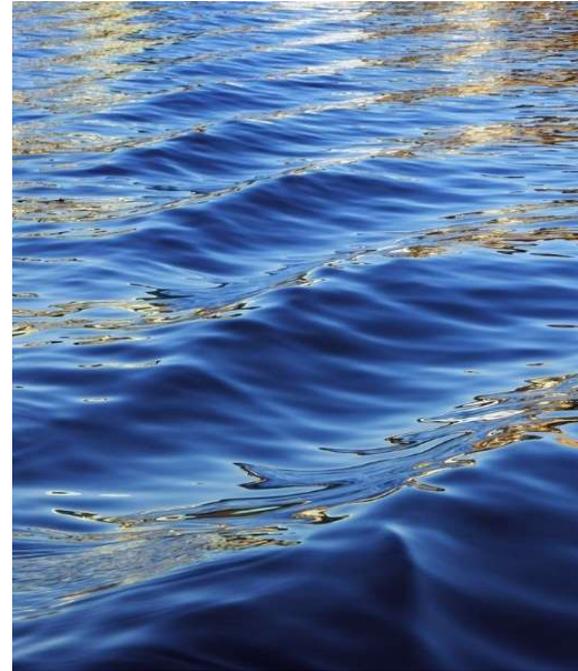


Onsite Wastewater Super Conference 2026

Overview of Newly Proposed
Onsite Wastewater Facilities
Regulations – Chapter 73

Camp Hill, PA
February 3, 2026



Overview of Newly Proposed Onsite Wastewater Facilities Regulations – Chapter 73

"DEP has approved this conference for SEO continuing education conference credits. The approval is based on the organization's narrative for the overall conference and each breakout session. DEP has not reviewed the content of the conference and does not guarantee that the sessions provide complete and accurate information about Pennsylvania's Sewage Facilities Act, the regulations promulgated thereunder, and DEP policy."

Overview of Newly Proposed Onsite Wastewater Facilities Regulations – Chapter 73

The Regulatory Process: Step by Step |

- 1. After a need to create or change a regulation is identified, DEP develops draft regulatory language, which is shared with stakeholder groups, including DEP advisory committees.*
- 2. The (EQB) considers the draft regulation and votes to adopt it as a proposed regulation.*
- 3. Once adopted, the proposed regulation undergoes review by the Office of General Counsel, the Governor's Budget Office, and the Office of Attorney General.*
- 4. The proposed regulation is published in the Pennsylvania Bulletin and opened for public comment (<http://www.pacodeandbulletin.gov/>), then sent to the House and Senate Environmental Resources and Energy committees and IRRC for review. The EQB may hold public hearings on the proposed regulation as part of the public comment period.*
- 5. All public comments submitted during the public comment period to the EQB become part of the official public record.*

Overview of Newly Proposed Onsite Wastewater Facilities Regulations – Chapter 73

6. *DEP reviews all comments and develops responses to those comments, including developing revisions to the proposed rulemaking, if needed. This new version, called the draft final regulation is again shared with stakeholder groups, including DEP advisory committees.*
7. *EQB considers and votes whether to adopt the final regulation.*
8. *Once adopted as final, the regulation is sent to the House and Senate Environmental Resources and Energy standing committees and IRRC for action.*
9. *If approved by the standing committees and IRRC, the final regulation is submitted to the Attorney General's Office for approval.*
10. *Once approved by the Attorney General's Office, the regulation is published in the Pennsylvania Bulletin and becomes enforceable under law.*
11. *Once the regulation is published, it is immediately effective, unless otherwise specified, and is enforced by DEP. Reference materials such as fact sheets are developed, training for staff and opportunities for stakeholders to become educated are put in place. As part of its compliance assistance efforts, DEP will work with the regulated community to ensure understanding of the new regulations and obligations for compliance.*

Overview of Newly Proposed Onsite Wastewater Facilities Regulations – Sewage Advisory Committee Recommendations

- **High-Priority SAC Recommendations**

The Committee respectfully recommends that the Department give particular consideration to the following items as the rulemaking advances toward final form:

- **Long-Term Performance Monitoring**

Remove long-term performance monitoring requirements unless such requirements apply equitably to *all* systems, rather than being limited to alternative or advanced technologies.

- **Soil Loading Criteria**

Replace the currently proposed modified Tyler Soil Loading Chart with the full version of Dr. Tyler’s Soil Loading Chart to ensure scientifically defensible and technically consistent application.

- **Fecal Coliform Limits**

Remove fecal coliform limits as currently drafted, as these limits present feasibility, monitoring, and enforcement challenges without clear corresponding benefit.

- **Horizontal Isolation Distances**

Maintain existing horizontal isolation distances for all systems. Proposed increases may significantly reduce feasibility on constrained or legacy lots without sufficient technical justification.

Overview of Newly Proposed Onsite Wastewater Facilities Regulations – Sewage Advisory Committee Recommendations

- **Time Dosing for Pumped Systems**

Incorporate time dosing requirements for all systems utilizing pumps for pressurization, recognizing its importance for long-term system performance and reliability.

- **Watertightness Testing Standards**

Require watertight testing of tanks in accordance with **ASTM C1227**, providing a clear, nationally recognized standard.

- **Sewage Management Program Applicability**

Ensure sewage management requirements are appropriately scaled to population density, and that restrictions on new land development are implemented in cooperation with local authorities and consistent with municipal planning practices.

