PROJECT SNAPSHOT

AQUA POINT
ADVANCED WASTEWATER TREATMENT SYSTEMS & SERVICES

DOVER & SHERBORN, MA WASTEWATER TREATMENT PLANT

Ground Water Protection: School WWTP Removes Total Nitrogen

October 18, 2016

DESIGN CHARACTERISTICS

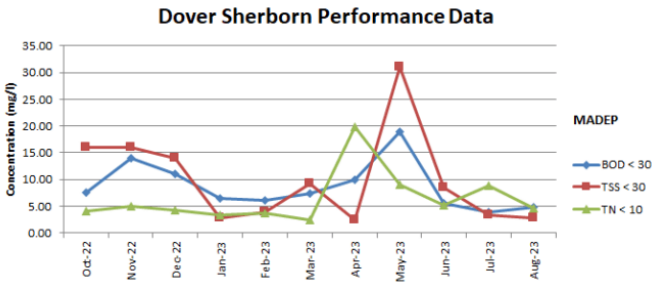
	Influent	Effluent
DESIGN FLOW (GPD)	15,260	15,260
DESIGN TEMP (C)	10	–
BOD5 (mg/l)	500	< 30
TSS (mg/l)	350	< 30
TKN (mg/l)	160	–
AMMONIA?N (mg/l)	130	< 3
NITRATE?N (mg/l)	–	< 5
TOTAL?N (mg/l)	–	< 10

OVERVIEW

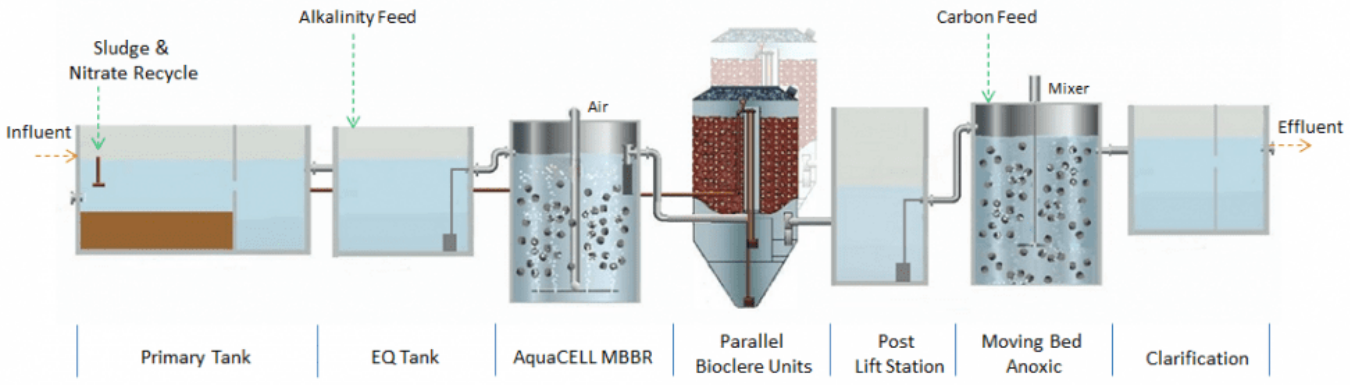
Twenty miles west of Boston the rural towns of Dover and Sherborn, Massachusetts share a regional middle and high school facility. Both towns rely entirely on individual septic systems for their wastewater infrastructure. When the school decided to expand in 1999 the Massachusetts Department of Environmental Protection (MADEP) required that the school district install a wastewater treatment facility to comply with the state's Groundwater Discharge (GWD) pollution control regulations. Under this guideline, any facility generating greater than 10,000 gallons per day (gpd) without access to an existing municipal sewer system must treat its wastewater to remove total nitrogen.

School waste streams can represent challenging conditions for biological treatment processes. Given school sanitary routines, the potential for toxic shock loading and peak hydraulic loading is high. Furthermore, ammonia nitrogen concentrations in the influent are typically 4-5 times that of typical domestic wastewater. The schools engineer selected an AquaPoint BioclereOH treatment system for its proven nitrification and denitrification performance capability, energy efficiency and low life cycle costs. The plant is designed for a maximum daily flow rate of 15,260 gpd.

PERFORMANCE DATA



- System Commissioned: 1999
- Detectable Limit for BOD & TSS: 2 mg/l
- Data Source: MA DEP Records

DATE	BOD5 (mg/l)	TSS (mg/l)	TN (mg/l)
OCT. 2022	7.50	16.00	4.10
NOV. 2022	14.00	16.00	5.05
DEC. 2022	11.00	14.00	4.30
JAN. 2023	6.40	2.80	3.34
FEB. 2023	6.20	4.00	3.71
MAR. 2023	7.40	9.20	2.50
APR. 2023	10.00	2.50	19.90
MAY. 2023	19.00	31.00	9.11
JUN. 2023	5.60	8.40	5.20
JUL. 2023	4.00	3.40	8.90
AUG. 2023	4.90	2.80	4.62
AVG.	**8.73**	**10.00**	**6.43**

SYSTEM DIAGRAM