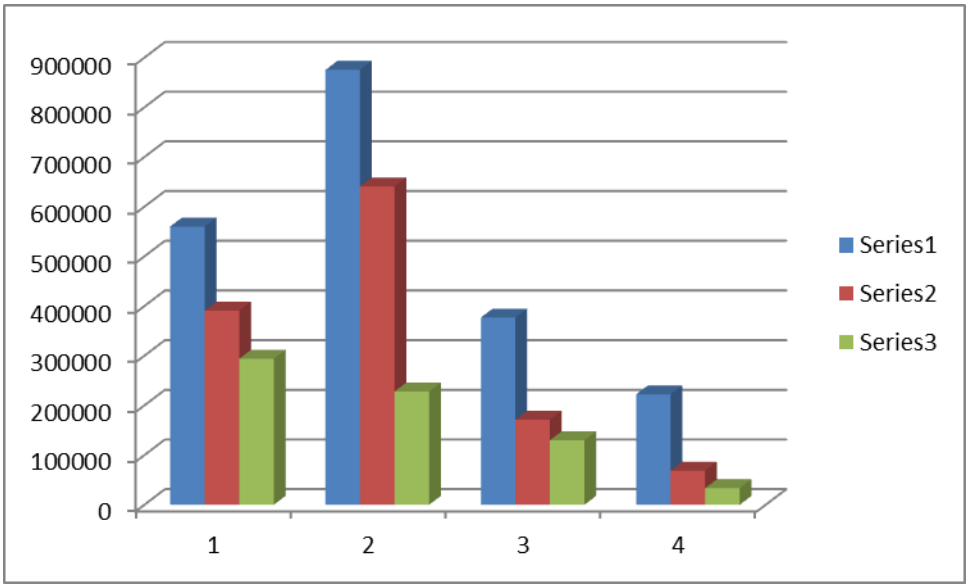
Case Study: Brunswick, Georgia Two stage wastewater lagoon



We began this project, upon recommendation to a client from their wastewater laboratory. The Client operates a housing facility in Brunswick, GA. The facility has a two stage static wastewater lagoon system which discharges to a environmentally sensitive waterway. The client had increasing concerns regarding the quality of his discharged effluent, and was in need of a cost effective solution. He had obtained quotes from manual dredging companies to mechanically dredge the accumulated sludge from the system, clear an area on his property to allow the sludge to dry and then transport the material to a suitable discharge point. This at a cost that exceeded $250,000.

The initial survey was conducted by their laboratory personnel during the prior year and is reflective of point #1 on the above graph. The color coordinates reflect: Blue-stage one; red-stage 2 (downstream of a baffle); and green-stage 3 the polishing pond prior to disinfection and final discharge.

Lakepointe surveyed the system, calculating the gallonage of the accumulated solids and began an application of a biological stimulant, AXCELL. This plant extract provided the stimulus for the existing bacteria to reduce, “in-situ” the accumulated organic solids. Point #2 on the above graph indicates the sludge depth upon injection of product, which was done on July 25, 2013. At this time

There were 1,744,424 gallons of sludge present in the system, the analysis of this sludge composite showed a solids content of 5.178% of solids. After the initial shock injection of AXCELL, we established a daily injection point at the master lift station in the community. We also provided a small blower and bottom aerator unit to facilitate mixing of product and to provide much needed DO to the system.

The clients aerator had gone out of service some time before and it was felt this application method was most effective. A daily dosage of biostimulant was targeted to address the daily orgainic loading to the system from the community as well as dosage to maintain the biological activity in the lagoon system. The aeration unit is still in place, but dosing was curtailed in November of 2013.

A second survey was conducted on September 30th, that corresponds to #3 on our graph, indicating 677,985 gallons of sludge still present.

The third survey was conducted on October 18th, corresponding to #4 on the graph, and it indicated 324,971 gallons of sludge present. A composite sample indicated the solids content at .0618. Solids volumes were reduced by 81.4% in the application period.

Measured volatiles in the system were 33104 mg/l prior to the injection and 2440 mg/l at the conclusion, a reduction of 93.3%.

There were no odors nor any permit issues during the application period.