

COMMONWEALTH OF VIRGINIA
DEPARTMENT OF ENVIRONMENTAL QUALITY
WATER DIVISION

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Subject: Water Guidance Memo No. 10-2001
Implementation Guidance for the Water Reclamation and Reuse Regulation, 9VAC25-740-10 et seq.

To: Regional Directors

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Date: January 13, 2010

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Summary:

The purpose of this guidance is to assist DEQ regional water permit staff in consistently implementing requirements of the Water Reclamation and Reuse Regulation (9VAC25-740-10 et seq.) through the existing VPDES and VPA Permit Programs. This guidance includes information on water reclamation and reuse related to permitting requirements, application for a permit and associated fees, permit drafting, management of pollutants from significant industrial users, coordination within DEQ and with other state agencies, CEDS records, compliance and enforcement, and other miscellaneous technical issues.

Electronic Copy:

An electronic copy of this guidance in PDF format is available for staff internally on DEQNET, and for the general public on DEQ's website at: <http://www.deq.virginia.gov/waterguidance/>.

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Disclaimer:

This document is provided as guidance and, as such, sets forth standard operating procedures for the agency. However, it does not mandate any particular method nor does it prohibit any alternative method. If alternative proposals are made, such proposals should be reviewed and accepted or denied based on their technical adequacy and compliance with appropriate laws and regulations.

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I. Introduction

The purpose of this guidance is to assist DEQ regional water permit staff in consistently implementing the [Water Reclamation and Reuse Regulation \(9VAC25-740-10 et seq.\)](#). The guidance also builds upon existing guidance for VPDES and VPA permits to authorize water reclamation and reuse projects through these permit programs. Therefore, regional water permit staff should always refer to the most current guidance and permit manuals posted on the DEQNET.

II. Authority

The authority for promulgation of the Water Reclamation and Reuse Regulation (9VAC25-740) is contained in §§ 62.1-44.2 et seq. of the Code of Virginia. Specifically, § 62.1-44.2 establishes the purpose of SWCL to, among other things, promote and encourage the reclamation and reuse of wastewater in a manner protective of the environment and public health; and § 62.1-44.15(15) authorizes the State Water Control Board (Board) 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. The Water Reclamation and Reuse Regulation was approved for adoption by the Board on December 4, 2007 and the Governor on July 31, 2008; and became effective on October 1, 2008.

III. Implementation of the Regulation

A. What is water reclamation and reuse?

Reclamation or water reclamation, reuse or water reuse, and reclaimed water are defined in 9VAC25-740-10 of the Water Reclamation and Reuse Regulation as follows:

“Reclamation” means the treatment of domestic, municipal or industrial wastewater or sewage to produce reclaimed water for a water reuse that would not otherwise occur.

“Reclaimed water” means water resulting from the treatment of domestic, municipal or industrial wastewater that is suitable for water reuse that would not otherwise occur. Specifically excluded from this definition is “gray water.”

“Reuse” or “water reuse” means the use of reclaimed water for a direct beneficial use, an indirect potable reuse, or a controlled use in accordance with this regulation.

“Water reclamation” means the reclamation of wastewater or treated effluent for reuse.

Based on these definitions, treatment of wastewater or sewage does not constitute water reclamation unless the reclaimed water is for a subsequent reuse. Disposal of reclaimed water is not a reuse. These definitions also limit the applicability of the Water Reclamation and Reuse Regulation to the reclamation and reuse of municipal or industrial wastewater, specifically excluding gray water, and omitting storm water. As defined in the regulation, gray water is untreated wastewater from bath tubs, showers, lavatory fixtures, wash basins, washing machines,

and laundry tubs. It does not include wastewater from toilets, urinals, kitchen sinks, dishwashers, or laundry water from soiled diapers. The Virginia Department of Health (VDH), Office of Environmental Health Services, provides guidelines, not regulations, for the reuse of gray water and potable reuse of harvested rainwater. The Department of Conservation and Recreation (DCR), Division of Soil and Water Conservation, will be developing regulations for the reclamation and non-potable reuse of stormwater, including harvested rainwater, in response to legislation passed by the General Assembly in 2008.

Water reclamation and reuse is voluntary, not mandatory. However, DEQ regional water permit staff should encourage applicants or permittees to consider water reclamation and reuse where it would benefit water quality and supply, be protective of public health, and is practical and feasible for an applicant or permittee to implement.

B. Permitting requirements for water reclamation and reuse

1. General

Because the Water Reclamation and Reuse Regulation is a technical regulation, requirements of the regulation will be implemented through existing water permit programs, such as those for VPDES and VPA permits. In most cases, permits will be issued to reclamation systems, satellite reclamation systems and reclaimed water distribution systems, including tank trucks used to transport and distribute reclaimed water. Most end users of reclaimed water will not be required to obtain a permit, but will be required to enter into a service agreement or contract with the system that directly provides reclaimed water to the end user (i.e., provider). End users that receive reclaimed water from more than one provider may be required to obtain a permit from DEQ. Reclamation systems, satellite reclamation systems, reclaimed water distribution systems, wastewater treatment facilities (WWTFs) and irrigation reuse sites under common ownership or management may be covered by one permit with some restrictions. Common ownership or management shall apply when two facilities or properties are owned by separate corporations that are subsidiaries of a common holding company.

2. Alternative permitting for reclaimed water distribution systems

The regulation, specifically [9VAC25-740-40.D](#), provides an alternative to permitting for reclaimed water distribution systems as follows:

“Where a reclamation system and a reclaimed water distribution system that receives reclaimed water from the reclamation system are under separate ownership and management, and the reclaimed water distribution system does not distribute reclaimed water to end users other than to the owner or management of that system, the reclaimed water distribution system shall not require a permit provided a *service agreement* is established between the reclamation system and the reclaimed water distribution system.”

Service agreements or contracts are discussed in more detail under [subdivision III.C.2](#).

3. Grandfathering

The regulation contains provisions to grandfather existing facilities under [9VAC25-740-30.A](#) (Applicability and transition), which states that “The requirements [of the regulation] may also be applied to all existing permitted facilities producing, distributing or using reclaimed water through a permit modification or reissuance procedure *and* shall be applied when such facilities are to be modified or expanded unless specifically excluded under [9VAC25-740-50](#).” With the implementation of this regulation, there is a transition period affecting the applicability of the grandfathering provision. Existing VPDES or VPA permitted facilities that were in the process of an expansion or modification related to reclamation and reuse at the time the regulation became effective (October 1, 2008) will not be grandfathered. For example, an existing VPDES or VPA permitted WWTF that is capable of meeting Level 2 reclaimed water standards, at a minimum, could be considered an “existing permitted” facility “producing ... reclaimed water”. If that same facility was undergoing modifications at the time the regulation became effective to subsequently distribute Level 2 reclaimed water to end users, the facility’s production and distribution of reclaimed water would need to be permitted by DEQ in accordance with [9VAC25-740-30.A](#). If these same modifications were completed prior to October 1, 2008, they would be exempted from permitting requirements by the grandfathering provision of [9VAC25-740-30.A](#).

4. Activities excluded or prohibited by the regulation

The regulation specifies activities that are either excluded from the requirements of the regulation (under [9VAC 25-740-50.A](#)) or prohibited (under [9VAC25-740-50.B](#)). Prohibited activities are relatively self explanatory, while some of the excluded activities require further explanation beyond that provided in the regulation.

a. Non-potable water produced and utilized by the same treatment works

Activities excluded from the requirements of the regulation include “Utilization of non-potable water produced and utilized by the same treatment works for facilities permitted through the VPDES or VPA permit.” The exclusion further applies to “the use of non-potable water at the treatment works site for incidental landscape irrigation that is not identified as land treatment defined in the Sewage Collection and Treatment Regulations (9VAC25-790). The treatment works site shall include property that is either contiguous to or in the immediate vicinity of the parcel of land upon which the treatment works is located, provided such property is under common ownership or management with the treatment works.”

“Incidental landscape irrigation” used in this context refers to irrigation that is not the primary means of disposal or use of non-potable water produced by the treatment works or WWTF and as specified in the VPDES or VPA permit. This exclusion does not apply to a combined or conjunctive WWTF and reclamation system, including, but not limited to, satellite reclamation systems. For example, a reclamation system constructed and operated within the basement of a high-rise building that produces reclaimed water for reuse within that building and has a discharge of treatment process wastewater to a sewage collection system, would require a VPA permit subject to the requirements of 9VAC25-740.

b. Reuse of industrial effluents or other industrial water streams at the same industrial facility

Industrial effluents or other industrial water streams created prior to final treatment and used in water re-circulation, recycle, or reuse systems located on the same property as the industrial facility, may also be excluded from the requirements of the regulation provided:

- (i) The water used in these systems does not contain or is not expected to contain pathogens or other constituents in sufficient quantities and with a potential for human contact as may be harmful to human health;
- (ii) These systems are closed or isolated to prevent worker contact with the water of the systems; or
- (iii) Other measures are in place, including but not limited to, applicable federal and state occupational safety and health standards and requirements, to adequately inform and protect employees from pathogens or other constituents that may be harmful to human health in the water to be re-circulated, recycled or reused at the facility.

If an industrial facility does not meet any of these criteria, the industry must apply for a VPDES or VPA permit to reclaim and reuse the industrial wastewater on site.

Note that although an industry may be excluded from the requirements of the Water Reclamation and Reuse Regulation per [9VAC25-740-50.A](#), the same industry may be subject to the requirements of the VPDES or VPA Permit Regulations and may still require a permit. For example, irrigation reuse of reclaimed industrial wastewater on the same property as the industry that produces the reclaimed water may be excluded from the requirements of the Water Reclamation and Reuse Regulation. However, the same activity may be considered land treatment requiring a VPA permit to management pollutants with potential to impact groundwater.

c. Industrial facilities that receive reclaimed water for reuse

An industrial facility that receives reclaimed water for reuse from a reclamation system not under common ownership or management with the industrial facility will not require a permit. Under these circumstances, however, the industrial facility will be required to enter into a service agreement or contract with the reclamation system.

d. Indirect reuse

Indirect reuse is the use of reclaimed water after it is discharged through a VPDES permitted outfall to surface waters of the state. It is excluded from the requirements of the regulation with the exception of indirect potable reuse. However, regional water permit staff may consider the need on a case-by-case basis to apply Level 1 reclaimed water disinfection standards to a VPDES permitted discharge where the intended purpose of the discharge is to augment water supply for a use having potential for public contact. Refer to [subsection III.K.3](#) for more

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information regarding intentional indirect reuse.

Indirect potable reuse is a type of indirect reuse that is defined as “the discharge of reclaimed water to a receiving surface water for the purpose of intentionally augmenting a water supply source, with subsequent withdrawal after mixing with the ambient surface water and transport to the withdrawal location, followed by treatment and distribution for drinking water and other potable water purposes.” All indirect potable reuse projects proposed after October 1, 2008 shall be permitted on a case-by-case basis. See [subdivision III.F.3](#) regarding standards for unlisted reuses, including indirect potable reuse. There is only one indirect potable reuse project in Virginia excluded from the requirements of the regulation that existed prior to the adoption of the regulation.

e. Ground water recharge and land treatment of wastewater

Although not specifically listed as an excluded activity, ground water recharge by definition is not considered a reuse of reclaimed water in the Water Reclamation and Reuse Regulation. The Sewage Collection and Treatment Regulations (9VAC25-790) minimally address ground water recharge under design requirements for rapid infiltration basins, which are considered a form of land treatment. Land treatment of wastewater is not the same as irrigation reuse of reclaimed water (see [subdivision III.C.5](#) and is specifically excluded from the requirements of the Water Reclamation and Reuse Regulation.

