

In May of 2007 St. Johnsbury officials contracted with Dufresne Group (DG) to evaluate the source of supply and water treatment systems with the objective of reducing disinfection byproducts. St. Johnsbury was in violation of the Stage 1 Disinfectants/Disinfection Byproducts Rule as the Running Annual Average for Trihalomethane (THM) was above the 80 parts per billion Maximum Contaminate Level. St. Johnsbury operational staff had already conducted various operational modifications including elimination of pre-chlorination and system wide flushing, but these measures were not successful in reducing THM levels.

## REVIEWED ALTERNATIVES:

- Operational improvements only
- Source Management
- Water distribution system best management practices pH reduction
- Reduced chlorine dose
- Pre-sedimentation
- Enhanced coagulation
- Installation of total organic carbon removal techniques
- Microfiltration, ultrafiltration and nanofiltration removal techniques
- Use of alternative disinfectants including ultraviolet light

## RECOMMENDATIONS:

- Reduce the chlorine dose at the Water Treatment Facility and boost chlorine at two points in the distribution system.
- Begin data collection at deeper intake points at the source of water supply.
- Extend the potassium permanganate feed point to increase detention time.
- Eliminate backwash recycle.
- Construct a larger clearwell.