

2024 Joint Committee Meeting

Wastewater Technology

April 24th, 2024

NSF, 789 N Dixboro Rd
Ann Arbor, MI 48105



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Dr. Robert Powitz - Chair
Jessica Evans - Secretariat

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TAB 1

- 2024 Meeting Agenda
- Membership rosters
- 2023 Draft Meeting Summary



Joint Committee on Wastewater Technology 2024 Annual Meeting – AGENDA

Wednesday, April 24 – 9:00am to 3:00pm ET

NSF, 789 N Dixboro Road, Ann Arbor, Michigan 48105

TAB 1 Meeting Open	Time	Item	Speaker	Action / Info
	9:00 am	Welcome & Introductions	B. Powitz	Action / Info
		Meeting Process & Best Practices	J. Evans	
		Attendance		
		Antitrust Statement		
		Review of Agenda	B. Powitz	
		Membership Updates	J. Evans	
		Review and Approval of 2023 Joint Committee Meeting Summary	B. Powitz	

TAB 2 Standards Updates	Time	Item	Speaker	Action / Info
	9:30 am	Current and Recent Ballots	J. Evans	Info
		Status Updates: NSF/ANSI 40, 41, 245, 350, 360, 385, 418, 437		
		Standards training	M. Leslie	
		Standards Development / Certification Body	J. Evans	



Joint Committee on Wastewater Technology 2024 Annual Meeting

TAB 3 Task Group Chair Reports	Time	Item	Speaker	Action / Info
	10:00 am	Task Group Expectations	J. Evans	Info
		Task Group on NSF/ANSI 40	B. Baumgaertel	Action / Info
		Task Group on NSF/ANSI 41	J. Wirth	
		Task Group on NSF/ANSI 245	D. Lentz	
		Task Group on NSF/ANSI 350	B. Rubin	
		Task Group on NSF/ANSI 385	J. Bell	
		Task Group on Aerosol Virus Monitoring	D. Potts	
		Task Group on Grinder Pumps	S. Williams	
		Task Group on High Strength Wastewater	S. Heger	
		Task Group on OCB Tech	No Chair	
		Task Group on Retesting	S. Berkowitz	
		Task Group on Scaling	C. Bishop	
		Task Group on Standard Improvement	J. Wirth R. Groover	

BREAK – 10:40am to 10:50am

TAB 4 Issue Papers	Time	Item	Speaker	Action / Info
	10:50 am	WWT-2024-2 – 40 Verification and BOD	J. Blount	Action / Info
		WWT-2024-3 – 40 245 350 Blowers	J. Bell	
		WWT-2024-4 – 245 Alternative Method	S. Randall	
		WWT-2024-5 – 245 Nitrogen	M. Stidham	
		WWT-2024-1 – 350 Removal of Sec 2.1	A. Zeoli	
		WWT-2024-6 – ISO Language Alignment	A. Zeoli	

LUNCH – 12:00pm to 1:00pm



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TAB 5 Info Papers	Time	Item	Speaker	Action / Info
	1:00 pm	WWT 350 – Is NSF 350 specific enough in defining appropriate end uses of treated effluent?	J. Brown	Info

TAB 6 New Business	Time	Item	Speaker	Action / Info
	1:10 pm	New Business	J. Evans	Info

TAB 7 Administrative	Time	Item	Speaker	Action / Info
	1:20 pm	Review of action items and motion outcomes	J. Evans	Info
		Planning of next JC meeting	B. Powitz	Action / Info

ADJOURN – 1:30pm ET

NSF Meeting Process Guideline

1. Presentation of an issue
2. Discussion (questions & answers) on the issue
 - In person attendees: Please raise your hand to make a comment
 - Phone and online attendees: Please use the raise hand and/or chat features
3. Motion on the issue (only voting members may make a motion)
4. Second to the motion (only voting members may second a motion)
5. Discussion on the motion
 - In person attendees: Please raise your hand to make a comment
 - Phone and online attendees: Please use the raise hand and/or chat features
6. Vote on the motion (voting members only)

To ensure voting members clearly understand the motion, the motion shall be restated by the secretariate immediately prior to the vote.

- Yes, Aye, Affirmative
- No, Nay, Negative
- Abstain, Abstention

If a voice vote seems to be close, a show of hands or a roll call vote is used to confirm the vote on the motion. A “friendly amendment” to the motion may be offered by voting members if the person making the original motion and the person seconding the motion agree.

A motion may be withdrawn by the person making the motion at any time.
A second to the motion may be withdrawn by the person seconding the motion at any time.

During the discussion of an issue or motion, the chair will recognize each person in turn so that everyone has an opportunity to comment in an orderly manner.

The above guideline is roughly based on Robert's Rules of Order and may be modified as necessary at any time.

NSF Antitrust Statement

Because this meeting may involve representatives of competing businesses or otherwise implicate antitrust laws, it is important that I get everyone's agreement before we begin that the meeting will be conducted in full compliance with the antitrust laws. We must avoid any comment or action that encourages joint action by participating organizations or persons to restrict their competition or to violate the antitrust law. If you have any questions, I refer you to the NSF Antitrust policy. All committee work will be conducted in full compliance with the NSF Code of Conduct for standards development.

Is there anyone participating who is not in full agreement with the NSF Antitrust statement?

Wastewater Technology JC Membership Updates

Current Roster

First Name	Last Name	Company	Role	Interest Category
Robert	Powitz	R.W. Powitz & Assoc., P.C.	Chair	Public Health / Regulatory
Jim	Meyer	Norweco, Inc.	Vice Chair	Industry
Emily	Bailey	Campbell University	Member	Academia / NGO
Jim	Bell	Bio-Microbics, Inc.	Member	Industry
Colin	Bishop	Anua	Member	Industry
John	Blount, PE	Civil Solutions	Member	User
Mike	Braden	LBC Manufacturing	Member	Industry
Randall	Chelette	Texas On-Site Wastewater Association	Member	User
Matteo	D'Alessio	University of Mississippi	Member	Academia / NGO
William	Daniel IV	Gulf Coast Testing, LLC	Member	User
David	Dobson	Alberta Municipal Services	Member	Public Health / Regulatory
Kathryn	Foster	NSF	Member	User
Roxanne	Groover	FOWA	Member	User
Thomas	Groves	National Onsite Wastewater Recycling Association	Member	User
Sara	Heger	University of Minnesota	Member	Academia / NGO
Anish	Jantrania	Texas A&M	Member	Academia / NGO
Matthew	Janzen	State of Wisconsin	Member	Public Health / Regulatory
Audra	Morse	Michigan Technological University	Member	Academia / NGO
Stewart	Oakley	California State University, Chico	Member	Academia / NGO
Eberhard	Roeder	Florida Department of Environmental Protection	Member	Public Health / Regulatory
Albert (Bob)	Rubin	North Carolina State University	Member	Academia / NGO
Kevin	Sherman	SeptiTech, Inc.	Member	Industry
Leah	Smith	Casper-Natrona County Health Department	Member	Public Health / Regulatory

Wastewater Technology JC Membership Updates

First Name	Last Name	Company	Role	Interest Category
Fraser	Sneddon	Sun-Mar Corp.	Member	Industry
Ping	Wang	Water/Natural Resources & Environmental Control of Delaware	Member	Public Health / Regulatory
Joelle	Wirth	Consultant – User	Member	User
Denise	Wright	Indiana State Department of Health	Member	Public Health / Regulatory

New Voting Members

Matthew Janzen State of Wisconsin

Retired / Resigned Voting Members

George Heufelder Barnstable County Department of Health and Environment

David Jumper Pro Flo Aerobic Systems

Theo Terry Shelby County Health Department (changed to Observer)

Current Balance

7 Academia/NGO

6 Industry

6 Public Health / Regulatory

7 User

First Name	Last Name	Company	Role	Interest Category
Robert	Powitz	R.W. Powitz & Assoc., P.C.	Chair	Public Health / Regulatory
Jim	Meyer	Norweco, Inc.	Vice Chair	Industry
Emily	Bailey	Campbell University	Member	Academia / NGO
Jim	Bell	Bio-Microbics, Inc.	Member	Industry
Colin	Bishop	Anua	Member	Industry
John	Blount, PE	Civil Solutions	Member	User
Mike	Braden	LBC Manufacturing	Member	Industry
Randall	Chelette	Texas On-Site Wastewater Association	Member	User
Matteo	D'Alessio	University of Mississippi	Member	Academia / NGO
William	Daniel IV	Gulf Coast Testing, LLC	Member	User
David	Dobson	Alberta Municipal Affairs - Public Safety	Member	Public Health / Regulatory
Kathryn	Foster	NSF	Member	User
Roxanne	Groover	FOWA	Member	User
Thomas	Groves	National Onsite Wastewater Recycling Association	Member	User
Sara	Heger	University of Minnesota	Member	Academia / NGO
Anish	Jantrania	Texas A&M	Member	Public Health / Regulatory
Matthew	Janzen	State of Wisconsin	Member	Public Health / Regulatory
Audra	Morse	Michigan Technological University	Member	Industry
Stewart	Oakley	California State University, Chico	Member	Academia / NGO
Eberhard	Roeder	Florida Department of Environmental Protection	Member	Academia / NGO
Albert (Bob)	Rubin	North Carolina State University	Member	Public Health / Regulatory
Kevin	Sherman	SeptiTech, Inc.	Member	Academia / NGO
Leah	Smith	Casper-Natrona County Health Department	Member	Industry
Fraser	Sneddon	Sun-Mar Corp.	Member	Public Health / Regulatory
Theo	Terry	Shelby County Health Department	Member	Industry
Ping	Wang	Water/Natural Resources & Environmental Control of Delaware	Member	Public Health / Regulatory
Joelle	Wirth	Consultant - User	Member	Public Health / Regulatory
Denise	Wright	Indiana State Department of Health	Member	User
Denise	Wright	Indiana State Department of Health	Member	Public Health / Regulatory
Donald	Alexander	Consultant - Public Health/Regulatory	Observer	General Interest
Archis	Ambulkar	Consultant - User	Observer	General Interest
Ben	Arnold	PHOENIX Process Equipment Co.	Observer	General Interest
Tracy	Artley	University of Michigan	Observer	General Interest
Rick	Artz	National Oceanic and Atmospheric Administration (NOAA)	Observer	General Interest
Dick	Bachelder	Infiltrator Water Technologies, LLC	Observer	General Interest
Randy	Barnard, PE	California Department of Public Health	Observer	General Interest
Jason	Baumgartner	Water/Natural Resources & Environmental Control of Delaware	Observer	General Interest
Nikki	Beetsch	NSF	Observer	General Interest
Marie-Christine	Belanger	Premier Tech	Observer	General Interest
John	Bell	Greyter Water Systems	Observer	General Interest
Natasha	Bell	Virginia Tech	Observer	General Interest
Theresa	Bellish	NSF	Observer	General Interest
Steven	Berkowitz, PE	Consultant - Public Health/Regulatory	Observer	General Interest
E.W. Bob	Boulware	Design-Aire Engineering, Inc	Observer	Emeritus
Terry	Bounds	Orenco Systems, Inc.	Observer	General Interest
Henry	Boyer	Center for Environmentally Sustainable Textile and Apparel Businesses	Observer	General Interest
Jeremy	Brown	NSF	Observer	General Interest
Justin	Brown	NSF	Observer	General Interest
Tom	Bruursema	Water Quality Association	Observer	General Interest
Peter	Cartwright, PE	Cartwright Consulting Co.	Observer	General Interest
Derrick	Caruthers	Delaware Department of Natural Resources and Env.	Observer	General Interest
Eric	Casey	National Onsite Wastewater Recycling Association	Observer	General Interest
Christopher	Childs	U.S. Army	Observer	General Interest
Sung	Choe	IAPMO	Observer	General Interest
Jeff	Coomer	Consolidated Treatment Systems, Inc.	Observer	General Interest
Troy	Cormier	Hoot Aerobic Systems	Observer	General Interest
Phillip	Cutler	National Precast Concrete Association	Observer	General Interest
Marcia	Degen, PE	VA Dept. of Health	Observer	General Interest

First Name	Last Name	Company	Role	Interest Category
Derek	DeLand	NSF	Observer	General Interest
Jerry	Easter	DIR Manufacturing & Supply, Inc.	Observer	General Interest
Sheryl	Ervin	Infiltrator Water Technologies, LLC	Observer	General Interest
Douglas	Everson	Plastic Tubing Industries, Inc.	Observer	General Interest
Alexander	Fairhart	Consultant	Observer	General Interest
Peter	Gavin	Polylok	Observer	General Interest
Daniel	Gleiberman	Sloan Valve	Observer	General Interest
Claude	Goguen	National Precast Concrete Association	Observer	General Interest
Greg	Graves	Norweco, Inc.	Observer	General Interest
Misty	Guard	Regulosity LLC	Observer	General Interest
Jay	Guio	FPZ, Inc.	Observer	General Interest
Kevin	Harris	Keen Pump Co.	Observer	General Interest
Jason	Henderson	Geomatrix, LLC	Observer	General Interest
Bradley	Hennig	Anua	Observer	General Interest
George	Heufelder	Barnstable County Department of Health and Environment	Observer	General Interest
John	Higgins	Northeast Environmental Corp.	Observer	General Interest
Karl	Holt	Aero-Stream, LLC	Observer	General Interest
Tanya	Ibrahim	NSF	Observer	General Interest
Stefan	Johansson	Ecojohn	Observer	General Interest
Ryan	Johnsen	Panhandle Health District	Observer	General Interest
Daryl	Johnson	Government of Newfoundland	Observer	General Interest
George	Johnson	Ecological Tanks, Inc.	Observer	General Interest
Trey	Johnson	Ecological Tanks, Inc.	Observer	General Interest
Tom	Kallenbach	Eliminite	Observer	General Interest
James	Kemper	City of Los Angeles	Observer	General Interest
Jim	King	Eljen Corporation	Observer	General Interest
Amanda	Knuteson	Eliminite	Observer	General Interest
Mark	Kowalak	Crane Pumps & Systems	Observer	General Interest
Karthik	Kumarasamy	Arizona Department of Environmental Quality	Observer	General Interest
Conor	Lally	Nutrient Networks	Observer	General Interest
Coralie	Lamaire Chad	Bionest	Observer	General Interest
Anna	Lefering	Prüfinstitut für Abwassertechnik GmbH	Observer	General Interest
David	Lentz	Infiltrator Water Technologies, LLC	Observer	General Interest
Monica	Leslie	NSF	Observer	General Interest
Kerri	LeVanseler	NSF	Observer	General Interest
Dawn/Don	Long	American Septic Service	Observer	General Interest
Zachary	Lowenstein	US EPA	Observer	General Interest
Mike	Luetngen	Kohler Company	Observer	General Interest
Joe	Matteo	Magnus Environmental	Observer	General Interest
Ted	Meyers	Tuf-Tite Corporation	Observer	General Interest
Randall	Miles	University of Missouri	Observer	General Interest
Don	Mills	Clivus Multrum, Inc.	Observer	General Interest
Dana	Morgoch	Greyter Water Systems	Observer	General Interest
Patrick	Mulhall	Polylok	Observer	General Interest
Ramani	Narayan	Michigan State University	Observer	General Interest
Eliza	Nejad	NSF	Observer	General Interest
Glenn	Nelson	Advanced Composting Systems LLC	Observer	General Interest
Nicholas	Noble	Orenco Systems, Inc.	Observer	General Interest
Taylor	Nokhodian	San Francisco Public Utilities Commission	Observer	General Interest
Bruce	Ordway	Crane Pumps & Systems	Observer	General Interest
Thomas	Palkon	IAPMO	Observer	General Interest
Lokeswar	Panchala	NCI Canada	Observer	General Interest
Jennifer	Paul	Centre for Alternative Wastewater Treatment (CAWT)	Observer	General Interest
Joseph	Petryk	Alberta Municipal Affairs - Public Safety	Observer	General Interest
Vince	Pileggi, PhD, P.Eng	Ministry of the Environment and Climate Change	Observer	General Interest
David	Potts	Geomatrix, LLC	Observer	General Interest
Doug	Pushard	HarvestH2O, LLC	Observer	General Interest
Scott	Randall	NSF	Observer	General Interest
Emily	Richardson	NSF	Observer	General Interest
Kaitlin	Rinke	NSF	Observer	General Interest
Ana Silvia	Santos	University of the State of Rio de Janeiro	Observer	General Interest
Laura	Schell	NSF	Observer	General Interest

First Name	Last Name	Company	Role	Interest Category
Ed	Schloss	Jet Inc.	Observer	General Interest
Steve	Schultz	FPZ, Inc.	Observer	General Interest
Marcus	Sheppard	Centre for Alternative Wastewater Treatment (CAWT)	Observer	General Interest
Barbara	Siembida-Losch	Centre for Alternative Wastewater Treatment (CAWT)	Observer	General Interest
Matt	Sigler	International Code Council	Observer	General Interest
Jeremy	Simmons	Washington State Department of Health	Observer	General Interest
Derek	Smith	Manitoba Conservation and Water Stewardship	Observer	General Interest
Tim	Smith	Hiblow USA, Inc.	Observer	General Interest
William	Snyder	Keen Pump Co.	Observer	General Interest
Joe	Soulia	Orenco Systems, Inc.	Observer	General Interest
Martin	Sparkes	FujiMAC Air Pumps Ltd.	Observer	General Interest
Amir	Tabakh, P.E.	City of Los Angeles	Observer	General Interest
Chris	Thompson	Greyter Water Systems	Observer	General Interest
Kyle	Thompson	Plumbing Manufacturers International (PMI)	Observer	General Interest
Mike	Vernon	Pro Flo Aerobic Systems	Observer	General Interest
Sam	Wagner	Milan Vault, Inc.	Observer	General Interest
Brian	Wakefield	Aerobic Guard, LLC	Observer	General Interest
Daniel	Westrich	Bio-Microbics, Inc.	Observer	General Interest
Steve	Williams	NSF	Observer	General Interest
Howard	Wingert	Concrete Sealants, Inc.	Observer	General Interest
Tre	Wright	Whirlpool Corporation	Observer	General Interest
Eric	Yeggy	Water Quality Association	Observer	General Interest
Amanda	Zeoli	NSF	Observer	General Interest
Hong	Zhang	Centre for Alternative Wastewater Treatment (CAWT)	Observer	General Interest
Alexander	Zook	US Army Public Health Center (APHC)	Observer	General Interest
Jessica	Evans	NSF	Secretariat	General Interest

Joint Committee on Wastewater Technology 2023 Meeting

Draft Meeting Summary

Wednesday, April 26, 2023

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I. Meeting Welcome

R. Powitz welcomed the group to the meeting. J. Snider provided some tips on using the chat and 'raise hand' feature of MS Teams to ask to comment, as well as using chat to record the names and companies of the participating observers. Roll call was taken with 22 of the 28 voting members (79%) present, which did represent a quorum. J. Snider read the antitrust statement.

