TO: Joint Committee on Wastewater Technology

FROM: Dr. Robert W. Powitz, Chair of the Joint Committee

DATE: June 9, 2023

SUBJECT: Proposed revision to NSF/ANSI 40 *Residential wastewater treatment systems (40i58r1)*

Revision 1 of NSF/ANSI 40, issue 58 is being forwarded to the Joint Committee for consideration. Please review the proposal and submit your ballot by **June 30, 2023** via the NSF Online Workspace <www.standards.nsf.org>.

Please review all ballot materials. When adding comments, please include the section number applicable to your comment and add all comments under one comment number whenever possible. If you need additional space, please use the attached blank comment template in the reference documents and upload online via the browse function.

Purpose

This ballot will clarify recently added language regarding stress loading in NSF/ANSI 40.

Background

Due to a recent change in Standard 40 that allows up to 1 week of flexibility to the beginning of the stress loading sequence, the issue proponent believes Section 8.2.2 is unclear. Section 8.2.2 Hydraulic loading and schedules states:

> *The performance of the system shall be evaluated for 26 consecutive weeks. During the testing and evaluation period, the system shall be subjected to 16 wk of design loading, followed by 7.5 wk (52 d) of stress loading, and then an additional 2.5 wk (18 d) of design loading.*

Section 8.2.2.2 Stress loading states:

> *Stress loading sequences shall begin in Week 17 ± 1 wk of the testing and will be completed in the order listed in the following sections. Each stress sequence shall be separated by 7 d of design loading, as described in Section 8.2.2.1.*

According to the current language, the length of the test will vary from 25 to 27 weeks depending on when the stress period starts. The design loading periods should be adjusted to ensure the test period is a total of 26 weeks.

This issue paper was presented at the 2023 Wastewater Technologies Joint Committee meeting where a motion to send the language to ballot was approved.

If you have any questions about the technical content of the ballot, you may contact me in care of:

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c/o Joint Committee Secretariat

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[Note – the recommended changes to the standard which include the current text of the relevant section(s) indicate deletions by use of ~~strikeout~~ and additions by grey highlighting. Rationale Statements are in *italics* and only used to add clarity; these statements will NOT be in the finished publication.]

NSF/ANSI Standard
For Wastewater Technology –

Residential Wastewater Treatment Systems

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8 Performance testing and evaluation

This section describes the methods used to evaluate the performance of residential wastewater treatment systems. Systems shall be designated as Class I or Class II. The performance classification shall be based upon the evaluation of effluent samples collected from the system over a 6-mo period.

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8.2 Testing and evaluation conditions, hydraulic loading, and schedules

8.2.1 Influent wastewater characteristics

The 30-d average wastewater characteristics delivered to the system over the course of the testing shall fall within:

- BOD_5: 100 to 300 mg/L;
- TSS: 100 to 350 mg/L; and
- alkalinity: ≥ 175 mg/L as $CaCO_3$.

The raw influent shall be supplemented with sodium bicarbonate to meet the required influent alkalinity.

8.2.2 Hydraulic loading and schedules

The performance of the system shall be evaluated for 26 consecutive weeks. During the testing and evaluation period, the system shall be subjected to 16 wk ± 1 wk of design loading, followed by 7.5 wk (52 d) of stress loading, and then an additional ~~2.5 wk (18 d) of design loading~~ period of design loading to complete the 26 consecutive week evaluation period.

8.2.2.1 Design loading

The system shall be dosed 7 d/wk with a wastewater volume equivalent to the daily hydraulic capacity of the system. The following schedule shall be adhered to for dosing:

Time frame	Rated daily hydraulic capacity (%)
6:00 a.m. to 9:00 a.m.	approximately 35
11:00 a.m. to 2:00 p.m.	approximately 25
5:00 p.m. to 8:00 p.m.	approximately 40

The individual dosage shall be no more than 10 gal per dose, unless the dosage system is based on a continuous flow and be uniformly applied over the dosing periods.

8.2.2.2 Stress loading

Stress loading sequences shall begin in Week 17 ± 1 wk of the testing and will be completed in the order listed in the following sections. Each stress sequence shall be separated by 7 d of design loading, as described in Section 8.2.2.1.

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