

Municipal Drinking Water Iron Removal

Société Nationale de Distribution et d'Exploitation des Eaux (SONEDE), Tunisia

How we created value

- Ovivo's team in North Africa commissioned, designed and supplied five water treatment stations in just seven months.
- SONEDE's iron removal water treatment capacity is now 250 liters per second.
- Ovivo technology is helping Tunisia treat clean well water and groundwater making it possible for Tunisia to maximize its use of the water resources available to it.



Ovivo helps Tunisian government combat iron contamination in its water supplies

Background

Small amounts of iron are often found in water when a large amount of iron is present in the soil and when water picks up iron from pipes. Water drawn from wells by faucet is usually clear and colorless. However, when water containing colorless, dissolved iron is allowed to stand in a cooking container or comes in contact with a sink or bathtub, the iron combines with oxygen from the air to form reddish-brown rust particles. These impurities can give a metallic taste to water or to food. Excessive iron in water can stain clothing. Furthermore, iron deposits can build up in pressure tanks, water heaters, and pipelines, reducing the quantity and pressure of the water supply.

Tunisia's Société Nationale de Distribution et d'Exploitation des Eaux (SONEDE) commissioned five iron removal stations. The design, detailed planning, erection and commissioning have been managed entirely by Ovivo's North Africa team.

Process

The secondary maximum contaminant level (MCL) for iron is 0.3 milligrams per liter (mg/l). Iron in excess of the suggested maximum contaminant level (MCL) usually results in discolored water and laundry. Because iron can be present in water in several forms, each form requires a different method treatment for removal. Iron bacteria can be controlled by chlorination, retention and filtration. If activated carbon is used as the filter material, excess chlorine is removed with the iron. Ferric iron may be filtered from water if it sticks together to form large flakes. Colloidal iron particles, on the other hand repel one another. As a result a coagulating agent is often required to enable filtration. Most water containing ferric iron also contains ferrous iron. Water containing small quantities of ferrous iron can be treated by ion exchange. Larger quantities would require oxidation and filtration.

The mechanical equipment for the project, such as pumps, blowers and valves, was imported from Europe. Containers, sand filters vessels, electric panels, pipes etc

were manufactured locally according to the drawings and specifications of Ovivo's North African team. Erection and commissioning were overseen locally by Ovivo workers.

Performance

The project's deadlines were very tight but the local team completed the installation in just seven months. SONEDE now has the capacity to treat 50 liters of water per second.

As a result of this successful project SONEDE is able to clean well water and groundwater making it possible for Tunisia to maximize its use of the water resources available to it.

As a result of SONEDE's satisfaction with Ovivo's project management in this case, the company has gone on to tender successfully for the deployment of the Ghdir El Ghoulia drinking water treatment plant, its biggest project yet in the region.

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