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Final Regulation Agency Background Document

Agency name	State Water Control Board
Virginia Administrative Code (VAC) citation	9VAC25-740-10 et seq.
Regulation title	Water Reclamation and Reuse Regulation
Action title	Amendment to the Water Reclamation and Reuse Regulation to promote and enhance program implementation
Date this document prepared	March 18, 2013

This information is required for executive branch review and the Virginia Registrar of Regulations, pursuant to the Virginia Administrative Process Act (APA), Executive Orders 14 (2010) and 58 (1999), and the *Virginia Register Form, Style, and Procedure Manual*.

Brief summary

Please provide a brief summary (no more than 2 short paragraphs) of the proposed new regulation, proposed amendments to the existing regulation, or the regulation proposed to be repealed. Alert the reader to all substantive matters or changes. If applicable, generally describe the existing regulation. Also, please include a brief description of changes to the regulation from publication of the proposed regulation to the final regulation.

Amendments to the Water Reclamation and Reuse Regulation (9 VAC 25-740-10 et seq.) are needed primarily to address issues that would improve the Board's ability to effectively promote and encourage the reclamation and reuse of wastewater in a manner protective of the environment and public health. Two amendments that would allow (i) design or operational deviations for facilities still capable of producing or distributing reclaimed water in a manner protective of the environment and public health, and (ii) temporary authorization of water reclamation and reuse without a permit during periods of significant drought, are needed to improve implementation of the regulation and to further promote and encourage water reclamation and reuse. These amendments meet the purpose of State Water Control Law and are within the authority of the Board to establish pursuant to §§ 62.1-44.2 and 62.1-44.15(15) of the Code of Virginia.

Most changes to the regulation from publication of the proposed regulation to the final regulation do not significantly alter the substance of amendments to the regulation but further refine them by:

- Improving clarity and reducing confusing language,
- Using more concise terms and language,
- Providing consistency with Virginia Register styled guidelines for regulations,
- Reducing redundancy, and
- Correcting typographical errors, omissions and incorrect subsection and subdivision references.

These changes occur throughout the regulation in sections 10, 30, 45, 50, 55, 60, 70, 80, 100, 105, 110, 150 and 170.

One change was made in response to public comments on the proposed regulation. This change, which appears in section 30, clarifies that a VPDES permit modification will be required where diversion of source water from the VPDES permitted discharge to water reclamation and reuse has the potential to cause a significant adverse impact to other beneficial uses of the receiving state water for the discharge.

A more detailed description of these changes is provided in the section entitled “Changes made since the proposed stage” of this document.

Statement of final agency action

Please provide a statement of the final action taken by the agency including (1) the date the action was taken, (2) the name of the agency or board taking the action, and (3) the title of the regulation.

The State Water Control Board adopted the final amendments to the Water Reclamation and Reuse Regulation at the March 14, 2013, board meeting.

Legal basis

Please identify the state and/or federal legal authority to promulgate this proposed regulation, including (1) the most relevant citations to the Code of Virginia or General Assembly chapter number(s), if applicable, and (2) promulgating entity, i.e., agency, board, or person. The identification should include a reference to the agency/board/person’s overall regulatory authority, as well as a specific provision authorizing the promulgating entity to regulate this specific subject or program; and a description of the extent to which the authority is mandatory or discretionary.

The legal basis for the Water Reclamation and Reuse Regulation (9 VAC 25-740-10 et seq.) is the State Water Control Law (Law) (Chapter 3.1 of Title 62.1 of the Code of Virginia). Section 62.1-44.15 authorizes the State Water Control Board (Board) to promulgate regulations necessary to carry out its powers and duties.

Specific to water reclamation and reuse, § 62.1-44.2 establishes the purpose of the Law to, among other things, promote and encourage the reclamation and reuse of wastewater in a manner protective of the environment and public health. More specifically, § 62.1-44.15(10) and § 62.1-44.15(15) give authority to the Board to adopt regulations as it deems necessary, to enforce the general water quality management program, and to promote and establish requirements for the reclamation and reuse of wastewater that are protective of state waters and public health as an alternative to directly discharging pollutants into state waters.

Purpose

Please explain the need for the new or amended regulation. Describe the rationale or justification of the proposed regulatory action. Detail the specific reasons it is essential to protect the health, safety or welfare of citizens. Discuss the goals of the proposal and the problems the proposal is intended to solve.

The primary purpose of this regulatory action is to amend the Water Reclamation and Reuse Regulation (9 VAC 25-740-10 et seq.), which became effective October 1, 2008. Since its implementation, both the Department of Environmental Quality (DEQ) and the public have identified needed changes to the regulation that would improve the State Water Control Board’s ability to implement a more effective water reclamation and reuse regulatory program for the protection of public health and safety. Two items that will be addressed among other changes to improve implementation of the regulation are (i) the inflexibility of the regulation to accept deviations from design or operational requirements that may discourage projects capable of producing or distributing reclaimed water suitable for reuse in a manner protective of the environment and public health; and (ii) the lack of provisions to authorize temporary water reclamation and reuse without a permit during periods of significant drought to conserve potable water supply.

Substance

Please identify and explain the new substantive provisions, the substantive changes to existing sections, or both where appropriate. A more detailed discussion is required under the “All changes made in this regulatory action” section.

Substantive new provisions and changes to existing sections of the Water Reclamation and Reuse Regulation (9VAC25-740-10 et seq.) identified in this "Final Regulation" stage include the following:

Proposed Change	Reason for Change	End Result
1. Addition of provisions to grant variances from design, construction, operation, or maintenance requirements of the regulation for facilities still capable of producing, distributing or reusing reclaimed water in a manner protective of the environment and public health.	Applicants/permittees have requested exceptions to design or operational requirements of the regulation, but DEQ was unable to grant such exceptions or variances without the authority established in law or regulation.	Will give the agency flexibility to approve projects that may not conform to all design, construction, operation, or maintenance requirements of the regulation but are still protective of the environment and public health.
2. Addition of provisions for an emergency authorization to produce, distribute or reuse reclaimed water without a permit during periods of significant drought	VPDES permittee requested temporary emergency authorization to reuse reclaimed water during a severe drought without permit coverage. DEQ does not currently have the authority established in regulation to allow this.	Will provide DEQ flexibility to temporarily authorize production, distribution or reuse of reclaimed water without a permit during periods of significant drought.
3. Addition of a requirement for an auxiliary or backup plan for conjunctive wastewater treatment works and reclamation systems that rely primarily or completely on water reuse for elimination of wastewater	Needed to ensure combined wastewater treatment facilities and reclamation systems that (i) have no or limited options to manage wastewater other than water reclamation and reuse, and (ii) rely	Will help permittees under these circumstances to reduce their vulnerability to a crisis situation in the event that their primary end users of reclaimed water discontinue service.

Proposed Change	Reason for Change	End Result
	<p>mostly on one or two major end users to take the majority of the reclaimed water, will have an auxiliary or backup plan to manage unused reclaimed water.</p>	
<p>4. Modification and addition of requirements to manage pollutants of concern from significant industrial users (SIUs) for reclamation systems and satellite reclamation systems that will produce Level 1 reclaimed water, and for reclamation systems that are part of an indirect potable reuse (IPR) project.</p>	<p>Needed to clarify and simplify requirements to manage pollutants of concern from SIUs for reclamation systems, and to provide similar but less comprehensive requirements for satellite reclamation systems also affected by pollutants of concern from SIUs. Also necessary to provide an additional barrier for the protection of public health where reclaimed water is produced for IPR.</p>	<p>Will simplify and allow greater flexibility in the management of pollutants of concern from SIUs for the purpose of producing Level 1 reclaimed water. Will ensure greater protection of public health where wastewater reclaimed for IPR has inputs from SIUs.</p>
<p>5. Addition of design and operational requirements for UV disinfection of Level 1 and Level 2 reclaimed water.</p>	<p>Most of these requirements are currently implemented through DEQ guidance and would not change disinfection requirements for reclaimed water.</p>	<p>Will formalize DEQ's acceptance of ultraviolet disinfection (UV) standards for reclaimed water already contained in other state regulations (i.e., SCAT Regulations) and model national standards (i.e., NWRI UV Disinfection Guidelines for Drinking Water Reuse, 2nd Ed., 2003).</p>
<p>6. Modification of language to clarify service agreement or contract requirements for end users of reclaimed water, and alternative permitting options for reclaimed water distribution systems.</p>	<p>Needed to (i) clarify vague or confusing language and requirements pertaining to service agreements or contracts between providers of reclaimed water and end users, and (ii) allow DEQ to issue a permit to reclaimed water distribution systems on a case-by-case basis for certain distribution system ownership and end user circumstances.</p>	<p>Will improve comprehension of existing regulatory requirements and will ensure that reclaimed water distribution systems are properly constructed, maintained and operated for the protection of the environment and public health.</p>
<p>7. Modification of activities excluded from the requirements of the regulation related to alternative onsite sewage systems permitted by the Virginia Department of Health, utilization of harvested rainwater and storm water, unintentional reuse, and indirect nonpotable reuse of reclaimed water.</p>	<p>Needed to address or clarify the applicability of the regulation to VDH permitted alternative onsite sewage systems (AOSSs), reuse of harvested rainwater, reclamation & reuse of storm water, unintentional reuse, and indirect nonpotable reuse of reclaimed water proposed after the effective date of the amendment.</p>	<p>Will extend requirements of the regulation to all treatment works/reclamation systems capable of producing reclaimed water meeting the standards of 9VAC25-740, and to specific proposals of indirect nonpotable reuse of reclaimed water. Will also reduce confusion between the types of wastewaters reclaimed for reuse that DEQ regulates versus those regulated by other agencies (e.g., VDH and DCR).</p>
<p>8. Modification of the point of compliance (POC) requirements for reclaimed water standards to include POCs for certain system storage facilities and reclaimed water distribution systems, in addition to POCs required for reclamation systems and satellite reclamation</p>	<p>Needed to verify that reclaimed water following specific system storage conditions and in the distribution system prior to delivery to end users, would continue to meet applicable standards for the intended reuses.</p>	<p>Will allow the consistency, quality and safety of the reclaimed water for the protection of the environment and public health to be verified prior to reuse.</p>

Proposed Change	Reason for Change	End Result
systems		
9. Addition of reclaimed water monitoring requirements for certain system storage facilities and reclaimed water distribution systems where determined necessary by the board on a case-by-case basis	Needed to ensure environmental and public health protection where conditions exist that may degrade reclaimed water quality in system storage, within the reclaimed water distribution system, or both.	Will verify the consistency, quality and safety of the reclaimed water for the protection of the environment and public health.
10. Modification of reuses listed in the regulation to include "irrigation to establish erosion control" under construction reuses and movement of "ship ballast" to industrial reuses requiring a minimum of Level 1 reclaimed water	Needed to expand the list of approved reuses not requiring case-by-case approval by the DEQ and to make the minimum standard requirements for ship ballast reuse, which may involve a subsequent discharge, comparable to US Coast Guard proposed standards for ship ballast discharges within US waters.	Will reduce the time to review and approve reuse involving irrigation to establish erosion control, and will make reclaimed water standards required for ship ballast reuse consistent with federal requirements for ship ballast discharges.
11. Modification of the description of unlisted reuses, and addition of indirect nonpotable reuse (proposed after the effective date of the amendments) and all reuses of reclaimed industrial wastewater that will require reclaimed water standards and monitoring requirements developed on a case-by-case basis.	Needed to expand the types of unlisted reuses of reclaimed water that may be approved by DEQ, and to clarify that the same process would be used to approve any reuse of reclaimed industrial wastewater.	Will allow a greater variety of reclaimed water reuses and will encourage more reuse of reclaimed industrial wastewater.
12. Addition of permit application, design, construction, operation, and education and notification (E&N) requirements that are specific to indirect potable reuse (IPR) projects.	IPR projects will be complex proposals. These amendments are needed to clarify the minimum information required by DEQ to review and permit IPR projects, and to establish minimum standards, specifications and requirements for the design, construction, operation and E&N of IPR projects.	Will, in most cases, expedite DEQ's process to review permit applications for IPR projects, and ensure that IPR projects are designed, constructed and operated in a manner protective of the environment and public health.
13. Addition of a provision that allows reclaimed water agents to inspect end users' reuses and storage facilities as part of the service agreement or contract between the reclaimed water agent and an end user	Although DEQ may inspect reuses and storage facilities of an end user, most end users will not be issued a permit by or have a relationship with DEQ. This modification provides reclaimed water agents the authority to inspect reuses and storage facilities of end users with whom they have a service agreement or contract.	Will allow reclaimed water agents to be more aware of and responsive to problems with end users, and to exercise more control in the management of reclaimed water within their service areas.
14. Modification of cross-connection and backflow prevention requirements for reclaimed water distribution systems to be consistent with regulations of other state agencies (e.g., DHCD - Virginia Statewide Building Code)	Needed to correct language that, according to the Dept. of Housing and Community Development, is incorrect or inconsistent with the Virginia Statewide Building Code.	Will not result in any new cross-connection and backflow prevention requirements for reclaimed water distribution systems.
15. Expansion of the types of existing systems that can be converted to reclaimed water distribution systems, and modification of items to be	Existing irrigation distribution systems are the most likely to be converted to reclaimed water distribution systems, but were not included among	Will create more opportunities to deliver reclaimed water to end users and offset most of the cost to construct or install a new distribution

Proposed Change	Reason for Change	End Result
submitted to the board for such converted systems to include a conversion plan and an operations and maintenance (O&M) manual.	convertible systems in the regulation. Needed system conversion plan that provided additional information regarding modification and cleaning of system to be converted, and an O&M manual consistent with the requirements for all reclaimed water distribution systems.	system for reclaimed water. Will ensure that systems converted to reclaimed water distribution systems meet appropriate design, operation and maintenance requirements of the regulation for the protection of the environment and public health.
16. Modification of identification, notification and signage requirements for reclaimed water distribution systems based on pipe outer diameter and indoor or outdoor installation, and clarification on the applicability of these requirements to converted systems.	Needed to (i) clarify the applicability of existing requirements, such as optional purple pipe coloring, (ii) make the requirements more implementable for both large and small diameter pipes, (iii) avoid inappropriate cross-connections with indoor potable water distribution systems and other non-potable water distribution systems, such as those for gray water and harvested rainwater, and (iv) make requirements for converted systems consistent with all reclaimed water distribution systems,	Will reduce the cost of identification, notification and signage requirements for many outdoor reclaimed water distribution systems, increase the protection of public health by reducing cross-connections with indoor reclaimed water distribution systems, and ensure that identification, notification and signage requirements are consistently implemented for all reclaimed water distribution systems, including converted systems.
17. Clarification that the requirement for reclaimed water distribution systems to maintain reclaimed water standards for intended reuses does not apply to Corrective Action Thresholds (CATs), which are operational standards for only reclamation systems and satellite reclamation systems.	Needed to eliminate unnecessary and confusing monitoring requirements for reclaimed water distribution systems.	Will improve applicability and implementation of the regulation related to reclaimed water distribution systems.
18. Modification of Class I reliability requirements for Level 1 reclamation systems and satellite reclamation systems to include associated pump stations not addressed by the Sewage Collection and Treatment Regulations, 9 VAC 25-790.	Needed to ensure that all components of Level 1 reclamation systems, including pump stations, will perform reliably or will initiate other contingencies in the event of power failure or other disruption at the facility.	Will reduce the potential discharge of substandard reclaimed water to reuses, thereby providing an additional barrier to protect the environment and public health.
19. Additions of requirement prohibiting application of reclaimed water during winds that would cause overspray or aerosol drift into or beyond buffer zones of setbacks.	Needed to avoid potential adverse environmental and public health impacts that may be associated with overspray or aerosol drift from the application of reclaimed water, such as for irrigation. This proposed provision is consistent with the prohibition of reclaimed water runoff from irrigation sites currently in the regulation.	Will provide greater protection of the environment and public health for spray irrigation reuse of reclaimed water, thereby improving consumer confidence and acceptance for this reuse.
20. Revision of an existing prohibition that will allow the reuse of reclaimed water inside residential buildings and structures that are other than one or two family dwellings.	The plumbing in buildings, such as, for example, hotels and dormitories, is typically maintained by a trained professional and will generally have a lower potential than one and two family dwellings for cross-connection	Will expand opportunities for reuse of reclaimed water inside residential buildings or structures other than one or two family dwellings, while still assuring protection of public health.

Proposed Change	Reason for Change	End Result
	of reclaimed water piping with other piping for water or sewer in the same building.	
21. Revision of an existing design requirement that allows nonsystem storage facilities of reclaimed water to discharge under less restrictive circumstances.	Many existing golf courses were unable to retrofit their existing ponds to meet the storage specifications for reclaimed water in the regulation due to either prohibitive cost or lack of space. For only non-system storage facilities, which are most likely to be under the ownership and/or management of the end user (e.g., a golf course), a smaller storage size requirement was needed that would still minimize discharges from these facilities to surface waters.	Will allow many existing storage facilities to be more easily retrofitted to store reclaimed water and at a lower cost.
22. Addition of provisions to prevent unauthorized discharges and to recover flush water or reclaimed water for use or reuse from the maintenance of reclaimed water distribution systems.	Potable or reclaimed water used to flush reclaimed water distribution systems for maintenance are likely to have concentrations of total suspended solids and chlorine that would not meet Water Quality Standards (9VAC25-260) if discharged directly or indirectly to surface waters. Provisions are needed to prevent such discharges and to provide opportunities to recover, reclaim and reuse flush water in lieu of disposal.	Will ensure that water reclamation and reuse facilities, including their maintenance, are protective of the environment and public health.
23. Addition of a prohibition against significant adverse impacts to other beneficial uses that may result from the diversion of source water from a VPDES permitted surface water discharge to water reclamation and reuse.	Diversion of a wastewater treatment facility's discharge from a surface water to water reclamation and reuse may adversely impact beneficial uses of the surface water that have come to rely on the flow of an existing discharge, in particular withdrawals for water supply. This prohibition is needed to protect beneficial uses of the receiving water that may be significantly and adversely impacted by water reclamation and reuse.	Will provide the basis to perform an analysis of impacts to beneficial uses of the receiving stream due to water reclamation and reuse.
24. Addition of a provision to submit information that is necessary to perform an impact analysis for each VPDES permitted treatment works that proposes a new or increased diversion of its discharge to reclamation and reuse.	Needed to clarify the minimum information necessary for the board to perform an analysis of impacts to beneficial uses of receiving waters due to water reclamation and reuse.	Will ensure that water reclamation and reuse projects are performed in a manner protective of the environment, public health, and beneficial uses of the receiving water that rely on the flow of a discharge diverted to water reclamation and reuse.

The above substantive amendments were discussed and vetted by a 17-member Regulatory Advisory Panel (RAP) with the assistance of technical support staff from DEQ, DCR and VDH.

In response to public comment received, changes are also being proposed to the "Applicability and transition" section of the regulation (9VAC25-740-30 B 2; B 2 a; and B 2 b). The proposed changes clarify

that a VPDES permit modification will be required where diversion of source water from the VPDES permitted discharge to water reclamation and reuse has the potential to cause a significant adverse impact to other beneficial uses of the receiving state water for the discharge. The changes also clarify conditions under which water reclamation and reuse projects may be authorized by an administrative authorization associated with a VPDES permit.

Issues

Please identify the issues associated with the proposed regulatory action, including:
 1) *the primary advantages and disadvantages to the public, such as individual private citizens or businesses, of implementing the new or amended provisions;*
 2) *the primary advantages and disadvantages to the agency or the Commonwealth; and*
 3) *other pertinent matters of interest to the regulated community, government officials, and the public.*

If the regulatory action poses no disadvantages to the public or the Commonwealth, please indicate.

The proposed amendments are not expected to result in any disadvantages to the public, the regulated community, the agency or the Commonwealth. The proposal should have advantages for the regulated community and the agency through improved implementation of the program.

As stated in the NOIRA for this regulatory action, the Board studied the possible reuse of reclaimed water for groundwater recharge and presented its findings in a report to the RAP with points for discussion by the panel. Based on discussions of the RAP and comments received from individual RAP members, there appeared to be general support by the RAP for groundwater recharge with reclaimed water for subsequent reuse. While DEQ appreciated the input of the RAP and recognized the benefits of groundwater recharge with reclaimed water for reuse, the agency determined that amendments to the Water Regulation and Reuse Regulation to address groundwater recharge, if any, should follow the establishment of a new or revised Board policy on groundwater recharge, and may be part of or follow other regulatory actions. Input received from the RAP provided useful information to support these efforts in the future.

Changes made since the proposed stage

Please describe all changes made to the text of the proposed regulation since the publication of the proposed stage. For the Registrar’s office, please put an asterisk next to any substantive changes.

Section number	Requirement at proposed stage	What has changed	Rationale for change
10	Definition for beneficial reuse	Deleted “or” after “recreation,” in second sentence.	Change was made to make the definition of this term in the regulation consistent with the definition of the same term in § 62.1-44.3 of the Code of Virginia.
10	Definition for biological nutrient removal (BNR)	Deleted “an” after “achieves” and replaced “of” with “concentrations less than or	Change was made to clarify the distinction between BNR and non-BNR

		equal to” after “annual average”.	reclaimed water currently used in guidance. This is significant with regard to bulk irrigation reuse of reclaimed water, which will not, in most cases, require a nutrient management plan (NMP) for irrigation with BNR reclaimed water, but would require a NMP for irrigation with non-BNR reclaimed water.
10	Definition for designated design flow	Replaced “wastewater or partially treated wastewater” with “source water”	Change was made to make the definition of “designated design flow” more concise and to consistently use terms already defined within regulation (e.g., “source water”) where appropriate.
10	Definition for reclaimed water distribution system	Deleted “one or more” after “reclamation systems to” and replaced “users” with “uses” after “end”	Change was made to clarify that reclaimed water distribution systems convey to end uses and not to end users.
10	Definition of "State Water Control Law or Law"	Revised to read "State Water Control Law" or "Law"	Changes were made to correct typographical error or omission.
30 B 2	Applicability and transition – authorization of standards, monitoring requirements and special conditions for water reclamation and reuse through VPDES permits	Delete the term "administratively" and insert the term " through" as follows: "2. Standards, monitoring requirements and special conditions for water reclamation and reuse may be administratively authorized for a VPDES permit through:"	Change was made to clarify authorization of water reclamation and reuse projects through VPDES permits.
30 B 2 a	Applicability and transition – authorization of standards, monitoring requirements and special conditions for water reclamation and reuse through VPDES permits	Insert subdivision number and revise original text as follows: " <u>a. A modification of the permit modification unless they where such standards, monitoring requirements and special conditions would effectively alter other conditions of the permit specifically related to the effluent discharge for which the permit was originally issued, or where the diversion of source water from the VPDES permitted discharge to water reclamation and reuse has the potential to cause a significant adverse impact to other beneficial uses of the receiving state water, or both;</u>	Changes were made to clarify conditions under which water reclamation and reuse projects may be authorized by VPDES permit modification.

