

# RESIDENTIAL NO3-N LOADING

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DEC 15 2022

Bourne Health Department  
24 Perry Avenue  
Buzzards Bay, MA 02532

**PROJECT:** 7 Wales Drive, Bourne  
EXISTING

TOWN Average Occupancy	2.5	ppl/unit
Bedrooms	2	
Units	1	
Title V Wastewater Flow =	220.0	gpd
Actual Wastewater Flow =	137.5	gpd
Total Land Area =	8179	ft2
Paved Area =	832	ft2
Roof Area =	1201	ft2
Lawn Area =	0	ft2
Natural Area =	6146	ft2

**ASSUMED VALUES**

Impervious Recharge Rate =	40	in/yr
Roof Runoff Concentration	0.75	mg/L
Road Runoff Concentration	1.50	mg/L
Lawn Nitrogen Leaching	25	%
Wastewater Concentration =	35	mg/L
Average Lawn Size =	5000	ft2
Recharge Rate =	21	in/yr
Fertilizer Application Rate	3	lbs/1000ft2

**CALCULATIONS**

Actual Wastewater Loading	18215.31	mg	Actual Wastewater Recharge	520.44	liters
Title V Wastewater Loading	29144.50	mg	Title V Wastewater Recharge	832.70	liters
Total Impervious Loading	555.73	mg			
Roof Loading	232.96	mg	Roof Recharge	310.61	liters
Paved Loading	322.77	mg	Paved Recharge	215.18	liters
Lawn Loading	0.00	mg	Natural Area Recharge	834.51	liters
Actual Total Loading	18771.04	mg	Actual Total Recharge	1880.74	liters
Title V Total Loading	29700.23	mg	Title V Total Recharge	2193.00	liters

TITLE V NITROGEN LOADING CONCENTRATION = 13.54 ppm

ACTUAL NITROGEN LOADING CONCENTRATION = 9.98 ppm

**Mean =** 11.76 ppm

Actual loading 6.85 kg/yr

Title 5 loading 10.84 kg/yr

**Mean=** 8.85 kg/yr