

Potable Reuse Rulemaking Public Workshop

Chapters 62-610, 62-600, 62-625, 62-550, and 62-555, F.A.C.

January 14, 2021



- Welcome and Introductions
- Presentation on Potable Reuse Rulemaking Part 1
 - Chapter 62-610, Florida Administrative Code (F.A.C.), Phase II
 - Chapter 62-600, F.A.C.
 - Chapter 62-625, F.A.C.
- Public Comment on Part 1
- Presentation on Potable Reuse Rulemaking Part 2
 - Chapter 62-550, F.A.C.
 - Chapter 62-555, F.A.C.
- Public Comment on Part 2



- Background
- Potable Reuse: Following the flow of the water
 - Pretreatment/Source Control
 - Wastewater Facility
 - Reclaimed Water Transport Indirect and Direct
 - Advanced Treatment
- Pilot Testing
- Reliability and Reporting
- Additional Rulemaking Updates
- Public Comment



Background Information



Reuse of reclaimed water

By December 31, 2020, the department shall initiate rule revisions based on the recommendations of the Potable Reuse Commission's 2020 report "Advancing Potable Reuse in Florida: Framework for the Implementation of Potable Reuse in Florida." Rules for potable reuse projects must address contaminants of emerging concern and meet or exceed federal and state drinking water quality standards and other applicable water quality standards. Reclaimed water is deemed a water source for public water supply systems.

[Section 403.064, Florida Statutes (F.S.)]



Rulemaking for Potable Reuse includes:

- Definitions (updated and new)
- Pretreatment/source control (enhanced)
- Wastewater treatment facility requirements (enhanced)
- Indirect potable reuse
 - Ground water (new)
 - Surface water (enhanced)
- Direct potable reuse (new)
- Advanced treated water (new)
- Pilot testing (enhanced)
- Full-scale operation demonstration (new)



- Types of Reuse of Reclaimed Water
 - Nonpotable Reuse
 - "De facto," or unplanned, potable reuse
 - Planned potable reuse
 - Direct
 - Indirect
- The augmentation of a drinking water supply with advanced treated water from a domestic wastewater treatment facility, which consists of direct potable reuse and indirect potable reuse

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Potable Reuse – 3

Multi-barrier (Layered) Protection

- Collection System
 - Enhanced source control program
 - Early warning system for spill/slug control
- Wastewater Treatment Facility
 - Advanced waste treatment and disinfection
 - Diversion of off-spec reclaimed water
- Advanced Treated Water
 - Control of unregulated wastewater constituents of emerging concern
 - Additional removal of pathogens
 - Treat, control or manage chemical peaks (rapid, short-lived increases in concentration) passing-through advanced treated water facility



Potable reuse systems include:

- The introduction of advanced treated reclaimed water to a drinking water treatment facility or potable water supply distribution system
- Discharges to Class I surface waters



Potable Reuse System – 2

Section 62-610.550(2)(a), F.A.C.

Potable reuse systems include:

- Discharges to surface waters directly or indirectly connected to Class I surface waters
- Discharge to G-I, F-I, or G-II ground waters as described in section 62-610.560, F.A.C., by injection of treated reclaimed water, or by rapid-rate land application systems



- Pretreatment/Source Control
- Wastewater Facility
- Discharge (indirect potable reuse)
- Advanced Treatment
- Reporting & Reliability
- Additional Rulemaking Updates



Source Control



Pretreatment/ Source Control

Section 62-610.550(2)(c), F.A.C.

All potable reuse projects shall be designed and operated to comply with, at a minimum:

- 2. comprehensive pretreatment and source control program requirements in section 62-610.330(2), F.A.C.
 - Source control



Addition of "potable reuse system" to:

- Section 62-625.400, F.A.C.
- Definitions for:
 - Interference
 - Pass Through
 - Significant Industrial User



Pretreatment/ Source Control - 3

Section 62-610.330(2), F.A.C.

Potable reuse projects regulated under Part V of Chapter 62-610, F.A.C., must include:

- The pretreatment requirements in Chapter 62-625, F.A.C.
- An assessment of the fate of DEP-specified toxic contaminants
- Source investigation and monitoring of DEP-specified toxic contaminants



Pretreatment/ Source Control – 4

Section 62-610.330(2), F.A.C. (cont.)