5. End users to be permitted

Although the vast majority of reclaimed water end users will not require a permit, an end user that receive reclaimed water directly from more than one reclamation system, satellite reclamation system, reclaimed water distribution system, or a combination thereof, may be required to obtain an individual permit when:

- (i) The end user fails to comply with the terms and conditions of a service agreement or contract between the end user and more than one provider from which it receives reclaimed water, or
- (ii) The end user intends to blend reclaimed water from different providers for redistribution to end users other than or in addition to the end user that blends the reclaimed water, thereby acting as a reclaimed water agent.

An end user may not be required to obtain a permit under these circumstances where the end user can be covered by the permit issued to one of the reclamation systems, satellite reclamation systems, or reclaimed water distribution systems that provide reclaimed water to the end user and the end user is under common ownership or management with the permitted system.

C. Application for a permit

1. Application Addendum

Water reclamation and reuse projects may be authorized by a VPA permit, a VPDES permit or an administrative authorization in association with VPDES permit. See [subsection III.D](#) for a discussion of minor VPA permit modifications, major VPDES and VPA permit modifications and administrative authorizations in association with VPDES permits. An Application Addendum ([Attachment A](#)) must be submitted for all water reclamation and reuse projects with the appropriate VPDES or VPA permit application forms for issuances and reissuances, or separately for modifications or administrative authorizations. The Application Addendum is considered part of a permit application. Therefore the Application Addendum must be completed in order to deem the permit application complete.

The Application Addendum consists of five sections and instructions. The sections include the following:

- A - Applicant Information
- B - Permitting Information
- C - General Project Information
- D - Reclaimed Water Management Plan
- E - Certification Statement

Information provided by the applicant or permittee in the Application Addendum and associated VPDES or VPA permit application forms and attachments, is needed to assemble the appropriate reclaimed water standards, monitoring requirements and special conditions for the permit or administrative authorization.

a. Compliance history

When reviewing an application for a reclamation system, regional water permit writers should coordinate with regional water inspectors to check the compliance history of all WWTFs that will provide source water to the reclamation system. The compliance history of the WWTFs can indicate the potential to discharge non-compliant water to reclamation and reuse, particularly for projects that are a combined WWTF and reclamation system. This becomes increasingly significant when the reclamation system proposes to produce reclaimed water for reuses with potential for public contact. Where any of the WWTFs are unable to consistently meet their permit effluent limits, the permit writer may include project-specific conditions in the permit to ensure that reclamation and reuse of wastewater will be performed in a manner protective of the environment and public health, or deny authorization of the reclamation and reuse project depending on the nature and resolution of permit non-compliances by the WWTFs. In some cases, the reclamation and reuse project may be part of a corrective action plan to address the treatment deficiencies of a WWTF. Where these circumstances occur, they should be noted in the fact sheet of the permit action authorizing the reclamation system (see [subdivision III.F.7](#)).

b. Application requirements for reclamation systems of industrial wastewater

Reclamation systems of industrial process wastewater that are not excluded from the requirements of the Water Reclamation and Reuse Regulation (see [subdivision III.B.4.b](#)) must apply for a VPDES or VPA permit or an administrative authorization in association with an existing VPDES permit. Where an industrial WWTF will have or maintain a point source discharge and reclaim a portion of the wastewater that it treats for reuse, the applicant must complete the appropriate VPDES permit application forms to provide information about the point source discharge of the facility and the Application Addendum to provide information about reclamation and reuse of the industry's process wastewater. For the reclamation and reuse of an industrial wastewater that does not involve a discharge to surface waters, a VPA permit will be required. At a minimum, the applicant must complete VPA permit application Parts A and C-I and the Application Addendum. The applicant may also be required to complete Part C-II of the VPA permit application for sites that:

- (i) Will irrigate with reclaimed industrial wastewater produced and distributed by the applicant, and
- (ii) Are under common ownership or management with the applicant.

2. Reclaimed Water Management plan

Under Section D of the Application Addendum, providers of reclaimed water are to submit a Reclaimed Water Management (RWM) plan. Where a reclamation system and a distribution system that receives reclaimed water from the reclamation system are permitted separately, the reclaimed water distribution system is the provider and shall be responsible for preparing and submitting the RWM Plan. Reclaimed water distribution systems include tank trucks used to transport and distribute reclaimed water. Therefore, tank truck distribution of reclaimed water will also require a RWM plan, although typically more simplified than a RWM plan for a reclaimed water distribution system consisting of mains and pipelines extending several miles within the service area.

a. Water balance

The RWM plan must include a water balance that accounts for reclaimed water generated, stored, reused and discharged/disposed (e.g., discharged from the VPDES permitted outfall of a combined WWTF and reclamation system). The purpose of the water balance is to demonstrate that the applicant or permittee has sufficiently planned for all inputs and outputs of the water reclamation and reuse project over the course of a year. Loss of reclaimed water from leaks in storage or distribution is not an acceptable output and should not be included in the water balance. For discharging WWTFs that will rely on water reclamation and reuse to meet a waste load allocation (WLA), the water balance may also be used to demonstrate that a facility is designed to comply with the WLA for its discharge.

Storage is a particularly critical component of the water balance where there is seasonal variability in reclaimed water demand and no other options for alternative generation or management of all or a portion of the reclaimed water (e.g., planned suspension of reclaimed water production, disposal of the reclaimed water through a VPDES permitted discharge, etc.)

are available. Storage at the reclamation system and within the reclaimed water distribution system will be system storage. Design capacity requirements for system storage under the specific circumstances described above are provided in [9VAC25-740-110.C.8.b\(2\)](#). Precipitation data used to design these facilities should be based on the wettest growing season over the most recent 30-year interval.

The water balance of the RWM plan is not the same as the water balance needed to demonstrate supplemental irrigation at bulk irrigation reuse sites, but should include bulk irrigation reuse as an output if it is listed among other reuses of reclaimed water in the RWM plan.

b. Service agreements or contracts

Also to be included in the RWM plan are examples of service agreements or contracts between the provider of reclaimed water and end users. [Attachment D](#) contains a checklist of the minimum items to be included in service agreements or contracts with a core set of items applicable to all end users followed by other items that are specific to categories of end uses (urban unrestricted access, irrigation-unrestricted access, irrigation-restricted access, landscape impoundments, construction and industrial). Depending on the number of different reuses occurring within in the service area of the RWM plan, more than one example service agreement or contract may be necessary.

c. Distribution system maintenance of reclaimed water quality and quantity

As part of the RWM plan, an applicant that will own and/or operate a reclaimed water distribution must also provide a description of how reclaimed water quality in the distribution system will be maintained to meet standards for the intended reuse(s) of the reclaimed water. This is intended to demonstrate compliance with [9VAC25-740-110.B.9](#) which states that “All reclaimed water distribution systems shall be maintained to minimize losses and to ensure safe and reliable conveyance of reclaimed water such that the reclaimed water will not be degraded below the standards required for the intended reuse or reuses in accordance with [9VAC25-740-90](#).” The Application Addendum instructions recommend, but do not require applicants of distribution systems to “consider accurate flow recording throughout the system and the ability to monitor disinfection residual (i.e., chlorine or other) to prevent bacterial regrowth and increased turbidity.” Where an applicant does not provide this information in the RWM plan, the permit writer should require the submission of a protocol as part of the permit special condition for the distribution system’s operations and maintenance manual, that addresses a situation where reclaimed water from the distribution system is found to be non compliant with the standards required for the intended reuse(s) of that water.

d. RWM plan review

Upon receipt of an Application Addendum by the Regional Office, both a water permit writer and water compliance inspector should review the RWM plan included in the Application Addendum. Inspectors should review items of the RWM plan that they will need for later inspections. All identified deficiencies of the RWM plan should be included in the deficiency letter prepared by the permit writer to the applicant or permittee. Refer to [subdivision III.K.1.b](#)

for more information regarding inspector review of RWM plans.

3. Requesting additional information

For some water reclamation and reuse projects, it may be necessary to obtain more information than that specifically requested and provided in the Application Addendum or VPDES and VPA permit application forms. The following sections of the VPDES and VPA Permit Regulations provide the agency the authority to request additional information in order to process the application and permit:

[9VAC25-31-100 E 1](#) - “The board shall not issue a permit before receiving a complete application for a permit except for VPDES general permits. An application for a permit is complete when the board receives an application form and any supplemental information which are completed to its satisfaction.”

[9VAC25-32-60 A 1 b](#) - “The board may require the submission of additional information after an application has been filed, and may suspend processing of any application until such time as the owner has supplied missing or deficient information and the board considers the application complete.”

Also, [9VAC25-740-100.B.3.c](#) requires an applicant to submit analyses of the effluent or source water to be diverted by a WWTF to the reclamation system. This provision does not specify the parameters to be analyzed, thereby giving DEQ staff the authority to request additional analyses where, based on their best professional judgment, such analyses are needed to determine the appropriate reclaimed water standards, monitoring requirements and conditions for the permit. This may be appropriate where, for example, a WWTF has significant industrial users but no approved pretreatment plan to ensure that contaminants from the industrial discharge do not pass through or disrupt treatment processes at the WWTF.

However, [9VAC25-740-100.B.6](#) also states that general information to be submitted with a permit application for projects that involve water reclamation and the distribution of reclaimed water may be provided by referencing specific information previously submitted to the board (or DEQ) unless changes have occurred that require the submission of new or more current information. This has been expanded in the instructions of the Application Addendum to apply to all information requested by the Application Addendum.

4. Auxiliary or backup plan

For facilities that will rely primarily or completely on water reclamation and reuse to manage their wastewater elimination needs, regional water permit staff should require an auxiliary or backup plan in the Application Addendum. This would apply to facilities that:

- (i) Do not have an allocation to discharge their full nutrient load under design flow or an alternate wastewater disposal system (e.g., mass drainfield, land treatment, etc.), and
- (ii) Rely predominantly on irrigation reuse to consume that portion of wastewater for which

the facility lacks a nutrient allocation or an alternate disposal system, or rely on one or more large end users, each consuming a significant volume of reclaimed water, such that the facility's ability to manage reclaimed water it produces would be noticeably and adversely impacted if any such end user were to cease to receive reclaimed water from that facility.

The auxiliary or backup plan must describe secondary or auxiliary reuses and/or disposal options for the reclaimed water in the event that primary reuses or disposal options described in the Application Addendum should cease or fail. Secondary or auxiliary reuses and/or disposal options described in the plan must be available immediately, if needed. Where an applicant of a non-discharging reclamation system is unable to provide an adequate auxiliary plan or proposes to rely completely on irrigations reuse to consume all reclaimed water produced by the reclamation system, the regional water permit staff should strongly recommend that the applicant consider the addition of a discharging system, unless prohibited by other regulations (e.g., Occoquan Policy ([9VAC25-410](#)) or Dulles Policy ([9VAC25-401](#))); and/or new or expanded system storage for the reclaimed water designed in accordance with [9VAC25-740-110.C](#).

