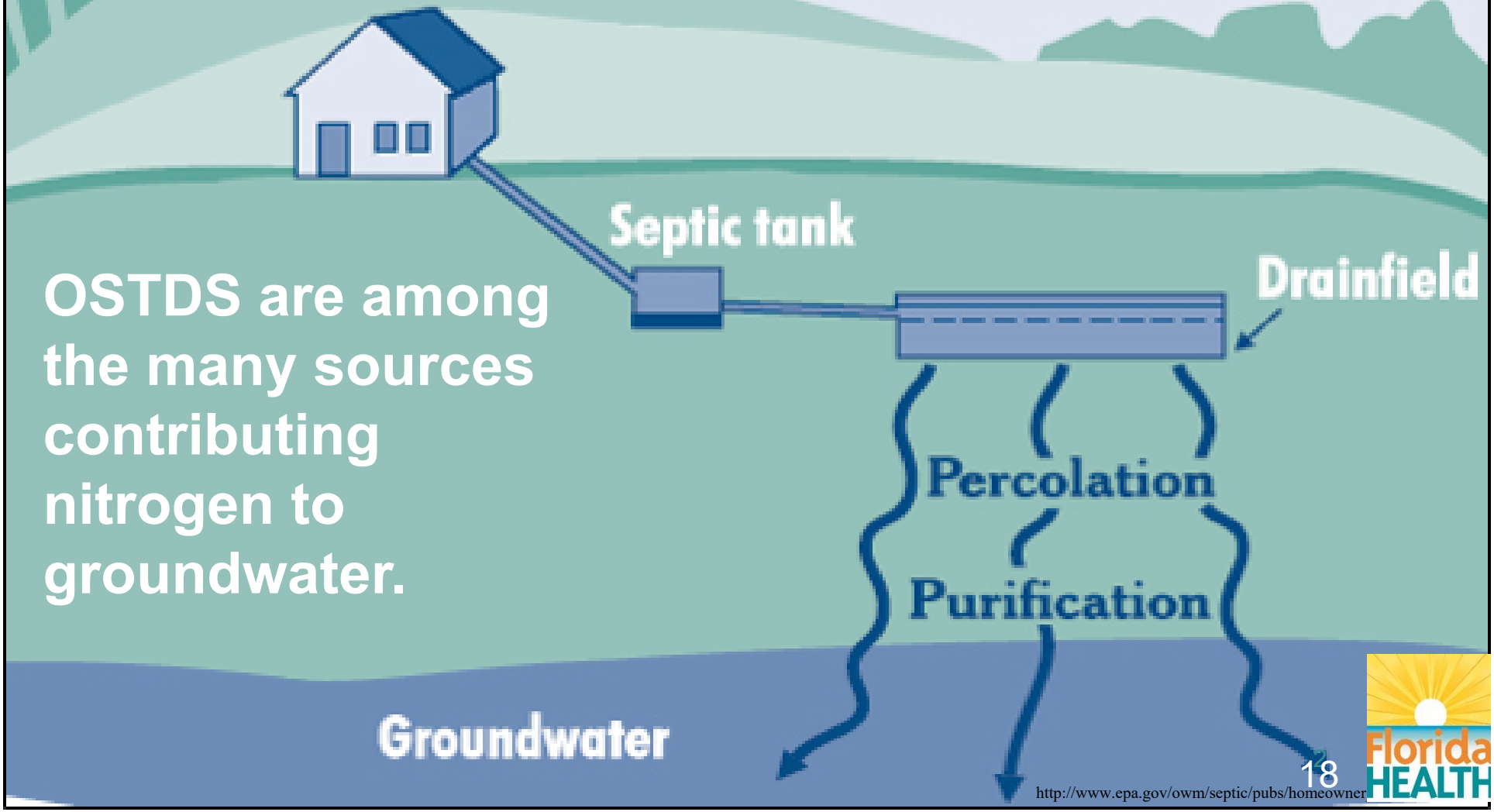
Spring Protection and Onsite Sewage Treatment and Disposal System (OSTDS) Remediation Plans

