

IMPACTS OF WASTEWATER TREATMENT WORKS ON WATER RESOURCES



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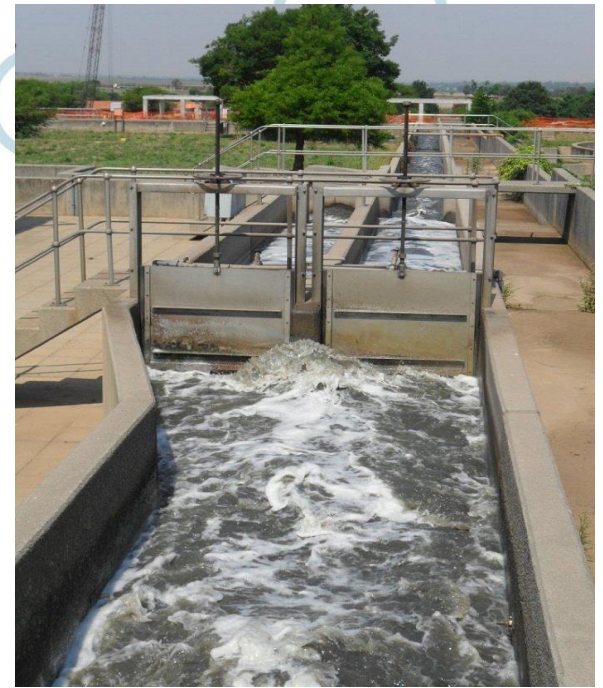
Introduction

- Fresh water is a common pool natural resource for which everyone is responsible.
- Highly delicate and vulnerable to pollution and contamination.
- South Africa is considered to be a water scarce country.
- The scarce fresh water is decreasing in quality because of an increase in pollution and the destruction of river catchments.
- Wastewater treatment works amongst the major contributors.



WWTW and pollution

- Municipal raw water or treated effluent is discharged from specific point-sources.
- Channeled into the receiving waters such as streams, rivers, lakes, ponds and ground water.
- Poor operation and maintenance of wastewater and sewage treatment infrastructure a cause for concern.
- This problem contributes to the pollution of water resources.
- Subsequently has a direct impact on human health and the environment.



Example of pollutants from WWTW

- Most homes and businesses send their wastewater to a treatment plant where many pollutants are removed from the water.

Types of pollutants may include

- Pathogens
- Organic and inorganic pollutants,
- Microplastics
- Oil, and grease etc.

Impacts of WWTW

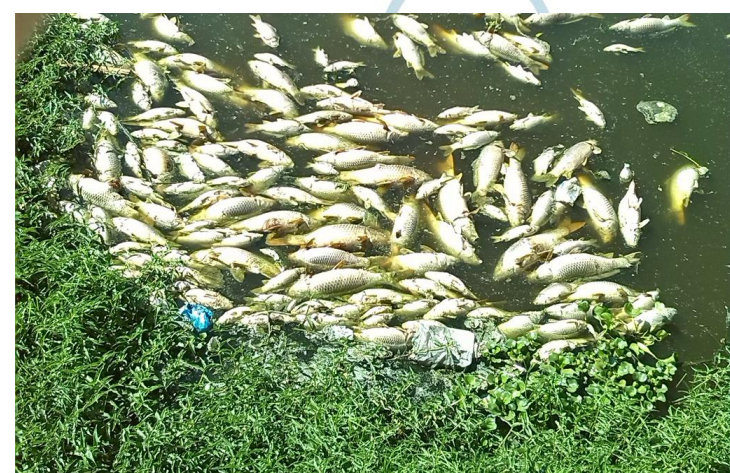
- Alter water quality

- ❖ Physico-chemical

dissolved oxygen; electrical conductivity; pH;
chemical oxygen demand; dissolved/suspended solids;
turbidity; ammonia; chlorides; nitrites and nitrates.

- ❖ Biological

Microbial (e.g. *E. coli*), aquatic fauna and flora.



The South African Water Quality Guidelines (TWQGR)

- A target range for water quality set by the Department of Water Affairs, responding to increasing deterioration of South Africa`s water resources.
- Principle - receiving waters have a capacity to assimilate pollution up to a point.
- Excessive discharge of undesirable substances breach the natural assimilative capacity of rivers.
- TWQGR provides for the acceptable level or range at which a substance may be found in water so as not to compromise the water quality.
- The TWQGR applies to water use for irrigation; livestock watering; domestic use; aquatic ecosystems; industrial and recreational use.

What can be done

- Most of South Africa's WWTW treatment facilities are ineffective.
- Due to poor management and maintenance.
- A need to INVEST in WWT infrastructure.
- Proper maintenance.
- Proper contingency plans.

This will help in reducing the stress on water resources.

Concluding remarks

- Poorly manage WWTW play a huge role in deteriorating water quality of freshwater resources.
- Improvement on management and maintenance may better the situation.
- We are all responsible.

Together we can !



THANK
YOU