A. Agenda

R. Powitz asked for a review of the proposed agenda.

Motion by A. Rubin	Accept the 2023 Joint Committee on WWT meeting agenda
Second:	J. Meyer
Discussion:	None.
Vote:	All in favor.
Motion:	Carries.

B. JC Membership

J. Snider provided a membership update, noting that the roster currently held 28 voting members. New members since the previous meeting included David Dobson from Alberta Municipal Services (Public Health / Regulatory), Kathryn Foster from NSF, (User) and Leah Smith from Casper-Natrona County Health Department (Public Health / Regulatory). S. Berkowitz retired from the Committee and was made an Emeritus member in honor of his contributions to the committee. E. Nejad (NSF) resigned from the Committee. The current balance of the roster consists of 7 Academia / NGO, 7 Industry, 7 Public Health / Regulatory, and 7 Users. J. Snider encouraged anyone interested in participating as voting member to contact him for an application.

J. Bell and S. Berkowitz received certificates commemorating their 30+ years of contributions to the Standards process.

J. Bell announced he was stepping down as vice chair of the committee.

Motion by J. Bell	Nominate J. Meyer for Vice chair of the Joint Committee.
Second:	S. Heger
Discussion:	None.
Vote:	All in favor.
Motion:	Carries.

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C. 2022 Meeting summary

The group reviewed the 2022 Joint Committee on WWT meeting summary.

Motion by T. Terry	Accept the 2022 Joint Committee on WWT meeting summary.
Second:	E. Roeder
Discussion:	None.
Vote:	All in favor.
Motion:	Carries.

II. Standards Updates

J. Snider provided an update on the ballots that had been sent to the group over the past year. An update on the publication status of each of the standards the committee maintained was also provided.

M. Leslie (Operations Manager, Standards Department) gave a presentation providing an overview of the standards process. Topics covered included the consensus process, membership requirements and responsibilities, task group functions, and the difference between normative and informative language in standards.

III. Task Group Updates

J. Snider asked the group for their feedback on the current meeting frequency and schedule for Task Groups. No feedback was given, and J. Snider informed the group that as in previous years, a poll to prioritize Task Group work would be sent out after the meeting. It was noted that many Task Group calls this year had not reached quorum, and J. Snider stated that he would be reaching out to TG chairs to conduct membership reviews for the task groups.

J. Snider provided some examples of [topics](#) that were acceptable for Standards Development discussions and topics that were better suited for discussion with certification bodies. J. Bell noted that test frequency was listed as a topic left to discussion with a certification body, and yet there was a Task Group on Retesting. J. Snider stated he would gather more information on this and provide a response.

NOTE – The [issue paper](#) that led to the creation of the Task Group recommended that Standards 245 and 350 adopt similar language to that in Standard 40, which is Informative and thus not a requirement. An excerpt from Standard 40, Annex I-2 is below. The paper also suggests incorporation of a field evaluation portion similar to NSF/ANSI 360. Because these are informative recommendations, and not requirements, they are acceptable to discuss in a standards environment. The issue paper notes: “There would not be a “pass-fail” condition (as is the case for NSF-360), but an approved protocol for selection, sampling and reporting would have to be followed.”

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B. Powitz also asked that the group be provided with a link to submit complaints regarding certification / misuse of the NSF mark to the QA department of NSF.

<https://www.nsf.org/complaints-concerns-contact>

T. Bellish added that NSF provides [guidance on language for certification](#) that could be shared with the group.

The task group chairs provided reports on task group progress. The group agreed to let B. Baumgaertel to present his report first to allow him to attend another commitment.

A. NSF/ANSI 40 - Residential Wastewater Treatment Systems (B. Baumgaertel)

B. Baumgaertel explained that the group had no issue papers before it, as they had discussed [WWT-2021-4 – Standard 40 influent characteristics](#) and sent language to JC ballot that was approved. He added that there was plenty of discussion about the standard, and that he looked forward to working with any issue proponents that submitted issue papers. B. Powitz echoed this, encouraging participants to submit papers on things they would like to see changed in the standard to ensure it stayed relevant.

B. NSF/ANSI 245 – Residential Wastewater Treatment Systems – Nitrogen Reduction (D. Lentz)

D. Lentz provided an update on the three topics the group had worked on this year. The first was [WWT-2020-3 – 40 / 245 certification](#), which looked to “decouple” 245 from requiring a product from meeting the requirements of 40. The language went to JC ballot but was met with negative votes. The task group had also spent some time with the [WWT-2020-17 - TKN](#) paper, which focused on TKN ranges as well as the possibility of adding a requirement that a majority of samples need to meet the effluent criteria. D. Lentz stated that the group had reviewed data from previously certified systems to see how many met the proposed new ranges. Many would not meet the proposed ranges, and the proponent was revising the proposal. The group also worked on harmonizing standard 245 with language regarding influent pH that had been approved for standard 40. That language had been balloted and approved by the JC.

G. Heufelder stated that he intended to withdraw his issue paper on decoupling 40 and 245 after the comments received on the Joint Committee ballot showed a lack of interest for the topic. B. Powitz reminded the group that the issue could be revisited and added that an optional annex could be used to house specific items such as this. The group spent some time discussing the main argument against decoupling the two standards, which is the concern that 245 had been incorporated into code with the assumption that the system would also meet the requirements of 40. D. Potts stated that denitrification demand was increasing, and the group needed to be aware of that.

C. NSF/ANSI 385 - Disinfection Mechanics (J. Bell)

J. Bell noted that the Task Group had worked on many things, the first being adding revised language to standard 46 that delayed the removal of the disinfection language from that standard until 2025. The group also looked at language regarding UV transmittance – originally this had been a test similar to those in other NSF standards, but it was discovered that since the duration of this testing was so much longer than in those standards, bulb fouling was occurring. Language was changed to shorten the test

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and make it optional. A follow up ballot was sent out to explain the rationale behind the shortened test, but that drew negative votes. After some discussion, the idea to place this language in the informative annex was brought up, and J. Bell expected this to be the next step for that language. The group had also been discussing photorepair as they had been tasked with the topic from an issue paper, but the group had largely concluded this was not an issue as discharge that was not underground was a rare occurrence.

Motion by J. Bell

Drop the charge to develop language regarding photorepair from issue paper [WWT-2019-8 – 385 revisions](#)

Second:

J. Meyer

Discussion:

None.

Vote:

All in favor.

Motion:

Carries.

The group had also worked on revising language regarding data plates to allow for other options, and corrected a dosing issue in section 6.5

D. Task Group on Scaling (C. Bishop)

C. Bishop explained that he had taken over as chair of the group recently. The group had one potential issue paper, which was the language on scale down which was currently at JC approval ballot. He added that the group would be looking at either further revising the scaling annex in standard 40 or incorporating similar scaling language in the other WWT standards.

E. Task Group on Grinder Pumps (B. Hennig)

B. Hennig provided the update, noting that the group was in need of participation from the manufacturer category. The group had drafted language regarding pump cycling, but that language had met negative votes at a JC ballot. The group would review the comments in its next meeting, as well as looking at revising the household loading test to be more representative of real-world conditions while also being practical for testing purposes.

F. Task Group on Aerosol Virus Monitoring (D. Potts)

D. Potts informed the group that the task group had focused on determining if there was a risk from aerosol virus transmissions from wastewater systems. It was eventually decided that there was a risk, and a draft work plan had been drafted to help determine that risk. The plan was submitted to NSF testing labs for consideration. J. Snider stated that he would follow up to determine the decision on the draft protocol.

G. Task Group on Standard Improvement: Harmonization and Simplification (R. Groover / J. Wirth)

J. Wirth provided the update, informing the group that the group had met 3 times, and had largely discussed finding ways to further harmonize standards 40, 245, and 350. The group was aware that those groups had already worked on some harmonization in the task groups specific to those standards.

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H. NSF/ANSI 41 - Non-liquid Saturated Treatment Systems (J. Wirth)

J. Wirth reported that the group had not met in the previous year, and had no issue papers before it.

I. NSF/ANSI 350 - Onsite Residential and Commercial Water Reuse Treatment Systems (A. Rubin)

A. Rubin provided an overview of the group's main focus, which was continued work on developing language around LRT values for reuse. He noted that the EPA and the Blue Ribbon Commission had released guidelines on this, and these documents were the base for the language being drafted for the standard. A. Rubin urged the participants to review the US EPA water reuse action plan.

Draft language had been sent to the task group in a straw ballot and received many comments. Language had been revised based on some of the comments and the intent was to send the language to the JC as a whole to gather more comments.

J. Bell stated that he was concerned that the monitoring requirements of the proposed language would be better addressed by regulatory requirements. A. Rubin answered that the monitoring component of the standard was a condition of receiving the credits in the LRT table. There was discussion on other NSF standards that required continuous monitoring – S. Randall noted that standard 55 required some indication if the UV unit wasn't functioning properly. G. Heufelder noted that turbidity was used as a surrogate measure of the device functioning. D. Deland added that thermometers and pressure gauges were also included in other standards, stressing that the LRT table would not apply to residential systems. C. Bishop added that the group needed to ensure they were having the larger framework discussions, and to be sure they were not overreaching.

The group was also working to address better defining the differences between commercial and residential systems.

IV. Issue Papers

[WWT-2023-1 - 40 Testing Duration](#)

J. Meyer presented the paper, which he submitted to add clarity to language in standard 40. He explained that a recently approved change to the language added a ± 1 week to the stress testing, but language in 8.2.2 was not included in this change. The paper recommends adding the ± 1 week to section 8.2.2 to ensure the testing period remains 26 weeks.

Motion by J. Meyer

Send issue paper WWT-2023-1 to Joint Committee approval ballot.

Second:

G. Heufelder

Discussion:

None.

Vote:

All in favor.

Motion:

Carries.

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WWT-2023-6 - Stress Testing Order

D. Lentz presented his paper, which focused on stress testing in standards 40, 245, and 350. He explained that the order of stress testing had not been defined in standard 245, and the approved 40i52r2 et al ballot set the order to be the same as that in standards 40 and 350. This created the issue of test data not being acceptable for a unit that was had completed testing just before the approval of this language because the test was conducted out of order. D. Lentz noted that when the motion to send the 40i52r2 language to ballot was made, it was stated that the intent was to add flexibility to testing, not to affect current listings. D. Lentz provided 3 potential options for the group to consider for next steps:

1. Defining in the standard that stress testing order applies only going forward
2. Withdraw the testing order from the standard
3. Establishing criteria for when retesting is required

B. Powitz suggested the three options could be sent out to the group in a straw poll to gather feedback. K. Foster stated that NSF has always performed the stress loading events in the order established by 40i52r2, and therefore none of their current listings would be affected at the time the standard was actually updated. She added that no currently certified products required retesting, and that NSF had an implementation period in place to allow flexibility for new listings that may have been tested at a different lab in a different order to be listed. G. Heufelder and J. Blount suggested removing the requirement for a testing order may be the best approach, as they both felt that order did not impact the results.

Motion by C. Bishop

Send issue paper WWT-2023-6 option 1 language to Joint Committee approval ballot.

Second:

J. Bell

Discussion:

K. Foster cautioned against creating language in the standard that only applied to particular systems. J. Bell suggested an option could be to add language to allow the testing center to determine the order of testing. T. Terry noted that this new language could still create issues as it was not clear when it would apply – would it apply going forward if the ballot was approved, when the standard was published, or from another date?

Vote:

14 Affirmative.

6 negative. (J. Bell, K. Foster, J. Meyer, K. Sherman (proxy)

T. Terry, P. Wang (proxy))

2 abstain (G. Heufelder, F. Sneddon).

Motion:

Carries.

WWT-2023-3 NSF 41 indoor ventilation

S. Choe submitted the issue paper to address systems in NSF/ANSI 41 that are used in residential settings. He noted that the current language does not address how ventilation requirements are handled for systems. The issue paper suggested removing residential systems from the standard until

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ventilation could be addressed. S. Choe added that information on the rationale for including residential systems could be beneficial.

No Action taken.

WWT-2023-4 Statement for report

J. Blount presented his paper, which looked to add language to the final report for systems tested to standard 40 that indicated that the unit was tested or proportionally upsized to a hydraulic and organic load. K. Foster asked if it would make more sense to include the language in an informative annex instead, so that reports do not need to be rewritten to include the proposed language. The group discussed how proportional upsizing (scaling) would affect this.

Motion by C. Bishop	Send issue paper WWT-2023-4 to the Task Group on Scaling for language development.
Second:	J. Blount
Discussion:	None.
Vote:	All in favor.
Motion:	Carries.

WWT-2023-8 41 normative references & clean up

J. Snider submitted the issue paper to make updates to the normative references in Standard 41, as well as some minor language cleanup to bring the standard more in line with NSF's publication guidelines.

Motion by J. Meyer	Send issue paper WWT-2023-8 to Joint Committee approval ballot.
Second:	F. Sneddon
Discussion:	E. Roeder noted that the NFPA reference may need to be updated as well. J. Snider stated he would review this before sending the language to ballot.
Vote:	All in favor.
Motion:	Carries.

WWT-2023-9 350 Normative reference

J. Snider shared the issue paper which updated a normative reference in NSF/ANSI 350.

Motion by A. Rubin	Send issue paper WWT-2023-9 to Joint Committee approval ballot.
Second:	S. Heger
Discussion:	None.
Vote:	All in favor.
Motion:	Carries.

WWT-2023-10 245 clean up

J. Snider explained that this issue paper was submitted to remove an and/or in Standard 245, as and/or statements were generally avoided in NSF Standards.

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Motion by J. Meyer	Send issue paper WWT-2023-10 to Joint Committee approval ballot.
Second:	J. Bell
Discussion:	None.
Vote:	All in favor.
Motion:	Carries.

[WWT-2023-11 46 clean up](#)

J. Snider presented his final issue paper, which was submitted to make minor cleanup changes to standard 46.

Motion by G. Heufelder	Send issue paper WWT-2023-9 to Joint Committee approval ballot.
Second:	J. Meyer
Discussion:	None.
Vote:	All in favor.
Motion:	Carries.

[WWT-2023-12 – ISO Alternatives](#)

A. Lefering shared her issue paper, which looked to add additional acceptable test methods to Table N-1.2 in NSF/ANSI 350. She explained that many European laboratories did not utilize the EPA or Standard Methods tests currently in the standard and finding equivalent ISO standards would facilitate use of the standard in these areas. The group discussed how to best determine if these proposed methods were truly equivalent. G. Heufelder asked if European agencies consider the EPA or *Standard Methods* as equivalent to their accepted ISO methods. E. Roeder suggested the table could be improved by clarifying the differences between “equivalent method”, “acceptable alternative” and the “ISO method”.

Tabled until more information available.

[WWT-2023-13 – Vacation stress clarification](#)

B. Hennig explained that his issue paper looked to clarify language in NSF/ANSI 350. The stress testing language had been updated recently, but the power/equipment failure stress table in 8.1.2.2.2 was not updated at the same time and was not aligned with the new language.

Motion by K. Foster	Send issue paper WWT-2023-13 to Joint Committee approval ballot.
Second:	A. Rubin
Discussion:	J. Bell asked if this change would affect any current certifications. B. Hennig stated that he was not aware of any products that may be affected.
Vote:	All in favor.
Motion:	Carries.

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WWT-2023-7 Blower Testing

J. Bell presented his paper, which focused on blower testing in standards 40, 245, and 350. He explained that [language](#) had been approved into the standard a few years ago. That language had been drafted to address utilization of alternate blowers that did not perform as well as the components the entire unit had been tested with. He expressed concerns about testing a component of the system when the focus should be on the performance of the entire system. J. Bell added that scaling was further complicating the process. He suggested that the group consider either removing the language regarding blower testing or charge the Task Group on Scaling to address the issue. B. Powitz noted that addressing replacement parts is a common problem in many standards and that the work this group does

Motion by J. Bell

Send issue paper WWT-2023-7 to Task Group on Scaling for language development

Second:

J. Meyer

Discussion:

J. Blount suggested there was a discrepancy in how NSF was conducting the testing and how manufacturers may be performing the test. Several manufacturers expressed concerns that they were unable to meet the requirements of the current test / certification policy.

