Stakeholder Meeting

PFOA & PFOS New MCLs and GWQS and Related Rules

Implementation Through Regulatory Programs

New Jersey Department of Environmental Protection

Expectations for Today

PURPOSE: To discuss potential rule amendments regarding new Maximum Contaminant Levels (MCLs) and GWQS for Perfluorooctanoic Acid (PFOA) and Perfluorooctanesulfonic acid (PFOS).

- Invited participants
  - Environmental Groups
  - Laboratories
  - Water Systems
  - Dischargers
  - Work groups
  - LSRPs

Agenda

- Overview of PFOA and PFOS
- Background - Drinking Water Quality Institute Recommendations
- Drinking Water Standards
- Ground Water Quality Standards
- List of Hazardous Substances
- Discussion
- Next Steps

Perfluorooctanoic acid (PFOA) & Perfluorooctanesulfonic acid (PFOS)

- What are these contaminants:
  - Part of group of PFAS (including PFNA)
  - Industrial and commercial and consumer good uses: repel water and highly resistant to temperature
  - Phased out in US by major manufacturers, but persistent and mobile
- Health Effects:
  - Bioaccumulates with continued exposure and remains in the body for years after exposure ends.
  - Non-cancer: delayed early growth and development; decrease vaccine response; increased childhood infections (PFOS), increased blood cholesterol and changed liver function
  - PFOA in drinking water is linked to kidney and testicular cancer in humans; PFOS causes liver and thyroid tumors in animals

Perfluorooctanoic acid (PFOA) & Perfluorooctanesulfonic acid (PFOS)

- Occurrence:
  - Detected in Public and private water systems
  - CDC found PFOA/PFOS and PFNA in the blood of virtually everyone in the country
  - Exposure from even low levels in drinking water overwhelms other sources

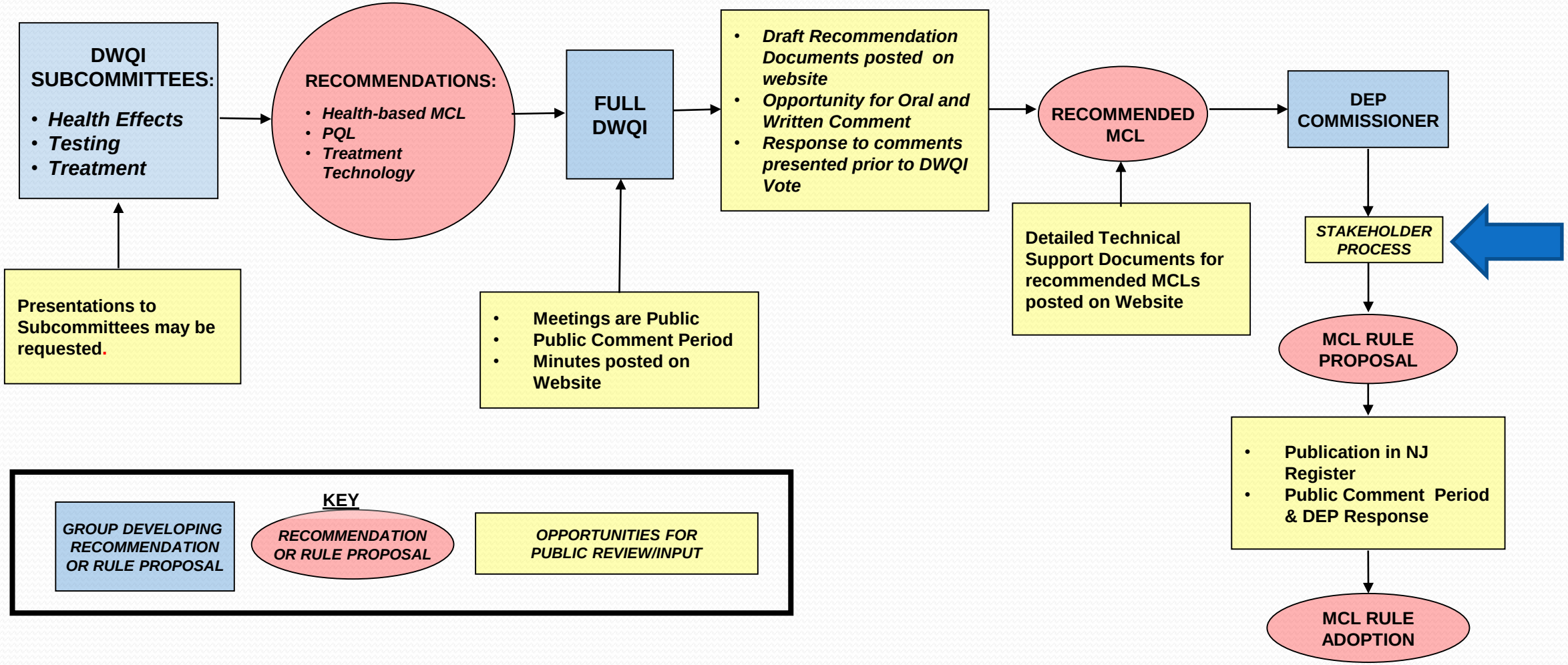
- PFOA Detected in five times more frequently in Unregulated Contaminant Monitoring Rule 3 (UCMR3) monitoring in NJ (10%) than nationally (1.93%)
  - 87 detections in 19/175 NJ public water systems sampled
- PFOS Detected more frequently in UCMR3 monitoring in NJ (3.4%) than nationally (1.7%)
  - 12 detections in 6/175 NJ public water systems sampled

