

Key Words: stormwater, blue-green algae, odors, filamentous algae



Photos: The aerial photo on the left indicates the locations of the two SB10000v12 units in the stormwater pond; the middle photo shows filamentous algae coverage in summer 2008; photo on right is from summer 2010 showing significant filamentous algae reductions.

Reservoir or Lake Use: This pond provides an aesthetic benefit for the customer's corporate headquarters on the north side of the pond. It is also a stormwater collection and retention pond.

System Overview and Reservoir: This stormwater pond is 13 surface acres. At its deepest point it measures 6 ft, and has an average depth of about 4 ft.

Reported Problem Before SolarBee Installation: Because of its shallowness and having high-nutrient stormwater runoff for source water, this pond had a history of blue-green algae (cyanobacteria) blooms that caused odors, as well as excessive filamentous algae growth that would cover much of the pond surface. The pond would often be stagnant, lacking sufficient circulation.

SolarBee Installation: Date: December 2007, installed two (2) SB10000v12 units in this pond.

Results: Since the SolarBees were installed in the stormwater pond, blue-green algae blooms and associated odors have been prevented. However, the combination of improved water clarity and the shallowness of the pond can create a favorable habitat for filamentous green algae to grow on bottom sediments, and eventually rise to the surface due to trapped metabolic gases. This scenario has been observed in other similar SolarBee installations during the first summer. This also happened in the customer's stormwater pond during the first summer (2008, see middle photo above). As also observed in other similar applications, enhanced sediment oxidation through SolarBee circulation has a negative effect on filamentous algal growth in the second and subsequent years after installation. By 2010, filamentous algae had been greatly reduced in this stormwater pond as well (see right hand photo above). No chemical treatments have been used since 2008, and complaints of unsightly algal blooms or noxious odors have also ended, which is very important as the pond directly faces corporate headquarters. They report the pond is now in "good shape", and they are very happy with the SolarBees and the significant improvements in pond ecology enhanced long-distance circulation has provide.

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