Vote:

All in favor.

Motion:

Carries.

Amendment by J. Bell

Send language to ballot removing blower testing and scale up annex from standards 40, 245, and 350.

Second:

J. Meyer

Discussion:

W. Daniel expressed concerns that these scaling issues could have significant repercussions for units already installed. M. Sparkes asked how a removal of the testing would be handled from a compliance standpoint. K. Foster and T. Bellish answered that for NSF, the certification program would need to determine how to address this. K. Foster cautioned that removing the testing then adding revised language later would create confusion.

Vote:

17 Affirmative

3 negative (K. Foster, G. Heufelder, D. Wright).

2 abstain (E. Roeder, F. Sneddon).

Motion:

Carries.

Motion by J. Bell

Make scaling language related to issue paper WWT-2023-7 the top priority for Task Group on Scaling.

Second:

T. Terry

Discussion:

S. Williams reminded the group that removing the scaling annex would remove the standardized process that ensures everyone is treated the same. K. Foster added that scaling will still need to be performed even if the language is removed from the standard.

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Vote: All in favor.
Motion: Carries.

WWT-2023-14 – Std 40 Organic & hydraulic loading

A. Jantrania explained that he submitted the issue paper because he wanted to see test reports presented more clearly and with more usable information, but he was going to withdraw the paper as the topic overlapped with the [WWT-2023-4 Statement for report](#) that had been presented earlier. S. Williams and K. Foster noted that NSF was revising the test reports to make them more usable for regulators and system designers. S. Williams also noted that the foreword of Standard 40 provided some guidance on treatment capacities:

The purpose of this standard is to establish minimum materials, design and construction, and performance testing and evaluation requirements for residential wastewater treatment systems. This standard specifies minimum literature requirements to be supplied by manufacturers to authorized representatives and owners. This standard does not establish nor demonstrate the appropriateness of utilizing certified equipment for treating nonresidential wastewater. Special considerations should be made with regard to anticipated wastewater strength, characteristics, and flows when utilizing certified equipment outside of its evaluated purpose. Additional consideration should also be taken when utilizing multiple applications of these technologies, whether in series or parallel, to create systems with a combined treatment capacity that exceed the 5,678 LPD (1,500 GPD) or 3.8 lb/d BOD₅ limitations of the equipment.

Issue proponent withdrew the paper as previous paper WWT-2023-4 addressed a similar issue.

WWT-2023-15 – Stress test data

M. Stidham presented his issue paper, which was submitted to propose including stress test data in the final report of products certified to NSF/ANSI 245. He noted that the stress testing data is in the report but is not included in the final report. This was creating scenarios where products were viewed as not being compliant because they do not meet the criteria without including the stress test in the final report.

Motion by C. Bishop

Send issue paper WWT-2023-15 to Joint Committee approval ballot.

Second:

D. Wright

Discussion:

J. Bell explained the reasoning behind the language being written originally was concerns of what the stress testing would do to the nitrifying bacteria which are more sensitive than the BOD bacteria, adding that the data is in the report, but not used in the overall averages. S. Williams noted that changes to the pass/fail criteria, such as including stress data, would result in reviewing and reevaluating all currently certified systems. M. Stidham explained that the intent was not to change the pass/fail criteria, but just to include the data in the final report. G. Heufelder suggested that the final report be altered to include both numbers.

Motion:

Withdrawn.

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M. Stidham stated that the stress data is included in the final report for standards 40 and 350. It was suggested that since the data is in the report, maybe including it in the front page of the report would be an improvement – this way data interpretation wasn't needed.

Motion by R. Chelette	Send issue paper WWT-2022-15 to Joint Committee approval ballot.
Second:	J. Wirth
Discussion:	It was asked if the final report should include the total nitrogen reduction.
Amendment by R. Chelette	Include language requiring the total nitrogen reduction in the final report.
Second:	J. Wirth
Discussion:	E. Roeder suggested the final report include the actual percent reduction, with data from both non-stress testing and stress-testing.
Amendment by R. Chelette	include the actual percent reduction, with data from both non-stress testing and stress-testing.
Second:	J. Wirth
Discussion:	C. Bishop cautioned that changes could cause systems to no longer be certified.
Vote:	15 Affirmative. 5 negative (C. Bishop, J. Blount, W. Daniel, J. Meyer, F. Sneddon). 3 abstain (K. Foster, A. Morse, F. Sneddon)
Motion:	Carries.

WWT-2023-5 – positive displacement pump

W. Snyder was not available to present the paper, but S. Williams suggested the topic was worthy of discussion and should be sent to a Task Group for consideration.

Motion by K. Foster	Send issue paper WWT-2023-5 to the Task Group on Grinder pumps
Second:	J. Meyer
Discussion:	None.
Motion:	Carries.

V. Information Papers

None.

VI. Committee Administrative Items

A. New business

None.

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B. Planning of next JC meeting

J. Snider stated that a doodle poll would be sent out to schedule next year's meeting, looking at the last week of April 2024.

Motion by K. Foster

Adjourn 2023 Joint Committee on Wastewater Technology meeting.

Second:

S. Heger

Discussion:

None.

Motion:

Carries.

MEETING ADJOURN

VII. ATTENDANCE

Joint Committee Members in Attendance

Company	Name	Interest Category	Role
R.W. Powitz & Assoc., P.C.	Powitz, Robert	Public Health / Regulatory	Joint Committee Chair
Bio-Microbics, Inc.	Bell, Jim	Industry	Vice chair
Anua	Bishop, Colin	Industry	Member
Civil Solutions	Blount, PE, John	User	Member
LBC Manufacturing	Braden, Mike	Industry	Member
Texas On-Site Wastewater Association	Chelette, Randall	User	Member
Gulf Coast Testing, LLC	Daniel IV, William	User	Member
NSF	Foster, Kathryn	User	Member
National Onsite Wastewater Recycling Assoc...	Groves, Thomas	User	Member
University of Minnesota	Heger, Sara	Academia / NGO	Member
Barnstable County Department of Health	Heufelder, George	Public Health / Regulatory	Member
Texas A&M	Jantrania, Anish	Academia / NGO	Member
Norweco, Inc.	Meyer, Jim ¹	Industry	Member
Michigan Technological University	Morse, Audra	Academia / NGO	Member
Florida Department of Environmental Protec...	Roeder, Eberhard	Public Health / Regulatory	Member
North Carolina State University	Rubin, Albert (Bob)	Academia / NGO	Member
Casper-Natrona County Health Department	Smith, Leah	Public Health / Regulatory	Member
Sun-Mar Corp.	Sneddon, Fraser	Industry	Member
Shelby County Health Department	Terry, Theo	Public Health / Regulatory	Member
Consultant - User	Wirth, Joelle	User	Member
Indiana State Department of Health	Wright, Denise	Public Health / Regulatory	Member

¹Proxy for K. Sherman

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Other Attendees

Barnstable County Department of Health	Baumgaertel, Brian	General Interest	Observer
NSF	Bechanko, Robin	General Interest	Observer
Premier Tech	Belanger, Marie-Christine	Industry	Observer
NSF	Bellish, Theresa	General Interest	Observer
Pro Flo	Brosseau, Boone	General Interest	Observer
NSF	Brown, Jeremy	General Interest	Observer
NSF	Brown, Justin	General Interest	Observer
Hiblow USA	Carter, Kyle	General Interest	Observer
Delaware Department of Natural Resources	Caruthers, Derrick ²	Public Health / Regulatory	Observer
IAPMO	Choe, Sung	General Interest	Observer
Ecological Tanks	Conrad, Dewey	General Interest	Observer
NSF	DeLand, Derek	General Interest	Observer
Fujiclean USA	Dunn, Mike	General Interest	Observer
Infiltrator Water Technologies, LLC	Ervin, Sheryl	General Interest	Observer
Polylok	Gavin, Peter	General Interest	Observer
Norweco, Inc.	Graves, Greg	General Interest	Observer
Geomatrix, LLC	Henderson, Jason	General Interest	Observer
NSF	Hennig, Brad	General Interest	Observer
NSF	Ibrahim, Tanya	General Interest	Observer
Bionest	Lamaire Chad, Coralie	General Interest	Observer
Prüfinstitut für Abwassertechnik GmbH	Lefering, Anna	User	Observer
Infiltrator Water Technologies, LLC	Lentz, David	General Interest	Observer
Greyter Water Systems	Morgoch, Dana	General Interest	Observer
Orenco Systems, Inc.	Noble, Nicholas	General Interest	Observer
Geomatrix, LLC	Potts, David	General Interest	Observer
NSF	Randall, Scott	General Interest	Observer
NSF	Rinke, Kaitlin	General Interest	Observer
Orenco	Schaefer, Mark	General Interest	Observer
FPZ, Inc.	Schultz, Steve	Industry	Observer
Jet	Seltross, Ed	General Interest	Observer
Hiblow	Smith, Tim	General Interest	Observer
Ez Treat	Stidhame, Mike	General Interest	Observer
Plumbing Manufacturers International (PMI)	Thompson, Kyle	General Interest	Observer
Pro Flo	Vernon, Mike	General Interest	Observer
TxAim AgriLife	Wolfe, June	General Interest	Observer
NSF International	Snider, Jason	General Interest	Secretariat
² Proxy for Ping Wang			



TAB 2

- Review of Recent and Current Ballots
- NSF Standards Update

Review of Recent and Current Ballots

Ballots approved since 2023 JC Meeting

40i51r2 et al - Scale Down

This revision modifies language in Section 1.4 to allow for scale down.

40i58r1 - Testing Duration

This revision adds clarification regarding stress loading in Section 8.2.2.

41i14r1 - Data Plate Harmonization

This revision harmonizes language within the WWT standards by adding language regarding dataplates to Section 5.10.1.

41i15r1 - Normative Ref & Clean Up

This revision updates normative references in Section 2. It also cleans up language throughout the standard according to NSF publication guidelines.

245i34r1 et al - Data Plate Harmonization

This revision will harmonize the language in Section 5.10.1 with recently approved language regarding dataplates in other WWT standards.

245i35r1 - Allowable pH

This revision updates language regarding the pH calculation in Section 8.4.3.4.

350i63r8 et al – LRT

This revision incorporates pathogen log reduction targets into the standard. This included revisions to Sections 8.7 and 9, and the addition of Annexes N-2 and I-5. Normative references were also added to Section 2.

350i77r1 - Pre & Post UV

This revision adds language addressing pre- and post-UV sample collection as new Section 8.4.4.

350i78r1 - Vacation Stress Clarification

This revision clarifies language regarding vacation stress testing in Section 8.1.2.2.2.2.

Review of Recent and Current Ballots

350i80r1 - Normative References Update

This revision updates a normative reference in Section 2.

350i82r1.1 et al - Wash Load Under 50 GPD

This revision updates language in Sections 8.1.2.2.2 and 8.1.2.2.3 regarding wash load testing.

360i5r1 - Normative Reference Updates

This revision updated normative references in Section 2. It also removed the definitions in Section 3, as they are already listed in the glossary standard NSF/ANSI 437.

385i15r2 - UVT Clarification

This revision adds clarifying language to UVT testing in Section 7.6.1.4 and Annex I-3.

418i4r1 - Normative References

This revision updates the normative references in Section 2.

Currently open ballots

385i5r1 – Ozone Loss Evaluation (at PHC)

This revision will remove Section 8.6.2 *Ozone loss Evaluation* and instead add a related informative NOTE under Section 8.3.

385i16r1 – Default Tank (at PHC)

This revision updates the normative references in Section 2.



Status of Wastewater Technology Standards

NSF/ANSI 40: Residential Wastewater Treatment Systems

NSF/ANSI 40-2023 was published in the 4th quarter of 2023.

NSF/ANSI 41: Non-liquid Saturated Treatment Systems

NSF/ANSI 41-2023 was published in the 4th quarter of 2023.

NSF/ANSI 46: Evaluation of Components & Devices Used in Wastewater Treatment Systems

NSF/ANSI 46-2022 was published in the 2nd quarter of 2023.

NSF/ANSI 245: Wastewater Treatment Systems – Nitrogen Reduction

NSF/ANSI 245-2023 was published in the 4th quarter of 2023.

NSF/ANSI 350: Onsite Residential and Commercial Water Reuse Treatment Systems

NSF/ANSI 350-2023 was published in the 1st quarter of 2024.

NSF/ANSI 360: Wastewater Treatment Systems – Field Performance Verification

NSF/ANSI 360-2019 was published in August 2019.

NSF/ANSI 360-2024 is in publication and is expected in the 2nd quarter of 2024.

NSF/ANSI 385: Disinfection Mechanics

NSF/ANSI 385-2022 was published in 3rd quarter of 2023.

NSF/ANSI 418: Effluent Filters Field Longevity Testing

NSF/ANSI 418-2024 was published in the 1st quarter of 2024.

NSF/ANSI 437: Glossary of Wastewater Technology Terminology

NSF/ANSI 437-2022 was published in the 3rd quarter of 2023.

NSF/ANSI 437-2023 is in publication and is expected in the 2nd quarter of 2024.



TAB 3

- Task Group Chair Reports



Task Group Chair Report

Joint Committee on Wastewater Technology Task Group on Aerosol Virus Monitoring

Chair: David Potts, Geomatrix, LLC

Task Group Charge:

To develop a risk assessment for aerosol phase pathogen transmission.

Task Group Roster:

Members		
Name	Company	Interest Category
Jim Bell	Bio-Microbics, Inc.	Industry
Colin Bishop	Anua	Industry
Randall Chelette	Texas On-Site Wastewater Association	User
Kathryn Foster	NSF	User
Sara Heger	University of Minnesota	Academia / NGO
George Heufelder	Barnstable County Department of Health and Environment	Public Health / Regulatory
Anish Jantrania	Texas A&M	User
Jim Meyer	Norweco, Inc.	Industry

Observers	
Name	Company
Emily Bailey	Campbell University
Brian Baumgaertel	Barnstable County Department of Health and Environment
John Blount	Civil Solutions
Katie Foster	NSF
Jason Henderson	Geomatrix, LLC
Brad Hennig	NSF
Coralie Lamaire Chad	Bionest
Joe Soulia	Orenco Systems, Inc.

Meetings held since last JC meeting:

The task group has not held any meetings since 12/3/2021.

Summary of Task Group work since last JC meeting:

JC needs to determine if this task group and topic is still relevant, and if so, have volunteers put active work into a detailed proposal to present to NSF regarding details and dollar amount needed. If there is another certification body on the JC, perhaps they would like to cost share.



Task Group Chair Report

Joint Committee on Wastewater Technology Task Group on Grinder Pumps

Interim Chair: Steve Williams, NSF

Task Group Charge:

To review issue paper WWT-2022-19 regarding the Grinder Pump Household Item List and develop language to send to JC ballot.

Task Group Roster:

Members		
Name	Company	Interest Category
Mark Kowalak	Crane Pumps & Systems	
Audra Morse	Michigan Technological University	Academia / NGO

Observers	
Name	Company
Justin Brown	NSF
Derrick Caruthers	Delaware Department of Natural Resources and Env.
Alex Crabtree	Crane Pumps & Systems
Katie Foster	NSF
Kevin Harris	Keen Pump Co.
George Heufelder	Barnstable County Department of Health and Environment
Kaitlin Rinke	NSF
William Snyder	Keen Pump Co.
Mike Vernon	Pro Flo Aerobic Systems

Meetings held since last JC meeting:

The task group held 2 meetings on 8/3/23 and 10/12/23.

Summary of Task Group work since last JC meeting:

The primary objective is to rework the household items loading test to make more sense and make testing safer. Much progress was made during the task group meetings. The remaining issue is to identify an appropriate abrasive.

Next goal: specify a standard chamber for the household items loading test. Use of manufacturer pump basins greatly increases difficulty of the test and creates safety issues.



Task Group Chair Report

Joint Committee on Wastewater Technology Task Group on High Strength Wastewater

Chair: Sara Heger, University of Minnesota

Task Group Charge:

To consider creating a high strength wastewater standard for residential and commercial systems.

Task Group Roster:

Members		
Name	Company	Interest Category
Marie-Christine Belanger	Premier Tech	Industry
Jim Bell	Bio-Microbics, Inc.	Industry
Steven Berkowitz (Emeritus)	Consultant	Public Health / Regulatory
Colin Bishop	Anua	Industry
John Blount	Civil Solutions	User
Tom Bruursema	Water Quality Association	User
Randall Chelette	Texas On-Site Wastewater Association	User
George Heufelder	Barnstable County Department of Health and Environment	Public Health / Regulatory
Jim King	Eljen Corporation	Industry
Amanda Knutseson	Eliminite	Industry
Jim Meyer	Norweco, Inc.	Industry
David Potts	Geomatrix, LLC	Industry
Eberhard Roeder	Florida Department of Environmental Protection	Public Health / Regulatory
Bob Rubin	North Carolina State University	User
Joelle Wirth	Consultant	User
Denise Wright	Indiana State Department of Health	Public Health / Regulatory

Observers	
Name	Company
David Dobson	Alberta Municipal Affairs - Public Safety
Sheryl Ervin	Infiltrator Water Technologies, LLC
Jason Henderson	Geomatrix, LLC
Brad Hennig	NSF
Tom Kallenbach	Eliminite
Coralie Lamaire Chad	Bionest



Task Group Chair Report



Dominic Mercier	Genivar
Mark Miller	New Jersey Dept. of Environmental Protection
Nicholas Noble	Orenco Systems, Inc.
Joseph Petryk	Alberta Municipal Affairs - Public Safety

Meetings held since last JC meeting:

The task group held 0 meetings.

