer that all strains of virus are absent. Although this is likely, it is not certain. Also, one-off tests may not pick up contamination existing in crevasses of the tank or delivery system.

## Disposal

The disposal of solids and super chlorinated water needs consideration. Under no circumstance should such material be discharged to the stormwater system. The volumes involved in tanker operations would normally be suitable for discharge to the sewer system. If access to the system is not available, the truck should be cleaned in a wash bay designed for such a purpose.