

Water Resources 2023 Annual Report

A scenic view of a lake at sunset or sunrise. The sky is a gradient of dark blue to orange, with the sun low on the horizon. The water is calm, reflecting the light. In the foreground, there is a wooden dock extending into the water. The shoreline is dark and silhouetted against the bright sky.

Water Resources Director: Randy Smith

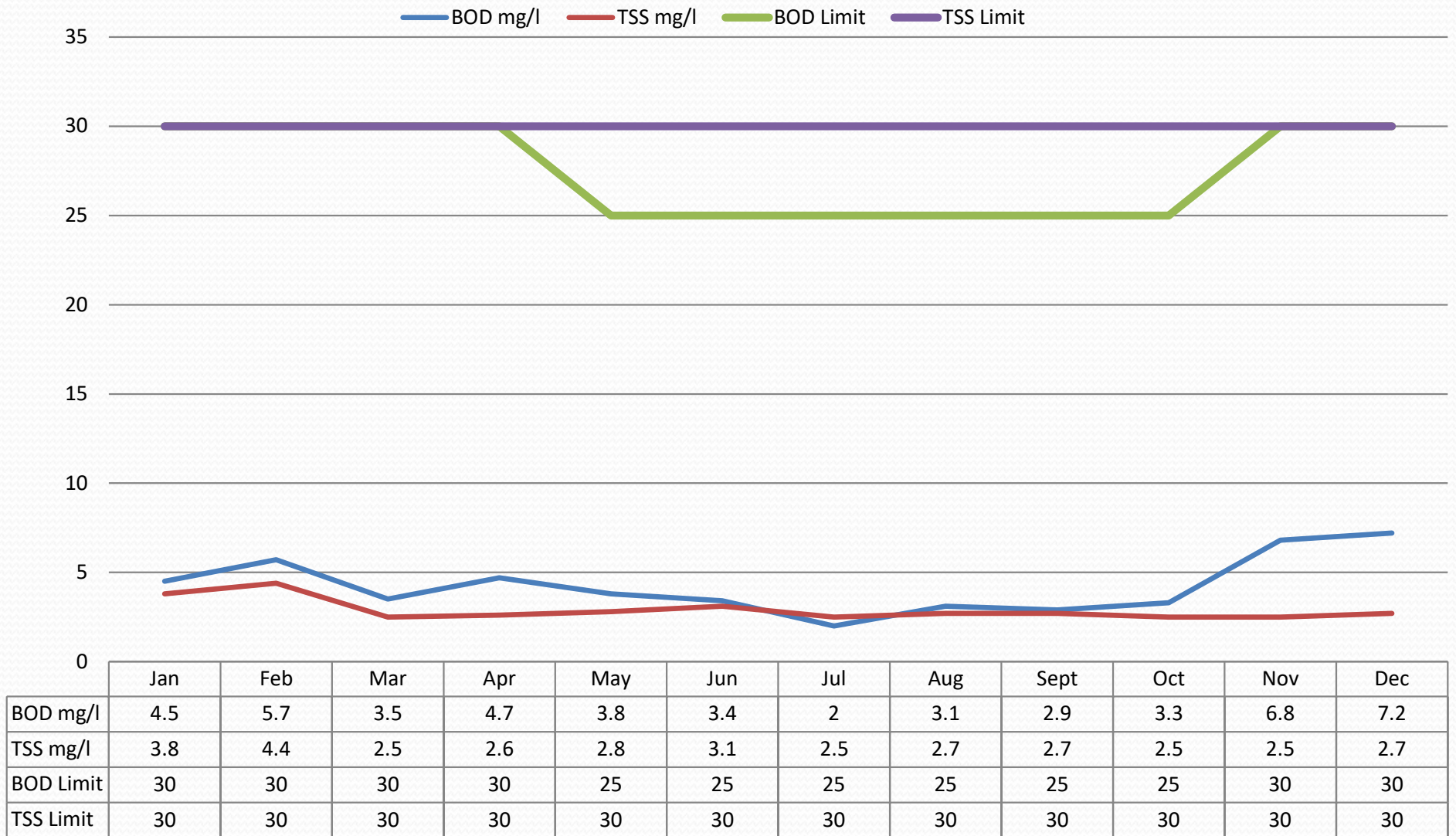


Our Mission

**To promote and protect the environment,
preserve natural resources, and ensure the
health and safety of our customers.**

Granite Falls Wastewater Treatment Plant

Granite Falls Wastewater Treatment Plant (WWTP) Bio Oxygen Demand (BOD) & Total Suspended Solids (TSS) Results



BOD & TSS are two of the main indicators of facility efficiency.