Summary of Task Group work since last JC meeting:

The committee needs direction from the Joint Committee if work should continue on development of a HSW standard and if so, the structure in relation to both open and closed systems.



Task Group Chair Report

Joint Committee on Wastewater Technology Task Group on NSF 245

Chair: David Lentz, Infiltrator Water Technologies, LLC

Task Group Charge:

To review issues related to NSF/ANSI 245 as they arise.

Task Group Roster:

Members		
Name	Company	Interest Category
Brian Baumgaertel	Barnstable County Department of Health and Environment	Public Health / Regulatory
Jim Bell	Bio-Microbics, Inc.	Industry
Steven Berkowitz (Emeritus)	Consultant	Public Health / Regulatory
Colin Bishop	Anua	Industry
Anna Lefering	Prüfinstitut für Abwassertechnik GmbH	User
Jim Meyer	Norweco, Inc.	Industry
Bob Rubin	North Carolina State University	User
Denise Wright	Indiana State Department of Health	Public Health / Regulatory

Observers	
Name	Company
Marie-Christine Belanger	Premier Tech
Justin Brown	NSF
Tom Bruursema	Water Quality Association
Randall Chelette	Texas On-Site Wastewater Association
Jeff Coomer	Consolidated Treatment Systems, Inc.
Marcia Degen	VA Dept. of Health
David Dobson	Alberta Municipal Affairs - Public Safety
Sheryl Ervin	Infiltrator Water Technologies, LLC
Katie Foster	NSF
Roxanne Groover	FOWA
Jason Henderson	Geomatrix, LLC
Brad Hennig	NSF
George Heufelder	Barnstable County Department of Health and Environment
Karl Holt	Aero-Stream®, LLC
Nicholas Hong	Pennsylvania Department of Environmental Protection



Task Group Chair Report



Jim King	Eljen Corporation
Coralie Lamaire Chad	Bionest
Chris Mandich	Jet Inc.
Eliza Nejad	NSF
Nicholas Noble	Orenco Systems, Inc.
Joseph Petryk	Alberta Municipal Affairs - Public Safety
David Potts	Geomatrix, LLC
Kaitlin Rinke	NSF
Eberhard Roeder	Florida Department of Environmental Protection
Ed Schloss	Jet Inc.
Joe Soulia	Orenco Systems, Inc.
Michael Sundberg	MicroSep Tec
Theo Terry	Shelby County Health Department
Mike Vernon	Pro Flo Aerobic Systems
Daniel Westrich	Bio-Microbics, Inc.

Meetings held since last JC meeting:

The task group held 4 meetings on 7/13/2023, 10/3/2023, 11/30/2023, and 1/9/2024.

Summary of Task Group work since last JC meeting:

Over the past year, the TG focused on two issues: influent nitrogen concentration and revising the pass criteria for total nitrogen reduction. The proposal to increase the influent nitrogen concentration was debated. An NSF staff analysis found that making such a change would require retesting for a substantial number of certified products. The proposal was subsequently withdrawn. Two proposals were made to establish a three-tiered nitrogen reduction system in NSF/ANSI 245. One method was a combination of concentrations and mass-balance values; the other was strictly mass-balance values. The next step is to poll members of the State Onsite Regulators Association (SORA) to determine how tiering the standard would change or not change state-level regulation and to determine what is best for individual states.



Task Group Chair Report



Assigned Issue Papers

Issue paper	Summary	Status
WWT-2020-3 – 40 / 245 certification	<p>NSF/ANSI 245 is a nutrient standard which has primarily been focused on nitrogen removal from wastewater. The present requirement to conduct this standard is that the applicant must have successfully met NSF/ANSI 40 requirements, which is basically a secondary treatment standard or conduct the NSF/ANSI 40 requirements concurrent with the NSF/ANSI 245 testing. The two standards should not be linked. A product purporting to remove nitrogen should not necessarily have to demonstrate that cBOD and TSS be removed to the NSF/ANSI 40 level.</p>	<p>The TG debated this issue extensively, including three distinct options to address the issue paper, including:</p> <ol style="list-style-type: none">1. Maintain NSF/ANSI 245, and create a new standard that does not require NSF/ANSI 40 certification2. Create a tiered NSF/ANSI 245, with and without NSF/ANSI 40 requirements or with modified requirements for cBOD and TSS set at higher levels than required under NSF/ANSI 245.3. Maintain NSF/ANSI 245, and create a proposed NSF/ANSI 245-1 <p>Option 2 was balloted, with negatives expressed by those balloting.</p> <p>Ultimately, consensus could not be reached on a definitive pathway forward to address the issue. Concerns included market and regulatory community comprehension of the changes and consistent implementation in the market.</p> <p>Based on the context of the discussions and dissenting opinions, the proponent withdrew the proposal.</p> <p>No further work is anticipated on this proposal based upon the withdrawal and no subsequent modified proposals.</p>



Task Group Chair Report



Assigned Issue Papers

Issue paper	Summary	Status
WWT-2020-17 - TKN	<p>1. Increase the Influent range from 30 to 70 mg/l to 50 to 100 mg/l on average during the testing period. Influent may be supplemented with urea, as currently allowed in the standard, as needed.</p> <p>2. Have the pass/fail criteria (at least 50-percent reduction) apply to the majority of the monthly effluent samples (e.g., compute 30-day influent and effluent, excluding days currently allowed to be excluded, and require 5 of the 6 test months to “pass”).</p>	<p>The original proposal to increase the influent TKN range was withdrawn and replaced with the updated issue paper WWT-2020-17.1 following a review of the data. The focus was revised to require that 4 of 5 sample day periods meet the influent and effluent passing criteria to provide a better picture of system performance.</p> <p>Concerns expressed during TG meeting discussions include the 7 of the 21 currently listed systems (only includes NSF International; there may be other systems listed by other certifying bodies) would not meet the revised criteria and there was not a scientific basis for making this change.</p> <p>The TG discussed using mass balance methods or a tiering strategy as alternatives. In response, two tiering strategies were proposed and discussed, including:</p> <ol style="list-style-type: none">1. The 50% criterion is unchanged and concentration-based requirements of arithmetically averaging 19 mg/l and 10 mg/l would be added.2. The 50% criterion is unchanged, with two concentration-based arithmetically averaged requirements added, including 65% and 80% average TN reduction. <p>The next step is to poll members of the State Onsite Regulators Association (SORA) to determine how tiering the standard would change or not change state-level regulation and to determine what is best for individual states.</p>



Task Group Chair Report

Joint Committee on Wastewater Technology Task Group on NSF 350

Chair: Bob Rubin, North Carolina State University

Task Group Charge:

To review issues related to NSF/ANSI 350 as they arise.

Task Group Roster:

Members		
Name	Company	Interest Category
Jim Bell	Bio-Microbics, Inc.	Industry
Steven Berkowitz (Emeritus)	Consultant	Public Health / Regulatory
Colin Bishop	Anua	Industry
Katie Foster	NSF	User
Brad Hennig	NSF	User
Anna Lefering	Prüfinstitut für Abwassertechnik GmbH	User
Kevin Sherman	SeptiTech, Inc.	Industry
Joelle Wirth	Consultant	User

Observers	
Name	Company
Frank Aguirre	Texas Septic Systems Council
Donald Alexander	Consultant - Public Health/Regulatory
Archis Ambulkar	Consultant - User
Sal Aridi	IAPMO
Ben Arnold	PHOENIX Process Equipment Co.
Rick Artz	National Oceanic and Atmospheric Administration (NOAA)
Adrian Aspenson	NSF
Emily Bailey	Campbell University
Stuart Bailin	Wahaso - Water Harvesting Solutions
Brian Baumgaertel	Barnstable County Department of Health and Environment
Nikki Beetsch	NSF
Marie-Christine Belanger	Premier Tech
John Bell	Greyter Water Systems
Theresa Bellish	NSF
John Blount	Civil Solutions
Bob Boulware	Design-Aire Engineering, Inc



Task Group Chair Report



Justin Brown	NSF
Tom Bruursema	Water Quality Association
Eric Budge	NSF
Maribel Campos	ICC-ES
Sebastian Canizales Gomez	Hydraloop International BV
Peter Cartwright	Cartwright Consulting Co.
Randall Chelette	Texas On-Site Wastewater Association
Christopher Childs	U.S. Army
Edward Clerico	Natural Systems Utilities
Wiley Cloud	Advantage Wastewater Solutions LLC
Troy Cormier	Hoot Aerobic Systems
Marcia Degen	VA Dept. of Health
Derek Deland	NSF
David Dobson	Alberta Municipal Affairs - Public Safety
Bob Drew	Equavie-Aqualoop
Alexander Fairhart	Consultant
Jay Garland	Environmental Protection Agency - Ohio
Roxanne Groover	FOWA
Misty Guard	Regulosity LLC
Jason Henderson	Geomatrix, LLC
George Heufelder	Barnstable County Department of Health and Environment
Anish Jantrania	Texas A&M
Nasrin Kashefi	NSF
Paula Kehoe	San Francisco Public Utilities Commission
James Kemper	City of Los Angeles
Jim Kendzel	American Supply Association (ASA)
Boguslaw Kocot	NSF
Coralie Lamaire Chad	Bionest
Marcus Lenger	CleanBlu
David Lentz	Infiltrator Water Technologies, LLC
Melissa Lubitz	Hydraloop International BV
Mike Luetgen	Kohler Company
Shawn Martin	International Code Council
Kevin Minissian	Norchem Corp
Dana Morgoch	Greyter Water Systems
Eliza Nejad	NSF
Nicholas Noble	Orenco Systems, Inc.
Taylor Nokhodian	San Francisco Public Utilities Commission
Arvind Patil	Protect Plus / Ricura Technologies
David Pellegrini	Gustavo Preston Company, Inc.



Task Group Chair Report



Joseph Petryk	Alberta Municipal Affairs - Public Safety
David Porto	EcocyclET, LLC
David Potts	Geomatrix, LLC
Doug Pushard	HarvestH2O, LLC
Regu Regunathan	ReguNathan & Associates, Inc.
Marc Rico	Hydraloop International BV
Kaitlin Rinke	NSF
Eberhard Roeder	Florida Department of Environmental Protection
Ana Silvia Santos	University of the State of Rio de Janeiro
Matt Sigler	International Code Council
Jeremy Simmons	Washington State Department of Health
Simran Singh	Michigan State University
Catherine Soroczan	Canada Mortgage and Housing Corporation (CMHC)
Joe Soulia	Orenco Systems, Inc.
Amir Tabakh	City of Los Angeles
Theo Terry	Shelby County Health Department
Chris Thompson	Greyter Water Systems
Kyle Thompson	Plumbing Manufacturers International (PMI)
Grady Tucker	AquaKlear Inc.
Arthur Valkieser	Hydraloop International BV
Mike Vernon	Pro Flo Aerobic Systems
Kevin Wong	Canadian Water Quality Association (CWQA)
Tre Wright	Whirlpool Corporation

Meetings held since last JC meeting:

The task group held 4 meetings.

Summary of Task Group work since last JC meeting:

The 350 Task group met several times during the last year and the greatest accomplishment was acceptance of the Log Reduction Issues as proposed and accepted by many regulatory agencies in the U.S. and strongly supported by the USEPA and the Blue Ribbon Commission on Decentralized Water Reuse. Acceptance of the Log Reduction Targets and Values establish clear criteria for product manufacturers proposing reuse technologies.

Derek Deland was most helpful in development of these criteria.

John Blount and his sub-committee continue to address the commercial/residential definitions and criteria.



Task Group Chair Report

Joint Committee on Wastewater Technology Task Group on NSF 385

Chair: Jim Bell, Bio-Microbics, Inc.

Task Group Charge:

To review issues related to NSF/ANSI 385 as they arise.

Task Group Roster:

Members		
Name	Company	Interest Category
Colin Bishop	Anua	Industry
Mike Braden	LBC Manufacturing	General Interest
Randall Chelette	Texas On-Site Wastewater Association	User
Brad Hennig	NSF	User
David Jumper	Pro Flo Aerobic Systems	Industry
Jim Meyer	Norweco, Inc.	Industry
Eberhard Roeder	Florida Department of Environmental Protection	Public Health / Regulatory
Bob Rubin	North Carolina State University	User
Kevin Sherman	SeptiTech, Inc.	Industry
Fraser Sneddon	Sun-Mar Corp.	Industry

Observers	
Name	Company
Marie-Christine Belanger	Premier Tech
Steven Berkowitz (Emeritus)	Consultant
John Blount	Civil Solutions
Justin Brown	NSF
Tom Bruursema	Water Quality Association
Mark Chaffin	Chlorination Station
Jeff Coomer	Consolidated Treatment Systems, Inc.
Katie Foster	NSF
Anish Jantrania	Texas A&M
Mark Kowalak	Crane Pumps & Systems
Coralie Lamaire Chad	Bionest
Mike Luetngen	Kohler Company
Chris Mandich	Jet Inc.



Task Group Chair Report

Eliza Nejad	NSF
Kaitlin Rinke	NSF
Larry Schantz	Aerobic Guard, LLC
Jeremy Simmons	Washington State Department of Health
Brian Wakefield	Aerobic Guard, LLC
Joelle Wirth	Consultant

Meetings held since last JC meeting:

Following the last JC meeting, this Task Group held two meetings of August 24, 2024 and October 19, 2024. In addition I had a meeting with the Standards group on October 30, 2024 to discuss the transition from Std. 46 to Std. 385 scheduled for February 2025. From this meeting I suggested changes to Std. 46 Section 11 as follows:

Section 11 Chlorine Devices

The evaluation of Chlorine Devices for disinfection has been removed from NSF Standard 46 and reestablished in NSF Standard 385. The disinfection portion of Section 11 of NSF Standard 46 was retired from NSF 46 in February 2025.

I have not heard back from NSF whether this language is acceptable. If it is, I would propose that the same language be used for NSF 46 Sections 12 and 13. We also need to have a discussion at this JC meeting on whether we want to keep the Chlorine Dispensers in NSF 46. I have provided language to Jason to address this and it is currently in Revision 46i33r2.

Summary of Task Group work since last JC meeting:

Since the last JC meeting there were three ballots for NSF 385. The UVT Clarification ballot closed on May 25, 2023 with no negative votes. The Default Tank ballot closed on October 20, 2023 with no negative votes. The Ozone ballot closed on October 23, 2023 with no negative votes. The Task Group has addressed all Issue Papers and there were no new Issue Papers at the last JC meeting. If there are no Issue Papers at this JC meeting, it is recommend that this Task Group be dismissed.



Task Group Chair Report

Joint Committee on Wastewater Technology Task Group on NSF 40

Chair: Brian Baumgaertel, Barnstable County Department of Health and Environment

Task Group Charge:

To review issues related to NSF/ANSI 40 as they arise.

Task Group Roster:

Members		
Name	Company	Interest Category
Jim Bell	Bio-Metrics, Inc.	Industry
Steven Berkowitz (Emeritus)	Consultant	Public Health / Regulatory
Colin Bishop	Anua	Industry
Randall Chelette	Texas On-Site Wastewater Association	User
Brad Hennig	NSF	User
David Jumper	Pro Flo Aerobic Systems	Industry
Jim King	Eljen Corporation	Industry
Anna Lefering	Prüfinstitut für Abwassertechnik GmbH	User
Jim Meyer	Norweco, Inc.	Industry
David Potts	Geomatrix, LLC	Industry
Eberhard Roeder	Florida Department of Environmental Protection	Public Health / Regulatory
Bob Rubin	North Carolina State University	User
Kevin Sherman	SeptiTech, Inc.	Industry
Joelle Wirth	Consultant	User

Observers	
Name	Company
Dick Bachelder	Infiltrator Water Technologies, LLC
Marie-Christine Belanger	Premier Tech
John Bell	Greyter Water Systems
Justin Brown	NSF
Tom Bruursema	Water Quality Association
Jeff Coomer	Consolidated Treatment Systems, Inc.
Troy Cormier	Hoot Aerobic Systems
Marcia Degen	VA Dept. of Health
David Dobson	Alberta Municipal Affairs - Public Safety



Task Group Chair Report



Sheryl Ervin	Infiltrator Water Technologies, LLC
Katie Foster	NSF
Roxanne Groover	FOWA
Jason Henderson	Geomatrix, LLC
Rick Hertges	West Virginia Bureau for Public Health
George Heufelder	Barnstable County Department of Health and Environment
Karl Holt	Aero-Stream®, LLC
Nicholas Hong	Pennsylvania Department of Environmental Protection
Coralie Lamaire Chad	Bionest
David Lentz	Infiltrator Water Technologies, LLC
Kemper Loyd	Virginia Department of Health
Mark Miller	New Jersey Dept. of Environmental Protection
Eliza Nejad	NSF
Nicholas Noble	Orenco Systems, Inc.
Jay Patel	Pennsylvania Department of Environmental Protection
Joseph Petryk	Alberta Municipal Affairs - Public Safety
Kaitlin Rinke	NSF
Brian Schlauderaff	Pennsylvania Department of Environmental Protection
Barbara Smith	Anua
Joe Soulia	Orenco Systems, Inc.
Michael Sundberg	MicroSep Tec
Theo Terry	Shelby County Health Department
Randy Trox	Oregon Department of Environmental Health
Denise Wright	Indiana State Department of Health

Meetings held since last JC meeting:

The task group held [3] meetings on [8/10/2023, 9/21/2023, 11/3/2023].

