PROJECT SNAPSHOT

AQUA POINT
ADVANCED WASTEWATER TREATMENT SYSTEMS & SERVICES

## REFLECTION VILLAGE WASTEWATER TREATMENT PLANT

# Aquifer & Estuary Protection Community System Reduces Nitrogen

October 6, 2016

### DESIGN CHARACTERISTICS

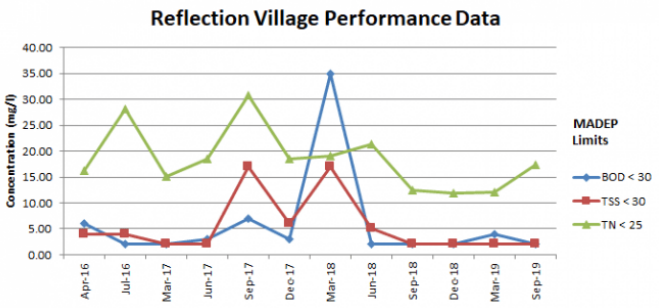
| | Influent | Effluent |
|---|---|---|
| DESIGN FLOW (GPD) | 7,250 | 7,250 |
| BOD5 (mg/l) | 250 | < 30 |
| TSS (mg/l) | 250 | < 30 |
| TKN (mg/l) | 45 | – |
| AMMONIA?N (mg/l) | 35 | < 10 |
| TOTAL?N (mg/l) | – | < 25 |

## OVERVIEW

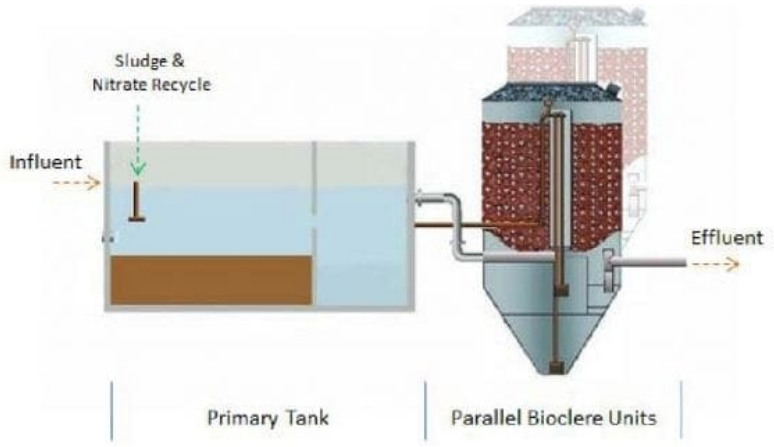
Reflection Village is a twenty?four home community and golf club located in Sandwich, Massachusetts. Because Cape Cod has a fragile sole source aquifer and coastal estuaries that are sensitive to nitrogen loading, the Massachusetts Department of Environmental Protection (MA?DEP) required that at least half of the homes be placed on denitrifying treatment systems.

The developer chose to install a single community shared Bioclere™ system to serve all of the homes because the initial capital cost and costs for installation and operation & maintenance (O&M), were significantly lower for the entire cluster system than they were for twelve individual systems. The treatment plant is owned by the 24 home owners and funds for O&M and replacement costs are accrued under a community trust agreement. O&M costs for the shared system are approximately 10% of what the costs would have been had half of the homes installed an individual system.

## PERFORMANCE DATA




- System Commissioned: February 1998
- Detectable Limit for BOD & TSS: 2 mg/l
- Data Source: MA DEP Records

| DATE | BOD5 (mg/l) | TSS (mg/l) | TN (mg/l) |
|---|---|---|---|
| APR. 2016 | 6.00 | 4.00 | 16.25 |
| JUL. 2016 | 2.00 | 4.00 | 28.07 |
| MAR. 2017 | 2.00 | 2.00 | 15.20 |
| JUN. 2017 | 3.00 | 2.00 | 18.60 |
| SEP. 2017 | 7.00 | 17.00 | 30.73 |
| DEC. 2017 | 3.00 | 6.00 | 18.48 |
| MAR. 2018 | 35.00 | 17.00 | 19.00 |
| JUN. 2018 | 2.00 | 5.00 | 21.39 |
| SEP. 2018 | 2.00 | 2.00 | 12.40 |
| DEC. 2018 | 2.00 | 2.00 | 11.92 |
| MAR. 2019 | 4.00 | 2.00 | 12.16 |
| SEP. 2019 | 2.00 | 2.00 | 17.37 |
| **AVG.** | **5.83** | **5.41** | **18.46** |

## SYSTEM DIAGRAM