<p>30 B 2 b</p>	<p>Applicability and transition – authorization of standards, monitoring requirements and special conditions for water reclamation and reuse through VPDES permits</p>	<p>or" Insert subdivision designation and revise original text to read: "<u>b. An administrative authorization where such standards, monitoring requirements and special conditions would not alter other conditions of the permit specifically related to the effluent discharge for which the permit was originally issued, and where the diversion of source water from the VPDES permitted discharge to water reclamation and reuse does not have the potential to cause a significant adverse impact to other beneficial uses of the receiving state water.</u> The administrative authorization shall have the full effect of the VPDES permit until such time that it is incorporated into the VPDES permit through reissuance or major modification.</p>	<p>Changes were made to clarify conditions under which water reclamation and reuse projects may be authorized by an administrative authorization associated with a VPDES permit.</p>
<p>45 C 3</p>	<p>Emergency authorizations</p>	<p>Replaced "through 9VAC25-31-900" with "et seq."</p>	<p>Change was made to be consistence with formatting of references and clarify reference to Part VII of the VPDES Permit Regulation.</p>
<p>50 A 6</p>	<p>Exclusions for land treatment systems</p>	<p>Replaced "defined" with "described" following "Land treatment systems" in the first sentence of subdivision A 6.</p>	<p>Change was made to clarify that land treatment systems are described but are not specifically defined in the Sewage Collection and Treatment Regulations (9VAC25-790).</p>
<p>50 A 7</p>	<p>Exclusions for unintentional reuse</p>	<p>Part of subdivision A.7 was made into new subdivision A.8 with the following changes: "<u>7. Indirect Unintentional reuse with the exception of indirect potable reuse projects proposed after October 1, 2008.</u></p>	<p>Changes were made to better clarify the intent of the language.</p>
<p>50 A 8</p>	<p>Exclusions for existing indirect non-potable reuse</p>	<p>Part of subdivision A.7 was made into new subdivision A.8 with the following changes: <u>8. and Existing indirect non-potable reuse projects proposed after that upon [effective date of amended</u></p>	<p>Changes were made to better clarify the intent of the language.</p>

		<u>regulation] are authorized by a VPDES permit to discharge to surface waters of the state."</u>	
50 A 9	Exclusions for existing indirect potable reuse	Change in designation from A 8 to A 9.	Designation changed to accommodate addition of new exclusion.
50 A 10	Exclusions for direct injection of reclaimed water into an underground aquifer	Change in designation from A 9 to A 10.	Designation changed to accommodate addition of new exclusion.
60 B	Description of relationship between 9VAC25-740 and the VPDES Permit Regulation (9VAC25-31)	In second sentence of subsection 60.B: (1) Deleted "a" after "discharge to" where it first appears in the sentence, and (2) Inserted "waters" following existing correction "and has a discharge to surface".	(1) Change was made to eliminate unnecessary text and to be consistent with similar language within the same sentence. (2) Change was made to correct an unintentional omission.
70 A	Table 70 A Treatment and Standards for Reclaimed Water	Revised table from a 3 column table with Level 1 and Level 2 treatment and standards for reclaimed water listed side-by-side, to a 2 column table with the first part of the table devoted to "Level 1" and the second half of the table devoted to "Level 2". The formatting of the table and the presentation of the material was changed.	Changes were made to make information in the table more clear and readable.
70 A 1 f	Turbidity standards for Level 1 reclaimed water	Changed "2" to "2.0" and "5" to "5.0" related to standards for turbidity in reclaimed water.	Change was made to be consistent with the number of significant figures established by acceptable methods used to properly calibrate field monitoring equipment for turbidity.
70 B 2 a	Point of compliance (POC) for system storage facilities and reclaimed water distribution systems	Related to the deletion of subdivision B 2 c, inserted "and" at end of sentence.	Grammatical correction to account for the deletion of previously proposed subdivision and to clarify requirements.
70 B 2 b	Point of compliance (POC) for system storage facilities and reclaimed water distribution systems	Related to the deletion of subdivision B 2 c, replaced ";" with a period at the end of subdivision B 2 b.	Grammatical correction to account for the deletion of previously proposed subdivision.
70 B 2 c	Point of compliance (POC) for system storage facilities and reclaimed water distribution systems	Deleted of all of subdivision B 2 c as follows: "c. For both the system storage facility and reclaimed water distribution system when under common ownership or management and within the	Changes were made to eliminate redundant and confusing requirements to describe POC locations for system storage facilities and reclaimed water distribution systems.

		same service area, in either document described in subdivisions B 2 (a) or (b) of this subsection.”	
70 E	Standards for the reclamation of industrial wastewater	In first sentence of subsection 70.E, replaced “will” with “shall”.	Change was made to be consistent with Virginia Register style guidelines for regulations.
80 D	Monitoring of reclaimed water held in system storage	In first sentence of subsection, moved “(i)” to follow first “where” and deleted 2 nd “where” after “(ii)”.	Changes were made to make the language more concise.
100 B 6	Determination of significant adverse impacts to other on and off stream beneficial uses due to diversion of source water from a discharge to reclamation and reuse	Replaced: “proposes” with “will provide” after “... sewage collection system that”, and replaced “including” with “and information, as applicable, regarding the SRS that includes” after “... the production of reclaimed water,”.	Changes were made to clarify that (i) neither the VPDES permitted WWTF or the sewage collection system “propose” the diversion of source water, rather they “provide” the source water by diversion; and (ii) where a SRS (satellite reclamation system) is involved, information will be required per 9VAC25-740-100.B.6.a and b.
100 B 6 b	Determination of significant adverse impacts to other on and off stream beneficial uses due to diversion of source water from a discharge to reclamation and reuse	Inserted “return discharge of” before “the SRS” where it first appears in the paragraph.	Change was made to clarify that the discharge from the SRS was referring to the return discharge to the sewage collection system and not the discharge of reclaimed water from the SRS to reuse.
100 B 6 e	Determination of significant adverse impacts to other on and off stream beneficial uses due to diversion of source water from a discharge to reclamation and reuse	Delete "subdivision 5" reference. Replace word "subsection" with "subdivision".	Change was made to clarify the requirements and for consistence with designation of references within a subdivision.
100 D 3 c	Requirements for an application to permit an Indirect potable reuse.	Deleted the word "source" after "WSS".	Change made to eliminate redundant terminology.
105 A 11	Application information for an emergency authorization	Replaced designation of subdivision "12" with "13".	Change made to correct subdivision reference.
105 A 12	Application information for an emergency authorization	Replaced subdivision reference “3 d” with “6”.	Change made to correct subdivision reference.
110 C 1 e	Options to ensure reliable reclamation system flow	Inserted “source” between “received” and “water”	Change was made to clarify what type of water, “source water”, and to eliminate confusion with “reclaimed

			water” and “reject water” used in the same subsection.
120 A 2 b	Construction requirements - requirements for a pilot study	Change subdivision reference from "2 d" to "2 c"	Correction of erroneous subdivision reference.
150 C	Management of pollutants of concern from significant industrial users - requirements for a satellite reclamation system	Change section reference from 9VAC24-740-70 D to 9VAC25-740-70 D.	Correction of VAC reference.
150 E 1	Management of pollutants of concern from significant industrial users for indirect potable reuse projects	Inserted “, developed” before “in accordance with ...”	Change was made to correct an unintentional omission and to be consistent with language in subdivision A 1 of the same section.
170 H	Table 170-H1 Setback distances for irrigation reuse of Level 1 reclaimed water	Inserted row of headers to label columns in the table (i.e., “Feature Requiring Setback” and “Setback Distance”), and enumerated each feature and associated setback in sequence a through c.	Changes were made to clarify the arrangement and content of the table, and to allow improved referencing of information contained in the subsection and table.
170 H	Table 170-H2 Setback distances for irrigation reuse of Level 2 reclaimed water	Inserted row of headers to label columns in the table (i.e., “Feature Requiring Setback” and “Setback Distance”), and enumerated each feature and associated setback in sequence a through f.	Changes were made to clarify the arrangement and content of the table, and to allow improved referencing of information contained in the subsection and table.

Public comment

Please summarize all comments received during the public comment period following the publication of the proposed stage, and provide the agency response. If no comment was received, please so indicate.

During the public comment period a total of 36 comments were received from six different organizations and one individual. The comments received are summarized below with agency responses.

1.	<p>Subject: Exclusion for industrial water reuse</p> <p>Commenter: Andrea Wortzel on behalf of the Virginia Manufacturers Association (VMA)</p> <p>Text: VMA supports the retention of the exclusions found in 9VAC25-740-50.A. This section supports industrial reuse by exempting from permitting requirements the recycling of industrial effluent when used on the same property as the industrial facility. This exemption is important to VMA members and provides needed flexibility to enable industrial facilities’ water management</p>
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	<p>practices to evolve as opportunities for reuse arise.</p> <p>Agency Response: There are no proposed amendments to the regulation that will affect the existing exclusion for industrial water reuse provided under 9VAC25-740-50.A.5. There are no additional changes to the amended regulation in response to this comment.</p>
<p>2.</p>	<p>Subject: Market-based approach to investment decisions regarding effluent reuse infrastructure</p> <p>Commenter: Robert C. Steidel, President, Virginia Association of Municipal Wastewater Agencies (VAMWA)</p> <p>Text: VAMWA believes that Virginia’s existing market-based approach to investment decisions in effluent reuse infrastructure, in accordance with applicable state regulations, is the best approach. Under this approach, Virginia localities and authorities determine whether reuse is an appropriated means to meet local needs. This approach allows those closest to consumers to gauge consumer demand, design infrastructure and safeguard costs (treatment and distribution) passed on to those consumers.</p> <p>Agency Response: According to the findings of a report on “Expanding Water Reclamation and Reuse in Virginia” (November 2011) prepared by DEQ and VDH for the Governor and General Assembly, “A variety of factors, including environmental, economic and societal, should be considered when determining the most appropriate alternative(s) to implement for water conservation and the reduction of nutrient pollution in surface waters of the Commonwealth. Based on these factors, water reclamation and reuse may or may not be the best alternative.” Consistent with these findings, localities have the choice to implement water reclamation and reuse voluntarily in Virginia. There are no proposed amendments to the regulation that change the voluntary nature of water reclamation and reuse in the Commonwealth.</p>
<p>3.</p>	<p>Subject: Specific VAMWA comments regarding amendment no. 1 in the Notice of Proposed Regulation</p> <p>Commenter: Robert C. Steidel, President, Virginia Association of Municipal Wastewater Agencies (VAMWA)</p> <p>Text: 1. DEQ’s Proposal: Add provisions to allow design or operational deviations for facilities still capable of producing or distributing reclaimed water in a manner protective of the environment and public health.</p> <p>VAMWA supports the flexibility of the proposed amendments to the Regulation found at 9VAC25-740-55, which add a new variance from design, construction, operation and maintenance requirements for projects still capable of producing or distributing reclaimed water in a manner protective of the environment and public health. VAMWA agrees with DEQ that the variance process should make the Regulation less prescriptive and more adaptive; provided, however, that it is implemented and enforced by DEQ consistent with the spirit in which the amendment appears to have been advanced (<i>i.e.</i>, to provide flexibility).</p> <p>VAMWA recommends that 9VAC25-740-55 D. be revised as follows in order to clearly set forth the policy of promotion and encouragement of water reuse as a factor to be considered by the Board when reviewing a request for a variance:</p> <p style="padding-left: 40px;"><i>D. The board shall act on any application for a variance submitted pursuant to this section within 60 days of application receipt. The board shall, in considering whether to grant or deny a variance for a project to produce, distribute, or reuse reclaimed water, <u>balance the protection of public health and the environment and the promotion of cost-effective water reuse or reclamation alternatives</u>, taking into consideration, at a minimum, the following:</i></p> <p>Agency Response: As stated in a report entitled “Expanding Water Reclamation and Reuse in</p>

	<p>Virginia” (November 2011) prepared by DEQ and VDH for the Governor and General Assembly, “Regulations must be balanced between protecting public health and the environment, and providing options to implement cost effective alternatives.” DEQ believes that the regulation and proposed amendments provide this balance. When applying a market-based approach at the project level, however, it is the responsibility of the applicant or permittee to determine what water reclamation and reuse alternative will be the most cost effective for their particular situation, while still capable of protecting public health and the environment.</p> <p>There are no additional changes to the amended regulation in response to this comment.</p>
<p>4.</p>	<p>Subject: Majority of amendments will not promote and encourage reclamation and reuse of wastewater</p> <p>Commenter: James J. Pletl, Director of Water Quality, Hampton Roads Sanitation District</p> <p>Text: The proposed amendments will encourage and promote water reclamation in a few specific areas. Emergency use without a permit is necessary, a wider variety of disinfection options with UV is needed, and clarification to the regulations concerning various reuse systems is helpful. The DEQ introduces these amendments for public comment with the following sentence: <i>“amendments to the Water Reclamation and Reuse Regulation (9 VAC 25-740-10 et seq.) are needed primarily to address issues that would improve the Board’s ability to effectively promote and encourage the reclamation and reuse of wastewater in a manner protective of the environment and public health.”</i> Although the proposed changes will make implementation of the regulations easier for DEQ, the majority of these amendments only add more requirements that the public must meet and therefore will not promote and encourage reclamation and reuse of wastewater.</p> <p>Agency Response: Proposed amendments to the regulation will not in all cases make the water reclamation and reuse program easier for DEQ to implement and may, in some ways, increase the resources needed by the agency for the program. Proposed amendments to the regulation will provide greater benefits to applicants, permittees, the public and the environment by: 1) making the regulation more flexible and, in some cases, less restrictive, for applicants and permittees, 2) making the application process more certain and predictable for more complex water reclamation and reuse projects, 3) formalizing existing procedures already in practice, 4) making the regulation more protective of public health, the environment and beneficial uses of surface waters, and 5) clarifying and/or simplifying language in the regulation to make it more understandable and implementable by applicants and permittees. Therefore, DEQ maintains that the proposed amendments to the regulation will do more to promote and encourage the reclamation and reuse of wastewater in a manner protective of the environment and public health.</p> <p>There are no additional changes to the amended regulation in response to this comment.</p>
<p>5.</p>	<p>Subject: Proposed amendments will not promote water reuse projects</p> <p>Commenter: Robert C. Steidel, President, Virginia Association of Municipal Wastewater Agencies (VAMWA)</p> <p>Text: With direct ground water recharge off the table, issues related to regulatory oversight received the most priority points overall from the Stakeholder Committee. See the Reuse Report at 2. DEQ also noted that the purpose of the amendments to the Regulation is to make sure they are “balanced between protecting health and the environment, and providing options to implement cost effective [reuse/reclamation] alternatives.” See Reuse Report at 3. VAMWA believes that the amendments to the Regulation do not achieve the intended balance, primarily because the amendments either add additional requirements or revise existing requirements in a manner that may make a reuse project appear unduly onerous to the regulated community, thereby discouraging pursuit of a reuse project.</p> <p>A possible reason the amendments to the Regulation to not provide more incentives for reuse is that some of the options require statutory, rather than regulatory, changes. The following require</p>

legislative action:

- Providing tax incentives and tax credits for end users in order to create reuse water demand;
- Providing subsidies for agricultural irrigation reuse of reclaimed water;
- Establishing priority areas to encourage water reuse pending completion of the State Water Resources Plan;
- Subsidizing operation and maintenance costs of water reclamation and reuse projects; and
- Ensuring continued availability of grant funds for the Water Quality Improvement Fund.

See Reuse Report at 3.

VAMWA believes that the degree to which the proposed amendments to the Regulation will promote and encourage reuse is overstated. Instead, VAMWA believes that it is more accurate to state that most, if not all, of the twenty-five (25) additions or revisions to the Regulation (key items discussed in turn below) contribute more the regulator’s ability to administer the Regulation, and less to the promotion and encouragement of reuse projects by the facility owners that consider whether to undertake a reuse project. Admittedly, this result is consistent with the purpose of the amendments to the Regulation set forth in the NOIRA; however, it does not account for the expanded charge to DEQ and VDH in convening the Stakeholder Committee. VAMWA has consistently expressed this concern. See the VAMWA Stakeholder Committee Response Letters.

Agency Response: The DEQ and VDH report on “Expanding Water Reclamation and Reuse in Virginia” (November 2011) referenced in the above comments, states that “Regulations must be balanced between protecting public health and the environment, and providing options to implement cost effective alternatives. The current regulatory process to amend the Water Reclamation and Reuse Regulation is aimed at achieving this goal ...” The primary purpose of amending the regulation as stated in the Proposed Regulation - Agency Background Document (Form TH-02, 7/14/11), is “to address issues that would improve the Board’s ability to effectively promote and encourage the reclamation and reuse of wastewater in a manner protective of the environment and public health.” This purpose encompasses but is not limited to the goal of balancing the protection of public health and the environment with options to implement cost effective alternatives. Amendments to the regulation provide options to implement cost effective alternatives, as well as other means to promote and encourage water reclamation and reuse in manner protective of the environment and public health. One amendment to the regulation that will provide more options to implement cost effective alternatives is the addition of a variance provision that will allow exceptions to design, construction, operation and maintenance requirements under specific conditions. Other amendments, such as requirements to monitor reclaimed water in certain system storage facilities and reclaimed water distribution systems, will encourage water reuse by ensuring the safety of reclaimed water, thereby increasing consumer confidence in and improving public perception of water reclamation and reuse.

Items requiring statutory changes to further incentivize water reclamation and reuse were included in the report on “Expanding Water Reclamation and Reuse in Virginia” presented to the Governor and the General Assembly in November 2011. These statutory changes are beyond the scope and authority of the process to amend the regulation.

DEQ acknowledges that many of the proposed amendments to the regulation will improve the ability of the agency to implement the regulation and administer the Water Reclamation and Reuse Program. However, the proposed amendments will additionally provide greater benefits to applicants, permittees, the public and the environment by: 1) making the regulation more flexible and, in some cases, less restrictive, for applicants and permittees, 2) making the application process more certain and predictable for more complex water reclamation and reuse projects, 3) formalizing existing procedures already in practice, 4) making the regulation more protective of public health, the environment and beneficial uses of surface waters, and 5) clarifying and/or simplifying language in the regulation to make it more understandable and implementable by

	<p>applicants and permittees. Therefore, DEQ maintains that the proposed amendments to the regulation will do more to promote and encourage the reclamation and reuse of wastewater in a manner protective of the environment and public health.</p> <p>There are no additional changes to the amended regulation in response to this comment.</p>
<p>6.</p>	<p>Subject: Comparison with Florida Water Reuse Rules</p> <p>Commenter: Mr. Peter Mansfield</p> <p>Text: Please simply send the 28 amendments back to DEQ and ask for a duplication of the Florida regulation.</p> <p>Agency Response: The Florida Water Reuse Rule (Rule) (Chapter 62-610 Reuse of Reclaimed Water and Land Application) was among several states’ rules or regulations that DEQ examined when initially developing Virginia’s Water Reclamation and Reuse Regulation (Regulation). Several requirements similar to those in Florida’s Rule were included in Virginia’s Regulation. However, not all technical requirements for water reuse in Florida’s Rule were appropriate for the Commonwealth due to Florida’s greater dependence on groundwater for public water supply. Also, many items covered by Florida’s Rule apply to land treatment of sewage, which in Virginia is addressed in a separate set of regulations, specifically the Sewage Collection and Treatment Regulations (9VAC25-790). Therefore, requirements of the Water Reclamation and Reuse Regulation and the Sewage Collection and Treatment Regulations are comparable in many cases to requirements of the Florida Water Reuse Rule.</p> <p>There are no additional changes to the amended regulation in response to this comment.</p>
<p>7.</p>	<p>Subject: Florida model and consideration of gray water use for industrial users</p> <p>Commenter: Mr. Peter Mansfield</p> <p>Text: Virginia might follow the Florida model or consider other uses such as gray water for industrial users.</p> <p>Agency Response: See response to comment 6 regarding the suggestion that Virginia follow the Florida model. DEQ does not regulate the reclamation and reuse of gray water. The Virginia Department of Health provides guidelines for gray water reuse and the Department of Housing and Community Development is currently developing plumbing codes for non-potable water systems, including systems for gray water.</p> <p>There are no additional changes to the amended regulation in response to these comments.</p>
<p>8.</p>	<p>Subject: Barriers that reduce the effectiveness of irrigation reuse to meet TMDLs</p> <p>Commenter: Mr. Peter Mansfield</p> <p>Text: Two Virginia Codes assure that Virginia will never have a productive, cost effective reuse water program that could be our most effective tool to meet the federally mandated nutrient diet (TMDL). They are:</p> <ol style="list-style-type: none"> 1. All irrigation with reclaimed water must be only “supplemental irrigation” per Virginia Code 9VAC25-740-100.C.2. Supplemental irrigation is defined as irrigation, which in combination with rainfall, meets <u>but does not exceed</u> the water necessary to maximize production or optimize growth of the irrigated vegetation. 2. Virginia Code 9VAC25-740-10 permits the distribution of irrigation reuse water at the above supplemental rates, only <u>during the active growing season for the designated vegetation.</u> <p>Agency Response: Other land-based, non-discharging alternatives in addition to water reclamation and reuse are available to reduce or eliminate point source discharges of treated wastewater to surface waters in Virginia. One such alternative is land treatment as described in the Sewage Collection and Treatment Regulations (9VAC25-790-880). Land treatment of partially</p>

	<p>treated wastewater differs from irrigation reuse of reclaimed water in that land treatment provides, by design, further treatment and disposal of wastewater, while irrigation reuse is not intended to provide any additional treatment of reclaimed water applied to a site and is a method of resource utilization rather than disposal. Consequently, land treatment will frequently allow the application of partially treated wastewater and nutrients at higher rates and within smaller areas than irrigation reuse of reclaimed water. Higher rates of wastewater application increase the potential for contaminants to move below the zone of land treatment and into groundwater. Therefore, groundwater monitoring will typically be required for land treatment sites.</p> <p>Land-based, non-discharging alternatives provide utility’s additional options to manage their wastewater based on their needs and available resources, and in a manner protective of the environment and public health.</p> <p>There are no additional changes to the amended regulation in response to this comment.</p>
<p>9.</p>	<p>Subject: Application rates for irrigation reuse of reclaimed water</p> <p>Commenter: Mr. Peter Mansfield</p> <p>Text: Why is it important that DEQ determine the amount of irrigation water and when to apply it to specific vegetation? If too much water is applied it simply soaks into the ground and eventually helps to recharge the aquifer. DEQ’s concern about nutrient entering the aquifers can be answered by studying the absorption graphs published by the Water Environment Research Foundation entitled Review of Quantitative Tools to Determine Wastewater Soil Treatment Unit Performance. Anyway, the 10 mg/l of N2 is acceptable to EPA and drops about 25% during the spray application. Nature does not have the same concern as DEQ regarding “active growing season”. In nature, nutrients are broadcast on the ground in the form of decaying leaves etc. preliminarily during the non-growing season.</p> <p>Agency Response: Whether diverting a surface water discharge of treated wastewater to irrigation reuse or land treatment, over application of the water, including nutrients that it contains, may exceed the need and ability of the irrigated vegetation to remove the nutrients (e.g., nitrate, phosphorus, etc.). This increases the probability of nutrient losses to ground water. Nitrates in ground water that may result from over application of treated wastewater or reclaimed water to sites, is a public health concern, particularly where the ground water will be used for potable water supply. In addition, ground water is often hydrologically connected to surface waters in Virginia. Through this connection, nutrients in ground water may be indirectly discharged to surface waters, thereby defeating the purpose of land-based, non-discharging alternatives.</p> <p>There are no additional changes to the amended regulation in response to this comment.</p>
<p>10.</p>	<p>Subject: Tracking unintended reuse in surface waters</p> <p>Commenter: Mr. Peter Mansfield</p> <p>Text: [DEQ] indicates that wastewater is in some cases a necessary component of municipal’s water sources and therefore not available for irrigation purposes, explaining, “Some localities depend on the dumping of treated wastewater up stream to provide water for their municipal water supplies.” But [DEQ] does not know what cites or even what rivers and to what degree their water levels are affected.</p> <p>Agency Response: Greater than 90 percent of Virginia’s public water supply comes from surface waters (Status of Virginia’s Water Resources: A Report on Virginia’s Water Resources Management Activities, DEQ 2012). Consequently, there is a high probability that wastewater treatment facilities with discharges to surface waters are contributing unintentionally or in an unplanned manner to the supply for a large number of downstream surface water withdrawals. The degree to which this unintentional reuse occurs will vary from case to case based on a variety of factors that would need to be evaluated (e.g., seasonal fluctuations in flow, travel distance between the discharge and withdrawal, etc.). DEQ has not compiled the data on unintentional reuse for all</p>