Summary of Task Group work since last JC meeting:

The Standard 40 TG has not received any requests for review from the Joint Committee, and as such does not have much work beyond what bubbles up during discussions. The group frequently does not meet quorum requirements. Topics that came up this year (without much forward motion) were Stress Testing order, and a tiered/rating approach.

One discussion item in particular was the need for Regulator participation in the TG. At present, only 21% of the members represent regulatory agencies.



Task Group Chair Report

Joint Committee on Wastewater Technology Task Group on NSF 41

Chair: Joelle Wirth, Consultant - User

Task Group Charge:

To review issues related to NSF/ANSI 41 as they arise.

Task Group Roster:

Members		
Name	Company	Interest Category
Steven Berkowitz (Emeritus)	Consultant	Public Health / Regulatory
Eric Casey	National Onsite Wastewater Recycling Association	User
Stefan Johansson	Ecojohn	General Interest
Bob Rubin	North Carolina State University	General Interest
Kevin Sherman	SeptiTech, Inc.	Industry
Fraser Sneddon	Sun-Mar Corp.	Industry

Observers	
Name	Company
Colin Bishop	Anua
Justin Brown	NSF
Tom Bruursema	Water Quality Association
Sung Choe	IAPMO
Katie Foster	NSF
Brad Hennig	NSF
Conor Lally	Nutrient Networks
Carol McFarland	Incinolet
Don Mills	Clivus Multrum, Inc.
Eliza Nejad	NSF

Meetings held since last JC meeting:

The task group held 0 meetings.

Summary of Task Group work since last JC meeting:

The last meeting was 2/15/2024. No work has been assigned to the TG since then.



Task Group Chair Report

Joint Committee on Wastewater Technology Task Group on Open Cell Bottom Technology

Chair: George Heufelder, Barnstable County Department of Health and Environment

Task Group Charge:

To review current language and develop a path forward to address open cell bottom technology within NSF 40.

Task Group Roster:

Members		
Name	Company	Interest Category
Marie-Christine Belanger	Premier Tech	Industry
Steven Berkowitz	Consultant - Public Health/Regulatory	Public Health / Regulatory
Colin Bishop	Anua	Industry
Sheryl Ervin	Infiltrator Water Technologies, LLC	Industry
Sara Heger	University of Minnesota	Public Health / Regulatory
Brad Hennig	NSF	User
Jim King	Eljen Corporation	Industry
David Lentz	Infiltrator Water Technologies, LLC	Industry
David Potts	Geomatrix, LLC	General Interest
Joelle Wirth	Consultant	User

Observers	
Name	Company
Dick Bachelder	Infiltrator Water Technologies, LLC
Katie Foster	NSF
Jason Henderson	Geomatrix, LLC
Coralie Lamaire Chad	Bionest
Eberhard Roeder	Florida Department of Environmental Protection
Kevin Sherman	SeptiTech, Inc.
Barbara Smith	Anua

Meetings held since last JC meeting:

The task group has not met since March 2018.

Should this group remain active? If so, new Chair needed as George has retired.



Task Group Chair Report

Joint Committee on Wastewater Technology Task Group on Retesting

Chair: Steven Berkowitz, Consultant – Public Health / Regulatory

Task Group Charge:

To review current language and develop a path forward to address retesting within NSF 40.

Task Group Roster:

Members		
Name	Company	Interest Category
Colin Bishop	Anua	Industry
Katie Foster	NSF	User
Jim King	Eljen Corporation	General Interest
David Lentz	Infiltrator Water Technologies, LLC	Industry
Nicholas Noble	Orenco Systems, Inc.	Industry
David Potts	Geomatrix, LLC	General Interest

Observers	
Name	Company
Marie-Christine Belanger	Premier Tech
John Bell	Greyter Water Systems
Justin Brown	NSF
Sheryl Ervin	Infiltrator Water Technologies, LLC
Jason Henderson	Geomatrix, LLC
Brad Hennig	NSF
George Heufelder	Barnstable County Department of Health and Environment
Dana Morgoch	Greyter Water Systems
Brian Schlauderaff	Pennsylvania Department of Environmental Protection
Joe Soulia	Orenco Systems, Inc.
Mike Vernon	Pro Flo Aerobic Systems

Meetings held since last JC meeting:

This Task Group has not met since the last JC meeting

Summary of Task Group work since last JC meeting:

This Task Group was precipitated by a Position Paper submitted by the Task Group Chair in 2020. The last Task Group meeting was held in 2022. In the meeting packet for the 2023 JC meeting, suggestions were



Task Group Chair Report



included by the Task Group Chair to rename this task group, eliminating “retesting” and to instead call this the “certification renewal” committee or something similar. Furthermore, the initial position paper recommendations were proposed to be modified to require a least one third-party evaluation of operation systems’ performance to be provided in order for a product’s certification to extend beyond a certain period (e.g., 5 to 7 years). There would not be a mandatory “pass-fail” criteria but require an approved evaluation protocol to be followed.

The Task Group Chair was unable to attend the 2023 JC meeting, and it is my understanding, there was no discussion or direction given by the JC on if/how to proceed with this Task Group’s work.

Subsequent correspondence between Berkowitz and Jason Snider highlighted NSF concerns that “retesting” and “certification renewal” were more in the realm of “certification policy” and not within the purview of “standards development”.

The continued need and potential interest in pursuing this Task Group’s work was exemplified by a talk and paper delivered by Jobin Justin at the NOWRA 2023 Megaconference, entitled “The Need for Regionalized Standard Operating procedures for the Acceptance, Use and Management of Nutrient-Reducing Septic Systems (Talk: https://www.nowra.org/Customer-Content/www/CMS/files/23Mega_Jobin_Regionalize_SOPs.pdf

Paper: https://www.nowra.org/Customer-Content/www/CMS/files/Paper_Jobin_NOWRA2023_Regionalized_SOPs.pdf)

Moving Forward Recommendations (**for consideration/action at the 2024 JC Annual Meeting**):

Option 1. Disband this Task Group; or

Option 2: Rename-Reconstitute the Task Group, with a charge to revisit how to incorporate a standardized field evaluation protocol of operational systems into NSF product certification standards. New title of this Task Group could be “Task Group on Field Evaluation Protocol Development”. Possible outcomes could be:

- a. Including requirement in selected product standards (e.g., 40, 245, 350) for standardized evaluations of operational systems at 5- to 7-year intervals after initial bench-test certification of the system, and/or:
- b. Revise/Update of NSF 360 as determined to be needed to facilitate its acceptance and utilization by industry/regulators/users.



NSF Standard(s) Impacted: NSF-40/245/350

Background:

Provide a brief background statement indicating the cause and nature of concern, the impacts identified relevant to public health, public understanding, etc, and any other reason why the issue should be considered by the Committee. Reference as appropriate any specific section(s) of the standard(s) that are related to the issue.

An on-going concern expressed by both Industry, regulators and users has been that these NSF wastewater standards are bench-tests only and do not accurately represent “real-life” conditions. Concerns expressed relate to system longevity, representativeness of raw wastewater influent at NSF test centers, lack of climate variability, and insufficient demonstration of performance during variable stress use conditions (e.g., seasonal use applications). This has prompted many states to require site-specific field testing prior to granting unlimited approval for use or at least a period of ongoing field-performance testing. While many states will accept test data reported from other states, there is lack of consistency which frustrates manufacturer’s and regulators alike. Protocols have been developed to partially address this, such as reflected by NSF Standard 360, and the Chesapeake Bay Data Sharing initiative. However, no manufacturers have yet been certified under this standard or protocol. It has also been suggested during Joint Committee meetings that NSF consider routinely publishing results of the annual audits of manufacturers which would provide information on on-going compliance of approved systems approved (even if done generically) and help validate the importance of maintaining a “listing” under a third-party certification program, in addition to the initial testing approval. This has not yet been implemented.

Recommendation:

Clearly state what action is needed: e.g., recommended changes to the standard(s) including the current text of the relevant section(s) indicating deletions by use of ~~strike-out~~ and additions by highlighting or underlining; e.g., reference of the issue to a Task Group for detailed consideration; etc.

NSF Standard 40 requires a listed manufacturer to go through a retest program that includes reevaluation and retesting at least every seven years. This currently is not similarly required with Standards 245 or 350. The recommendation is to require in each of these standards a reevaluation every 5 to 7 years, and for this to include (and perhaps even be essentially limited to) completion of at least one field evaluation comparable to that described in NSF Standard 360 or the Chesapeake Bay Data Sharing initiative, with sanitized data provided (with no personally-identifiable information shown) and results available on the NSF webpage (or on the manufacturer’s webpage accessible from the NSF webpage). Data collection should focus on systems in operation for greater than six months, installed during the past 5 to 7-year period, and documented to have been operated continuously under and manufacturer-authorized operation and maintenance plan. There would not be a “pass-fail” condition (as is the case for NSF-360), but an approved protocol for selection, sampling and reporting would have to be followed.

Supplementary Materials (photographs, diagrams, reports, etc.):

If not provided electronically, the submitter will be responsible to have sufficient copies to distribute to committee members.

See Response to Survey from 2018, attached (especially see responses to Questions 10, 11 and 17). While participation was less than desired, this includes responses from 18 different states and 9 local public health agencies, as well as 12 industry representatives.



I hereby grant NSF International the non-exclusive, royalty free rights, including non-exclusive, royalty free rights in copyright; in this item and I understand that I acquire no rights in any publication of NSF International in which this item in this or another similar or analogous form is used.

Signature*: Steven Berkowitz
Company: NCDHHS
Telephone Number: 919-707-5876 E-mail: steven.berkowitz@dhhs.nc.gov
Is this a revision of a previous Issue Paper (if yes put original issue number): No
Submission Date: 4/10/2020

Please submit to: Joint Committee Secretariat, Jason Snider at jsnider@nsf.org

**Type written name will suffice as signature*

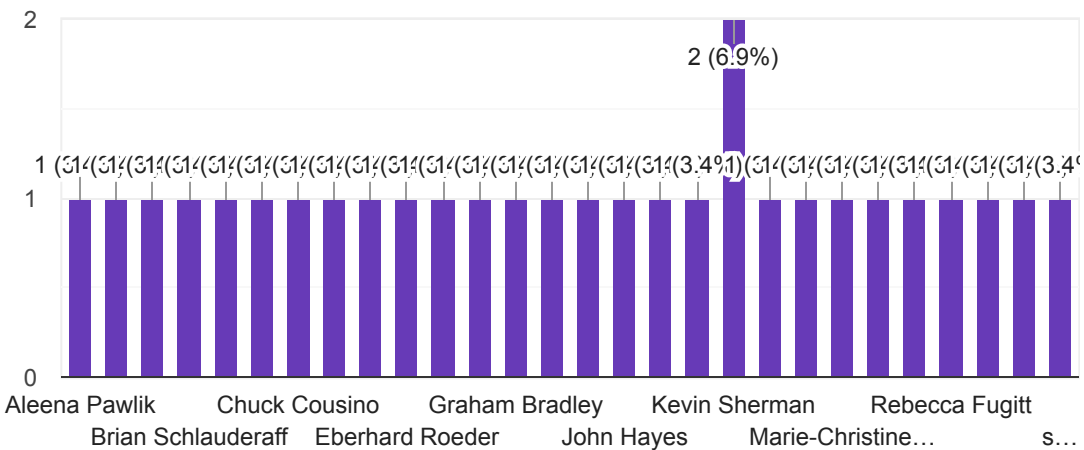
Standard 40 Task Group

38 responses

Please use the "other" selection as needed to provide explanation for any answers

1. Name (optional)

29 responses



2. Company (optional)

30 responses

- Colorado Dept. of Public Health & Env.
- Clay County NC Health Dept.
- Washington State Department of Health
- Delaware DNREC

Persby Environmental, Inc.

Presby

Baltimore County EPS

Orenco

Vermont Department of Environment

State of Vermont

Clackamas County Onsite Wastewater Program

King County, Washington

Skagit County Public Health

FRP Manufacturing (2010) Inc.

Albemarle Regional Health Services

Ohio Dept. of Health

Dynamic Monitors

Waterloo Biofilter

Wescor

ECO-DYNAMICS

Advanced DWTS

Premier Tech Aqua

Presby Environmental

NYSDOH

NHDept. of Environmental Services

WVBPH

State of Delaware

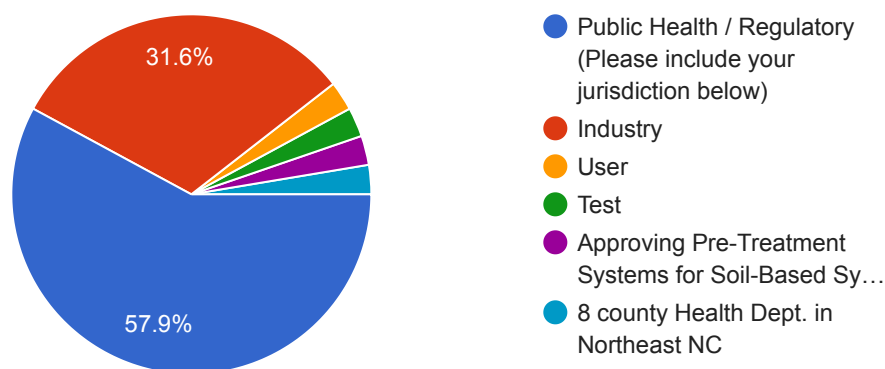
Virginia Department of Health

PA DEP

Florida Department of Health

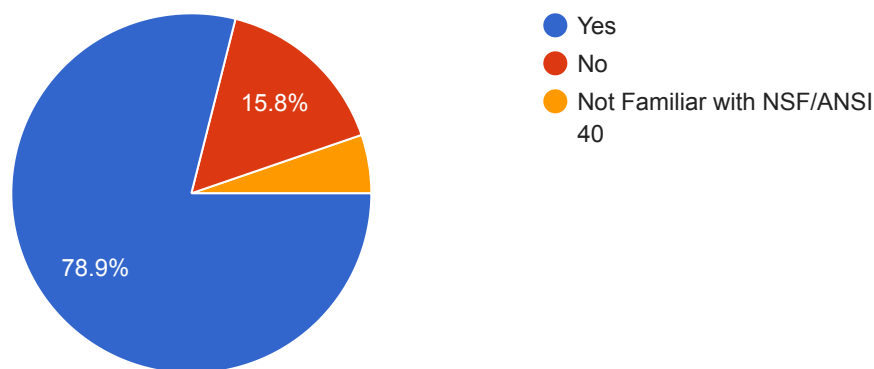
3. Interest Category

38 responses



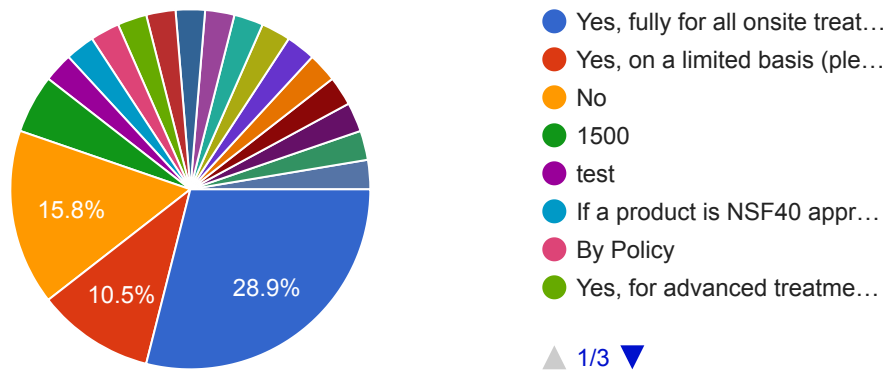
4. In terms of regulatory product approval, does your state or local jurisdiction reference NSF Standard 40 for product review purposes?

38 responses



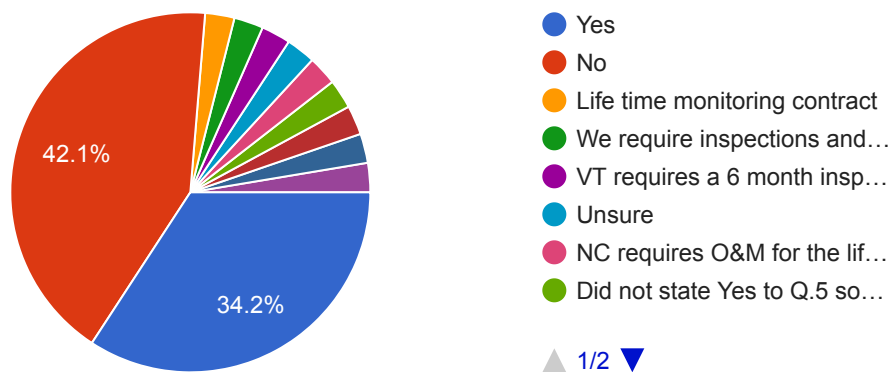
5. In terms of regulatory product approval, does your state or local jurisdiction reference NSF Standard 40 product certification requirements in your code, rule or ordinance? NOTE-NSF/ANSI 40 applies to residential systems with estimated sewage flows ranging from 400 to 1500 gpd.

38 responses



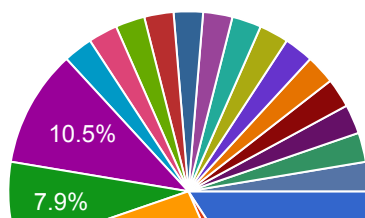
6. If you provided any “Yes” response for question 5, does your state or jurisdiction require the full NSF certification program including audits and maintenance contracts for the first two years after the sale?