Drinking Water Quality Institute (DWQI)

- Established under SDWA and charged with recommending MCLs
- Testing, Treatment & Health Subcommittees
- Tasked with recommending MCLs for PFOA & PFOS
- This is following work that was done on PFNA.
- Meeting information including agendas at:

  http://www.nj.gov/dep/watersupply/g_boards_dwqi.html

PUBLIC PARTICIPATION IN MCL DEVELOPMENT PROCESS



DWQI Recommendations

- Health Effects, Analytical Capability, and Treatment Capability considered in development of MCL
  - Health-Based Level intended to be protective of chronic exposure through drinking water.
  - Practical Quantitation Level (PQL) - Minimum concentration to which the contaminant can be reliably quantified within acceptable limits of uncertainty.
  - Determine best available treatment technologies for removal of the hazardous contaminants from drinking water.
- Detailed information in Subcommittee Reports available at http://www.nj.gov/dep/watersupply/g_boards_dwqi.html
- Opportunity for comment during DWQI process.

DWQI Recommendations

- DWQI Health Based Levels:
  - PFOA = 14 ng/L
  - PFOS = 13 ng/L
- DWQI PQLs:
  - PFOA = 6 ng/L
  - PFOS = 4.2 ng/L
- Can be removed to levels below health-based levels.
- Final recommendation based on health-based level:
  - **PFOA DWQI Recommended MCL (2017) = 14 ng/L (ppt)**
  - **PFOS DWQI Recommended MCL (2018) = 13 ng/L (ppt)**
- Commissioner accepted DWQI recommendations for PFOA in 2017 and PFOS in 2018

History

- A NJ MCL for PFNA was adopted on September 4, 2018
  - Monitoring starting in 2019 for systems <= 10,000 & NTNC water systems.
  - Monitoring starting in 2020 for systems >10,000.
- Stakeholder meeting for PFOA done on December 19, 2017
  - Discussed implementation of MCL for PFOA and establishment of monitoring requirements for PWTA
- Today's discussions will focus on both PFOA & PFOS