- **Definition and Determination of Malfunction**

Clearly define “malfunction” in regulation and provide explicit guidance identifying the entity authorized to make malfunction determinations, to promote consistency, enforceability, and due process.

- **System Replacement Flexibility**

If Best Technical Guidance is eliminated, ensure that replacement processes are not so onerous that malfunctions persist. All feasible alternatives should be thoroughly evaluated before requiring installation of a holding tank.

Overview of Newly Proposed Onsite Wastewater Facilities Regulations – Sewage Advisory Committee Recommendations

- **Housing Affordability Considerations**

In light of the Commonwealth's recognized shortage of affordable housing, ensure regulatory changes do not impose unreasonable burdens on the regulated community that could inhibit housing affordability, redevelopment, or repair of existing homes.

Additional Committee Observations

- In addition to the high-priority items above, the Committee offers the following overarching observations derived from its regulation-by-regulation review:
- **Clarity and Consistency Across Chapters**
- Definitions, terminology, and procedural requirements should be aligned across Chapters 71, 72, and 73 to reduce confusion and promote uniform application.
- **Implementation Practicality and Local Administration**
- Regulatory expectations should reflect the operational realities and resource constraints of municipalities, county health departments, SEOs, and delegated local agencies. Clear guidance and realistic timelines are essential for consistent statewide implementation.
- **Technical Standards and Regulatory Flexibility**
- While updated technical standards are supported, the Committee encourages maintaining appropriate flexibility to address site-specific conditions and to accommodate emerging technologies.

Overview of Newly Proposed Onsite Wastewater Facilities Regulations – Sewage Advisory Committee Recommendations

Additional Committee Observations

In addition to the high-priority items above, the Committee offers the following overarching observations derived from its regulation-by-regulation review:

- **Clarity and Consistency Across Chapters**

Definitions, terminology, and procedural requirements should be aligned across Chapters 71, 72, and 73 to reduce confusion and promote uniform application.

- **Implementation Practicality and Local Administration**

Regulatory expectations should reflect the operational realities and resource constraints of municipalities, county health departments, SEOs, and delegated local agencies. Clear guidance and realistic timelines are essential for consistent statewide implementation.

- **Technical Standards and Regulatory Flexibility**

While updated technical standards are supported, the Committee encourages maintaining appropriate flexibility to address site-specific conditions and to accommodate emerging technologies.

- **Transition Provisions**

The final rulemaking should include clear transition provisions addressing applications, approvals, and enforcement actions in progress at the time the regulations become effective.

Overview of Newly Proposed Onsite Wastewater Facilities Regulations – Sewage Advisory Committee Recommendations

- **Guidance and Outreach**

The Committee recommends development or revision of supporting guidance documents, training materials, and standardized forms concurrent with final rulemaking to facilitate understanding and compliance.

Overview & Impact Assessment of Newly Proposed Onsite Wastewater Facilities Regulations

- Proposed Chapter 73 Regulations – Standards for Onlot Sewage Treatment Facilities

- New Definitions:

- **Advanced Secondary Treatment** - The use of physical, biological and chemical operations and processes designed to achieve a CBOD₅ and total suspended solids of 10 milligrams per liter or less.
- **Coarse Aggregate**- Coarse material consisting of hard, tough, durable and uncoated inert particles reasonably free from clay, silt, vegetation and other deleterious substances such as reactive chert, gypsum, iron sulfide, amorphous silica and hydrated iron oxide.
- **HLLR** - Hydraulic linear loading rate—The volume of effluent applied to the soil, per linear foot of infiltration component of an onlot sewage system, that can be transmitted far enough away from the infiltrative surface so that it does not impede infiltration of additional effluent. It is expressed in gallons per linear foot per day and determined using soil morphology, depth to a limiting zone and slope.
- **Sand** - Natural silica or manufactured silica-based material consisting of hard, durable, and uncoated inert particles reasonably free from clay, silt, vegetation and other deleterious substances such as reactive chert, gypsum, iron sulfide, amorphous silica and hydrated iron oxide. Substances present in amount large enough to cause inconsistent performance for use as media in absorption areas and filters are considered deleterious.

Overview & Impact Assessment of Newly Proposed Onsite Wastewater Facilities Regulations

- Proposed Chapter 73 Regulations – Standards for Onlot Sewage Treatment Facilities

- New Definitions:

- **Secondary Treatment** - The use of physical, biological and chemical operations and processes designed to achieve a BOD₅ and total suspended solids of 30 milligrams per liter or less.
- **TSS—Total suspended solids** - The weight of solids remaining after a well-mixed sample is filtered through a standard glass filter and the suspended portion is dried to a constant weight at 103-105°C.
- **Total Nitrogen** - The sum of nitrate (NO₃-N), nitrite (NO₂-N), organic nitrogen and ammonia (all expressed as N). For laboratory analysis purposes, Total Kjeldahl Nitrogen is a test performed that is made up of both organic nitrogen and ammonia.
- **UV—Ultraviolet** - A wavelength of light or electromagnetic radiation ranging from 10 nanometers to 400 nanometers, shorter than that of visible light but longer than X-rays.

Overview & Impact Assessment of Newly Proposed Onsite Wastewater Facilities Regulations

TABLE 73-B

Horizontal Isolation Distances from the Perimeter of the Aggregate in the Absorption Area.

