

COUNTY OF SUFFOLK



STEVEN BELLONE
SUFFOLK COUNTY EXECUTIVE

SUFFOLK COUNTY DEPARTMENT OF HEALTH SERVICES
DIVISION OF ENVIRONMENTAL QUALITY

**STANDARDS PROMULGATED UNDER ARTICLE 19
FOR THE APPROVAL AND MANAGEMENT OF INNOVATIVE
AND ALTERNATIVE ONSITE WASTEWATER TREATMENT SYSTEMS**

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James L. Tomarken, MD, MPH, MBA, MSW
Commissioner of Health Services

Walter Dawydiak, PE, JD
Director of Environmental Quality

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AND ALTERNATIVE ONSITE WASTEWATER TREATMENT SYSTEMS**

19-101 INTRODUCTION

- A. These are standards for the Suffolk County Department of Health Services for the administration of Article 19, “Management of Innovative and Alternative Onsite Wastewater Treatment Systems” under the Suffolk County Sanitary Code.
- B. The purpose of these standards is to establish procedures for development and use of I/A OWTS in Suffolk County as an environmental conservation and public health protection measure, while ensuring a safe, sanitary means of disposing of wastewater.
- C. These Standards outline the role of the Department in serving as a Responsible Management Entity, to develop and use resources, capabilities and systems to ensure that I/A OWTS are properly managed and maintained, and provide intended levels of treatment.

19-102 DEFINITIONS APPLICABLE TO THESE STANDARDS

Commissioner means the Commissioner of the Suffolk County Department of Health Services.

Conventional Septic System or Conventional Onsite Wastewater Treatment System (OWTS) mean, for the purposes of this Article, an onsite sanitary system consisting of a septic tank and any associated interconnecting piping, a leaching structure(s) and any associated interconnecting piping that does not have any active or mechanical means of treatment or any supplemental filtration components.

Department means the Suffolk County Department of Health Services.

Design Professional means a person licensed or registered in the State of New York and authorized by the State Education Law to design the systems described in the standards.

Field-Built System means non-prefabricated units that are constructed on-site such as sand/gravel filters, constructed wetlands, and soil based treatment systems.

Innovative and Alternative Onsite Wastewater Treatment System(s) (I/A OWTS) means an onsite decentralized wastewater treatment system(s) that, at a minimum, is designed to reduce total nitrogen in treated effluent to 19 mg/l. An I/A OWTS can serve more than one parcel, but shall not be considered sewerage, Community Sewerage Systems, or Modified Subsurface

Sewage Disposal (denitrification) by the Department under the Suffolk County Sanitary Code. (As used herein, I/A OWTS may be singular or plural, depending on the context. Not all I/A OWTS will meet the requirements for approval in Suffolk County).

I/A OWTS Management Program means comprehensive oversight and activities that address issues critical to I/A OWTS including planning, education, maintenance, residuals management, training certification, licensing, inspections, monitoring, corrective action and enforcement, recordkeeping, inventorying, reporting, financial assistance, and funding.

Maintenance Provider means a private entity hired by a Property Owner to provide operation and maintenance and contractual service of an I/A OWTS.

Management Information System means any computer-based system capable of capturing, storing, analyzing, and displaying specifically referenced information.

Operation and Maintenance (O&M) means the act of performing tasks specified by the Department and/or the manufacturer of the I/A OWTS including, but not limited to, cleaning, inspection, and adjustment of control settings to ensure proper operation of I/A OWTS and related components.

Operation and Maintenance Contract means a signed contract between the Property Owner and the Maintenance Provider setting forth all required Operation and Maintenance procedures and monitoring schedules along with effective dates of the contract.

Property Owner(s) means the owner(s) of the real property upon which such I/A OWTS is installed or proposed for installation.

Registration means the approval process by which a Property Owner completes and submits routine documentation required by the Department so as to certify his/her/its ownership and use of an I/A OWTS.

Responsible Management Entity means the Department, which shall administer and conduct a comprehensive set of activities and have the legal authority and technical capacity to ensure the long-term operation, maintenance, and management of all I/A OWTS in Suffolk County.

Vendor means the patent holder, manufacturer, distributor or creator of an I/A OWTS.

Written Notification means the act or instance of notifying, making known or giving notice either through a written or printed notice, or electronic submission of written notice.

19-103 GENERAL CONDITIONS

- A. No person shall submit an application for the installation of an I/A OWTS for a technology unless such technology has been placed on the Department's list of Experimental, Pilot, Demonstration, Provisional, or General Use approved systems.
- B. The Department shall maintain a list of all approved technologies and all approved guidance documents.
- C. The Department may revoke approval of an I/A OWTS technology if there is a failure to comply with these standards, including but not limited to failure to submit reports, monitoring, and/or maintenance data; or failure to fulfill effluent performance standards, provided that before any such revocation, the Department shall provide written notice of the failure to the I/A OWTS vendor specifying a time period that is reasonable under the circumstances during which the failure may be remedied. More than three such notices for any I/A OWTS within a six-month period shall be grounds for revocation without further opportunities to remedy noncompliance.
- D. An I/A OWTS installer must hold a current Liquid Waste License pursuant to Suffolk County Code Chapter 563, Article VII (Septic Industry Businesses) with an Endorsement as an Innovative and Alternative Treatment System Installer through the Suffolk County Department of Labor, Licensing and Consumer Affairs. The Department of Labor, Licensing, and Consumer Affairs maintains a list of liquid waste license holders.
- E. An I/A OWTS requires a permit issued by the Department prior to installation at a specific location. This applies to systems installed for experimental, demonstration, piloting, provisional use and general use.
- F. All installed I/A OWTS are required to have an initial 3-year warranty inclusive of O&M services from the Vendor or Design and Installation Professional in the case of field-built systems.
- G. All installed I/A OWTS are required to have active O&M Agreements between the property owner and an authorized Maintenance Provider in perpetuity as long as I/A OWTS is in use.
- H. Maintenance Providers must report all O&M activities to the Department in a manner to be prescribed by the Department.
- I. Covenants may be required on properties where I/A OWTS are installed. Covenants may require system replacement in the event of failure; O&M requirement; access to Department Staff for inspection and/or sampling; and any other requirements that the Department deems necessary.

