Algae Control in Cooling Ponds

- ✅ Monitor and control algal blooms effectively
- ✅ Comply with NPDES pH permit limitations
- ✅ Reduce pH, TSS, BOD and chemical usage

LG SONIC
Leading in ultrasonic algae control

Algae Control in Cooling Ponds

The MPC-Buoy is a floating, solar-powered system that combines real-time water quality monitoring and ultrasonic sound waves to control algae effectively.

- ✓ **Monitor and control algal blooms effectively**
- ✓ **Comply with NPDES pH permit limitations**
- ✓ **Reduce pH, TSS, BOD and chemical usage**

Control Algae with Ultrasound

Specific ultrasonic sound waves based on real-time water quality data can be used to control algae in cooling ponds.

MPC-Buoy installed in the water

Treatment range top view

500m / 1600ft

1000m / 3200ft
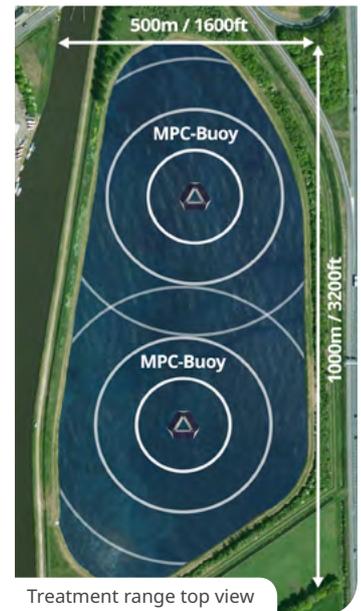
MPC-Buoy

MPC-Buoy

Each MPC-Buoy system has an ultrasonic treatment range
of 500m in diameter

How Ultrasound Targets Algae

Specific ultrasonic frequencies, waveforms and amplitudes can be utilised to directly target algae.

1. Ultrasound waves create a sound layer in the top layer of the water
2. The sound layer has a direct impact on the buoyancy of the algae
3. The algae cells sink to the bottom where they are unable to photosynthesize and eventually die due to a lack of light

LG Sonic products have been tested by various universities and are proven to be safe for fish, plants, zooplankton, and insects.


Ultrasound waves target the algae
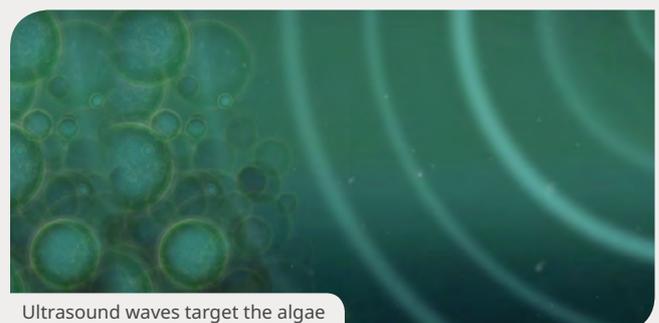
Learn more about ultrasound ⊕

LG Sonic Algae Control Products

MPC-Buoy

The MPC-Buoy is a solar-powered system that controls algae using sound waves. The solution is to anchor one or multiple systems that transmit specific ultrasonic parameters depending on the type of algae.

1 Specific ultrasonic parameters control algae up to 90%

2 Sensor package provides real-time insight in the water quality

3 The real-time water quality data is automatically transferred to online software

860mm

2540mm
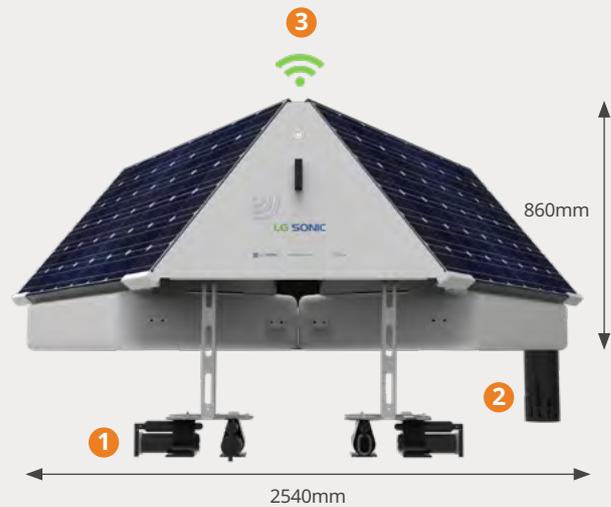
Learn more about the MPC-Buoy ➔

Real-time Water Quality Monitoring Software

Real-time water quality monitoring combined with web-based software allows to have a clear overview of the water quality in a drinking water reservoir.

✓ **Real-time insight in the water quality**

✓ **Data transfer through radio, GPRS, 3G**

✓ **Ultrasonic program based on received data**

The MPC-Buoy provides a complete overview of the water quality by collecting the following parameters every ten minutes: Chlorophyll α (green algae), Phycocyanin (blue-green algae), pH, Turbidity, Dissolved Oxygen, and Temperature.

Based on the received data an algorithm determines the most effective ultrasonic parameters.

The customer can visually monitor the water quality, progress of the treatment, and technical status of the devices

Learn more about water quality monitoring ➔

Case study: Algae Control in Nuclear Power Plant of Sellafield

The challenge

In 2015, the UK government has started a major clean-up of stored nuclear waste in Sellafield because of the bad condition of storage ponds. One of the main causes of bad conditions in the storage ponds was poor visibility in the water due to algae growth.

Key results

- ✅ **Improved water visibility**
- ✅ **Reduced blue-green algae count**
- ✅ **Lower chlorophyll levels**

"During late May and June 2018, the pond visibility had noticeably improved with significant reduction in blue-green algae and chlorophyll measured".

Technical Engineer, Sellafield

Download case study ⊕

At this moment LG Sonic is running MPC-Buoy projects in more than 20 countries worldwide

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