

Taste & Odor Controlled at Johnstown, Colorado, USA

Reduced Geosmin and MIB

BACKGROUND

The Town of Johnstown operates a 6.2 MGD surface water treatment plant supplied by Lone Tree and Town Lake reservoirs. Seasonal cyanobacteria caused recurring taste and odor events, particularly geosmin and MIB. To address this at the source, Johnstown implemented continuous monitoring and ultrasonic algae control in Town Lake.



KEY OUTCOMES

- 1 Reduction in taste & odor**
Geosmin and MIB levels in Town Lake dropped significantly after stratification late in the 2025 season.
- 2 Reduced chemical use**
Powdered Activated Carbon (PAC) hasn't been used at Lone Tree since 2022 following the installation of MPC-Buoys and seasonal GAC vessels.
- 3 Improved algae conditions**
Less floating algae was observed throughout the 2025 season, supporting more stable raw water quality.

Results from the 2025 season indicate improved algae control, reduced taste & odor compounds, and decreased reliance on treatment chemicals.

THE PROBLEM

Seasonal Taste & Odor Events

Cyanobacteria-driven Geosmin and MIB
PAC dosing unavailable at Town Lake
Increased operational complexity

Data Limitations

No real-time algae visibility pre-2022
Limited ability to predict blooms
Operator availability constrained response timing

THE SOLUTION

- Operators observed **reduced floating algae** and more **stable summer conditions** in 2025.
- **Lowered taste and odor levels**, which may allow greater reliance on Town Lake, supporting energy-efficient operations.
- **Discontinued use of PAC at Lone Tree** since installation, removing respirator-required handling.

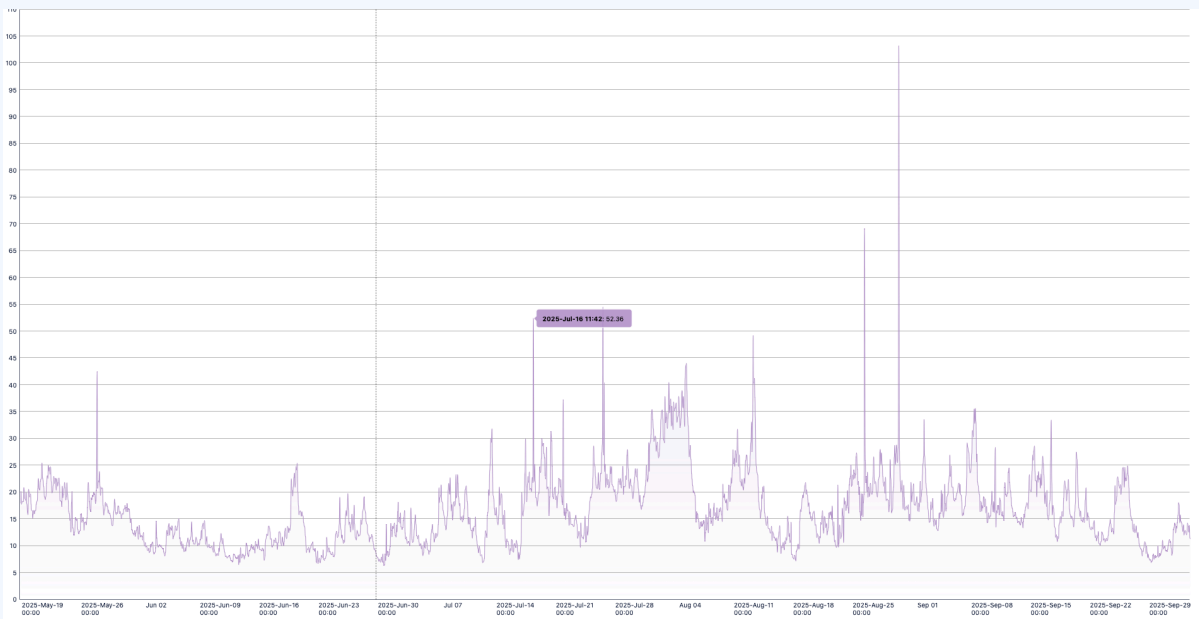


Fig.1: Turbidity levels dropped (May-Oct 2025)

Turbidity remained low and stable from May to early October 2025, with only brief peaks during storm events. Fluctuations slightly increased after mid-July, but values still trended downward toward season's end, indicating improving clarity and fewer suspended particles heading into autumn.