Bureau of Environmental Health
Division of Disease Control and Health Protection
Florida Department of Health

October 31, 2018

Septic Tank and Drainfield
(A Conventional OSTDS)



OSTDS are among the many sources contributing nitrogen to groundwater.

http://www.epa.gov/owm/septic/pubs/homeowner

Florida HEALTH

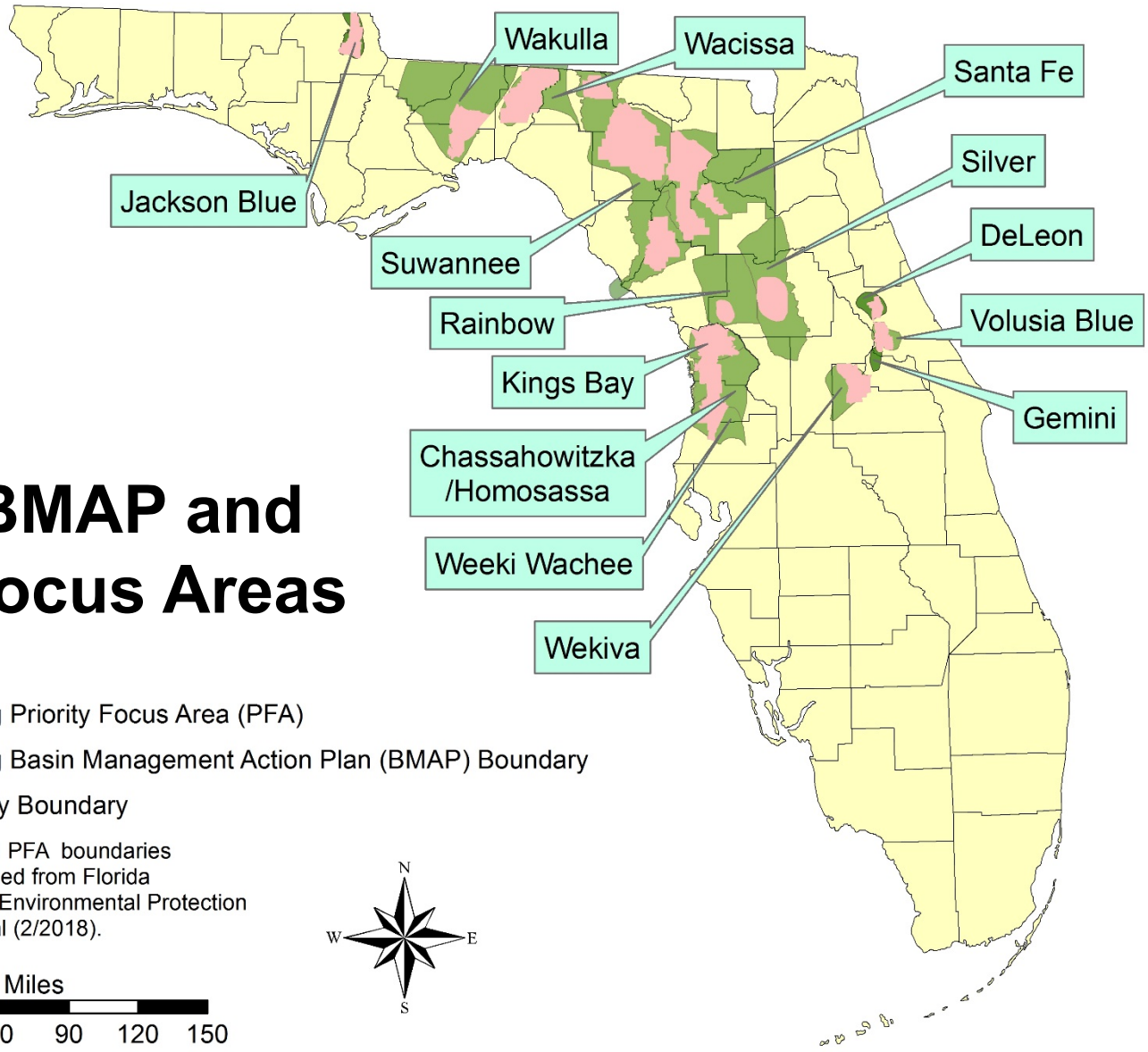
Florida Springs and Aquifer Protection Act