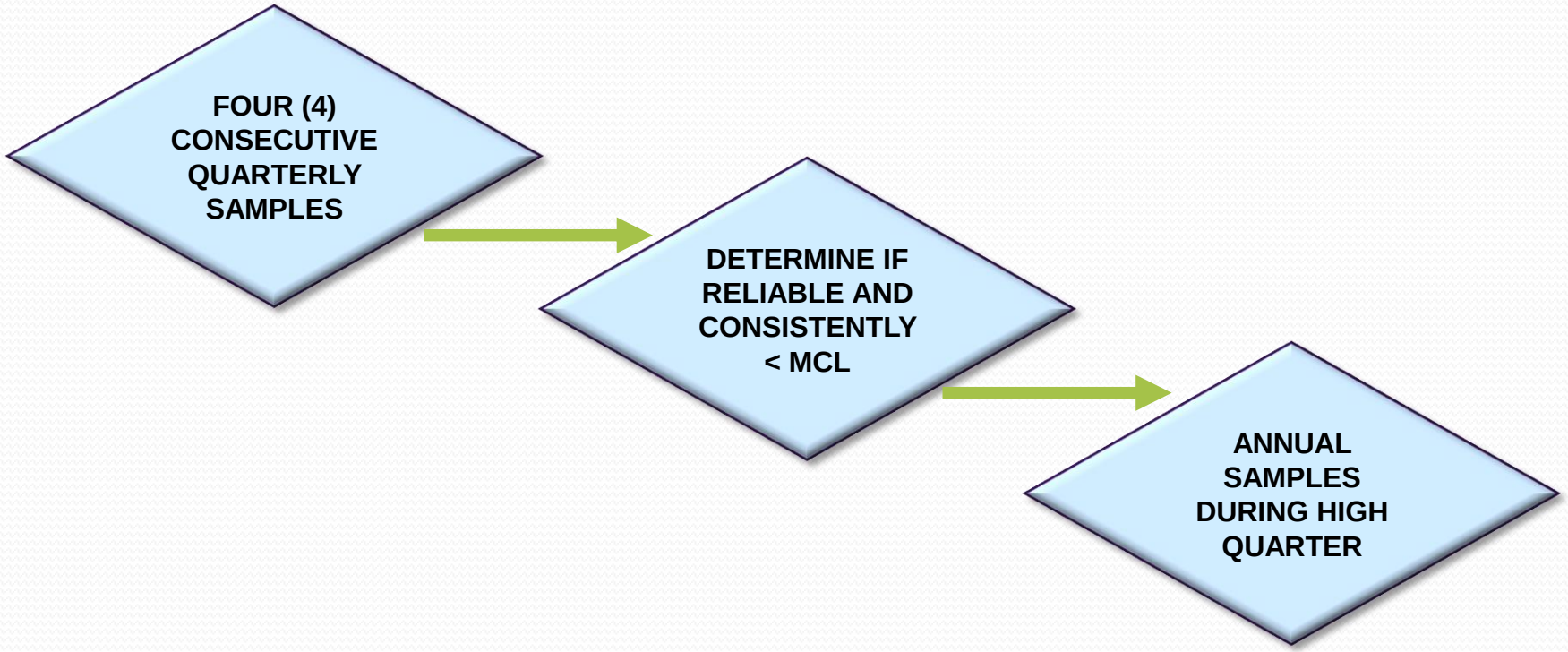
MCLs for PFOA and PFOS

- New MCLs for PFOA and PFOS based on recommendations from the DWQI
  - Safe Drinking Water Act (SDWA) rules, N.J.A.C. 7:10
- New testing for private well owners based on the DWQI recommended MCL and new occurrence data.
  - Private Well Testing Act (PWTA) rules, N.J.A.C. 7:9E

Water Systems: MCL Monitoring Requirement

- Monitoring required at:
  - All Community Water Systems
  - All Non-Transient Non-Community Water Systems
  - Private wells under PWTA
- Monitoring not required this time at:
  - Transient Water Systems

Water Systems:
VOC Monitoring Framework



Water Systems:
MCL Monitoring Framework

- If three consecutive annual samples have no detections system can be placed on triennial monitoring
- Monitoring period in the three year cycle is determined by population and type of water system (N.J.A.C. 7:10-5.2(a)7)

Analytical Method 537

- Used to test for PFOA & PFOS in potable water
- Also picks up other PFAS (including PFNA)
- 16 laboratories certified by New Jersey OQA

QUESTIONS?

When should monitoring requirements take effect?

Should requirements start mid-year or first quarter?

Should NJDEP consider data submitted voluntarily prior to adoption in determining monitoring frequency?

Are there concerns regarding lab capacity in New Jersey for MCL monitoring requirements?

QUESTIONS?

Are there any requirements that should be changed regarding the design of treatment for PFOA or PFOS in Subchapter 11?

What is the approximate price that a laboratory should charge for adding PFNA, PFOA, and PFOS to PWTA?

Are there concerns regarding lab capacity in New Jersey for PWTA requirements?

