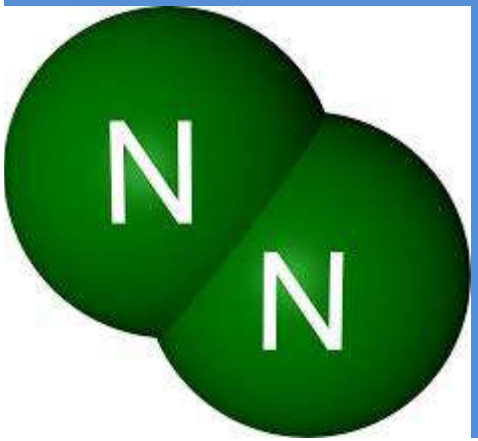
The effect of pre-treatment on the removal of nitrogen in the soil absorption systems of onsite septic systems



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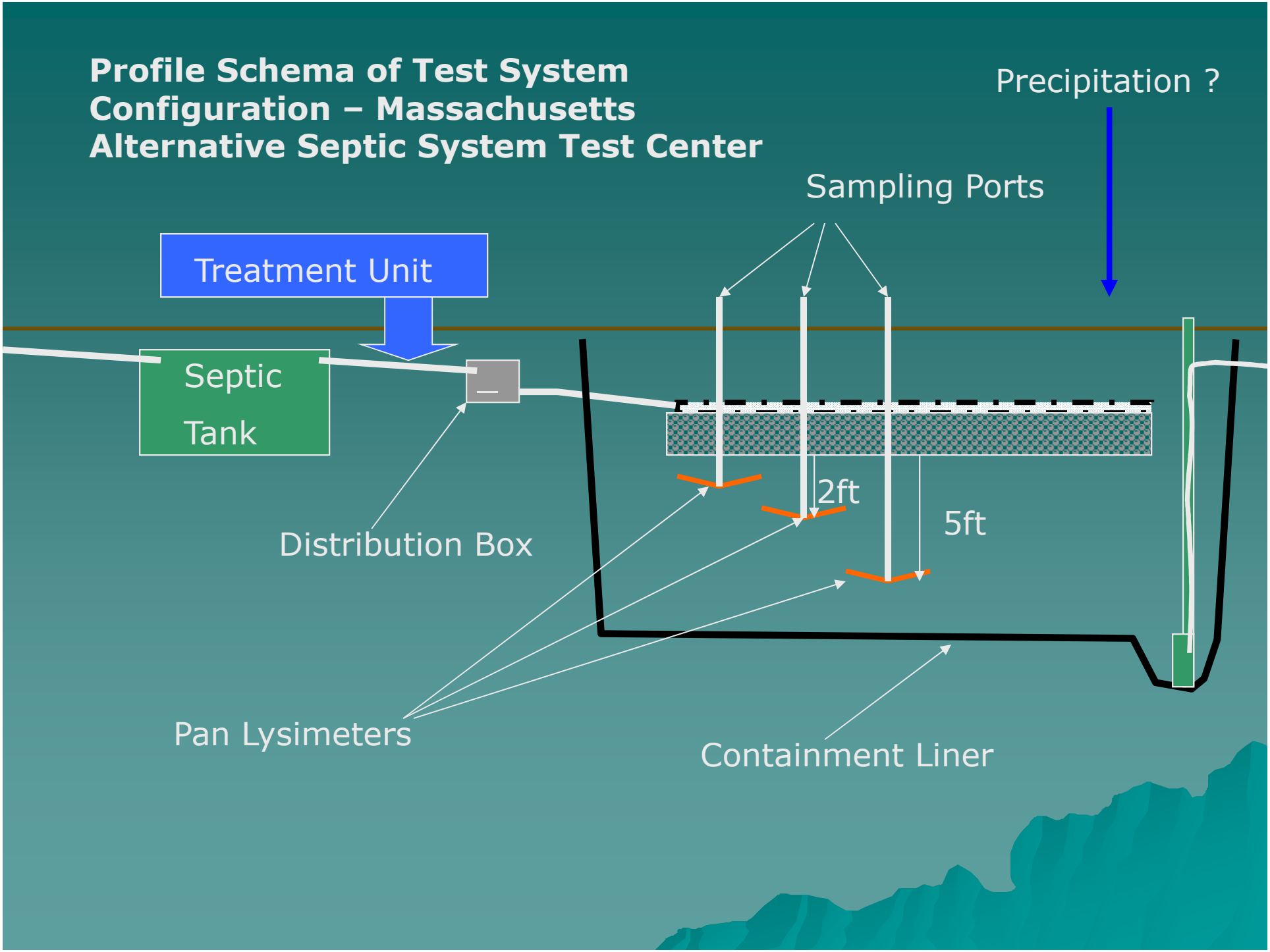
Massachusetts Alternative Septic System Test Center

How does pre-treatment of wastewater affect subsequent removal of nitrogen in the soil ?

The Test Center offered a near perfect opportunity to find out.

- We were already testing a number of pretreatment units
- All units were getting the same influent
- Rare ability to measure influent concentrations of nutrients
- All soil absorption systems were similarly constructed in large lined sand beds
- Two years worth of data

Soil absorption systems are completely underdrained allowing five feet of sand beneath each SAS.


Profile Schema of Test System Configuration – Massachusetts Alternative Septic System Test Center
Precipitation ?
Sampling Ports
Treatment Unit
Septic Tank
Distribution Box
2ft
5ft
Pan Lysimeters
Containment Liner

But first

Why do we care about nitrogen ?

In the majority of the marine estuary studies completed to date, over 75% of the excess nitrogen has been shown to originate from onsite septic systems

In most instances 50-80% of the nitrogen from existing septic systems must be removed.