5. Supplemental irrigation

In accordance with [9VAC25-740-100.C.2](#) of the Water Reclamation and Reuse Regulation, all irrigation reuse of reclaimed water must be supplemental. Supplemental irrigation is defined in the regulation as "irrigation, which in combination with rainfall, meets but does not exceed the water necessary to maximize production or optimize growth of the irrigated vegetation". This definition distinguishes irrigation reuse of reclaimed water from land treatment of wastewater in that the primary function of irrigation at supplemental rates is reuse without further need to treat the reclaimed water at the site of application. Land treatment as described in the Sewage Collection and Treatment (SCAT) Regulations (9VAC25-790) is first and foremost a method of treating and disposing of wastewater that includes the application site as part of the treatment process, and may secondarily provide some reuse. Consequently, supplemental irrigation will typically occur at lower rates of application than land treatment and will require more land area to reuse the same volume of water that can be disposed via land treatment.

In the Application Addendum, applicants are asked if irrigation reuse (bulk and non-bulk) with reclaimed water within the service area will be supplemental irrigation. If not, the regional water permit writer should inform the applicant that irrigation with reclaimed water at rates greater than supplemental can not be permitted as irrigation reuse, but may be permitted as land treatment in accordance with design criteria of the SCAT Regulations. Where the applicant indicates that irrigation reuse of reclaimed water within the service area will be supplemental irrigation, the applicant must provide the following information:

- (i) For *non-bulk* irrigation reuse, a description of educational materials and instructions for non-bulk irrigation end users explaining how supplemental irrigation is to be achieved, and a description of how this information will be distributed. Non-bulk irrigation reuse will not require site specific monitoring and calculations to demonstrate supplemental irrigation. However, the provider of reclaimed water must distribute information to non-bulk irrigation end users instructing them on the proper use of the reclaimed water to

minimize environmental impacts. At a minimum, this information shall be provided in the example service agreement or contract between the applicant (or provider) and non-bulk irrigation end users, and may also be distributed with other information the provider is required to give individual non-bulk irrigation end users of non-BNR reclaimed water annually per [9VAC25-740-100.C.3.c\(3\)](#). See [Attachment D](#) for a checklist of the minimum items to be included in a service agreement or contract that would apply to non-bulk irrigation reuse of non-BNR reclaimed water.

- (ii) For *bulk* irrigation reuse by the applicant and end users other than the applicant, the methodology(s) that will be used to calculate supplemental irrigation. By definition, supplemental irrigation allows the application of water up to but not in excess of the amount necessary to “maximize production or optimize growth of the irrigated vegetation”. Therefore, supplemental irrigation is based largely on the water demands of the irrigated vegetation and is most often correlated with the evapotranspiration rate of the irrigated vegetation minus inputs from rainfall. Soil moisture monitoring frequently used for land treatment systems to determine application timing and rates, provides a measure of water available for plant uptake. Because many factors, including soil moisture, may affect the water demand of irrigated vegetation, soil moisture alone cannot be used to determine supplemental irrigation. Factors affecting the water demand of the irrigated vegetation also vary from day to day. Therefore, the rate of supplemental irrigation must be calculated for every day that irrigation with reclaimed water occurs.

As defined in [9VAC25-740-10](#), supplemental irrigation allows the application of water (reclaimed or other) in addition to that volume lost to evapotranspiration by the crop where the additional water will “maximizes production or optimizes growth of the irrigated vegetation”. This may be necessary to leach salts that have accumulated in the soil from reclaimed water or other sources when the concentrations of the salts adversely affect the productivity or growth of the irrigated vegetation. Where a permittee or an end user other than the permittee demonstrates that salts will accumulate or have accumulated to undesirable levels in the soil of the irrigation reuse site and the application of reclaimed water will not contribute or has not contributed significantly to the salt problem, an additional volume of reclaimed water less than or equal to ten percent of the water lost to evapotranspiration by the irrigated vegetation may be used for leaching and shall be added to evapotranspiration losses to calculate supplemental irrigation. Where a permittee or an end user other than the permittee demonstrates that salts will accumulate or have accumulated to undesirable levels in the soil of the irrigation reuse site and the application of reclaimed water is identified as a primary or significant source of the salts, no volume of reclaimed water in addition to that lost to evapotranspiration by the irrigated vegetation may be used to leach salts from soils at the irrigation reuse site. Any additional volume of water required for leaching that is not or can not be reclaimed water must be provided from sources other than reclaimed water (e.g., rainwater, potable water, etc.) and included in the calculation of supplemental irrigation.

a. Methods to calculate supplemental irrigation

There are numerous methods available to calculate water demand and, thereby, supplemental irrigation for irrigated vegetation. These include but are not limited to:

- Allen, R.G., Periera, L.S., Raes, D., Smith, M., 1998. Crop evapotranspiration: Guidelines for computing crop requirements. Irrigation and Drainage Paper No. 56, FAO, Rome, Italy, 300 pp. A combined radiation-temperature approach.
- Blaney-Criddle Method (former Soil Conservation Service, 1993). USDA National Engineering Handbook, Part 623 - Irrigation water requirements (p. 2-i to 2-284). Uses percent of daylight hours per month and mean monthly temperature.
- Doorenbos, J., Pruitt, W.O., 1977. Crop water requirements. Irrigation and Drainage Paper No. 24, (rev.) FAO, Rome, Italy, 144 pp. A combined radiation-temperature approach.
- Hargreaves, G. H. and Z. A. Samani, 1985. Reference Crop Evapotranspiration from Temperature. Applied Engr. Agric. 1(2):96-99. This is basically a radiation approach that uses some temperature data.
- Jensen, M.E., Burman, R.D., Allen, R.G., 1990. Evapotranspiration and irrigation water requirements. ASCE Manuals and Reports on Engineering Practices No. 70., ASCE, New York, NY, 360 pp. A combined radiation-temperature approach.
- Jones, J.W., Allen, L.H., Shih, S.F., Rogers, J.S., Hammond, L.C., Smajstrla, A.G., Martsof, J.D., 1984. Estimated and measured evapotranspiration for Florida climate, crops and soils. Bulletin 840 (Tech.), IFAS, University of Florida, Gainesville, FL
- Linacre, E. T., 1977. A Simple Formula for Estimating Evaporation Rates in Various Climates, Using Temperature Data Alone, Agricultural Meteorology, Vol. 18, pp. 409-424. This approach is also known as modified Penman-Monteith approach and uses only temperature data.
- Monteith J. L. (1973). Principle of Environmental Physics. Arnold Ed., London, 241 pp. A combined radiation-temperature approach, it also depends on plant cover type.
- McCloud, D.E., 1955. Water requirements of field crops in Florida as influenced by climate. Proc. Soil Sci. Soc. Fla. 15:165-172. A temperature approach.
- Penman, H. L., 1948. Natural Evapotranspiration from Open Water, Bare Soil and Grass. Proc. Roy. Soc. London, A193:120-146. This is a combined radiation-temperature approach, requiring temperature, relative humidity, wind speed, saturation vapor pressure, and net radiation. It also uses complicated unit conversions and lengthy calculations.
- Penman, H.L., 1963. Vegetation and Hydrology. Tech. Comm. No. 53, Commonwealth Bureau of Soils, Harpenden, England. 125 pp. A combined radiation-temperature approach.

- Priestly, C. H. B. and R. J. Taylor, 1972. On the Assessment of Surface Heat Flux and Evapotranspiration Using Large Scale Parameters. *Mon. Weath. Rev.* 100:81-92.
- Smith, M., 2000. CROPWAT: A computer program for irrigation planning and management, FAO, ISBN 92-5-103106 ISSN-1. This is a computer program that can be downloaded from the FAO website to determine the water requirements of various crops from climatic data of almost every continent. The program was recently updated in 2005.
- Thornthwaite, C.W., 1948. An approach toward a rational classification of climate. *The Geogr. Rev.* 38:55-94. Using a temperature based model, Thornthwaite developed a monthly regional water balance model with 3 components (precipitation, overland runoff, evaporation) and comprised of 4 parameters (precipitation, temperature, latitude, soil water holding capacity). This model was used as the basis for the development of many regional water balance models. Thornthwaite is known to systematically underestimate potential evapotranspiration (PET) in more arid regions and seasons.
- Thornthwaite, C. W. and J. R. Mather, 1955. *The Water Balance*. Publications in Climatology. Drexel Institute of Technology, Centerton, NJ, Vol. VIII, No. 1. This is a temperature based approach that uses only two parameters, daytime hours and mean monthly temperature.
- Thornthwaite, C.W., Mather, J.R., 1957. *Instruction and Tables for Computing Potential Evapotranspiration and the Water Balance*. Drexel Institute of Technology, Laboratory of Climatology, Publications in Climatology 10 (3), 311 pp.
- Walter, I. A. R. G. Allen, R. Elliott, B. Mecham, M. E. Jensen, D. Itenfisu, T. A. Howell, R. Snyder, P. Brown, S. Echings, T. Spofford, M. Hattendorf, R. H. Cuenca, J.L. Right, D. Martin. 2000. ASCE Standardized Reference Evapotranspiration Equation, pages 209-215 in Evans, R. G., B. L. Benham, and T.P. Trooien (ed.) *Proceedings of the National Irrigation Symposium, ASAE, Nov. 14-16, 2000, Phoenix, AZ*. This is a combined radiation-temperature approach.

Some DEQ Regional Offices have successfully used the Blaney-Criddle method to calculate irrigation rates at or approaching supplemental irrigation for land treatment systems having very restrictive site conditions. The Blaney-Criddle method modified by the former Soil Conservation Service (1993) is a relatively simple method, using percent of daylight hours per month and mean monthly temperature to calculate water demand of the irrigated vegetation. This method allows the use of growing season dates for specific crops and locations, and requires data that is readily available for most irrigation sites.

Where an applicant proposes to use a method other than any of those listed above to calculate supplemental irrigation, regional water permit staff are encouraged to contact staff in the Office of Land Application Programs to determine the applicability of that method.

Many golf courses and agricultural operations now use preprogrammed, automated systems that receive daily data to calculate and irrigate at supplemental rates. Although not required for non-

bulk irrigation, similar systems are also available for residential irrigation or lawn watering.

6. Nutrient management, site plans and minimum reclaimed water standards for irrigation reuse

a. Nutrient management requirements

Nutrient management requirements of the Water Reclamation and Reuse Regulation apply, in most cases, to irrigation reuse of reclaimed water having concentrations of total nitrogen (N) and total phosphorus (P) greater than BNR. BNR (or Biological Nutrient Removal) is defined in [9VAC25-740-10](#) as treatment which achieves an annual average of 8.0 mg/l total N and 1.0 mg/l total P. In this guidance, reclaimed water having concentrations of total N and total P less than or equal to BNR will be referred to as BNR reclaimed water, and greater than BNR will be referred to as non-BNR reclaimed water. While there are no nutrient management requirements for irrigation reuse of BNR reclaimed water, there are nutrient management plan (NMP) requirements for bulk irrigation reuse and other requirements to manage nutrients in lieu of NMPs for non-bulk irrigation reuse of non-BNR reclaimed water.

(1) Bulk irrigation reuse

Bulk irrigation refers to irrigation of an area greater than five contiguous acres and non-bulk irrigation refers to irrigation of an area less than or equal to five acres. NMPs that are required for bulk irrigation reuse sites must be prepared by a DCR certified nutrient management planner and are the responsibility of the owner or manager of the site to obtain and implement. Where a bulk irrigation reuse site requiring a NMP is under common ownership or management with the applicant or permittee providing reclaimed water to the site, the NMP must be submitted with the RWM plan in the Application Addendum.