(Florida Statute Sections 373.801 – 373.813)

Area residents applying for **new** construction permits after expiration of the BMAP extensions (January 4, 2019) **in PFAs on lots less than one acre** have the following options:

- Connect to available sewer or,
- Install a non-nitrogen-reducing OSTDS if the applicant demonstrates that sewer connection will be available within 5 years or,
- Install a nitrogen-reducing OSTDS using various options identified by the Department.

Spring BMAP and Priority Focus Areas



"New" OSTDS per Florida Administrative Code, Chapter 64 E-6

- where none has been
- where the previous system was abandoned
- where the previous DEP-regulated treatment facility is withdrawn
- to serve a house addition rather than modifying the existing system

"New" OSTDS per Florida Administrative Code, Chapter 64 E-6

- to serve an additional structure on the property
- to replace a system when a structure expands into the location of the existing, or where the pool placement or other structure impacts the existing system
- where domestic flow increases over 20% at a non-residential establishment
- where there is any increase in commercial sewage flow

Permitting New OSTDS systems in PFAs

New permits applications completed (except the site evaluation) prior to January 4, 2019

- Will not be limited to nitrogen-reducing systems
- As previously required in 381.00655, FS, systems will have to connect to sewer should it become available

New permits applications completed after January 4, 2019 for systems on lots less than one acre in a PFA will require a nitrogen-reducing OSTDS

Existing Systems
DEP Septic Upgrade Incentive Program

- Effective September 17, 2018, DEP implemented an existing system upgrade incentive program
- The incentives are available to offset homeowner costs to upgrade existing systems to nitrogen reducing systems
- Payment will be made directly to registered septic tank contractors and state-licensed plumbers who register with DEP for the incentive program
- The incentive program is available for existing systems in Priority Focus Areas (PFA) of non-agricultural BMAPs (Citrus, Hernando, Leon, Marion, Orange, Pasco, Seminole, Volusia, Wakulla counties) only

Nitrogen-Reducing Treatment System Options

Overall Goal of Nitrogen Removal: ≥65%

Nitrogen-reducing Aerobic Treatment Units

- Certified to meet National Sanitation Foundation Standards 40 and 245
- Require operating permit (OP), maintenance entity (ME) and maintenance contract agreement (MCA)

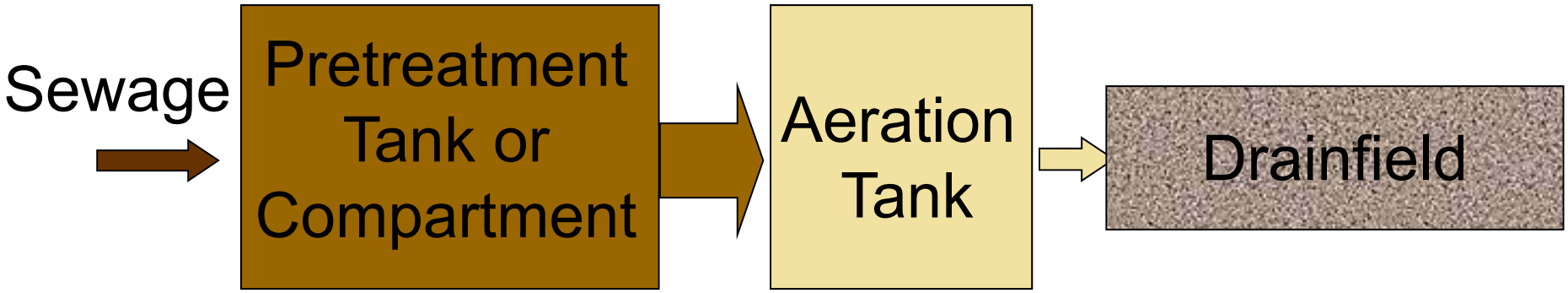
Performance-based Treatment Systems

- Must be designed by Florida Professional Engineer
- Require OP, ME and MCA

In-ground Nitrogen-Reducing Biofilter (INRB) stacked under a conventional drainfield

