

MOLEAER BOOSTS DISSOLVED OXYGEN LEVELS AT SMALL MUNICIPAL TREATMENT SYSTEM

Wastewater Treatment Plant in Nevada (USA)

A small city in the Nevada desert, near the California border, treats its wastewater via two wastewater treatment plants operated by a private utility company. As with many small-city municipal plants that are decades old, there is a critical need for capital improvements. Larger populations, higher loadings and aging equipment combine to create challenging operating conditions. While it may sometimes be necessary, upgrading a plant's equipment is a very costly endeavor and many cities don't have the budget, manpower, or capacity to make major upgrades that would force operators to take the plants offline.

Client:	Nevada Municipal Wastewater Treatment Plant
Type:	Wastewater Treatment Sequence batch reactors & Aerobic digestion
Flow:	650,000 GPD
Capacity:	772,000 gallons
Unit Type:	200 XTB
Installed:	July 28, 2017



Aerial view of municipal wastewater treatment plant for a small city in the Nevada desert.



Aerobic digestion tanks at the city's municipal wastewater treatment plant

One of the treatment plants in this small Nevada desert city faced a particularly challenging issue; their aerobic digestion tanks are aerated with coarse bubble aeration. While coarse bubble aeration is good for mixing, it is inefficient at transferring oxygen. During the hot summer months when the digester tanks get very warm, they battle depressed dissolved oxygen (DO) levels that struggle to get above 0.5 ppm. Poor aerobic digestion placed a lot of stress on the plant's tertiary sludge removal process and forced them to overwork the equipment to create space for the incoming effluent.

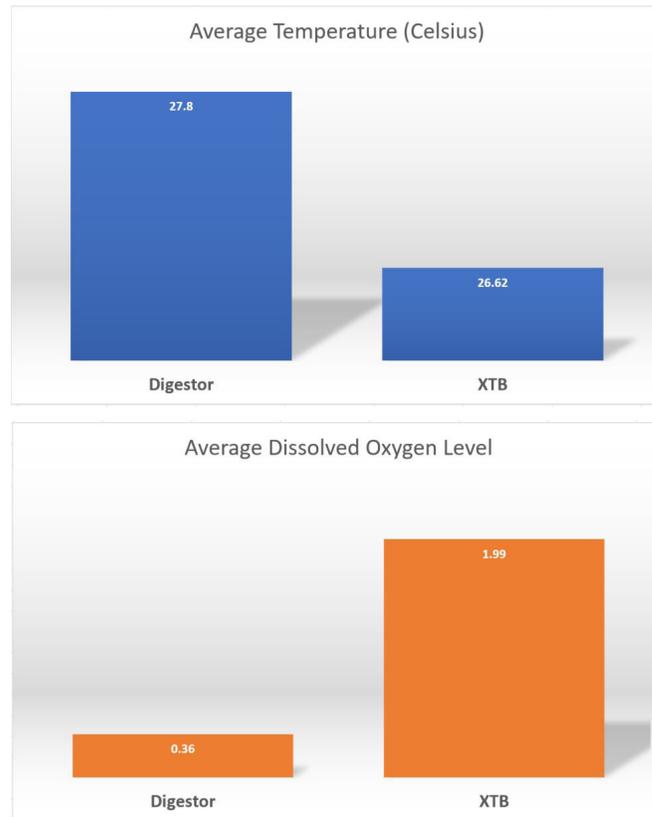
Moleaer's XTB Nanobubble Generator™ is the perfect solution for plants such as this. Regardless of the existing aeration system, the Moleaer XTB can deliver a supplemental oxygen source resulting in immediate improvement.

Nanobubbles present distinct advantages over micro bubbles - benefits that were clearly demonstrated at this small municipal treatment plant. The neutral buoyancy of nanobubbles, coupled with their excellent mixing potential, allows for stable oxygen transfer throughout the entire system, effectively elevating the DO levels in all the connected tanks. Higher and more stable oxygen levels allow plant operators to turn off their primary blowers for periods of time in order to reduce energy consumption and provide beneficial resting periods for the sludge. As a result, the plant's small

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5-HP unit which operates only 8 hours a day has been able to increase DO levels up to 8-times the normal range.

The following charts illustrate the difference in DO levels generated by the XTB in comparison to the aerobic sludge digester, taking into account changes in temperature throughout the day.



The Nevada installation demonstrates that Moleaer XTB Nanobubble Generators are highly effective supplemental aeration systems that can be retrofitted into a wide range of plants needing cost-effective improvements to existing aeration systems. Most importantly, installation is very simple - a single unit can be installed in less than two hours without disrupting the plant's operation.