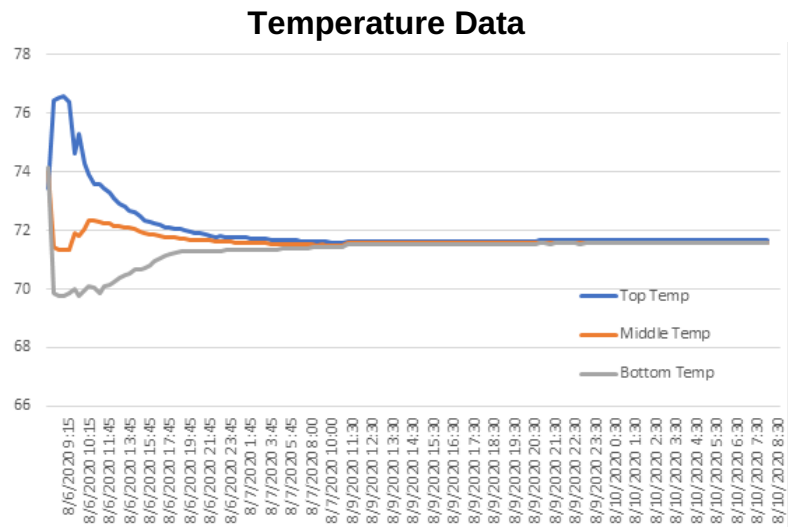
BIG WAVE WATER TECHNOLOGIES

CASE STUDY
AUGUST 2020

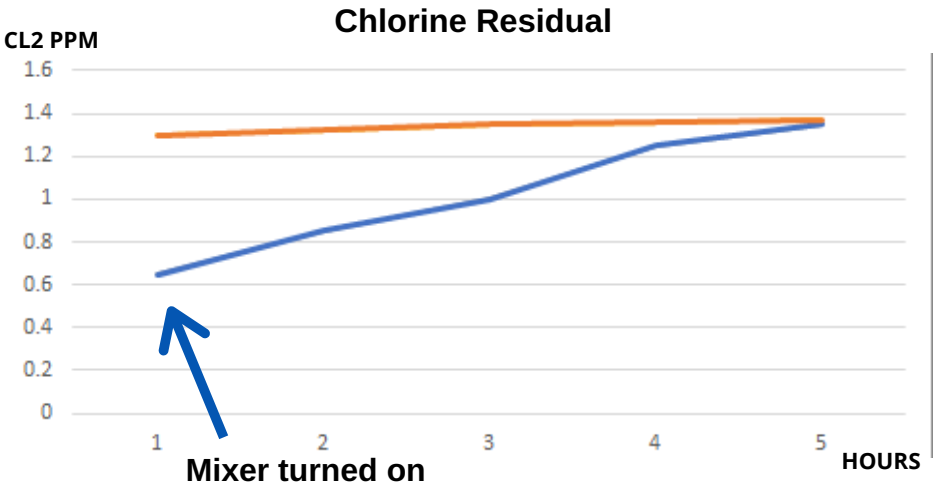
9 MILLION GALLON RESERVOIR

In August of 2020 Big Wave Water Technologies installed the Tidal Wave Mixer in 9 million gallon concrete reservoir. In order to validate the effectiveness of the mixer, temperature sensors were placed through an access hatch located on the opposite side of the reservoir from the mixer. The temperature sensors are attached to a stainless steel string with a stainless steel float on the top and weight on the bottom. The bottom sensor is attached to the weight and sits roughly 6 inches off the floor of the tank. The middle sensor is 10 feet above the bottom sensor, and the top sensor is attached to a float that floats with the high water level of the tank. In this case, the top sensor was about 1 foot below the surface, which is roughly 17 feet above the middle sensor.

The graph (right) illustrates the temperature data spanning from 9:15 AM on 8/6/20 through 8:30 AM on 8/7/20. As you can see in the graph, we see all three temperature sensors (Top, Middle, and Bottom) converge to be within 0.2 degrees F within 20 hours of the mixer being turned on. Upon initial start-up of the mixer, we see a thermal stratification of roughly 6.5 degrees F, and this is eliminated within 20 hours.



In addition to collecting water temperature data, free chlorine grab samples were collected from the bottom and top of the tank prior to turning the mixer on. Both grab samples were taken near the location of the temperature probes, which are on the opposite side of the tank from the Tidal Wave Mixer.



A sample pump was placed roughly 3' from the floor of the reservoir that provides sample flow to a free chlorine analyzer; the grab sample from this location showed a free chlorine residual of 1.30 PPM, while a grab sample from the top water level of the reservoir showed a free chlorine residual of 0.65 PPM.

The above graph shows the free chlorine residual at the top and bottom of the tank. You will see the top and bottom residuals converge after the mixer is turned on with a grab sample of 1.35 PPM at the top of the tank, and 1.37 PPM at the bottom of the tank.