Municipal Reuse

CHALLENGES

Minera del Norte – Cerro Del Mercado is an Iron ore mine in the north part of Mexico. Due the water scarcity in the region, usage of potable water was restricted and the mine was required to find an alternative water source for the production processes. Reuse of municipal wastewater of the nearby city was found as the most cost effective. Due to the fact the water are used for production. The WWTP had to produce a continuous flow of high quality water and therefore should be able to cope quickly with hydraulic shocks and toxins. Another challenge was the cost that had to be low enough to allow economical operation of the mine.

SOLUTION

A new WWTP based on Moving Bed Biofilm Reactor (MBBR) and Media clarifier technologies. The WWTP included two lines of two stage AGAR® MBBR followed by a Media Clarifier (MC). The media clarifier is a unique patented clarifying technology, developed especially for MBBR effluent. The MBBR effluent characteristics, containing mainly the sloughed-off biomass, are different in particle size distribution and biomass morphology compared to activated sludge. MC has several advantages as simple operation, small footprint and no need for chemicals for sedimentation. The installation works lasted for 11 months and included: earth works, biological reactors and media clarifiers, installation of equipment and introducing Aqwise Biomass Carriers and commissioning. The usage of fine-bubble diffusers (unique to Aqwise) enabled reduction of operational costs.

RESULTS

After a startup that lasted for 4 weeks, the AGAR® MBBR & MC produced a high quality effluent achieving more than 95% reduction of BOD and TSS levels. The system is being operated with no malfunctions and supplies 100% of the process water for the mine and enables its operation.

SUMMARY

The AGAR® MBBR WWTP produced new high quality water source which enabled the mine to continue operating economically. The AGAR® MBBR allows high and stable removal efficiency of organic loads and solids. In addition, it was proved that the MBBR is a stable process that can cope with toxic compounds and hydraulic shocks. In 30 months of operation the customer covers the investment costs of the plant and reduced the operational costs related to water consumption (700,000 US$/year). The usage of reused wastewater increased the availability of potable water and the sustainability of the local municipality.

- Durable & Flexible Process
- Low CAPEX/OPEX
- Sustainability
- Reduction of production costs

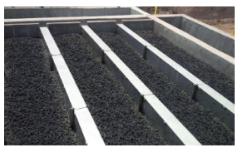
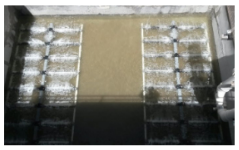
Client
Minera del Norte, Mexico

CASE STUDY
Industrial, New

Location
Durango, Mexico

CAPACITY
3,450 m3/d



Contact Us

Please fill-in the below form and we will contact you promptly:

Full Name | Phone | Email | Send >

Aqwise Clear and Simple