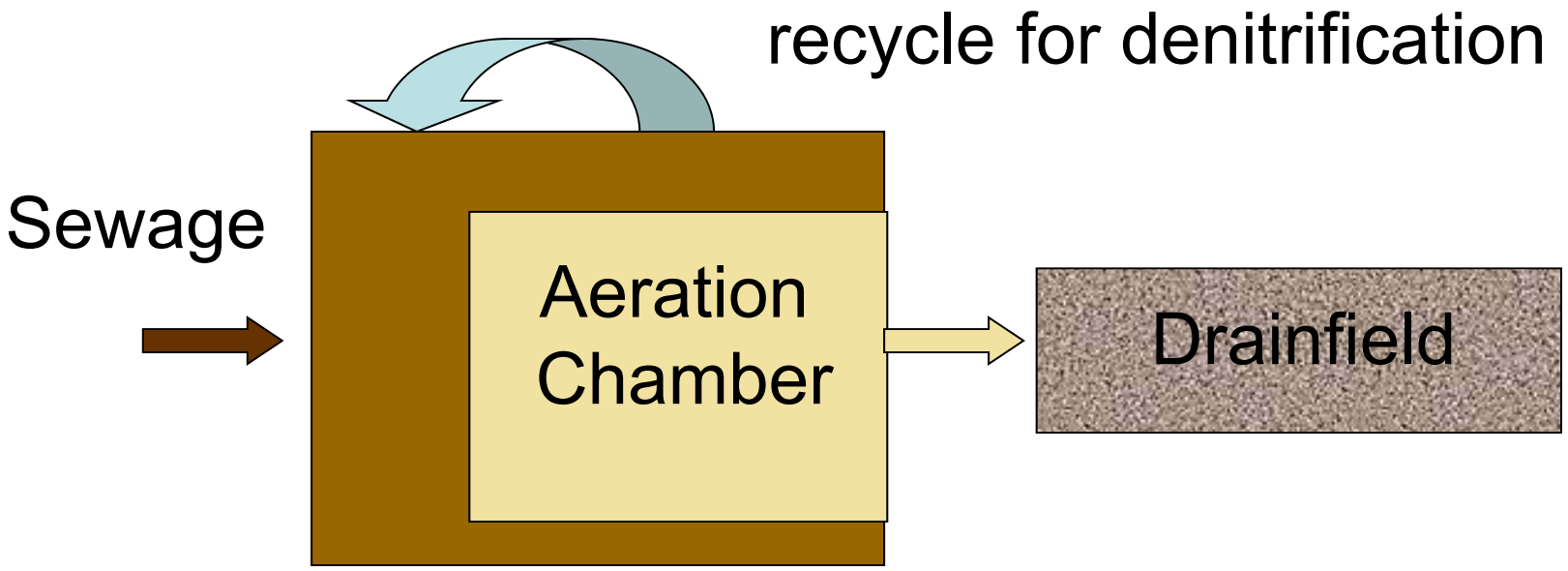
- No engineer design should be needed unless lot conditions require
- No OP, ME or MCA needed

Aerobic Treatment Unit (ATU)



- About 8,000 NSF 40 units installed in Florida
- Approximately 600 of these are nitrogen-reducing ATUs certified to meet NSF 245 Standard

Nitrogen-Reducing Aerobic Treatment Unit



List of NSF245-certified ATUs

Manufacturer	Equipment Series	NSF Tested Model	Florida Approved NSF – 245 Certified Models	Average Total Nitrogen Removal Efficiency (%)
Aquaklear, Inc.	AquaKlear	AK6S245	AK6s245C, AK10S245C	50.8%
Bio-Microbics, Inc.	BioBarrier	MBR 0.5	MBR 0.5-N; MBR 1.0-N; MBR 1.5-N	79%
Bio-Microbics, Inc.	MicroFAST	0.5	MicroFast 0.5, 0.625, 0.75, 0.9, 1.5	55%
Fuji Clean USA	CEN	5	CEN 5, 7, 10	74%

