

## Summary of Proposed January 1, 2015 Revisions to the Technical Standards for Subsurface Sewage Disposal Systems

### ○ **Section I Definitions:**

- Eliminate the definition for “two (2) inch nominal tire chip aggregate”, and reference to that term in the approved aggregate definition.
- Add definition for “outbuilding”: Outbuilding means a structure that is served by a water supply and sewage disposal system, and that is located on the same lot as a residential building, and that cannot be split off and sold as a separate residential building. Outbuildings include, but are not limited to, detached garages, workshops, barns, pool house cabanas, game rooms, guest houses, and in-law apartments.
- Add definition for “receiving soil”: Note: Receiving Soil definition is currently in MLSS Appendix A, but the term is used elsewhere in the standards in addition to this appendix.
- Add definition for “cesspool”: A primitive (pre-B103/1982), hollow sewage disposal system that does not follow a septic tank; and that is designed to retain organic matter and solids, permitting the liquid wastewater to seep into the surrounding soil. Cesspools are considered leaching systems for Table 1 minimum separating distance purposes.
- Add definition for “proprietary pressure-dosed dispersal system” and stipulate it includes both proprietary drip dispersal systems and proprietary low pressure distribution systems, and note that these systems use a pump or automatic siphon and small diameter distribution piping with small-diameter holes to introduce septic tank effluent into the soil. Alternate term: “pressure distribution system” (Defined in International Private Sewage Disposal Code (IPSDC)).
- Revise the “effective leaching area (ELA)” definition so the square feet rating measure based on infiltrative area and type of infiltrative interface does not apply to proprietary pressure-dosed dispersal systems, and note the sizing for those systems are correlated to area needed for a 3-foot wide leaching trench (See Section VIII).
- Revise definition for “leaching system” so that it includes the perforated piping utilized in proprietary pressure-dosed dispersal systems.
- Revise definition for “proprietary leaching system” to stipulate it does not include proprietary pressure-dosed dispersal systems.
- Add definition for “sewage disposal system”: Sewage Disposal System means a subsurface sewage disposal system, cesspool, holding tank, privy, or exterior non-discharging sewage system regulated by the various sections of Public Health Code regulation 19-13-B103, and the associated Technical Standards for Subsurface Sewage Disposal Systems.
- Revise the definition of “tight pipe” to reference new table designation: Table 3.

### ○ **Section II Location of SSDs:**

- Add language noting minimum separating distances shall be maintained between the cited items and sewage disposal systems.
- Special provision language to reference “sewage tank” and note sewage tanks include septic tanks, pump chambers, grease interceptor tanks, and holding tanks.
- Modify Table 1 to combine Item B (Human Habitation on Adjacent Property) and Item C (Building Served) and note it applies to all buildings served by a sewage disposal system, and allow the special provision reduction down to 10 feet for buildings served that don’t have groundwater drains.
- Provide separate item rows for groundwater drains, and stormwater infiltration and retention/detention systems, which are currently both in Table 1 Item G. Note: Assuming 46” of

precipitation/year in CT, this equates to an average of approximately 3,400 gallons/acre per day. The collection of even small areas (i.e., ¼ acre) of impervious area stormwater and discharge near SSDSs remains a concern. Currently minimum separation distances for stormwater infiltration systems are the same as drains. Provision for reduced distances for rain gardens on single-family residential building lots may need to include drainage area limits. Note: DEEP's 2004 CT Stormwater Quality Manual (pages 11-P3-3 & 11-P3-4) stipulates that stormwater infiltration systems should be kept at least 75 feet from septic systems unless otherwise recommended by DEEP, DPH or the local health department. This would seem appropriate for parking lot drainage systems on commercial sites. Separating distance reductions should be considered only when the groundwater recharge is evaluated to confirm localized groundwater mounding will not affect the SSDS. Comments welcome on infiltration systems of most concern to SSDSs. Sites where MLSS is not applicable are less of a concern.