- J. This Suffolk County program is subject to the continuing approval of the New York State Departments of Health and Environmental Conservation.

19-104 APPROVAL PROCESS FOR I/A OWTS

All I/A OWTS technologies must be approved by the Department for use in Suffolk County as either an Experimental, Piloting, Provisional, or General Use system in order to be permitted for installation as a sewage disposal system in accordance with the “Standards for Approval of Plans and Construction for Sewage Disposal Systems for Single-Family Residences” and “Standards for Approval of Plans and Construction for Sewage Disposal Systems for Other Than Single-Family Residences.”

During each phase of approval, the I/A OWTS technology must undergo sampling as detailed in this standard. The minimum sampling requirements and resulting combined average outlined in **Table 19-104.1 and Table 19-104.2**, shall be required prior to a system receiving approval to move from one phase of approval to the next and eventually to the final approval phase known as “General Use.” **Tables 19-108.1, 19-108.2, and 19-108.3** are the minimum sample parameters required for each phase of the I/A OWTS approval process.

A. Experimental Approval (Residential and Commercial)

1. Experimental technologies designed to reduce total nitrogen (TN) to a minimum of 19 mg/L that are not yet certified by United States Environmental Protection Agency (EPA) Environmental Technology Verification (ETV) or National Sanitation Foundation (NSF) 245 testing, or do not have NSF 40 certification and are not approved for 19 mg/l TN in a minimum of two (2) other jurisdictions with climate conditions similar to Suffolk County, may be installed in Suffolk County as an Experimental I/A OWTS provided the following items are submitted to the Department for initial review:
 - a. The Vendor shall submit an engineering report prepared by a licensed professional engineer in the State of New York completely describing the technology with process design calculations and product design drawings.
 - b. Documentation showing that systems employing the Vendor’s technology have been previously installed and tested at a testing facility acceptable to the Department.
 - i. The tested system(s) must have been a full-scale system with a minimum design capacity of at least 440 gallons per day (gpd).
 - ii. Sampling results for the tested system(s) must be submitted and include both influent and effluent results. The results must be for a minimum of a 12-month period with samples taken at a maximum of thirty (30) day

intervals. Sampling results must include, at a minimum, total nitrogen (TN), total Kjeldahl nitrogen (TKN), ammonia-N (NH₃), nitrite (NO₂), nitrate (NO₃), pH, five-day biochemical oxygen demand (BOD₅), total suspended solids (TSS), and alkalinity. Samples must be taken and analyzed by a certified laboratory within the jurisdiction in which the system was tested.

- c. Any other items the Vendor and/or Department determine to be advisable for a complete review and evaluation of the technology as embodied in the specific system(s) tested.
2. The Department shall review the submitted items and provide a written determination within sixty (60) days to the Vendor either approving or disapproving the technology as an Experimental I/A OWTS within Suffolk County.
3. Vendors receiving Department approval to install their unit in Suffolk County as an Experimental I/A OWTS must install a minimum of three (3) units and no more than five (5) units per manufacturer and/or technology at year-round residences within Suffolk County.
4. Experimental I/A OWTS must be installed in a manner that it can function by gravity as a system meeting conventional OWTS standards.
5. Effluent samples from Experimental systems shall be tested by a New York State certified laboratory to assess the systems' success in achieving treatment standards of no greater than 19 mg/l of TN. Samples shall be taken no less frequently than every 30 days after the system reaches equilibrium. The Department shall consider an Experimental I/A OWTS at equilibrium after a three-month period unless actual field results demonstrate otherwise. Sampling results must include TN, TKN, NH₃, NO₂, NO₃, pH, BOD₅, TSS, alkalinity and such other parameters as the Department may prescribe. Refer to Section 19-108 of this Standard for sampling protocol specifications.
6. Testing on the initial set of three (3) to five (5) Experimental systems must be performed for at least twelve (12) months and result in a full technical reporting of results in a format acceptable to the Department. At that time, the Department will determine whether to approve the Experimental I/A OWTS for Piloting (pursuant to subsection B) or require an additional period of testing on an Experimental basis.
7. Any Experimental technology or system may be ordered removed in Suffolk County

based on unsatisfactory results in the yearly technical report(s), based on other information indicating the Experimental I/A OWTS is not functioning properly to produce an effluent of no greater than 19 mg/l TN, or if the technology or system has been determined to be a public health threat by the Department. Any installed system ordered to be removed must be replaced with a system meeting Department standards within sixty days of notification from the Department.

8. Experimental I/A OWTS may be approved for Piloting if 75% of the units installed have a combined total average effluent TN of 19 mg/L or less for at least twelve (12) consecutive months of sampling.
9. Experimental systems that meet performance goals are allowed to remain in place long-term, provided that they are monitored no less frequently than every thirty (30) days as set forth above until the technology advances to Provisional Use. If the technology advances to the Piloting phase, installed Experimental systems count as part of the total number of systems required under the Piloting phase.
10. A technology may remain in the Experimental phase for no more than 2-years after the installation date of the fifth Experimental system has been installed unless otherwise extended at the Department's discretion.

B. Pilot Approval (Residential and Commercial)

1. Piloting involves the installation, field testing, and technical evaluation to demonstrate that an I/A OWTS technology can function effectively under the physical and climatological conditions at pilot sites in Suffolk County.
2. The Department will allow piloting of I/A OWTS that have satisfactorily completed or attained at least one of the verifications and/or certifications listed below:
 - a. Verification through the National Sanitation Foundation/American National Standards Institute (NSF/ANSI) that the technology meets Standard 245 for nitrogen reduction.
 - b. Certification for advanced nitrogen removal through the EPA Environmental Technology Verification Program.
 - c. General approval (or the equivalent) for use for nitrogen reduction in at least two jurisdictions with winter climate conditions similar to Suffolk County.