- A local discharge limit for DEP-specified toxic contaminants
- Monitoring at influent, intermediate and compliance (treated effluent and biosolids)
- Outreach programs to industrial, commercial, and residential communities for managing and minimizing discharge of DEP-specified toxic contaminants



Pretreatment/ Source Control - 5

Section 62-610.330(2), F.A.C. (cont.)

- Maintain a current inventory of toxic chemicals and other contaminants of aquatic life and human health significance, including new chemicals resultant from new sources or changes to existing sources that may be discharged into the collections system
- Significant industrials users shall implement a sludge control program



Pretreatment/ Source Control - 6

Section 62-610.330(2), F.A.C. (cont.)

- All power-operated equipment associated with controlling and monitoring discharges to the collections system must have a continuous power source
- An early warning system with real-time monitoring shall be in place for event detection
- A continuous improvement plan for performance and reliability shall be in place



Wastewater Facility



System Size Requirements

Section 62-610.550(2)(c), F.A.C.

All potable reuse projects shall be designed and operated to comply with, at a minimum:

1. system size requirements in section 62-610.553, F.A.C.

 Reclaimed water from treatment facilities with a design average daily flow of less than 0.1 million gallons per day (mgd) shall not be used for ground water recharge or potable reuse under the provisions of Part V of this chapter



Full Treatment Requirements

Section 62-610.550(2)(c), F.A.C.

All potable reuse projects shall be designed and operated to comply with, at a minimum:

3. full treatment and disinfection requirements in section 62-610.563(3), F.A.C., prior to the reclaimed water leaving the wastewater facility



Section 62-610.563(3), F.A.C.

- Advanced waste treatment requirements as defined in section 403.086, F.S.
- High-level disinfection
- Filtration requirements described in section 62-610.563(2)(b), F.A.C.
 - Total suspended solids



Storage Requirements

Section 62-610.550(2)(c), F.A.C.

All potable reuse projects shall be designed and operated to comply with, at a minimum:

4. storage requirements in section 62-610.573, F.A.C.



"Reject" water has been updated to be referred to as "off-spec reclaimed" water

- Section 62-610.463(2), F.A.C.
- Section 62-610.568(7), F.A.C.
- Section 62-610.464, F.A.C.
- Section 62-610.573, F.A.C.



Reclaimed Water Transport



Aquifer Storage and Recovery (ASR)

Section 62-610.466(1), F.A.C.

- Aquifer Storage and Recovery (ASR) can be an effective and environmentally sound approach to provision of storage for reclaimed water for reuse systems
- ASR by itself does not constitute 'reuse'
 - It is only when the water is recovered and used for a beneficial purpose that it is considered 'reused'



Injection of reclaimed water into a subsurface formation meeting the definition for underground source of drinking water in section 62-528.200, F.A.C., shall be considered as being an ASR system for indirect potable reuse purposes.



- Potable reuse, stored reclaimed water recovered for reuse as a potable water source, is subject to the requirements of Part V of this chapter
- Injection of reclaimed water into an underground source of drinking water shall be considered potable reuse



Discharge to Surface Water

Section 62-610.554(3), F.A.C.

Discharges of reclaimed water to Class I waters, or to waters contiguous to or tributary to Class I waters shall be considered as potable reuse.



Discharge to Surface Water - 2

Section 62-610.554(4), F.A.C.

Discharge to waters contiguous to or tributary to Class I waters shall be defined as a discharge located less than or equal to four hours travel time from the point of discharge to arrival at the boundary of the Class I water.



Discharge to Surface Water – 3

Section 62-610.554(5), F.A.C.

Discharges of reclaimed water upstream of Class I waters shall be considered potable reuse only if the applicant provides an affirmative demonstration in the engineering report of the following:

- a. There is a need to supplement the supply of water in the Class I water for public water supply purposes
- b. Discharge of reclaimed water will meet part or all of the identified need to supplement the water supply



Discharge to Surface Water – 4

Section 62-610.554(6),F.A.C.

- Discharge to waters upstream of Class I waters shall be defined as a discharge located greater than four hours and less than or equal to 24 hours travel time from the point of discharge to arrival at the boundary of the Class I water
- Surface water discharges located greater than 24 hours travel time to Class I waters shall not be considered as potable reuse



Discharge to Surface Water – 5

Section 62-610.554(7), F.A.C.

If the ambient water quality in the receiving Class I water does not meet the drinking water standards, DEP shall establish alternate reclaimed water limits at the level in the receiving water.



Advanced Treatment



Advanced Treatment

Definitions

Advanced Water Treatment Facility

The treatment facility where advanced treated water is produced. The specific combination of treatment technologies employed will depend on the quality of the source water, the type of potable reuse (i.e., indirect or direct potable reuse), and the existing treatment in place.

Advanced Treated Water

Water produced from an advanced water treatment process for potable reuse applications.



Advanced Wastewater Treatment Facility

- Water receives advanced treatment at an advanced water treatment facility (AWTF):
 - Indirect potable reuse after being withdrawn from ground or surface waters
 - Direct potable reuse between the advanced waste treatment (wastewater treatment facility) and drinking water treatment
- The AWTF can come before or be combined with the drinking water treatment facility



Advanced Treated Wastewater

Section 62-610.563(3)(f), F.A.C.

- Appropriate treatment technology
 - Resiliency
 - Redundancy
 - Robustness
- Multiple barriers for control of organic compounds pollutants
 - Emerging constituents
 - Pathogens



Advanced Treated Wastewater – 2

Section 62-610.567(6)(a), F.A.C.

Delivery of reclaimed wastewater from the potable water system to the distribution system must meet the water quality requirements of Chapters 62-610, 62-550, and 62-555, F.A.C.



Advanced Treated Wastewater – 3

Section 62-610.550(2)(b), F.A.C.

Applicants shall conduct a pilot study in accordance with section 62-610.564, F.A.C.



Pilot Testing



Pilot Testing Program

Section 62-610.564, F.A.C.

- Pilot testing pilot-scale or full-scale in pilot mode – is required for all potable reuse projects
- Required to provide full treatment and disinfection [section 62-610.563(3), F.A.C.]
- Will require a wastewater permit revision



Pilot Testing Program –

Section 62-610.564(3), F.A.C.

Designed to demonstrate the ability of the selected appropriate treatment technology:

- Maximum Contaminant Levels (MCLs) and Maximum Residual Disinfectant Levels (MRDLs) and treatment techniques established in Chapter 62-550, F.A.C. for public water systems
- The pathogen requirements in section 62-550.817(2)(c), F.A.C,
- Meet the requirements of Chapter 62-610 Part V
- Identify critical control points for improved process control and treatment reliability



Section 62-610.564(4), F.A.C.

Accumulate a minimum of 12 months of data using the final treatment design



Pilot Testing Program –

Section 62-610.564(6), F.A.C.

Pilot test shall include:

- Affirmative demonstration that the treatment processes are capable of meeting full treatment and disinfection requirements, and that the resultant water will be of sufficient quality to protect public health and environmental quality
- Evaluation of constituents in the wastewater that may be difficult to remove or precursors to disinfection byproducts
- Evaluation of Enterovirus, Cryptosporidium, Giardia, and helminths heterotrophic plate count, bacteria, Legionella and turbidity to demonstrate the wastewater treatment facilities are capable of producing reclaimed water that is pathogen free



Section 62-610.564, F.A.C., (cont.)

Pilot test shall include:

- Provide a detailed plan of study to DEP for approval before initiating pilot testing program
- Advanced treatment of water that utilizes reverse osmosis and an oxidation treatment process
- Evaluate methods for treating, controlling or managing potential chemical peaks for chemical contaminants that have the potential to pass through the AWTF



Full-Scale Operation



Full-Scale Operation Section 62-610.567(9), F.A.C.

- Full-scale operation of the pilot-tested process once it has demonstrated reliability and consistency and protective of public health and the environment
- The applicant shall implement, in full-scale operation, the oxidation process as designed pursuant to section 62-610.564(8), F.A.C.
- Continuously monitor the surrogate and operational parameters established pursuant to section 62-610.564(8), F.A.C., as applicable



Full-Scale Operation – 2

Section 62-610.567(10), F.A.C.

Demonstrate:

- The removal differential of the indicator compounds
- Efficacy of the surrogate and/or operational parameters to reflect the removal differential of the indicator compounds



Pathogens Requirements

Section 62-610.550(2)(c), F.A.C.

All potable reuse projects shall be designed and operated to comply with, at a minimum:

- Overall pathogen reduction requirements in section 62-550.817(2)(c), F.A.C., where the finished water is finally introduced into the distribution system of a public water system
- A separate treatment process may be credited with no more than 6-log reduction, with at least two processes each being credited with no less than 1.0-log reduction; a single treatment process may receive log reduction credits for one or more pathogens



Reporting & Reliability



Engineering Report

Section 62-610.310(3)(e)9, F.A.C.

The engineering report shall include:

- Technical information and design criteria for potable reuse system:
 - a. Operations and unit processes operations
 - b. Maximum blending ratios of treated reclaimed water with other sources of drinking water



Engineering Report – 2

Section 62-610.310(3)(e)9, F.A.C. (cont.)

- c. Additional treatment, controls or management of potential chemical peaks (rapid, short-lived increases in concentration) for chemical contaminants that have the potential to pass through advanced treated water facilities
- d. Identified critical control points
- e. Surrogate and operational parameters
- f. Monitoring points



The engineering report shall be certified by a Florida certified professional engineer or professional geologist, as appropriate.



Engineering Report – 4

Section 62-610.310(4)(b)5, F.A.C.

- Point of discharge of reclaimed water to ground water for indirect potable reuse is at or within a five-year travel time of a public water supply well or a potable reuse supply well
- Evaluate the anticipated changes in the characteristics of the reclaimed water from the time of discharge to the time of recovery



Engineering Report – 5

Section 62-610.310(4)(b)6, F.A.C.

A plan for monitoring surrogate and operation parameters and pathogen reductions



Section 62-610.550(2)(c), F.A.C.

All potable reuse projects shall be designed and operated to comply with, at a minimum:

6. reliability and operator staffing requirements in section 62-610.567, F.A.C.



Section 62-610.567, F.A.C.

- The wastewater facility (WWF) and public water system (PWS) shall submit a joint operations plan to DEP for review
- The WWF and PWS must both demonstrate they possess financial, managerial, and technical capacity to assure compliance
- Demonstrate that all treatment processes are installed and achieve, as designed, the intended function, and can be operated by the WWF and PWS operators

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Section 62-610.567, F.A.C. (cont.)

Within 60 days after completing the initial 12 months of monitoring, the applicant shall submit a report to DEP.



Section 62-610.567, F.A.C. (cont.)

Reverse osmosis process:

 The applicant shall submit a report to DEP describing the effectiveness of the treatment, process failures, and actions taken in the event the on-going monitoring indicated that process integrity was compromised



Section 62-610.567, F.A.C. (cont.)

The applicant shall calculate what percent of results of the quarter's monitoring did not meet the surrogate and operational parameter limits established to assure proper on-going performance of the reverse osmosis and oxidation processes.



Additional Potable Reuse Requirements

Section 62-610.550(2)(c), F.A.C.

All potable reuse projects shall be designed and operated to comply with, at a minimum:

7. monitoring and operating protocol requirements in section 62-610.568, F.A.C.; and



Additional Potable Reuse Requirements – 2

Section 62-610.550(3), F.A.C.

Prior to applying for a proposed indirect potable reuse system, the applicant shall comply with the public notification requirements of section 62-610.574(4), F.A.C.



Additional Potable Reuse Requirements – 3

Section 62-610.550(4), F.A.C.

Applications proposing indirect potable reuse projects shall be submitted to both DEP and the appropriate water management district



Additional Potable Reuse Requirements – 4

Section 62-610.550(5), F.A.C.