- Modify Table 1 Item F (Surface & GW Drain Pipes) to also cover stormwater catch basins and manholes (25' separating distance), and include provision for reduced distance of 10 feet to sewage tank if the stormwater structure has watertight pipe seals, and seams with gaskets. Change the special provision table designation for approved tight piping to Table 3.
- Modify Table 1 Item O (Water Treatment Wastewater System) to reference term Water Treatment Wastewater Disposal System utilized in DEEP's new LFWTW General Permit, and cite a 25 feet minimum distance for discharges less than 300 GPD, with a provision to reduce distance to 10 feet if discharge is less than 150 gallons per day and not downgradient of leaching system. Specify 50 feet minimum distance for discharges between 300 to 500 GPD, and potentially 75 feet minimum distance for discharges exceeding 500 GPD (ex. GP for large flows being extended).
- Modify Table 1 Item P (Closed Loop Geo-exchange Systems) to include provision for a reduced distance of 25 feet to sewage tank, and to leaching systems except for leaching systems upgradient of closed loop geo-exchange systems. Geo-exchange term to be change to geothermal.
- In coastal areas, add note that lacking site specific information as to the extent the high tide typically extends to on a property, the Coastal Jurisdiction Line established pursuant to Public Act 12-101 shall be used as the limits of the open watercourse.
- **Section III Piping:**
  - Modify wording in Figure 2 to reference solid SSDS pipes rather than sanitary sewer.
  - Consolidate all sewer piping (building sewer, distribution piping, force mains) into Tables 2, 2-A, and 2-B per below.
  - Eliminate current Tables 2-A & 2-B that concern public sewer piping near water supply wells.
  - Change the table designation for the current Table 5 (Effluent Distribution Pipe) to Table 2-A, and move the distribution piping currently in Table 2-C to the new Table 2-A. Designate approved solid distribution piping for use within 25' from an open watercourse, groundwater or surface water drainage system, and within sanitary radius of a water supply well. Note: No cast iron or ductile iron piping will be in the distribution piping table.
  - Change the table designation for the current Table 2-D (Approved force mains near wells, drains, & watercourses) to Table 2-B.
  - Change the table designation for the current Table 2-C to Table 3, and change title to Approved Tight Pipe for Groundwater and Surface Water Piping within 25' of a Sewage Disposal System.
  - Eliminate Subsection C (Procedure for Air Pressure Testing of Sewer Pipe) including current Table 3, and add reference to applicable leakage test specifications. Plastic (PVC & PE) non-

pressure sewer line low pressure air test: ASTM F1417. Ductile iron: Hydrostatic pressure testing per AWWA C600. Concrete pipe: ASTM C924 (Per TR-16).

- **Section IV Design Flows:** None

- **Section V Septic Tanks & Grease Interceptor Tanks:**

- Non-concrete septic tanks must meet IAPMO septic tank standard, or other tank standard w/ the approval of DPH. Also note tank markings shall include dangerous gas warning and tank size.
- Create new Table 5 that will include the current chart for minimum septic tank capacities for residential buildings.
- Stipulate septic tank covers shall be kept on the tanks when riser assemblies are utilized, unless a secondary safety lid or device is provided below the riser cover or the riser cover weighs more than 59 pounds.

- **Section VI Effluent Distribution, Pump Systems & Air Injection Processes:**

- Pump chamber diagram (Figure 11) modified (check valve location, 2<sup>nd</sup> weep hole?).
- Reference proprietary pressure-dosed dispersal systems in Subsection C.
- Subsection C currently stipulates low-pressure distribution systems require a PE design. Modify that stipulation so that it applies to low-pressure distribution systems used in conjunction with leaching trenches, leaching galleries, and proprietary leaching systems, and include provisions for non-PE designed low-pressure distribution systems for leaching system manufacturers that submit to DPH supporting documentation for their low-pressure distribution system arrangements for use with their leaching system products, and receive DPH concurrence that the dosing system is sufficiently detailed/designed so that a PE design is not required.
- Modify wording about pumping large volumes of effluent into leaching systems with limited storage. Apply to proprietary leaching systems only as non-proprietary leaching systems don't have limited storage. Note 20% internal storage maximum dose unless approved by the proprietary leaching system company.
- Require 1-day emergency storage or dual pumps for exterior raw sewage pump systems that pump more than 25% of the subsurface sewage disposal system's design flow, except this provision would not apply to outbuildings. Require minimum tank size (100 -200 gallons?) for exterior raw sewage pump systems handling 100% of building's wastewater, except for outbuildings, even if dual pumps provided.
- Add reference to new approved proprietary dosing systems (Geomatrix HydroAir & Premier Plastics Flout© Dosing Tanks).