	<p>wastewater treatment facilities with surface water discharges across the Commonwealth.</p> <p>Proposed amendments to the regulation include provisions that would allow DEQ to perform an analysis of impacts to beneficial uses of receiving streams related to new or expanding water reclamation and reuse projects. This analysis will be performed for only discharging wastewater treatment facilities with an associated water reclamation and reuse project, and will capture unintentional reuse where it occurs as a beneficial use of the receiving stream. With the implementation of proposed amendments to the regulation, more data regarding unintentional reuse will become available with most new and expanding water reclamation and reuse projects.</p> <p>There are no additional changes to the amended regulation in response to this comment.</p>
<p>11.</p>	<p>Subject: Cost savings estimates to divert a wastewater treatment plant discharge to land application</p> <p>Commenter: Mr. Peter Mansfield</p> <p>Text: The following detailed cost/savings estimates are considered possible if we simply converted one 11 million gallon per day waste treatment plant to produce reuse water. Also included is a snapshot of the most egregious impediments that DEQ has placed on Virginia’s reuse program with their current and proposed regulations. - First the advantages:</p> <ol style="list-style-type: none"> 1. Eliminate 500,000 pounds per year of nutrients from our Bay waters - a cost avoidance (savings) of \$75,000,000 based on HRSD’s estimate of \$225,000,000 to remove 1,500,000 pounds per year by upgrading our existing waste treatment plants. 2. Generate 4 billion gallons per year of nutrient rich irrigation water equal to 750 tons of 30% nitrogen fertilizer for our agricultural community with an economic value ranging from \$4 to \$20 million. The 4 billion gallons is simply the product of 11,000,000 gallons per day (plant output) times 365 days. And the revenue generated from the sale of reuse water is the above 4 billion gal/yr times a revenue of \$1.00 to \$5.00 per 1000 gallons. 3. Return about 3 billion gallons of water per year to our aquifers. This number is simply a guess with the assumption that 25% will be lost to crop absorbent and evaporation. The writer does not know the value of replenishing our failing aquifers, but it is obviously huge and was the original reason the example Florida plant embarked on their reuse program, that is, they were NOT faced with a mandate to remove nutrients from their surface waters as we are - their problem was simply failing aquifers. With the proper application of reuse water forty nine percent of the nutrients in the James River could be eliminated and our aquifers replenished. <p>There are, two major costs to implement the system, the first is the conversion costs for the plant, which includes a final chlorination or ultraviolet treatment of the water before sending it to one of two new holding basins. But these two costs (the chlorination and holding basins) approximately equal the savings from a possible increase in plant throughput as the nitrogen content is allowed to rise from 5-7 milligrams per liter (mg/l) to 10 mg/l. (As an example - Manatee County, Florida, increased their throughput from 8 million gallons per day to 11.) Based on a current cost for new construction of a large waste treatment plant of about \$20 per capacity gallon this savings could be as much as \$60 million; certainly enough to pay for the above plant conversion to produce reuse water.</p> <p>The distribution infrastructure cost is more nebulous and will vary greatly depending on the end use of the reuse water. Manatee County started by simply giving away all their wastewater to a nearby large farm. And then began to build the distribution network only as they deemed profitable. Now, several years later, they are selling all the reuse water they can produce at an average selling price of about \$3.00 per 1000 gallons.</p> <p>Agency Response: DEQ acknowledges that irrigation reuse of reclaimed water, as well as land treatment, can provide: 1) an alternative to nutrient reduction technology for wastewater treatment facilities, 2) nutrients for crop production, and 3) some groundwater recharge and replenishment. The economic value, amount of nutrients, and degree of groundwater recharge will vary widely</p>

	<p>depending on the nature of the wastewater and individual system characteristics.</p> <p>There are no additional changes to the amended regulation in response to this comment.</p>
<p>12.</p>	<p>Subject: Specific VAMWA comments regarding amendment nos. 7 and 15 in the Notice of Proposed Regulation</p> <p>Commenter: Robert C. Steidel, President, Virginia Association of Municipal Wastewater Agencies (VAMWA)</p> <p>Text:</p> <p>7. DEQ's Proposal: Modify language to clarify service agreement or contract requirements for end users of reclaimed water, and alternative permitting options for reclaimed water distribution systems.</p> <p>VAMWA is concerned that the requirements regarding service agreements and contracts creates a potential barrier to the promotion and encouragement of reuse. VAMWA recommends that reuse end users complete an application that references and reaffirms required compliance with applicable state and federal law and any reuse purveyor requirements. VAMWA is also concerned that too much additional monitoring and inspection requirements imposed on end users will add costs and, therefore, discourage them from becoming reuse customers. This concern is related to the discussion of points of compliance below.</p> <p>15. DEQ's Proposal: Add a provision that allows reclaimed water agents to inspect end users' reuses and storage facilities as part of the service agreement or contract between the reclaimed water agent and an end user.</p> <p>VAMWA is concerned that this provision may expose those permit holders to additional enforcement liability and responsibility. As DEQ states in the NOPR, "This change may also provide some administrative relief to DEQ as it may be able to direct some of its resources to other areas as needed." VAMWA understands this to mean that permittees will assume both quasi-regulatory responsibility (cost) and retain exposure to enforcement from DEQ (liability). Such an arrangement seems unworkable and overly burdensome to the permittees undertaking a reuse project for the public benefit.</p> <p>Agency Response: Language in 9VAC25-740-40.C was revised to clarify and be consistent with current requirements for service agreements or contracts between reclaimed water agents and end users contained in 9VAC25-740-100.C.1.d. In those cases where the end user and reclaimed water agent will be one in the same, a service agreement or contract will not be required. The technical advisory committee that assisted DEQ with development of the Water Reclamation and Reuse Regulation recommended service agreements or contracts much like those between other public utilities and the customers that they service in lieu of DEQ issuing a permit to every end user of reclaimed water. The service agreement or contract reasonably transfers some requirements of the permit issued to the reclaimed water agent to end users where applicable to the reuse(s), and provides a means to terminate service to non-compliant end users. To date, requirements for service agreements or contracts have not been a barrier to promoting and encouraging water reclamation and reuse.</p> <p>Proposed amendments to the regulation under 9VAC25-740-100.C.1d will provide reclaimed water agents (or providers of reclaimed water) the right to perform routine or periodic inspections of their end users' reclaimed water reuses and storage facilities as a provision of the service agreement or contract between the reclaimed water agent and end user. The proposed amendments do not mandate inspections, nor do they specify the frequency and other details regarding such inspections. Therefore, the cost of inspections will vary according to whatever frequency and level of scrutiny the reclaimed water agent chooses to exercise. End users will not have monitoring or inspection requirements unless they are also a reclaimed water agent permitted by DEQ to provide reclaimed water to end users other than themselves.</p>

	<p>DEQ issues a permit to reclaimed water agents for the distribution of reclaimed water, but does not issue permits to end users except in rare cases. Therefore, the reclaimed water agent is ultimately responsible for the proper reuse of reclaimed water by end users within their service area. Service agreements or contracts between reclaimed water agents and end users clarify and affirm the responsibilities of the two parties to properly manage and reuse reclaimed water. Through the terms of the service agreement or contract, a reclaimed water agent maintains the right to terminate service to a non-compliant end user. In essence, the reclaimed water agent is operating like many other utilities that provide services to customers. Inspections performed by the reclaimed water agent would provide a valuable tool to verify that end users are complying with service agreements or contracts in order to avoid violations of the permit issued to the reclaimed water agent. Proposed amendments that will provide reclaimed water agents the right to perform inspections of their end users' reclaimed water reuses and storage facilities will not add any new liabilities for reclaimed water agents, but will give them an option to perform inspections as they deem necessary to reduce the incidence of permit violations. Inspections by reclaimed water agents may also have direct and indirect economic benefits where, for example, an inspection identifies a leak and significant loss of a reclaimed water that an end user is paying for, or where public knowledge of inspections by the reclaimed water agent increases consumer confidence and promotes water reclamation and reuse.</p> <p>There are no additional changes to the amended regulation in response to these comments.</p>
<p>13.</p>	<p>Subject: Specific VAMWA comments regarding amendment no. 10 in the Notice of Proposed Regulation</p> <p>Commenter: Robert C. Steidel, President, Virginia Association of Municipal Wastewater Agencies (VAMWA)</p> <p>Text: 10. DEQ's Proposal: Modify the point of compliance (POC) for reclaimed water standards to include POCs for certain system storage facilities and reclaimed water distribution systems, in addition to POCs required for reclamation systems and satellite reclamation systems.</p> <p>Even though POCs are proposed to be evaluated by the Board on a case-by-case basis (rather than mandated in all cases), VAMWA is concerned that the addition of POCs will add to the monitoring costs and enforcement liability exposure of reuse purveyors. VAMWA recommends that factors be included to guide the Board's case-by-case evaluations, rather than leaving the determination entirely to the Board's discretion.</p> <p>VAMWA also believes that the Industrial Pretreatment Program may provide a useful counterpoint for consideration in this context, as well as a model for a reuse program. Under the Industrial Pretreatment Program, protection of public health and the environment is achieved by regulating the non-domestic/industrial users of a publicly owned treatment works (POTW), rather than establishing multiple POCs at which the POTWs' compliance is measured. Industrial users must comply with the prohibitive, general, applicable categorical standards, and local limits developed by the POTW. The relationship between a POTW and reuse water users is analogous to the relationship between a POTW and its industrial users. As with an industrial pretreatment program, a POTW (or locality) could adopt an appropriate reuse ordinance and program, allocating compliance responsibility to end reuse water users, rather than establishing POCs throughout a reuse transmission and distribution system. This would also be similar to the requirements for drinking water purveyors.</p> <p>Agency Response: DEQ's authorities and activities are regulated by statute and DEQ does not, in most cases, regulate itself within the regulations that it develops. Therefore, guidelines for DEQ's case-by-case evaluation of either reclaimed water system storage or distribution systems for conditions warranting additional points of compliance (POCs) and monitoring, will be provided in agency guidance.</p> <p>Under 9VAC25-740-110.B.9 of the existing regulation, all reclaimed water distribution systems must be maintained to minimize losses and to ensure safe and reliable conveyance of reclaimed water</p>

	<p>such that the reclaimed water will not be degraded below the standards required for the intended reuse(s) in accordance with 9VAC25-740-90. Proposed amendments to the regulation that may require additional POCs and monitoring for certain systems storage facilities and reclaimed water distribution systems, will not add any additional liability for reclamation systems or reclaimed water agents already contained in the existing regulation. These POCs and associated monitoring would be limited to storage facilities and distribution systems under the direct control of the reclamation system or reclaimed water agent. Reclaimed water nonsystem storage and distribution systems that are under the direct control of an end user may be monitored by the reclaimed water agent through the terms of the service agreement or contract between the agent and end user per existing requirements of the regulation. Such monitoring may include POCs if determined necessary by the reclaimed water agent to verify that the reclaimed water quality is maintained for the intended reuse(s).</p> <p>Monitoring at additional POCs and associated costs for certain systems storage facilities and reclaimed water distribution systems may be reduced or avoided where conditions that degrade the quality of the reclaimed water below the standards required for the intended reuses of that water are eliminated, monitoring results indicate that the reclaimed water meets the required standards, or both.</p> <p>Due to a wide range of varying factors that can affect the quality of reclaimed water conveyed by reclaimed water distribution systems, flexibility when determining appropriate monitoring requirements for these systems is necessary in lieu of additional, prescriptive specifications. Therefore, guidelines for DEQ's case-by-case evaluation of either reclaimed water system storage or distribution systems for conditions warranting additional points of compliance (POCs) and monitoring will be provided in agency guidance.</p> <p>DEQ understands and appreciates the value of the Industrial Pretreatment Program to reduce or eliminate the discharge of contaminants from Industrial facilities to POTWs that may disrupt or pass through the treatment processes of the facility, resulting in non-compliant discharges from the POTW to surface waters. However, reclaimed water end users are not analogous to industrial users of a POTW in that end users are customers and are not responsible for the treatment and quality control or assurance of reclaimed water to ensure that it complies with applicable reclaimed water standards prior to their receipt of that water. Per the regulation, this is the responsibility of the water reclamation system (generator of reclaimed water) or reclaimed water agent. This is similar to the Waterworks Regulations, which confer all responsibility for drinking water quality onto the waterworks (the generator and provider of the drinking water).</p> <p>There are no additional changes to the amended regulation in response to these comments.</p>
<p>14.</p>	<p>Subject: Specific VAMWA comments regarding amendment no. 11 in the Notice of Proposed Regulation</p> <p>Commenter: Robert C. Steidel, President, Virginia Association of Municipal Wastewater Agencies (VAMWA)</p> <p>Text: 11. DEQ's Proposal: Add reclaimed water monitoring requirements for certain system storage facilities and reclaimed water distribution systems where determined necessary by the board.</p> <p>VAMWA does not object to the addition of these requirements, subject to the same general comment expressed above.</p> <p>Agency Response: See response to comment 13. There are no additional changes to the amended regulation in response to this comment.</p>
<p>15.</p>	<p>Subject: Emergency authorization for the production, distribution or reuse of reclaimed water</p> <p>Commenter: Andrea Wortzel on behalf of Mission H₂O</p>

	<p>Text: The proposed regulations include provisions relating to emergency reuse. See proposed 9VAC25-740-45. This section requires that coverage under a VPDES or VPA permit must be sought for such emergency authorizations within 180 days. This time period is excessive. The emergency provisions in the Virginia Water Protection regulations require that a permit application be filed within 14 days of the emergency authorization. 9VAC25-210-80.D.2. The time period for applying for permit coverage for emergency reuse projects should be consistent with that for emergency withdrawals.</p> <p>Agency Response: § 62.1-44.15.22.C of the Code of Virginia requires that a permit application for a Virginia Water Protection Permit be filed within 14 days of the issuance of an Emergency Water Protection Permit, and provides the basis for the same requirement under 9VAC25-210-80.D.2 of the Virginia Water Protection Permit Regulation. A similar requirement does not exist in the Code of Virginia related to an emergency authorization for the production, distribution and reuse of reclaimed water. However, submission of an application for permanent coverage of a water reclamation and reuse project under either an existing VPDES or VPA permit within 180 days of the emergency authorization issuance is consistent with another application submission requirement of the Water Reclamation and Reuse Regulation. Per 9VAC25-740-430.A, “The owners of existing water reclamation systems, reclaimed water distribution systems and, as applicable, water reuses that do not have a VPA or VPDES permit shall submit a complete VPA or VPDES permit application or other necessary information as prescribed under 9VAC25-740-40 within 180 days of being requested by the board.” In a broader effort to promote and encourage water reclamation and reuse, DEQ also believes that an application submittal period of 180 days will provide the time necessary for applicants to develop more diversified, comprehensive and viable water reclamation and reuse projects beyond the very limited scope of activities that can be covered by an emergency authorization.</p> <p>There are no additional changes to the amended regulation in response to this comment.</p>
<p>16.</p>	<p>Subject: Consumptive use impacts</p> <p>Commenter: Charles M. Murray, General Manager, Fairfax County Water Authority</p> <p>Text: Consumptive reuse projects authorized under Virginia’s Water Reclamation and Reuse Regulation have the potential to adversely impact Fairfax Water and our utility partners’ water supply resources unless mitigation is required. If consumptive reuse is widely implemented without appropriate mitigation, downstream beneficial uses will not be protected from resulting reductions in stream flow.</p> <p>Agency Response: Proposed amendments to the regulation under 9VAC25-740-50 and 9VAC25-740-100 are intended to avoid significant adverse impacts to beneficial uses of a receiving state water that may result from the diversion of VPDES permitted discharge to water reclamation and reuse. This will involve an analysis of impacts on the hydrologic regime by DEQ, similar to that required for a surface water withdrawal authorized by a VWP permit (9VAC25-210). Where DEQ’s analysis of impacts for a new or expanding water reclamation and reuse project identifies significant adverse impacts to beneficial uses of the receiving water, the project may be denied authorization or limited by special conditions of the VPDES permit or modification of the VPDES permit to avoid such impacts.</p> <p>There are no additional changes to the amended regulation in response to this comment.</p>
<p>17.</p>	<p>Subject: Consumptive use impacts</p> <p>Commenter: Andrea Wortzel on behalf of Mission H₂O</p> <p>Text: [The] proposed amendments to the Water Reuse and Reclamation Regulation prohibit the reduction of a discharge from a treatment works for reuse that has a significant adverse impact to beneficial uses. See Proposed Amendments to 9VAC25-740-50 (Exclusions and Prohibitions). The term “significant” has not been defined, nor do the proposed amendments identify how a determination of adverse impact will be made. Mission H₂O expects that DEQ will issue guidance</p>

	<p>on this subject, and looks forward to working with DEQ as this concept is more fully developed.</p> <p>Agency Response: DEQ will develop guidance regarding the analysis of impacts to beneficial uses of a receiving water resulting from a new or increased diversion of a discharge from a treatment works related to a proposed water reclamation and reuse project. That guidance will address the technical basis for determining significance of impacts.</p> <p>There are no additional changes to the amended regulation in response to this comment.</p>
<p>18.</p>	<p>Subject: Consumptive use impacts</p> <p>Commenter: Charles M. Murray, General Manager, Fairfax County Water Authority</p> <p>Text:</p> <p>A. The proposed amendments to 9VAC25-740-50 (Exclusions and Prohibitions) to include the prohibition of the reduction of discharge from a treatment works for reuse that may cause a significant adverse impact to beneficial uses provides a mechanism by which DEQ can begin to address proposed consumptive use. It is critical that “significant” be clearly defined.</p> <p>B. The downstream impact must be comprehensively evaluated and performed in consultation with downstream water suppliers. Fairfax Water has developed the enclosed booklet, <i>Evaluating Water Reclamation and Reuse Projects</i>, which includes a decision matrix that can be used to support such evaluation. We request that DEQ strongly consider using Figure 1, <i>Considerations When Evaluating the Impact of Proposed Water Reuse Projects</i>, in evaluating the Prohibition issue.</p> <p>C. To further minimize the impact of this issue on downstream water supplies, DEQ needs to include the following in 9VAC25-740-40 (Permitting Requirements): <i>The owner of the reclaimed water distribution system shall require that each end user’s service agreement or contract require the elimination or reduction of consumptive use to less than 0.5 MGD during drought periods.</i></p> <p>Agency Response: DEQ will develop guidance regarding the analysis of impacts to beneficial uses of a receiving water resulting from a new or increased diversion of a discharge from a treatment works to a proposed water reclamation and reuse project. That guidance will address the technical basis for determining significance of impacts. DEQ will consider the information contained in the comments as guidance is developed.</p> <p>There are no additional changes to the amended regulation in response to this comment.</p>
<p>19.</p>	<p>Subject: Downstream notification</p> <p>Commenter: Charles M. Murray, General Manager, Fairfax County Water Authority</p> <p>Text: The proposed amendments need to include a requirement that notice be provided of any application for water reclamation and reuse provided to any water supplier that withdraws water downstream from the point of the proposed water reclamation and reuse project. We respectfully request that DEQ add the following subsection (E.) to 9VAC25-740-100 (Application for a Permit):</p> <p><i>E. The applicant must provide notification in a newspaper of general circulation for 14 days and provide notice to downstream VWP permit holders and downstream local or regional entities conducting water supply planning pursuant to 9VAC25-780 et seq.</i></p> <p>Agency Response:</p> <p>In response to this comment, language in 9VAC25-740-30.B.2 has been enhanced to clarify that a VPDES permit modification will be required where diversion of source water from the VPDES permitted discharge to water reclamation and reuse has the potential to cause a significant adverse impact to other beneficial uses of the receiving state water for the discharge. Conditions to avoid significant adverse impacts will be included in the draft VPDES permit modification that must be advertised for public comment. DEQ will also work informally with applicants to consider changes</p>

	<p>to the application that may reduce potentially significant adverse impacts of a water reclamation and reuse project, thereby eliminating the need for a VPDES permit modification.</p> <p>Although the statute directs DEQ to provide public notice of permit applications for a limited number of regulated activities, this does not apply to permit applications for water reclamation and reuse. However, DEQ will develop guidance that will allow early public involvement for proposed water reclamation and reuse projects; particularly where a project has the potential to cause significant adverse impacts to beneficial uses of the receiving state water.</p>
<p>20.</p>	<p>Subject: Emergency authorization</p> <p>Commenter: Charles M. Murray, General Manager, Fairfax County Water Authority</p> <p>Text: We are very concerned that the proposed amendment [Emergency authorization (9VAC25-740-45)] allows for emergency authorization for the production, distribution or reuse of reclaimed water during a period of drought. Emergency use of reclaimed water is not an appropriate substitute for adequate water supply planning. We urge DEQ to remove 9VAC25-740-45 in its entirety from this amendment. This section of the proposed amendment will increase the number of unpermitted water users during periods of drought. During these periods, the unpermitted diversion of water has the potential to significantly decrease both the water availability for downstream water supplies and the reliability of flow and stream monitoring gages.</p> <p>Agency Response: This amendment further qualifies circumstances under which the emergency authorization may be issued as those where “due to drought, there is insufficient public water supply that may result in a substantial threat to public safety.” This considerably limits the circumstances under which an emergency authorization for the production, distribution or reuse of reclaimed water would be issued by DEQ.</p> <p>Also, proposed procedures to approve an emergency authorization for the production, distribution or reuse of reclaimed water in the amended regulation are similar to those required to issue an Emergency VWP permit for new or increased public water supply withdrawals.</p> <p>Lastly, an analysis of impacts to the hydrologic regime will be required to assess significant adverse impacts to beneficial uses of a receiving state water due to the emergency authorization where such an authorization will divert any portion of an existing discharge to water reclamation and reuse. Should the analysis of impacts indicate that activities proposed for emergency authorization may result in significant adverse impacts, the activities may be denied authorization or limited by special conditions of the emergency authorization to avoid such impacts. Proposed amendments to the regulation require that a new application for a permit or administrative authorization related to water reclamation and reuse be submitted within 180 days of the emergency authorization issuance. Therefore, an initial analysis of impacts will be conducted for the emergency authorization, followed by a more comprehensive analysis for the permit or administrative authorization. This proposed procedure for the analysis of impacts is similar to what is done for water withdrawals authorized by Emergency VWP Permits.</p> <p>There are no additional changes to the amended regulation in response to these comments.</p>
<p>21.</p>	<p>Subject: Water Supply Plan Advisory Committee report and recommendations regarding water reuse</p> <p>Commenter: Andrea Wortzel on behalf of Mission H₂O</p> <p>Text:</p> <p>A. Mission H₂O also participated on the Water Supply Plan Advisory Committee that recently completed its work. In that Committee’s final report, recommendations were made about options for mitigating for consumptive use (and consumptive reuse) projects. Mission H₂O encourages DEQ to continue to identify criteria and options for such mitigation to take place.</p>

	<p>B. The [Water Supply Plan Advisory] Committee’s report also suggests that stormwater reuse and/or rainwater harvesting may provide even greater reuse opportunities. Mission H₂O would welcome the opportunity to partner with DEQ to explore such options. Similarly, Mission H₂O encourages both DEQ and the Health Department to move forward in considering gray water reuse in buildings, and the necessary amendments to the Building and Plumbing Code to enable reuse to occur for nonpotable purposes.</p> <p>Agency Response:</p> <p>A. DEQ has not yet determined how it will address the recommendation of the Water Supply Plan Advisory Committee. Such a recommendation is of a policy magnitude that would require legislative action. Legislative actions in the Executive Branch are determined by the Governor.</p> <p>B. DEQ is involved with the development of guidelines and regulations by other state agencies with lead authority for the reclamation and reuse of non-potable waters other than municipal or industrial wastewaters. DEQ actively participated on the advisory committee that assisted the Virginia Department of Health with development of the “Virginia Rainwater Harvesting & Use Guidelines” completed on March 31, 2011. More recently, DEQ has participated on a work group organized by the Department of Housing and Community Development to develop proposed amendments to the Plumbing Chapters of the Virginia Statewide Building Code for non-potable water systems. These amendments will apply to systems of harvested rainwater, gray water, and reclaimed water. Per § 10.1-603.4 of the Code of Virginia, the Department of Conservation and Recreation has the authority to develop regulations for the reclamation and reuse of stormwater, a process that would include DEQ’s participation.</p> <p>There are no additional changes to the amended regulation in response to these comments.</p>
<p>22.</p>	<p>Subject: Specific VAMWA comments regarding amendment no. 20 in the Notice of Proposed Regulation</p> <p>Commenter: Robert C. Steidel, President, Virginia Association of Municipal Wastewater Agencies (VAMWA)</p> <p>Text: 20. DEQ’s Proposal: Revise an existing prohibition that will allow the reuse of reclaimed water inside residential buildings and structures that are other than one or two family dwellings.</p> <p>VAMWA notes that, although revising a prohibition may remove a barrier to reuse, it does not automatically expand or encourage reuse, especially without corresponding changes to other regulations, particularly those related to the use of gray water. In the absence of an affirmative statement regarding reuse in residences and other structures, whether in statute, regulation or guidance, combined with meaningful examination and revisions to other related laws, including the Virginia Uniform Statewide Building Code, reuse will continue to languish. The approaches of other states would be instructive in this area, and VAMWA has advocated (and continues to support) a more expansive review of other states’ reuse practices. See the VAMWA Stakeholder Committee Response Letters.</p> <p>Agency Response: Although DEQ does not regulate the reclamation and reuse of gray water, storm water or harvested rainwater, DEQ has worked closely with other state agencies having statutory authority to develop either guidelines or regulations for the reclamation and reuse of these water sources. Throughout 2012 to the present, DEQ has served on a work group organized by the Department of Housing and Community Development (DHCD) to develop a new chapter in the plumbing section of the Virginia Statewide Building Code (Code) on non-potable water systems, including systems for gray water, harvested rainwater, and reclaimed water, inside buildings and structures. DEQ is now working to revise and update a memorandum of agreement with DHCD to address issues of regulatory jurisdiction between the Code and the Sewage Collection and Treatment Regulations (9VAC25-790) and the Water Reclamation and Reuse Regulation (9VAC25-740) related to the new chapter on non-potable water systems. DEQ also assisted VDH with development of the Virginia Rainwater Harvesting & Use Guidelines completed on March 31, 2011.</p>

