

## Increased Oxygen to Promote Stratification Reduction



*Placing Vertex AirStation™ into Heron Cay's lake.*

Heron Cay, a high-end gated residential development in South Florida, was experiencing a number of problems in their 21-acre lake which is central to the community.

With maximum water depths of over 20 feet, stratification had resulted in a lake with severely low oxygen levels at the bottom. Having no beneficial bacteria to break down organics, heavy muck accumulation and foul odors from hydrogen sulfide gases were present. The lake was consuming what little available oxygen there was faster than it could be replenished, and excessive nutrient levels from fertilizer runoff only made conditions worse. The lake's Biochemical Oxygen Demand (BOD) was extremely high.

With the brunt of summer approaching, Heron Cay had a very real potential for a serious fish kill. Action needed to be taken, so the residents looked to Vertex to provide them with an efficient and cost effective method of bringing their lake system back to a healthy state.

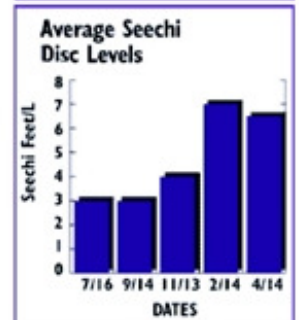
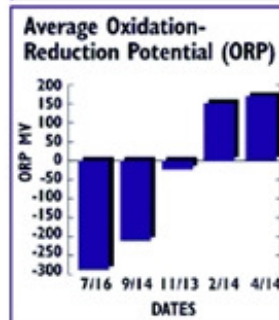
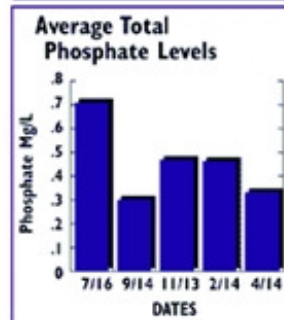
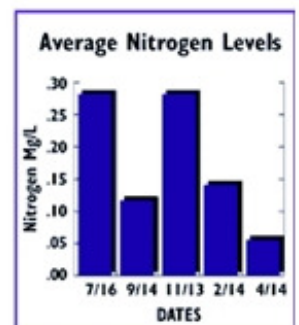
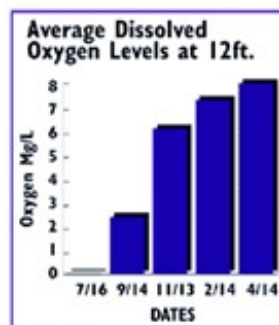
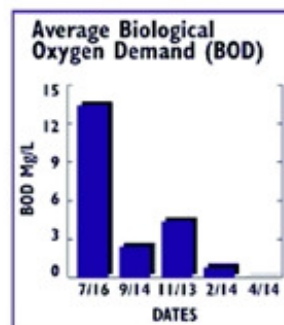
## Results

After the design and installation of a Vertex aeration system consisting of 11 diffuser stations being fed by compressors totaling only 2-1/4 horsepower, Heron Cay was set up on a monitoring schedule to determine how lake dynamics were being affected. The results over the four month monitoring period were dramatic. Within days of initial start-up, the systems main objectives were beginning to be realized:

- The breakdown of temperature and oxygen stratification - the lake's water was being circulated.
- Increased oxygen levels throughout the entire water column - creating a healthy environment for both fish population and beneficial bacteria.
- Decreased the lake's Biochemical Oxygen Demand (BOD) - oxygen was no longer being consumed faster than it was being replenished.
- The residents of Heron Cay are no longer in danger of oxygen-related fish kills, odors have been eliminated and the lake is returning to natural, healthy conditions.



*Gathering water samples. The lake was regularly monitored to determine water quality.*



**"I've never seen the lake look better"**  
- Mark Sanderson,  
President, Heron Cay HOA