Per [9VAC25-740-100.C.4](#) of the regulation, a bulk irrigation reuse site shall also require a NMP independent of the nutrient content of the reclaimed water applied to the site, where:

“a. A wastewater treatment works, a reclamation system, satellite reclamation system or reclaimed water distribution system and the irrigation reuse site or sites are under common ownership or management, and

b. In addition to irrigation reuse:

(1) There is no option to dispose of the reclaimed water through a VPDES permitted discharge, or

(2) There is an option to dispose of the reclaimed water through a VPDES permitted discharge, but the VPDES permit does not allow discharge of the full nutrient load under design flow (e.g., a treatment works with a VPDES permitted discharge implements water reclamation and reuse in lieu of providing treatment to meet nutrient effluent limits at design flow).”

(a) DCR approval of NMP

NMPs prepared for these bulk irrigation reuse sites must be approved by the DCR ([9VAC25-740-100.C.4](#)). The applicant or permittee is responsible for submitting the NMP to the DCR for approval and must provide a copy of DCR's approval letter and the NMP with the RWM plan.

Further details regarding NMPs for bulk irrigation reuse sites of reclaimed water and coordination with DCR for NMP approval, when required, are provided in [subdivision III.I.3](#).

(2) Non-bulk irrigation reuse

A NMP is not required for non-bulk irrigation reuse of non-BNR reclaimed water. However, [9VAC25-740-100.C.3.c](#) requires that the RWM plan describe other measures to be implemented by the applicant or permittee to manage nutrient loads from non-bulk irrigation reuse of non-BNR reclaimed water within the service area. The service area includes non-bulk irrigation reuse sites under common ownership or management with the applicant or permittee. Other measures to manage nutrient loads from non-bulk irrigation reuse of non-BNR reclaimed water must include, at a minimum, the following:

- (i) The inclusion of language in the example service agreement or contract between the provider of the reclaimed water and end users (discussed above in this subsection) explaining proper use of the reclaimed water by the end user for the purpose of managing nutrients. See also [Attachment D](#) for items "Applicable only to non-bulk irrigation reuse that receives non-BNR reclaimed water" to be included in service agreements or contracts.
- (ii) Reclaimed water metering of individual non-bulk irrigation end users. This can be accomplished as part of the monitoring required by the applicant or permittee of all end users, including metering of the volume of reclaimed water consumed by end users described under D.1.e of the [Application Addendum](#).
- (iii) Routine distribution of literature (not less than annually) to individual non-bulk irrigation end users describing the proper use of reclaimed water for irrigation in accordance with [9VAC25-740-170.A.1](#). This applies only to reuses that require Level 1 reclaimed water, will be in areas accessible to the public, or are likely to have human contact.
- (iv) Monthly monitoring of nitrogen (N) and phosphorus (P) loads by non-bulk irrigation reuses to the service area of the RWM plan based on the total monthly metered use of reclaimed water for the service area and the monthly average concentrations of total N and total P in the reclaimed water. "Total monthly metered use" refers to the metered use of all non-bulk irrigation end users within the service area.

b. Site plans for bulk irrigation reuse sites

Per [9VAC25-740-100.C.6](#), a site plan is required for each bulk irrigation site that receives reclaimed water. Where the bulk irrigation reuse site will receive reclaimed water from and is

under common ownership or management with the applicant or permittee, the applicant or permittee must prepare and submit the site plan with the RWM plan in the Application Addendum. Site plans for bulk irrigation reuse sites under common ownership or management with an end user other than the applicant or permittee, must be prepared and submitted by the end user with the service agreement or contract between the end user and the applicant or permittee. Items to be included in the site plan for a bulk irrigation reuse site are contained in [9VAC25-740-100.C.6](#) of the regulation and D.2.d of the [Application Addendum](#) instructions.

Where a bulk irrigation reuse site is to be added to or expanded in an approved RWM plan, the same site plan information for the new site or expansion area of an existing site must be submitted to:

- (i) The DEQ Regional Office where the permittee owns or manages the site, or
- (ii) The permittee where an end user other than the permittee owns or manages the site.

See [Attachment B](#) for a permit special condition that addresses site plan requirements for bulk irrigation reuse sites under common ownership or management with the permittee.

c. Different reclaimed water standards for different irrigation reuses

There are different types of irrigation reuse having different minimum reclaimed water standard requirements contained in [9VAC25-740-90.A](#) of the regulation. For example, irrigation reuses in the reuse categories of Urban –Unrestricted Access and Irrigation – Unrestricted Access will require a minimum of Level 1 reclaimed water, while irrigation reuses in the Irrigation – Restricted Access reuse category will require a minimum of Level 2 reclaimed water. Therefore, the regional water permit writer must ensure that the appropriate reclaimed water standards are applied for a particular proposed irrigation reuse.

D. Permit modifications and administrative authorizations for water reclamation and reuse

The incorporation of standards, monitoring requirements and special conditions for water reclamation and reuse into an existing VPA permit at other than reissuance or major modification shall be considered a minor modification. For existing VPDES permitted facilities, water reclamation and reuse standards, monitoring requirements and special conditions will be contained in an administrative authorization that is separate from but associated with the VPDES permit. The administrative authorization is a temporary document that can be enforced along with the permit (per EPA) and should be incorporated into the body of the VPDES permit at reissuance or major modification. There is no fee or public participation process for the administrative authorization. A major modification of either a VPA or VPDES permit may still be required to add water reclamation and reuse standards, monitoring requirements and special conditions where they alter other conditions specifically related to the pollutant management activity or effluent discharge for which the permit was originally issued.

The permittee must complete the Application Addendum ([Attachment A](#)) for a minor

modification of a VPA permit, a major modification of a VPDES or VPA permit, or an administrative authorization associated with an existing VPDES permit that is related to water reclamation and reuse. It is not necessary for the permittee to submit a new permit application in addition to the Application Addendum unless new information is required to permit or authorize the reclamation and reuse project that was not provided on the application forms for the issuance or reissuance of the VPDES or VPA permit.

For only a minor modification of a VPA permit and an administrative authorization associated with an existing VPDES permit, regional permit writer staff should, where possible, complete review of the Application Addendum, whether submitted with or separate from the VPDES or VPA permit application forms, within 60 days of initial receipt. Upon receipt of a complete Application Addendum, preparation of a minor VPA permit modification or an administrative authorization associated with an existing VPDES permit should be completed within 30 days. Depending on the complexity of a reclamation and reuse project, review of the Application Addendum and completion of the minor VPA permit modification or administrative authorization associated with an existing VPDES permit may require much less time.

Refer to [Attachment B](#) for the cover pages and [Attachment E](#) for the transmittal letters of these permit modifications (major and minor) and the administrative authorization.

E. Fees for permit application, reissuance and modification

Water reclamation systems, satellite reclamation systems, reclaimed water distribution systems and, as applicable, certain end users of reclaimed water (see [subsection III.B](#)), are required by the regulation to obtain a VPA permit, a VPDES permit or an administrative authorization in association with a VPDES permit. One permit or administrative authorization may be issued to each of the above or to any combination of the same, including WWTFs and irrigation reuse sites, under common ownership or management. Consolidation of permit coverage or administrative authorization for these facilities and operations under common ownership or management is encouraged to reduce permit fees for the applicant or permittee.

Standards, monitoring requirements and special conditions for water reclamation and reuse may be added to individual VPDES and VPA permits at issuance, at reissuance, or through major modification (as applicable per [subsection III.D](#)) with no change to the application fee, annual permit maintenance fee, or permit modification fee, respectively.

A fee will not be required for a minor modification of an existing VPA permit to add water reclamation and reuse standards, monitoring requirements and special conditions, and administrative authorization of the same items in association with an existing VPDES permit. However, permittees are still required to pay annual maintenance fees for the original VPA or VPDES permit reissuance.

Fees for the application, annual maintenance or major modification of a VPDES or VPA permit issued to reclamation systems, satellite reclamation systems, reclaimed water distribution systems or, as applicable, end user of reclaimed water, shall be the same fees for the following individual VPDES and VPA permit categories specified in 9VAC25-20 (Fees for Permits and

Certifications):

Water reclamation and reuse systems and end users requiring a VPDES or VPA permit	Corresponding individual permit fee category
VPDES	
Reclamation system of municipal wastewater	Municipal major or minor - based on design flow of the municipal WWTF adjoining the reclamation system
Reclamation system of industrial wastewater	Industrial major or industrial minor/no standard limits - based on NPDES Permit Rating Work Sheet score of the industrial WWTF adjoining the reclamation system. For industrial minors, there will be “no standard limits” because reclaimed water standards for industrial wastewaters are developed on a case-by-case basis.
VPA	
Reclamation system of municipal wastewater independent of or adjoining a WWTF	Municipal wastewater treatment operation
Satellite reclamation system	Municipal wastewater treatment operation
Reclamation system of industrial wastewater adjoining an industrial WWTF	All other operations not specified above
Distribution system of reclaimed water (municipal or industrial)	All other operations not specified above
End user of reclaimed water (municipal or industrial) where required to have a permit per subdivision III.B.5	All other operations not specified above

F. Permit cover pages, standards, monitoring requirements, special conditions and fact sheet

Permit cover pages, standards, monitoring requirements and conditions to be included in VPDES or VPA permits for reclamation and reuse projects are contained in [Attachment B](#) of this guidance.

1. Cover pages for permits and an administrative authorization

[Attachment B](#) contains cover pages for the issuance or reissuance of VPA and VPDES permits, minor or major modification of a VPA permit, major modification of a VPDES permit, and an administrative authorization in association with a VPDES permit. These cover pages are designed for the variety of permitting and permit modification options specific to water

reclamation and reuse that are discussed in [subsections III.C](#) and [III.D](#) of this guidance

2. Standards for reclaimed municipal and industrial wastewater

There are “standards” for the reclamation of municipal wastewater contained in the Water Reclamation and Reuse Regulation. The reclaimed water standards, in most cases, are not the same as effluent limits based on federal and other state regulations that affect the discharge of effluent to state waters. The regulation excludes reuses that involve a point source discharge to surface waters with the exception of new indirect potable reuse projects. In this case, standards for reclaimed water discharged to a surface water that is also a potable supply, may be the equivalent of effluent limits. Although parameters to be monitored for reclaimed industrial wastewater may differ from those for reclaimed municipal wastewater, they are also referred to as standards in the regulation. Therefore, [Attachment B](#) contains standards pages for reclaimed water rather than effluent limits pages to be inserted into Part I.A of a VPA or VPDES permit, or an administrative authorization associated with a VPDES permit.

a. Municipal wastewater

For the reclamation of municipal wastewater, there are two sets of reclaimed water standards referred to as Level 1 and Level 2. Generally speaking, Level 1 reclaimed water is suitable for reuses with potential for human or public contact, while Level 2 reclaimed water is suitable for reuses with no or minimal potential for human or public contact. Reuses of reclaimed water that are listed in the regulation are divided among six general reuse categories shown in [9VAC25-740-90.A](#) and for each category, a minimum reclaimed water standard (either Level 1 or Level 2) is required.

The appropriate standards to include in the permit for a reclamation system will depend on the intended reuses of reclaimed water from that system. Use the table in [9VAC25-740-90.A](#) to determine if a standards page for Level 1, Level 2 or both should be included in the permit based on the reuses of the reclaimed water proposed in the provider’s RWM plan (Section D of the Application Addendum). Among the three bacterial standards listed for Level 1 or Level 2, only one is to be included in the permit under Part I.A. The bacterial standard should correspond to the bacterial monitoring parameter for an effluent point source discharge to the nearest surface water whether or not a discharge exists for the reclamation system to be permitted.

