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GEOTECHNICAL SOLUTIONS

# Sludge dredging and dewatering at WWTPs - Geotube® refilling

Case Study



- ◆ **Client** – Zikim WWTP, Thuvot WWTP
- ◆ **Execution** – Admir Environmen Ltd., 2014-2015



## The challenge:

Sludge accumulation at the bottom of ponds and reservoirs is a well-known issue at wastewater treatment plants. Leftover sludge that hasn't been removed during treatments ends up settling, creating operational and maintenance problems, and significantly affecting the quality of the treated wastewater (TWW) leaving the WWTP. Often, tertiary TWW treatment becomes impossible due to sand filters being clogged by sludge that mixed into the TWW.

Removing the sludge allows to restore previous conditions while improving water quality and cutting operational costs.



## Results:

- As per requirements, the job was carried out during the facility's normal operations.
- About 3,000m<sup>3</sup> of sludge were pumped from the bottom of the ponds.
- Pumping out the sludge caused significant improvement to the TWW quality in the pond, which thus allowed for efficient use of the sand filters.
- The sludge volume in the Geotubes was reduced due to dewatering.
- The project was achieved at a low cost thanks to reusing the existing Geotubes and not needing an additional spill containment system.



## The solution:

**Cleaning the ponds by pumping out the sludge buildup from the bottom, and dewatering it to reduce the volume of sludge for removal. The pond cleanup was done combining two technologies proposed by Admir:**

- 1. Pumping out the sludge using a dredger**
- 2. Sludge dewatering using Geotube®**

Two years earlier, a similar project was done involving sludge dewatering with Geotubes. Since the volume of the existing Geotubes decreased due to the dewatering, it was decided to reuse them and pump in additional sludge.

It was agreed that, if there is still sludge in the reservoir after refilling the existing Geotubes, additional Geotubes would be provided, to be placed as a second story over the existing Geotubes in order to complete the project. The use of preexisting infrastructures from the old project enabled to avoid new purchasing and significantly save on projects costs.





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