



**Bioreactor Cross-Section**

The Town of Cabot was required by an EPA 1277 order to provide wastewater collection and treatment for failing septic systems located in lower Cabot Village. To meet this need, a 50,000 gpd membrane microfiltration treatment facility was designed by a team of design professionals including Phelps Engineering; Tom B. Leytham, Architect; Dufresne Group; Salem Engineering and Lawes Engineering. Dufresne Group was responsible for process design for the project.

The facility, which was completed in December of 2001, includes two 25,000 gallon equalization basins followed by two parallel bioreactor tanks. The bioreactor tanks include chemical feed, aeration and filtration components. Effluent from these tanks is withdrawn through Zenon membrane filters with a 0.2 micron pore size. The effluent is disinfected through enclosed tube UV treatment units prior to discharge.

The project was complicated by site characteristics, including significant wetlands. Due to these constraints, microfiltration was selected as the most feasible treatment alternative. The state of the art facility was the first project in Vermont to utilize membrane filtration for wastewater treatment.

### KEY FEATURES

- Innovative treatment system
- Phosphorus removal
- Membrane microfiltration
- UV disinfection
- First use of microfiltration technology for wastewater treatment in Vermont
- Efficient use of site