

Waste Water Treatment in Refineries

Consultant / Trainer

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The **Petrogenium Waste Water Treatment in Refineries** course will give the participants a basic introduction to the waste water treatment process from sewer lay-out till discharge. The basic building blocks which make up a WWTP will be discussed in detail including process selection, design criteria, operating windows, process control, trouble shooting and reuse of effluent. After finishing the training, you will be able to solve operational problems in the waste water treatment. Also you will be skilled enough to discuss design and operational changes with outside firms specialized in water treatment.



Participants

This **Petrogenium.** course aims at improving competencies of operators, process engineers, utilities engineers and all others involved with the waste water treatment at the refinery. It is also possible to benefit from an exclusive technical services arrangement from Petrogenium after the training. Participants can be from diverse spectrum of both young and experienced engineers. The training includes both theoretical and case studies. The training can also be structured to address specific issues faced by a particular refinery / operating unit.



Learning Objectives

Understanding of waste water treatment in the refinery, enabling further optimization and trouble shooting:

- Distribution of Sewage and Effluent
- The separation of oil, water and solids also known as primary treatment.
- The biological or secondary treatment of waste water, including strategies needed for treating water with high nitrogen, sulfur and phosphate levels.
- Clarification of both sludges and biotreater effluent.
- Treatment methods for specific pollutants which are not in compliance with the permit after biotreatment, also known as tertiary treatment.
- Management of biosludge including dewatering and drying.

Programme

DAY 1

Basic Water Chemistry

- The composition of water
- COD, BOD and TOC
- The interpretation of analytical reports

Primary Water Treatment and Oil-Water Separation

- Oil Water Separators: API, CPI
- Flocculation and Flotation: mechanism, chemicals and process control
- DGF, IGF and DAF units
- Design exercise
- Trouble Shooting

Filtration

- Sand Filters and Mixed Media Filters
- Self Cleaning Filters
- Membrane technologies: Ultrafiltration

DAY 2

Biological Waste Water Treatment

- Introduction in biochemistry
- Aerobic Treatment
- Nitrification/Denitrification
- Sequential Bio Reactor
- Membrane Bio Reactor
- Design exercise
- Trouble Shooting

Tertiary Treatment

- Priority Substances
- Metal Removal
- Advanced Oxidation
- Reverse Osmosis

Sludge handling

- Deactivation and water content
- Slurry pumps
- Decanters
- Thermal drying

Water Reuse

- Critical factors for reuse
- Water master planning and Strategy

Why select Petrogenium.?

The above support will be provided by principal consultants with 30+ years world-class experience in the technology and hands-on know-how from operation of refinery units.

Contact Petrogenium.:

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Because Experience Matters