Where the nearest surface water is a shellfish water, two bacterial monitoring parameters, fecal coliform and enterococci, could apply to a point source discharge. In this situation, only one bacterial standard corresponding to either bacterial monitoring parameter should be included in the permit. Monitoring frequency and sample type for each parameter on the standards page (Part I.A) of the permit are contained in [Attachment B](#) and are based on reclaimed water monitoring requirement specified in [9VAC25-740-80](#) of the regulation. Monitoring frequency and sample type for Level 1 and Level 2 BOD₅ or CBOD₅, Level 2 TSS, and Level 2 residual disinfectants, including TRC and bacteria; are based on the designated design flow (discussed under [subdivision III.F.4.g](#) of the guidance) of the reclamation system and shall be that specified in the Sewage Collection and Treatment Regulations, 9VAC25-790, to monitor the same parameters for sewage treatment works or municipal WWTFs.

b. Industrial wastewater

The Sewage Collection and Treatment Regulations ([9VAC25-790-460.B](#)) identify an industrial WWTF as a treatment works with a combined average daily influent flow of greater than 90 percent industrial wastewater. Due to their variable character and composition, it was not possible to develop general reclaimed water standards and monitoring requirements applicable to all industrial wastewaters. Therefore, the Water Reclamation and Reuse Regulation ([9VAC25-740-70.E](#)) requires that standards for the reclamation of industrial wastewater be developed “on a case-by-case basis relative to the proposed reuse or reuses of the reclaimed water and for the purpose of protecting public health and the environment.” Reclaimed water standards for municipal wastewater, specifically those used to monitor disinfection, may apply to industrial wastewaters that contain sewage or organisms pathogenic to humans, particularly where reuses of the reclaimed industrial wastewater have potential for human contact.

Requirements of the Water Reclamation and Reuse Regulation do not apply to the reclamation and reuse of industrial wastewater used on the same property as long as it meets one or more of the qualifying factors for exclusion under [9VAC25-740-50.A](#) (see [subdivision III.B.4.b](#)). In those rare cases where a DEQ Regional Office receives an application for the reclamation and reuse of an industrial wastewater that does not qualify for exclusion under [9VAC25-740-50.A](#), refer to [subdivision III.F.3](#) (immediately below) for information regarding the development of minimum standards for reclaimed industrial wastewater. Regional water permit staff should also contact staff in the Office of Land Application Programs for assistance developing reclaimed water standards, monitoring requirements and special conditions for the permit of the industrial facility.

3. Minimum standards for unlisted reuses of reclaimed water or listed reuses of reclaimed industrial wastewater

a. Determination of appropriate standards

When an applicant or permittee proposes a reuse of reclaimed water (reclaimed from municipal or industrial wastewater) that is not listed in [9VAC25-740-90.A](#) of the Water Reclamation and Reuse Regulation or a reuse of reclaimed industrial wastewater that is listed in [9VAC25-740-90.A](#), the regional water permit staff must evaluate the proposed reuse on a case-by-case basis to determine if and what minimum reclaimed water standards (i.e., Level 1, Level 2, and/or other) are needed for that reuse in the permit. A fundamental criterion to apply when determining the appropriate standards for a reuse is that each standard must be for the protection of the environment and public health, including worker health. In a situation where an end user may require reclaimed water meeting specifications for other purposes (e.g., to protect equipment from corrosion or scale, to meet product specifications, etc.), this is a matter to be addressed independent of the permit.

Factors that must be evaluated to determine the minimum reclaimed water standards for an unlisted reuse of reclaimed water are specified in [9VAC25-740-90.B](#) of the regulation. Evaluate the same factors to determine minimum reclaimed water standards for listed reuses of reclaimed

industrial wastewater. When making these evaluations, regional water permit writers should apply a common sense approach. First, verify that the reuse is not excluded or prohibited by [9VAC25-740-50](#). If not, consider the applicability of other federal or state laws, regulations or guidelines to the proposed reuse; the reclaimed water treatment necessary for the proposed reuse to comply with the Water Reclamation and Reuse Regulation and other applicable regulations of the State Water Control Board, and the similarity of the reuse to reuses that are listed in the regulation. Also consider information provided by the applicant or permittee under subsection C.6 of the [Application Addendum](#) for each proposed unlisted reuse of reclaimed water or listed reuse of reclaimed industrial wastewater, describing the degree of public access and human exposure to reclaimed water that is or will be caused by the proposed reuse, any known risks of the proposed reuse to public health, the reclaimed water treatment necessary to prevent nuisance conditions by the proposed reuse, and the potential for improper or unintended use of reclaimed water resulting from the proposed reuse.

Generally, reclaimed water standards required for a proposed unlisted reuse of reclaimed municipal wastewater are:

- (i) Level 1 where there is potential for public contact with reclaimed water for the unlisted reuse; or
- (ii) Level 2 where there is no or minimal potential for public contact with reclaimed water for the unlisted reuse.

Where only worker contact is likely with reclaimed municipal wastewater for a particular unlisted reuse, a minimum of Level 2 reclaimed water standards are allowed but Level 1 disinfections standards (i.e., for bacteria and turbidity) are required.

b. Coordination with the VDH

For all proposed unlisted reuses of reclaimed water and proposed listed reuses of reclaimed industrial wastewater, coordinate with the VDH, Office of Drinking Water as described in [subdivision III.1.2](#) to obtain their recommendations on the appropriate minimum reclaimed water standards needed to protect public health. For some unlisted reuses of reclaimed municipal water, such as, but not limited to filling public swimming pools, it may be necessary to provide disinfection more stringent than the Level 1 reclaimed water standards. Note that the use of reclaimed water to fill residential swimming pools, hot tubs or wading pools is prohibited per [9VAC25-740-50.B](#).

c. Below-ground drip systems

Subsection [9VAC25-740-90.B](#) gives authority to DEQ to regulate below-ground drip irrigation reuse of reclaimed water, but requires DEQ to coordinate with VDH for input on the risk of this proposed reuse to public health. VDH may regulate a below-ground drip system utilizing municipal wastewater or reclaimed water through the Sewage Handling and Disposal Regulations (12VAC5-615). The regulatory jurisdiction of each agency regarding below ground drip systems is determined by the designated purpose of the system. Where the designated

purpose of the system is to deliver wastewater or reclaimed water for **further treatment and disposal**, thereby operating as an onsite wastewater disposal system (OWDS), the system will be regulated by the VDH, Office of Environmental Health Services, Division of Onsite Sewage and Water Services (OEHS, DOSWS). Where the designated purpose of the system is to deliver reclaimed water for a **reuse**, specifically irrigation reuse, the system will be referred to as a drip irrigation system and will be regulated by the DEQ. The Water Reclamation and Reuse Regulation requires that all irrigation reuse, including below-ground drip irrigation, must be supplemental irrigation.

Periodically, projects are proposed that include both an OWDS for treatment and disposal of wastewater and/or reclaimed water, and an irrigation system (above or below ground) for reuse of reclaimed water. Refer to [subdivision III.1.2.c](#) regarding coordination between DEQ and VDH to permit these projects.

(1) Ponding and pooling

The potential for ponding and pooling of reclaimed water at an irrigation reuse site is anticipated to be greater because an irrigation reuse site, particularly a non-bulk irrigation reuse site, is not required to have the same level of scrutiny as an OWDS site. Therefore, VDH-DOSWS has recommended the following for below-ground drip irrigation systems reusing reclaimed water:

- (i) Level 1 reclaimed water be required where the minimum in-ground depth of burial for the irrigation system piping is less than four inches below the soil surface, and
- (ii) Reclaimed water meeting a minimum of Level 2 standards be required where the minimum in-ground depth of burial for the irrigation system piping is greater than or equal to four inches below the soil surface.

A permit special condition that embodies this recommendation is contained in Attachment B and applies only when below-ground drip irrigation is proposed as a reclaimed water reuse in the RWM Plan submitted, if applicable, with the Application Addendum.

All bulk irrigation reuse sites must prevent the ponding or pooling of reclaimed water per [9VAC25-740-170.F](#) of the regulation. For bulk irrigation reuse sites that propose to use below-ground drip irrigation, particularly those under common ownership or management with the reclamation system or reclaimed water distribution system that will provide reclaimed water to irrigate the site, DEQ regional water permit staff should verify that the applicant or permittee has evaluated the site soils to confirm that they are suitable for the vegetation to be grown and are sufficiently permeable to receive reclaimed water applied at supplemental irrigation rates. Supplemental irrigation rates, in turn, are determined by the water demand of the irrigated vegetation.

d. Indirect potable reuse

Indirect potable reuse is defined as a “discharge of reclaimed water to a receiving surface water for the purpose of intentionally augmenting a water supply source, with subsequent withdrawal

after mixing with the ambient surface water and transport to the withdrawal location, followed by treatment and distribution for drinking water and other potable water purposes.” Indirect potable reuse is not a reuse listed in 9VAC25-740-90.A of the regulation with established minimum standard requirements. Therefore, indirect potable reuse requires a case-by-case evaluation to develop minimum reclaimed water standards for each proposal. Because indirect potable reuse involves intentional augmentation of a water supply source, it will, in most cases, require reclaimed water standards more stringent than those used to develop effluent limits for VPDES permits, and will require coordination with the VDH, Office of Drinking Water to develop minimum reclaimed water standards that are protective of public health (see [subdivision III.I.2](#)). Regional water permit staff should contact staff in the Office of Land Application Programs for assistance in developing these standards, forwarding copies of the Application Addendum, in particular information in C.6, and attachments pertaining to the proposed indirect potable reuse project.

4. Monthly monitoring reports

Monthly monitoring reports are required for any permittee that produces reclaimed water for reuse. This will typically include reclamation systems, satellite reclamation systems, and some end users that blend and redistribute reclaimed from more than one provider. However, some reclaimed water distribution systems with a history of problems maintaining the quality of the reclaimed water necessary for the intended reuses of that water, may be required to monitor the reclaimed water within the system. Under these circumstances, the reclaimed water distribution system would also require a monthly monitoring report.

a. Point of compliance

Reclaimed water must be monitored at a point of compliance (POC) to verify that it meets the standards in the Water Reclamation and Reuse Regulation ([9VAC25-740-70](#)) and to determine if the total Nitrogen (N) and total Phosphorus (P) content of the reclaimed water will be BNR or non-BNR related to nutrient management requirements for irrigation reuses. The POC for Level 1 and Level 2 treatment shall be after all reclaimed water treatment and prior to discharge to a reclaimed water distribution system. Exceptions to this are turbidity for Level 1 treatment and TRC when chlorine is used for disinfection. The POC for turbidity must be just upstream of disinfection ([9VAC25-740-70B](#)) and the POC for TRC must be at the end of the chlorine contact tank or contact period ([9VAC25-740-80.A.2](#)). The exact monitoring locations for these POCs are to be specified in the operations and maintenance manual for the reclamation system. Monitoring following system storage may also be required as discussed in [subdivision III.F.4.i](#) of the guidance.

b. CEDS

CEDS can generate monthly monitoring reports for VPDES permits or administrative authorizations in association with existing VPDES permits for water reclamation and reuse projects. In CEDS, the POC of the reclamation system is considered an internal outfall. To allow permittees to submit their monthly monitoring information via e-DMR, alphabetical characters cannot be used in the identification number of the reclaimed water internal outfall. In

order to clearly distinguish internal outfalls for reclaimed water from external outfalls for effluent discharges, use the following outfall identification numbering in CEDS:

Reclaimed Water Treatment Level	Internal Outfall Identification Number
Level 1	650 – 675
Level 2	676 - 699

CEDS cannot generate monthly monitoring reports for VPA permits. Therefore, a template of a monthly monitoring report for a VPA permitted reclamation system is provided in [Attachment C](#). The POC for a VPA permitted reclamation systems will not be an internal outfall but will be referred to as a “Sampling Location” shown in the upper left corner of the monitoring report page. However, the same POC numbering procedures described for internal outfalls of VPDES permitted reclamation systems should also be used to number sampling locations for VPA permitted reclamation systems.

c. Bacteria monitoring

Only one bacteria standard of three will apply to each permittee and will correspond, in most cases, to the effluent bacteria monitoring parameter of the point source discharge for a WWTF that is combined with a reclamation system, and has the option to discharge. For a non-discharging reclamation system, the bacterial standard will be that required for a discharge to the nearest surface water had there been a discharge from the reclamation system or combined WWTF and reclamation system.

