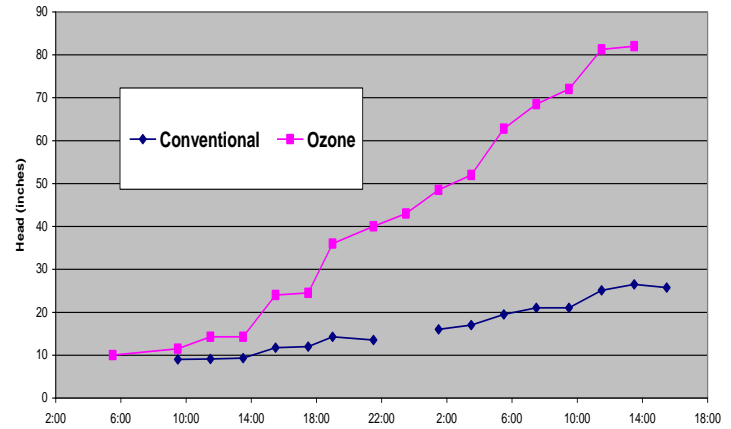


# OZONE PILOT INVESTIGATION

## TOWN OF NEWMARKET, NEW HAMPSHIRE



Parallel Process Comparison for Adsorber Clarifiers Followed by Mixed Media Filters (on right) Compared to Ozone Plus Coagulants (on left)

Ozonation was investigated for raw water from the Piscassic River near the existing Water Treatment Facility in Newmarket, New Hampshire. The investigation was completed using a team that included the Town of Newmarket (pilot operation and equipment assembly), UNH (water quality analyzers, testing, and financial assistance) and Dufresne Group of Windsor, Vermont (pilot design, assistance in equipment assembly, project overview, and final report.)

As "Side-stream" ozonation was a relatively new technology, DG recommended piloting to assess process variables and confirm manufacturer's claims for process results. "Side by side" pilot operation was specifically recommended to eliminate changes caused by raw water changes.

Based on the results, DG recommended that Newmarket not proceed with ozonation alone. The information obtained during the pilot stage was crucial in preventing the expenditure of \$1,000,000 in local funding for a process that would not accomplish all of the treatment objectives, particularly compliance with the Disinfectants/Disinfection Byproducts (D/DPB) Rule.

### PILOT RESULTS:

#### POSITIVE

- Will ozone (O<sub>3</sub>) remove taste and odor?
- Will O<sub>3</sub> eliminate color?
- Is the clarification/filtration process enhanced with O<sub>3</sub>?

#### NEGATIVE

- Consistent manganese removal achieved with O<sub>3</sub>?
- Will the filters become biologically active using O<sub>3</sub>?
- Will O<sub>3</sub> improve TOC removal?
- Compliance with the D/DBP rule achieved with O<sub>3</sub>?