- **Section VII Percolation Tests:**

- Add language about not reading last 2-3 inches of percolation test.

- **Section VIII Leaching Systems:**

- Note that reserve areas are not required for outbuildings on single-family residential building lots.
- Modify Table 6 (Residential Buildings) to include provision for 1-bedroom leaching system sizing for residential outbuildings on single-family residential building lots, and stipulate required minimum ELA is 50% of the required 2-bedroom ELA.

- Modify Table 6 (Residential Buildings) so that the current required ELA for 2, 3, or 4 bedrooms applies to single-family residential buildings, and multi-family residential buildings need to be sized for 1 additional bedroom.
- Remove language concerning two (2) inch nominal tire chip aggregate.
- For leaching systems in select fill, stipulate that select fill shall be percolation tested after placement to confirm the rate is not slower than the ELA sizing percolation rate. Leaching systems installed partly in select fill and partly in receiving soil shall be sized upon the slower percolation rate of the select fill or underlying receiving soil. Leaching systems entirely in select fill shall be sized based on select fill percolation rate determined after placement.
- Revise language concerning manufactured fill so that it is broad enough to apply to recycled glass product. Rock or other product used to make manufactured fill...(2<sup>nd</sup> paragraph on page 39).
- Add proprietary leaching systems approved after the last Technical Standards' revision.
- Incorporate proprietary pressure-dosed dispersal systems into this section, and reference the Perc Rite proprietary drip irrigation (dispersal) system (approval pending). List approved proprietary pressure-dosed dispersal systems in Subsection F, and change current Subsection F to Subsection G, and change current Subsection G to Subsection H. Note that the sizing of proprietary pressure-dosed dispersal systems shall be correlated to an equivalent area needed for a conventional 3 feet wide leaching trench. Require new construction utilizing proprietary pressure-dosed dispersal systems identify on the design plan an area that can accommodate a conventional 3-foot wide leaching trench system including any necessary fill including fill extensions.
- Change the language in Subsection H (currently Subsection G) to indicate the ELA rating criterion that takes into account the interface factors, and the center to center minimum spacing based on ELA ratings do not apply to proprietary pressure-dosed dispersal systems. Stipulate the ELA sizing requirements and tubing/piping spacing for proprietary pressure-dosed dispersal systems must be approved by the Commissioner of Public Health based on a review of supporting documentation from the proprietary company. Currently under consideration for the Perc Rite drip irrigation system: Minimum linear footage of drip tubing is four (4) times the required linear footage of a 3-foot wide leaching trench system calculated based for the building served, and the tubing shall have a 1.5 feet minimum center to center.
- Note that leaching system products approved after January 1, 2015 will get ELA rating limitations for competing bio-mats (no credit for <1/2 inch, 50% credit for ½ to 2 inches). Stipulate the Commissioner of Public Health can require currently approved leaching systems that receive ELA credit for competing bio-mats less than 2 inches apart be re-evaluated and a revised ELA published in the next revision of the Technical Standards.
- Discussion on the need to eliminate internal bio-mat ELA credits for non-viable/available interfaces.
- Discussion on internal interface ELA credits to ensure flow pathway maintains soil aeration and low soil moisture. Discount sand area within 1" of internal interface in flow assessments. The bottom sand area available for internal loading must be capable of transmitting unsaturated flow, and the bottom sand area that is deemed available is between 1 inch and 1-foot (horizontal measurement) of an internal bio-mat interface. Internal bio-mats credited if within 2 feet of each other. Note that leaching system products approved after January 1, 2015 will get ELA rating limitations for internal interfaces, and stipulate the Commissioner of Public Health can require currently approved leaching systems that receive ELA credit for internal interfaces be re-evaluated and a revised ELA published in the next revision of the Technical Standards.
- Re-evaluate leaching system credited height (¾ up pipe being considered) to recognize available leaching system interfaces above the pipe invert, or provide leaching trenches and galleries

alternate designs with piping (SDR 35) at the top of the system similar to the arrangements afforded to proprietary leaching systems. Promote gas transfer in leaching systems.

