PROJECT SNAPSHOT

AQUA POINT
ADVANCED WASTEWATER TREATMENT SYSTEMS & SERVICES

SKAKET CORNER WASTEWATER TREATMENT PLANT

Total Nitrogen Removal For High Strength Commercial Wastewater

October 6, 2016

DESIGN CHARACTERISTICS

	Influent	Effluent
DESIGN FLOW (GPD)	20,000	20,000
DESIGN TEMP (C)	10	–
BODs (mg/l)	600	< 30
TSS (mg/l)	300	< 30
TKN (mg/l)	75	–
AMMONIA-N (mg/l)	60	< 2
NITRATE-N (mg/l)	–	< 5
TOTAL-N (mg/l)	–	< 10
FECAL (MPN/100ml)	–	< 200

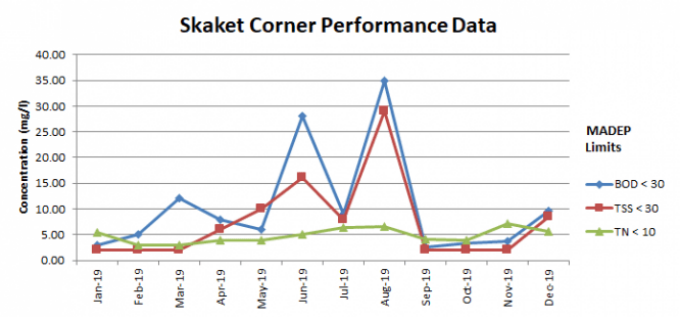
OVERVIEW

Orleans, Massachusetts is one of several Cape Cod towns that continues to experience significant growth without conventional sewer infrastructure. When a developer wanted to build a new commercial plaza adjacent to the town's off ramp from the Mid-Cape Highway the Massachusetts Department of Environmental Protection (MADEP) required that a wastewater treatment and disposal facility be installed onsite to protect local groundwater.

Anchored by Shaw's supermarket, CVS Pharmacy, Hallmark and Radio Shack this commercial center generates up to 20,000 gallons per day (gpd) of moderate to high strength wastewater. The 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 selected an AquaPoint Bioclere™ treatment system for its proven nitrification & denitrification performance capability, energy efficiency, ease of operation and small footprint. The Bioclere units are preceded by a pre-aeration stage to condition the high strength wastewater and to strip off volatile organic compounds (VOCs) which can impair treatment efficiency if present in high concentrations. Effluent from the plant is discharged through a conventional pressure dosed drain field.

PERFORMANCE DATA



- System Commissioned: December 2006
- Detectable Limit for BOD & TSS: 2mg/l
- Data Source: MA DEP Records

DATE	BOD5 (mg/l)	TSS (mg/l)	TN (mg/l)
JAN. 2019	3.00	2.00	5.34
FEB. 2019	5.00	2.00	3.00
MAR. 2019	12.00	2.00	3.00
APR. 2019	8.00	6.00	4.00
MAY 2019	6.00	10.00	3.85
JUN. 2019	28.00	16.00	5.00
JUL. 2019	9.00	8.00	6.40
AUG. 2019	35.00	29.00	6.57
SEP. 2019	2.50	2.00	4.13
OCT. 2019	3.40	2.00	3.90
NOV. 2019	3.70	2.00	7.08
DEC. 2019	9.60	8.50	5.60
AVG.	**10.43**	**7.46**	**4.82**

SYSTEM DIAGRAM