- Any construction, modification, or operation of a ground water recharge or potable reuse system or related activity shall be in accordance with sound professional engineering practices
- Any supporting documents involving the practice of the profession of geology shall be in accordance with sound professional geological practices
- All plans of study, reports and applications for permits shall be certified by a professional engineer registered in the State of Florida except where professional engineering is not required by Chapter 471, F.S.
- Where required by Chapter 471 or 492, F.S., applicable portions of plans of study, reports, permit applications and supporting documents which are submitted to DEP for public record shall be signed and sealed by a professional engineer or professional geologist, as appropriate

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Additional Rule Updates



Additional Changes to ASR

Section 62-610.466(4), F.A.C.

ASR of reclaimed water involves the following:

- a. Injection of reclaimed water into a subsurface formation for storage
- Recovery of the stored reclaimed water for nonpotable and potable reuse at a later date



Additional Changes to ASR – 2

Section 62-610.466(4)(b)1, F.A.C.

Nonpotable reuse, stored reclaimed water recovered for reuse as a nonpotable source, is subject to the requirements of Part III of this chapter.



Additional Changes to ASR – 3

Section 62-600.440(4), F.A.C.

Addition of "aquifer storage and recovery projects" language



Section 62-610.550(1), F.A.C.

The planned use of reclaimed water to augment Class F-I, G-I, or G-II ground waters without developing or supplementing the potable water supply

De facto potable reuse



- 2

Section 62-610.550(1), F.A.C. (cont.)

Proposed ground water recharge or salinity barrier projects:

- Comply with the public notification requirements (section 62-610.574(4)(d) F.A.C.)
- Shall be submitted to both DEP and the appropriate water management district



- 3

Section 62-610.310(3)(c)9, F.A.C.

- Ground water recharge projects:
 - Injection fluids shall not exceed the total dissolved solids (TDS) concentration of the receiving ground waters at the point of injection
- ASR projects with a zone of discharge (ZOD)
 - The injection fluids shall not exceed the TDS concentration reported in the engineering report for the receiving ground waters at the edge of the ZOD



- 4

Section 62-610.560(1), F.A.C.

Injection of reclaimed water into Class F-I, G-I, or G-II ground water without planned development of or supplementation of the potable water supply shall be considered as ground water recharge.



Salinity Barrier Systems

Section 62-610.562(4), F.A.C.

Update setback distance from injection wells to potable supply wells to 3,500 feet

 Permitted wells shall retain the 1,000-foot horizontal setback



Discharge to Surface Water

Section 62-610.554, F.A.C

(8) Discharges to surface waters shall meet the requirements in section 62-610.850(1)(b), F.A.C.

(10) The reclaimed water shall be sampled and analyzed for total organic carbon (TOC) and total organic halogen (TOX) in accordance with section 62-610.568(4), F.A.C.



Discharge to Surface Water – 2

Section 62-610.555, F.A.C.

- Remove current section 62-610.555(1)-(3), F.A.C.
- Section 62-610.555(1)(f), F.A.C.
 - Discharges to surface waters shall meet the requirements in section 62-610.850(1)(b), F.A.C.
 Discharge limits shall be established to ensure that ground water quality criteria established in Chapter 62-520, F.A.C., will be met at the point or points where the surface water enters the ground water system.



Discharge to Surface Water – 3

Section 62-610.574, F.A.C.

Written notice to affected utilities and to the county health department is required for the following types of projects:

(c) Discharge to waters upstream of Class I surface waters, as described in section 62-610.554(1), F.A.C.



Addition of springs protection, and/or springs criteria language to:

- Section 62-610.563(2)(c), F.A.C. nitrogen limits
- Section 62-610.563(4), F.A.C. treatment and disinfection requirements
- Section 62-600.510(9), F.A.C. discharge of reclaimed water and effluent
- Section 62-600.550(3)(b), F.A.C. new or expanded rapid-rate or restricted slow-rate application systems
- Section 62-600.550(5), F.A.C. Tertiary Protection Zone



Updated coliform language compliance with the Revised Total Coliform Rule (section 62-550.830, F.A.C.)

Language throughout Chapters 62-610 and 62-600, F.A.C., was updated from reading "fecal coliform" to reading "coliform," "total coliform," or other specified bacteriological compounds, as necessary.