OPERATIONAL IMPACT

Lower taste and odor levels allowed greater reliance on Town Lake, supporting more stable and energy-efficient treatment operations.

DISCUSSION & CONCLUSION

- Reduced reliance on PAC supports chemical-free sustainability goals
- Simplified treatment operations and reduced operator exposure
- Ongoing monitoring confirms stable clarity trends

Results from the 2025 season demonstrate how continuous monitoring and **ultrasonic algae control** deliver **measurable source-level improvements**.

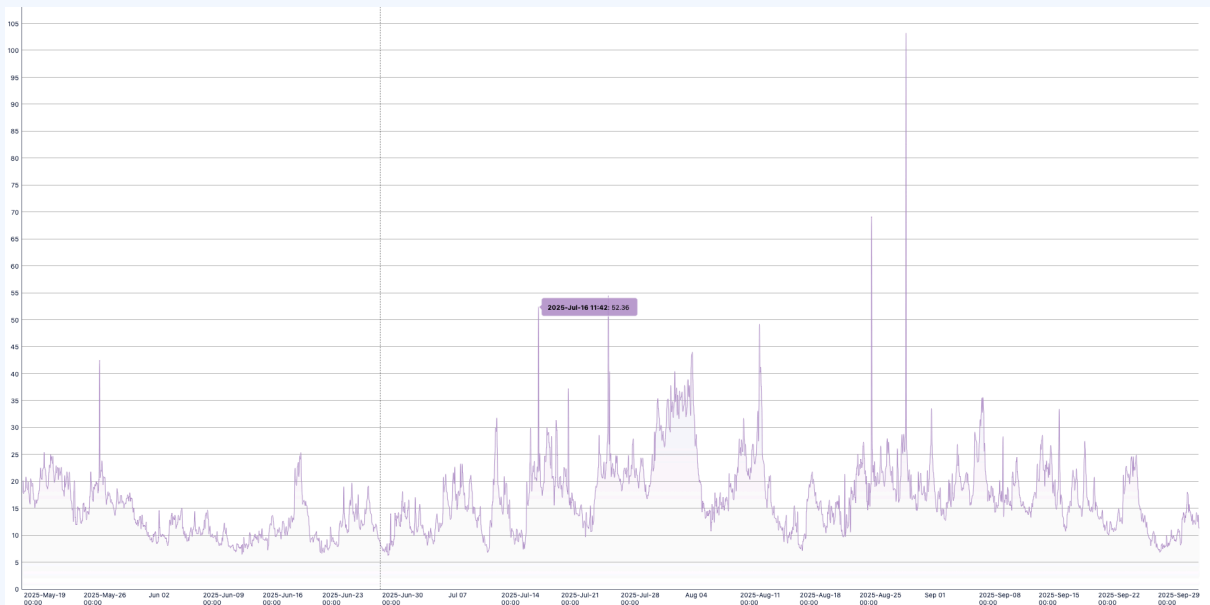


Fig.2: Chlorophyll-a levels dropped (May-Oct 2025)

Chlorophyll-a levels remained relatively low throughout the season, with only brief natural peaks. Although fluctuations increased after early summer, overall concentrations declined toward autumn, indicating reduced algal biomass and improving system stability.

“ I feel like we are finally seeing a positive change in Town Lake this year, based off of Geosmin/MIB results throughout 2025. ”

John Ferguson,
Water Superintendent, Town of Johnstown