- Center to center (C to C) spacing considerations for leaching systems except for proprietary pressure-dosed dispersal systems: Provide mechanism in the Technical Standards that would allow the Commissioner of Public Health to authorize (C to C) spacing reductions, with the stipulation that a minimum of 2 feet between sidewall interfaces are maintained, following review of such a request by the leaching system manufacturer and a determination that construction of the leaching system with the reduced C to C spacing is feasible.
- Re-evaluate the current 0.4 SF/LF reduction cited for chambers products that are backfilled with non-select fill to ensure the products are being credited too high. Consider removing.
- Add new language noting that in coastal areas on sites that have a groundwater table that is tidally impacted, the minimum separation distance for the bottom of the leaching system above maximum groundwater shall be 24 inches, and maximum groundwater determinations shall take into account water level rise associated with high tides.
- Allow non-marked filter fabric to cover leaching systems if product information and specifications for a specific fabric are included on the engineered design plan, and documentation is submitted by the design engineer to the local health department confirming fabric meets the minimum specifications (unit weight, permittivity, trapezoid tear strength) cited in the Technical Standards, and the design engineer submits an as-built drawing to the local health department along with a certification the designated fabric was utilized.
- Move the distribution piping paragraph to Section III Piping. Note: See Sections III & V for new piping table designations.
- **Section IX Groundwater, Roof, Cellar and Yard Drainage:**
  - Note that porous pavers/concrete are not considered stormwater infiltration systems for the purposes of minimum separation distances in Table 1, and are allowed within 25 feet of a SSDS. Include language about rain gardens on single-family residential building lots if Table 1 includes provisions for reduced distances below 25 feet.
- **Section X Other Wastewater:**
  - Revise language to note DPH may allow Point of Use (i.e., kitchen tap treatment system) water treatment wastewater to discharge to a SSDS if the discharge is deemed to be incidental.
  - Modify language to stipulate Point of Entry (i.e., whole house treatment systems) water treatment wastewater shall be discharged in accordance with DEEP's General Permit (GP) for the Discharge of Low Flow Water Treatment Wastewater issued January 30, 2014, which authorizes on-site discharges to dedicated disposal systems. Reference the item designation in Table 1 for water treatment wastewater disposal system minimum separation from sewage disposal systems. Revise to also cover DEEP's existing GP for Water Treatment Wastewater that is currently being revised.
- **Section XI Non-Discharging Systems: None**
- **Forms #1, 2, 3 & 4: None**
- **Appendix A, MLSS Revisions:**
  - Currently, a percolation rate of 10.1 – 20.0 is specified for select fill for non-compliant repair MLSS. Modify to utilize the actual percolation rate of the select fill.

- Add Flow Factor (0.5) for 1-bedroom residential outbuildings on single-family residential building lots, and for 1-bedroom residential buildings. Note: The minimum leaching system size for residential buildings is still 2-bedrooms even if the building only has 1-bedroom, except for 1-bedroom residential outbuildings on single-family residential building lots per Section VIII Leaching Systems.
- Revise item #2 in the non-compliant repair (NCR) minimum leaching system spread (MLSS) portion of Appendix A to stipulate that the receiving soil in the leaching system area shall be measured from the top of the leaching system to the restrictive layer. Currently it is measured from the bottom of the leaching system.
- **Appendix B & Appendix C:**
  - Update Appendix B to include new filters and company names, and delete filters no longer approved.
- **Appendix D, Approved Non-Concrete Septic Tanks:**
  - Update appendix to include the approved tanks based on most recent list.

Summary Date: September 16, 2014