- Section 62-600.420(3), F.A.C.
 - Reuse, land application, or groundwater discharge (including underground injection, but excluding potable reuse projects)
- Section 62-600.520(1), F.A.C.
 - Added clarifying language
 - Section 403.086 F.S., regarding the discharge of domestic wastewater through ocean outfalls



Section 62-625.400(2)(i), F.A.C.

 Any hazardous waste pharmaceuticals from healthcare facilities or reverse distributors in accordance with section 62-730.181, F.A.C.



Additional changes were made throughout Chapters 62-600, 62-610, and 62-625, F.A.C., to be consistent with these revisions and other DEP rules:

- Capitalization
- Updating rule references
- Clarifying language



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https://floridadep.gov/water/domesticwastewater/content/water-reuse-program



Public Comment - Part 1

- Comments will be accepted through January 28, 2021.
- Written comments can be submitted via email or U.S. postal mail to:

<u>Potable_Reuse_Rulemaking2020@FloridaDEP.gov</u> OR

Alexandra Spencer Division of Water Resource Management 2600 Blair Stone Rd, MS #3545 Tallahassee, FL 32399-2400



- Direct Potable Reuse Rules Overview
 - Chapters 62-550 and 62-555, F.A.C.
- Reuse Rulemaking Overview
- Summary of Key Revisions to Chapters 62-550 and 62-555, F.A.C., for Phase II
- Public Comment



DEP's reuse program is charged with:

- Encouraging and promoting reuse in Florida
- Protecting the public health and environmental quality



Chapters 62-550 and 62-555, F.A.C., regulate all potable and direct potable reuse of reclaimed water in Florida, including:

- Primary and secondary drinking water standards
- Monitoring and compliance requirements
- Recordkeeping and reporting requirements
- Permitting requirements
- Operation and maintenance of a public water system



- Revisions to Chapters 62-550 and 62-555,
 F.A.C., will be one rulemaking effort (Phase II)
- Phase II
 - Consistency and Clarifications:
 - Ensure consistency with other department rules and governing Florida Statutes
 - Clarify existing requirements for reuse/reclaimed water
 - Propose a new electronic reporting tool for Annual Reuse Reports
 - Requirements for Potable Reuse Systems



NOTE:

Phase II includes changes addressing potable reuse requirements contained in Florida's Clean Waterways Act.



Rule 62-550.200, F.A.C., Definitions for Public Water Systems

- Update definitions consistent with other department rules
- Delete definitions that do not appear in the chapter



Rule 62-550.315, F.A.C., Primary Drinking Water Standards: Treatment Technique Requirements

 Adjust language to specify requirements for direct potable reuse for water systems



Rule 62-550.512, F.A.C., Nitrate and Nitrite Monitoring Requirements

Add language regarding Direct Potable Reuse requirements



Rule 62-550.521, F.A.C., Unregulated Contaminants Monitoring Requirements

- Adjust language to adhere to new rule changes regarding Direct Potable Reuse
- Clarify the requirements for all systems using reclaimed water that has undergone advanced wastewater treatment



Rule 62-550.817, F.A.C., Additional Requirements for Subpart H Surface Water Systems and Public Water Systems using Direct Potable Reuse

- Add language to title to reference Direct Potable Reuse
- Clarify language regarding Direct Potable Reuse requirements for corresponding water systems



Rule 62-550.824, F.A.C., Consumer Confidence Reports

 Add language to address Direct Potable Reuse changes



Rule 62-555.320, F.A.C., Design and Construction of Public Water Systems

- Add language regarding requirements for Public Water Systems using reclaimed water
- Specify treatment requirements for viruses,
 Cryptosporidium, and Giardia lamblia for systems using reclaimed water



Rule 62-555.350, F.A.C., Operation and Maintenance of Public Water Systems

 Add language regarding Public Water Systems using Direct Potable Reuse



Public Comment - Part 2

- Comments will be accepted through January 28, 2021.
- Written comments can be submitted via email or U.S. postal mail to:

<u>Potable_Reuse_Rulemaking2020@FloridaDEP.gov</u>

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