<u>100 feet</u>	<u>Mine subsidence areas, open bore holes and sinkholes</u>
	<u>Wells for water supply (potable and non-potable) and for geothermal heating system, except wells sealed in accordance with the Water Well Drillers License Act</u>
	<u>Springs used for domestic water supply</u>
	<u>Oil and gas wells, except wells plugged in accordance with Chapters 78 and 78a</u>
<u>50 feet</u>	<u>An individual water supply or water supply suction line</u>
	<u>Streams, water courses, lakes, ponds and other surface waters</u>
<u>25 feet</u>	<u>A cistern used as a water supply</u>
	<u>Swales</u>
	<u>A post-construction stormwater control measure</u>
<u>10 feet</u>	<u>Roads or driveways</u>
	<u>Natural or manmade slope greater than 25%</u>
	<u>Property lines, easements and rights-of-way</u>
	<u>Buildings and swimming pools</u>
	<u>Decks and patios</u>
	<u>Water supply lines under pressure</u>
	<u>Rock outcrops and identified shallow pinnacles</u>
	<u>Wells for water supply (potable and non-potable) and geothermal heating systems that have been properly sealed in accordance with the Water Well Drillers License Act</u>
<u>Open excavations</u>	
<u>5 feet</u>	<u>Other active onlot sewage systems</u>

Overview & Impact Assessment of Newly Proposed Onsite Wastewater Facilities Regulations

TABLE 73-C

Horizontal Isolation Distances from Wetted Perimeter of the Spray Field.

<u>100 feet</u>	<u>Wells for water supply (potable and non-potable) and for geothermal heating systems, except wells sealed in accordance with the Water Well Drillers License Act</u>
	<u>Mine subsidence areas, open boreholes and sinkholes</u>
	<u>Springs used as a domestic water supply</u>
	<u>Oil and gas wells, except wells plugged in accordance with Chapters 78 and 78a</u>
	<u>An individual water supply or water supply suction line</u>
	<u>Occupied buildings and swimming pools</u>
<u>50 feet</u>	<u>Property lines, easements and rights-of-way</u>
	<u>A cistern used as a water supply</u>
	<u>Streams, watercourses, lakes, ponds and other surface waters</u>
	<u>Permanent stormwater control measures</u>
<u>25 feet</u>	<u>Roads or driveways</u>
	<u>Rock outcrops and identified shallow pinnacles</u>
	<u>Swales</u>
	<u>Unoccupied buildings</u>
<u>10 feet</u>	<u>Open excavations</u>
	<u>Decks and patios</u>
	<u>Water supply lines under pressure</u>

Overview & Impact Assessment of Newly Proposed Onsite Wastewater Facilities Regulations

TABLE 73-D

Horizontal Isolation Distances from Aggregate Areas with Shallow Limiting Zones.

<u>100 feet</u>	<u>A cistern used as a water supply downgradient of the absorption area</u>
	<u>Streams, watercourses, lakes, ponds and other surface waters downgradient of the absorption area</u>
	<u>Other active absorption areas or spray fields upgradient or downgradient of the absorption area</u>
<u>75 feet</u>	<u>Permanent stormwater control measures upgradient or downgradient of the absorption area</u>
	<u>Swales downgradient of the absorption area</u>
	<u>Embankment cut-face downgradient of the absorption area</u>
	<u>Natural or manmade slope greater than 25% downgradient of the absorption area</u>
<u>50 feet</u>	<u>Open excavations</u>
	<u>Roads and driveways downgradient of the absorption area</u>
	<u>Property lines, easements and rights-of-way downgradient of the absorption area</u>
	<u>Buildings and swimming pools downgradient of the absorption area</u>
	<u>Water supply lines downgradient of the absorption area</u>
	<u>Wells and boreholes for water supply (potable and non-potable) and for geothermal heating systems sealed in accordance with the Water Well Drillers License Act downgradient of the absorption area</u>
<u>25 feet</u>	<u>Rock outcrops and identified shallow pinnacles downgradient of the absorption area</u>
	<u>Roads and driveways upgradient of the absorption area</u>

Overview & Impact Assessment of Newly Proposed Onsite Wastewater Facilities Regulations

- (4.1) A slope measurement must be made, perpendicular to the contour of the landscape, at each soil probe location and recorded on a form provided by the Department. All proposed absorption areas also require a slope measurement across the steepest portion of the absorption area to evaluate the suitability of the site for relying on an onlot sewage system as a viable, long-term sewage treatment and disposal option. **When absorption areas are proposed for sites with a limiting zone within 20 inches of the mineral soil surface, the slope must also be measured at the least steep portion of the proposed absorption area.**
- **The surveyed location of all soil probe excavations and all percolation test holes conducted on a lot must be indicated on the plot plan.** Each soil probe excavation must be uniquely identified, and the limiting zone included on the plot plan. The plot plan must be attached to a form provided by the Department.
- When an absorption area or spray field is proposed on a fill site or reclaimed mine land, a qualified soil scientist shall conduct an evaluation of the fill to determine if it can provide renovation and infiltration of the effluent. The qualified soil scientist shall submit a report to the Department and the local agency that states that the fill site meets all the requirements in this section. **Soil testing for siting an onlot sewage system on a fill site must be observed by the Department in addition to the sewage enforcement officer. The Department will determine if the site is suitable for an onlot sewage system.**

Overview & Impact Assessment of Newly Proposed Onsite Wastewater Facilities Regulations

➤ § 73.15. Percolation tests.

