

# SALINE WASTE INFORMATION SHEET.

## WHAT IS SALINE WASTE?

Saline or brine waste is a waste stream containing salts. It is actually a concentrated watery solution, typically containing 1-6% of dissolved low value salts (NaCl), emanating from the Reverse Osmosis or wastewater treatment process from the industries.

## WHERE IS SALINE WASTE/BRINE GENERATED FROM?

In a study conducted by the Water Research Commission on the production of saline waste in 2009 showed that the major producers of saline waste were:

- Mining sector (33.1%),
- Petroleum (28.4%),
- Power generation (15%),
- Paper & pulp (7.6%) and
- Steel/metals processing industries (6.8%) releases approximately 90.1% of the inland salt load.

Using the data provided in the Water Research Commission Report (Van der Merwe et al, 2009) it is estimated that the saline waste production for 2014 was 4 968 745 tonnes/year.



## WHY IS SALINE WASTE/BRINE A PROBLEM IN LANDFILLS?

Saline waste affects the integrity of the landfill liners. There is evidence regarding the effect of these salts on the physical and mechanical properties of clay barriers which could affect the long-term performance of landfill liners. One of the major problems facing the industrial world today is the contamination of soil, ground water, surface water and air. The potential impact on environment should a landfill liner fail is enormous and the Department of Environmental Affairs took a decision to reduce this risk.

## SALINE WASTE DISPOSAL RESTRICTIONS

The Waste Classification and Management Regulations of 2013, restrict the disposal of brine or waste with a high salt content (TDS $\geq$ 5%) and a leachable concentration for TDS of more than 100 000mg/l to landfill in August 2021

## Disposal of Saline waste to landfills

In a survey conducted by the Department in 2014, it was calculated that only 0.45% of the 5 million tons of saline waste produced in South Africa is going to the landfills. This showed that the major producers of saline waste do not take it to landfill but opt to invest in their own saline waste management facilities such as lagoons, evaporation ponds and marine outfalls



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