More NSF -245 certified ATUs can be found at:
http://www.floridahealth.gov/environmental-health/onsite-sewage/products/_documents/245cert-atu-18.pdf.pdf

Performance-based Treatment System (PBTS)

Specialized onsite sewage treatment and disposal system

In many cases, includes an ATU

Designed to achieve specific and measurable established *performance standards* for:

- Carbonaceous biochemical oxygen demand ($CBOD_5$), total suspended solids,
- TN (total nitrogen), TP (total phosphorus), and
- Fecal coliforms

Data for Components of PBTS

Equipment Series	Equipment	TN Removal (%)	Vendor	Innovative Status
Aerocell	Aerocell ATS SCAT-8-AC-C500	77%	Quanics	Yes
Aqua Safe	Aqua Safe 500	52%	Ecological Tanks Inc.	Yes
EcoPure	EcoPure 300	44%	Eco-Pure Wastewater System	n/a
CE	Fuji Clean CE 5	67%	Fuji Clean USA, LLC	Yes

- At least 50% nitrogen-reduction before drainfield
- Some of these are permitted for innovative system testing.
- More permitted PBTSs can be found at http://www.floridahealth.gov/environmental-health/onsite-sewage/products/_documents/npbts-components.pdf

Water Table Separation

INRBs

- Require to have at least 24 inches of water table separation (subtracting the lignocellulosic layer)

New ATU/PBTS

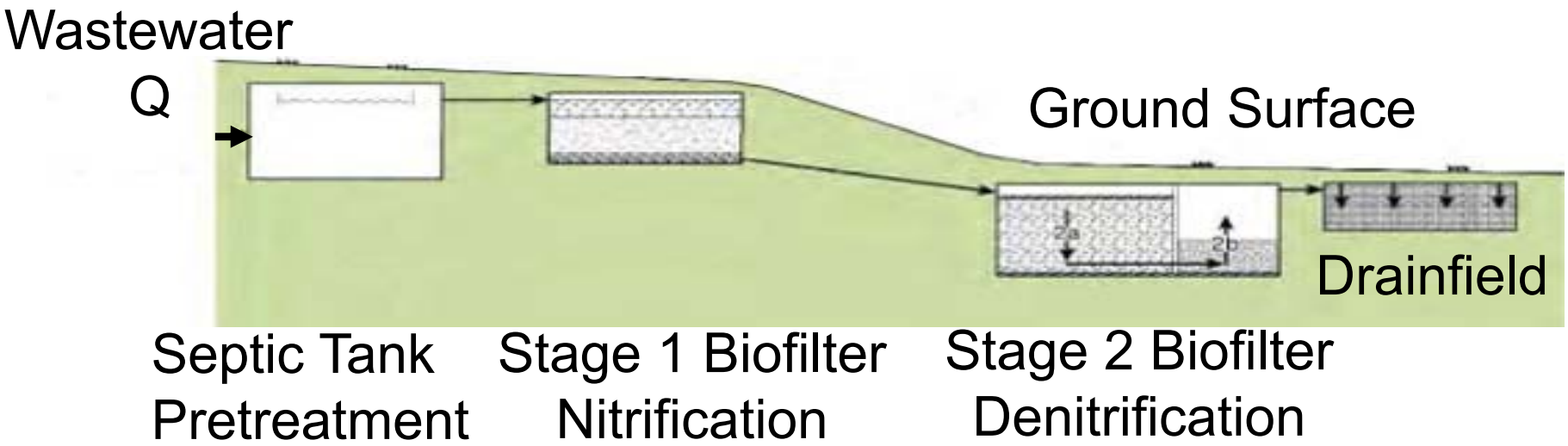
- Require to meet 24 inches of water table separation
- At least 50% nitrogen-reduction required before discharge to drainfield

Repairs or Modifications ATU/PBTS

- If nitrogen-reduction is ≥ 50% and < 65%: drainfield required to meet 24 inches water table separation
- If nitrogen-reduction is ≥ 65%: follow 64E-6 FAC for water table separation for systems repairs

