Septic Dilution Calculation

Assumptions

System Type: On-Site Package Treatment Plant

System Design Nitrogen Removal: 94.5%

Disposal Field Area: 0.64 sq ft per gal per day

Vegetal Uptake: 0 %

Assumed Total Nitrogen in the Wastewater: 170 ppm

Average Use: 365 days/year

Total Square Feet: 9265

Gallons / Sq. Ft.: 0.125

Date: 10-23-2020

App. Number:

AppName: Dollar General

Municipality: Southampton

Block(s): 2203

Lot(s): 14

Af = 0.64 sq.ft./gal. x ((0.125 gal./sq.ft. x 9265 sq.ft.)) x 0.0929 sq.m./sq.ft. x .0001 ha./sq.m. x 4 effective area/actual area = 0.02754299 ha.

F = 10

Lf = (((0.125 gal./sq.ft. x 9265 sq.ft.)) x 365 days/yr. x 170 mg./l. x 3.785 l./gal. x .000001 kg./mg.) / 0.02754299 ha.) x 0.055 N reduction factor = 543.1436 kg./ha./yr.

Do = 50.8 cm/yr

Df = (0.125 gal./sq.ft. x 9265 sq.ft.) x 365 days/yr. x 3785 cc./gal.) / (0.02754299 ha.) x 1E+08 sq cm./ha. x 1) + 50.8 = 631.7023 cm./yr.

The average Nitrate-Nitrogen Concentration at the 3.11 acre property line would be 1.88 ppm.

Notes: Proposed 9,265 SF Dollar General