Bacteria monitoring for Level 2 reclaimed water is based on the design flow of the reclamation system and the Sewage Collection and Treatment Regulations for WWTFs of similar capacity ([9VAC25-740-80.A.4.b](#)). Like municipal WWTFs, Level 2 reclamation systems using chlorine for disinfection may monitor TRC at the end of the chlorine contact tank in lieu of the appropriate bacteria monitoring. Bacteria monitoring may be waived for a WWTF where the facility has completed a demonstration study as outlined in [GM 03-2007](#) to verify that TRC is a suitable surrogate for the given bacteria effluent limit. Although not specifically developed for discharges from reclamation systems, the principles and procedures of [GM 03-2007](#) may also be used to waive bacteria monitoring for reclamation systems that will produce Level 2 reclaimed water. Such waivers should be noted in the fact sheet of the permit or administrative authorization for the reclamation system.

Where a WWTF proposes to produce Level 2 reclaimed water with little or no change in its existing treatment processes (i.e., the WWTF and the reclamation system are essentially the same facility), bacteria monitoring in accordance with the Water Reclamation and Reuse Regulation may or may not be waived based on any one of the following circumstances:

- (1) If, for any reason, an existing or proposed permit includes bacteria limits or monitoring (e.coli, enterococci, or fecal coliform) for a discharge (VPDES) or land application (VPA) system, then a demonstration study and bacteria sampling waiver for reclamation and reuse is not to be considered;

- (2) If a current or previous bacteria demonstration study for an individual or group of facilities was not successful in establishing chlorine as a surrogate, then waivers of bacteria sampling of the reclaimed water should not be considered; or
- (3) If bacteria limits or monitoring are not warranted for inclusion in an existing or proposed VPDES discharge or VPA land application system, then the Regions may choose to:
 - (a) Include language from GM 03-2007 in the administrative authorization or permit allowing for a bacteria demonstration study to be performed for the reclaimed water; and/or
 - (b) Consider the results of a successful bacteria demonstration study to waive the need to sample bacteria in the reclaimed water.

Given a scenario where a major VPDES permitted WWTF proposes to produce Level 2 reclaimed water through an administrative authorization, the WWTF and the reclamation system will be essentially the same facility, and the WWTF has not yet received bacteria monitoring requirements, the reclaimed water bacteria monitoring in this case should not be waived and should be the same bacteria monitoring that will be required for the effluent discharge when the VPDES permit of the WWTF is reissued.

Where bacteria monitoring is waived for a combined WWTF and reclamation system, the more stringent of the minimum TRC concentrations at the end of the chlorine contact tank (effluent disinfection requirement vs. reclamation and reuse disinfection requirement) should apply to the reclamation system.

Bacteria monitoring requirements for Level 1 reclaimed water are specified in [9VAC25-740-80.A.4.a](#) of the Water Reclamation and Reuse Regulation and can not be waived.

Where any reclamation system or combined WWTF and reclamation system are under common ownership or management with the distribution system that will convey reclaimed water from the reclamation system to end users, the RWM Plan submitted with the Application Addendum (see [subdivision III.C.2.c](#)) must describe how the quality of reclaimed water in the distribution system shall be maintained to meet the standard for the intended reuse(s) in accordance [9VAC25-740-90](#). This may include, but is not limited to, monitoring of TRC residual or bacteria in the distribution system.

d. Oxygen demand monitoring

The Water Reclamation and Reuse Regulation requires BOD₅ or CBOD₅ monitoring of reclaimed water. Many reclamation systems will be one in the same facility with a WWTF. Therefore, the reclaimed standard of either BOD₅ or CBOD₅ that corresponds with the effluent monitoring parameter in the WWTF's VPDES or VPA permit should be selected. Some WWTFs that choose to reclaim wastewater for reuse may have effluent limits and monitoring requirements for Chemical Oxygen Demand (COD) or Total Organic Carbon (TOC) in lieu of

BOD₅. The regulation does have the flexibility to allow the substitution of COD or TOC as reclaimed water standards for BOD₅. However, numerical reclaimed water standards for COD or TOC must be determined on a case-by-case basis, using the more conservative factors specified in laboratory methods or wastewater engineering references accepted by the DEQ to convert numerical BOD₅ reclaimed water standards to COD or TOC. In these situations, regional water permit staff should contact OLAP staff for assistance developing the standards.

e. Nutrient monitoring

There are no nutrient standards for water reclaimed from municipal or industrial wastewater. However, monitoring for total N and total P is required in the permit (without a limit) where reuses of the reclaimed water will include irrigation (e.g., of residential lawns, golf courses, agricultural crops, etc.) to determine whether the reclaimed water is BNR or non-BNR. This distinction is significant because there are no nutrient management requirements for irrigation reuse of BNR reclaimed water, while there are nutrient management plan (NMP) requirements for bulk irrigation reuse and other requirements to manage nutrients in lieu of NMPs for non-bulk irrigation reuse of non-BNR reclaimed water. Monitoring for total N and total P on the reclaimed water standards page in Part I.A of a VPDES permit is not necessary if these parameters are to be monitored in the effluent discharged by a combined WWTF and reclamation system, and there is no difference in the nutrient removal treatment for the reclaimed water and the effluent that is discharged. However, where reclaimed water from such facilities will be reused for irrigation, the fact sheet should note that nutrient monitoring is included in the effluent monitoring requirements. NMP requirements for irrigation reuse of reclaimed water are discussed further under [subdivision III.I.3](#) regarding coordination with DCR.

f. Monitoring for additional parameters

Reclaimed water monitoring for additional parameters, such as but not limited to sodium, may be required where the permittee of the reclamation system will also be the end user of the reclaimed water and the permittee’s reuse includes irrigation. Sodium can adversely impact soil properties affecting plant growth or may be directly toxic to the vegetation irrigated with the reclaimed water. Additional parameters can be similar to those monitored for land treatment systems of wastewater that utilize plants as part of the treatment process. Note that the vegetation at an irrigation reuse site is not part of the treatment for the reclaimed water that is applied to that site.

g. Parameter codes

The same non-seasonal parameter codes used for effluent outfalls in CEDS will be used for the following minimum list of parameters included in the monthly monitoring reports for both VPDES and VPA permitted reclamation systems:

Parameter	Code	Parameter	Code
Flow	001	Turbidity	798
pH	002	Fecal coliform	006
BOD ₅	003	E. coli	120

CBOD ₅	159	Enterococci	140
TSS	004	Total Phosphorus *	012
TRC	157	Total Nitrogen *	013

* Applicable only where reuses of the reclaimed water will include irrigation

h. Designated design capacity

The monitoring frequency for certain reclaimed water standards specified in Part I.A of a VPDES or VPA permit and the associated monthly monitoring report will be based on the designated design capacity of the reclamation system or satellite reclamation system. These parameters include TRC and TSS for Level 2, and BOD₅ (or CBOD₅) and bacteria (Fecal coliform, E. coli or Enterococci) for both Levels 1 and 2.

The designated design capacity of a reclamation system or satellite reclamation system will be the design flow or some percentage of the design flow for a WWTF that provides source water or effluent to the reclamation system or satellite reclamation system. The permitted design flow of a WWTF is based on the design capacity of the facility, which is determined as the average rate of influent flow per 24 hours that can be reliably treated by that facility based on projected flow estimates to be received at full buildout. The WWTF must be designed to process this influent flow 365 days a year with appropriate peak factors provided to meet reliability and redundancy requirements.

(1) Capacity based on WWTF flow

The designated design capacity of the reclamation system shall be the design flow of the WWTF when effluent of the WWTF will be discharged to a reclaimed water distribution system, a non-system storage facility or directly to a reuse (water reclamation and reuse) with little or no additional separate treatment for reclamation. This applies to reclamation systems and satellite reclamation systems that are essentially the same facility as the WWTF or a treatment train within or part of the larger treatment train of the WWTF.

(2) Capacity based on additional separate treatment

The designated design capacity of the reclamation system is the design capacity of only additional, separate treatment components when additional separate treatment of the WWTF effluent is needed to produce higher quality reclaimed water suitable for specific end uses and the WWTF that provides effluent for reclamation has a permitted discharge to surface waters. Where the WWTF that provides effluent for reclamation does not have a permitted discharge to surface waters and may divert all the effluent that it produces to the reclamation system at any one time, the designated design capacity of the reclamation system must be the design flow of the WWTF.

Example #1: The permitted design flow of a WWTF capable of producing Level 2 reclaimed water is 2.0 MGD. Because the WWTF and the reclamation system are essentially the same facility and little or no additional treatment will be provided to produce Level 2

reclaimed water, the designated design capacity of the reclamation system is 2.0 MGD.

Example #2: In the same scenario as Example #1, the WWTF will divert a portion of its flow to additional separate filtration and higher level disinfection to produce Level 1 reclaimed water and the remainder of its flow to a permitted discharge to surface waters. The designated design capacity of the reclamation system is the design capacity of the additional separate treatment needed to produce Level 1 reclaimed water (i.e., filtration and higher level disinfection).

Example #3: In the same scenario as Example #1, the WWTF, which does not have a permitted discharge to surface waters, will divert all of its flow to additional separate filtration and higher level disinfection to produce Level 1 reclaimed water. The designated design capacity of the reclamation system is the design flow of the WWTF.

(3) Capacity of regional reclamation systems

The designated design capacity of a regional reclamation system that receives effluent or source water from more than WWTF must be based on the maximum cumulative flow to be diverted by all the WWTFs served by the reclamation system. The flow diverted by each WWTF will be influenced by a variety of factors, including but not limited to, the availability of a permitted discharge to surface waters at the WWTFs and the availability of storage at either the WWTFs or the reclamation system to equalize flow into the reclamation system.

i. Operational flow monitoring

Flow of the reclamation system must be monitored to report monthly average and maximum flows and to verify that the system is complying with operational flow requirements of [9VAC25-740-180](#) in the Water Reclamation and Reuse Regulation (i.e., 95% of design capacity). Although influent flow monitoring may be acceptable, flow of the reclamation system should, in most cases, be metered at the point of discharge to a reclaimed water distribution system, a storage facility (system or non-system) and/or directly to a reuse, as applicable.