WWTP Average BOD & TSS

Average Influent BOD

307

Average Effluent BOD

4.2

Permit Limit: 25 / 30 mg/l

Average Influent TSS

156

Average Effluent TSS

2.70

Permit Limit: 30 mg/l

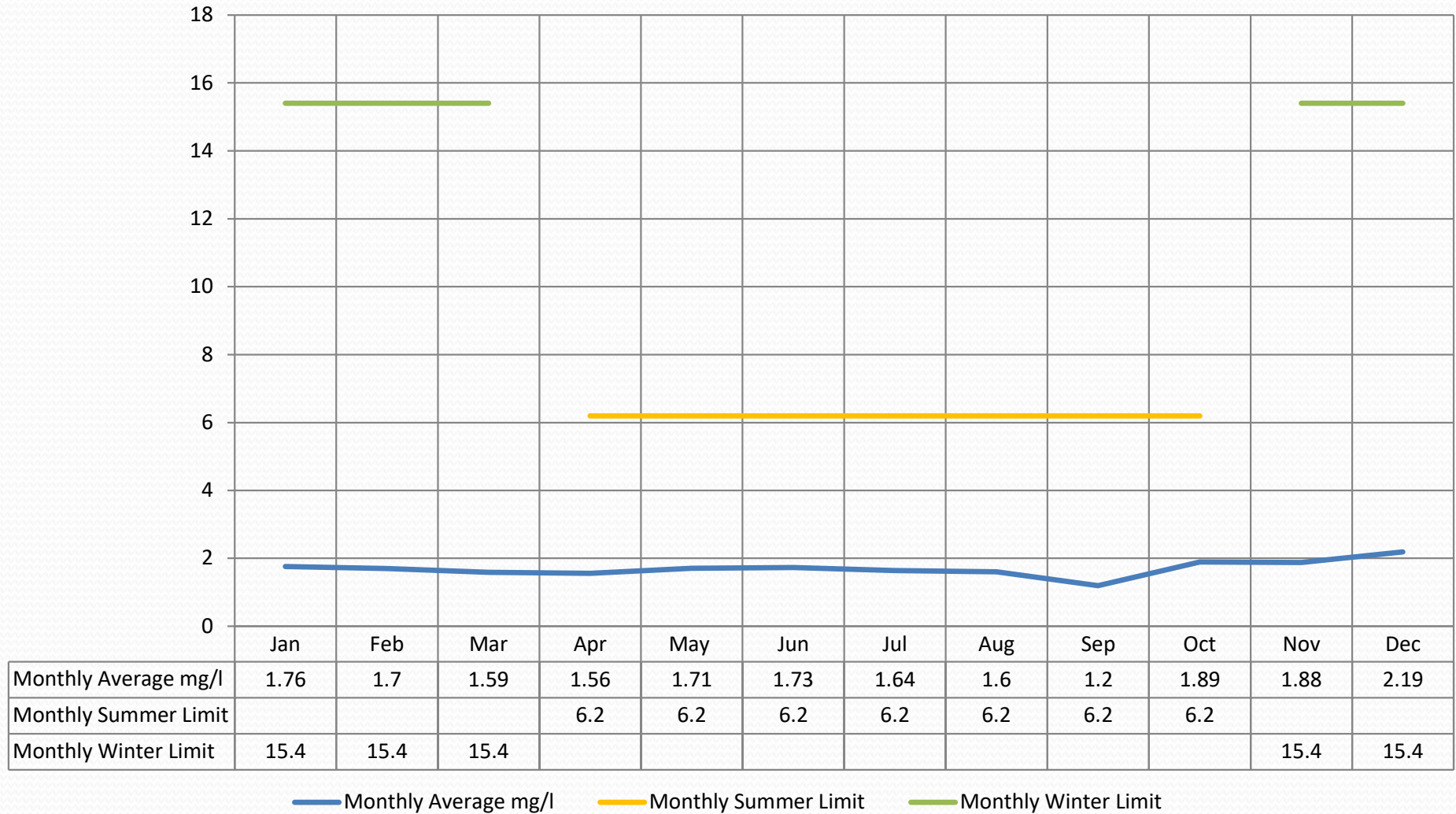
**Overall Treatment
Plant Efficiency (Actual)**