When should testing requirements under PWTA take effect?

New Jersey Ground Water Quality Standards (GWQS), N.J.A.C. 7:9C

Sandra Cohen, GWQS Rule Manager
Bureau of Environmental Analysis, Restoration and Standards
Division of Water Monitoring and Standards

GWQS Overview

Use	Criteria

• Class I: Ground Water of Special Ecological Significance
  • Class I-PL (Pinelands Protection Area):
  • Class I-A and Class I-PL (Pinelands Preservation Area):
	• "Background water quality"
	• "Natural quality"

Class II: Ground Water for Potable Water Supply	• Specific • Interim Specific • Interim Generic
Class III: Ground Water for Uses Other Than Potable Water Supply	Site-specific (implementing program)

Class II Ground Water Quality Standards (Specific and Interim Specific)

- Designated Use: Ground Water for Potable Water Supply
- Health-based criterion:
  - Health-based level for promulgated MCL; or
  - Derived from best available toxicological information
- PQL = lowest concentration reliably achieved during routine laboratory operations
- **GWQS (Constituent Standard) = higher of the ground water quality criterion and PQL**

History of GWQS for PFAS

- Interim Specific GWQS for PFNA was established on November 25, 2015
- Replaced with Specific GWQS for PFNA through rulemaking in 2018 that also added PFNA to the DPHS List of Hazardous Substances
- Revised to be consistent with PFNA MCL

Interim Specific GWQS for PFOA, PFOS

- Division of Science and Research (DSR) developed draft interim specific ground water quality criteria and draft interim PQLs
  - Posted **January 17, 2019** on DSR website along with technical support documents on DSR's website:

    https://www.nj.gov/dep/dsr/ISGWQC_Public_Comment_PFOS_PFOA.html

Constituent	Draft Interim Criteria	Draft Interim PQL
PFOA	0.01 µg/L = 10 ng/L	0.006 µg/L = 6 ng/L
PFOS	0.01 µg/L = 10 ng/L	0.004 µg/L = 4 ng/L

Interim Specific GWQS for PFOA, PFOS (cont'd)

- DSR Requests Public Input on:
  - Additional data or technical information related to health effects of PFOA or PFOS that should be considered in the development of the interim ground water quality criteria
  - Additional data or technical information concerning analytical methods to detect PFOA and PFOS that would affect the selected draft interim PQLs
- DSR publishes summary of comments and responses along with an explanation of any revisions.

Interim Specific GWQS for PFOA, PFOS (cont'd)

- NJDEP establishes new interim specific GWQS
  - DWMS adds PFOA, PFOS to Table of Interim Criteria on the GWQS Program website at https://www.state.nj.us/dep/wms/bears/gwqs.htm.
  - Effective upon posting and until specific GWQS are promulgated via rulemaking.

Specific GWQS for PFOA, PFOS

- Promulgated through rulemaking
- Criterion = health-based level of MCL
- Standard = higher of criterion and PQL

Constituent	Criterion	PQL	Constituent Standard
PFOA	0.014 µg/L (14 ng/L)	0.006 µg/L (6 ng/L)	0.014 µg/L (14 ng/L)
PFOS	0.013 µg/L (13 ng/L)	0.0042 µg/L (4.2 ng/L)	0.013 µg/L (13 ng/L)

Who does this apply to?

- Specific and interim specific GWQS are implemented primarily through the New Jersey Pollutant Discharge Elimination System (NJPDES) discharge to ground water permit (DGW) program and the Site Remediation Program.
  - GWQS = Minimum remediation standard for sites with contaminated ground water

New Jersey Discharge Pollutant Elimination System (NJPDES) rules, N.J.A.C 7:14A

Ron Bannister, P.G.
Section Chief - Ground Water & Storm Water Permitting
Bureau of Nonpoint Pollution Control
Division of Water Quality

New Jersey Discharge Pollutant Elimination System (NJPDES)

- In accordance with N.J.A.C. 7:14A-7.6, all DGW permits must ensure the discharge does not contravene the Ground Water Quality Standards.
- Upon establishment of interim specific GWQS or adoption of amendments to the GWQS rules, the NJDEP will begin requiring monitoring for PFOA and/or PFOS at targeted facilities.

