



## AT A GLANCE

### Location:

Sana'a, Yemen

### Water treatment plant:

Civil waste water treatment plant (WWTP)

### Raw water source:

Concentrated civil waste water drawn directly from septic systems and transported in trucks to the treatment plant.

The average specific BOD at inlet: 1500 mg/l

### Treated water quality:

Safe to be reused for garden irrigation, street cleaning or vehicle washing for example.

BOD5: <50 mg/l

### Capacity:

#### Flow rate:

- 500 m<sup>3</sup>/day
- 21 m<sup>3</sup>/hour, average
- 50 m<sup>3</sup>/hour, maximum

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## WASTE WATER TREATMENT AND REUSE IN YEMEN

With strategic partners, Euro Mec has designed and built, and is now managing, a waste water treatment plant serving a residential area in the city of Sana'a, Yemen.

This project is particularly unique because of the highly concentrated civil waste water which is transported by road to the plant in cisterns filled directly from septic systems in the city. This important factor means that the waste water at the inlet of the treatment plant has a very high organic load (measured in BOD) demanding specific treatment processes, equipment and customized plant configuration.

Furthermore, the treatment has been designed to guarantee the outlet water quality to a level that it is safe to be reused for garden irrigation and street cleaning for example and in fact this is where the water is delivered after being transported away from the WWTP in trucks.

This WWTP treats a daily flow rate of 500 m<sup>3</sup>/day and includes the following processes: fine screening, oil and sand separation, pre-denitrification, biological oxidation-nitrification, final sedimentation, disinfection, sand pressure filtration, sludge recirculation, sludge thickening and sludge dewatering.

Ongoing monitoring of the outlet water quality and professional management of the plant is essential. To this end Euro Mec has been contracted by the client for the first year of management in which time local operators are also receiving valuable on the job training. These aspects are fundamental to the smooth operation and sustainability of any water treatment project.

*The photos show different views of the finished WWTP in operation (top and below left) and an oxidation tank being filled for the first time during the start-up phase (right).*