	<p>As part of a larger effort to promote and encourage water reclamation and reuse, DEQ will continue to work with other state agencies to avoid regulatory conflicts and inconsistencies for the reclamation and reuse of all water sources, including municipal and industrial wastewater, harvested rainwater, gray water and storm water.</p> <p>There are no additional changes to the amended regulation in response to this comment.</p>
<p>23.</p>	<p>Subject: Specific VAMWA comments regarding amendment no. 8 in the Notice of Proposed Regulation</p> <p>Commenter: Robert C. Steidel, President, Virginia Association of Municipal Wastewater Agencies (VAMWA)</p> <p>Text: 8. DEQ’s Proposal: Modify activities excluded from the requirements of the regulation related to alternative onsite sewage systems permitted by the Virginia Department of Health, utilization of harvested rainwater and storm water, and indirect nonpotable reuse of reclaimed water.</p> <p>VAMWA does not object to the proposed exclusions; however, a comprehensive, statewide water reuse policy should address these important sources of reuse water.</p> <p>Agency Response: DEQ acknowledges that a comprehensive, statewide water reuse policy would help to address the reclamation and reuse of source waters in addition to municipal and industrial wastewater. However, the Code of Virginia gives the authority to develop guidelines and regulations for the reclamation and reuse (or recycle) of other water sources, such as gray water, harvested rainwater and storm water, to other state agencies. While these circumstances limit DEQ’s ability to develop a comprehensive, statewide water reuse policy for all water sources that can be reclaimed for reuse where it does not have the authority to regulate such activities, DEQ will continue its current work with other state agencies to promote and encourage the reclamation of all source waters (e.g., municipal and industrial wastewater, gray water, harvested rainwater and storm water) for reuse in a manner protective of the environment and public health.</p> <p>There are no additional changes to the amended regulation in response to this comment.</p>
<p>24.</p>	<p>Subject: Specific VAMWA comments regarding amendment no. 22 in the Notice of Proposed Regulation</p> <p>Commenter: Robert C. Steidel, President, Virginia Association of Municipal Wastewater Agencies (VAMWA)</p> <p>Text: 22. DEQ’s Proposal: Add provisions to prevent unauthorized discharges and to recover flush water or reclaimed water for use or reuse from the maintenance of reclaimed water distribution systems.</p> <p>VAMWA objects to the addition of new subsections to 9VAC25-740-140.D.2.d. VAMWA believes that the current language is adequate.</p> <p>Agency Response: When developing new requirements under 9VAC25-740-140.D.2.d regarding the management of flush water from reclaimed water distribution system maintenance, DEQ considered the following: 1) flush water may not meet surface water quality standards (e.g., due to high solids, chlorine, etc.) and would not be appropriate to discharge indirectly to surface waters via storm drains or directly to surface waters without a discharge permit issued by DEQ; 2) some localities may prohibit the discharge of flush water to a sanitary sewer through local ordinances where such a discharge has the potential to hydraulically overload a WWTP; and 3) flush water can be reclaimed and reused as an alternative to disposal where reuse of the reclaimed flush water is approved by DEQ. Based on these considerations, DEQ believes that requirements under 9VAC25-740-140.D.2.d are necessary, at a minimum, to clarify appropriate options and procedures for the management of flush water.</p> <p>There are no additional changes to the amended regulation in response to this comment.</p>

<p>25.</p>	<p>Subject: Ground water recharge with reuse water</p> <p>Commenter: Robert C. Steidel, President, Virginia Association of Municipal Wastewater Agencies (VAMWA)</p> <p>Text: Early in the regulatory process, VAMWA and others identified ground water recharge with reuse water as an issue of significant interest with the potential to greatly incentivize and encourage reuse, especially among wastewater treatment plant owners and operators. See the VAMWA Stakeholder Committee Response Letters. In fact, ground water recharge with reuse water was the single regulatory issue that garnered the most support overall from the Stakeholder Committee [on Expanding Water Reclamation and Reuse in Virginia] at its meeting. See Reuse Report at 3.</p> <p>VAMWA acknowledges the complexity of addressing groundwater recharge with reuse water, including the number of regulations that ground water recharge implicates. However, in VAMWA's view, removal of ground water recharge from the purview of the instant regulatory process significantly diminished the ability of the Stakeholder Committee and the agencies to achieve their charge of examining and recommending opportunities to expand, promote and encourage the reuse of wastewater in the Commonwealth.</p> <p>VAMWA and the members for the RAP [Regulatory Advisory Panel] agreed to table ground water recharged during the RAP, in deference to the regulatory process, to allow the amendments to the Regulation to proceed. VAMWA remains keenly interested in the planned future regulatory process to examine the rules related to ground water recharge and looks forward to participating in that process.</p> <p>Agency Response: Although ground water recharge with reclaimed water is essentially excluded from the requirements of the Water Reclamation and Reuse Regulation, ground water recharge with treated wastewater is not prohibited in Virginia and may be authorized by either the EPA Underground Injection Control Program or DEQ Water Division depending on the method of ground water recharge. See also response to comment 28 regarding groundwater or aquifer recharge with reclaimed water.</p> <p>There are no additional changes to the amended regulation in response to these comments.</p>
<p>26.</p>	<p>Subject: Groundwater recharge with reclaimed water</p> <p>Commenter: Curt Smith, Director of Planning, Accomack-Northampton Planning District Commission</p> <p>Text: The Eastern Shore of Virginia Groundwater Committee supports the efforts to enhance the Water Reclamation and Reuse Regulations in order to promote and encourage the beneficial use in a safe and protective manner. Because the freshwater resource on the Eastern Shore of Virginia is restricted to groundwater, the EPA has designated Accomack County and Northampton County a Sole Source Aquifer area. As a consequence, we are very interested in measures that enhance sustainability of our resource including measures that 1) reduce use of the fresh groundwater resource; 2) promote recharge to the groundwater; and 3) prevent saltwater intrusion. To that end, there are a number of processes and technologies falling under water reclamation and reuse that, with proper implementation, can support these goals. These processes and technologies were the subject of the Groundwater Recharge Stakeholder Advisory Group facilitated by VDEQ last year, and include underground injection; on-site sewage systems; stormwater recharge; and aquifer storage and recovery. As discussed by the Advisory Group, many of these have a direct relation to water reclamation and reuse but are not addressed in regulations in a form that promotes or encourages their use. We hope VDEQ, following promulgation of this amendment, will continue to consider avenues to promote and encourage use of these processes in order to support a more sustainable groundwater resource.</p> <p>Agency Response: DEQ acknowledges that, depending on the circumstances, water reclamation and reuse may be an alternative to reduce the use of fresh groundwater resources for non-potable uses, and that groundwater recharge may be a valuable option to restore, maintain, and in some</p>

	<p>cases, protect the water resources of a locality. The EPA Underground Injection Control (UIC) Program may issue a rule authorization or individual permit for recharge of an aquifer with fluids from various sources (e.g., reclaimed water, storm water, etc.) where it will occur through an injection well and will not pose a potential endangerment to an underground source of drinking water. DEQ has not sought delegation of the UIC program from EPA in Virginia. Consequently, direct aquifer recharge is excluded from the requirements of the Water Reclamation and Reuse Regulation.</p> <p>Groundwater recharge with treated sewage or municipal wastewater through a rapid infiltration basin (RIB) may be authorized by the DEQ under a Virginia Pollution Abatement Permit where the RIB is designed in accordance with the Sewage Collection and Treatment Regulations (9VAC25-790). To avoid regulatory redundancy, this activity is excluded from requirements of the current and amended Water Reclamation and Reuse Regulation under 9VAC25-740-50.A.6.</p> <p>There are no additional changes to the amended regulation in response to these comments.</p>
<p>27.</p>	<p>Subject: Groundwater recharge with reclaimed water by direct aquifer injection</p> <p>Commenter: James J. Pletl, Director of Water Quality, Hampton Roads Sanitation District</p> <p>Text: Additionally, one of the bullets in the amendment summary states that: <i>“The amendments will be adding specific details for indirect potable reuse (IPR) projects including permit application, design, construction, and operation requirements.”</i> These amendments provide clarity on some aspects of indirect potable reuse such as the amendments in section B of (9VAC25-740-100 Application for Permit). However, the regulation does not directly address groundwater recharge other than in the development of the IPR definition. Further, the proposed regulations keep direct aquifer injection in the exclusions category of the Exclusions and Prohibitions section (9VAC25-740-50 Exclusions and Prohibitions). This approach to direct recharge in the regulations continues to reinforce the belief that it is not an option available in Virginia and, hence, that it will cause unacceptable impact to aquifers. Therefore the proposed regulations must take a more explicit and definitive approach to direct recharge which properly presents this option as available and viable given scientifically-defensible limiting restrictions.</p> <p>Agency Response: The definition for IPR in the existing and proposed regulation does not address the recharge of underground sources of drinking water with reclaimed water. See also the response to comment 28 regarding groundwater or aquifer recharge with reclaimed water.</p> <p>There are no additional changes to the amended regulation in response to these comments.</p>
<p>28.</p>	<p>Subject: Groundwater or aquifer recharge with reclaimed water</p> <p>Commenter: James J. Pletl, Director of Water Quality, Hampton Roads Sanitation District</p> <p>Text: The amendments discussing IPR must provide absolute clarity on groundwater recharge and support it as a reuse option. For example, the regulation needs to use the term “groundwater and/or aquifer recharge” as an indirect potable reuse option. Many wastewater professionals in Virginia are confused regarding the legality and feasibility of groundwater recharge. It is not uncommon in wastewater circles to hear the incorrect statement “aquifer injection with reclaimed water is banned in Virginia”. The term “aquifer recharge” is only mentioned in section 9VAC25-740-10 of the regulations which list a variety of common reuse definitions. As the demand for water increases across the Commonwealth and groundwater supplies are being stretched, replenishing groundwater basins with reuse water may be the best option for Virginia. These amendments must help clear known obstacles to encourage and promote all forms of beneficial reuse, including direct groundwater recharge.</p> <p>Agency Response: DEQ acknowledges that direct groundwater/aquifer recharge with reclaimed water may be considered a beneficial reuse and an option among others to manage water resources. The EPA Underground Injection Control (UIC) Program may issue a rule authorization or individual permit for recharge of an aquifer with fluids, such as treated wastewater, where it will</p>

	<p>occur through an injection well and will not pose a potential endangerment to an underground source of drinking water. DEQ has not sought delegation of the UIC program from EPA in Virginia. Consequently, direct groundwater/aquifer recharge is not defined in and is excluded from the requirements of the Water Reclamation and Reuse Regulation.</p> <p>Groundwater recharge with treated sewage or municipal wastewater by way of rapid infiltration basins (RIBs) may be authorized by the DEQ under a Virginia Pollution Abatement Permit where the RIBs are designed in accordance with the Sewage Collection and Treatment Regulations (9VAC25-790). To avoid regulatory redundancy, this activity is excluded from requirements of the current Water Reclamation and Reuse Regulation under 9VAC25-740-50.A.6.</p> <p>There are no additional changes to the amended regulation in response to these comments.</p>
<p>29.</p>	<p>Subject: Groundwater recharge with reclaimed water</p> <p>Commenter: James J. Pletl, Director of Water Quality, Hampton Roads Sanitation District</p> <p>Text: When considering the new amendments and the specific language concerning design and construction of IPR, the Department of Environmental Quality and the State Water Control Board must address the EPA Guidelines for Water Reuse 2012, hereafter referred to as the “Guidelines”. This document discusses the primary types of groundwater recharge as surface infiltration/spreading, vadose zone injection, and deep direct aquifer injection. The design and construction details of the proposed amendments must discuss these primary types of groundwater recharge thoroughly but separately because they each have advantages and disadvantages based on the location and needs of a specific project.</p> <p>Agency Response: See response to comment 28 regarding groundwater or aquifer recharge with reclaimed water. Design requirements for surface infiltration/spreading (or rapid infiltration basins) regulated by DEQ are contained in the Sewage Collection and Treatment Regulations (9VAC25-790-880).</p> <p>There are no additional changes to the amended regulation in response to this comment.</p>
<p>30.</p>	<p>Subject: Rapid infiltration basins for groundwater recharge</p> <p>Commenter: James J. Pletl, Director of Water Quality, Hampton Roads Sanitation District</p> <p>Text: Surface rapid infiltration basins are used in other regions of the U.S. such as Florida’s Orlando Rapid Infiltration System and the Flushing Meadows Project in the Salt River bed west of Phoenix, AZ. Infiltration basins may be the most publically acceptable recharge option based on the fact that the water eventually becomes part of the groundwater supply only after natural physical and chemical treatment by the soil. Many coastal parts of Virginia could be well suited for this treatment due to loamy sand soil conditions similar to Florida (see VA soil types). Soils must be coarse enough to allow infiltration and fine enough to provide filtration. According to page 19 of Chapter 2 (Planning and Management Considerations) in the EPA 2012 Guidelines for Water Reuse, trace organic compounds have not been observed in soil aquifer treatment systems using spreading /infiltration basins where microbial activity in the subsurface is stimulated. If the amendments address this rapid infiltration recharge method and a subsequent design and construction guidance document is made available, this method of groundwater recharge could be widely accepted in the Commonwealth due to the general public’s historical desire for extended natural treatment.</p> <p>Agency Response: Design requirements for rapid infiltration basins (RIBs) as a method of wastewater land treatment and groundwater recharge already exist in the Sewage Collection and Treatment Regulations (9VAC25-790-880). RIBs may be authorized by the DEQ under a Virginia Pollution Abatement Permit. In Virginia, RIBs are not a commonly used method of sewage treatment and disposal, but may find greater application for groundwater recharge in the future.</p> <p>To avoid regulatory redundancy with the Sewage Collection and Treatment Regulations, groundwater recharge with treated wastewater by way of RIBs is excluded from requirements of</p>

	<p>both the existing and amended Water Reclamation and Reuse Regulation under 9VAC25-740-50.A.6.</p> <p>There are no additional changes to the amended regulation in response to these comments.</p>
<p>31.</p>	<p>Subject: Groundwater recharge with reclaimed water</p> <p>Commenter: James J. Pletl, Director of Water Quality, Hampton Roads Sanitation District</p> <p>Text: The benefits of directly injecting reclaimed water into the groundwater aquifer are stated nicely in Table 2-2 of the EPA 2012 Guidelines for Water Reuse (Guidelines). The depletion of groundwater resources is a reality in many regions of Virginia, and direct injection could benefit groundwater levels immediately. There are additional advantages to direct groundwater recharge including the provision of a barrier to seawater intrusion into freshwater aquifers and prevention of aquifer damage due to loss of volume. According to the page 27 of Chapter 3 (Types of Reuse Applications) in the Guidelines, “the practice of discharging treated wastewater effluent to a natural environmental buffer, such as a groundwater aquifer, has historically been deemed as an appropriate practice for IPR.”</p> <p>Agency Response: See response to comment 28 regarding groundwater or aquifer recharge with reclaimed water.</p> <p>There are no additional changes to the amended regulation in response to these comments.</p>
<p>32.</p>	<p>Subject: Direct potable reuse and groundwater recharge.</p> <p>Commenter: James J. Pletl, Director of Water Quality, Hampton Roads Sanitation District</p> <p>Text: We now have developed engineered treatment technologies such as ultra or micro filtration, reverse osmosis, and advanced oxidative processes (see article on advanced treatment) that can perform as well or better than natural environmental buffers. With the implementation of technologies producing such high quality effluents, it is not defensible to bring reclaimed water quality to a level higher than that of most drinking water sources simply to discharge this high quality water to an aquifer. Performance-based treatment technology could eliminate the need for a natural buffer and allow Direct Potable Reuse (DPR) to be considered. DPR characterizes the process where highly treated municipal wastewater is discharged directly into the drinking water treatment plant source water stream. It appears that DPR is still prohibited in the amended reuse regulation (9VAC25-740-50 Exclusions and Prohibitions) although the UOSA plant in Virginia discharges highly treated wastewater directly into a drinking water reservoir. Another factor to consider is that aquatic organisms are far more sensitive than humans to pollutants. Discharging effluent into natural buffers such as a small stream system with very little dilution may be more harmful to humans and the environment than discharging to an aquifer. In some cases groundwater recharge may be the most environmentally protective choice.</p> <p>Agency Response: DEQ acknowledges that technology exists to treat various wastewater sources to a quality that meets or exceeds most drinking water sources.</p> <p>Direct potable reuse remains prohibited by the regulation in Virginia. The discharge of highly treated wastewater from the Upper Occoquan Service Authority (UOSA) facility to a reservoir used for public water supply is indirect potable reuse or IPR based on the definition of this term in the existing and amended regulation. New IPR projects may be authorized by DEQ on a case-by-case basis with input from the Virginia Department of Health on appropriate standards for the protection of public health.</p> <p>A discharge to surface waters, whether for disposal or IPR, must meet, among other things, Water Quality Standards (9VAC25-260) that address potential impacts to aquatic species. Surface waters used for public water supply receive additional treatment upon withdrawal by waterworks in accordance with the Waterworks Regulations (12VAC5-590). Discharging the same water to aquifers may be more harmful to humans that rely on groundwater for potable supply without any</p>

	<p>treatment following withdrawal as would be the case for most privately owned wells.</p> <p>There are no additional changes to the amended regulation in response to these comments.</p>
<p>33.</p>	<p>Subject: Groundwater recharge with reclaimed water and withdrawal for reuse</p> <p>Commenter: James J. Pletl, Director of Water Quality, Hampton Roads Sanitation District</p> <p>Text: It is unclear whether the injected water will have to meet drinking water standards prior to injection or best professional judgment will be used on a case specific basis depending on the native quality of water in the aquifer being considered. Guidance defining the hydraulic residence time required of injected water will be required. The identification and testing of environmentally acceptable tracers to measure travel time still needs to be researched and determined according to the EPA Guidance on Water Reuse 2012. It is well understood that the treatment of organics occurs with time especially in aerobic or anoxic conditions that encourage microbial activity. Therefore, the location of the direct injection well in relation to the extraction well is critical to determine mixing with existing groundwater, residence time in the aquifer, and other conditions that will define the level of treatment needed. Designing the appropriate system will be the key to successful projects. A pilot study described in the amendments is a great idea.</p> <p>Agency Response: See response to comment 28 regarding groundwater or aquifer recharge with reclaimed water. The EPA UIC Program may consider the factors noted above when determining the potential for endangerment of underground sources of drinking water from direct injection wells. Pilot study requirements in proposed amendments to the regulation apply to only IPR involving surface waters (not groundwater aquifers) used for water supply.</p> <p>There are no additional changes to the amended regulation in response to these comments.</p>
<p>34.</p>	<p>Subject: Groundwater recharge with reclaimed water</p> <p>Commenter: James J. Pletl, Director of Water Quality, Hampton Roads Sanitation District</p> <p>Text: Public opinion will shape the success of reuse and groundwater recharge in our state. Virginia has a history of IPR success at the UOSA facility. Public dialogue and education about reuse and successful IPR around the country is critical. To promote and encourage water reclamation, all forms of groundwater recharge and other IPR options should be made available and provided an opportunity to succeed. These regulations and subsequent guidance should provide maximum clarity on the issue of groundwater recharge and lay out a viable pathway for using groundwater recharge in beneficial reuse projects.</p> <p>Agency Response: See response to comment 28 regarding groundwater or aquifer recharge with reclaimed water. DEQ may develop more specific guidance in the future on the use of rapid infiltration basins for groundwater recharge.</p> <p>There are no additional changes to the amended regulation in response to these comments.</p>
<p>35.</p>	<p>Subject: Groundwater recharge with reclaimed water and pilot study requirement</p> <p>Commenter: James J. Pletl, Director of Water Quality, Hampton Roads Sanitation District</p> <p>Text: The amendments add a provision requiring that a pilot study of treatment be provided to document the efficacy of the treatment process when it will be part of an indirect potable reuse project. One of the greatest benefits of a pilot for groundwater recharge is the ability to understand the flow direction, residence time, and the study of possible undesirable chemical reactions between the injected reclaimed water and the native groundwater. The new amendments regarding construction requirements for IPR pilots are listed below. Conducting a pilot study described in the proposed amendments to develop IPR projects including groundwater recharge is a great way to promote and encourage water reclamation in a manner protective of human health and the environment.</p> <p>9VAC25-740-120. Construction requirements</p>

	<p><u>2. A pilot study shall be required where treatment is proposed for a reclamation system of an IPR project.</u></p> <p><u>a. The pilot study shall demonstrate the ability of selected treatment processes to:</u></p> <p><u>(1) Meet, at a minimum, the reclaimed water standards prescribed for the IPR project in accordance with 9VAC25-740-90 C, and</u></p> <p><u>(2) Generate a consistent and reliable supply of reclaimed water for the IPR project.</u></p> <p><u>b. The pilot study shall quantify and characterize the quality of source water provided for reclamation and reclaimed water generated by the treatment processes of the reclamation system for a period of not less than 365 days unless reduced by the board in accordance with subdivision A 2 d of this subsection.</u></p> <p><u>c. At the request of the applicant or permittee, the board may reduce the pilot study duration specified in subdivision A 2 b of this subsection or the pilot study scope where the following are met:</u></p> <p><u>(1) The applicant or permittee provides a detailed plan of study for the board’s review and approval before initiating the pilot study, and</u></p> <p><u>(2) The detailed plan of study justifies to the satisfaction of the board that a pilot study of shorter duration or reduced scope will be sufficient to achieve the requirements of subdivision A 2 a of this subsection. For the purpose of reducing the duration or scope of a pilot study, results of previous pilot studies and operating experiences of similar water reclamation and IPR projects may be used as part of the demonstration required pursuant to subdivision A 2 a of this subsection.</u></p> <p><u>d. Results of the pilot study shall be submitted to the board for review.</u></p> <p>Agency Response: See response to comment 28 regarding groundwater or aquifer recharge with reclaimed water. Indirect potable reuse or IPR, as defined in the existing and amended regulation, does not include the recharge of underground sources of drinking water with reclaimed water. Therefore, proposed pilot study requirements for IPR under 9VAC25-740-120 do not apply to groundwater recharge for this purpose.</p> <p>There are no additional changes to the amended regulation in response to this comment.</p>
<p>36.</p>	<p>Subject: Groundwater recharge with reclaimed water and standards for indirect potable reuse (IPR)</p> <p>Commenter: James J. Pletl, Director of Water Quality, Hampton Roads Sanitation District</p> <p>Text: In addition to design requirements, the amendments address IPR Permit requirements. It seems Section C of 9VAC25-740-90 (Minimum standard requirements for reuses of reclaimed water) could have the potential to discourage IPR even when unacceptable risk does not occur due to IPR (i.e., Drinking Water Standards).</p> <p>9VAC25-740-90. Minimum standard requirements for reuses of reclaimed water</p> <p><u>C. For any indirect potable reuse (IPR) project that is newly proposed after [effective date of amended regulation], the following are required:</u></p> <p><u>1. A multiple barrier approach shall be used in the planning, design and operation of the project. Multiple barriers to be employed for the project shall be described in the application for a permit in accordance with 9VAC25-740-100 D.</u></p> <p><u>2. All reclaimed water generated by a reclamation system for IPR shall meet, at a minimum, Level 1 reclaimed water standards, reclaimed water standards developed pursuant to subsection B of this section and any other standards that may apply, including but not limited to, the Water Quality Standards (9VAC25-260) and Total Maximum Daily Loads (TMDLs). Where there is more than one standard for the same pollutant, the more stringent standard shall apply.</u></p> <p><u>3. The public health risks of and the need to impose new or more stringent reclaimed water standards for an IPR project shall be re-evaluated with specific input from the Virginia Department of Health upon each renewal of the permit issued to the reclamation system that</u></p>

	<p><u>produces reclaimed water for the project. Factors to be considered in the re-evaluation shall include, at a minimum, applicable factors contained in subsection B of this section.</u></p> <p>Agency Response: See response to comment 28 regarding groundwater or aquifer recharge with reclaimed water. Treatment requirements for wastewater that will be used to recharge an underground source of drinking water may be developed on a case-by-case basis by the EPA Underground Injection Control Program where recharge will occur through an injection well, or in accordance with the Sewage Collection and Treatment Regulation (9VAC25-790) where recharge will occur through a rapid infiltration basin. Requirements to regulate groundwater recharge with treated wastewater in the Water Reclamation and Reuse Regulation would be redundant of other existing federal and state regulations and programs. Therefore, groundwater recharge with reclaimed water, including the treatment standards for this use, is essentially excluded from the requirements of the Water Reclamation and Reuse Regulation.</p> <p>There are no additional changes to the amended regulation in response to this comment.</p>
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All changes made in this regulatory action

Please list all changes that are being proposed and the consequences of the proposed changes. Describe new provisions and/or all changes to existing sections.