- d. Successful completion of the Experimental Approval process outlined in Section 19-104 A of this Standard.
3. Piloting of a particular I/A OWTS technology may be conducted at either existing or new construction. Eight (8) to twelve (12) systems per manufacturer and technology must be successfully piloted prior to proceeding to Provisional approval. Systems must serve buildings/facilities that are occupied year round. Systems from the same Vendor that utilize the same technology but have different daily sanitary flow volumes can be used. Sites appropriate for pilot systems will be agreed upon by the manufacturer and the Department.
4. Effluent samples from Pilot systems shall be tested by a New York State certified laboratory to assess the systems' success in achieving treatment standards of no greater than 19 mg/l of TN. Samples shall be taken no less frequently than every 30 days after the system reaches equilibrium. The Department shall automatically consider an I/A OWTS to be at equilibrium after the first 3-month period of continuous operation. Sampling results must include TN, TKN, NH₃, NO₂, NO₃, PH, BOD₅, TSS, alkalinity and such other parameters as the Department may specify. Piloting must be done for at least twelve (12) months and result in a full technical reporting of results in a format acceptable the Department. Refer to Section 19-108 in this Article for sampling protocol specifications.
5. Piloting is generally not intended to address long-term operation and maintenance, although the information gathered during piloting should be used to understand these issues.
6. At the close of the Pilot test period, the Department may allow the technology to proceed to the Provisional Use approval stage, require additional Piloting, or disapprove the system. Piloting is considered successful if 75% of the units installed have a combined total average effluent total nitrogen of 19 mg/L or less for at least twelve (12) consecutive months of sampling.
7. Piloted systems that meet performance goals are allowed to remain in place long-term. For pilot systems that do not meet the expected parameters, adjustments to system design and operation may be required by the Department for installed systems and incorporated into future systems employing the same technology. In extreme circumstances, a sub-performing piloted system may need to be removed or replaced at the discretion of the Department, in consultation with the Vendor and Property Owner.

8. A technology may remain in the Piloting Phase for no more than two (2) years after the installation date of the twelfth Pilot system is installed unless otherwise extended at the Department's discretion.
9. Piloting phases are identical for residential and commercial systems. A technology can advance to Provisional Approval after successfully completing the piloting phase with residential systems, commercial systems, or any combination thereof.

C. Provisional Use Approval (Residential and Commercial)

1. In the Provisional Use stage, the Department will evaluate whether an I/A OWTS technology can provide treatment exceeding that of a Conventional OWTS with effluent nitrogen reduction to 19 mg/l or less under actual field conditions in Suffolk County and with a broader range of uses than in the controlled environment of Piloting.
2. Provisional Use phase can occur when, in the Department's judgment, a technology has been piloted successfully in Suffolk County. The Department will consider Provisional Use Approval after the first eight (8) Pilot systems have finished twelve (12) months of operation at equilibrium.
3. A technology approved for Provisional Use can be installed in existing or new construction on residential or commercial properties where a Conventional OWTS in compliance with Article 6 of the Suffolk County Sanitary Code could be approved.
4. In the Provisional Use approval for residential systems the first twenty (20) systems installed at year-round residences (including Experimental and Pilot systems) must be sampled every two (2) months for at least twenty-four (24) months prior to a technology becoming eligible for General Use Approval. All other residential systems installed during Provisional Use approval must be sampled every twelve (12) months for TN.
5. In the Provisional Use approval of commercial systems, a minimum of twenty (20) systems (including Experimental and Pilot systems) must be installed at commercial sites. The first twenty (20) installed systems shall be sampled every month for at least 12 months, and every two months for an additional twelve (12) months prior to a technology becoming eligible for General Use Approval for commercial use. All other installations during Provisional Use approval must be sampled every twelve (12) months for total nitrogen. However, if a commercial system is installed at a seasonal use site, the system must be sampled monthly during months of operation while the technology is in Provisional Use Approval.

In addition, four (4) systems must be installed and successfully implemented in each of the following five (5) commercial subcategories: (1) office, retail, industrial, gym

- and dry goods; (2) restaurants, coffee shops, and other kitchen / fats, oils, and grease (FOG) waste; (3) multi-tenant residential; (4) institutional use; (5) medical use in order for General Use approval to be granted for those specific subcategories. In instances where a particular use could be categorized as more than one subcategory, the Department shall specify which subcategory a particular use would fall under.
6. Effluent samples from both residential and commercial Provisional systems shall be tested by a New York State certified laboratory to assess the systems' success in achieving treatment standards of no greater than 19 mg/l of TN. The Department shall automatically consider an I/A OWTS to be at equilibrium after a 3-month period. Sampling results must include TN, TKN, NH₃, NO₂, NO₃, pH, BOD, TSS, alkalinity, and such other parameters as the Department may specify. Sampling must be done for at least twenty-four (24) months and result in a full technical reporting of results in a format acceptable to the Department. Refer to Section 19-108 in this Article for sampling protocol specifications.
 7. In the Provisional Use stage, systems will be evaluated based on operation, maintenance, and monitoring issues. Overall sampling of the installed systems as a group will be coordinated by the Vendor and the Department to determine how the systems are performing throughout the year.
 8. Provisional Use is considered successful if the first twenty (20) installed systems achieve a level of environmental protection at least equivalent to a Conventional OWTS and a mean effluent nitrogen concentration of 19 mg/l or less over a period of twenty-four (24) months. Provisional Use approval can be suspended or revoked if problems develop in the performance of the approved technology or of particular systems.
 9. A technology may remain in residential Provisional Use Approval no more than five (5) years after the installation date of the twentieth Provisional system unless Provisional Approval is renewed at the Department's discretion.
 10. A technology may remain in commercial Provisional Use Approval no more than five (5) years after the installation date of the twentieth Provisional system unless Provisional Approval is renewed at the Department's discretion.

D. General Use Approval for Residential Systems

1. When a residential I/A OWTS technology has successfully completed the Provisional Use stage, it receives Certification for General Use.
2. I/A OWTS technology certified for General Use can be installed at any site where a Conventional OWTS in compliance with Article(s) 5 and/or 6 of the Suffolk County Sanitary Code could be approved.