38 responses



7. What measures do you have in place to determine if a technology is not functioning properly?(this is regarding technology performance evaluation, not site-specific compliance):

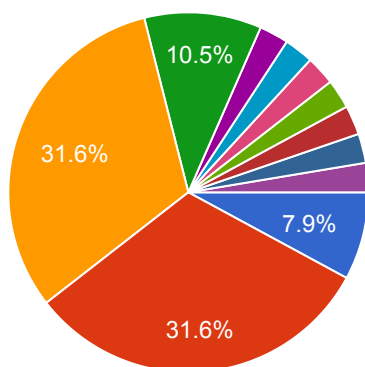
38 responses



- We require routine effluent...
- We require remote monitori...
- We require filing of service...
- We rely on homeowner co...
- We do not have a way to m...
- INFK

8. Do you require service and maintenance of all approved treatment systems?

38 responses

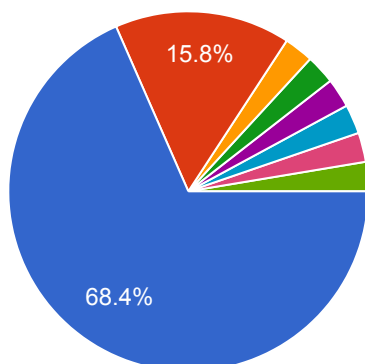


- Yes, for the first two years
- Yes, for the life of the system
- Yes, but there is a lack of r...
- No, we have no requireme...
- /M contracts are required f...
- For some types, not all
- maintenance contract must...
- Depends...our local provinc...

▲ 1/2 ▼

9. Are the NSF Standards an important component to assure performance of onsite wastewater systems?

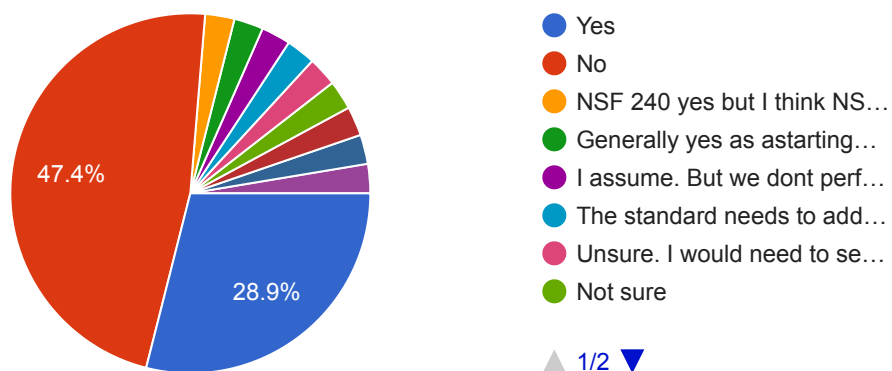
38 responses



- Yes
- No
- Standard is important but needs to be more rigorous...
- Yes-provide a minimum standard that systems mus...
- I don't know if the NSF Sta...
- They have been in the past...
- If it is upgraded
- Certification is. BNQ certific...

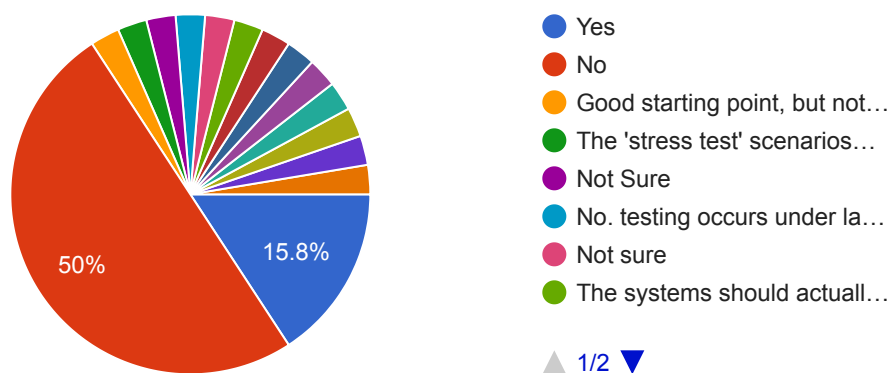
10. Are the NSF Standards adequate in ensuring protection of public health and water quality?

38 responses



11. Do the Standard 40 test protocol and the test data accurately reflect real-life residential applications?

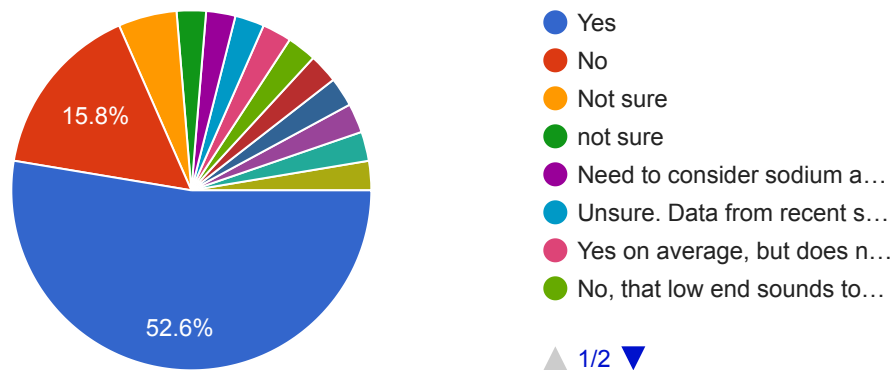
38 responses



12. Is the raw wastewater strength used for testing to NSF Standard 40

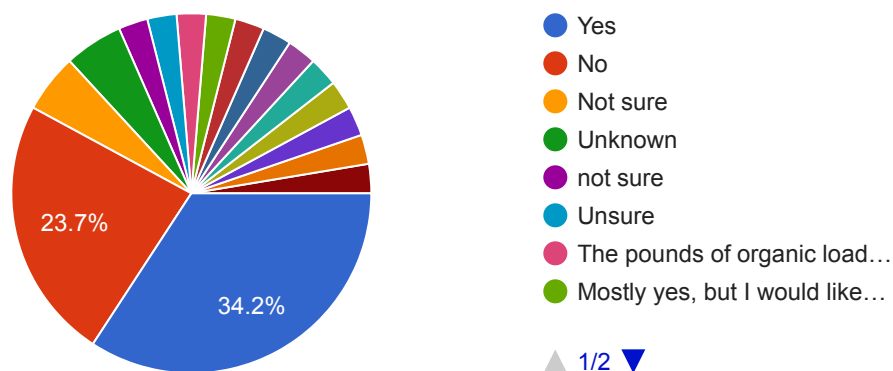
representative of typical residential sewage? From NSF/ANSI 40: The 30 d average BOD5 concentration of the wastewater delivered to the system shall be between 100 mg/L and 300 mg/L. The 30 d average TSS concentration of the wastewater delivered to the system shall be between 100 mg/L and 350 mg/L.

38 responses



13. Does the Standard 40 testing protocol adequately simulate the hydraulic and organic loadings (rate, volume, time frames, duration, stress test)?

38 responses

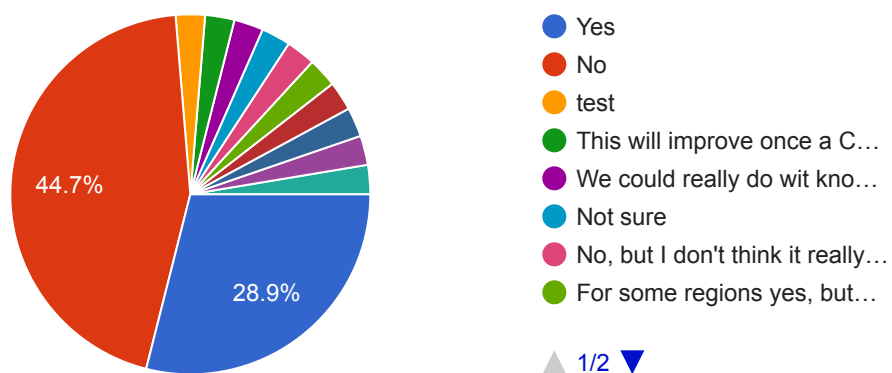


14. Does the Standard 40 testing protocol adequately address climate and

WWT=2020-16

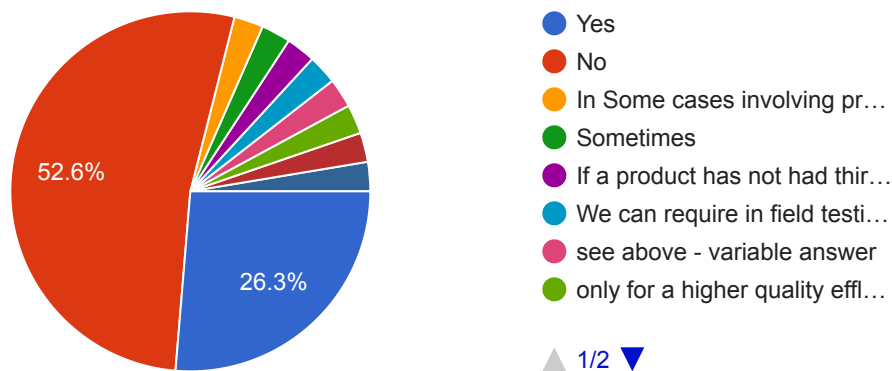
geographic variability?

38 responses



15. Does your state or local jurisdiction require in-field testing for approval or product listing in addition to Standard 40 certification?

38 responses



16. If the in-field testing requirement is not specified in statute or rule, what is the purpose of the in-field testing?

38 responses

none please

N/A

We require field testing of all proprietary treatment products

NA

it is

NSF 40 doesn't address all technology involved in onsite wastewater

We don't do in-field testing.

Verify NSF Claims under more real world conditions

We do not require in-field testing and it is not in our regulations

verification of certain systems

New Hampshire does not require field testing

Not required

To verify performance throughout the 4 seasons

To ensure compliance with regulatory performance requirements

Demonstrate efficacy of system with Pilot or Experimental Approval when NSF or other third party testing unavailable. May be required to demonstrate efficacy to treat high waste strength (>300 mg/L) or high loading (>1500 gpd) not covered by NSF 40 if system is experiencing problems.

Effluent testing is sometimes required by permit if the waste strength and characteristics may present a performance issue. The Program requires effluent testing of all units if the effluent at the time of annual service is cloudy or pungent, however few service providers take the time to collect a sample.

Do not currently require in-field testing.

Not applicable

Not sure

in-field testing may confirm to the installer that the system is functioning per its specs.

Compliance verification based on sample results.

Can be required as part of 5 year product reapproval process. Based on sampling of systems that discharge off-lot.

There is no requirement for in-field testing

lets call a spade a spade here. Very few jurisdictions want the results because they might have to do something with it. They don't have the staff or resources to do their jobs.

verification

It is specified in statute

The idea is to test it in real world conditions. Both from a use standpoint as well as an installation and operation standpoint.

It is a statute

We don't require in-field testing currently

n/a

This program is not used in New Hampshire

Unknown

only when system has not been 3rd party tested

It is not in my (BPH) rules, but is in the WVDEP general Permit for surface discharges

We do not require in-field testing

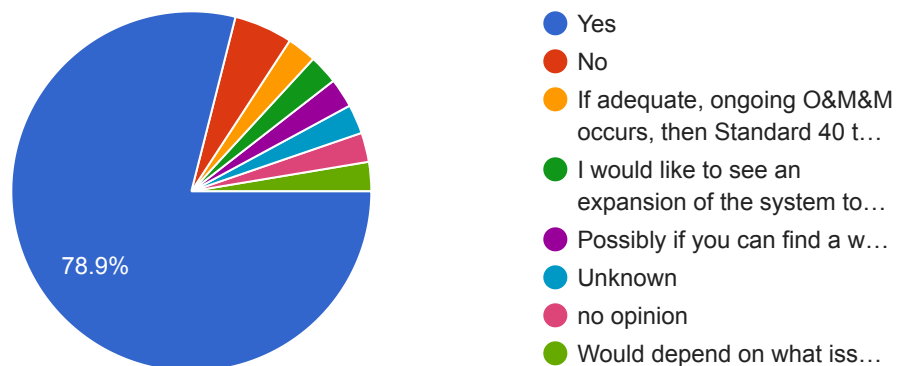
To verify compliance with a more stringent standard

Though not currently required, when required the purpose is to ensure the technology performs to the required standards in the field before approval of the technology is given. The testing would not have to occur in PA, but would need to be 3rd party and in a similar or colder climate than PA.

specified in statute and rule, purpose is to demonstrate performance

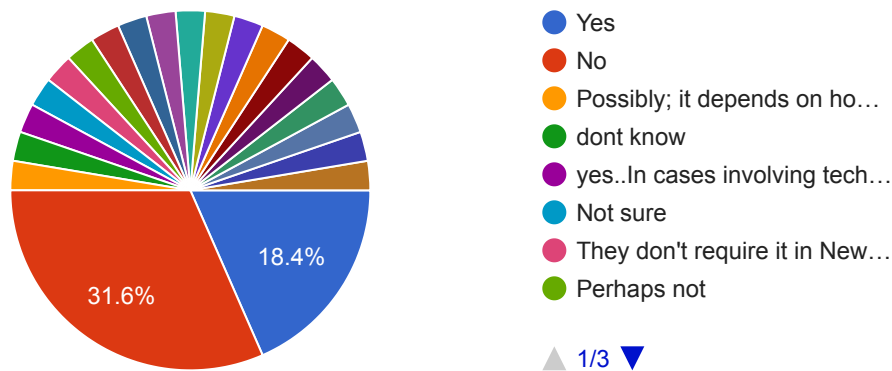
17. Should Standard 40 be modified to better simulate “real-world” use and operation?

38 responses



18. If Standard 40 is modified to better simulate “real-world” use and operation, would your state or local jurisdiction still require in-field testing?

38 responses



19. Please use this space for additional comments:

10 responses

We understand every condition and situation cannot be reproduced; however, we do have faqith in the certificati0on process.

The standard should definitely be updated to include a field test component. As far as what 'typical' waste strength & components are, updated research would be critical, as many of the studies looking at this are from the 70's & 80's.

Further varification of approved technologies is critial to protect property owners, public health, and the environment!

Requiring NSF-40 is a good start to ensure that systems that cannot achieve a minimum treatment level are not being installed, however, it's current version allows for systems to be tested in climates completely dissimilar to many of the locations where the systems are being installed.

In addition, the auditing system being used at current is not comprehensive enough to ensure that systems are functioning at their necessary capacities. It would be nice to see a larger cross section of systems being evaluated, especially since we cannot be entirely sure that they are being tested initially with real world conditions.

I would rather see systems/brand MAINTAIN NSF certification and do away with State/County Samples. Often times samples are only based on the date and time of the GRAB sample and may not reflect actual treatment/usage.

We use the BNQ in Ontario

I strongly believe Standard 40 as it currently sits needs to remain specifically for in vessel treatment. Expanding the Standard to include technologies that are not housed in a water tight vessel prior to discharge would undermine current State regulatory structures.

This entry may be a repeat. There should only be one response from Kevin Sherman

we require 3rd party testing or allow in-state pilot testing for innovative and alternative systems. no state requirement for advanced treatment systems...

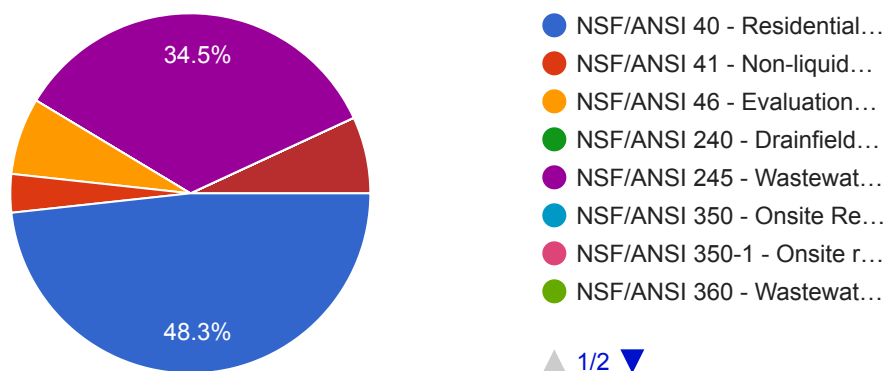
testing in WV is currently only a minimum of one sampling event per the 5 year term of the WVDEP General Permit. This can be modified on permit revisions

NSF Standards are under Continuous Maintenance, meaning they are open to revision at any time. If you would like to submit an issue paper to suggest a revision to any NSF Standard, please visit [standards.nsf.org](https://standards.nsf.org/kwspub/public/stds). (<https://standards.nsf.org/kwspub/public/stds>)

Questions 20, 21, and 22 apply to the Regulatory community only

20. Please select each NSF Standard / Protocol for Wastewater which your state or local jurisdiction has incorporated in your code, rule or ordinance:

29 responses

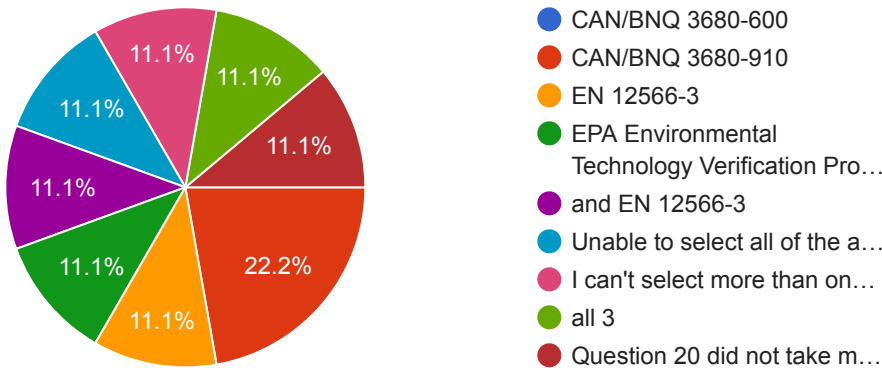


21. Please select any other Standards your local jurisdiction has formally

WWT=2020-16

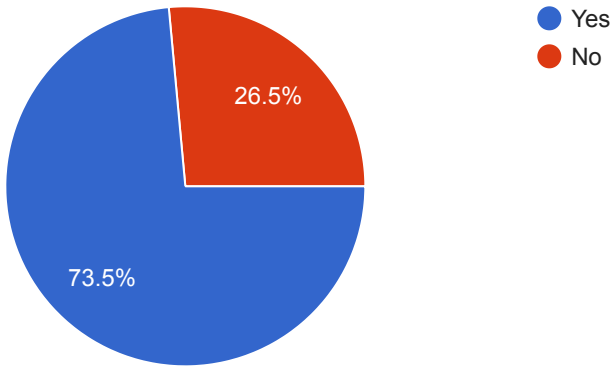
adopted for treatment system approval purposes.