99%

**Rate Efficiency of
Treatment Plan (Design)**

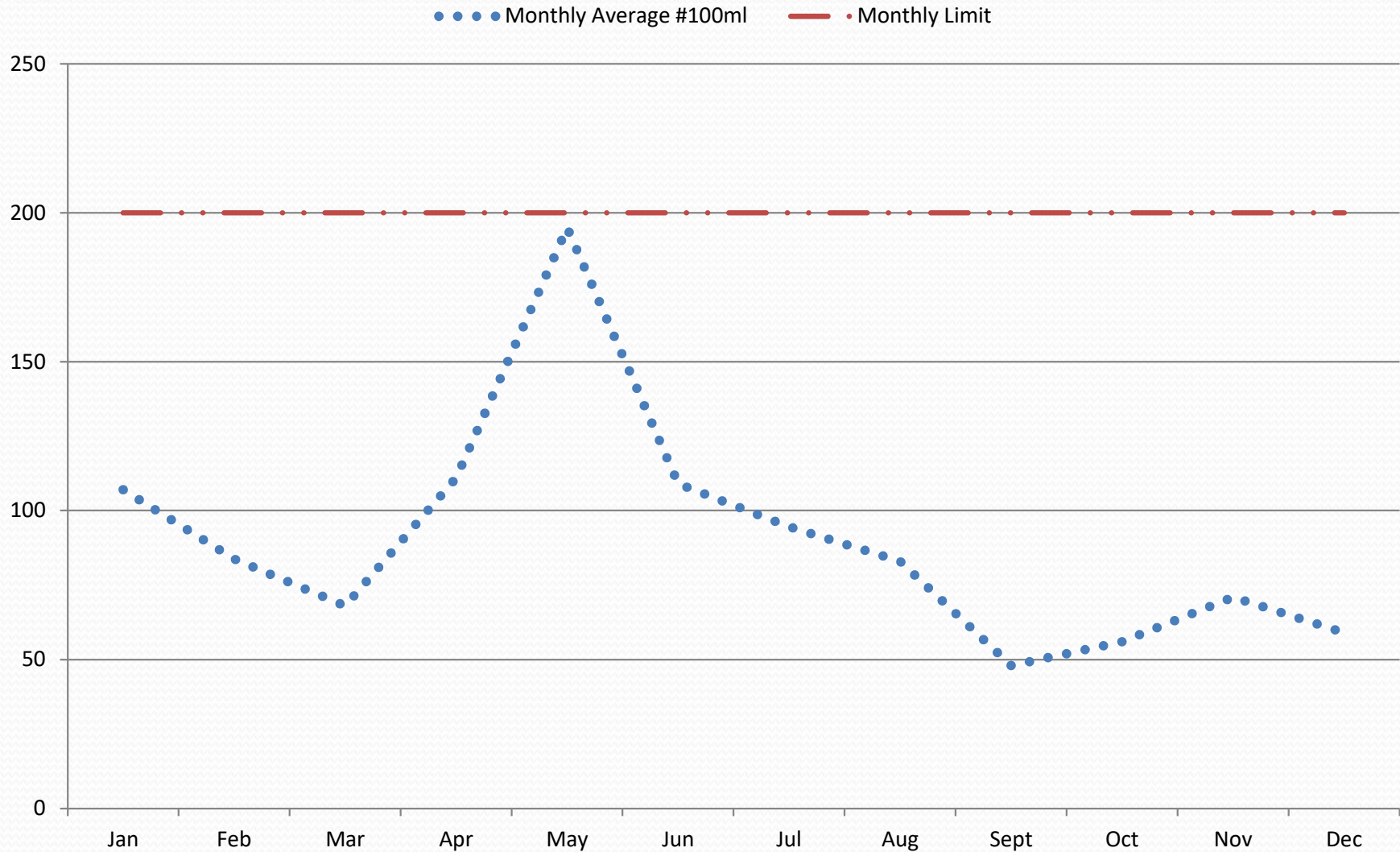
87%

Granite Falls Wastewater Treatment Plant Ammonia Nitrogen Results



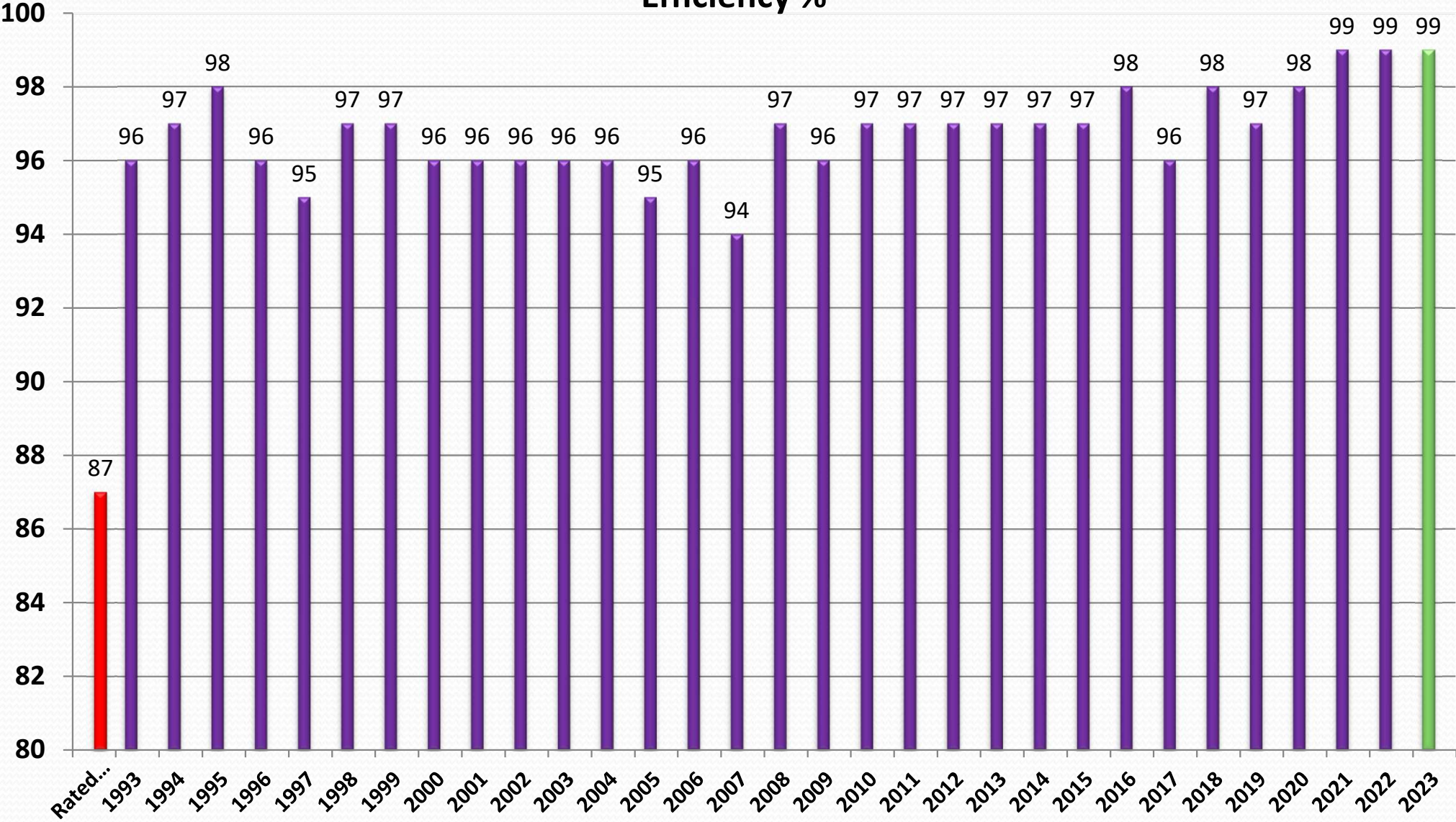
Ammonia Nitrogen is also an indicator of the efficiency of the wastewater treatment process. Our facility operates well below the permitted limits for this chemical compound.

Granite Falls Wastewater Treatment Plant Fecal Coliform Results



Fecal Coliform are pathogenic organisms that must be removed from our discharge in order to meet state and federal standards. We have consistently discharged significantly less than our permitted limit.