3. An O&M contract and annual O&M shall be required for all I/A OWTS between the Property Owner and Maintenance Provider. See section 19-107 for further details on O & M requirements.
4. Systems approved for residential General Use must be sampled every thirty-six (36) months and result in a full technical reporting of results in a format acceptable to the Department. Sampling results must include TN, TKN, NH₃, NO₂, NO₃, and other parameters as the Department may specify. Refer to Section 19-108 in this Article for sampling protocol specifications.

E. General Use Approval for Commercial Systems

1. In order for a commercial technology to receive General Use Approval for any of the following subcategories: (1) office, retail, industrial, gym and dry goods; (2) restaurants, coffee shops, and other kitchen / FOG waste; (3) multi-tenant residential; (4) institutional use; (5) medical use, a minimum of four (4) systems must be installed and successfully implemented in that specific subcategory during Provisional Use phase. The Department reserves the right to define which subcategory an applicant's commercial use is in.
2. When a commercial I/A OWTS technology has successfully completed the Provisional Use stage, it receives Certification for General Use. Based on the results of the Provisional Approval evaluations, the Department will approve the system for general commercial use and any of the following uses: (1) office, retail, industrial, gym and dry goods; (2) restaurants, coffee shops, and other kitchen / FOG waste; (3) multi-tenant residential; (4) institutional use; (5) medical use.
3. I/A OWTS technology certified for General Use can be installed at any site where a Conventional OWTS in compliance with Article(s) 5 and/or 6 of the Suffolk County Sanitary Code could be approved in accordance with the provisions above.
4. An O&M contract and annual O&M shall be required for all I/A OWTS between the Property Owner and Maintenance Provider. See section 19-107 for further details on O & M requirements.
5. Systems approved for commercial General Use must be sampled every twelve (12) months and result in a full technical reporting of results in a format acceptable to the Department. Sampling results must include TN, TKN, NH₃, NO₂, NO₃, and other parameters as the Department may specify. Refer to Section 19-108 in this Article for sampling protocol specifications..

TABLE 19-104.1: Approval Chart for Residential Systems			
Approval Phase	# of Systems	Sampling Frequency	Performance Requirement
Experimental*	3 – 5 year-round	Monthly Sampling 12 months rolling average	The total dataset of 75% of the systems must have a combined average of 19 mg/L or less TN
Piloting*	8 – 12 year-round	Monthly Sampling 12 months rolling average	The total dataset of 75% of the systems must have a combined average of 19 mg/L or less TN
Provisional 1	First 20 year-round	Bi-Monthly Sampling for 24 months rolling average	The dataset of all the 20 systems must have a combined average of 19 mg/L or less TN
Provisional 2	All Residential Systems installed during Provisional Use Approval	Every 12 Months	The annual dataset must maintain a combined average of 19 mg/L or less TN in order to remain in the Provisional phase **
General Use	All Residential Systems	Every 36 Months	The dataset must maintain an average of 19 mg/L or less in order to remain in General Use phase **

Note: The number of required systems is a cumulative number. The minimum of 20 systems for Provisional Use includes the number of systems installed as part of Experimental and Piloting processes.

** Piloting and Experimental phases are identical for residential and commercial systems. A technology can advance to Provisional Approval after successfully completing piloting phase with residential systems, commercial systems, or any combination thereof.*

***The combined average of the dataset in Experimental, Piloting and the first 20 year-round Provisional is the requirement to achieve successful completion of that phase. The average of the dataset of other Provisional systems and systems installed under General Use shall be evaluated to affirm compliance to maintain approval or disclose non-performance to be considered for revocation. See section of revocation of approval in Section 19-109*

TABLE 19-104.2: Approval Chart for Commercial Systems			
Approval Phase	# of Systems	Sampling Frequency	Performance Requirement
Experimental*	3 – 5 year-round	Monthly Sampling 12 months rolling average	The total dataset of 75% of the systems must have a combined average of 19 mg/L or less TN
Piloting*	8 – 12 year-round	Monthly Sampling 12 months rolling average	The total dataset of 75% of the systems must have a combined average of 19 mg/L or less TN
Provisional 1	First 20 Systems Installed and systems installed in commercial subcategories**	Monthly Sampling for 12 months; bi-monthly sampling for an additional 12 months	The dataset of all the 20 systems must have a combined average of 19 mg/L or less TN
Provisional 2	All Other installations during Provisional Use Approval	Every 12 months, unless seasonal then every month of operation.	The annual dataset must maintain a combined average of 19 mg/L or less TN in order to remain in the Provisional phase ***
General Use	All Systems	Every 12 Months	The dataset must maintain an average of 19 mg/L or less in order to remain in General Use phase ***

Note: The number of required systems is a cumulative number. The minimum of 20 systems for Provisional Use includes the number of systems installed as part of Experimental and Piloting processes.

** Piloting and Experimental phases are identical for residential and commercial systems. A technology can advance to Provisional Approval after successfully completing piloting phase with residential systems, commercial systems, or any combination thereof.*

*** In order for a commercial technology to receive General Use Approval specific to any of the following subcategories: (1) office, retail, industrial, gym and dry goods; (2) restaurants, coffee shops, and other kitchen / fats, oils, and grease (FOG) waste; (3) multi-tenant residential; (4) institutional use; (5) medical use, a minimum of four (4) systems must be installed and successfully implemented in that specific subcategory.*

****The combined average of the dataset in Experimental, Piloting and Provisional 1 is the requirement to achieve successful completion of that phase. The combined average of the dataset in Provisional 2 and General Use shall be evaluated to affirm compliance to maintain approval or disclose non-performance to be considered for revocation. See section of revocation of approval in 19-108 Paragraph (E).*

F. Demonstration Programs

1. The Department may solicit participation in an I/A OWTS Demonstration Program, whereby a Vendor installs, tests and maintains systems at no cost or at a reduced cost to a Property Owner(s). Systems being tested as part of a Demonstration Program may be subject to a streamlined approval process. For example, two septic demonstration programs have been conducted, wherein the Department has approved a technology for Provisional Use if 75% of the units installed have a combined total average effluent TN of 19 mg/L or less for at least six (6) consecutive months of composite sampling.
2. The purpose of the Demonstration program is to assess the design, operation, maintenance, installation, and overall ability of an I/A OWTS technology to meet nitrogen reduction objectives.
3. The Department will require that technologies participating in a Demonstration Program have NSF 245 certification or EPA Environmental Technology Verification (ETV).
4. Systems being tested as part of a Demonstration Program may be admitted into the Provisional phase after successful completion of the program, subject to the Department's discretion.
5. A Vendor participating in the Demonstration Program may not sell or install additional units not part of the Demonstration Program until Vendor's technology receives Provisional Use Approval.
6. Participation in the demonstration program can be suspended or revoked if problems develop in the performance of the approved technology or of particular systems.

G. New England Coastal States and Long Island Data Sharing Project

1. The New England Coastal States and Long Island Data Sharing Project (Data Sharing Project) was developed to document and standardize the performance of I/A OWTS for nitrogen reduction and, therefore, to simplify and expedite the approval processes for these technologies in each individual state, as well as to reduce costs to residents and manufacturers arising from repetitive testing. Data sharing within the New England/Long Island coastal region will support the restoration of New England/Long Island coastal shores.

2. Technologies seeking Provisional or General Use approval for nitrogen reduction in jurisdictions within the New England coastal region, including Maine, Massachusetts, New Hampshire, Rhode Island, and Suffolk County, NY may participate in the Data Sharing Project by submitting a Test Plan Application maintained by the Department.
3. A Vendor's participation in the Data Sharing Project is optional. If a Vendor chooses not to participate, the number of systems outlined in the approval processes above must all be installed in Suffolk County.
4. Vendors participating in the Data Sharing Project shall install the number of systems outlined in the approval processes above. A minimum of five (5) systems must be installed in Suffolk County, and the remainder of the systems can be split among any of the jurisdictions participating in the Data Sharing Project.

H. Guidance Document

1. Once a technology is approved for Piloting, Provisional, or General Use by the Department, the Vendor (or Designer in the instance of field-built technologies) shall submit a finalized guidance document detailing all design, installation, and operation and maintenance requirements ("Vendor Guidance Document").
 - a. The Vendor Guidance Document for non-field built systems shall include but not be limited to the following:
 - i. Engineering design drawings and calculations
 - ii. Installation manual and training documents
 - iii. O&M specifications for the I/A OWTS
 - iv. Sample copy of standard 3-year product warranty
 - v. Sample copy of O&M Agreement with typical costs
 - vi. Sample copy of O&M service form used by Vendor
 - vii. Estimated repair and replacement costs for system components.
 - viii. A description of local distribution and O&M support network established in Suffolk County
 - b. The Guidance Document for field-built systems shall include but not be limited to the following:
 - i. Engineering design drawings and calculations
 - ii. Installation manual and training documents
 - iii. O&M specifications
 - iv. Sample copy of standard 3-year product warranty
 - v. Sample copy of O&M Agreement with typical costs
 - vi. Estimated repair and replacement costs for system components
 - vii. Sample copy of O&M service form
 - viii. A description of:

- Types of media used
 - Media Specifications (including estimated longevity and replacement procedures)
 - Proposed loading rates
 - Distribution manifold and laterals
 - Site construction precautions
- c. I/A OWTS shall be installed, operated, and maintained in accordance with the Vendor Guidance Document and comply with all conditions outlined in the approval document for that specific technology. In addition to Department inspections, a Design Professional shall supervise the installation of field-built technologies, certify that the system was built in accordance with the approved plan, and submit as-built plans of the system to the Department.
- d. The Vendor (or Design Professional in the instance of field-built technologies) shall provide training to the Department and Industry with respect to the technology in question in accordance with Chapter 563 Article VII (Septic Industry Businesses) for the Innovative and Alternative Treatment System Service Provider Endorsement through the Suffolk County Department of Labor, Licensing and Consumer Affairs, pursuant to Suffolk County Code § 563-79.

19-105 TECHNOLOGY VERIFICATION AND PERFORMANCE STANDARDS

- A. I/A OWTS must demonstrate that they are engineered to a sound biological, chemical, or physical nitrogen removal process through the following:
1. I/A OWTS must have attained verification and/or certification status as follows:
 - a. Through the EPA Environmental Technology Verification Program (“ETV”), or;
 - b. Through the National Sanitation Foundation/American National Standards Institute (“NSF/ANSI”) Standard 245, or;
 - c. Have current approval for 19 mg/l of TN in a minimum of two (2) jurisdictions with winter climate conditions similar to Suffolk County. This includes all States who participated in the EPA’s New England Coastal States and Long Island Data Sharing Project.

2. I/A OWTS that have not attained verification and/or certification through the above listed criteria shall be considered Experimental Technologies and must follow procedures for experimental technologies as outlined in the approval process.

B. Performance Standards for I/A OWTS Technologies:

1. I/A OWTS must meet treated effluent concentrations for TN of 19 mg/L or less. The following criteria shall be used to evaluate the effluent data through the different approval processes:
 - a. Experimental and Piloting Approval: 75% of the units installed must have a combined total average effluent TN of 19 mg/L or less for at least a 12-month sampling period.
 - b. Provisional and General Use Approval: The total technology dataset must maintain a mean TN of 19 mg/L or less.

C. Annual Review of Technologies:

1. The Department shall perform an evaluation of I/A OWTS technologies to ensure that performance standards represent the best available technologies. This evaluation shall occur, at a minimum, on an annual basis, and more frequently if advances in technology so warrant.

19-106 REGISTRATION REQUIREMENTS

- A. Any Property Owner whose property is served by an I/A OWTS shall be required to register the system with the Department.
- B. Property Owner(s) shall register a new I/A OWTS utilizing the Registration forms provided by the Department.
- C. Upon the transfer of real property by a Property Owner utilizing or proposing to install an I/A OWTS, the transferor Property Owner shall notify the Department, in writing, of such transfer. Such notification shall take place no later than sixty (60) days after the property transfer.
- D. Prior to the transfer by a Property Owner of real property upon which an I/A OWTS is installed or proposed to be installed, the transferor shall notify the successor Property Owner that the I/A OWTS must be registered in the successors name no later than sixty (60) days after such property transfer.

- E. Upon the transfer by a Property Owner of real property upon which an I/A OWTS is installed or proposed to be installed, the successor Property Owner must re-register the I/A OWTS, no later than sixty (60) days after such property transfer, in the successors name.
- F. Every Property Owner shall renew the I/A OWTS registration every 36 months after the initial Registration by such Property Owner.
- G. For condominiums and townhouses, the homeowner association shall complete the registration of I/A OWTS.
- H. A fully executed Operation and Maintenance Contract between Maintenance Provider(s) and Property Owner(s) must be in place and submitted to the Department prior to receiving approval of the Registration from the Department.
- I. Registration form requirements shall include, at a minimum:
 - 1. Tax Map Number
 - 2. Property Owner's name
 - 3. Address where system will be or is installed
 - 4. Property Owner's permanent address if different than location of system
 - 5. Property Owner's phone number(s)
 - 6. Property Owner's e-mail address
- J. Registration forms may include questions regarding the Property Owner's opinions and experience with:
 - 1. The technology as a whole
 - 2. The installation
 - 3. Appearance of the system
 - 4. Their overall satisfaction with the system
 - 5. O&M
 - 6. Operating costs
- K. By completing the Registration process, the Property Owner shall agree to:
 - 1. Provide access to the Commissioner or his authorized representative to inspect and sample the I/A OWTS and its discharges upon reasonable notice for the purpose of determining compliance with Article 19 of the Suffolk County Sanitary Code and/or this Standard.
 - 2. Provide access to the Commissioner or his authorized representative, for inspection of all records required under Article 19 of the Suffolk County Sanitary Code and/or this Standard by the Department, upon reasonable notice to the Property Owner, for the purpose of determining compliance to Article 19 of the Suffolk County Sanitary Code and/or this Standard.

3. Execute any documents required for release of required information to the Department when requested by a Maintenance Provider.

19-107 OPERATION AND MAINTENANCE REQUIREMENTS

- A. Every Property Owner shall have an active Operation and Maintenance Contract with a Maintenance Provider that has a current Liquid Waste License pursuant to Chapter 563 Article VII (Septic Industry Businesses) and an Endorsement as an Innovative and Alternative Treatment System Service Provider through the Suffolk County Department of Labor, Licensing and Consumer Affairs. The Department of Labor, Licensing, and Consumer Affairs maintains a list of licensed I/A OWTS Maintenance Providers.
- B. The Property Owner shall notify the Department in writing within thirty (30) days in the event there is a change in Maintenance Provider.
- C. Maintenance Providers shall notify the Department in writing within thirty (30) days when an Operation and Maintenance Contract is not renewed or is canceled.
- D. The Property Owner is responsible for implementing all necessary repairs and maintenance to maintain the operation of the I/A OWTS.
- E. The Operation and Maintenance Contract shall require the Property Owner to authorize the Maintenance Provider to enter onto the Property Owner's property, when necessary, for periodic inspection, pumping, maintenance, and repair of an I/A OWTS.
- F. At a minimum, annual O&M shall be required for all I/A OWTS in perpetuity as long as the I/A OWTS is in use.
- G. In addition to the O&M specifications outlined in the Vendor Guidance Document, the following procedures shall be required of Maintenance Providers:
 1. The septic tank/trash chamber shall be measured for solids accumulation and a pump out should be scheduled if the quantity of solids exceeds the manufacturer's specifications. More actively used systems may need to be placed on more frequent inspection or maintenance schedules.
 2. All electrical components should be checked annually for functionality and safety.
 - a. All control switches shall be activated and timer should be checked to ensure accurate settings.
 - b. All visual and audible alarms shall be tested
 - c. All submerged floats shall be activated and checked for proper function.
 - d. If moisture is encountered in any splice box, the source shall be identified and corrections made.

3. All effluent screens shall be cleaned at a minimum, on a yearly basis, and whenever the tanks are pumped.
4. Bio-solids hosed off of filters, pumps, pump vaults, and treatment material shall be placed into the inlet end of the septic/trash tank.

H. Alarms:

1. In the event of an audible alarm, the alarm may be silenced. In cases where a high-water alarm is caused by too much water entering the system at a particular time the system will typically correct itself. However, in the event of a repeat alarm, the O&M provider should be contacted to address the situation.

- I. Maintenance Providers shall maintain records relating to all routine O&M service and any emergency service for each I/A OWTS for which the Maintenance Provider is contractually responsible. Using forms and procedures specified by the Department, including any Management Information Systems adopted by the Department for this purpose, the Maintenance Provider shall make prompt reports to the Department following routine and emergency service. Maintenance Providers shall maintain records for at least five (5) years after the date of service and make such records available for inspection by the Commissioner or his designee upon request.

- J. Maintenance Providers shall identify high risk systems and increase maintenance as needed to prevent nuisance alarms, clogging, and backup.

19-108 SAMPLING PROTOCOL

A. Quality Assurance Project Plan (QAPP)

1. The Vendor is responsible for submitting a QAPP for their I/A OWTS technology that follows the guidelines in NSF 360 Section 7: Quality Assurance/Quality Control. The QAPP shall address the following points:
 - a. Procedures to maintain chain-of-custody (e.g., custody seals, records) during sample transfer from the field to the laboratory, in the laboratory, among contractors, and subcontractors shall be described in the QAPP to ensure that sample integrity is maintained.
 - b. The QAPP shall include quantitative acceptance criteria for QA objectives associated with accuracy, precision, detection limits, and completeness for critical measurements (process, physical, and analytical, as applicable) for each matrix.
 - c. Any additional test-specific QA objectives shall be presented in the QAPP, including acceptance criteria. This includes items such as mass balance requirements.