9 responses



22. Is there a need for development of commercial application Wastewater Standards?

34 responses



Untitled Section





Task Group Chair Update

Task Group Name	WWT Task Group on Retesting
Chairs	Steven Berkowitz
Date	March 2023

Members:

First Name	Last Name	Company	Role	Interest Category
Steven	Berkowitz, PE	Consultant - Public Health/Regulatory	Group Chair	Emeritus
Colin	Bishop	Anua	Member	Industry
Jim	King	Eljen Corporation	Member	General Interest
David	Lentz	Infiltrator Water Technologies, LLC	Member	Industry
Nicholas	Noble	Orenco Systems, Inc.	Member	Industry
David	Potts	Geomatrix, LLC	Member	General Interest
Marie-Christine	Belanger	Premier Tech	Observer	Industry
John	Bell	Greyter Water Systems	Observer	Industry
Justin	Brown	NSF	Observer	
Sheryl	Ervin	Infiltrator Water Technologies, LLC	Observer	General Interest
Kathryn	Foster	NSF	Observer	
Jason	Henderson	Geomatrix, LLC	Observer	General Interest
Brad	Hennig	NSF	Observer	
George	Heufelder	Barnstable County Department of Health and Environment	Observer	General Interest
Brian	Schlauderaff	Pennsylvania Department of Environmental Protection	Observer	Public Health / Regulatory
Joe	Soulia	Orenco Systems, Inc.	Observer	General Interest
Blake	Stark	NSF	Observer	General Interest
Jason	Snider	NSF	Secretariat	General Interest

Assigned Issue Papers:

Issue Paper	Summary	Status
WWT-2020-16 - retesting	NSF Standard 40 requires a listed manufacturer to go through a retest program that includes reevaluation and retesting at least every seven years. This currently is not similarly required with Standards 245 or 350. The recommendation is to require in each of these standards a reevaluation every 5 to 7 years, and for this to include (and perhaps even be	



	essentially limited to) completion of at least one field evaluation comparable to that described in NSF Standard 360 or the Chesapeake Bay Data Sharing initiative, with sanitized data provided (with no personally identifiable information shown) and results available on the NSF webpage (or on the manufacturer's webpage accessible from the NSF webpage). Data collection should focus on systems in operation for greater than six months, installed during the past 5 to 7-year period, and documented to have been operated continuously under and manufacturer-authorized operation and maintenance plan. There would not be a "pass-fail" condition (as is the case for NSF-360), but an approved protocol for selection, sampling and reporting would have to be followed.	

Brief Summary of task group work since previous Joint Committee Meeting:

A position paper was presented in 2020 (see: [WWT-2020-16 - Retesting](#)) highlighting ongoing interest to incorporate a field testing component in NSF Standards (e.g., 40, 245 and 350). As other “old timers” may recall, I’ve been working on this for most of my 25+ years tenure on the Joint Committee, so far unsuccessfully. The “Retesting” Task group was formed and had one meeting in March 2021. The meeting included representatives of industry, general interest, and regulatory/public health participants from four states (Pennsylvania, Virginia, North Carolina and Massachusetts) that incorporate field performance verification in their states’ pretreatment system approval requirements. The current NSF ongoing audit process was discussed and believed beneficial but does not bridge the gap between a 6-month test and long-term performance verification. There was general agreement about the need and potential benefits of a standardized field evaluation and testing protocol but was also recognized that there are difficulties posed by how variable climatic conditions and use patterns impact field performance. It also became evident that despite “retesting” being called for “at least once every 7 years” (Informative Annex 2, NSF-40), this currently does not occur, and indeed the notion of mandatory “retesting” strikes fear and trepidation and would doom such a requirement from ever seeing the light of day.

Based upon more recent discussions, both regulators and consultants still express keen interest in pursuing an effort to streamline their evaluation processes and better facilitate data sharing. Besides the Chesapeake Bay States (Virginia, Maryland, Pennsylvania), the New Jersey Pinelands Commission and more recently Nassau and Suffolk Counties on Long Island have been implementing their own comprehensive evaluation protocols, as many industry representatives undoubtedly are aware of. However, buy-in from industry and other groups on the Joint Committee would be pre-requisite to the successful incorporation of a field evaluation protocol into NSF wastewater treatment system standards. NSF 360 was originally intended to meet similar objectives, but its lack of “takers” clearly indicates other approaches are needed.



The first recommendation is to rename this task group, eliminating “retesting” from its title. Instead, please call this the “certification renewal” committee, or something similar.

Furthermore, I recommend modifying the previous position paper recommendations as follows:

In order for a product’s certification to Standard’s 40, 245 and 350, to extend beyond a certain period of time (e.g., 7 years), at least one third-party evaluation of operational systems would be required to be completed on behalf of the manufacturer, with sanitized results reported (with no personally-identifiable information shown) and made available. Data collection should focus on systems in operation for greater than 12 months, installed during the past 5 to 7-year period, and documented to have been operated continuously under a manufacturer-authorized operation and maintenance plan. There would not be a “pass-fail” condition (as is the case for NSF-360), but an approved protocol for selection, sampling, and reporting followed, and a minimum number of systems would have to have been sampled. Clearly these and other details would need to be worked out by the committee to be incorporated into a harmonized “Normative” Annex in these standards.

Calls

5/24/22



Task Group Chair Report



Joint Committee on Wastewater Technology Task Group on Scaling

Chair: Colin Bishop, Anua

Task Group Charge:

To review current language and develop a path forward to address scaling in NSF WWT standards.

Task Group Roster:

Members		
Name	Company	Interest Category
Jim Bell	Bio-Microbics, Inc.	Industry
Steven Berkowitz	Consultant - Public Health/Regulatory	Public Health / Regulatory
Allison Blodig	Infiltrator Water Technologies, LLC	Industry
Katie Foster	NSF	User
Sara Heger	University of Minnesota	Public Health / Regulatory
Brad Hennig	NSF	User
David Jumper	Pro Flo Aerobic Systems	Industry
Jim Meyer	Norweco, Inc.	Industry
Eberhard Roeder	Florida Department of Environmental Protection	Public Health / Regulatory
Joelle Wirth	Consultant - User	User
Denise Wright	Indiana State Department of Health	Public Health / Regulatory

Observers	
Name	Company
Justin Brown	NSF
Tom Bruursema	Water Quality Association
David Dobson	Alberta Municipal Affairs - Public Safety
Kevin Harris	Keen Pump Co.
Dana Morgoch	Greyter Water Systems
Joseph Petryk	Alberta Municipal Affairs - Public Safety
Ed Schloss	Jet Inc.
Steve Shultz	FPZ, Inc.
Tim Smith	Hiblow USA, Inc.
William Snyder	Keen Pump Co.
Martin Sparkes	FujiMAC Air Pumps Ltd.



Task Group Chair Report

Observers

Mike Vernon	Pro Flo Aerobic Systems
Steve Williams	NSF

Meetings held since last JC meeting:

The task group held 3 meetings on [8/1/23](#), [12/5/23](#), and [1/18/24](#).

Summary of Task Group work since last JC meeting:

See meeting summaries link above.

1. The Alternate aerator removal language

The Joint Committee approval ballot had received negative votes, and after adjudication, the ballot met the requirements for consensus. The language was then balloted with the Public Health Council for final approval, and that ballot received 8 affirmative votes and 6 negative votes, which did not meet the requirements for consensus. The ballot was then adjudicated and did not meet consensus requirements after that ballot closed. The process was complete with this issue having failed.

2. Issue paper WWT-2023-7 recommended removing Annex N-1 from NSF/ANSI 40 to alleviate concerns that the language was too stringent and preventing acceptable systems from achieving certification. A motion was approved at the annual Joint Committee meeting to send a ballot removing the annex. That ballot did not meet consensus requirements after adjudication, and the issue proponents chose to work to revise the language instead. A subtask group was formed to focus on the annex, and the attached language was reviewed by the subtask group, who deemed it ready for straw ballot with the WWT Task Group on Scaling.

3. The WWT-2023-7 straw ballot received 4 affirmative votes and 2 negative votes. The group reviewed the comments received on the ballot. D. Wright expressed concerns that language changes in N-1.1 could reduce consistency in scaling between certification bodies, as well as concern that requiring engineer-signed drawings was not rigorous enough. C. Bishop responded that currently the standard does not require engineer review, so the proposed language would be more rigorous. D. Wright added that there were concerns that products installed in the field varied largely from the approved scaling. C. Bishop suggested that those changes would likely be better addressed in a separate issue paper and placed in the design review section, not the general section that was being discussed now. He added that he'd like to see D. Wright and J. Wirth draft language to address their concerns. D. Wright and S. Williams expressed concerns that the last paragraph of N-1.1 was very open ended for interpretation by the certifier. There was discussion of adding more parameters to better define what a limited testing program should contain. S. Berkowitz added that there needed to be clearer language about what constituted scaling and what would actually be a model change. C. Bishop stated that the listing could include information on scaling.

4. Action Items for next meeting:

- a. D. Wright / J. Wirth to draft language addressing their concerns with 40i59r1 language.
- b. Discuss WWT-2023-4 - statement for report issue paper when the issue proponent is able to attend a meeting.



Task Group Chair Report

Joint Committee on Wastewater Technology Task Group on Standard Improvement: Harmonization and Simplification

Co-Chairs: Joelle Wirth, Consultant – User & Roxanne Groover, FOWA

Task Group Charge:

To review current language in NSF WWT standards to identify redundancy and conflicting statements and develop common language to harmonize the standards.

Task Group Roster:

Members		
Name	Company	Interest Category
Dick Bachelder	Infiltrator Water Technologies, LLC	Industry
Colin Bishop	Anua	Industry
Nicholas Noble	Orenco Systems, Inc.	Industry
Eberhard Roeder	Florida Department of Environmental Protection	Public Health / Regulatory
Chris Thompson	Greyter Water Systems	General Interest

Observers	
Name	Company
Adrian Aspenson	NSF
Derrick Caruthers	Delaware Department of Natural Resources and Env.
Derek DeLand	NSF
Brad Hennig	NSF

Meetings held since last JC meeting:

The task group held 1 meeting on 8-13-2023.

Summary of Task Group work since last JC meeting:

No update provided. [Agenda](#) from 8-13-2023 meeting.



TAB 4

- Issue Papers

ISSUE PAPER

NSF standard(s) impacted: NSF/ANSI 40

Purpose and background:

Provide a one or two sentence statement explaining the purpose of your recommendation. Also please provide a brief background statement indicating the cause and nature of concern, the impacts identified relevant to public health, public understanding, etc., and any other reason why the issue should be considered by the Committee. Reference as appropriate any specific section(s) of the standard(s) that are related to the issue.

Users and Regulators need to be able to verify that the unit being sold is in fact the unit tested as well as BOD loading during test. $\text{average flow}/1000000 \times \text{average influent BOD} \times 8.34 = \text{actual BOD loading during test}$ need to be published.

Recommendation:

Clearly state what action is needed: e.g., recommended changes to the standard(s) including the current text of the relevant section(s) indicating deletions by use of ~~strike-out~~ and additions by highlighting or underlining; e.g., reference of the issue to a Task Group for detailed consideration, etc.

An Outline of required report that requires actual BOD loading during test, discussion needed. Additionally some way of verification of tested unit vs unit being sold must be made available without manufacturer holding the key to verification.

Item #: WWT-2024-2
(For NSF internal use)

ISSUE PAPER



Supplementary materials (photographs, diagrams, reports, etc.):

If not provided electronically, the submitter will be responsible to have sufficient copies to distribute to committee members.

I hereby grant NSF the nonexclusive, royalty free rights, including nonexclusive, royalty free rights in copyright; in this item and I understand that I acquire no rights in any publication of NSF in which this item in this or another similar or analogous form is used.

Name:* John Blount

Company: Civil Solutions

Telephone: 713-600-1105 Email: johnblount@ecivilsolutions.com

Submission date: 03/13/2024

Please submit to: Joint Committee Secretariat or to standards@nsf.org

**Type written name will suffice as signature*

Item #: WWT-2024-2

(For NSF internal use)

ISSUE PAPER

NSF standard(s) impacted: 40,245,350

Purpose and background:

Provide a one or two sentence statement explaining the purpose of your recommendation. Also please provide a brief background statement indicating the cause and nature of concern, the impacts identified relevant to public health, public understanding, etc., and any other reason why the issue should be considered by the Committee. Reference as appropriate any specific section(s) of the standard(s) that are related to the issue.

At the 2023 JC Meeting Issue Paper WWT-2023-7 was discussed involving the testing of blowers under Stds. 40, 245 and 350. From this meeting a motion was made to have the JC vote on removing the language in Std. 40 Section 8.1.8, Std. 245 Section 8.1.8 to 8.1.10 and Std. 350 Section 5.11, 8.1.1.8 and 8.2.1.8. NSF JC Ballot 40i56r1 was sent out for ballot and passed with 17 Affirmative, 2 Negative and 4 Abstained votes. This ballot was sent to the PHC for confirmation where it received 6 negative votes. The comments from the PHC indicated that they felt this issue needed to go back to the JC for further discussion. This Issue Paper is being presented to the JC to fulfill the requests of the PHC.

Recommendation:

*Clearly state what action is needed: e.g., recommended changes to the standard(s) including the current text of the relevant section(s) indicating deletions by use of ~~strike-out~~ and additions by **highlighting** or underlining; e.g., reference of the issue to a Task Group for detailed consideration, etc.*

At the JC meeting last year there were two options for resolving this issue that were presented. One was to expedite this issue through a special Task Group that would quickly resolve the issues with blower testing. This would require NSF to put the blower testing on hold until this was accomplished. The second approach was to eliminate the language as the blower testing as it is not needed as part of these Standards. If the JC decides to keep the language it is essential that this Task Group be expedited. Also there is a lot of confusion with the Scale Up TG assigning two separate SubTask Groups to deal with this issue and the issue of Scale Up. All of this is related and should be discussed together in one expedited Task Group.

Item #: WWT-2024-3

(For NSF internal use)

ISSUE PAPER

Supplementary materials (photographs, diagrams, reports, etc.):

If not provided electronically, the submitter will be responsible to have sufficient copies to distribute to committee members.

The PHC requested additional information on the issues with Blower testing and the attached document was shared with the PHC.

I hereby grant NSF the nonexclusive, royalty free rights, including nonexclusive, royalty free rights in copyright; in this item and I understand that I acquire no rights in any publication of NSF in which this item in this or another similar or analogous form is used.

Name:* Jim Bell

Company: BioMicrobics, Inc.

Telephone: 913-449-7505 Email: jbell@biomicrobics.com

Submission date: 03/25/2024

Please submit to: Joint Committee Secretariat or to standards@nsf.org

**Type written name will suffice as signature*

Item #: WWT-2024-3

(For NSF internal use)

General Response to CPHC Negative Votes on the Aerator Testing Ballot 40i56r1

We are asking that a consideration of changing the negative ballots be given based on more specific explanation of the problems Industry has had with NSF over the testing of blowers for Aerobic Treatment Units. The first issue Industry had with NSF was in regard to what exactly NSF would be testing for with the blowers. Section 8.1.8 of ANSI/NSF 40 states:

8.1.8 Prior to initiation of design loading, the air delivery component (if one is utilized)—either air compressor or blower—shall be connected to the system and run for a minimum of four hours. Air pressure shall be measured by a pressure gauge installed near the exhaust port of the air delivery component and that reading recorded. Then the air compressor or blower component shall be disconnected from the system and the air flow measured at the system pressure and recorded.

Based on the language from Section 8.1.8 it was assumed that NSF would only be testing the one point for each of the blowers that were submitted for testing. Instead NSF decided that it was necessary to test the entire range of the blower curve in the testing of the blowers. In addition NSF also made the decision to test blowers with multiple voltages at each voltage. This requires properly wiring of the blower motor to assure that the blower is operating at the correct speed for the voltage input. Industry also feels that it would have been appropriate for NSF to provide information on how the blowers were being tested so that the certified manufacturer could share this testing protocol with the blower manufacturer to assure that the blower is tested in the correct manner for that type of blower. NSF did not provide an information on the testing protocol for the blowers it was testing, so there was no way to determine if the correct measurements were being taken.

