

MEETING HOUSE WASTEWATER TREATMENT PLANT

Ground Water Protection Community Removes Total Nitrogen

October 6, 2016



DESIGN CHARACTERISTICS

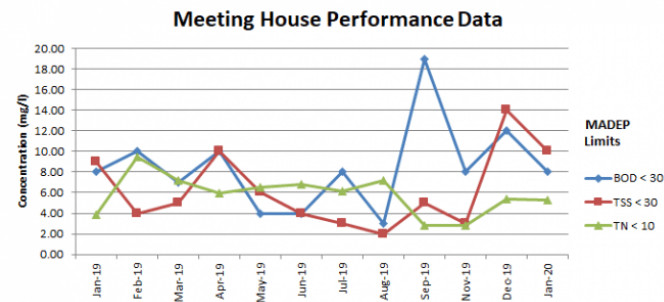
	Influent	Effluent
DESIGN FLOW (GPD)	12,000	12,000
DESIGN TEMP (C)	10	-
BOD5 (mg/l)	250	< 30
TSS (mg/l)	250	< 30
TKN (mg/l)	65	-
AMMONIA-N (mg/l)	50	< 2
NITRATE-N (mg/l)	-	< 5
TOTAL-N (mg/l)	-	> 10
FECAL (MPN/100ml)	-	< 200

OVERVIEW

Twenty miles northwest of Boston the rural town of Stow, Massachusetts is home to the Meeting House at Stow Elderly Care Community. When the facilities' previous wastewater treatment plant failed to meet permit for a prolonged period, the Massachusetts Department of Environmental Protection (MADEP) issued an administrative consent order (ACO) requiring the facility to correct its non-compliant discharge to the ground water.

The solution was to replace the failed activated sludge based process with a more robust and reliable fixed film process. The new system was permitted under Massachusetts Groundwater Discharge (GWD) pollution control regulations requiring the system to meet a standard of < 10 mg/l total nitrogen. The project engineer Martinage Engineering Associates, Inc. selected an AquaPoint Bioclere™ treatment system for its proven nitrification & denitrification performance capability, energy efficiency and low life cycle costs. In order to retain heat in the process and enhance removal efficiencies, the Bioclere trickling filters are ventilated with warm air from the process control building. Effluent from the biological process is polished through a sand filter and UV disinfection prior to groundwater discharge.

PERFORMANCE DATA



- System Commissioned: July 2008
- Detectable Limit for BOD & TSS: 2 mg/l
- Data Source: MA DEP Records

DATE	BOD5 (mg/l)	TSS (mg/l)	TN (mg/l)
JAN. 2019	8.00	9.00	3.81
FEB. 2019	10.00	4.00	9.45
MAR. 2019	7.00	5.00	7.14
APR. 2019	10.00	10.00	5.91
MAY 2019	4.00	6.00	6.53
JUN. 2019	4.00	4.00	6.76
JUL. 2019	8.00	3.00	6.15
AUG. 2019	3.00	2.00	7.20
SEP. 2019	19.00	5.00	2.80
NOV. 2019	8.00	3.00	2.85
DEC. 2019	12.00	14.00	5.34
JAN. 2020	8.00	10.00	5.33
AVG.	8.42	6.25	5.77

SYSTEM DIAGRAM

