

Dumping of Highly Polluting Waste in Sources of Water: Impact on Rivers and Possible Solution

Universidad Tecnológica Nacional – Facultad Regional Paraná



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English II - 2023

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Introduction - Contextualization



Water pollution threatens people's lives in the Argentinian context.

Introduction – Global Framework of Reference

Clean Water and Sanitation for All

6 CLEAN WATER AND SANITATION



Principal causes of water pollution

- Trash



- Hazardous chemicals



Introduction - Purpose of this Presentation

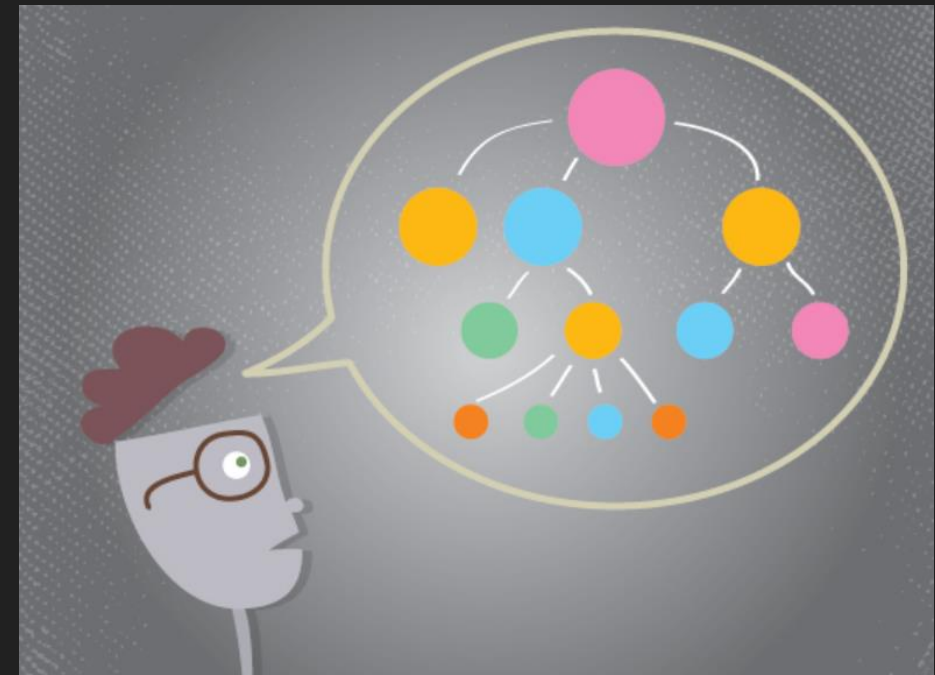
This project aims to:

- reduce pollution;
- eliminate dumping;
- minimize release of hazardous chemicals and materials into the water.



Introduction – Map of the Presentation

1. Determination of the predominant waste in the river
 - Phosphate
2. Presentation of solutions to reduce this waste
 - Biological Phosphorus Removal
 - Phosphate Chemical Precipitation
3. Advantages and disadvantages of the proposed methods



Introduction – Impact of this Project:

It is expected that this project may:

- generate a positive impact on the environment and aquatic life;
- contribute to the achievement of SDG6.



Problem Description – Phosphate Origin

Phosphate comes from:

- Industries that use phosphate for the fertilization of the soil and the care of their production.
- Fertilizers removed from the soil by rainwater or wind.
- Humans and animal excretions.
- Cleaning products.