WWTFs are also required to monitor and report flows going through the facility to verify compliance with operational flow requirements of either [9VAC25-31-200.B.4](#) or [9VAC25-32-90.B](#), as applicable. Although these regulations refer to influent loading, effluent flows of a WWTF are most often used to determine operational flows. If a WWTF diverts a portion of its effluent flow to water reclamation and reuse, the regional water permit staff should ensure that influent flows of the WWTF are reported to verify that the facility is not being overloaded. Reported influent flow may be measured or estimated based on other flows that are measured. For example, given a WWTF that has a discharge to a point source or to land treatment, and diverts a portion of its effluent flow to water reclamation and reuse, the estimated influent inflow of the WWTF will be the sum of all its recorded discharge flows. Given a situation where a WWTF and reclamation system are essentially the same facility and all flow of the WWTF will be diverted to water reclamation and reuse, the estimated influent flow of the WWTF will be the sum of all recorded discharge flows from the reclamation system to a reclaimed water distribution system, a storage facility (system or non-system) and/or directly to a reuse, as

applicable.

Influent flow monitoring and reporting requirements of a WWTF, when determined necessary, must be included on the effluents limits page of a VPDES or VPA permit, and on the corresponding monthly effluent monitoring report forms (i.e., DMR for a VPDES permitted WWTF or the monthly monitoring report for a VPA permitted WWTF). If, however, the permit action involves an administrative authorization in association with an existing VPDES permit for water reclamation and reuse, add influent flow to the original DMR but do not add influent flow to the effluent limits page of the WWTF's VPDES permit. Instead, add influent flow to the reclaimed water standards page of the administrative authorization but do not add influent flow to the monthly monitoring report of the reclamation system. Upon reissuance of a VPDES permit having an administrative authorization, contents of the administrative authorization are to be transferred to the VPDES permit and influent flow should be added to the effluent limits page for the WWTF.

Influent flow (CEDS parameter code 164) is to be reported as monthly average and maximum value in units of million gallons per day (MGD). The sample type for influent flow will be either (i) estimated and monitored on a daily frequency; or (ii) TIRE (totalizing, indicating and recording equipment) and monitored on a continuous frequency. Regional water permit staff should request the permittee to specify the influent flow sample type when it is determined that influent flow monitoring for the WWTF will be necessary. Procedures to either estimate or measure the influent flow should be provided in the O&M Manual of the WWTF.

j. Monitoring of system storage facilities

Where the reclamation system has seasonal system storage or system storage that retains the reclaimed water greater than 24 hours, a separate point of compliance for monitoring and flow metering or other means to determine daily flows, and a separate monthly monitoring report form should be required for the discharge of the storage facility. Discharge used in this context refers to a discharge from system storage directly to a reuse or to a reclaimed water distribution system. Note that [9VAC25-740-70.D](#) of the regulation allows DEQ to require treatment other than or in addition to the standards of [9VAC25-740-70.A](#) if deemed necessary to protect public health and the environment. This is particularly applicable to system storage facilities:

- (i) That are not covered or otherwise contained to prevent the introduction of pollutants or bacteria that may be harmful to public health or the environment, or
- (ii) Where certain reclaimed water standards specified in [9VAC25-740-70.A](#) are determined on a case-by-case basis to be unnecessary or inappropriate for the discharge of a system storage facility.

Exceptions to system storage monitoring, excluding flow measurement, may be granted for facilities that are covered or otherwise contained to prevent the introduction of pollutants or bacteria that may be harmful to public health or the environment.

Monitoring should not be required for a system storage discharge where the facility is used for

flow equalization and retains the reclaimed water less than or equal to 24 hours.

(1) Contingency plan for system storage

For situations where reclaimed water in a system storage facility fails to comply with reclaimed water standards applicable to the facility, the contingency plan included in the operations and maintenance manual of the reclamation system must describe how the potential to deliver inadequately treated reclaimed water from system storage to reuse areas will be eliminated or minimized in accordance with [9VAC25-740-140.D.1.i](#). Contingency options could include, but are not limited to, adding a treatment step after storage (i.e., additional disinfection), diverting the water from system storage to reject water storage for subsequent treatment or retreatment, discharging to another permitted reuse system requiring a lower level of treatment not less than Level 2 or to a VPDES permitted effluent disposal system provided the water meets the effluent limits of the permit.

k. Ground water monitoring

Ground water monitoring for irrigation reuses is not required because all irrigation reuse is to be supplemental. Supplemental irrigation is defined in the regulation as irrigation, which in combination with rainfall, meets but does not exceed the water necessary to maximize production or optimize growth of the irrigated vegetation.

l. Corrective Action Threshold (CAT)

Unique to the Water Reclamation and Reuse Regulation is a Corrective Action Threshold (CAT), which replaces an instantaneous minimum, instantaneous maximum and maximum value for TRC, turbidity and bacteria, respectively. Once TRC goes below its CAT or turbidity exceeds its CAT, the permittee has one hour within which to bring the water back into compliance with the CAT standards in the permit. If this is not possible, the permittee must then implement other options, such as diverting the water to storage for retreatment, discharging to another permitted reuse requiring a lower level of treatment but not less than Level 2, or discharging to a permitted outfall provided the reject water meets effluent limits of the VPDES permit. The bacteria CAT is used primarily to verify that the TRC and turbidity CATs are working properly. Two consecutive routine bacterial monitoring results that exceed the bacteria CAT will be a violation.

CATs and their associated monitoring requirements are to be included on the reclaimed water standards page in Part I.A of the permit. Templates of the standards pages for both Level 1 and Level 2 reclaimed water are provided in [Attachment B](#). Although the CAT for TRC is the same for both Level 1 and Level 2, there is no turbidity CAT for Level 2 and all bacteria CATs for Level 1 are more stringent than those for Level 2. There are also differences between Level 1 and Level 2 regarding the monitoring frequency and sample types for the CAT standards. Regulatory references are provided in the template to help the permit writer complete this information in the reclaimed water standards page.

(1) CAT reporting requirements

CAT occurrences and diversions must be reported for VPDES and VPA permitted reclamation systems and satellite reclamation systems. CAT reporting requirements are included in the template of the monthly monitoring report for a VPA permit, and in the attachment to the monthly monitoring report for a VPDES permit entitled “Additional Reporting for Reclamation Systems Authorized by or in Association with a VPDES Permit”. A “Monthly Log Sheet for Reclaimed Water Bacteria Monitoring” must also be submitted with each monthly monitoring report for a VPDES or VPA permitted reclamation systems or satellite reclamation system to verify compliance with the bacteria CAT of the permit. The above monitoring report and attachments are provided in [Attachment C](#).

m. Additional instructions for preparation and distribution of monthly monitoring reports

Additional general instructions to customize the monthly monitoring report template for a VPA permit and attachments to monthly monitoring reports for VPA and/or VPDES permits are provided in [Attachment C](#). Information in the monthly monitoring report template for a VPA permit may also be used to prepare a monthly monitoring report in CEDS for a VPDES permitted reclamation system. Provide paper copies and, if requested by the permittee, electronic copies of the monthly monitoring report and appropriate attachments with the transmittal letter for a VPDES or VPA permit issuance, reissuance, modification or an administrative authorization (VPDES permits only) related to water reclamation and reuse. See [Attachment E](#) for example transmittal letters.

5. Special Conditions

Special conditions for water reclamation and reuse are contained in [Attachment B](#) and are to be inserted into Part I.B of a VPA or VPDES permits, or an administrative authorization associated with a VPDES permit. Immediately following each special condition is the “Basis” for the condition, which is to be placed in the fact sheet, not in the permit or administrative authorization. The basis of only those conditions used in the permit or administrative authorization should be included in the fact sheet. Additional instructions regarding the use of these conditions are provided in [Attachment B](#).

Many of the special permit conditions contained in [Attachment B](#) may apply more to the reclamation and reuse of municipal wastewater or sewage than industrial wastewater due to the differing pollutant content and character of industrial wastewaters. For example, irrigation reuse of a reclaimed industrial wastewater may require no or minimal setbacks from the irrigation reuse sites where the industrial wastewater does not contain any pathogens or other constituents that may be harmful to human health. Therefore, the applicability of these conditions must be evaluated by the Regional Office for each project that involves the reclamation and reuse of industrial wastewater, and modified if appropriate and necessary. Note that modifications to special conditions contained in [Attachment B](#) may require a different basis to support the condition than that provided in this guidance.

6. Permits for End Users

As noted in [subdivision III.B.5](#), specific end users that receive reclaimed water directly from more than one reclamation system, satellite reclamation system, reclaimed water distribution system, or a combination thereof, may be required to obtain an individual permit when:

- (i) The end user fails to comply with the terms and conditions of a service agreement or contract between the end user and more than one provider from which it receives reclaimed water, or
- (ii) The end user intends to blend reclaimed water from different providers for redistribution to end users other than or in addition to the end user that blends the reclaimed water, thereby acting as a reclaimed water agent.

When required, a VPA permit should be issued to either type of end user provided the end user will not have a discharge to surface waters.

The permit for a non-compliant end user will not have reclaimed water standards and monitoring requirements, but should include applicable conditions from the following special condition categories in [Attachment B](#):

- Conditions applicable to all water reclamation and reuse projects
- Conditions applicable to reject water and reclaimed water storage facilities (including reclaimed water non-system storage)
- Conditions related to design and construction of water reclamation and reuse projects
- Conditions requiring access control and advisory signs
- Conditions applicable to irrigation reuses of reclaimed water
- Conditions applicable to non-irrigation reuses of reclaimed water
- Conditions applicable to notification, record keeping and reporting.

A blending end user acting as a reclaimed water agent will have a reclaimed water distribution system to deliver the blended reclaimed water to secondary end users. Therefore, the permit for the end user in this case should include conditions from [Attachment B](#) that apply specifically to reclaimed water distribution systems. End users that blend reclaimed water from more than one provider of varying levels of reclaimed water treatment (i.e., Level 1 and Level 2 per [9VAC25-740-70](#)) or nutrient content (i.e., BNR and non-BNR reclaimed water), must comply with more stringent management requirements for the lower quality or higher nutrient content reclaimed water. Less stringent management requirements may be included in the end user's permit if monitoring of the blended reclaimed water is also included in the permit to verify that the blended reclaimed water meets Level 1 standards and/or has total N and total P concentrations

meeting BNR as defined in the regulation.

7. Fact Sheets

A fact sheet is required for the issuance or reissuance of a VPDES or VPA permit, and for an administrative authorization in association with a VPDES permit for water reclamation and reuse projects. For a major modification of either a VPDES or VPA permit, or minor modification of a VPA permit to add water reclamation and reuse standards, monitoring requirements and special conditions, the existing fact sheet of the permit should be amended to address the modifications.

A fact sheet for an administrative authorization associated with an existing VPDES permit should have the same format as the permit fact sheet. However, the content of the fact sheet for the administrative authorization should, as much as possible, be limited to only the basis for water reclamation and reuse standards, monitoring requirements and special conditions contained in the administrative authorization. Upon the reissuance of a VPDES permit with an administrative authorization for water reclamation and reuse, the administrative authorization and the fact sheet of the administrative authorization are to be incorporated into the VPDES permit and the fact sheet of the VPDES permit, respectively.

G. Preliminary Engineering Report, Certificate to Construct and Certificate to Operate

1. Preliminary Engineering Report

Per [9VAC25-740-120.A](#), a preliminary engineering report (PER) must be submitted by an applicant or permittee for a new reclamation system, satellite reclamation system or reclaimed water distribution system; or for the modification or expansion of the same facilities where they already exist. An applicant or permittee may also ask the DEQ Regional Office to waive the need for a PER or portions of the PER for modification or expansion of an existing reclamation system, satellite reclamation system or reclaimed water distribution system determined by the scope of the proposed project. For example, an expansion to add a unit process or a modification to increase the design flow of the system would require a PER, while replacement of equipment for maintenance purposes should not.