- d. The specific procedures used to assess all identified QA objectives shall be fully described in the QAPP.
 - e. The QAPP shall list and define all other QC checks and/or procedures (i.e., blanks, surrogates, controls, etc.) used for the verification testing, both field and laboratory.
 - f. For each specified QC check or procedure, required frequencies, associated acceptance criteria, and corrective actions to be performed, if acceptance criteria are not met, shall be included in the QAPP.
 - g. The QAPP shall describe how the sampling equipment is calibrated and the frequency of calibration.
 - h. The QAPP shall describe how cross-contamination between samples is avoided.
 - i. All QA Managers and their relationship in the organizations (i.e. location within each organization) shall be identified in the QAPP with evidence that the QA Manager is independent of project management.
 - j. Responsibilities of all other project participants shall be identified in the QAPP, meaning that organizations responsible for planning, coordination, sample collection, sample custody, measurements (i.e. chemical, physical, and process), data reduction, data validation, and report preparation shall be clearly identified in the QAPP.
 - k. Any change from the approved sampling procedures must be approved in advance by the Department.
 - l. All I/A OWTS units must be designed and installed in accordance with the Vendor Guidance Document and in compliance with the Approval for I/A OWTS received by the Department.
- B. Sampling of I/A OWTS shall be conducted in accordance with NSF/ANSI Standard 360 and the following describes the minimum acceptable sampling requirements:
1. 24-hour composite sampling is required for sampling during Experimental and Piloting Use Approval.
 2. Grab sampling or 24-hour composite sampling are acceptable methods to the Department for Provisional and General Use Approval.
 3. The Vendor must describe the process and location of how the samples will be collected in the Vendor Guidance Document.
 4. Influent samples may be requested where practical and/or deemed necessary by the Department.
 5. For Experimental, Piloting or Provisional Approval (first 20 installed and commercial subcategories), the following measurements are required to be conducted on effluent samples: BOD₅, TSS, pH, NO₂, NO₃, TKN, ammonia-N, total-nitrogen, and alkalinity. Wastewater temperature and ambient air temperature will also be recorded as depicted in Table 19-108.1 and 19-108.2.

6. For all other systems installed during Provisional Use Approval and systems installed during General Use Approval, the following measurements are required: NO₂, NO₃, TKN, NH₃, TN
7. Samples may be taken by the Department-approved responsible party, processed by a New York State-certified laboratory and be accompanied with a chain of custody.
8. Additionally, if on public water, an estimate of influent flow shall be included based on the site's water bill. If no water bill is available, the pump event counter or telemetry system can be used to estimate the flow.
9. The Department reserves the right to sample, test, or inspect the installed I/A OWTS at any time provided appropriate notice is given to the Property Owner.

C. Responsibility for Taking and Performing an Analysis of I/A OWTS Samples:

The responsibilities and procedures for sampling during each phase of approval shall be according to the following:

1. Experimental and Piloting Phase

- a. Sampling and analysis of effluent from I/A OWTS during the Experimental and Piloting phases shall be completed by the Department, to the extent Department resources permit, for determination of a technology's approval to move to the next I/A OWTS approval phase.
- b. Sampling points of each system shall be via sample port, manhole, etc., as approved by the Department.
- c. Samples taken and used to calculate the total nitrogen average shall be 24-hour composite samples using an automatic composite sampling unit with refrigeration. The composite sampler shall withdraw a sample at no more than 1-hour intervals but no less than 15-minute intervals for a period of 24-hours.
- d. The Department shall clean/purge sample ports, manholes, etc. at least 24-hours prior to commencement of the 24-hour composite sampling event.
- e. The samples shall be analyzed by a New York State certified laboratory. All samples must maintain a chain-of-custody (e.g., custody seals, records) during transfer from the field to the laboratory, in the laboratory, among contractors, and subcontractors.
- f. TN levels shall be determined by summing the results of NO₂, NO₃ and TKN of the analyzed 24-hour composite sample.
- g. The Department shall maintain the data during Experimental and Piloting phases.
- h. At the completion of the sampling timeframe, the Department will determine whether to approve the I/A OWTS for the next phase of use pursuant to meeting the technology requirements or require an additional period of testing in the current phase of use.

2. Provisional Phase

- a. Sampling of effluent from all I/A OWTS during the Provisional phase shall be the responsibility of the Vendor or Vendor's certified operation and maintenance provider.
- b. Samples shall be taken by a Department approved responsible party, for review by the Department for consideration of further approval.
- c. The Vendor must submit a sampling plan to the Department for their I/A OWTS technology for review and approval prior to commencing the Provisional phase sampling per the Article 19 Standard.
- d. A Vendor guidance document must be supplied to the Department for each I/A OWTS technology upon receipt of Provisional approval and prior to commencing Provisional phase sampling, which must include the designated sample collection location for that I/A OWTS technology.
- e. Samples taken and used to calculate the total nitrogen average shall be grab or 24-hour composite samples.
- f. Sampling collection must be taken and stored in accordance with the approved sampling plan, Vendor guidance document, and standard laboratory protocol.
- g. The samples shall be analyzed by a New York State certified laboratory. All samples must maintain a chain-of-custody (e.g., custody seals, records) during transfer from the field to the laboratory, in the laboratory, among contractors, and subcontractors.
- h. TN levels shall be determined by summing the results of NO₂, NO₃ and total TKN of the analyzed grab sample.
- i. The Vendor shall provide the Department a copy of the results of each sample event within two (2) weeks of completion of the analysis by a New York certified laboratory.
- j. The Department reserves the right to sample, test, or inspect any installed I/A OWTS units at any time during the Provisional phase to verify I/A OWTS performance and data provided by the Vendor, provided appropriate notice is given to the Property Owner.
- k. At completion of the Provisional phase testing, the vendor shall submit results in a full technical report in a format acceptable to the Department for review and consideration of the I/A OWTS technology for General Use approval by the Department.
- l. At the completion of the sampling timeframe, the Department will determine whether to approve the I/A OWTS for the next phase of use pursuant to meeting the technology requirements or require an additional period of testing in the current phase of use.
- m. A technology may remain in Provisional approval phase no more than five (5) years unless Provisional approval is renewed at the Department's discretion.