When NSF provided data on the blower testing back to the certified manufacturers the data was very confusing. As an example for BioMicrobics there was a test on Blower 1 (the name of the blower manufacturer has been removed as a means of keeping this confidential). Looking at this test shows that the measured back pressure from the aeration system for this technology was 0.728 Psi, but the flow measurements following this show that the blower was tested at much higher pressures ranging from 1.156 Psi to 1.252 Psi. This blower is a regenerative blower that is very sensitive to higher pressures which would explain the very low air flow measurements. Another example was for Blower 2 which was tested twice with no explanation for the two tests. Test 1 shows very low air flow measurements while Test 2 shows higher flow measurements. This data was plotted and is shown graphically in the Blower 2 Comparison. Based on this type of testing data from NSF, BioMicrobics asked for a meeting with NSF the day before the Wastewater Joint Committee (JC) meeting. BioMicrobics specifically asked to speak with someone who was familiar with the testing who could explain the discrepancies as shown on the examples above. Attending this meeting from NSF were Katlin Rinke, Katie Foster and Justin Brown. BioMicrobics was told that no one from NSF Engineering who was familiar with the testing would be attending the meeting. BioMicrobics presented the discrepancies as noted above and the NSF representatives could not provide any information to explain why. NSF did make copies of the tests and said they would be getting back to BioMicrobics, but to date nothing has been received and no explanations given on the problems with the blower testing.

At the JC meeting Industry explained the problems with the blower testing and asked if NSF was willing to halt all blower testing until some of these problems were worked out. NSF was not willing to stop the blower testing, so Industry was forced to make a motion to remove the blower testing from the Standards to resolve the problems with blower testing. It was also stated that some certified blower manufacturers had received correspondence from NSF indicating they could no longer use certain blowers.

Industry feels that we should be able to rely on the blower manufacturers' curves in selecting other blowers to use as options to the blower used during the NSF testing of the aeration treatment system under the NSF Standard. The recent pandemic has demonstrated that different blower options are necessary to address supply chain issues to provide products to our customers. Based on the test data that has been supplied to certified manufacturers by NSF, the industry does not think that NSF has adequately researched the correct methods of blower testing based on industry standards or consulted with experts on blower testing. By relying on the current NSF methods of testing blowers, certified manufactures have had blowers decertified. As an example BioMicrobics sent test data from NSF to a blower manufacturer which showed that the blower tested by NSF produced only 40% of the air as compared to the blower curve. The blower manufacturer questioned the testing methods as their testing per a recognized ISO Standard showed the blower to perform similar to the blower curve. Industry is concerned the blowers will be decertified based on testing that is not appropriate for the blower type.

Based on the information provided above, we respectfully request that you reconsider changing your negative vote to correct the blower testing problems which have resulted from the testing requirement being added to the NSF wastewater standards.



General Information

Standard NSF/ANSI 40

Test Description: Air Measurement Testing against the MicroFast Series

Trade Designation/Model Number: MicroFast **Blower 1**

Sample ID: S-0001962240

Description: MicroFast Series

Sampled Date: 10-Nov-2022

Received Date: 10-Nov-2022

Air Pressure (Connected to the system): 0.728 Psi

Run time prior to flow measurements: >240 min.

Measured Pressure on test sample: 0.728 Psi

Flow Rate at Measured Pressure on Sample: 181.59 Psi

Flow curve point 1: 174.64 Lpm @ 1.156 Psi

Flow curve point 2: 157.23 Lpm @ 1.163 Psi

Flow curve point 3: 139.80 Lpm @ 1.184 Psi

Flow curve point 4: 122.26 Lpm @ 1.186 Psi

Flow curve point 5: 104.78 Lpm @ 1.167 Psi

Flow curve point 6: 87.36 Lpm @ 1.168 Psi

Flow curve point 7: 69.81 Lpm @ 1.174 Psi

Flow curve point 8: 52.38 Lpm @ 1.175 Psi

Flow curve point 9: 34.95 Lpm @ 1.218 Psi

Flow curve point 10: 17.44 Lpm @ 1.252 Psi

Pump Curve Result: Complete



General Information

Standard NSF/ANSI 40

Test Description: Additional Air Measurement Testing against the MicroFast Series

Trade Designation/Model Number: MicroFast | Blower 2 Test 1

Sample ID: S-0001964961

Description: MicroFast |

Sampled Date: 22-Nov-2022

Received Date: 22-Nov-2022

Air Pressure (Connected to the system): 0.718 Psi

Run time prior to flow measurements: >240 min.

Measured Pressure on test sample: 0.718 Psi

Flow Rate at Measured Pressure on Sample: 97 Lpm

Flow curve point 1: 188 Lpm @ 0.058 Psi

Flow curve point 2: 168 Lpm @ 0.064 Psi

Flow curve point 3: 150 Lpm @ 0.133 Psi

Flow curve point 4: 132 Lpm @ 0.371 Psi

Flow curve point 5: 113 Lpm @ 0.525 Psi

Flow curve point 6: 94 Lpm @ 0.748 Psi

Flow curve point 7: 75 Lpm @ 0.934 Psi

Flow curve point 8: 56 Lpm @ 1.200 Psi

Flow curve point 9: 38 Lpm @ 1.222 Psi

Flow curve point 10: 19 Lpm @ 1.272 Psi

Pump Curve Result: Complete



General Information

Standard NSF/ANSI 40

Test Description: Additional Air Measurement Testing against the MicroFast Series

Trade Designation/Model Number: MicroFast | Blower 2 Test 2

Sample ID: S-0001964960

Description: MicroFast |

Sampled Date: 22-Nov-2022

Received Date: 22-Nov-2022

Air Pressure (Connected to the system): 0.720 Psi

Run time prior to flow measurements: >240 min.

Measured Pressure on test sample: 0.720 psi

Flow Rate at Measured Pressure on Sample: 747 Lpm

Flow curve point 1: 1336 Lpm @ 0.053 Psi

Flow curve point 2: 1203 Lpm @ 0.197 Psi

Flow curve point 3: 1069 Lpm @ 0.333 Psi

Flow curve point 4: 935 Lpm @ 0.502 Psi

Flow curve point 5: 801 Lpm @ 0.652 Psi

Flow curve point 6: 669 Lpm @ 0.808 Psi

Flow curve point 7: 527 Lpm @ 0.941 Psi

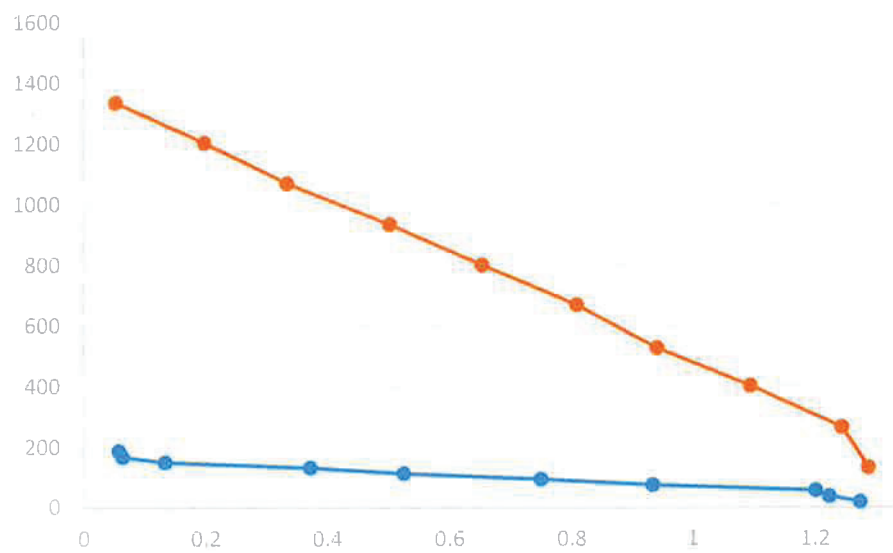
Flow curve point 8: 402 Lpm @ 1.094 Psi

Flow curve point 9: 265 Lpm @ 1.243 Psi

Flow curve point 10: 132 Lpm @ 1.286 Psi

Pump Curve Result: Complete

Blower 2 Test 1		Blower 2 Test 2	
PSI	LPM	PSI	LPM
0.058	188	0.053	1336
0.064	168	0.197	1203
0.133	150	0.333	1069
0.371	132	0.502	935
0.525	113	0.652	801
0.748	94	0.808	669
0.934	75	0.941	527
1.2	56	1.094	402
1.222	38	1.243	265
1.272	19	1.286	132



ISSUE PAPER

NSF standard(s) impacted: NSF/ANSI 245

Purpose and background:

Provide a one or two sentence statement explaining the purpose of your recommendation. Also please provide a brief background statement indicating the cause and nature of concern, the impacts identified relevant to public health, public understanding, etc., and any other reason why the issue should be considered by the Committee. Reference as appropriate any specific section(s) of the standard(s) that are related to the issue.

NSF/ANSI 245, Section 8.3.4 identifies the appropriate methods for analytical targets identified in Section 8.3.3. However, the section does not identify any alternative methods for analytical work and that flexibility is desired to accommodate different laboratory instruments, when the alternative method provide equivalent data, precision, and accuracy. Certifying bodies have multiple avenues to demonstrate equivalency such as side-by-side comparison testing or the equivalency approval of an accepted authority.

NSF would like to use an alternative ammonia analytical method, EPA 350.1. Per 40 CFR §136.3(a), Table IB-List of Approved Inorganic Test Procedures, EPA 350.1 is accepted as an alternative method to SM 4500-NH₃ when using manual distillation or gas diffusion, followed by automated phenate, salicylate, or other substituted phenols in Berthelot reaction-based methods. Because the equivalency is accepted by US regulatory agencies for the analysis of contaminants in surface waters, sewage, and drinking water, NSF proposes to add EPA 350.1 for ammonia analysis to Section 8.3.4.



Recommendation:

Clearly state what action is needed: e.g., recommended changes to the standard(s) including the current text of the relevant section(s) indicating deletions by use of ~~strike-out~~ and additions by highlighting or underlining; e.g., reference of the issue to a Task Group for detailed consideration, etc.

8.3.4 Analytical methods

The appropriate methods in *Standard Methods*⁴ shall be used to complete the analyses indicated in Section 8.3.3. For aqueous ammonia analysis, EPA 350.1 is an acceptable alternative.

8.3.5 Pressure and flow

-
-
-

Item #: WWT-2024-4
(For NSF internal use)

Supplementary materials (photographs, diagrams, reports, etc.):

If not provided electronically, the submitter will be responsible to have sufficient copies to distribute to committee members.

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Item #: WWT-2024-4

(For NSF internal use)

ISSUE PAPER

NSF standard(s) impacted: 245

Purpose and background:

Provide a one or two sentence statement explaining the purpose of your recommendation. Also please provide a brief background statement indicating the cause and nature of concern, the impacts identified relevant to public health, public understanding, etc., and any other reason why the issue should be considered by the Committee. Reference as appropriate any specific section(s) of the standard(s) that are related to the issue.

The purpose of the issue paper is to have the constituent values of the Total Nitrogen to be included in the Executive Summary of the Report.

It is currently becoming a concern in many STATE and TERRITORIAL regulatory evaluations that the 245 Summary to be considered as Nitrate reduction and not just TN reduction. This is an issue in addressing the ground water standards that require <10 mg/l Nitrate and <1 Nitrite.

Recommendation:

*Clearly state what action is needed: e.g., recommended changes to the standard(s) including the current text of the relevant section(s) indicating deletions by use of ~~strike-out~~ and additions by **highlighting** or underlining; e.g., reference of the issue to a Task Group for detailed consideration, etc.*

This action would simplify the review for Regulators and should be identified in the Executive Summary. Not all regulators review the data and some struggle to understand the information. By adding the data in the Executive Summary would insure the correct evaluation.

Item #: WWT-2024-5

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ISSUE PAPER

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Item #: WWT-2024-5

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ISSUE PAPER

NSF standard(s) impacted: NSF/ANSI 350

Purpose and background:

Provide a one or two sentence statement explaining the purpose of your recommendation. Also please provide a brief background statement indicating the cause and nature of concern, the impacts identified relevant to public health, public understanding, etc., and any other reason why the issue should be considered by the Committee. Reference as appropriate any specific section(s) of the standard(s) that are related to the issue.

This issue paper is to propose the removal of the abbreviations table in Section 2.1 of NSF/ANSI 350. Last year, NSF standards began to be published with an added abbreviations table on page iv of the foreword of the document. Since this is not a part of the standard, abbreviations can be added or removed as the body of the standard is modified. The abbreviations table in Section 2.1 contains duplicate abbreviations of those already in the foreword. The removal of this section will not change the section numbers of any other sections, as it is listed after the normative references in Section 2. I checked the other WWT standards, and none of them include this same table.

Recommendation:

Clearly state what action is needed: e.g., recommended changes to the standard(s) including the current text of the relevant section(s) indicating deletions by use of ~~strike-out~~ and additions by highlighting or underlining; e.g., reference of the issue to a Task Group for detailed consideration, etc.

Remove Section 2.1 from NSF/ANSI 350.

Item #: WWT-2024-1

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See attachment.

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Item #: WWT-2024-1

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Section to be removed:

2.1 Abbreviations

Common abbreviation	Meaning
°C	degrees Celsius
CFU	colony forming unit
d, mo	day(s), month(s)
dBA	decibel A-weighting
°F	degrees Fahrenheit
ft	foot / feet
g	gram(s)
gal	gallon(s)
h	hour(s)
in	inch(es)
kg	kilogram(s)
L	liter(s)
lb	pound(s)
m	meter(s)
mg	milligram(s)
mL	milliliter(s)
mm	millimeter(s)
MPN	most probable number
NTU	Nephelometric Turbidity Unit
oz	ounce(s)
SU	standard unit(s)
wk	week(s)

Abbreviations table in foreword:

Abbreviations

The following table is provided as a reference for unit abbreviations for common forms of measurement used within NSF documents.

time	second	s
	minute	min
	hour	h
	day	d
	week	wk
	month	mo
	year	yr

length	inch	in
	foot	ft
	yard	yd
	micrometer	μm
	nanometer	nm
	millimeter	mm
	centimeter	cm
	meter	m
	kilometer	km
liquid measure	milliliter	mL
	liter	L
	liters per day	LPD
	liters per minute	LPM
	ounce	oz
	pint	pt
	quart	qt
	gallon	gal
	gallons per minute	GPM
	gallons per day	GPD
weight	microgram	μg
	picogram	pg
	nanogram	ng
	milligram	mg
	centigram	cg
	gram	g
	kilogram	kg
	pounds	lb
	tons	t
	metric tons	mt
miscellaneous	cup	c
	colony forming unit	CFU
	A-weighted decibel	dBA
	kilowatt-hour	kWh
	Most probable number	MPN
	Nephelometric turbidity unit	NTU
	Standard unit	SU

ISSUE PAPER

NSF standard(s) impacted: 40, 41, 46, 245, 350, 360, 385, 418, 437

Purpose and background:

Provide a one or two sentence statement explaining the purpose of your recommendation. Also please provide a brief background statement indicating the cause and nature of concern, the impacts identified relevant to public health, public understanding, etc., and any other reason why the issue should be considered by the Committee. Reference as appropriate any specific section(s) of the standard(s) that are related to the issue.

In an effort to align our publications with the ISO/IEC Directives, Part 2, 2016 Principles and rules for the structure and drafting of ISO and IEC documents, NSF Standards is going through all of our publications to ensure the correct usage of words to indicate expressions of requirements, recommendations, permissions, and possibility and capability.

Requirements: "shall" or "shall not"; avoid "must," "will," "may not," "can not," "do not," "will not."

Recommendations: "should" or "should not."

Permissions: "may" or "may not"; avoid "is possible," "can," "might."

Possibility and Capability: "can" or "cannot"; avoid "may," "may not."

An issue paper will be created for each standard and balloted as it is convenient.

Recommendation:

Clearly state what action is needed: e.g., recommended changes to the standard(s) including the current text of the relevant section(s) indicating deletions by use of ~~strike-out~~ and additions by highlighting or underlining; e.g., reference of the issue to a Task Group for detailed consideration, etc.

Item #: WWT-2024-6

(For NSF internal use)

Supplementary materials (photographs, diagrams, reports, etc.):

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See <www.iso.org/sites/directives/current/part2/index.xhtml#_idTextAnchor078>

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Item #: WWT-2024-6

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TAB 5

- Information Papers



INFORMATION PAPER

An information paper is a document to share information, research, or other news that would be of interest to the relevant Joint Committee. Anyone can submit an information paper, excluding the Joint Committee Chair or Secretariat. An information paper does not go to ballot but may be motioned to be resubmitted as an issue paper if appropriate. The Joint Committee Chair will determine which of the following options is most appropriate:

- *the information paper requires more work from the submitter before distribution;*
- *the information paper may be circulated to the Joint Committee for review; or*
- *the information paper will be added to the agenda of the next face-to-face meeting.*

Subject: Is NSF 350 specific enough in defining appropriate end uses of treated effluent?

Brief statement of information provided:

Name:* _____

Company: _____

Telephone: _____ Email: _____

Submission date: _____

Please submit to: Joint Committee Secretariat or to standards@nsf.org

**Type written name will suffice as signature*



TAB 6

- New Business
- Notes:



TAB 7

- Committee Administrative Items
- Notes: