

# Medora Corporation

## Jordan Lake Demonstration Project

### 2014-2016



**Background.** Jordan Lake is a 13,900 acre reservoir near Raleigh NC. Since 2014 it has had very good water quality; about 13,000 acres has been meeting NC DEQ standards 100% of the time. And the remaining 900 acres, consisting of Morgan Creek, which is a 740 acre shallow area, and small parts of the Haw River inlet, have been meeting NC DEQ standards over 80% of the time.

**The SolarBee test authorization.** In 2013 the NC legislature authorized a SolarBee rental test, that began in mid-July 2014, to try to improve Morgan Creek and the Haw River inlet. In 2015, the legislature extended the test to run through the end of July, 2016, when funding ended. The total cost of the SolarBee test was about \$1.6 million. The legislature chose the SolarBee test in lieu of spending (wasting?) \$2,000 million, \$2 billion, which had been proposed earlier for Jordan Lake watershed protection. One can assume the legislature was aware that no lake in the US over 1,000 acres has ever been restored through watershed protection, over the past 50 years, regardless of how much money is spent. Plus, virtually all lake experts in the region agreed that the \$2 billion would have made no measurable improvement in Jordan Lakes' water quality.

**The test and results.** Medora, at its sole discretion and not as an obligation of the contract, spent most of the test funding gathering and evaluating water quality data from throughout the entire Jordan Lake. Medora's water quality data obtained during the test period is far more extensive than NC DEQ's, and shows that the SolarBee machines were making improvements in the test areas despite the fact that the water quality was very good to start with. Medora's testing also showed that no cyanotoxins were ever present in the lake. The Haw River inlet test area, in particular, improved significantly during the summer of 2016, though even before then the NC DEQ had already

indicated in a draft document that parts of this area would likely be removed from the EPA 303(d) list of impaired water in the near future. Also, Medora believes that more improvements in water quality from SolarBee machines could have been demonstrated if the test had proceeded for the entire proposed 3 years instead of being cut short to 2 years.

#### **Possible future benefits from the SolarBee test.**

Medora has extensive data from the test period on algae speciation, cyanotoxins, chlorophyll-a, phycocyanin, pH, dissolved oxygen, salinity, temperature, stratification, Secchi depth clarity, zooplankton, response of the lake to rainstorms, and more. This data will be useful in the future if water quality declines at Jordan Lake. For instance, Medora's zooplankton data could possibly be used to improve fish stocking practices in Jordan Lake. Also, new accessories that Medora is working on, for example, a cyanocide dispensing system for SolarBee machines, have promise of being an effective backup remedy if the cyanobacteria in Jordan Lake were ever to become toxic.

**Summary.** The water quality at Jordan Lake was very good before the SolarBee test, far better than in most of the other 400 fresh water bodies that have deployed SolarBees, and remains very good today. The SolarBee test yielded some improvements in the treated areas, but the improvements were not very dramatic because the water quality was already so good. During the two years of testing, Medora accumulated a mountain of data and knowledge about Jordan Lake that may become valuable to stakeholders in the future if water quality at Jordan Lake deteriorates.

For more information about the SolarBee test at Jordan Lake test, please contact Medora Corporation. Thank you