

Guidelines for obtaining City of Austin approval for Nitrogen Reduction Systems

Prior to Submitting your Application

All treatment systems to be considered for approval as a Nitrogen Reduction System in the City of Austin must meet the secondary treatment standards of [30 TAC §285.32\(e\)](#), and be approved for use by TCEQ according to [30 TAC §285.32\(c\)\(5\) or §285.32\(d\)](#).

Application Submittal

In order to obtain approval from the City of Austin for a Nitrogen Reduction System, a vendor or system designer must submit the following to Austin Water:

- vendor/designer contacts,
- a general technology description,
- a description of each test site (i.e. type of facility, # of occupants, wastewater volume, etc.),
- a diagram of the proposed treatment system that clearly indicates all sampling locations,
- operating manuals, and
- third party performance verification in the form of a detailed analytical report.

Analytical reports must include quality assurance quality control (QA/QC) data to include (but not limited to) duplicates, blanks, and spiked samples. Adequately trained sample collection personnel shall be provided by an accredited laboratory, governmental agency, or university, and shall be independent of the technology vendor and the system design engineer of record. Influent and effluent samples must be analyzed using [40 CFR §136](#) approved methods for the analysis.

Third Party Performance Verification

Performance verification of the proposed treatment technology must be accomplished by one of the following methods: verification at an established test center following a test protocol that mirrors the former [EPA/NSF ETV protocol](#) or tested in the field at individual residences or establishments.

The table below specifies the minimum testing parameters, frequency, and period for both methods of third party performance verification.

Guidelines for obtaining City of Austin approval for Nitrogen Reduction Systems

	Test Center	Field Tests
minimum # of systems tested	1, with 5 stress tests	5
minimum # of sampling events	53 influent (TKN)*, 53 effluent** (TKN+ammonia+nitrate+nitrite)***	53 influent (TKN)*, 53 effluent** (TKN+ammonia+nitrate+nitrite)***
minimum period of sampling	12 months after system start-up	12 months after system start-up
minimum frequency of sampling events	see EPA/NSF ETV protocol	once per quarter for each system, but may be more frequent

* The average TKN concentration (arithmetic mean) of all influent samples must not be less than 36 mg/L.

** The average total nitrogen concentration (arithmetic mean) of all effluent samples must not be greater than 20 mg/L or 11 lbs. of total nitrogen per year based on the system's maximum design flow.

*** 53 is the total number of samples that need to be analyzed for the report. For examples, if you are testing one treatment system at a test center, all 53 samples will come from the single treatment system. If you are testing 14 treatment systems in the field each quarter, 56 samples would come from all 14 of the treatment systems. You could also test just five treatment systems in the field with samples collected monthly to obtain 60 samples.

Austin Water Evaluation Process

Austin Water will evaluate the third party evaluation/certification's test methods, independent performance evaluations, and test results to verify the vendor's or system designer's claim. After evaluation, Austin Water will either approve or reject the technology as a City of Austin approved Nitrogen Reduction System capable of achieving a total nitrogen effluent concentration of 20 mg/L or less as an annual average. Alternatively, the system may demonstrate a maximum nitrogen loading of 11 lb. /year based on the system's maximum design flow. A letter of justification will be provided for any technology that is rejected. An approved technology will be added to the City's list of Nitrogen Reduction Systems which can be found on the City's On-site Sewage Facility program website. Identical treatment processes to an approved Nitrogen Reduction System (i.e. scaled models that use the same wastewater loading/design rates as those that have been tested and approved) will also be accepted.