- When the examination of the soil profile reveals a limiting zone equal to or greater than 20 inches from the mineral soil surface, except for system designs requiring a soil morphological evaluation, percolation tests must be conducted in accordance with the following procedure:
- Number and location. A minimum of six tests must be made in separate test holes spaced uniformly over a proposed absorption area site up to 1,000 square feet. When estimating the size of the absorption area the person completing the test shall calculate the size of the absorption area using a minimum of 2 square feet per gallon of effluent. Two additional tests must be made in separate holes for every additional 400 square feet beyond 1,000 square feet.
- When a percolation test hole is dry at the end of a 10-minute testing interval, another test must be performed within 5 feet of the dry hole unless the area of the dry hole will not be included in the final absorption area. If the additional percolation test hole is dry at the end of 10-minute testing interval the area of the two dry holes may not be used in the absorption area.

Overview & Impact Assessment of Newly Proposed Onsite Wastewater Facilities Regulations

➤ § 73.17. Sewage Flows

TABLE 73-E
Design Sewage Flows

<i>Residential</i>	<i>Gallons/day</i>	<i>BOD/unit</i>
Bed and breakfast (per unit)	100	0.30
Single-family residences, townhouses or duplexes of three bedrooms or less	400	0.90
Single-family residences, townhouses or duplexes for each additional bedroom over three	100	0.3
Mobile home parks, independent (per space)	400	1.00
Multiple family dwellings, apartments or condominiums of three bedrooms or less (per unit)	400	1.13
Multiple family dwellings, apartments or condominiums for each additional bedroom over three	100	=
Reverse osmosis water treatment system (whole unit/house)	A	=
<i>Commercial</i>	<i>Gallons/day</i>	
Airline catering (per meal served)	3	0.03
Airports (per passenger—not including food)	5	0.02
Airports (per employee)	10	0.06
Beauty shops attached to a single-family residence (one licensed operator/one chair)	200 additional	=
Group home (per person)	60	0.15
Bus service areas not including food (per patron and employee)	5	0.02
Country clubs not including food (per patron and employee)	30	0.02
Drive-in theaters (not including food—per space)	10	0.06
Event venues, for example, wedding barns (per person)	7	0.05
Factories and plants exclusive of industrial wastes (per employee)	35	0.08
Hotels and motels (per unit)	100	0.30
Movie theaters (not including food, per auditorium seat)	5	0.03
Offices (per employee)	10	0.06
Restaurants (toilet and kitchen wastes per patron)	10	0.06
Restaurants (kitchen and toilet wastes, single-service utensil/person)	8.5	0.03
Restaurants (kitchen waste only, single-service utensil/patron)	3	0.01
Potable water treatment system, not including water softener systems	B	

Overview & Impact Assessment of Newly Proposed Onsite Wastewater Facilities Regulations

➤ § 73.17. Sewage Flows

TABLE 73-E
Design Sewage Flows

<i>Residential</i>	<i>Gallons/day</i>	<i>BOD/unit</i>		<i>Gallons/day</i>	
Bed and breakfast (per unit)	100	0.30	Stores (per public toilet)	400	2.00
Single-family residences, townhouses or duplexes of three bedrooms or less	400	0.90	Vehicle repair shop (per vehicle served and per employee)	15	=
Single-family residences, townhouses or duplexes for each additional bedroom over three	100	0.3	Warehouses (per employee)	35	=
Mobile home parks, independent (per space)	400	1.00	Work or construction camps (semipermanent) with flush toilets (per employee)	50	0.17
Multiple family dwellings, apartments or condominiums of three bedrooms or less (per unit)	400	1.13	Work or construction camps (semipermanent) without flush toilets (per employee)	35	0.02
Multiple family dwellings, apartments or condominiums for each additional bedroom over three	100	=	<i>Institutional</i>	<i>Gallons/day</i>	
Reverse osmosis water treatment system (whole unit/house)	A	=	Churches (per seat)	3	=
			Churches (additional kitchen waste per meal served)	3	=
			Churches (additional with paper service per meal served)	1.5	=
			Hospitals (per bed space, with laundry)	300	0.20
			Hospitals (per bed space, without laundry)	220	=
			Institutional food service (per meal)	20	=
			Institutions other than hospitals (per bed space)	125	0.17
			Potable water treatment system, not including water softener systems	B	
<i>Commercial</i>	<i>Gallons/day</i>		Schools, boarding (per resident)	100	0.17
Airline catering (per meal served)	3	0.03	Schools, day (without cafeterias, gym or showers per student and employee)	15	0.04
Airports (per passenger—not including food)	5	0.02	Schools, day (with cafeterias, but no gym or showers per student and employee)	20	0.08
Airports (per employee)	10	0.06	Schools, day (with cafeterias, gym and showers per student and employee)	25	0.10
Beauty shops attached to a single-family residence (one licensed operator/one chair)	200 additional	=	<i>Recreational and Seasonal</i>	<i>Gallons/day</i>	
Group home (per person)	60	0.15	Camps, day (no meals served)	10	0.12
Bus service areas not including food (per patron and employee)	5	0.02	Camps, day (with meal)	20	
Country clubs not including food (per patron and employee)	30	0.02	Camp, children's with central toilet/bath	50	0.50
Drive-in theaters (not including food—per space)	10	0.06	Campgrounds, with individual sewer and water hookup (per space)	100	0.50
Event venues, for example, wedding barns (per person)	7	0.05	Campgrounds with water hookup only or central comfort station or both, which includes water-carried toilet wastes (per space)	50	0.50
Factories and plants exclusive of industrial wastes (per employee)	35	0.08	Fairgrounds and parks, picnic—with bathhouses, showers and flush toilets (per person)	15	0.06
Hotels and motels (per unit)	100	0.30	Fairgrounds and parks, picnic (toilet wastes only, per person)	5	0.06
Movie theaters (not including food, per auditorium seat)	5	0.03	Swimming pools and bathhouses (per person)	10	0.06
Offices (per employee)	10	0.06			
Restaurants (toilet and kitchen wastes per patron)	10	0.06			
Restaurants (kitchen and toilet wastes, single-service utensils/person)	8.5	0.03			
Restaurants (kitchen waste only, single-service utensils/patron)	3	0.01			
Potable water treatment system, not including water softener systems	B				

