

Key Words: Covington, GA, raw water, blue green algae, taste and odor, treatment savings, circulation



Photos: The left photo is an aerial photo showing the placement of the 12 SolarBee units in Lake Varner. The center photo shows the lake and boat ramp access. The right photo is an aerial photo of Lake Varner.

Owner: Newton County Board of Commissioners, Covington, City of, Georgia; Contact: Jason Nord, Water Production Director; Telephone: Mobile 770-616-5987; Email: jnord@co.newton.ga.us

System Overview: Lake Varner is a large habitat for avian wildlife, and provides drinking water and recreational activities to the residents of Covington and Newton County. Lake Varner is known as an excellent fishing destination as well as an important source of raw water. It is an 850+ acre man-made reservoir that feeds the Cornish Creek WTP in Newton County, GA. The plant's production capacity is currently around 10 to 12 mgd, and future flows are forecasted to be over 25 mgd.

Reported Problem Before SolarBee Installation: In recent years Lake Varner experienced problems associated with blue-green algae, which can contribute to taste and odor problems in drinking water and be potentially toxic to fish and wildlife. Environmentalists have identified an emerging neurological problem with certain bird species and speculate that toxins existing within certain blue-green algae strains are the cause. It has been verified that the blue-green algae within Lake Varner contains very high levels of these toxins. Newton County previously used chemicals to control the algae growth, but increased costs for the chemicals in recent years led county leaders to research new options for keeping the water supply safe.

SolarBee Installation: Date: On 4/25/2013 the city installed 12 SolarBee SB10000HWv18 units in Lake Varner, as an epilimnetic deployment. Primary objectives for the installation are to provide long-distance circulation in order to control harmful blue-green algae blooms and reduce taste and odor issues.

Results: In early 2013, the Georgia Environmental Finance Authority approved financing for the Newton County board of commissioners to purchase and install solar-powered reservoir circulators called SolarBees in Lake Varner. The SolarBees saved the county approximately \$250,000 in annual chemical costs the first year. The county will see a total return on investment with the SolarBees in about four years. The SolarBees have completely eliminated the need for algacide application and have lowered the PAC (powdered activated carbon) usage by at least 75%. Taste and odor issues have been resolved. The SolarBee circulators are an important investment for the community, improving the water quality of Lake Varner, reducing system costs, safeguarding public health and protecting the ecosystem. This community is very pleased with the SolarBee installation and is happy to serve as a positive reference.

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