

CASE STUDY

KRECHBA LIVING BASE (W.GHARDAÏA)

2017

Distributor	Envirostep SARL
Project	Completion of a wastewater treatment plant in the desert that collects the treated water to be reused.
Treatment Capacity	40,000 L/day
Soil Analysis	Very Permeable
System Surface Area	1,374.8 m²
On-Site Completion Time	20 days
Particularities of the Site	<p>The installation is located in the Sahara desert, where temperatures regularly reach upwards of 40°C.</p> <p>Thanks to the installation of a watertight system, all of the treated water is recovered and reused.</p> <p>Treatment results available upon request.</p>



Preparing the site

BACKGROUND

This is a base camp in the Sahara desert where the workers of the Krechba gas facility live full-time while they work. The camp's living arrangements contain cafeterias, showers as well as bathrooms. All of the wastewater is treated and recovered to be reused for irrigation.



PRIMARY TREATMENT

The System O)) is preceded by a primary treatment. Raw wastewater is collected in a 150,000 L septic tank made out of reinforced concrete. Inside the septic tank, the wastewater separates into layers as the fats float to the top and the solids sink to the bottom of the tank.

DISTRIBUTION

The septic tank effluent flows into a pumping station where it is then pumped into the System O)). The proper functioning of the System O)) depends on a uniform distribution of wastewater between the Advanced Enviro))Septic pipe rows. This is achieved with our Low Pressure Repartition System. This pressurized system ensures that all of the rows of pipes are evenly supplied with wastewater with less than a 2% difference between the rows.



Covering the pipes with filter sand



ADVANCED SECONDARY TREATMENT

This watertight System O)) uses six cells of 28 rows of three parallel Advanced Enviro))Septic pipes. The wastewater flows along the length of the rows where it is treated by bacteria living in the pipes and in the filter sand during the infiltration process

RECOVERY OF TREATED WATER

Underneath the System O)), there is a watertight membrane and a network of collection pipes. All of the water that is treated by the System O)) is recuperated by this network and directed towards a pumping station where it is then pumped into a recovered water holding tank.



SYSTEM FEATURES AND BENEFITS

- All wastewater at the site is treated passively,
- No maintenance is required,
- No energy is spent on wastewater treatment,
- No products are required for wastewater treatment,
- Wastewater odours cannot develop,
- The treated water is perfectly clear and free of pollution.



ECONOMIC ADVANTAGES

By using a System O)), the client saves money in the long term. A System O)) costs roughly the same as a conventional system, but has a lifespan of over 30 years. Conventional installations can start to fail after 15 years even if they are treated well. The System O)) doesn't require maintenance and there isn't any filter media to replace or parts that can break. This system allows the client to treat the massive quantity of wastewater that is produced every-day without having to worry that something will break. By using a Watertight System O)), the client saves money on irrigation. Irrigating one hectare of green space with 1 inch of water costs roughly US\$17.



ENVIRONMENTAL ADVANTAGES

In the Sahara desert, potable water is a limited and very important commodity. By installing a watertight System O)) with a recovery zone, the company is helping protect this extremely valuable resource.

Purification performance well below the country's standards:

- Less than 35mg/L of BOD5 (5-day biochemical oxygen demand)
- Less than 35mg/L of suspended solids (SS)

The treatment process of a conventional installation occurs in the native soil, while System O)) treats the wastewater within the system, protecting the native soil.



Completed System O))