Overview & Impact Assessment of Newly Proposed Onsite Wastewater Facilities Regulations

- (e) Onlot sewage systems receiving high-strength wastewater, as defined in Table 73-F, must be designed by a professional engineer and account for the anticipated high-strength concentration of the influent wastewater.

TABLE 73-F
High-Strength Wastewater

<u>Constituent</u>	<u>Unit</u>	<u>High-Strength</u>
Total Suspended Solids	mg/L	400
BOD₅ (20°C)	mg/L	350
Total Nitrogen	mg/L	70
Oil and Grease	mg/L	100

Overview & Impact Assessment of Newly Proposed Onsite Wastewater Facilities Regulations

§ 73.18. Onlot sewage system treatment performance standards.

- (a) **Onlot sewage treatment performance standards establish minimum performance requirements for onlot sewage systems and components. These treatment standards establish the standards to be applied when designing and permitting onlot sewage systems.**
- (b) **The sewage treatment standards are as follows:**

TABLE 73-G
Sewage Treatment Standards

<u>Treatment Standard</u>	<u>Name</u>	<u>CBOD₅ mg/L^A</u>	<u>TSS mg/L^B</u>	<u>Total Nitrogen (mg/L or % Reduction)</u>
<u>Primary</u>	<u>TS-1</u>	<u>< 125 mg/L</u>	<u>< 80 mg/L</u>	<u>NA</u>
<u>Secondary</u>	<u>TS-2</u>	<u>< 25 mg/L</u>	<u>< 30 mg/L</u>	<u>NA</u>
<u>Advanced</u>	<u>TS-3</u>	<u>< 10 mg/L</u>	<u>< 10 mg/L</u>	<u>NA</u>
<u>Total Nitrogen 1</u>	<u>TN-1</u>	<u>< 25 mg/L</u>	<u>< 30 mg/L</u>	<u>≥ 50%^C</u>
<u>Total Nitrogen 2</u>	<u>TN-2</u>	<u>< 25 mg/L</u>	<u>< 30 mg/L</u>	<u>< 20 mg/L^D</u>
<u>Total Nitrogen 3</u>	<u>TN-3</u>	<u>< 25 mg/L</u>	<u>< 30 mg/L</u>	<u>< 10 mg/L^D</u>

Overview & Impact Assessment of Newly Proposed Onsite Wastewater Facilities Regulations

(c) The disinfection treatment standards are as follows:

TABLE 73-H
Disinfection Treatment Standards

<u>Treatment Standard</u>	<u>Fecal Coliform</u>	<u>MPN/100ml^A</u>
<u>Fecal Coliform 1</u>	<u>FC-1</u>	<u>< 50,000</u>
<u>Fecal Coliform 2</u>	<u>FC-2</u>	<u>< 1,000</u>
<u>Fecal Coliform 3</u>	<u>FC-3</u>	<u>< 200</u>
<u>Fecal Coliform 4</u>	<u>FC-4</u>	<u>< 1</u>

^A The geometric mean of the fecal coliform data expressed as the MPN of fecal coliforms per 100 milliliters of effluent.

Overview & Impact Assessment of Newly Proposed Onsite Wastewater Facilities Regulations

- (d) The required treatment performance standards based on the depth and type of the limiting zone are as follows:

TABLE 73-I
Treatment Performance Standard Requirements

<u>Type and depth to limiting zone below the mineral soil surface (in.)</u>	<u>Sewage Treatment Standard</u>	<u>Disinfection Treatment Standard</u>
<u>SHWT^A ≥ 10 and < 12</u>	<u>TS-3</u>	<u>FC-3</u>
<u>SHWT^A ≥ 12 and < 20</u>	<u>TS-3</u>	<u>FC-2</u>
<u>Rock^B ≥ 16 and < 20</u>	<u>TS-3</u>	<u>FC-2</u>
<u>Limiting Zone^C ≥ 20 and < 48</u>	<u>TS-2</u>	<u>FC-1</u>
<u>Limiting Zone^C ≥ 48 and < 60</u>	<u>TS-1</u>	<u>N/A</u>
<u>Limiting Zone^C ≥ 60</u>	<u>TS-1</u>	<u>N/A</u>

Overview & Impact Assessment of Newly Proposed Onsite Wastewater Facilities Regulations

➤ CHAPTER 73 – SUBCHAPTER D: TREATMENT TANKS AND UNITS

➤ § 73.31. Standards for Septic Tanks

➤ (b) Construction (1)

➤ (vi) Tanks shall be vacuum tested as follows:

- (A) Tanks made of concrete must be vacuum tested after installation to ensure they are watertight. The vacuum test must be performed prior to backfilling around the tank. The tank must be sealed, vacuum equal to 4 inches (100 millimeters) of mercury must be applied to the tank, and the tank must hold 90% of the applied vacuum for a minimum of 5 minutes to pass a vacuum test. The test must follow the ASTM testing standards in ASTM C1719, “Standard Test Method for Installed Precast Concrete Tanks and Accessories by the Negative Air Pressure (Vacuum) Test Prior to Backfill.”
- (B) Tanks made of materials other than concrete (for example, plastic or fiberglass) must be vacuum tested after installation to ensure they are watertight. The recommended manufacturer vacuum level for a tank may not be exceeded during vacuum testing.