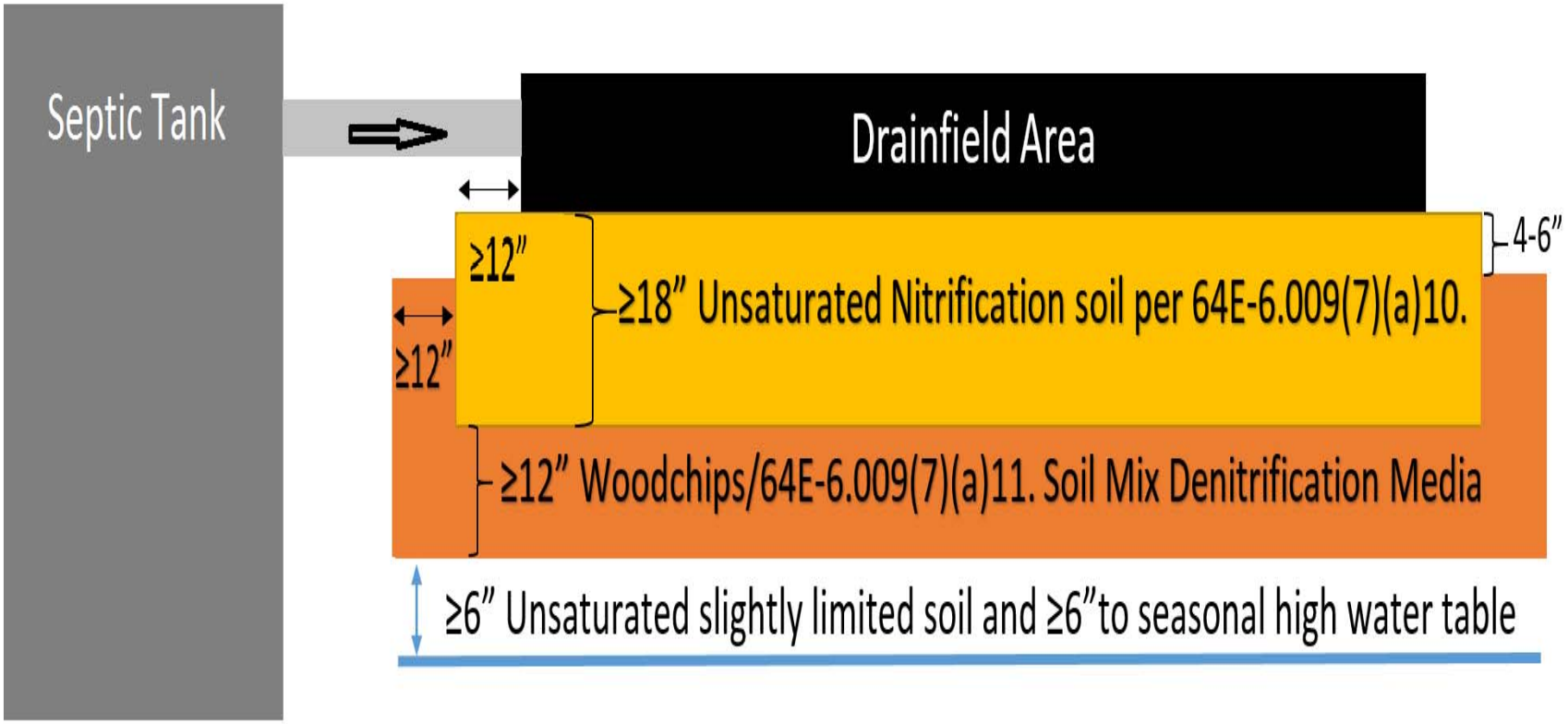
Two-Stage Nitrogen Reduction Process Example

In-tank Nitrogen Reduction Biofilter - PBTS



Note: In flat landscapes may need a single pump.

In-ground Nitrogen-Reducing Biofilter (INRB)



A nitrate-reducing layer below drainfield; material reacts with nitrate

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