Problem Description – Contamination caused by Phosphate



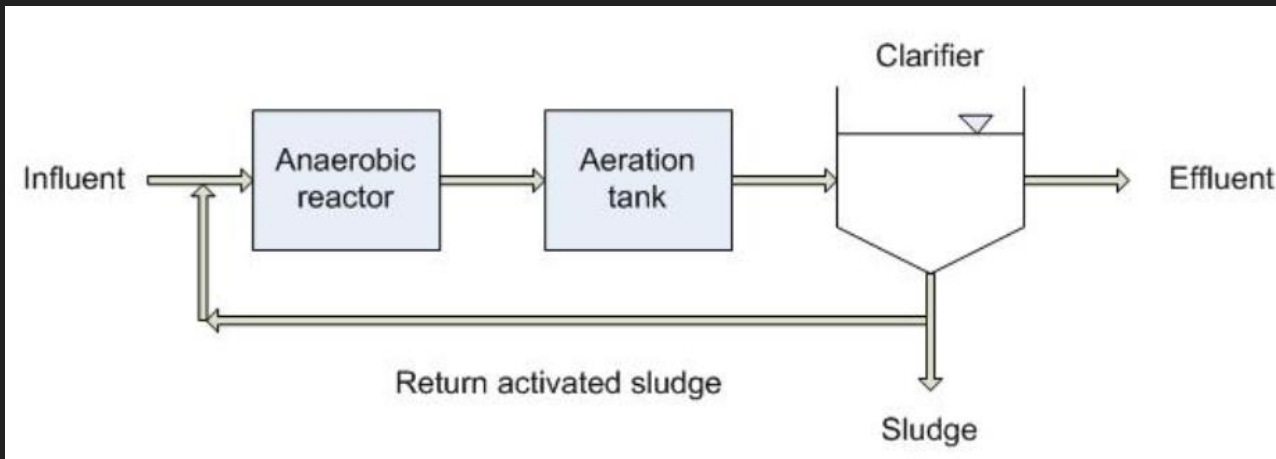
Death of fish due to phosphate concentration



Creation of algae due to phosphate concentration

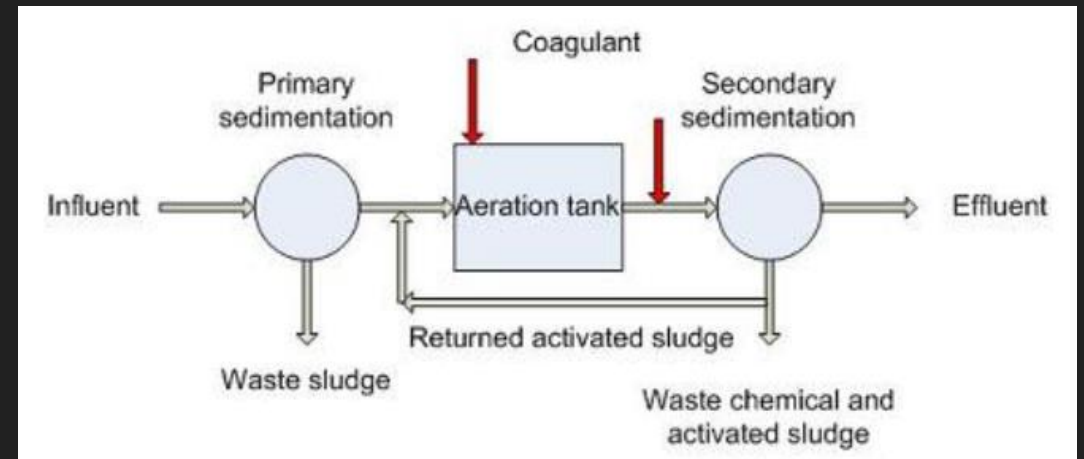
Problem Approach – Solution Processes

Biological Phosphorous Removal



This process is carried out by establishing a chemical relation of oxygen at the inlet of the aeration tank.

Phosphate Chemical Precipitation



It consists in adding precipitants such as iron or aluminum salts and lime slurry.

Advantages and Disadvantages – Comparison

Phosphate Chemical Precipitation

1. High prices
2. Low sustainability
3. Best effectiveness

Biological Phosphorus Removal

1. Low prices
2. High sustainability
3. Worse effectiveness

Conclusion

Some aspects should be highlighted:

- The importance of eliminating phosphate
- The active participation of governments
- The environmental education and technology investments

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Thank you for your attention.

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