Overview & Impact Assessment of Newly Proposed Onsite Wastewater Facilities Regulations

➤ CHAPTER 73 – SUBCHAPTER D: TREATMENT TANKS AND UNITS

➤ § 73.31. Standards for Septic Tanks

- (5) The tanks must be designed and constructed using anti-buoyancy measures to prevent floatation when the proposed installation site is below a SHWT, actual water table or is prone to flooding.
- (6) Tanks must be installed using a minimum of 4 inches of aggregate, as detailed in § 73.171(d) (relating to general), to bed the tank.

➤ **These requirements extend to ALL tanks (ie: Advanced secondary, secondary, flow equalization, lift, etc.)**

Overview & Impact Assessment of Newly Proposed Onsite Wastewater Facilities Regulations

➤ CHAPTER 73 – SUBCHAPTER D: TREATMENT TANKS AND UNITS

- ****All Shallow Limiting Zone Systems (less than 20" but greater than 10" to LZ) must be time-dosed!!! SAC and DEP are considering this requirement for all pressurized systems with the hope that the vacuum testing requirement could be dropped.**

Overview & Impact Assessment of Newly Proposed Onsite Wastewater Facilities Regulations

➤ CHAPTER 73 – SUBCHAPTER D: TREATMENT TANKS AND UNITS

➤ § 73.36. Standards for ultraviolet radiation units

- (e) The contact chamber must be at least four-inch diameter. The minimum contact time with the wastewater is 30 seconds.
- (g) An automatic flow control valve, accurate within the expected pressure range, must be installed to restrict flow to not exceed the maximum design flow of the treatment unit.
- (h) An accurately calibrated UV intensity meter, properly filtered to restrict its sensitivity to the point of the disinfection spectrum, must be installed in the wall of the disinfection chamber at the point of greatest vertical water depth from the tube.
- (i) A lamp life indicator must be installed on each lamp to notify the property owner when the lamp must be replaced.

Overview & Impact Assessment of Newly Proposed Onsite Wastewater Facilities Regulations

➤ CHAPTER 73 – SUBCHAPTER D: TREATMENT TANKS AND UNITS

➤ § 73.36. Standards for ultraviolet radiation units

- (j) A visible and audible alarm must be installed to notify the property owner if a UV lamp fails, the UV intensity drops below 50% or the UV system is not operating. Alarms must be located where they are readily visible and audible by the property owner. The alarm must be placed on an independent circuit breaker.
- (k) The UV radiation treatment owner shall complete maintenance using a qualified service provider in accordance with the manufacturer's specifications.

Overview & Impact Assessment of Newly Proposed Onsite Wastewater Facilities Regulations

➤ CHAPTER 73 – SUBCHAPTER D: TREATMENT TANKS AND UNITS

➤ § 73.44. Pressurized distribution design

➤(a) General requirements are as follows:

➤(4) Piping must meet the requirements of the standard ASTM D 2665, as subsequently amended, for polyvinyl chloride drain, waste and vent pipe.

➤(5) When an absorption area is placed on a site where the limiting zone is less than 20 inches to the

➤(a.1) **Pressure distribution system designs that do not meet the requirements in this section may be permitted when the design is signed and sealed by a qualified professional engineer and the local agency qualified professional engineer concurs with the design.**

➤(b) Seepage Beds

➤(7.1) The maximum length of a lateral from the manifold to the cleanout may not exceed 84 feet for 1 ½-inch diameter pipe and 126 feet for 2-inch diameter pipe.

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➤ CHAPTER 73 – SUBCHAPTER D: TREATMENT TANKS AND UNITS

➤ § 73.44. Pressurized distribution design

- (18) A cleanout must be provided at the terminal end of each lateral consisting of two 45°-elbows or a 90°-sweep elbow with a removable threaded end cap or plug to allow for cleaning of the lateral. The cleanouts must be accessible at the surface and be protected from damage.

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TABLE 73-L
Infiltration and Hydraulic Linear Loading Rates

				HLLR, gal/ft/d							
Soil Characteristics				Infiltration Loading Rate (ILR), gal/ft ² /d		Slope					
Texture*	Structure		Primary effluent	Secondary or advanced secondary effluent	0 - <5%		≥5 - <10%		>10%		
	Shap e ⁿ	Grade L			Infiltration Distance, Inch		Infiltration Distance, Inch		Infiltration Distance, Inch		
				≥10 - <12	>12 - <20	≥10 - <12	>12 - <20	≥10 - <12	>12 - <20		
<u>COS, S, LCOS, LS</u>	=	OSG	0.8	1.6	4.0	5.0	5.0	6.0	6.0	7.0	
<u>FS, VFS, LFS, LVFS</u>	=	OSG	0.4	1.0	3.5	4.5	4.0	5.0	5.0	6.0	
<u>CSL, SL</u>	=	OM	0.2	0.6	3.0	3.5	3.6	4.1	5.0	6.0	
	PL	1	0.2	0.5	3.0	3.5	3.6	4.1	4.0	5.0	
		2,3	Unsuitable								
	PR/B K/G R	1	0.4	0.7	3.5	4.5	4.0	5.0	5.0	6.0	
		2,3	0.6	1.0	3.5	4.5	4.0	5.0	5.0	6.0	
<u>FSL, VFSL</u>	=	OM	0.2	0.5	2.0	2.3	2.4	2.7	2.7	3.2	
	PL	1,2,3	Unsuitable								
		PR/B K/G R	1	0.2	0.6	3.0	3.5	3.3	3.8	3.6	4.1
			2,3	0.4	0.8	3.3	3.8	3.6	4.1	3.9	4.4
<u>L</u>	=	OM	0.2	0.5	2.0	2.3	2.4	2.7	2.7	3.2	
	PL	1,2,3	Unsuitable								
		PR/B K/G R	1	0.4	0.6	3.0	3.5	3.3	3.8	3.6	4.1
			2,3	0.6	0.8	3.3	3.8	3.6	4.1	3.9	4.4
<u>SIL</u>	=	OM	Unsuitable	0.2	2.0	2.5	2.2	2.7	2.4	2.9	
	PL	1,2,3	Unsuitable								
		PR/B K/G R	1	0.4	0.6	2.4	2.7	2.7	3.0	3.0	3.5
			2,3	0.6	0.8	2.7	3.0	3.0	3.5	3.3	3.8
<u>SCL, CL, SICL</u>	=	OM	Unsuitable								
	PL	1,2,3	Unsuitable								
		1	0.2	0.3	2.0	2.5	2.2	2.7	2.4	2.9	

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➤ CHAPTER 73 – SUBCHAPTER F: ABSORPTION AREAS

➤ § 73.55. Elevated Sand Mounds

- (b)(1.1) The area within the proposed absorption area obscured by rocks that are unable to be removed without disturbing the soil and the surface area of tree or shrub stumps greater than 3 inches must be measured. The sum of these areas must be added to the total square footage of the absorption area.

➤ § 73.56. At-Grade Absorption Areas

- (a)(1) At-grade absorption areas may be utilized on any suitable soil as determined in § 73.51, Table 73-L.
- (a)(2) Soil morphology and Table 73-L in § 73.51 must be used when designing an at-grade bed.
- (3) The steepest slope of the original ground surface across the absorption area may not exceed 15%. The slope must be measured at the steepest portion of the proposed absorption area when assessing site suitability.

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➤ CHAPTER 73 – SUBCHAPTER F: ABSORPTION AREAS

- (4) For sites with slopes greater than 4% and not exceeding 15%, measured at its steepest point, an absorption area with a downslope-facing, concave-shaped design may not exceed 10% deflection. The Department may require additional square foot of absorption area to address the loss of soil treatment due to deflection.
- (5) For a site with slopes between 0% and 4%, concave-shaped absorption areas are prohibited.
- (6) The length of absorption area must be placed on contour.
- (7) For sites with slopes greater than 4% and not exceeding 15%, the total width of the absorption area will be the width as determined by 73.51(a.1)(5)(iii) plus 2 feet of aggregate on the upslope edge of the minimum absorption area that was determined by using calculation in § 73.51(a.1)(5)(v).
- (8) The width of the absorption area must not exceed 15 feet.
- (9) The maximum number of laterals is two.
- (10) The treatment performance standards are established under § 73.18 (relating to onlot sewage system treatment performance standards).

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➤ CHAPTER 73 – SUBCHAPTER F: ABSORPTION AREAS

- (8) Designing the location of two or more absorption areas so that one absorption area is placed hydraulically upgradient or downgradient from the other may cause the lower absorption area to fail due to excessive hydraulic loading from the upper absorption area. Unless the potential for such an impact is shown to be nonexistent by the applicant through the alternative/experimental system process, this type of absorption area placement is prohibited.

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➤ CHAPTER 73 – Subchapter H. EXPERIMENTAL AND ALTERNATE SEWAGE SYSTEMS

➤(e.1) Ongoing monitoring of the alternate sewage system and component performance shall be conducted as follows.

➤(1) Manufacturers shall monitor system performance through inspection and sampling of installed alternate sewage system and components. The following are the minimum requirements for the ongoing inspection and sampling.

➤(i) An annual system sampling event shall be performed by a third-party testing organization. The systems or components to be sampled will be randomly selected by the Department from a list of installed systems or components. The Department will establish the initial list of systems based on a manufacturer supplied list of alternate systems installed in this Commonwealth.

➤(ii) The Department will randomly select up to ten installed alternate sewage systems to be inspected and sampled. The Department may require any system that has failed to conform with approved performance standards be retested in addition to the ten selected systems.

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➤ CHAPTER 73 – Subchapter H. EXPERIMENTAL AND ALTERNATE SEWAGE SYSTEMS

- (iii) The manufacturer shall submit an inspection and sampling plan, including an implementation schedule to the Department for approval.
- (iv) After the performance monitoring is complete for the selected alternate sewage systems, the manufacturer shall provide a report to the Department. The report shall contain the following information:
 - (A) A summary of the results of the inspection and sampling.
 - (B) The date and time of sampling
 - (C) The address of the alternate sewage systems.
 - (D) The temperature and weather on the days of sampling.
 - (E) The lab reports for each sample.
 - (F) Whether operation and maintenance was performed on the alternate sewage system in the last 365 days including during the days of the inspection and sampling. If it was performed, the report shall describe the operation and maintenance performed, when it was performed and the reason it was performed.

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➤ CHAPTER 73 – Subchapter H. EXPERIMENTAL AND ALTERNATE SEWAGE SYSTEMS

- (G) A description of any exceedances of the performance standard. When the sample data shows the alternate sewage system effluent exceeds two times the system's approved performance standard, corrective actions shall be taken to address the nonconformance of the system. Resampling of the system shall be completed to verify conformance with the performance standard. If the results of the resampling continue to show nonconformance, the Department may require the manufacturer to submit a corrective action plan for approval.
- (H) Any additional documentation the Department determines is necessary to evaluate the ongoing performance of the approved alternate sewage system.
- (v) Testing method and parameters for influent and effluent sampling will be based on the approved treatment standards of the technology as detailed in § 73.72a, Table 73-N.
- (2) Every 5 years, the data collected during annual performance monitoring and field testing will be statistically analyzed by the Department as detailed in § 73.72a(f).

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➤ CHAPTER 73 – Subchapter H. EXPERIMENTAL AND ALTERNATE SEWAGE SYSTEMS

- (i) When the result of the statistical analysis determines that the technology meets the performance standards the technology is approved under, provided for in § 73.18 (relating to onlot sewage treatment performance standards), the Department may reduce the occurrence of the annual inspection and testing for the upcoming 5-year period.
 - (ii) When the result of the statistical analysis determines that the technology is not meeting the treatment standards the technology is approved under, as provided for in § 73.18, the Department may increase the frequency of the sampling at selected sites or the frequency of the inspection and testing, or both.
- (e.2) The following conditions will result in the system no longer being approved for use as an alternate sewage system:
- (1) Failure to maintain the certification required in § 73.72a(b)(1) unless the manufacturer develops a plan for recertification approved by the Department.
 - (2) Failure to perform ongoing monitoring of the systems performance

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➤ CHAPTER 73 – Subchapter H. EXPERIMENTAL AND ALTERNATE SEWAGE SYSTEMS

- (3) When the Department determines that the alternate sewage system is not capable of consistently meeting the performance standards of the system's approval based on an evaluation of the data collected from the ongoing performance monitoring of the system.
- (4) Non-proprietary alternate sewage systems or components and alternate sewage systems or components other than those used to treatment standards in § 73.18 may be reviewed by the Department for approval as an alternate sewage system and component without undergoing the performance verification program at the Department's discretion.
- (e.3) When a system is no longer approved as an alternate sewage system, the Department will provide notice to the manufacturer and publish notice of the decision in the Pennsylvania Bulletin.

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➤ CHAPTER 73 – Subchapter H. EXPERIMENTAL AND ALTERNATE SEWAGE SYSTEMS

➤ § 73.72a. Performance verification of proprietary alternate sewage systems and components.

➤(a) General. Manufacturers proposing alternate systems or components intended to meet the onlot sewage treatment performance standards in § 73.18 (relating to onlot sewage treatment performance standards) must verify the performance of the proposed system or component through the following performance verification requirements. Performance verification requirements include third-party certification and field testing.

➤(b) Third-party certification of the system or components.

➤(1) The manufacturers of the onlot sewage systems or components shall provide proof of certification through product testing conducted by a testing facility accredited by ANSI using an NSF/ANSI standard or by a BNQ standard. The following table lists approved certifications applicable to the onlot sewage treatment performance standards in § 73.18:

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➤ CHAPTER 73 – Subchapter K. CONSTRUCTION COARSE AGGREGATE AND SAND

➤ § 73.171. General.

- (a) Prior to use of an aggregate or sand, or both, in an onlot sewage system, a written certification from the supplier that confirms the aggregate and sand meet the requirements in this section shall be provided to the sewage enforcement officer and the permittee. The written certification must include the name of the supplier of the aggregate and sand, testing standard achieved, testing date, amount of material purchased and the delivery date.
- (b) Coarse aggregate must meet the following specifications:
 - (1) All coarse aggregate testing must be conducted within 1 year prior to the delivery date.
 - (2) Coarse aggregate must be washed and meet the uniform size and grading requirements of AASHTO No. 3, 467, 5 or 57 size except as noted in paragraph (3) and (4).
 - (3) Coarse aggregate placed over an underdrain must be washed and meet the uniform size and grading requirements of AASHTO No. 8.

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➤ CHAPTER 73 – Subchapter K. CONSTRUCTION COARSE AGGREGATE AND SAND

- (4) Coarse aggregate used to bed tanks and sewer lines must meet the uniform size and grading requirements for AASHTO No. 2A.
- (c) All sand must be washed and meet the following specifications:
 - (1) Sand must have been gradation tested within 90 days prior to the delivery date and have passed soundness testing within 1 year prior to delivery.
 - (2) Sand must meet or exceed the Fine Aggregate, Type A (Section 703.1), Pennsylvania Department of Transportation Publication 408, the ASTM C33 standard, or as subsequently amended.
- (d) A substitute aggregate may not be used without prior approval by the Department and must meet the standards for the coarse aggregate or sand being substituted.

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