3. General Use Phase

- a. Sampling of effluent from all I/A OWTS during the General Use phase shall be the responsibility of the Vendor or Vendor's certified operation and maintenance provider.
- b. Samples shall be taken by a Department-approved responsible party for review by the Department to provide long term data to ensure that the systems are operating in optimal configurations for ongoing denitrification.
- c. Samples shall be taken no less than once every three years during the time of year determined by the Department.
- d. Samples shall be withdrawn from the I/A OWTS unit at a sampling point within the system as identified by the Vendor guidance document.
- e. Samples taken and used to calculate the total nitrogen shall be grab or 24-hour composite samples.
- f. Sampling collection must be taken and stored in accordance with the Vendor guidance document and standard laboratory protocol.
- g. The samples shall be tested by a New York State certified laboratory. All samples must maintain a chain-of-custody (e.g., custody seals, records) during transfer from the field to the laboratory, in the laboratory, among contractors, and subcontractors.
- h. TN levels shall be determined by summing the results of NO₂, NO₃ and TKN of the analyzed grab sample.
- i. The Vendor or Vendor's certified operation and maintenance provider shall provide a copy of the results of each grab sample event to the Department within 2-weeks of completion of the analysis by the New York certified laboratory.
- j. Department reserves the right to sample, test, or inspect any installed I/A OWTS units at any time during the General Use phase to verify I/A OWTS performance and data provided by the Vendor or Vendor's certified operation and maintenance provider, provided appropriate notice is given to the Property Owner.

Table 19-108.1: Sampling Requirements for Experimental and Piloting Use Approval

Parameter	Sample Type	Testing Location
BOD ₅	24 h composite	Laboratory
Total suspended solids	24 h composite	Laboratory
pH	Grab	Test site
Temperature (wastewater)	Grab	Test site
Temperature (ambient air)	Grab	Test site
Effluent Alkalinity (as CaCO ₃)	24 h composite	Laboratory
TKN (as N)	24 h composite	Laboratory
Ammonia-N (as N)	24 h composite	Laboratory
Nitrite-N (as N)	24 h composite	Laboratory
Nitrate-N (as N)	24 h composite	Laboratory

Table 19-108.2: Sampling Requirements for first Twenty (20) year-round Provisional Systems and Commercial Subcategories

Parameter	Sample Type	Testing Location
BOD ₅	Grab or 24 h composite	Laboratory
Total suspended solids	Grab or 24 h composite	Laboratory
pH	Grab	Test site
Temperature (wastewater)	Grab	Test site
Temperature (ambient air)	Grab	Test site
Effluent Alkalinity (as CaCO ₃)	Grab or 24 h composite	Laboratory
TKN (as N)	Grab or 24 h composite	Laboratory
Ammonia-N (as N)	Grab or 24 h composite	Laboratory
Nitrite-N (as N)	Grab or 24 h composite	Laboratory
Nitrate-N (as N)	Grab or 24 h composite	Laboratory

Table 19-108.3: Sampling Requirements for all other Provisional and General Use Systems

Parameter	Sample Type	Testing Location
TKN (as N)	Grab or 24 h composite	Laboratory
Ammonia-N (as N)	Grab or 24 h composite	Laboratory
Nitrite-N (as N)	Grab or 24 h composite	Laboratory
Nitrate-N (as N)	Grab or 24 h composite	Laboratory

D. Data Reporting Requirements

1. Vendor shall identify the unit and method for each measurement required
2. Vendor shall provide description of the site and installation
3. Vendor shall list key participants included on the Chain of Custody
4. Vendor shall report all testing results including all sample data and any statistical analyses or data summaries or evaluations
5. If the Department requires use of a particular Management Information System, Vendor shall report all data electronically using the prescribed Management Information System.

19-109 REVOCATION OR SUSPENSION OF EXPERIMENTAL, PILOTING, PROVISIONAL, OR GENERAL USE APPROVAL

If there is non-performance shown in the dataset of a technology's sample results that is causing an exceedance of performance requirement, the Department reserves the right to revoke or suspend the approval status of such technology. Action shall be taken in the following manner depending on the approval phase that the technology is in. In addition, if significant nuisance problems and/or if the technology or system has been determined to be a public health threat by the Department, the system may be ordered to be removed at the Vendor's expense.

A. *Experimental and Pilot Phases*

1. Failure of a technology within Experimental or Piloting phases to reach equilibrium and/or functioning performance level within two years of installation shall result in revocation of the technology's current approval phase, thus no additional permits shall be granted for the installation of the technology. Manufacturers may reapply to the Department for consideration of their participation in an approval phase along with sufficient documentation of the technology's improvements.

B. *Provisional or General Use Phases*

1. Failure of a technology within Provisional or General Use phases to consistently meet the Department's performance requirements shall result in the following actions:
 - a. **Minor Violation:** If the annual 12-month rolling average effluent TN concentration of a technology's systems at equilibrium is between 19 mg/L and 30 mg/L, then the Department shall require a Vendor to submit a remedial action plan and timeline to improve the technology's performance. Failure to do so will result in revocation or suspension of the technology's approval for Provisional or General Use.

- b. **Major Violation:** If the annual 12-month rolling average effluent TN concentration of a technology's systems at equilibrium exceeds 30mg/L, the Department may revoke or suspend a technology's approval for Provisional or General Use.

19-110 VARIANCES

- A. The Commissioner of the Department of Health Services, on written application, may grant a variance, in accordance with Section 760-220 of the Suffolk County Sanitary Code, from a specific provision of these Standards in a particular case, subject to appropriate conditions, where such variance is in harmony with the general purpose and intent of the Standards, and when such application for a variance has been considered in accordance with Section 760-220 of Article 2 and Article 19 the Suffolk County Sanitary Code.
- B. The Commissioner may impose more stringent requirements in a specific case when necessary to ensure an adequate and satisfactory sewage and waste disposal system.

19-111 APPROVAL BY THE COMMISSIONER OF HEALTH SERVICES

In accordance with Article 2, Article 6, and Article 19 of the Suffolk County Sanitary Code, the foregoing are Standards for Approval and Management of Innovative and Alternative Onsite Wastewater Treatment Systems approved by the Suffolk County Commissioner of Health Services and include the required details for submission of information to the Suffolk County Department of Health Services to assure conformity to the approved Standards. These Standards are adopted December 29, 2017 and are effective January 1, 2018.

Signature on File

James L. Tomarken, MD, MPH, MBA, MSW
Commissioner of Health Services
Suffolk County

(Amended 12/29/2017)