

## MOLEAER™ NANOBUBBLES BRING CLARITY AND A BREATH OF FRESH AIR

City of Palm Springs, California

The city of Palm Springs, California, is famous for its warm weather and more than 100 meticulously designed golf courses. This desert paradise, located in the southwest corner of the United States, also boasts over 1,000 ponds, lakes and ornamental bodies of water. The responsibility for maintaining many of these ponds can be a daunting one - ensuring that they stay in pristine condition all year-round for the residents, club members and resort guests. Unfortunately, golf course ponds are prone to nutrient run-off which can create numerous challenges for maintenance companies.

<b>Client:</b>	Private pond maintenance company, Palm Springs (CA)
<b>Type:</b>	Ornamental/Golf Course Pond
<b>Volume:</b>	2 million gallons
<b>Unit Type:</b>	200 XTB™ w/submersible pump
<b>Installed:</b>	July 13, 2017

One such challenge was with a two-million gallon pond located on a private golf course. The clarity of the water was very poor and unpleasant odors emanated from certain areas of the pond as a result of insufficient circulation. The maintenance company was further challenged because the project's requirements excluded the use of conventional aerators for aesthetic reasons, and diffusers because of their localized effect and poor mixing capabilities. Other options, such as blowers equipped with diffusers, would also require extensive submerged piping systems that are both labor and capital intensive.



Moleaer's XTB Nanobubble Generator presented a cost-effective and simple-to-install solution to deliver a supplementary source of oxygen-enriched nanobubbles throughout the entire pond. Moleaer's nanobubbles are neutrally-buoyant, enabling them to remain in suspension and aerate the entire water column from top to bottom. Once installed at the Palm Springs golf pond, the XTB quickly delivered oxygen to all reaches of the pond and within the first week, the pond's water clarity improved dramatically and foul odors were eliminated. Below is a time table representing the pond's DO levels and depth of water clarity measured with a Secchi disk.

Date	Clarity Depth	DO level at surface	DO level at bottom	Average DO concentration
July 11, 2017	18 inches (0.46 meters)	7.0 mg/l	2.5 mg/l	3.5 ppm
July 13, 2017 - Moleaer XTB Nanobubble Generator is installed				
August 1, 2017	30 inches (0.76 meters)	6.9 mg/l	4.9 mg/l	Not measured
August 17, 2017*	>60 inches (1.52 meters)	6.0 mg/l	5.1 mg/l	5.6 ppm

\*After measurements were taken, the XTB Nanobubble Generator was turned off for a period of two weeks, during which the clarity depth rapidly dropped to 15 inches (0.38 meters). The XTB was turned on again after those two weeks and within one week, clarity depth increased to 24 inches (0.61 meters).

Both the maintenance company and the residents surrounding the two-million gallon golf pond have been extremely impressed with the dramatic improvement in water clarity after the installation of the Moleaer XTB. This simple-to-install nanobubble generator transfers gas with greater than 85% efficiency. And unlike conventional micro bubbles, Moleaer's unique nanobubbles stay in suspension long after saturation. This is especially critical in large ponds where foul odors can quickly develop without sufficient aeration and circulation.

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