

HVLA Water Quality Test Results Summer 2024 (through August)

Our starting samples (prior to install) were unfortunately, corrupted somehow in the Water IQ Lab, so we do not know what our true starting point was prior to install of the units. We do know the types of algae, by prevalence included: Planktothrix, Dilichospermum, Chlorella (green), and Tabellaria (healthy diatom). Our main concern is the Planktothrix and Dilichospermum, as they are the types that can produce cytotoxins. Both types are long, tubular cells, which we learned are a little more resistant to ultrasonic treatment than small, round or oval cells.

Between early May and mid-June we saw a dramatic increase in the levels of all algae in the water at HVLA (25%-64% depending on sampling location), resulting in the algae blooms that plagued the lake in the weeks prior to July 4th and during that week. Of course, the storms that stirred up the lake contributed to that increase by bringing dormant cells into the light where they could reproduce. Additionally, numerous homeowners had their beaches reclaimed, which also contributed to the turbidity of the water.

Between mid-June and the end of July the ultrasonic units started catching up to the reproduction levels and storms were less frequent so we saw decreases in live algae counts (12-40%) and dramatic increases in dying algae cells (40%-70%, depending on sampling location). Another notable change was that Planktothrix and Dilichospermum dropped to 2nd and 3rd place in prevalence, meaning the ultrasonic is starting to impact their reproduction levels despite water temps still being high.

Water clarity, measured by Secchi disk, ranged 12-14" at the start of Spring, and maintained in that range most of May, June, and July. The clarity readings for mid-July-Sept 1 reflected a range of 12-18" clarity, a minor improvement but in the right direction. As discussed before, clarity readings are subject to many variables (time of day, amount of clouds/sunlight, wind/rain) and it will be a lagging measure of changes/improvements in the water.

We sent a water sample to Midwest Labs on May 30 to test for Phosphorous and Nitrogen levels. Our nitrogen levels do not appear to be of concern, however our phosphorous levels are extremely high (.22/ml; reporting level for public lakes is .05). A pro-bono Water Restoration expert with Houston Engineering has recommended testing for additional water components before he can suggest a course of action. First steps include obtaining improved containment of runoff from uphill farms/watersheds (Lindy Rogers has been pursuing this) and use of PHOSPHOROUS-FREE fertilizers on all HVLA resident properties (will require educational campaign in early Spring 2025). Lindy is also researching funding sources for additional mitigation efforts we may consider.

We have been waiting all of August for water sample bottles from Water IQ and expect them to arrive soon, after which another water sample will be submitted to get updated readings.

The ultrasonic units will remain in the water as late in the season as possible, up to the formation of ice.