Section number	Description of Requirement	What has changed	Rationale for change
10	Definition for beneficial use	Added new term, "Beneficial use", and the definition for this term. Revised the proposed definition to delete "or" after "recreation," in second sentence.	A definition for this term was added because it is used in proposed amendments to 9VAC25-740-50.B. The revision was made to make the definition of this term in the regulation consistent with the definition of the same term in § 62.1-44.3 of the Code of Virginia.
10	Definition for biological nutrient removal (BNR)	Deleted "an" after "achieves" and replaced "of" with "concentrations less than or equal to" after "annual average".	Change was made to clarify the distinction between BNR and non-BNR reclaimed water currently used in guidance. This is significant with regard to bulk irrigation reuse of reclaimed water, which will not, in most cases, require a nutrient management plan (NMP) for irrigation with BNR reclaimed water, but would require a NMP for irrigation with non-BNR reclaimed water.
10	Definition of Class I reliability	Definition renamed "Reliability Class I" and moved.	Change was made to make terminology in 9VAC25-740 consistent with terminology in the Sewage Collection and Treatment Regulations (9VAC25-790) for two terms having essentially the same

Section number	Description of Requirement	What has changed	Rationale for change
			meaning.
10	Definition of Conjunctive system	Added new term, "Conjunctive system", and the definition for this term. See also changes to definition of "Satellite reclamation systems".	The definition of this term was removed from the definition of "Satellite reclamation system" as it now applies to facilities in addition to satellite reclamation systems mentioned in new subdivision 9VAC25-740-100.C.10.
10	Definition for corrective action threshold	Inserted " or "CAT" after "Corrective action threshold"	Change was made to acknowledge substitution of "corrective action threshold" with its acronym "CAT" where used in subsequent sections to reduce unnecessary text.
10	Definition for design flow	Added definition for existing term, "Design flow".	A definition for this term was needed as it is currently used in the regulation without a definition, and is subsequently used to define the new term "designated design flow".
10	Definition for designated design flow	Added new term, "Designated design flow", and the definition for the term. Revised the proposed definition to replace the phrase "wastewater or partially treated wastewater" with the term "source water".	This is a new term used in amendments to subdivisions 9VAC25-740-80.A.3.b, 4, 5.a and 5.b; 9VAC25-740-100.B.5.c; 9VAC25-740-110.C.8.a and 8.b (1), and 9VAC25-740-180.A; and was not previously defined in the regulation. This term distinguishes the design flow of reclamation systems from design flows of WWTFs typically at the same location, and is used to determine monitoring frequency for certain reclaimed water standards. Definition was revised to make it more concise and to consistently use terms already defined within the regulation (e.g., "source water") where appropriate.
10	Definition for direct injection	Added new term, "Direct injection", and the definition for this term.	A definition for this term was added because it is currently used in the regulation without a definition and was needed to distinguish this method of groundwater recharge from other methods.
10	Definition for groundwater	Deleted the term "Ground water" and replaced with the word "groundwater" throughout the proposed amendments.	Change was made to be consistent with proposed amendments to 9VAC25-610 (Groundwater Withdrawal Regulation).
10	Definition for harvested rainwater	Added new term, "Harvested rainwater", and the definition for this term.	A definition for this term was added because it is used in proposed amendments to 9VAC25-740-50.A.

Section number	Description of Requirement	What has changed	Rationale for change
10	Definition for indirect non-potable reuse	Added new term, "Indirect non-potable reuse", and definition for this term.	A definition for this term was added because it is used in current amendments to 9VAC25-740-50.A.7 and 9VAC25-740-90.B, and was not previously defined in the regulation.
10	Definition for indirect potable reuse	Inserted " or "IPR" after "Indirect potable reuse", and	Change was made to acknowledge the substitution of "indirect potable reuse" with its acronym "IPR" in subsequent sections to reduce unnecessary text.
10	Definition for indirect reuse	Deleted definition of "indirect reuse". Term renamed "unintentional reuse" and revised to add "unintentional or unplanned" to the original definition.	Changes were made to reduce confusion of this term with indirect non-potable reuse" and "indirect potable reuse" and to further clarify the difference between indirect reuse and intentional indirect reuse in 9VAC25-740-10.
10	Definition for nutrient management plan (NMP)	Revised term to read "Nutrient management plan" or "NMP".	Change was made to be consistent with Virginia Register style guidelines for regulations.
10	Definition for point of compliance	Added an acronym "POC" to the definition and thereafter replaced the term "point of compliance" with "POC" in most places where the term appears throughout the regulation.	Changes were made to minimize unnecessary text throughout the regulation and to improve readability.
10	Definition for reclamation	Deleted definition. Moved term and associated definition to follow definition for "Reclaimed water distribution system".	Change was made to arrange terms that are defined in alphabetical order.
10	Definition for reclamation system	Deleted definition. Moved term and associated definition to follow relocated definition for "Reclamation".	Change was made to arrange terms that are defined in alphabetical order.
10	Definition for reclaimed water	Revised definition of "reclaimed water" to additionally exclude harvested rainwater and stormwater. Added new terms, "Harvested rainwater" and "Stormwater", and definitions for these terms.	Use or reuse of gray water and harvested rainwater is or will be subject to guidelines developed by VDH pursuant to §32.1-248.2. The reclamation and reuse of stormwater will be subject to regulations developed by DCR pursuant to §10.1-603.4. Therefore, the definition of reclaimed water for the purposes of this regulation was revised to exclude harvested rainwater and stormwater in addition to gray

Section number	Description of Requirement	What has changed	Rationale for change
			water.
10	Definition for reclaimed water distribution system	Deleted “one or more” after “reclamation systems to” and replaced “end users” with “end uses”	Change was made to clarify that reclaimed water distribution systems convey to end uses and not to end users.
10	Definition of reclamation	Added term “reclamation” and associated definition from previous location in definition listing.	Change was made to arrange terms that are defined in alphabetical order.
10	Definition of reclamation system	Added term “reclamation system” and associated definition from previous location in definition listing.	Change was made to arrange terms that are defined in alphabetical order.
10	Definition of “Reliability Class I	Changed “Class I reliability” to “Reliability Class I” and added a statement indicating that the definition of Reliability Class I in 9VAC25-740 is in addition to but does not supersede the definition of the same term used in 9VAC25-790.	Change was made to make terminology in 9VAC25-740 consistent with terminology in the Sewage Collection and Treatment Regulations (9VAC25-790) for two terms having essentially the same meaning.
10	Definition for reuse or water reuse	Inserted phrase “an indirect nonpotable reuse,” after “an indirect potable reuse,” in the definition.	Change was made to ensure that all requirements of the regulation that apply to reuse or water reuse, would apply to intentional indirect reuse.
10	Definition for satellite reclamation system	(1) Added an acronym “SRS” to the definition and thereafter replaced the term “satellite reclamation system” with “SRS” in most places where the term appears throughout the regulation. (2) Deleted “wastewater treatment works and reclamation” after “conjunctive”.	(1) Change was made to minimize unnecessary text throughout the regulation and to improve readability. (2) Change was made to eliminate the definition of “conjunctive system” within the definition of “satellite reclamation system”. See change regarding the addition of “conjunctive system” to 9VAC25-740-10.
10	Definition for significant industrial user	Added definition and acronym “SIU” for the term “significant industrial user” currently used in the regulation. Thereafter, replaced the term “significant industrial user” with “SIU” and deleted duplicate definitions of the term in most places where it appeared throughout the regulation.	Changes were made to minimize unnecessary text and to improve readability.
10	Definition for source water	Added definition for existing term, “Source water”.	A definition for this term was needed as it is currently used in the

Section number	Description of Requirement	What has changed	Rationale for change
			regulation without a definition.
10	Definition of "State Water Control Law or Law"	Revised to read "State Water Control Law" or "Law"	Changes were made to correct typographical error or omission.
10	Definition for stormwater	Added the term "stormwater" and associated definition.	A definition for this term was needed as it is currently used in the regulation without a definition.
10	Definition of surface waters	Replaced the phrase "ground water" with the term "groundwater".	Change was made to be consistent with proposed amendments to 9VAC25-610 (Groundwater Withdrawal Regulation).
10	Definition of system storage	Replaced the phrase "satellite reclamation system" with the acronym "SRS".	Change was made to minimize unnecessary text throughout the regulation and to improve readability.
10	Definition for Total Maximum Daily Load or TMDL	Added new term with acronym, "Total Maximum Daily Load" and "TMDL", and the definition of this term.	A definition for this term was added because it is used in newly proposed subsection 9VAC25-740-90.C.
10	Definition for underground aquifer	Added new term, "Underground aquifer", and the definition for this term.	A definition for this term was added because it is currently used in the regulation without a definition and describes a specific type of groundwater recharge excluded from the requirements of the regulation.
10	Definition for unintentional reuse	Added term "unintentional reuse" and the definition for this term. Previously included as "indirect reuse".	Changes were made to reduce confusion of this term with indirect non-potable reuse" and "indirect potable reuse" and to further clarify the difference between indirect reuse and intentional indirect reuse in 9VAC25-740-10.
10	Definition for Virginia Pollution Abatement (VPA) Permit	Revised definition of "Virginia Pollution Abatement (VPA) Permit" to read "Virginia Pollution Abatement Permit" or "VPA Permit".	Change was made to be consistent with Virginia Register style guidelines for regulations.
10	Definition for Virginia Pollutant Discharge Elimination System (VPDES) Permit	Revised definition of "Virginia Pollutant Discharge Elimination (VPDES) Permit" to read "Virginia Pollutant Discharge Elimination System Permit" or "VPDES Permit".	Change was made to be consistent with Virginia Register style guidelines for regulations.
10	Definition of "wastewater"	Replaced the phrase "water carried" with the term "water-carried".	Grammatical correction.
10	Definition for waterworks	Added new term, "Waterworks", and definition	A definition for this term was added because it is used in new

Section number	Description of Requirement	What has changed	Rationale for change
		for this term.	subsection 9VAC25-740-100 D and subdivisions 9VAC25-740-170 A 2 a (2) (a) and 9VAC25-740-170 A 2 b (2), and was not previously defined in the regulation. The definition is that contained in the VDH Waterworks Regulations (12VAC5-590) for the same term.
30 B 2	Applicability and transition – authorization of standards, monitoring requirements and special conditions for water reclamation and reuse through VPDES permits	Delete the term "administratively" and insert the term " through" as follows: "2. Standards, monitoring requirements and special conditions for water reclamation and reuse may be administratively authorized for a VPDES permit <u>through</u> :"	Change was made to clarify authorization of water reclamation and reuse projects through VPDES permits.
30 B 2 a	Applicability and transition – authorization of standards, monitoring requirements and special conditions for water reclamation and reuse through VPDES permits	Insert subdivision number and revise original text as follows: " <u>a. A modification of the permit modification unless they where such standards, monitoring requirements and special conditions would effectively alter other conditions of the permit specifically related to the effluent discharge for which the permit was originally issued, <u>or where the diversion of source water from the VPDES permitted discharge to water reclamation and reuse has the potential to cause a significant adverse impact to other beneficial uses of the receiving state water, or both; or</u>"</u>	Change was made to clarify conditions under which water reclamation and reuse projects may be authorized by VPDES permit modification.
30 B 2 b	Applicability and transition – authorization of standards, monitoring requirements and special conditions for water reclamation and reuse through VPDES permits	Insert subdivision designation and revise original text to read: " <u>b. An administrative authorization where such standards, monitoring requirements and special conditions would not alter other conditions of the permit specifically related to the effluent discharge for which the permit was originally issued, and where the</u>	Changes were made to clarify conditions under which water reclamation and reuse projects may be authorized by an administrative authorization associated with a VPDES permit.

Section number	Description of Requirement	What has changed	Rationale for change
		<p><u>diversion of source water from the VPDES permitted discharge to water reclamation and reuse does not have the potential to cause a significant adverse impact to other beneficial uses of the receiving state water.</u> The administrative authorization shall have the full effect of the VPDES permit until such time that it is incorporated into the VPDES permit through reissuance or major modification.</p>	
30 B 3	Applicability and transition of the regulation, and application requirements for existing permitted facilities	<p>Revised the language in subdivision B 3 as follows: “Minor modification <u>Modification of a VPA or VPDES permit or the issuance of an</u> administrative authorization associated with a VPDES permit described in subdivisions 1 and 2 of this subsection, shall require an application for a water reclamation and reuse project in accordance with 9VAC25-740-100.”</p>	<p>Changes were made: (i) to acknowledge that a permit application as described in 9VAC25-740-100 shall be required for all modifications (minor or major) of VPA or VPDES permits, in addition to administrative authorizations associated with VPDES permits; and (ii) to eliminate unnecessary and confusing language.</p>
40 B	Permitting requirements	<p>Added the acronym "SRS" in the first sentence and then replaced the phrase "satellite reclamation system" throughout the remainder of the subdivision.</p>	<p>Change was made to minimize unnecessary text throughout the regulation and to improve readability.</p>
40 C	Permittee requirements for service agreements or contracts with end users	<p>(1) Inserted at beginning of subsection “Each end user shall enter into a service agreement or contract with all reclaimed water agents from which the end user receives reclaimed water prior to receipt of such water.” (2) Deleted the phrase "of reclaimed water" in the second sentence. (3) Replaced “permittee” with “reclaimed water agent” throughout the definition.</p>	<p>(1) Change was made to clarify that a service agreement or contract with a reclaimed water agent is not optional for end users. (2) Phrase deleted to clarify requirements and to improve readability. (3) Not all reclamation and reuse permittees are reclaimed water agents that distribute reclaimed water to end user. This change was made to clarify that end users must have a service agreements or contract with a reclaimed water agent instead of a permittee.</p>

Section number	Description of Requirement	What has changed	Rationale for change
		(4) Added the word "the" before the phrase "service agreements or contracts" in the second sentence. (5) Added at end of subsection "unless affected by a permit issued to an end user as described in subsection F of this section."	(4) Grammatical correction. (5) Change was made to acknowledge that it may not be necessary for an end user to have a service agreement or contract with a reclaimed water agent where the DEQ has permitted the end user.
40 D	Permitting requirements	(1) Replaced the word "shall" with "may". (2) Added the phrase "or contract" after "provided a service agreement".	(1) Clarification of requirements - Change was made to acknowledge circumstances where DEQ may need to issue a permit to reclaimed water distribution systems described in 9VAC25-740-40 D due, for example, to environmental or public health issues resulting from the construction, operation or maintenance of the system. (2) Clarification that either a service agreement or a contract could be used to satisfy the requirements and to be consistent with current practices.
40 E	Alternative permitting option for reclaimed water distribution systems	Replaced the phrase "satellite reclamation system" with the acronym "SRS".	Change was made to minimize unnecessary text throughout the regulation and to improve readability.
40F	Alternative permitting option for reclaimed water distribution systems	Replaced the phrase "satellite reclamation system" with the acronym "SRS".	Change was made to minimize unnecessary text throughout the regulation and to improve readability.
45 A through F	Emergency authorization for the production, distribution or reuse of reclaimed water	Inserted new section 9VAC25-740-45 that describes circumstances under which the board (or DEQ) can issue an emergency authorization, projects that are or are not eligible for emergency authorization, VPDES or VPA permit application requirements following the issuance of an emergency authorization, the effective duration of the emergency authorization and public participation requirements for an emergency authorization. Revised language in C 3 to replace	Change was made to allow the production, distribution and reuse of reclaimed water without a permit when the board finds that due to drought there is insufficient public water supply that may result in a substantial threat to public safety. Change in reference was made to conform to formatting of references and to clarify that only Part VII of the VPDES Permit Regulation is being referenced.

Section number	Description of Requirement	What has changed	Rationale for change
		"through 9VAC25-31-900" with "et seq."	
50 A	Exclusions from 9VAC25-740	Moved the last sentence within 9VAC25-740-50 A to the first paragraph of the subsection	Change was made to eliminate a hanging sentence, thereby improving organization and readability of subsection.
50 A 1	Exclusions for activities permitted by the VDH	(1) Inserted "(VDH)" after "Virginia Department of Health". (2) Added "This exclusion does not apply to alternative onsite sewage systems defined in 12VAC5-613 (Regulations for Alternative Onsite Sewage Systems) with an average daily sewage flow in excess of 1,000 gallons per day that are concurrently permitted by the board and VDH to allow sewage reclamation and reuse in addition to on-site sewage treatment and disposal."	(1) Because the Virginia Department of Health is mentioned more than once in the same paragraph, the acronym for the Virginia Department of Health (VDH) was added to make the language concise. (2) Other language was added to allow DEQ and VDH to jointly permit alternative onsite sewage systems (AOSSs) that are capable of producing reclaimed water suitable for reuses in accordance with 9VAC25-740. The VDH Regulations for AOSSs (12VAC5-613) do not have provisions for the reclamation and reuse of domestic wastewater or sewage.
50 A 2	Exclusion for utilization of gray water	Added to exclusion utilization of ", harvested rainwater, or stormwater".	Use or reuse of gray water and harvested rainwater is or will be subject to guidelines developed by VDH pursuant to §32.1-248.2. The reclamation and reuse of stormwater will be subject to regulations developed by DCR pursuant to §10.1-603.4. Therefore, the reclamation and/or reuse of harvested rainwater and stormwater should not be addressed by this regulation and were excluded in 9VAC25-740-50 A 2.
50 A 6	Exclusions for land treatment systems	Replaced the term "defined" with "described" following "Land treatment systems" in the first sentence of subdivision A 6.	Change was made to clarify that land treatment systems are described but are not specifically defined in the Sewage Collection and Treatment Regulations (9VAC25-790).
50 A 7	Exclusion for unintentional reuse	Part of subdivision A.7 was made into new subdivision A.8 with the following changes: "7. Indirect Unintentional reuse with the exception of indirect potable reuse projects proposed after	Changes were made to better clarify the intent of the language.

Section number	Description of Requirement	What has changed	Rationale for change
		October 1, 2008.	
50 A 8	Exclusions for existing indirect nonpotable reuse	Part of subdivision A 7 was made into new subdivision A 8 with the following changes: <u>8. and Existing indirect nonpotable reuse projects proposed after that upon [effective date of amended regulation] are authorized by a VPDES permit to discharge to surface waters of the state."</u>	Changes were made to better clarify the intent of the language.
50 A 9	Exclusions for existing indirect potable reuse	Change in designation from A 8 to A 9.	Designation changed to accommodate addition of new exclusion.
50 A 10	Exclusions for direct injection of reclaimed water into an underground aquifer	Change in designation from A 9 to A 10.	Designation changed to accommodate addition of new exclusion.
50 A	Exclusions and prohibitions – last sentence of section below 50 A 9	Deleted the last sentence within 9VAC25-740-50 A. Sentence moved to first part of 9VAC25-740-50 A.	Change was made to eliminate a hanging sentence, thereby improving organization and readability of subsection.
50 B 2	Prohibition for reuse of reclaimed water inside a residential or domestic dwelling or a building containing a residential or domestic unit	Revised language as follows: "The reuse of reclaimed water for any purpose inside a residential or domestic dwelling or a building containing a residential or domestic unit <u>distributed to one or two family dwellings. This prohibition does not apply to reuses of reclaimed water outside of and on the same property as one or two family dwellings where the reclaimed water is not distributed to such reuses by way of plumbing within the dwellings;"</u>	Changes were made to: (i) narrow the type of dwellings (i.e., to single family homes, townhouses and duplexes) that would be subject to this prohibition in order to be consistent with Virginia's Uniform Statewide Building Code, and (ii) clarify circumstances where the prohibition would not apply to reuses of reclaimed water outside of and on the same property of one or two family dwellings.
50 B 5	Prohibitions	Delete the word "and" at the end of the subdivision.	Grammatical correction to account for addition of a new prohibition.
50 B 6	Prohibitions.	Insert the word "and" at the end of the subdivision.	Change made to add an subdivision to subsection B.
50 B 7	Prohibition for significant adverse impacts to downstream beneficial uses resulting from the diversion of VPDES	Added new prohibition under subdivision B 7 as follows: "7. Reduction of the discharge from a VPDES	Change was made to protect beneficial uses in proximity of and reliant upon the discharge of a treatment works from significant adverse impacts resulting primarily

Section number	Description of Requirement	What has changed	Rationale for change
	permitted discharges to reclamation and reuse	permitted treatment works due to diversion of source water flow for reclamation and reuse such that the physical, chemical or biological properties of the receiving state waters are affected in a manner that would cause a significant adverse impact to other beneficial uses.”	from reduced flow where the treatment works or a sewage collection system providing influent to the treatment will divert all or a portion of its discharge or flow to reclamation and reuse.
55 A through G	Procedures to grant variances from design, construction, operation or maintenance requirements of the regulation	Inserted new section 9VAC25-740-55 that allows variances for design, construction, operation or maintenance requirements of this regulation. This section describes circumstances for which a variance may be considered, information to be included in an application for a variance, period within which the board must act on a variance request, minimum factors to be considered by the board when acting upon a variance request, the board’s disposition of a variance request, effective date of a variance request when granted, variance non-transferability and incorporation into the project permit, and circumstances where variance procedures contained in the SCAT Regulations (9VAC25-790) may apply in lieu of the variance procedures contained in this regulation.	Change was made to give the regulation greater flexibility where the design, construction, operation or maintenance of a water reclamation and reuse proposal may not conform to specific requirements of the regulation but will still be protective of the environment and public health.
60 A	Brief description of VPA Permit Regulation (9VAC25-32) as it relates to the Water Reclamation & Reuse Regulation	Revised language of second sentence as follows: “ While any <u>Any</u> treatment works treating domestic, municipal or industrial wastewater that produces reclaimed water or a facility that distributes reclaimed water in a manner that does not result in a discharge to surface waters is required to <u>shall</u> obtain a	Changes were made to improve the grammar and readability of the two subsections, and do not change any requirements of the regulation.

Section number	Description of Requirement	What has changed	Rationale for change
		<p>VPA permit, this chapter prescribes design. <u>Design, operation, and maintenance standards prescribed by this chapter</u> for water reclamation and water reuse. These requirements shall be incorporated into the VPA permit application and the VPA permit when applicable. Water reclamation and reuse requirements contained in a VPA permit shall be enforced through existing enforcement mechanisms of the VPA permit.</p>	
60 B	Description of relationship between 9VAC25-740 and the VPDES Permit Regulation (9VAC25-31)	<p>Made similar changes to those in subsection A, except that “VPDES” rather than “VPA” was deleted in the last sentence. Also changed the 2nd sentence as follows: “While any <u>Any</u> treatment works treating domestic, municipal or industrial wastewater that produces reclaimed water and has a <u>discharge to surface waters,</u> or a facility that distributes reclaimed water in a manner that results in distribution system that has a discharge to surface waters is required to <u>shall</u> obtain a VPDES permit, this chapter prescribes design. Design, operation, and maintenance standards for water reclamation and reuse. These requirements shall be incorporated into the VPDES permit...existing enforcement mechanisms of the VPDES permit”.</p>	Changes were made to better clarify what facilities related to water reclamation and reuse would need a VPDES permit.
60 G	Brief description of Water Withdrawal Reporting Regulation (9VAC25-200) as it relates to the Water Reclamation & Reuse Regulation	Added Water Withdrawal Reporting Regulation to list of other DEQ regulations with a relationship to the Water Reclamation & Reuse Regulation.	Language was added to identify and describe the existing relationship between the Water Reclamation and Reuse Regulation and the Water Withdrawal Reporting Regulation.