Granite Falls Wastewater Treatment Plant Efficiency %

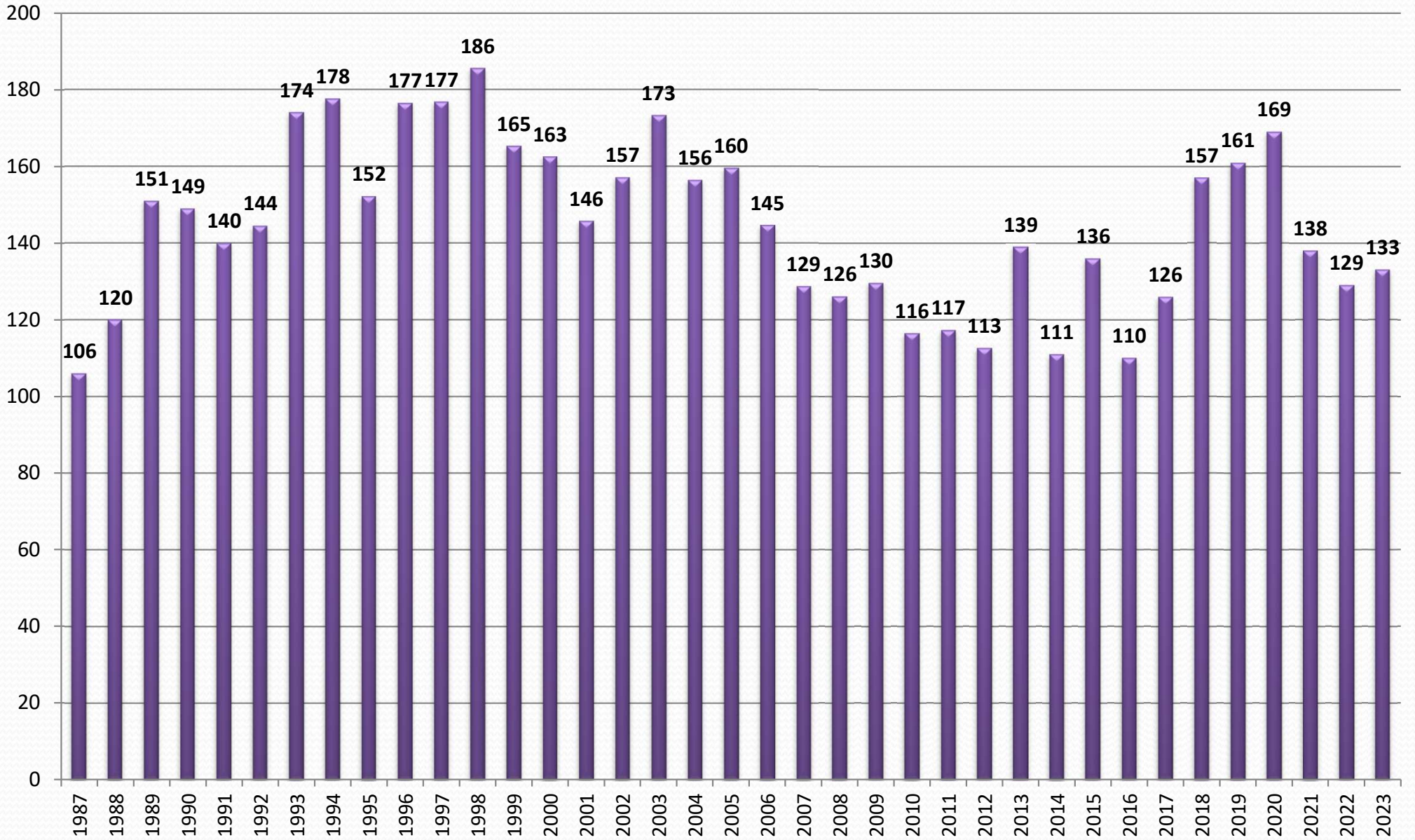


DESIGN RATED EFFICIENCY: 87%

ACTUAL 2023 EFFICIENCY: 99%

TOTAL YEARLY FLOW 1987 - 2023

*TOTAL FLOW IN MILLION GALLONS





The Granite Falls Wastewater Treatment Plant treated 132,629,000 gallons, or an average of 364,000 gallons per day, of wastewater while meeting all effluent limitations in our permit. The Treatment Plant operated at 40.4% of its permitted capacity of 900,000 gallons per day and achieved a 99% combined efficiency removal rate.