Implementation of GWQS in NJPDES-DGW Permits

- Identify existing targeted DGW facilities
  - Facilities with operations or industrial/manufacturing processes that generate wastewater discharges that may contain PFOA and/or PFOS
    - Military Bases (firefighting foam)
    - Carpet Manufacturers
  - Operating Landfills
  - Municipal Wastewater Treatment Plants that may accept wastewater from users that generate wastewater that may contain PFOA and/or PFOS
  - Approximately 58 existing targeted facilities have been identified

Implementation of GWQS in NJPDES-DGW Permits

- Requirements for Monitoring for PFOA and PFOS for existing targeted facilities will be implemented upon renewal of each NJPDES-DGW permit.
- Monitoring at newly permitted facilities would be required if PFOA and/or PFOS is present in their pollutant characterization submitted with the NJPDES-DGW permit application.

Implementation of GWQS in NJPDES-DGW Permits

- Amendments to the NJPDES Rules at N.J.A.C. 7:14A-4 Appendix A, and 7.9
  - Add to Appendix A, a Table VI: **Toxic Pollutants and Hazardous Substances Required to be Identified by Existing Discharges if Expected to be Present** which will include PFOA and PFOS.
  - Add a section (T) to the Pollutant Characterization requirements for NJPDES-DGW permit applications at N.J.A.C. 7:14A-7.9(d) Titled: per- and polyfluoroalkyl substances (PFAS) which will include PFOA and PFOS.

Implementation of GWQS in NJPDES-DGW Permits

- Initial frequency of monitoring in the permit would be annually consistent with existing monitoring requirements for Volatile Organic Compounds.
- Monitoring results that indicate the presence of PFAS above the GWQS would require the permittee to provide written notification, by certified mail, to the permitting Bureau within seven (7) days of receiving the analytical results, in addition to reporting the analytical result on a DMR.
- After reviewing the analytical results, NJDEP may require the permittee to:
  - Increase the monitoring frequency for the substance in question;
  - Impose groundwater quality monitoring for that substance;
  - Locate and remove the source of the substance from the waste stream;
  - Develop and implement measures to ensure that contamination of the system will not occur.

Non-Potable Analytical Methods

- Modified EPA Method 537
- 11 laboratories certified by New Jersey OQA
  - All are out of state

QUESTIONS?

Are there additional considerations that NJDEP should take into account with regards to new GWQS for PFOA and PFOS?

Any considerations for requiring monitoring for PFOA and/or PFOS in NJPDES-DWG permits?

Are there additional considerations with regards to analytical methods for PFOA and PFOS in non-potable water?

Hazardous Substance Discharge List

Addition of PFOA and PFOS to List of Hazardous Substances

- On January 16, 2018, PFNA was added to the Discharges of Petroleum and Other Hazardous Substances (DPHS) rules List of Hazardous Substances (found at N.J.A.C. 7:1E Appendix A) as part of the amendments to the GWQS rules.

- NJDEP is considering adding PFOA and PFOS to the list alongside PFNA, as part of rule making for MCLs and GWQS

Implementation

- Listing PFOA and PFOS as hazardous substances would regulated these substances under the requirements of the Spill Compensation and Control Act:
  - Provides a fund for persons damaged by a discharge to seek reimbursement for cleanup/removal costs
  - Enables the NJDEP to utilize public remediation funding monies to cover PFOA and PFOS remediation costs and undertake cost recovery against parties responsible for the discharge
  - Owners and operators of Major Facilities are subject to discharge prevention under DPHS rules

Implementation

- Existing major facilities liable under Spill Act would have to review substances on-site.
- Capacity determination for non-major facilities to determine if newly liable.
- Detailed information on determining capacity and completing Safety Data Sheets (SDS) available online at: https://www.nj.gov/dep/enforcement/dp/dpdown.htm

QUESTIONS?

Are there additional considerations regarding the addition of PFOA and PFOS to the List of Hazardous Substances that NJDEP should take into account?

QUESTIONS?

Are there additional considerations on anything discussed today?

Next Steps

- Consider Stakeholder Feedback
- Establish ISGWQS
- Rulemaking for drinking water and groundwater standards and other related rules

Thank you for participating!