Section number	Description of Requirement	What has changed	Rationale for change
Part II 70	Reclaimed Water Standards, Monitoring Requirements and Reuses	Inserted "Treatment" before "Standards" in the title of Part II.	Change was made to acknowledge that Part II of the regulation, specifically 9VAC25-740-70 under Part II, contains treatment requirements in addition to standards for reclaimed water.
70	Standards for reclaimed water	Revised title of section to "Treatment and standards for reclaimed water".	Change was made to acknowledge that Part II of the regulation, specifically 9VAC25-740-70 under Part II, contains treatment requirements in addition to standards for reclaimed water.
70 A	Treatment and standards for reclaimed water	<p>(1) Added "Treatment" before "Standards" in the title of 9VAC25-740-70 subsection A;</p> <p>(2) Replaced "as follows" with "provided in Table 70-A";</p> <p>(3) Placed the treatment and standards for reclaimed water described under subsection A into a table identified as "Table 70-A", including footnotes. Asterisks for footnotes were replaced with numbers. Table 70-A was originally presented as a 3 column table that presented both "Level 1" and "Level 2" Treatment and Standards for Reclaimed Water side-by-side. The Table has been converted to a 2 column table with the first part of the table devoted to "Level 1" and the second half of the table devoted to "Level 2". The formatting of the table and the presentation of the material was changed.</p> <p>(4) Changed the "TSS" standard for Level 2 reclaimed water to "Total Suspended Solids (TSS)"</p>	<p>(1) Change was made to acknowledge that 9VAC25-740-70 and subsection A of this section contain treatment requirements in addition to standards for reclaimed water.</p> <p>(2) To account for creation of table to present information.</p> <p>(3) Changes were made to improve organization and readability of information in this subsection. Table was reformatted to make information in the table more clear and readable.</p> <p>(4) Change was made to be consistent with other terms having acronyms in the table.</p>
70 A 1 f	Turbidity standards for Level 1 reclaimed water	Changed "2" to "2.0" and "5" to "5.0" related to standards for turbidity in reclaimed water.	Change was made to be consistent with the number of significant figures established by acceptable methods used to properly calibrate field monitoring equipment for turbidity.

Section number	Description of Requirement	What has changed	Rationale for change
70 A 1 f – Footnote ⁶	Turbidity standard for Level 1 reclaimed water	Added a new footnote notation “ ⁶ ” to the Turbidity standard for Level 1 and inserted a corresponding footnote below Level 1 and 2 standards that states “Where ultraviolet radiation will be used for disinfection of Level 1 reclaimed water, other turbidity standards may apply in accordance with 9VAC25-740-110 A 2 a.”	Change was made in relation to the addition of new UV disinfection requirements to 9VAC25-740-110 A allowing the board to authorize lower UV disinfection dosages for Level 1 reclaimed and to develop, as needed and on a case-by-case, reclaimed water turbidity standards and UV transmittance requirements for the specific UV disinfection process.
70 B 1	Point of compliance for reclaimed water standards	(1) Added subdivision notation; (2) In subdivision B.1 – (i) inserted “(POC)” after “point of compliance” in first line of subsection and replaced “point of compliance” with “POC” throughout B.1; (ii) revised first sentence to read: “Excluding the turbidity standard for Level 1 treatment, reclaimed <u>Reclaimed water produced by reclamation systems and SRSs for reuse shall meet all other-applicable standards in accordance with this chapter, excluding the turbidity standard for Level 1 treatment, at the point of compliance-POC.”</u> and (iii) added a sentence regarding the POC for the TRC standard where chlorination is used for disinfection.	(1) Change made to account for the addition of a new subdivision and to improve readability. (2) Changes were made to (i) reduce unnecessary text, and (ii) clarify that the POC for the TRC reclaimed water standard and the monitoring location for TRC specified in 9VAC25-740-80 A 2, are the same.
70 B 2	Point of compliance for reclaimed water standards	Added subdivision B 2 describing POC requirements for system storage facilities and reclaimed water distribution systems when reclaimed water monitoring is required by the board for these facilities, and identifying where information on the POCs must be maintained by the permittee.	Change was made to establish locations for new monitoring requirements where deemed necessary by the board in accordance with new subsection 9VAC25-740-80 D for certain system storage facilities, and amended subdivision 9VAC25-740-100 C 1 h for reclaimed water distribution systems.

Section number	Description of Requirement	What has changed	Rationale for change
70 B 2 a	Point of compliance (POC) for system storage facilities and reclaimed water distribution systems	Related to the deletion of subdivision B 2 c, inserted "and" at end of sentence.	Grammatical correction to account for the deletion of previously proposed subdivision and to clarify requirements.
70 B 2 b	Point of compliance (POC) for system storage facilities and reclaimed water distribution systems	Related to the deletion of subdivision B 2 c, replaced “;” with a period at the end of subdivision B 2 b.	Grammatical correction to account for the deletion of previously proposed subdivision.
70 B 2 c	Point of compliance (POC) for system storage facilities and reclaimed water distribution systems	Deleted of all of subdivision B 2 c as follows: “c. For both the system storage facility and reclaimed water distribution system when under common ownership or management and within the same service area, in either document described in subdivisions B 2 (a) or (b) of this subsection.”	Changes were made to eliminate redundant and confusing requirements to describe POC locations for system storage facilities and reclaimed water distribution systems.
70 D	Additional or different reclaimed water treatment or standards	Revised language as follows: <u>Treatment or standards other than or in addition to the treatment and standards of 9VAC25-740-70 in subsection A of this section may be necessary based on the quality and character of the wastewater to be reclaimed or the intended reuse or reuses of the reclaimed water. Such alternative or additional treatment or standards may be exempt from this chapter unless required by the board to protect public health and the environment.</u>	Change was made to acknowledge that there may be acceptable alternatives to some of the reclaimed water treatment standards (e.g., COD or TOC in lieu of BOD ₅ or CBOD ₅) in addition to alternative or other treatment that should be allowed. Change regarding reference to 9VAC25-740-70 A was made to be consistent with Virginia Register style guidelines for regulations.
70 E	Standards for the reclamation of industrial wastewater	In first sentence of subsection 70.E, replaced “will” with “shall”.	Change was made to be consistent with Virginia Register style guidelines for regulations.
80 A 1 and A 2	Reclaimed water monitoring requirements for turbidity and residual disinfectants	Created additional subdivisions 9VAC25-740-80 A 1 a & 1 b, and subdivisions 9VAC25-740-80 A 2 (1) and (2) with minimal change to text.	Changes were made to eliminate hanging paragraphs and to be consistent with Virginia Register style guidelines for regulations.
80 A 1	Reclaimed water monitoring requirements for reuse – turbidity	Placed colon after "Turbidity analysis.	Punctuation used to create a new subdivision to clarify requirements.

Section number	Description of Requirement	What has changed	Rationale for change
	analysis		
80 A 1 a	Reclaimed water monitoring requirements for reuse – turbidity analysis	Subdivision number added in addition to the word "analysis".	Separated requirements into separate subdivisions for clarification of requirements.
80 A 1 b	Reclaimed water monitoring requirements for reuse – turbidity analysis	Subdivision number added.	Separated requirements into separate subdivisions for clarification of requirements.
80 A 2 a	Sampling and analysis for residual concentrations of disinfectants, including total residual chlorine (TRC)	Replace "shall for" with "For". Inserted subdivision designations into text.	Grammatical correction. Subdivision notations inserted to clarify requirements and readability of material.
80 A 2 a (1)	Sampling and analysis for residual concentrations of disinfectants, including total residual chlorine (TRC)	Added subdivision designation "(1)" and the word "Shall".	Separated requirements into separate subdivisions for clarification of requirements.
80 A 2 a (2)	Sampling and analysis for residual concentrations of disinfectants, including total residual chlorine (TRC)	Added subdivision designation "(2)".	Separated requirements into separate subdivisions for clarification of requirements.
80 A 2 b	Reclaimed water monitoring requirements for residual disinfectants; BOD ₅ , TSS, and CBOD ₅ ; and bacteria	Revised text from "Shall for Level 2..." to "For Level 2, shall..." Inserted "designated" before "design flow".	Grammatical correction to improve readability. Changes were needed to distinguish design flow of a reclamation system from the design flow of a WWTF. See also changes to Section 10 regarding the addition of a new term, "Designated design flow", and the definition for the term.
80 A 2 b	Reclaimed water monitoring requirements for residual disinfectants	Revised language as follows: "For chemical disinfectants other than TRC, monitoring shall be provided at the point of compliance monitoring in accordance with 9VAC25-740-70 B ".	Change was made to better clarify POC monitoring requirements for chemical disinfectants other than TRC.
80 A 3	Reclaimed water monitoring requirements for reuse – Sampling for residual disinfectants; BOD ₅ , TSS, and CBOD ₅ ; and bacteria	Inserted "designated" before "design flow".	Change was needed to distinguish design flow of a reclamation system from the design flow of a WWTF.

Section number	Description of Requirement	What has changed	Rationale for change
80 A 4 a and Table 80-A	Sampling for fecal coliform, E. Coli and enterococci	<p>(1) Deleted “following” and inserted “provided in Table 80-A” after “frequencies”.</p> <p>(2) Labeled table as “Table 80-A” and incorporated footnotes below table into the table.</p> <p>(3) Moved and consolidated paragraph below the table with the paragraph above the table.</p>	<p>(1) Change was made to be consistent with other changes made in the regulation when referencing information contained in tables.</p> <p>(2) Change was made to conform to Virginia Register style guidelines and to be consistent with other tables in the regulation.</p> <p>(3) Change was made to improve continuity and readability of information provided in this subdivision.</p>
80 A 4 b	Sampling for fecal coliform, E. Coli and enterococci	<p>In first sentence, inserted “designated” before “design flow”.</p> <p>In second sentence, replaced “section” with “subsection”.</p>	<p>Change was needed to distinguish design flow of a reclamation system from the design flow of a WWTF.</p> <p>Change was made to be consistent with Virginia Register style guidelines for regulations.</p>
80 C	Reclamation system monitoring requirements	Changed term "non-system" to "nonsystem".	Grammatical correction.
80 D	Reclaimed water monitoring for specific system storage facilities	<p>Inserted the following new paragraph as subsection D and changed existing subsection D to E:</p> <p>“Monitoring of reclaimed water held in system storage for a period greater than 24 hours at a reclamation system or SRS may be required by the board where (i) the system storage facility discharges to a reclaimed water distribution system, a non-system storage facility, or directly to a reuse; and (ii) conditions exist at the facility to degrade the reclaimed water to a quality failing to comply with applicable minimum reclaimed water standards for the intended reuses of that water. When monitoring of reclaimed water in or from system storage is required, monitoring parameters and frequencies shall be determined by the board on</p>	<p>Change was made to address reclaimed water monitoring that may be required for specific system storage facilities where there is potential for the quality of the water to degrade below minimum reclaimed water standards in storage and prior to discharge to a reclaimed water distribution system, a non-system storage facility, or directly to a reuse.</p>

Section number	Description of Requirement	What has changed	Rationale for change
		a case-by-case basis.”	
80 E	Reclaimed water monitoring for specific system storage facilities	Revised 80, subsection D to read 80, subdivision E.	Revised to account for the addition of a new subsection.
90 A 1 through A 6, and footnotes a through k	Minimum standard requirements for reuses of reclaimed water within specific reuse categories	<p>(1) In subsection A, replaced “as follows:” with “provided in Table 90-A.”</p> <p>(2) In subsection A, labeled table as “Table 90-A Minimum Standard Requirements for Reuses of Reclaimed Water” and incorporated footnotes below table into the table.</p> <p>(3) For listed reuses in subdivision A.1 (Urban – Unrestricted Access Reuse Category), deleted references to “non-residential”, “in non-residential buildings” and “domestic or residential”, and added a footnote notation “b” to “Toilet Flushing”, “Fire fighting or protection and fire suppression” and “Outdoor reuse”.</p> <p>(4) Inserted corresponding footnote “b” that prohibits these reuses “where they would involve the distribution of reclaimed water to a one or two family dwelling in order to occur.”</p> <p>(5) In subdivision A.5 (Construction Reuse Category), added new reuse – “Irrigation to establish vegetative erosion control” with footnote notation “g”.</p> <p>(6) Inserted corresponding footnote “g” that describes irrigation requirements applicable to this reuse and minimum standard requirements of subsection 90.A that may apply if irrigation of the site with reclaimed water continues following construction completion.</p>	<p>(1) Change was made to be consistent with other changes made in the regulation when referencing information contained in tables.</p> <p>(2) Change was made to conform to Virginia Register style guidelines and to be consistent with other tables in the regulation.</p> <p>(3) Changes were made in relation to changes made to 9VAC25-740-50 B 2.</p> <p>(4) Change was made to be consistent with the prohibition of reclaimed water reuse in accordance with 9VAC25-740-50 B 2</p> <p>(5) Change was made to avoid unnecessary case-by-case development of standards and monitoring requirements for a reuse that would have minimum standards and management requirements similar to other types of irrigation reuse listed in 9VAC25-740-90 A.</p> <p>(6) New footnote clarifies that although this particular irrigation reuse falls under the Construction Reuse Category due to its initial relationship to construction, it can change to another Reuse Category upon construction completion and continued irrigation reuse at the site.</p> <p>(7) A comparison of the reclaimed water bacteria standards in the Water Reclamation and Reuse Regulation with the US Coast Guard’s proposed “Standards for Living Organisms in Ships’ Ballast Water Discharged in U.S. Waters” (Fed. Register, Vol. 74, No. 166, 8/28/09), indicated that Level 2 reclaimed water would not meet the Coast Guard’s standards if adopted, while Level 1 would. For consistency, it is likely that EPA will</p>

Section number	Description of Requirement	What has changed	Rationale for change
		<p>(7) In subdivision A.6 (Industrial Reuse Category), moved "Ship ballast" to industrial reuses requiring a minimum of Level 1 reclaimed water and added a footnote notation "h".</p> <p>(8) Inserted corresponding footnote "h" that states "Reuse of reclaimed water for ship ballast shall also comply with applicable federal regulations and standards governing the use and discharge of ship ballast."</p> <p>(9) Reversed the order of former footnotes "d" and "e".</p> <p>(10) Following the addition of new footnotes "b", "g" and "h", relabeled footnote notations in subdivisions A 1 through A 6 and relabeled corresponding footnotes.</p>	<p>at some point include standards similar to those of the Coast Guard in the NPDES Vessel General Permit for Discharges Incidental to the Normal Operation of Vessels. Therefore, EPA recommended that Level 1 reclaimed water be required for ship ballast instead of Level 2.</p> <p>(8) This footnote was added to acknowledge that the use of reclaimed water for ship ballast may be subject to federal regulations under agencies such as the US EPA and the US Coast Guard.</p> <p>(9) Change in footnote sequence corresponds with changes to footnote notations in subdivisions A.3 and A.4.</p> <p>(10) Changed were made to ensure that footnote notations and corresponding footnotes were labeled according to the new sequence in which they appeared in subdivisions A.1 through A.6.</p>
90 B	Establishing reclaimed water standards and monitoring requirements for reuses not listed in the regulation	<p>Revised language as follows: For any type of reuse not addressed in this chapter listed in subsection A of this section, including, but not limited to, indirect potable reuse and below-ground drip irrigation reuse, that is newly proposed after October 1, 2008, <u>indirect nonpotable reuse that is newly proposed after [effective date of amended regulation]; or any reuse of reclaimed industrial wastewater, including reuses listed in subsection A of this section,</u> the board may prescribe specific reclaimed water standards and monitoring requirements needed to protect public health and the environment.</p>	<p>Changes were made to:</p> <p>(1) More concisely define the scope of reuses to which subsection B applies.</p> <p>(2) Recognize indirect nonpotable reuse as an unlisted reuse that may require reclaimed water standards and monitoring requirements developed on a case-by-case basis. This change is also consistent with changes to 9VAC25-740-50 A 7, which eliminates the exclusion of indirect nonpotable reuse from the requirements of the regulation.</p> <p>(3) Recognize the need to develop reclaimed water standards and monitoring requirements on a case-by-case basis for listed reuses of reclaimed industrial wastewater consistent with 9VAC25-740-90 A, as well as for unlisted reuses of reclaimed industrial wastewater.</p>
90 C	Minimum standard requirements specific to	Added new subsection C for exclusively indirect potable	Changes were made to identify and describe in more detail the

Section number	Description of Requirement	What has changed	Rationale for change
	indirect potable reuse	reuse (IPR). Subdivisions C 1 through C 5 require for each IPR project: (1) A multiple barrier approach to be implemented through all stages of and described in the permit application for the project; (2) Compliance by the reclamation system of the project with reclaimed water standards and other applicable water quality standards; (3) Reevaluation of public health risks and standards imposed on the reclamation system of the project with each reissuance of the permit issued to the reclamation system; (4) Specific reliability requirements for reclamation systems and associated pump stations; (5) Pretreatment programs or programs equivalent to pretreatment programs for VPDES permitted treatment works with significant industrial users that provide source water for reclamation and subsequent IPR, if required in accordance with 9VAC25-740-150 E.	minimum items required for an IPR project to ensure protection of the environment and public health as affected by this reuse.
100 A	Application for permit.	Added the acronym "SRS" to first sentence.	Revised to be consistent with proposed regulatory language and previous edits.
100 B	General information required to permit a reclamation system or reclaimed water distribution system.	1. Moved the last sentence within 9VAC25-740-100 B to the first paragraph of the subsection. 2. Inserted a subsection designation to the last sentence of the paragraph.	1. Change was made to eliminate a hanging sentence, thereby improving organization and readability of subsection. 2. Clarification of requirements.
100 B 3	Information on wastewater treatment works diverting source water to a reclamation system	In subdivision B 3, deleted "effluent or" before "source water".	Changes were made to eliminate terminology that is redundant of and captured by "source water" within the same sentences.
100 B 3 b	Information on wastewater treatment	Replaced the phrase "significant industrial users	Correction made to be consistent with other changes made in the

Section number	Description of Requirement	What has changed	Rationale for change
	works diverting source water to a reclamation system	defined in 9VAC25-31-10" with the acronym "SIUs".	proposed regulations.
100 B 3 c	Information on wastewater treatment works diverting source water to a reclamation system	In subdivision B 3 c, deleted "effluent or" before "source water".	Changes were made to eliminate terminology that is redundant of and captured by "source water" within the same sentences.
100 B 4	Information regarding the sewage collection system that diverts or will divert sewage to the satellite reclamation system	Replaced the phrase "satellite reclamation system" with the acronym "SRS".	To be consistent with changes made throughout the regulation.
100 B 4 b	Information regarding the sewage collection system that diverts or will divert sewage to the satellite reclamation system	Replaced the phrase "significant industrial users (SIUs) defined in 9VAC25-31-10 with the acronym "SIUs" and the phrase "satellite reclamation system" with the acronym "SRS".	To be consistent with changes made throughout the regulation.
100 B 4 c	Information regarding the sewage collection system that diverts or will divert sewage to the satellite reclamation system	1. Replaced the phrase "satellite reclamation system" with the acronym "SRS". 2. Added section notation.	1. To be consistent with changes made throughout the regulation. 2. To clarify requirements.
100 B 5	Permit application information regarding reclamation systems and satellite reclamation systems	Replaced the phrase "satellite reclamation system" with the acronym "SRS".	To be consistent with changes made throughout the regulation.
100 B 5 c	Permit application information regarding reclamation systems and satellite reclamation systems	Replaced "Design" with "Designated design".	Change was made to distinguish design flow of a reclamation system from the design flow of a WWTF. See also changes to Section 10 regarding the addition of a new term, "Designated design flow", and the definition for the term.
100 B 6	Information needed to perform cumulative impact analyses for diversions of source water from discharging treatment works and sewage collection systems for reclamation and reuse	Added new subdivision, 9VAC25-740-100 B 6, describing information that must be submitted for VPDES permitted treatment works and sewage collection systems that will provide a new or increased diversion of source water to reclamation systems or satellite reclamation systems (SRSs) for the	Changes (1) through (5) were made to provide DEQ the information necessary to perform a cumulative impact analysis of consumptive use by water reclamation and reuse for each VPDES permitted treatment works or sewage collection system that will provide a new or increased diversion of source water to a reclamation system or SRS. This change is consistent and in

Section number	Description of Requirement	What has changed	Rationale for change
		<p>production of reclaimed water, and information, as applicable, regarding the SRS that includes:</p> <p>(a) Latitude and longitude of the treatment works or SRS discharge,</p> <p>(b) Mean monthly discharges of the treatment works or SRS for 60 consecutive months,</p> <p>(c) Maximum monthly diversion of source water from the treatment works or sewage collection system for 12 consecutive months,</p> <p>(d) The name of the treatment works at the end of the sewage collection system, and</p> <p>(e) Information required for multiple phased increases of source water diverted from treatment works and sewage collection systems for reclamation and reuse.</p>	<p>conjunction with the new provision under 9VAC25-740-50.B.7 prohibiting significant adverse impacts to other beneficial uses. Changes were made to clarify that neither the VPDES permitted WWTF or the sewage collection system “propose” the diversion of source water, rather they “provide” the source water by diversion, and the second change was made to clarify that where a SRS (satellite reclamation system) is involved, information will be required per 9VAC25-740-100.B.6.a and b.</p>
100 B 6	Determination of significant adverse impacts to other on and off stream beneficial uses due to diversion of source water from a discharge to reclamation and reuse	Replaced: "proposes" with "will provide" after "...sewage collection system that", and replaced "including" with "and information, as applicable, regarding the SRS that includes" after "...the production of reclaimed water,".	Changes were made to clarify that (i) neither the VPDES permitted WWTF or the sewage collections system "propose" the diversion of source water, rather they "provide" the source water by diversion and (ii) where a SRS (satellite reclamation system) is involved, information will be required per 9VAC25-740-100 B 6 a and b.
100 B 6 b	Determination of significant adverse impacts to other on and off stream beneficial uses due to diversion of source water from a discharge to reclamation and reuse	Inserted “return discharge of” before “the SRS” where it first appears in the paragraph.	Change was made to clarify that the discharge from the SRS was referring to the return discharge to the sewage collection system and not the discharge of reclaimed water from the SRS to reuse.
100 B 6 e	Determination of significant adverse impacts to other on and off stream beneficial uses due to diversion of source water from a discharge to reclamation and reuse	Delete "subdivision 5" reference. Replace word "subsection" with "subdivision".	Change was made to clarify the requirements and for consistence with designation of references within a subdivision.

Section number	Description of Requirement	What has changed	Rationale for change
100 B 7	Alternative wastewater and reclaimed water management options for specific conjunctive systems	Added new subdivision 9VAC25-740-100 B 7 requiring application information for specific conjunctive systems on measures to be immediately implemented for the management of wastewater and reclaimed water in the event that primary reuses of reclaimed water generated by the system cease or fail.	Change was made to address the vulnerability of specific conjunctive systems with no or limited wastewater management options other than water reuse in the event that primary reuses of reclaimed water cease or fail.
100 B 8	Alternative wastewater and reclaimed water management options for specific conjunctive systems	Added new subdivision 9VAC25-740-100 B 8 requiring information submitted for 9VAC25-740-100 B 7 to be included in the Reclaimed Water Management plan (9VAC25-740-100 C where the conjunctive system is acting as a reclaimed water agent.	Change was made to ensure that application information related to or affecting the distribution of reclaimed water to end users is included in the Reclaimed Water Management plan.
100 B 9	Alternative wastewater and reclaimed water management options for specific conjunctive systems	Existing subdivision 9VAC25-740-100 B 6 was changed to 9VAC25-740-100 B 9 and revised to delete the word "and" at the end of the subdivision.	With the addition of new subdivisions 9VAC25-740-100 B 6, 7 and 8, change was made to avoid redundant subdivision numbering. Change made to account for moving of the last sentence of the subdivision to subdivision 100 B.
100 C 1	RWM Plan requirements for reclamation systems, satellite reclamation systems and reclaimed distribution systems that provide reclaimed water to end users	Revised language as follows: "A RWM plan shall be submitted in support of a <u>permit application</u> application <u>application for a new or expanded reclamation system</u> system, satellite reclamation systems-SRS or reclaimed water distribution systems that provide system <u>acting as a reclaimed water agent by directly distributing reclaimed water</u> to an end user or end users, including an end user that is also the applicant or permittee. <u>A RWM plan shall not be required for a reclamation system that distributes reclaimed water exclusively</u>	Changes were made to use the term already defined in the regulation, "reclaimed water agent", for systems permitted to distribute reclaimed to end users, and to improve grammar of the language. Second sentence was added to acknowledge that for those circumstance where the only reuse of reclaimed water distributed by a reclamation system will be IPR, much of the information required for a RWM plan would not apply to the IPR project and the ultimate end users of the reclaimed water would be connected to a waterworks that is regulated by the Virginia Department of Health, not DEQ.

