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N.J.A.C. 7:9A-8.3:Advanced wastewater pretreatment components

The Department is proposing a new N.J.A.C. 7:9A-8.3 to address advanced wastewater pretreatment devices. These devices achieve treatment by microbes which oxidize and decompose the organic compounds in the presence of oxygen. These devices are typically installed after a septic tank and before the disposal field, but may, in some cases, be utilized in place of the septic tank. Advanced wastewater pretreatment components treat the sanitary sewage to a higher quality, lower strength effluent than is produced by a septic tank alone. These devices include, but are not limited to peat biofilters, trickling filters, and sequencing batch reactors. In order for the Department to consider an advanced wastewater pretreatment device to be applicable under this chapter and included on the Department's list of applicable technologies, the manufacturer must submit a request to the Department and provide the Department with a copy of an NSF International Standard 40 and/or Standard 245 certification for their device. However, NSF Standards 40 and 245 are limited to systems with capacities less than 1,500 gallons per day of residential strength wastes. Since this chapter deals with systems up to 2,000 gallons per day and includes some non-residential applications, language has been proposed to allow for these devices to be used in those applications even though those systems can not bear the mark of NSF. To address the issue, the Department is proposing to provide additional, site specific certifications from the manufacturer to identify that their technology has been certified by NSF for smaller systems, and that an analysis of the intended wastewater influent to the system will be adequately treated to EPA secondary effluent standards. In order to facilitate the use of these pretreatment components, the Department is proposing to maintain lists of devices and their manufacturers to assist the regulated community in identifying those manufacturers and

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their devices that have certified to the Department their ability to comply with their NSF certifications and this chapter.

The remainder of this proposed section set forth the requirements to design, review, install, and maintain systems using these technologies. These criteria were originally established in technical guidance titled "Aerobic Treatment Systems Guidance Document" issued by the Department in January 2008 (available at http://www.state.nj.us/dep/dwq/owm_ia.htm), limited to approving technologies for correcting existing, malfunctioning systems. Similar guidance has been in existence since April 2004. The current technical guidance document, as was its predecessor, was vetted through a Department-sponsored review group that consisted of health departments, professional engineers, installers, service providers and manufacturers of the technologies.

Proposed N.J.A.C. 7:9A-8.3(b) specifies the requirements that a septic system designer must incorporate into the design of a system including advanced wastewater pretreatment prior to submission of the design to the administrative authority. One of the proposed requirements is that the designer certify on the plans or in the application that they are sufficiently knowledgeable of the specific technology(ies) they are proposing as part of the design. Since these technologies are relatively new in the State for general use, it is necessary to assure that professional engineers are adequately knowledgeable about the specifics of each and every proprietary technology with which they design. Requiring that the New Jersey licensed professional engineer designing the system certify that he or she has this specific knowledge presents administrative authorities and property owners with a level of confidence that the system is properly designed. To further assure that the advanced wastewater pretreatment component functions as it is designed to and results in a discharge that complies with the rules,

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proposed N.J.A.C. 7:9A-8.3(b) further requires that the design requirements proposed require that the designs comply with all manufacturer minimum requirements and recommendations in addition to the requirements of the chapter where those requirements are not contrary to manufacturer requirements. Additionally, proposed requirements ensure that individual components of the pretreatment device are designed to address the following issues related to system performance: meet the manufacturer's sizing criteria and be water tight to ensure additional water is not entering the system causing potential overloading of the hydraulic capacity of the system and prevent inadequately treated wastewater from being discharged to the environment. The proposed subsection also requires manufacturer review of residential designs in cases where the administrative authority requests this verification. Due to the complexity of non-residential designs and variability of wastewater characteristics (for example; high-strength waste or lack of black water content) for these applications, the septic system designer must obtain a manufacturer endorsement of the proposed design and submit it to the administrative authority as part of the application for approval under this subsection for these systems.

The design requirements proposed also include a provision at N.J.A.C. 7:9A-8.3(b)3 to ensure that all wastewater entering the system passes through the treatment process and that proper alarms are in place to ensure that a bypass does not occur. If a bypass of the treatment process were to occur, inadequately treated wastewater could enter a disposal system that was not designed to receive wastewater of that quality. For example, provisions are proposed in Subchapter 10 to allow for reduced sizing of disposal fields when advanced wastewater pretreatment devices are part of the system prior to disposal. Smaller disposal fields can malfunction very quickly when they receive a higher pollutant loading than for what they were designed.

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The remaining proposed requirements of this subsection ensure that the design complies with this chapter. These provisions establish minimum required separation distances from the pretreatment units identical to septic tanks, which are the traditional pretreatment device employed in the current rule. Additionally, with the new proposed requirements for effluent filters at N.J.A.C. 7:9A-8.2(j)3, the subsection provides for the relocation of the effluent filter to suit the specifications of the advanced wastewater pretreatment device manufacturer for optimal pretreatment performance. Further, due to the periodic need to check the quality of the effluent being discharged by service providers, the design must include a method of sampling that will be readily available at the ground surface to minimize costs to service and troubleshoot the system. Because of the need to maintain these systems, the control panel requirements for these technologies are more complex than the pump control panels currently required by the rules at N.J.A.C. 7:9A-9.2. Additionally, due to the smaller disposal area and shorter mound heights allowed in conjunction with the use of these systems, it is imperative to ensure that the units are providing for treatment as designed. Therefore, a means of verifying the continued operation of these treatment units is necessary. Accordingly, control panel requirements to address these types of issues have been proposed at N.J.A.C. 7:9A-8.3(b)6. Similarly, the design needs to include all installation requirements to minimize confusion for the authorized installers bidding on these projects, when they are to be constructed and for the administrative authority that will be inspecting the system during construction and issuing certifications after the completion of construction.

Proposed N.J.A.C. 7:9A-8.3(c) establishes the requirements for installation of systems incorporating an advanced wastewater pretreatment device. The proposed subsection identifies that installation of an advanced wastewater pretreatment device is to be conducted by or under

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the direct supervision of an authorized installer (N.J.A.C. 7:9A-8.3(c)1) who is also required to ensure that the required service contract is in place prior to the commencement of installation (N.J.A.C. 7:9A-8.3(c)2). This ensures that the property owner understands the need for, has in place, and agrees to comply with the requirements contained in the service contract, and prevents the system from being started up without a service contract, which would violate the proposed provisions of N.J.A.C. 7:9A-12.3. This proposed provision does not mean that the authorized installer must be present for the installation of the entire system, only the advanced wastewater pretreatment device that is discussed in this section. Other proposed responsibilities of the authorized installer are that the system be installed in accordance with manufacturer minimum installation specifications and the approved design, that all permits and required documentation have been obtained and are present on the site for the duration of the installation, and that all tanks installed are tested water tight after the installation has occurred.

Proposed N.J.A.C. 7:9A-8.3(d) requires that the authorized service provider, with whom the authorized installer ensured a contract has been executed, is present at the system start up with the authorized installer that installed the system, to inspect the system for proper functioning using a manufacturer provided system start up checklist. Completed checklists must then be submitted by the applicant to the administrative authority.

Proposed N.J.A.C. 7:9A-8.3(e) establishes the requirements for administrative authorities to approve the installation of the system within their area of jurisdiction. In order to ensure that these systems will comply with the requirements of the chapter, administrative authorities, or their authorized agents, may not issue any construction approvals unless they receive all information regarding the system and track these systems in a database format and submit the reports to the Department in accordance with the requirements at N.J.A.C. 7:9A-3.15. Also, they

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may not certify the system unless they have a copy of a fully executed service contract for the system.

Subchapter 9. Effluent Distribution Networks

Subchapter 9 specifies the requirements applicable to the effluent distribution networks of onsite subsurface sewage disposal systems including provisions for dosing tanks and delivery pipes and dosing networks. The following are the proposed amendments to Subchapter 9 including a new section on products to use in lieu of laterals or filter material.

N.J.A.C. 7:9A-9.2: Dosing tanks

N.J.A.C. 7:9A-9.2(d)8 is proposed to be amended to update the reference to N.J.A.C. 7:9A-8.2 to be consistent with the re-codification of the existing standards for backfilling around tanks from N.J.A.C. 7:9A-8.2(m) to N.J.A.C. 7:9A-8.2(n).

N.J.A.C. 7:9A-9.2(f)7.iv. is proposed to be amended to make it clear that all electrical connections must be located outside of dosing tanks to avoid problems with premature corrosion of electrical connections and avoid problems with respect to working with electrical connections inside of a confined space that contains corrosive and potentially explosive conditions from the presence of methane, hydrogen sulfide and other similar gases. Currently, most administrative authorities do not see designs that locate these electrical connections inside of dosing tanks for the very reasons listed above. However, there is confusion as to what is addressed by the existing chapter and what is permissible under the electrical subcode, for issues not addressed by this chapter. These amendments are intended to eliminate this confusion by making clear that no electrical connections may be made inside of the dosing tank by adding electrical splices and junction boxes to the electrical contacts and relays already required to be outside of the dosing tank.