Wastewater Treatment Plant Improvements

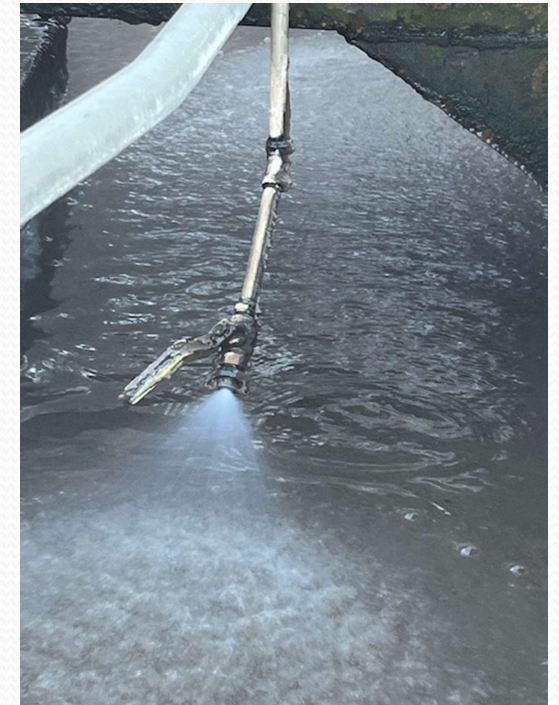


Replaced
Nozzle on
Diesel Pump



Soft Starts and Timers for
Aerator Motors for Energy
Savings

Replaced Sprayers around
Clarifiers



Started the Electrical
Upgrade for the Blower
Control Panel

Replaced Waste Pump



Started the
Missions
Upgrade





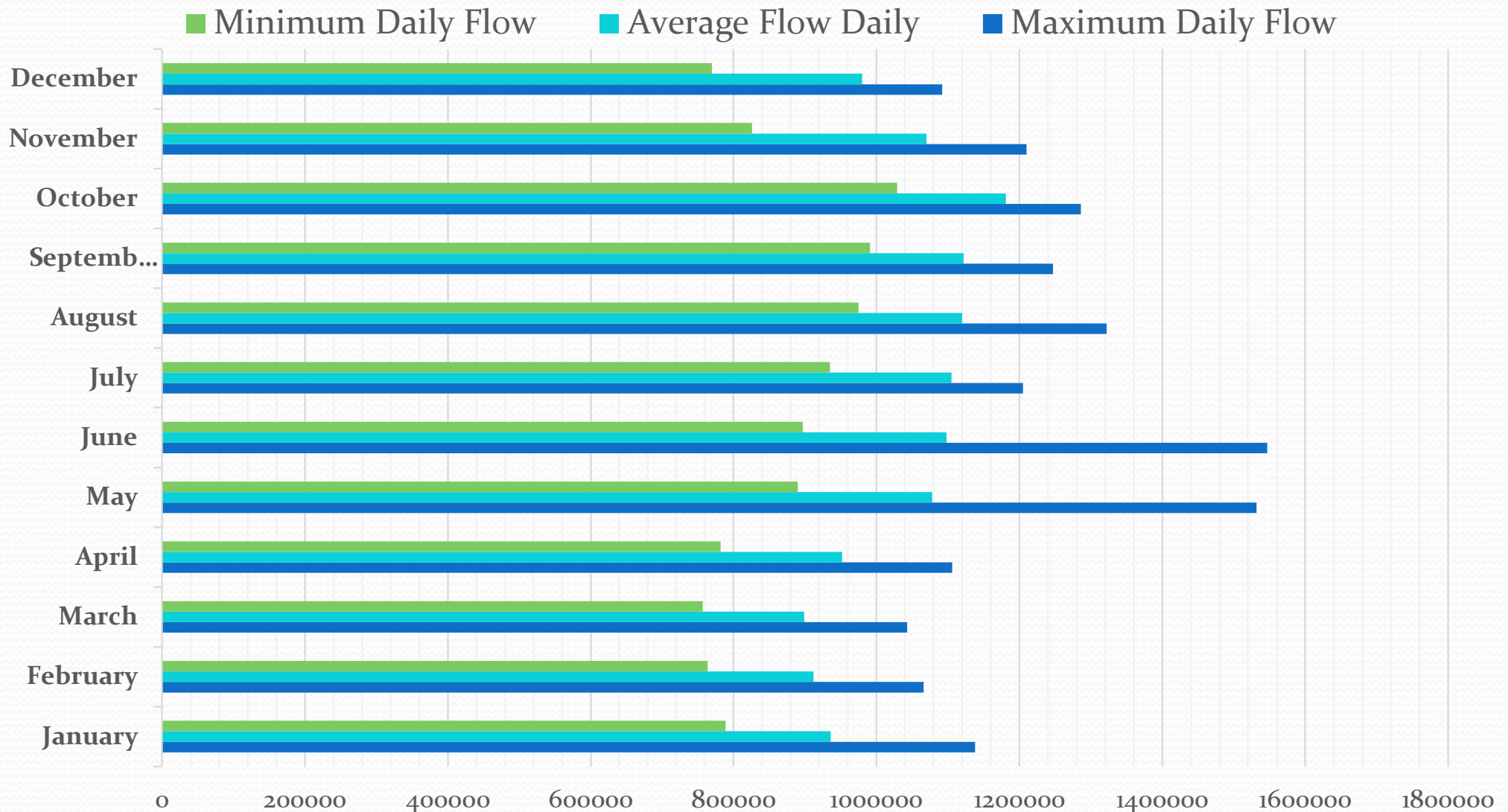
Plant staff completed lab proficiency certification for field analysis during 2023. There were no compliance issues during 2023.