Section number	Description of Requirement	What has changed	Rationale for change
		for indirect potable reuse. The RWM plan shall contain the following.”	
100 C 1 d	Example service agreements or contracts between the applicant or permittee and prospective end users to include in the RWM plan	1. Added subsection notation in second sentence. 2. Replaced the term "nonpotable" with the term "non-potable" 3. In last sentence, changed the language as follows: “Within the agreement or contract, the applicant or permittee shall also reserve the right to <u>perform routine or periodic inspections of an end user’s reclaimed water reuses and storage facilities, and to terminate the agreement or contract</u> and withdraw service for any failure by the end user to ...”	1. Clarification of requirements 2. To be consistent with changes made throughout the regulation. 3. Changes were made to make it possible for reclaimed water agents to monitor end users through the terms of the service agreement or contract and in accordance with 9VAC25-740-40 C, and to be consistent with the names of the legal documents.
100 C 1 g (3)	Cross-connection and backflow prevention program	Delete last "and" in sentence.	Grammatical correction: To account for revision and reorganization of material.
100 C 1 g (4)	Cross-connection and backflow prevention program	Insert "and" at the end of the sentence.	Grammatical correction: To account for revision and reorganization of material.
100 C 1 g (5)	Cross-connection and backflow prevention program for the distribution of reclaimed water	In the last paragraph under subdivision 9VAC25-740-100 C 1 g, revised language of the first sentence as follows: “(5) A Requires a backflow prevention device shall be required on the reclaimed water service connection ...”	Change was made to eliminate a hanging paragraph and to be consistent with Virginia Register style guidelines for regulations.
100 C 1 h	Maintenance of reclaimed water quality within reclaimed water	Revised language as follows: “A description of how the	Changes were made to be consistent with changes to design requirements for reclaimed water

Section number	Description of Requirement	What has changed	Rationale for change
	distribution system to meet standards for intended reuse of reclaimed water	quality of reclaimed water in the reclaimed water distribution system shall be maintained to meet <u>and, if determined necessary by the board, monitored to verify compliance with the standards-minimum standard requirements specified in 9VAC25-740-90</u> for the intended reuse or reuses of the reclaimed water <u>in accordance with 9VAC25-740-90, excluding CAT standards. Where monitoring of reclaimed water in the distribution system is required, monitoring parameters and frequencies shall be determined by the board on a case-by-case basis.</u>	distribution systems in 9VAC25-740-110 B 9 that exclude maintenance of CAT standards and new point of compliance (POC) requirements for reclaimed water distribution systems in 9VAC25-740-70 B.
100 C 1 i	Information for specific conjunctive systems acting as reclaimed water agents	Inserted the following new language under subdivision 9VAC25-740-100 C 1 i and changed existing subdivision C 1 i to C 1 j: "Information specified in subdivision B 7 of this section for conjunctive systems described in subdivision B 8 of this section."	Change was made to provide a "cross-walk" between new language inserted under subdivisions 9VAC25-740-100 B 7 and 8 regarding information that may be included in the Reclaimed Water Management plan for specific conjunctive systems.
100 C 1 j	Reduced application information requirements for the distribution of reclaimed water	Deleted "C" after "subdivisions" and replaced "section" with "subsection".	Changes were made to eliminate unnecessary subdivision reference and to identify the correct location of the regulation referenced, consistent with the Virginia Register style guidelines for regulations.
100 C 3 b (2)	Nutrient management requirements for bulk and non-bulk irrigation reuse with non-BNR reclaimed water	Deleted "C" after "subdivisions" and replaced "section" with "subsection".	Changes were made to eliminate unnecessary subdivision reference and to identify the correct location of the regulation referenced, consistent with the Virginia Register style guidelines for regulations.
100 C 3 c (1)	Nutrient management requirements for bulk and non-bulk irrigation reuse with non-BNR reclaimed water	Deleted "C" following "subdivision" in the text and replaced "section" with "subsection".	Changes were made to eliminate unnecessary subdivision reference and to and to identify the correct location of the regulation referenced, consistent with the Virginia Register style guidelines

Section number	Description of Requirement	What has changed	Rationale for change
			for regulations.
100 C 3 c (2)	Metering of non-bulk irrigation end users of reclaimed water	Deleted "Reclaimed water metering of individual non-bulk irrigation end users;"	Requirement deleted because it is redundant of 9VAC25-740-100 C 1 e, which requires the provider of reclaimed water to meter all end users, not just non-bulk irrigation end users.
100 C 3 c (3)	Routine distribution of literature	Subdivision renumbered as 100 C 3 c (2).	Subdivision renumbered to account for deletion of original subdivision 100 C 3 c (2).
100 C 3 c (4)	Monitoring and reporting of N & P loads from non-bulk irrigation reuse with non-BNR reclaimed water	Subdivision renumbered as 100 C 3 c (3). Inserted "nonbulk irrigation reuse" after "metered" and added 2 nd sentence – "Results of this monitoring shall be included in the annual report to the Board submitted in accordance with 9VAC25-740-200 C."	Subdivision renumbered to account for deletion of original subdivision 100 C 3 c (2). Language was changed to make it consistent with annual reporting requirements for nonbulk irrigation reuse of non-BNR reclaimed water specified in 9VAC25-740-200 C.
100 C 4 a	NMP requirements for bulk irrigation reuse site	Replace phrase "satellite reclamation system" with the acronym "SRS".	Change made to be consistent with other changes made to the regulations.
100 C 4 and 5	NMP requirements for bulk irrigation reuse independent of reclaimed water nutrient content and DCR approval of such NMPs	(1) Changed last paragraph under 9VAC25-740-100 C 4 to a new subdivision, 9VAC25-740-100.C.5, and changed existing subdivisions C.5 through C.8 to C.6 through C.9. (2) In new subdivision C 5, changed the language in the 1 st sentence as follows: " The A <u>NMP required per subdivision 4 of this subsection shall ...</u> "	Changes were made to (1) eliminate a hanging paragraph, and (2) properly identify the applicable subdivisions and subsections consistent with the Virginia Register style guidelines for regulations.
100 C 5	NMP Requirements for specific irrigation reuse	Subdivision renumbered to C 6.	Change made to account for revised numbering.
100 C 6	Content of site plan for bulk irrigation reuse sites	Subdivision renumbered to C 7. Moved and incorporated last sentence of 9VAC25-740-100 C 7 to first sentence of subdivision as follows: "A site plan is required for each bulk irrigation reuse site <u>and area of proposed expansion to an existing irrigation reuse site,</u>	Change made to account for revised numbering. Change was made to eliminate hanging sentence consistent with Virginia Register style guidelines for regulations.

Section number	Description of Requirement	What has changed	Rationale for change
		displayed ...”	
100 C 7 a and b	Parties responsible for preparation and submission of site plans for bulk irrigation reuse sites	<p>Subdivisions renumbered to C 8 a and b.</p> <p>Replaced “or” with a comma following “reclamation system”; replace the phrase “satellite reclamation system” with the acronym “SRS” and added “or reclaimed water distribution system” after “SRS”.</p>	<p>Change made to account for revised numbering of subdivision.</p> <p>Changes made to be consistent with other changes made in the regulation.</p> <p>Added an applicable facility type to those listed in 9VAC25-740-100.C.7.a and b that was unintentionally omitted in the original regulation.</p>
100 C 8	Amendment of the RWM Plan to add new end users	<p>Subdivision renumbered to C 9.</p> <p>(1) Added “or new reuses” following “new end users” throughout the paragraph. (2) Inserted “for approval” after “board” (3) Deleted “not less than 30 days” in first sentence.</p>	<p>Changes made to account for revised numbering of subdivision.</p> <p>(1) New reuses may have similar or greater impact on reclaimed water standards, monitoring requirements and special conditions contained in the permit. Therefore, new reuses were added to RWM plan amendment procedures in 9VAC25-740-100 C 8.</p> <p>(2) Board (or DEQ) approval of amendments to the RWM plan is consistent with board approval of amendments to other similar types of plans or manuals. Also, if a proposed reuse is not listed in the regulation or involves the reuse of reclaimed industrial wastewater, it must be reviewed and approved by the board (or DEQ) on a case-by-case basis. This applies any time such reuses are included in the RWM plan.</p> <p>(3) Depending on the type of new reuses to be added to the RWM plan, DEQ’s review and approval of the new reuse may require more than 30 days. Therefore, the minimum 30-day submission period for new reuses prior to connection to reclaimed water service was deleted.</p>
100 D	Permit application requirements specific to indirect potable reuse projects	Added new subsection D for exclusively indirect potable reuse (IPR) proposals.	Changes were made to identify and generally describe items that are needed in a permit application for only IPR proposals in order to allow DEQ and VDH to fully evaluate the

Section number	Description of Requirement	What has changed	Rationale for change
			environmental impacts and public health risks of such proposals.
100 D 1	Permit application requirements specific to indirect potable reuse projects	Added new text requiring identification of the 3 major components of an IPR project;	Changes were made to identify and generally describe items that are needed in a permit application for only IPR proposals in order to allow DEQ and VDH to fully evaluate the environmental impacts and public health risks of such proposals.
100 D 2	Permit application requirements specific to indirect potable reuse projects	Added new text requiring identification of all uses in addition to IPR of the water supply source (WSS) considered part of the IPR project;	Changes were made to identify and generally describe items that are needed in a permit application for only IPR proposals in order to allow DEQ and VDH to fully evaluate the environmental impacts and public health risks of such proposals.
100 D 3	Permit application requirements specific to indirect potable reuse projects	Added new text requiring a description of multiple barriers to be implemented as part of an IPR project to ensure the production of water suitable for IPR. Multiple barriers shall include, at a minimum, source control and protection, effective and reliable treatment, environmental buffers and natural attenuation, monitoring programs, and responses to adverse conditions.	Changes were made to identify and generally describe items that are needed in a permit application for only IPR proposals in order to allow DEQ and VDH to fully evaluate the environmental impacts and public health risks of such proposals.
100 D 3 c	Requirements for an application to permit an Indirect potable reuse.	Deleted the word "source" after "WSS".	Change made to eliminate redundant terminology.
100 D 4	Permit application requirements specific to indirect potable reuse projects	Added new subsection requiring an evaluation of the effectiveness of multiple barriers combined to produce water of quality suitable for IPR;	Changes were made to identify and generally describe items that are needed in a permit application for only IPR proposals in order to allow DEQ and VDH to fully evaluate the environmental impacts and public health risks of such proposals.
100 D 5	Permit application requirements specific to indirect potable reuse projects	Added new subsection requiring any information deemed necessary by DEQ to establish reclaimed water standards and monitoring requirements for the IPR project in accordance with 9VAC25-740-90 B.	Changes were made to identify and generally describe items that are needed in a permit application for only IPR proposals in order to allow DEQ and VDH to fully evaluate the environmental impacts and public health risks of such proposals.
100 D 6	Permit application requirements specific to	Added new subsection requiring a water balance	Changes were made to identify and generally describe items that are

Section number	Description of Requirement	What has changed	Rationale for change
	indirect potable reuse projects	for the reclamation system of the IPR project;	needed in a permit application for only IPR proposals in order to allow DEQ and VDH to fully evaluate the environmental impacts and public health risks of such proposals.
100 D 7	Permit application requirements specific to indirect potable reuse projects	Added new subsection requiring a reclaimed water management plan and associated water balance for specific changes to the reclamation system considered part of the IPR project.	Changes were made to identify and generally describe items that are needed in a permit application for only IPR proposals in order to allow DEQ and VDH to fully evaluate the environmental impacts and public health risks of such proposals.
100 D 8	Permit application requirements specific to indirect potable reuse projects	Added new subsection requiring a copy of the contractual agreement, when required, between the reclamation system and waterworks of an IPR project, establishing responsibilities of two parties.	Changes were made to identify and generally describe items that are needed in a permit application for only IPR proposals in order to allow DEQ and VDH to fully evaluate the environmental impacts and public health risks of such proposals.
105	Application for an emergency authorization	Added new section 9VAC25-740-105 that describes items needed in an application for an emergency authorization (subdivisions A 1 through A 15) to produce, distribute and reuse reclaimed water. Also includes a provision that allows submission of a permit application in lieu of an emergency authorization application where information required by the emergency authorization application can be provided in the permit application.	Change was made in conjunction with the addition of new section 9VAC25-740-45 (Emergency authorization for the production, distribution or reuse of reclaimed water). The information required in the application for an emergency authorization is needed by the board or DEQ to determine if the authorization is feasible and warranted in lieu of the conventional permit application and issuance process.
105 A 11	Application information for an emergency authorization	Replaced designation of subdivision "12" with "13".	Change made to correct subdivision reference.
105 A 12	Application information for an emergency authorization	Replaced subdivision reference "3 d" with "6".	Change made to correct subdivision reference.
110 A	Reclamation system	Subdivision A 1 notation added to existing language.	Changes made to clarify requirements and to improve readability.
110 A 1	Design criteria for reclamation systems	Replaced "the effluent" with "source water" throughout	Change was made to use terminology that applies to

Section number	Description of Requirement	What has changed	Rationale for change
		paragraph.	untreated, as well as treated wastewater.
110 A 2	Design criteria of UV disinfection for reclamation systems	Added new subdivision A 2 that describes UV disinfection design requirements for both Level 1 and Level 2 reclamation systems, and describes an option to allow lower UV disinfection dosages for Level 1 reclamation systems.	The Sewage Collection and Treatment (SCAT) Regulations (9VAC25-790) provide the design and operational requirements for UV disinfection of water comparable in quality to Level 2 reclaimed water, but not for water meeting Level 1 reclaimed water standards. Because the current regulatory action does not include amendment of the SCAT Regulations, changes were made to 9VAC25-740-110 A of the Water Reclamation and Reuse Regulation to address UV disinfection design requirements for both Level 1 and Level 2 reclamation systems.
110 B 2 b	Requirements of the cross-connection and backflow prevention program for reclaimed water distribution systems	Changed the language as follows: “The reclaimed water distribution system shall be in compliance with the cross connection control and backflow prevention requirements of the Article 3 (12VAC5-590-580 et seq.) of Part II of the Commonwealth of Virginia Waterworks Regulations, <u>and, when applicable, the reclaimed water distribution system shall also be in compliance with the Virginia Statewide Building Code (13VAC5-63), and local building and plumbing codes.</u> ”	Changes were made to address the fact that: (1) The USB Code regulates reclaimed water distribution systems that are part of the construction of a building, but not systems outside buildings; and (2) Localities are not permitted to have local building and plumbing codes.
110 B 6; B 6 a and B 6 b	Information to be submitted for conversion of potable water distribution systems, sewer and wastewater collection systems, and irrigation distribution systems to reclaimed water distribution systems	(1) Changed first paragraph of B.6 as follows: “Existing <u>potable water distribution systems, sewer and wastewater pipelines collections systems, and irrigation distribution systems</u> may be converted for use as reclaimed water distribution <u>pipelines systems. The Not less than 90 days prior to such conversions, excluding the conversion of irrigation</u>	(1) Changes were made: (i) to acknowledge that mechanical appurtenances and storage facilities in addition to piping can be converted, (ii) to correct descriptions of different facilities to be converted, (iii) to include existing irrigation distribution systems among systems that can be converted, and (iv) to establish when a conversion plan and operations & maintenance (O&M) manual for a converted system, excluding certain irrigation

Section number	Description of Requirement	What has changed	Rationale for change
		<p><u>distribution systems that are not under common ownership or management with reclamation systems, SRSs, or reclaimed water distribution systems providing reclaimed water to the irrigation distribution systems, the following information shall be submitted to the board for approval of the conversion:</u></p> <p>(2) Created new subdivisions B 6 a and B 6 b that describe submittals for a “system conversion plan” and an “operations and maintenance manual”, respectively, for the converted system. Existing B 6 a through B 6 h were placed under new subdivision B 6 a & numbered B 6 a (1) through B 6 a (7) and revised accordingly or in some cases deleted.</p> <p>(3) Deleted former B 6.c – “A description of measures to be taken to ensure that existing connections will be eliminated.”</p> <p>(4) Replaced former B 6 e - “Description of marking, signing, labeling, or color coding to be used to identify the converted facility as a reclaimed water transmission facility;” with B 6 a (4) – “A description of the physical and operational modifications necessary to convert the existing system to a reclaimed water distribution system that shall comply with applicable design criteria in subsections B and C of this section, and the operations and maintenance requirements of 9VAC25-740-140 D 2;”</p> <p>(5) Replaced “The” with</p>	<p>distribution systems, must be submitted for approval.</p> <p>(2) Change was made (with the addition of an O&M manual requirement) to identify the conversion plan and O&M manual as two separate documents.</p> <p>(3) Change was made to delete and consolidate language that is redundant of what is now 9VAC25-740-110 B 6 a (3).</p> <p>(4) Changes were made: (i) to include converted pipe identification among physical and operational modifications to the entire system that will be converted to a reclaimed water distribution system, and (ii) to demonstrate that the converted system complies with design and maintenance requirements contained in other provisions of the regulation.</p> <p>(5) Changes were made to improve grammar and readability of the subdivisions.</p> <p>(6) Changes were made to: (i) require cleaning and disinfection according to an ANSI/AWWA standard for the conversion of sewer and wastewater collection systems to reclaimed water distribution systems, and (ii) ensure the proper disposal of flush water from converted systems.</p> <p>(7) Change was made to ensure that converted systems will have O&M manuals consistent with the requirements of 9VAC25-740-140 for all reclaimed water distribution systems.</p>

Section number	Description of Requirement	What has changed	Rationale for change
		<p>“Information on the” in B 6 a (1) and (2), replaced “Description” with “A description” in B 6 A (3) and (5), and replaced “Assessment” with “An assessment” in B 6 A (6). (6) Added requirements to B 6 a (5): (i) to perform cleaning and disinfection of converted sewer and wastewater collection systems according to specific AWWA standards, and (ii) for the proper disposal of flush waters from any system converted to a reclaimed water distribution system in accordance with the operations & maintenance (O&M) manual for the converted system. (7) Under B 6 b, inserted requirements for and minimum content of the O&M manual for the converted system.</p>	
110 B 8 a and b	<p>Identification and notification requirements for reclaimed water piping – outer diameter greater than or equal to one inch</p>	<p>(1) Changed language in subdivision 9VAC25-740-110 B 8 a as follows: All reclaimed <u>Reclaimed water piping with an outer diameter greater than or equal to one inch, installed in-ground after [effective date of amended regulation] or above ground shall have display</u> the words "CAUTION: RECLAIMED WATER - DO NOT DRINK" embossed, integrally stamped, or otherwise affixed to the piping, and shall be identified by one or more of the following methods: (2) Revised and moved color coding option from subdivision B 8 a (1) to new subdivisions B 8.b and c, and renumbered B 8 a (2) through (4) to B 8 a (1)</p>	<p>(1) Changes were made: (i) to make identification and notification requirements of 9VAC25-740-110 B 8 a applicable to only larger diameter distribution pipes (≥ 1" outer diameter), and (ii) to eliminate redundant language. (2) Change was made to make color coding an optional identification method for larger pipes (≥ 1" outer diameter) but required for smaller pipes (< 1" outer diameter). (3) Changes were made to be consistent with existing terminology and changes in 9VAC25-740-110 B 8 a. (4) Changes were made: (i) to be consistent with existing terminology used in 9VAC25-740-110 B 8 a, and (ii) to be consistent with specifications for tape used to identify reclaimed water piping described in 9VAC25-740-110 B 8 a (2).</p>

Section number	Description of Requirement	What has changed	Rationale for change
		<p>through (3) (3) In B 8 a (1), replaced “pipe” with “piping” throughout, 1st sentence - replaced “Using stenciled” with “Stenciling or stamping the”; and 2nd sentence - replaced “in” with “and greater than or equal to one inch outer [diameter]”. (4) In B 8 a (3), 1st sentence – replaced “pipe’ with “piping”, and 2nd sentence -revised language as follows: “The <u>width of the tape shall be at least three inches, and shall</u> display the required caution statement in either white or black lettering.” (5) Added new subdivision B 8 a (4) that states “Using an alternate method that assures the caution statement will be displayed to provide an equivalent degree of public notification and protection if approved by the board.” (6) Inserted new subdivision B 8 b that allows additional methods to be used for identification of reclaimed water piping with an outer diameter greater than or equal to one inch provided they do not obscure the caution statement on the piping.</p>	<p>(5) Change was made to provide greater flexibility in the options that may be used to display the caution statement on larger reclaimed water piping (≥ 1” outer diameter). (6) Change was made to allow the use of additional options that may improve the identification of larger (≥ 1” outer diameter) reclaimed water piping.</p>
110 B 8 c	Identification and notification requirements for reclaimed water piping – outer diameter less than one inch	Inserted new subdivision B 8 c that describes color coding and caution statement requirements for reclaimed water piping less than one inch outer diameter.	Changes were made to make color-coding mandatory for the identification of smaller (< 1” outer diameter) reclaimed water piping, and to distinguish this same piping from other non-potable water piping (e.g., for recycled gray water and harvested rainwater) inside buildings and structures that in accordance with Virginia’s Uniform Statewide Building Codes must also be color-coded purple.
110 B 8 d, e and f	Identification and notification requirements	(1) Modified and moved existing subdivision B 8 d to	(1) Change was made to address identification and notification

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	for above-ground portions, mechanical appurtenances and valve boxes of reclaimed water distribution systems	B 8 g (2) Changed existing subdivisions B8 b, c and e to B 8 d e and f, respectively. (3) In the first sentence of B 8 d, replaced “visible,” with “other”, deleted “piping”, and changed “colored coded” to “color coded”.	requirements for new reclaimed water distribution systems before addressing the same for systems converted to reclaimed water distribution systems (2) Changes were made to ensure the proper identification of remaining subdivisions following the deletion of former 9VAC25-740-110 B 8 d. (3) Changes were made: (i) to clarify that this provision applies to all above-ground portions of reclaimed water systems not addressed in 9VAC25-740-110 B 8 a, b and c and regardless of whether they are or are not visible, (ii) to make language consistent throughout 9VAC25-740-110 B 8 with regard to reclaimed water “piping”, and (iii) to correct a grammatical error.
110 B 8 g	Identification, notification and signage requirements for systems converted to reclaimed water distribution systems	Former subdivision B 8 d was modified and moved to B 8 g, which describes identification, notification and signage requirements for systems converted to reclaimed water distribution systems and identifies some exceptions for certain existing underground piping and exclusion for certain converted irrigation distribution systems.	Change was made to address identification, notification and signage requirements for systems converted to reclaimed water distribution systems not addressed in 9VAC25-740-110 B 6, and circumstance under which these requirements would not apply.
110 B 9	Maintenance of reclaimed water distribution systems to minimize loss, ensure safe, reliable conveyance; and maintain quality of reclaimed water	Inserted “, excluding CAT standards,” after “below the standards”.	Revised the language to exclude maintenance of CAT standards in the reclaimed water distribution system since these standards only apply to operation of treatment process at the reclamation system.
110 C 1 e	Options to ensure reliable reclamation system flow	Inserted “source” between “received” and “water”	Change was made to clarify what type of water, “source water”, and to eliminate confusion with “reclaimed water” and “reject water” used in the same subsection.
110 C 2	Circumstances requiring reclaimed water storage	Changed language in 9VAC25-740-110 C 2 as follows: “Storage for reclaimed water	Changes were made to correct a typographical error.

