

## Aerator/Mixer System Gives China WWTP Trouble-Free Performance

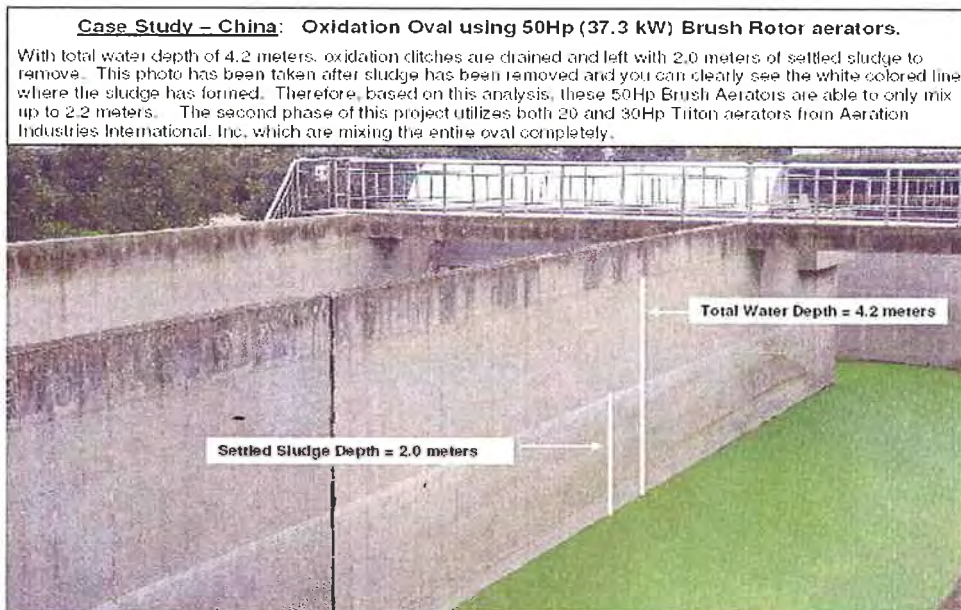
Aeration Industries International, Inc. is playing a key role in cleaning up water worldwide to help preserve the earth's most precious resource, water. When the Chinese city of Lin An planned an expansion to their oxidation oval system, officials were looking for a new type of aeration system that would offer process performance and trouble free operation. The company's AIRE-O<sub>2</sub> TRITON® process aerator/mixers were the ideal solution for the Lin An wastewater treatment facility.

Aeration Industries, a Minnesota-USA based company, is the world's largest manufacturer of aeration equipment and also offers a full-line of advanced process wastewater treatment systems.

The city of Lin An, in the Peoples Republic of China, is located about 50 kilometers west of Hangzhou, the capitol of Zhejiang Province. The city's wastewater treatment facility had been experiencing treatment process problems with its oxidation oval system. The flow into the ditch system is 40,000 m<sup>3</sup>/day. Influent BOD is 200 mg/l, TSS is 200 mg/l, and NH<sub>3</sub> is <30 mg/l. Phosphorus is < 3 mg/l.

The system used 50 hp (37.3 kW) Brush Rotor type aerators in the two ring ditches. The facility had process problems that included maintaining mixing velocities in the ditch to keep solids in suspension. Maintenance was a big problem and compounded the mixing inadequacies. The gears on the Brush Rotor type aerators had to be continually replaced. These aerators required expensive maintenance, downtime, and many manpower hours.

City officials decided to drain the ditches and remove any buildup sludge to improve performance capabilities. The total water depth of the ditch was 4.2 meters. After the ditch was drained, a huge amount of build up sludge was discovered and removed, 2.0 meters, almost have the depth of the ditch.



The sludge has blanket left a permanent stain in the ditch that can be seen in the photo [illustration above](#).

The Lin An officials expanded the plant to a three-ring design. The aeration system of choice was the AIRE-O<sub>2</sub> TRITON® process aerator/mixer system. The total number of units installed were 16 x 30 Hp (22 kW) and 16 x 20 Hp (15 kW) units.

The benefits of using the smaller sized aerator/mixers is it allows for “turn-down capability” whereby one or more units (aeration and mixing) can be turned entirely on or off to match BOD demand and flow fluctuations which improves process operation and minimizes operating costs such as electrical consumption. This also allows for nitrification (aeration and mixing) or denitrification (in the mixing only mode), a feature unavailable in the Brush Rotor system.



The Aire-O<sub>2</sub> Triton® aerators are bridge-mounted at Lin An for easy access.

The Aire-O<sub>2</sub> Triton® process aerator/mixers create a high velocity, horizontal mixing flow pattern for maximum treatment efficiency. The units are capable of mixing to 10 meters deep, oxygenating with fine bubble oxygen dispersion that keeps solids in suspension. This optimizes the treatment process and eliminates dead zones and sludge build up. And, the city is very pleased that the aerators require minimal maintenance. The Triton has a simple mechanical design, few wear components, and has no gear reducer.

The Lin An wastewater treatment facility is now a showcase site meeting its permit discharge limits. Effluent discharge BOD is <20 mg/l, TSS <20 mg/l, NH<sub>3</sub> is <15 mg/l. Phosphorus is < 0.5 mg/l.

The staff is very pleased with the new “worry-free” aeration system that allows them time for other duties at the facility.

### **Learn More about Aeration Industries at Trade Shows**

Aeration Industries International attends conference and trade shows worldwide year-round. This is an excellent opportunity for our staff to meet with you to learn more about your wastewater needs and offer a customized solution. Mr. Brian Cohen, Vice President of International, recently attended the Oz Water show in Sydney, Australia, March 4 – 8, 2007.

Upcoming shows Aeration Industries plans on attending are: Aqua Symposium, Nicaragua, from May 2-4, 2007; Puerto Rico Water and Environment Association, May 22-26, 2007; and Indo-Water, Jakarta, Indonesia – June 20 -22, 2007.

Aeration Industries at [www.aireo2.com](http://www.aireo2.com)

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