HOW STUs CAN BE USED FOR NEW CONSTRUCTION AND UPGRADES

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Discussion Points

- Overview of innovative/alternative technologies in MA
- Types of innovative/alternative systems
- Somewhat recent changes to STU approvals
- Use of STUs for upgrades
- Use of STUs for new construction
- BOH Approvals
- Wrap-up
1995 Code set forth the procedure for approval

Four types of approval
- General Use
- Piloting Use
- Provisional Use
- Remedial Use
Types of I/A Approvals

- Restorative Treatment Processes
- Drip Dispersal Systems
- Buried Filter SASs
- Bottomless Sand Filter
- Secondary Treatment Units (STUs)
What is a Secondary Treatment Unit (STU)?

- An alternative technology that may be used as a component of an on-site sewage disposal system where soil or site conditions make conventional soil absorption systems more costly to construct or infeasible.

- Effluent from the STU shall meet secondary treatment standards:
  - BOD5 ≤ 30 mg/l
  - TSS ≤ 30 mg/l
  - pH between 6.0 and 9.0 SU
Remedial Use Approvals
Secondary Treatment Units with Remedial Use Approval

- AdvanTex
- Amphidrome
- Bioclere
- Busse-MF
- The Clean Solution
- Cromaglass
- FAST
- Modular FAST
- Hoot
- JET Bat
- Low-Rate ISF
- Puraflo Peat Fiber Biofilter
- SeptiTech
- Singulair
- Singulair Green
- Waterloo Biofilter
RUA Approvals for STUs

- November 5, 2012 Issuance
- Standard Conditions for Secondary Treatment Units Approval for Remedial Use
- Greater uniformity in conditions of approval
- Shorter specific technology approval letter references only technology specific info, conditions, etc.
- Similar to the conditions required of BSFs
II. Design and Installation Requirements, Para. 5

Provided that the Designer demonstrates that the impact of the proposed Alternative System has been considered and the design requirements of 310 CMR 15.000 have been varied to the least degree necessary so as to allow for both the best feasible upgrade within the borders of the lot and the least effect on public health, safety, welfare and the environment, the local approving authority may allow any combination of the following alternative design standards without the need for granting a variance under 310 CMR 15.400 or obtaining Department approval:
RUA Alternative Design Options

- Reduction in SAS area (up to 50%); and/or
- Reduction in depth of NOPM (down to 2 feet); and/or
- Reduction in depth to GW*
  - 2 foot separation in soils with perc rates slower than 2 mpi
  - 3 foot separation in soils with 2 mpi or faster perc rates

* See following discussion
II. Design and Installation Requirements, Para. 6

Any proposed reduction in the required depth to groundwater, specified in 310 CMR 15.212, may only be approved when:

a) An approved Soil Evaluator who is a member or agent of the local Approving Authority determines the high groundwater elevation;…
STU Standard Conditions

- Disclosure notice in the deed (MassDEP website)
- Certifications by designer and installer (no standard form)
- Contract operations
- Periodic sampling, recordkeeping and reporting
- 24-hr notification of system failure
- 24-hour emergency storage (req’d – STU w/ RUA has pressure distribution)
- Owner acknowledgement of responsibilities
Design and Installation Requirements

- 26 in all: these are the highlights
- Effluent BOD5, TSS and pH standards
- PE or RS (< 2,000 gpd)
- 3 Alternative design standards
- Best Feasible Upgrade
- NSA requirements for systems >2,000 gpd
- Expanded submittal to BOH
Best Feasible Upgrade

Identified

1. Conventional (with or without reserve area)
2. Conventional with LUA
3. BSF
4. Variance (w/ maximum capable compliance)
5. Tight Tank

Undisturbed
General Use Approvals
Secondary Treatment Units with General Use Approval

- AdvanTex
- Amphidrome
- Bioclere
- Busse-MF
- The Clean Solution
- Cromaglass
- FAST
- Modular FAST
- Hoot
- JET Bat
- SeptiTech
- Singulair
- Waterloo Biofilter
STU GUA Reduced SAS Option

- For residential systems less than 2,000 gpd
- SAS may be reduced up to 50% from required area for a gravity SAS (using graving LTAR)
- No variance to GW separation
- No variance for depth of NOPM
- Pressure distributed SAS
- If pressure distribution LTAR is used, no reduction
- For residential systems 2,000 gpd or greater or any nonresidential systems, no reduction
Additional Requirements with SAS Reduction – GUA

- Full-sized SAS area shown on plans and approved
- No permanent buildings or structures or disturbance that would encroach on the area approved for the full-sized primary conventional SAS
- Full-sized reserve SAS shown on plans and approved
- No permanent buildings or structures or disturbance that would encroach on the area approved for the full-sized reserve conventional SAS
Conditions Applicable to RUA and GUA STUs
Expanded BOH Submittal

- Designer proof of technology training, if required by Company
- >2,000 gpd system, Company certification
- Designer certification of design conformance
- Owner certification*
Owner Certification

- Documents and agrees to terms and conditions
- Aware of estimated costs associated with operation
- Understands service contract requirement
- Requires Deed Notice
- Approval given to any new owner
- Garbage grinder restriction as appropriate
- Understands about repair/replacement/etc.
Operation and Maintenance

- O&M contract with Grade II WWTPO
- Sampling
- SFH: annual
- <2,000 gpd: semi-annual; >2,000 gpd: quarterly
- If used with BSF, BSF requirements trump those of the STU (RUA only)
- Procedures when ample results outside of limits
- Immediate discharge cessation/hauling if failure/back-up/break-out
Reasons for these Requirements

- Lessons learned regarding:
  - What works/doesn’t
  - Owner involvement/knowledge
  - O&M requirements
  - Design considerations

- Approvals are evolving to incorporate lessons

- Look for more changes in the future
Contact for STU Approvals

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THANK YOU!