Section number	Description of Requirement	What has changed	Rationale for change
		shall be required only when subdivisions 1 b, c, or d of this subsection or, as applicable, subdivision 1 e of ...”	
110 C 4	Option to use reject water storage as emergency storage to meet reliability requirements of 9VAC25-740-130	Changed “Class I reliability” to “Reliability Class I”	Change was made to be consistent with changes to the terminology in 9VAC25-740-10.
110 C 8 a; C 8 b and 8 b (1)	Capacity requirements for reject water storage and reclaimed water system storage facilities	<p>(1) In subdivision C 8 a, revised the language as follows: “For reject water, the capacity of the storage facility shall, at a minimum, be the volume equal to the average daily permitted designated design flow of the reclamation system...”</p> <p>(2) Subdivision notation added.</p> <p>(3 a and 3 b) In subdivision C 8 b (1), revised the language as follows: Where there is no or minimal seasonal variability in demand and no other options are available for alternative generation or management of all or a portion of the reclaimed water, the capacity of the storage facility shall, at a minimum, be the volume equal to three times that portion of reclaimed water average daily <u>the reclamation system designated design</u> flow for which no other options to generate or manage the reclaimed water <u>from the reclamation system</u> are permitted.</p>	<p>(1) Change was made to allow capacity requirements for reject water storage facilities to address worst case scenarios requiring the most storage.</p> <p>(2) Clarification of regulations.</p> <p>(3.a) Change was made to allow capacity requirements for reclaimed water system storage facilities to address worst case scenarios requiring the most storage.</p> <p>(3.b) Change was made to clarify that the reclaimed water to be managed is from the reclamation system and not the storage facility</p>
110 C 9, C 12 and C 12 a	Design requirements and setbacks distances for non-system storage of reclaimed water	Deleted “Lake” and “lake” from 9VAC25-740-110 C 9, 12 and 12.a.	“Lake” and “impoundment” are used together in all these subdivisions. Because the vast majority of lakes in Virginia are impoundments, “lake” in the context of the language in these subdivisions is redundant of

Section number	Description of Requirement	What has changed	Rationale for change
			"impoundment". Therefore, "lake" was not considered necessary.
110 C 14	Discharge prohibitions for reclaimed water storage facilities	(1) In 1 st sentence, replaced "All" with "Reclaimed water system", deleted ", including landscape impoundments used for nonsystem storage," and inserted a comma after "25-year". (2) Added a sentence that states "Reclaimed water non-system storage facilities, including landscape impoundments used for nonsystem storage, shall be designed and operated to prevent a discharge to surface waters of the state, except in the event of a storm greater than the 10-year, 24-hour storm."	(1) Changes were made to limit this requirement to only <u>system</u> storage facilities of reclaimed water and to correct a grammatical error. (2) Change was made to differentiate and describe discharge prohibitions for <u>nonsystem</u> storage of reclaimed water.
120 A; A 1; and A 2	Preliminary engineering report and pilot study requirements	In subsection A, added "and pilot study" to title of subsection, divided subsection into two subdivisions addressing separately the requirements for preliminary engineering reports and pilot studies, and added new language on pilot study requirements for only the treatment of reclamation systems that are part of IPR projects.	Changes were made in conjunction with the addition of new subsection 9VAC25-740-90 C regarding minimum items required for IPR projects. Because treatment technologies typically required for IPR projects continue to evolve and improve, pilot studies are needed to verify that these new technologies will provide the level of treatment proposed, or to identify areas of correction and adjustment prior to full scale construction of the treatment facilities.
120 A 1	Preliminary engineering report and pilot study	Replaced phrase "satellite reclamation systems" with "SRSs" and "satellite reclamation system" with "SRS".	Changes made to be consistent with other changes in the regulations.
120 A 2	Pilot study requirements	New subdivisions A 2 and A 2 a; b and c added.	Changes made to clarify the requirements for pilot studies.
120 A 2 b	Construction requirements - requirements for a pilot study	Change subdivision reference from "2 d" to "2 c"	Correction of erroneous subdivision reference.
120 B 1	Certificate to construct and certificate to operate	Replace the phrase "satellite reclamation system" with the acronym "SRS".	Changes made to be consistent with other changes in the regulations.

Section number	Description of Requirement	What has changed	Rationale for change
120 B 2	CTC requirements	Replace the phrase "satellite reclamation system" with the acronym "SRS".	Changes made to be consistent with other changes in the regulations.
120 B 3	CTO requirements	Replaced the phrase "satellite reclamation system" with the acronym "SRS".	Changes made to be consistent with other changes in the regulations.
120 B 3 a	CTO requirements	Added subdivision notation.	Clarification of requirements.
120 B 3 c	CTO requirements	Replaced the phrase "satellite reclamation system" with the acronym "SRS".	Changes made to be consistent with other changes in the regulations.
120 B 3 d	Interim CTO issuance procedures	In the first sentence, deleted "Consideration will be given to issuance of" and inserted "may be issued".	Revised language to describe more clearly interim CTO issuance procedures.
120 B 3 e	CTO monitoring requirement for reclamation systems and satellite reclamation systems	Replaced the phrase "satellite reclamation system" with the acronym "SRS". In the first sentence, inserted "board may require" after "into operation, the" and replaced "should" with "by the system to".	Changes made to be consistent with other changes in the regulations. Revised language to clarify that sampling and testing by the reclamation system or satellite reclamation system is not required unless determined necessary by the board; and reclaimed water sampling and testing, when required, must be performed by the systems producing that water.
120 B 3 f	CTO operations & maintenance manual submission requirement for reclamation systems and satellite reclamation systems	Replaced the phrase "satellite reclamation system" with the acronym "SRS". Replaced "as applicable, to be" with "if" in first sentence.	Changes made to be consistent with other changes in the regulations. Revised language to be more concise without changing the requirement of the provision.
130 B	Class I Reliability requirements for Level 1 reclamation systems and satellite reclamation systems	Revised language as follows: <u>"Reliability Class I reliability as defined in 9VAC25-740-10 is required for Level 1 reclamation systems and satellite reclamation systems, and for pump stations considered part of these systems, unless there is a permitted alternate treatment-of, discharge or disposal system available which has with sufficient capacity to handle any</u>	(1) Change to "Reliability Class I" was made to be consistent with change made to the term in 9VAC25-740-10. (2) Pump stations that are part of reclamation systems or satellite reclamation systems are not subject to requirements of the Sewage Collection and Treatment Regulations. Therefore, added pump stations to facilities subject to Reliability Class I requirements of the Water Reclamation and Reuse Regulation. (3) Added "or disposal" (i.e.,

Section number	Description of Requirement	What has changed	Rationale for change
		reclaimed water flows which do not meet the reclaimed water standards of this chapter or performance criteria established in the operations and maintenance manual.”	through land treatment) as another alternate to requiring Reliability Class 1 for Level 1 reclamation systems. (4) Revised language to be more concise without changing the requirement of the provision.
130 C	Reliability requirement for reclamation systems and pump stations of IPR projects	(1) Added new subsection C as follows: “Reliability Class I as defined in 9VAC25-740-10 is required for a reclamation system identified as a component of an IPR project in accordance with 9VAC25-740-100 D 1, including pump stations that are part of the reclamations system. No exception or variance shall be granted for this requirement.” (2) Existing subsections C and D were changed to D and E.	Per 9VAC25-740-90.C, reclamation systems of an IPR project are required to produce reclaimed water meeting Level 1 standards, applicable Water Quality Standards and any other standards developed in accordance with 9VAC25-740-90 B. Because reclamation systems of IPR projects must meet Level 1 reclaimed water standards among others, 9VAC25-740-130 B would normally apply. However, 9VAC25-740-130 C differs from 9VAC25-740-130 B in that it requires Reliability Class I for the reclamation system and its associated pump stations when identified as a component of an IPR project, regardless of the availability of an alternate disposal system and without exception or variance. This is due to the greater human health risks associated with a treatment failure and subsequent discharge of substandard water to the public water supply of an IPR project.
130 D	Reliability requirements for independent reclamation systems and conjunctive industrial WWTFs and reclamation systems	Changed “Class I reliability” to “Reliability Class I”.	Change was made to be consistent with changes to “Class I reliability” 9VAC25-740-10.
130 E	Board approval of alternative measure to achieve Reliability Class I	(1) Changed “Class I reliability” to “Reliability Class I”. (2) Inserted “and this chapter” after “Sewage Collection and Treatment Regulations (9VAC25-790)	(1) Change was made to be consistent with changes to “Class I reliability” 9VAC25-740-10. (2) Change was made to acknowledge that the Water Reclamation Regulation also specifies requirements to achieve Reliability Class I”.
140 A	Operations and maintenance	Replaced the phrase "satellite reclamation system" with the acronym "SRS".	Changes made to be consistent with other changes in the regulations.

Section number	Description of Requirement	What has changed	Rationale for change
140 B	Operations and maintenance	Replaced the phrase "satellite reclamation system" with the acronym "SRS".	Changes made to be consistent with other changes in the regulations.
140 D	Operations and maintenance	Replaced the phrase "satellite reclamation system" with the acronym "SRS" and a comma.	Changes made to be consistent with other changes in the regulations.
140 D 1	Operations and maintenance	Replaced the phrase "satellite reclamation system" with the acronym "SRS".	Changes made to be consistent with other changes in the regulations.
140 D 1 a	Operations and maintenance	Replaced the phrase "satellite reclamation system" with the acronym "SRS".	Changes made to be consistent with other changes in the regulations.
140 D.2.a	Information to be contained in the operation maintenance manual for a reclaimed water distribution system	Inserted "map of the distribution system, a" after "A", and inserted a comma after "within the distribution system".	Change was made to ensure that the location and identification of reclaimed water distribution system components may be readily determined by mapping to avoid cross connections with other types of distribution or collection systems, or damage from excavation or other activities near the reclaimed water distribution system.
140 D 2 d	Procedures to handle and dispose of waste and wastewater generated by maintenance of the reclaimed water distribution system	<p>Revised language as follows:</p> <p>"2. For a reclaimed water distribution system, the operations and maintenance manual shall, at a minimum, contain the following:</p> <p>d. Procedures to:</p> <p><u>(1) handle-Handle and dispose of any wastes or wastewater generated by maintenance of the distribution system in a manner protective of the environment;</u></p> <p><u>(2) Prevent the discharge of reclaimed or flush water from distribution system maintenance activities to:</u></p> <p><u>(a) Storm drains,</u></p> <p><u>(b) State waters unless otherwise authorized by the board, and</u></p> <p><u>(c) Sanitary sewers unless</u></p>	Changes were made related to maintenance activities for reclaimed water distribution systems to: (i) describe separately the handling of wastes and wastewaters (or flush waters) resulting from these activities, (ii) clarify inappropriate vs. appropriate discharges of reclaimed or flush water, and (iii) provide an option to recover reclaimed or flush water from maintenance activities for other subsequent reuse or use.

Section number	Description of Requirement	What has changed	Rationale for change
		<p><u>allowed under local sewer use ordinances and authorized by the board; and</u></p> <p><u>(3) Collect and, as applicable, retreat reclaimed water or treat flush water from distribution system maintenance activities for a subsequent reuse or use approved by the board."</u></p>	
140 F	Operations and maintenance	Replaced the phrase "satellite reclamation system" with the acronym "SRS".	Changes made to be consistent with other changes in the regulations.
140 G	O&M manual content for bulk irrigation reuse sites under common ownership or management with a reclamation system or satellite reclamation system.	<p>Replaced the phrase "satellite reclamation system" with the acronym "SRS".</p> <p>Revised language as follows: "Where a reclamation system or satellite reclamation system and a bulk irrigation reuse site or sites are <u>is</u> under common ownership or management <u>with a reclamation system or SRS that generates reclaimed water applied to the site,</u> the operations and maintenance manual for the reclamation system or satellite reclamation system <u>SRS</u> shall include the following:"</p>	<p>Changes made to be consistent with other changes in the regulations.</p> <p>Change was made to clarify that this requirement is applicable when the bulk irrigation site also <u>applies</u> the reclaimed water received from a reclamation system or satellite reclamation system under common ownership or management with the site.</p>
150 A through E	Requirements to manage pollutants of concern from SIUs	<p>(1) In subsection A, replaced "effluent" with "source water"; replaced the phrase "significant industrial users (SIUs) as defined by the VPDES Permit Regulation (9VAC25-31-10) with the acronym "SIUs"; replaced the phrase "treated to" with the term "meeting"; added the word "standards"; deleted "or for reuse in areas accessible to the public or where human contact with the reclaimed water is likely" and moved</p>	<p>(1) Changes were made: (a) to use terminology that applies to untreated, as well as treated wastewater, and (b) to eliminate language for which there are no standards and to consolidate related language segments into the appropriate subdivision.</p> <p>(2) Changes were made to eliminate an unnecessary acronym and to make language of this subdivision consistent with similar requirements under subdivision E.1.</p> <p>(3) Changes were made to simplify procedures for Level 1 reclamation</p>

Section number	Description of Requirement	What has changed	Rationale for change
		<p>“the wastewater treatment works providing source water to the reclamation system is” to the beginning of subdivision A 1.</p> <p>(2) In subdivision A 1, revised language as follows: <u>“A-The wastewater treatment works providing source water to the reclamation system is a publicly owned treatment works (POTW), as defined in the VPDES Permit Regulation (9VAC25-31-10), that and has a pretreatment program required by and developed, approved and maintained in accordance with procedures described in Part VII of the VPDES Permit Regulation (9VAC25-31-730 through 9VAC25-31-900 et seq.);”</u>.</p> <p>(3) In subdivision A 2, for all other treatment works with SIUs not described in A 1, replaced requirement for a pretreatment program with an evaluation (by the reclamation system) of the source water “from the treatment works for pollutants of concern discharge by SIUs to the treatment works”.</p> <p>(4) In subsection B, deleted the phrase “or effluent”, modified language regarding the contractual agreement between a reclamation system and treatment works with SIUs providing source water to the reclamation system, and eliminated requirement for the board to review and approve such contractual agreements.</p> <p>(5) Added new subsection C that describes management of pollutants</p>	<p>systems to manage pollutants from treatment works with SIUs but without approved pretreatment programs that provide source water to the reclamation systems.</p> <p>(4) Changes were made to: (a) use terminology that applies to untreated, as well as treated wastewater, (b) make the language more concise and clear, and (c) eliminate unnecessary reviews and approvals by the board.</p> <p>(5) Because of their relation to sewage collection systems, SRSs are particularly vulnerable to adverse impacts by SIU discharges. Therefore, language was added to protect SRSs from SIU discharges.</p> <p>(6) Contractual agreement requirement between SRSs and sewage collection systems with SIU discharges is similar and serves a similar purpose as the contractual agreement between reclamation systems and treatment works with SIUs.</p> <p>(7) Language was added to provide an additional barrier for the protection of public health where the reclaimed water is produced for indirect potable reuse. <i>[See also “Changes made since the proposed stage”.]</i></p>

Section number	Description of Requirement	What has changed	Rationale for change
		<p>from SIUs by satellite reclamation systems (SRSs).</p> <p>(6) Added new subsection D to establish contractual agreement between SRSs and sewage collection system requiring the sewage collection system to notify the SRS of all SIUs discharging to the collection system.</p> <p>(7) Added new subsection E requiring most VPDES permitted treatment works with SIUs to have a pretreatment program or program equivalent to a pretreatment program where the treatment works provides source water for indirect potable reuse.</p>	
150 C	Management of pollutants of concern from significant industrial users - requirements for a satellite reclamation system	Change section reference from 9VAC24-740-70 D to 9VAC25-740-70 D.	Correction of VAC reference.
150 E 1	Management of pollutants of concern from significant industrial users for indirect potable reuse projects	In subdivision E.1, inserted "developed" before "in accordance with ...".	Change was made to correct an unintentional omission and to be consistent with language in subdivision A.1 of the same section.
160 A	Access control and advisory signs.	Replaced the phrase "satellite reclamation system" with the acronym "SRS".	Changes made to be consistent with other changes in the regulations.
160 B	Warning statement and specifications for advisory signs or placards	<p>Added "or 9VAC25-740-110 C 5 for above-ground storage facilities".</p> <p>Replaced term "non potable" with "nonpotable".</p>	<p>9VAC25-740-110 C 5 refers to the requirements of 9VAC25-740-160 B. Reciprocal language was added to 9VAC25-740-160 B to clarify that this provision applies to above-ground storage tanks.</p> <p>Grammatical correction.</p>
160 C and D	Advisory signage requirements for reuses of Level 2 and Level 1, respectively.	Rearranged existing language in both subsections.	The content of 9VAC25-740-160 C and D was not changed, but the language was rearranged to better emphasize the difference between the two subsections.

Section number	Description of Requirement	What has changed	Rationale for change
170 A and A 1 and A 2	Education and notification program for reclaimed water reuse	<p>(1) In 9VAC25-750-170 A, clarified submittal requirements for the education and notification (E&N) program of indirect potable reuse (IPR) vs. non-IPR projects.</p> <p>(2) Rearranged existing language with no change in requirements, and added new language to subdivision A 1 describing education requirements for IPR projects.</p> <p>(3) Added new language to subdivision A 2 describing notification requirements for discharges of substandard reclaimed to reuse or loss of service for IPR, and requiring modes of communication for notifications to be described.</p>	Changes were made in conjunction with new subsection 9VAC25-740-100 D regarding permit application requirements for IPR projects. Due to the greater public health implications of IPR and other features unique to this reuse, education and notification requirements for IPR projects were described separately from those of non-IPR projects.
170 C	Quality of reclaimed water delivered to end users	Replaced “be of acceptable quality” with “comply with reclaimed water standards required”.	Changed language to clarify that “acceptable quality” with regard to the regulation is limited to the appropriate reclaimed water standards for the intended reuses.
170 H 1 and H 3	Setbacks for irrigation reuse of Level 1 and Level 2 reclaimed water, respectively	Moved setback information in 9VAC25-740-170 H 1 and H 3 into Tables 170-H1 and 170-H2, respectively. Also changed language in 9VAC25-740-170 H 1 as follows: “... the following setback distances <u>provided</u> in Table 170-H1 are required: ...”. Similar, changes were made to the language in 9VAC25-740-170 H 3.	Changes were made to improve readability of information in these subsections and to be consistent with referencing tables throughout the regulation.
170 H – Table 170-H1	Table of "Setback Distances for Irrigation Reuses of Reclaimed Water Treated to Level 1".	Inserted row of headers to label columns in the table (i.e., "Feature Requiring Setback" and "Setback Distance", and enumerated each feature and associated setback in sequence a through c.	Changes were made to clarify the arrangement and content of the table, and to allow for improved referencing of information contained in the subsection and table.
170 H – Table 170-	Table of "Setback Distances for Irrigation	Inserted row of headers to label columns in the table	Changes were made to clarify the arrangement and content of the

Section number	Description of Requirement	What has changed	Rationale for change
H2	Reuses of Reclaimed Water Treated to Level 2".	(i.e., "Feature Requiring Setback" and "Setback Distance", and enumerated each feature and associated setback in sequence a through f.	table, and to allow for improved referencing of information contained in the subsection and table.
170 H 5, 6 and 7	Setback distances and requirements for irrigation reuse of reclaimed water	Inserted new subdivision for H 5 that states "Application of reclaimed water shall not occur during winds of sufficient strength to cause overspray or aerosol drift into or beyond the buffer zones of setbacks specified in subdivisions 1 through 4 of this subsection." Existing subdivisions H 5 and H 6 were changed to H 6 and H 7, respectively.	Change was made to be consistent with other management requirements for irrigation reuse of reclaimed water. Just as reclaimed water runoff must be confined to the irrigation reuse site per 9VAC25-740-170 F 3, reclaimed water sprays and aerosols must also be confined to the irrigation reuse sites for the protection of human health and the environment.
180	Operational flow requirements	Inserted subsection references.	Designations added to clarify requirements.
180 A	Operational flow requirements	(1) Replaced "satellite reclamation system" with the acronym "SRS, (2) Inserted "designated" before "design", and replaced "capacity" with "flow" after "design".	(1) Change was made to be consistent with other changes in the regulation. (2) Change is consistent with changes made in relation to the addition of the new term "designated design flow" and associated definition.
180 B through E	Operational flow requirements	Converted 9VAC25-740-180 A 1 through 4 to 9VAC25-740-180 B through E, inserted "of action described in subsection A of this section" after "plan" in subsection B, inserted "described in subsection A of this section" after "plan of action" in subsection C, and inserted "of action in accordance with subsection A of this section" after "plan" in subsection D. Replaced phrase "satellite reclamation system" with the acronym "SRS".	Changes were made to be consistent with Virginia Register style guidelines for regulations. Changes made to be consistent with changes in the regulations.
200 A	Monthly Monitoring Report	Replaced the phrase "satellite reclamation system" with the acronym "SRS".	Changes made to be consistent with other changes in the regulations.
FORMS	Water Reclamation and Reuse Addendum to an	Replaced reference for required form that will have	Change was made to update reference.

Section number	Description of Requirement	What has changed	Rationale for change
	Application for a VPDES or VPA Permit and Instructions	a new date when revised form is submitted to the Virginia Register.	

Regulatory flexibility analysis

Please describe the agency’s analysis of alternative regulatory methods, consistent with health, safety, environmental, and economic welfare, that will accomplish the objectives of applicable law while minimizing the adverse impact on small business. Alternative regulatory methods include, at a minimum: 1) the establishment of less stringent compliance or reporting requirements; 2) the establishment of less stringent schedules or deadlines for compliance or reporting requirements; 3) the consolidation or simplification of compliance or reporting requirements; 4) the establishment of performance standards for small businesses to replace design or operational standards required in the proposed regulation; and 5) the exemption of small businesses from all or any part of the requirements contained in the proposed regulation.

Proposed amendments to the regulation will, in most cases, impact publicly owned treatment works, reclamation systems, satellite reclamation systems and reclaimed water distribution systems. Similar privately owned systems that are less common, may be impact by the amendments to the regulation when considered a small business. End users of reclaimed water, which are more likely to include small businesses, would either be positively affected or minimally affected by amendments to the regulation.

The following proposed amendments to the regulation will accomplish the objects of the applicable law while minimizing the adverse impact on treatment works, reclamation systems, satellite reclamation systems, reclaimed water distribution systems and end users that are considered small businesses:

1. An amendment is proposed to add provisions that would allow design or operational deviations for facilities still capable of producing or distributing reclaimed water in a manner protective of the environment and public health. For applicants/permittees, including small businesses, that previously requested exceptions to design or operational requirements of the regulation, DEQ was unable to grant such exceptions or variances without the authority established in law or regulation. This amendment will give the agency the authority and flexibility to approve projects that may not conform to all design requirements of the regulation but are still protective of the environment and public health.
2. An amendment is proposed to add provisions for an emergency authorization to reclaim and reuse wastewater without a permit during periods of significant drought. DEQ had in the past received requests to temporarily authorize emergency reuse of reclaimed water during severe droughts without permit coverage, but was unable to grant such authorization without the authority to do so established in regulation. The amendment will provide DEQ the authority and flexibility to temporarily authorize reclamation and specific reuses of reclaimed wastewater without a permit during periods of significant drought.
3. An amendment is proposed to simplify procedures for Level 1 reclamation systems to manage pollutants of concern from treatments works that provide source water to the reclamation system, have significant industrial users (SIUs), and are not required to have pretreatment programs. These treatment works will include privately owned facilities that may be considered small businesses.
4. An amendment is proposed to revise an existing design requirement that would allow non-system storage facilities of reclaimed water to discharge only in the event of a 10-year, 24-hour storm. Currently, all reclaimed water storage cannot discharge except in the event of a 25-year, 24-hour

storm, requiring much more storage capacity. This amendment will have the greatest positive economic effect on end users of reclaimed water that must store the reclaimed water between periods of reuse, such as for irrigation (e.g., at golf courses), utilizing existing ponds that predate the design requirements of the current regulation.

5. An amendment is proposed that would exclude existing irrigation distribution systems converted to reclaimed water distribution systems from requirements to provide conversion plans, O&M manuals, and identification and notification for in-ground piping where the irrigation distribution systems are not under common ownership or management with reclamation systems, satellite reclamation systems or reclaimed water distribution systems providing reclaimed water to the irrigation distribution systems. This amendment will have the greatest positive economic effect on end users of reclaimed water with existing in-ground irrigation systems that predate design requirements of the current regulation.

Family impact

Please assess the impact of the proposed regulatory action on the institution of the family and family stability including to what extent the regulatory action will: 1) strengthen or erode the authority and rights of parents in the education, nurturing, and supervision of their children; 2) encourage or discourage economic self-sufficiency, self-pride, and the assumption of responsibility for oneself, one's spouse, and one's children and/or elderly parents; 3) strengthen or erode the marital commitment; and 4) increase or decrease disposable family income.

It is not anticipated that this regulation will have a direct impact on the institution of the family or family stability.

Acronyms and Definitions

Please define all acronyms used in the Agency Background Document. Also, please define any technical terms that are used in the document that are not also defined in the "Definition" section of the regulations.

The following acronyms are used in the Agency Background Document:

- AOSS – "alternate onsite sewage system"
- APA – "Administrative Process Act"
- AWWA – "American Waterworks Association"
- BNR – "biological nutrient removal"
- CAT – "corrective action threshold"
- DCR – "Department of Conservation and Recreation"
- DEQ – "Department of Environmental Quality"
- DHCD – "Department of Housing and Community Development"
- E&N – "education and notification"
- EPA – "Environmental Protection Agency"
- IPR – "indirect potable reuse"
- N – "nitrogen"
- NOIRA – "Notice of Intended Regulatory Action"
- NMP – "nutrient management plan"
- NWRI – "National Water Research Institute"
- O&M – "operation and maintenance"

- P – "phosphorus"
- POC – "point of compliance"
- RAP – "regulatory advisory panel"
- RWM – "reclaimed water management"
- SCAT – "Sewage Collection and Treatment "
- SIUs – "significant industrial users"
- SRS – "satellite reclamation system"
- TAC – "technical advisory committee"
- TMDL – "total maximum daily load"
- US – "United States"
- UV – "ultra-violet"
- VA – "Virginia"
- VDH – "Virginia Department of Health"
- VPA – "Virginia Pollution Abatement "
- VPDES – "Virginia Pollutant Discharge Elimination System "
- VWEA – "Virginia Water Environment Association"
- WSS – "water supply source"