Granite Falls Water Treatment Plant

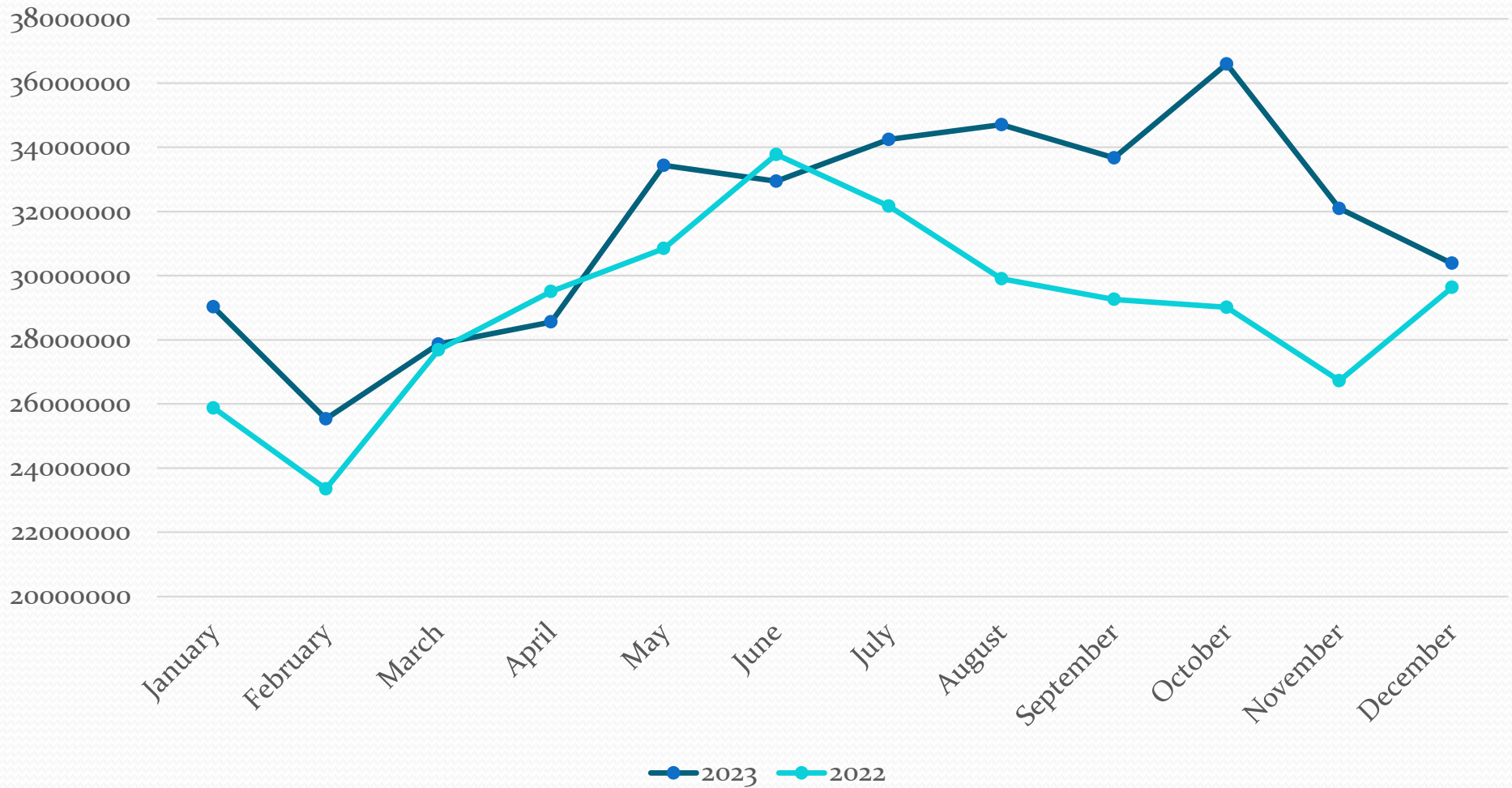


The Granite Falls Water Treatment Plant treated 379,046,000 gallons, or an average of 1,038,482 per day, of water while exceeding all drinking water quality standards. The Treatment Plant operated at 41.5% of its permitted capacity of 2,500,000 gallons per day.

Monthly Water Treatment Plant Flow



Flow Comparison



There was a 9% increase in water treated during 2023.

Water Treatment Plant Chemicals Used

Chemical	Amount Used
Activated Carbon	0 lbs.
Aluminum Sulfate	17,336 gals
Fluoride	19,831 lbs.
Lime Slurry	21,158 gals
Polymer	628 lbs.
Sodium Hypochlorite (Bleach)	7,015 gals
Sodium Permanganate	0 gals

Water Treatment Plant Improvements



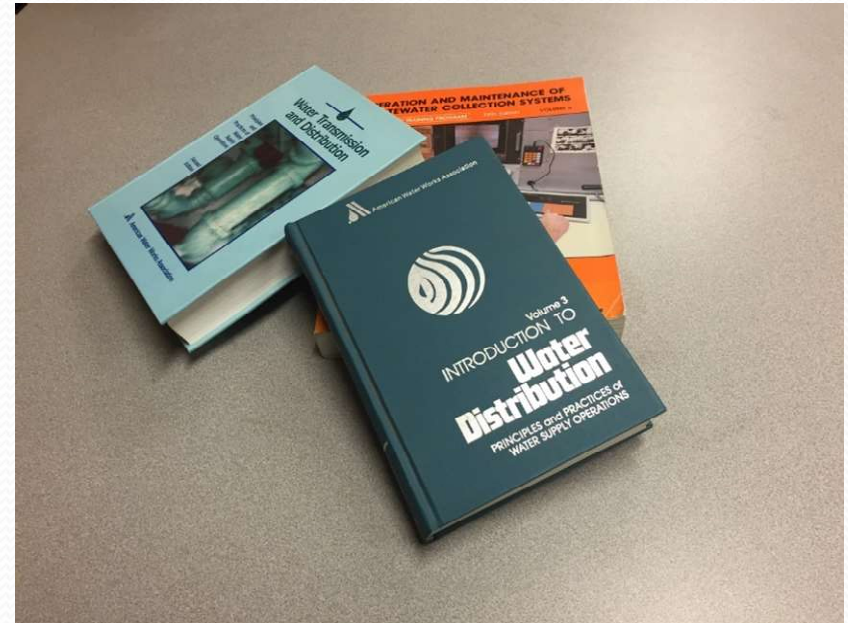
- Purchased two new bleach chemical feed pumps
- Retrofitted backwash valve and actuator for filter #1
- Completed project of tying in main building to finished water pump house via new fiberoptic cable
- Purchased new finished water pump

Training, Qualifications, and Awards

All Water Resources staff obtained their mandatory six hours of continuing education to maintain their certifications.

All staff members attended required safety training.

Seventh Consecutive Year Gold Safety Award from NC Department of Labor for Public Utilities.



In Conclusion

Our Water Resources employees are operating both facilities at efficient levels. Drinking water and wastewater qualities continue to meet and/or exceed state and federal standards. We will continue to provide high quality water to our customers and return high quality water to the environment by the most efficient means available.