2. Certificate to Construct and Certificate to Operate

A certificate to construct (CTC) and a certificate to operate (CTO) is required per [9VAC25-740-120.B](#) for the construction, expansion or modification, and operation of a reclamation system and a satellite reclamation system. Although the construction, expansion or modification of a reclaimed water distribution system requires a PER, it does not require a CTC or CTO. The need to modify a CTC or CTO should be determined by the DEQ Regional Office based on the proposed change to the original scope of work. For example, an expansion to add a unit process or a modification to increase the design flow of the system would require a modification to the CTC and CTO, while replacement of equipment for maintenance purposes should not require a modification to the CTC and CTO.

Note that by definition in [9VAC25-740-10](#), system storage is “considered part of the a reclamation system, satellite reclamation system, or reclaimed water distribution system that is used to store reclaimed water produced by the reclamation system or satellite reclamation system and to equalize flow to or within the reclaimed water distribution system.” Therefore, PER, CTC and CTO requirements for construction, expansion or modification of a system storage facility will be the same as those for the reclamation system, satellite reclamation system or reclaimed water distribution system of which the storage facility is a part.

Where a reclamation system, satellite reclamation system or components thereof will reclaim municipal wastewater (or sewage) and will receive WQIF funds for construction, submit the PER, and plans and specifications for the CTC and CTO to staff in the Office of Wastewater Engineering for their review as described in [subdivision III.1.1](#). For all other reclamation systems, satellite reclamation systems or components thereof that will reclaim either municipal or industrial wastewater and are not WQIF funded, refer to procedures on the DEQ program page for Wastewater Engineering to administratively approve CTCs and CTOs.

H. Management of pollutants from significant industrial users

1. Reclamation systems

a. Pretreatment or equivalent program

Management of pollutant from significant industrial users (SIUs) described in [9VAC25-740-150](#) of the Water Reclamation and Reuse Regulation applies only to reclamation systems that will receive effluent from wastewater treatment works or WWTFs with SIUs, and will produce reclaimed water treated to Level 1 or for reuse in areas accessible to the public or where human contact with the reclaimed water is likely. The reclamation system will not be permitted to produce reclaimed water of this quality or for such reuses unless the WWTFs providing effluent to the reclamation system is:

“1. A publicly owned treatment works (POTW) as defined in the VPDES Permit Regulation ([9VAC25-31-10](#)), that has a pretreatment program developed, approved and maintained in accordance with Part VII of the VPDES Permit Regulation ([9VAC25-31-730](#) through [9VAC25-31-900](#)); or

2. Any other POTW or privately owned treatment works as defined in the VPDES Permit Regulation ([9VAC25-31-10](#)), with either a VPA or VPDES permit that has developed a program to manage pollutants of concern discharged by SIUs, equivalent to a pretreatment program required in the VPDES Permit Regulation for qualifying POTWs.”

The applicant or permittee of a reclamation system is required to provide information about all WWTFs that divert or will divert effluent or source water to the reclamation system under subsection C.3 of the [Application Addendum](#). This includes the names of all SIUs indirectly discharging to each WWTF and whether the WWTF has or does not have an approved pretreatment program to address the indirect discharges of its SIUs. Where all the WWTFs with SIUs that provide effluent or source water to the reclamation system have an approved

pretreatment program and a good history of compliance with their program, the reclamation system may be authorized to produce reclaimed water treated to Level 1 or for reuse in areas accessible to the public or where human contact with the reclaimed water is likely.

For reclamation systems that receive effluent or source water from one or more WWTFs with SIUs that are other than a POTW with an approved pretreatment program as described in [9VAC25-740-150.A](#), the WWTF must have “a program to manage pollutants of concern discharged by SIUs, equivalent to a pretreatment program required in the VPDES Permit Regulation for qualifying POTWs”. The WWTF’s program may be submitted by the applicant or permittee with the Application Addendum or as a condition of the permit (See [Attachment B](#)). Before requesting submission of such a program, verify that SIUs listed for each WWTF under subsection C.3 of the [Application Addendum](#) meet the definition of SIUs contained in [9VAC25-31-10](#) of the VPDES Permit Regulation. In those rare cases where an equivalent program will be required, the regional water permit staff should contact staff in the Office of Land Application Programs for assistance reviewing and approving the program.

b. Contractual agreement

The applicant or permittee of a reclamation system is required to establish a contractual agreement with a WWTF that has SIUs and will provide effluent or source water to the reclamation system when the reclamation system is authorized to produce reclaimed water treated to Level 1 or for reuse in areas accessible to the public or where human contact with the reclaimed water is likely. The purpose of the contractual agreement is to ensure that reclaimed water discharged by the reclamation system will be safe for use in areas accessible to the public or where human contact is likely. Per [9VAC25-740-150.B](#), a draft copy of the contractual agreement must be submitted to the DEQ for review and approval prior to its execution. Therefore, the contractual agreement should be provided with the Application Addendum for existing facilities, or may be obtained at a later date through a condition of the permit (see [Attachment B](#)) when the reclamation system does not plan to receive effluent or source water from a WWTF on or soon after the effective date of the permit or administrative authorization. A contractual agreement will not be required where the permittee of the reclamation system is also the permittee of the WWTF that provide effluent or source water to the reclamation system.

2. Satellite reclamation systems

The applicant or permittee of a satellite reclamation system is required to provide information about the sewage collection system that diverts or will divert sewage or municipal wastewater to the satellite reclamation system under subsection C.4 of the [Application Addendum](#). This includes information about each SIU that discharges directly or indirectly to the sewage collection pipeline from which sewage or municipal wastewater is or will be diverted to the satellite reclamation system, excluding any downstream SIUs whose discharge has no potential to backflow to the satellite reclamation system. Note that [9VAC25-740-100.B.4.c](#) gives DEQ the authority to require analyses of sewage where SIUs discharge to the collection system from which a satellite reclamation system will withdraw sewage. This information is also requested under subsection C.4 of the [Application Addendum](#).

a. Evaluation of pollutants of concern from SIUs

The Water Reclamation and Reuse Regulation does not require a satellite reclamation system to develop a “program to manage pollutants of concern discharged by SIUs, equivalent to a pretreatment program required in the VPDES Permit Regulation for qualifying POTWs”. However, the Regional Office should not permit a satellite reclamation system for the production of reclaimed water meeting Level 1 standards, or for reuse in areas accessible to the public or where human contact with the reclaimed water is likely where SIUs discharge directly or indirectly to the sewage collection pipeline from which sewage or wastewater is to be diverted to the satellite reclamation system, unless any pollutants of concern discharged by the SIUs are evaluated and demonstrated by the applicant or permittee to not:

- (i) Cause interference with the ability of the satellite reclamation system to produce reclaimed water treated to Level 1 or that is safe for reuse in areas accessible to the public or where human contact with the reclaimed water is likely;
- (ii) Cause a fire and explosion hazard in the satellite reclamation system;
- (iii) Cause corrosive damage to the satellite reclamation system;
- (iv) Adversely impact the health and safety of workers operating the satellite reclamation system; and
- (v) Adversely impact the beneficial use or disposal of sewage sludge produced by the satellite reclamation system.

This evaluation should be submitted with the Application Addendum or as a condition of the permit (See [Attachment B](#)) by the applicant or permittee for each SIU that discharges directly or indirectly to the sewage collection pipeline from which sewage or municipal wastewater is or will be diverted to the satellite reclamation system, excluding any downstream SIUs whose discharge has no potential to backflow to the satellite reclamation system. Although not required, it is recommended that a current inventory of SIUs described above be maintained in the operations and maintenance manual of the satellite reclamation system. For each new SIU discharge either directly or indirectly to the sewage collection pipeline where there is potential for pollutants of concern from the new SIU to be withdrawn by the satellite reclamation system, the permittee should repeat the evaluation. Where a Regional Office requires an applicant or permittee to perform these evaluations, the Regional Office staff may consider contacting staff in the Office of Land Application Programs for assistance reviewing the evaluations.

3. Coordination with Pretreatment Program Staff

Where an approved pretreatment program or program equivalent to a pretreatment program is required for WWTFs that will provide source water for reclamation and reuse, routine coordination between regional water permit and pretreatment program staff is recommended to communicate any problems with pretreatment at the WWTFs that could impact the quality and safety of reclaimed water produced by the reclamation system. POTWs with an approved

pretreatment program, providing source water for reclamation and reuse, may be subject to requirements of the Water Reclamation and Reuse Regulation, specifically [9VAC25-740-150](#), in addition to pretreatment requirements of the VPDES Permit Regulation. Where the Application Addendum indicates that a WWTF has an approved pretreatment program for its SIUs in accordance with the VPDES Permit Regulation, the water permit writer should consult with pretreatment program staff to verify that this information is correct and to obtain information on any problems the WWTF has had to comply with its approved pretreatment program. Other WWTFs with SIUs that do not require a pretreatment program in accordance with the VPDES Permit Regulation, and provide source water to reclamation systems producing reclaimed water treated to Level 1 or for reuse in areas accessible to the public or where human contact with the reclaimed water is likely, will be subject to only requirements of [9VAC25-740-150](#) related to management of pollutants from SIUs. Pretreatment program staff may, at the request of water permit writers, review and provide input on programs equivalent to pretreatment programs, contractual agreements, and evaluations of pollutants from SIUs for satellite reclamation systems described in [subdivision III.H](#). 1.a, 1.b and 2.a, respectively.

I. Coordination with DEQ-Office of Wastewater Engineering and other state agencies

1. DEQ-Office of Wastewater Engineering

The Office of Wastewater Engineering (OWE) only reviews construction related documents for facilities with WQIF funded components treating domestic sewage, commonly termed as ‘municipal’ facilities regardless of actual ownership. The basis for these reviews is the Sewage Collection and Treatment Regulations (9VAC25-790). These reviews typically encompass the Preliminary Engineering Report (PER), documents to issue a Certificate to Construct (CTC), and the Certificate to Operate (CTO).

These same procedures will be used by OWE staff to evaluate and process water reclamation projects at municipal facilities if WQIF funds are involved. In addition to the Sewage Collection and Treatment Regulations, the Water Reclamation and Reuse Regulation shall be used as the basis for these reviews.

PERs, and plans and specifications for CTC and CTO requests for municipal sewage projects are to be routed to the assigned OWE engineer as is currently done for any sewage project. For engineer contact information, see <http://www.deq.virginia.gov/wastewater/staff.html>.

For industrial wastewater or non-WQIF funded municipal wastewater reclamation projects, OWE will not process PERs, CTCs, or CTOs. Instead, these will be processed by the water permit staff as described in [subsection III.G](#).

2. VDH

a. General coordination procedures

A copy of the Application Addendum with the appropriate VPDES or VPA permit application must be sent to the VDH for the following proposals:

1. All reclamation systems or satellite reclamation systems that will reclaim municipal wastewater or sewage for reuse; or
2. A reuse of reclaimed water that:
 - a. Is not listed in [9VAC25-740-90.A](#) of the Water Reclamation and Reuse Regulation,
 - b. Is listed in [9VAC25-740-90.A](#) but involves the reuse of a reclaimed industrial wastewater, or
 - c. Is determined to be an intentional indirect reuse as discussed in [subdivision III.L.3](#). There will be no Application Addendum for intentional indirect reuse. Therefore, send only a copy of the VPDES permit application.

Regional water permit writers should send the above to the VDH at the following address:

VDH, Office of Drinking Water
109 Governor Street, 6th Floor
Richmond, VA 23219
Attention: Field Services Engineer

Note that it may not be necessary for a permittee to submit an entirely new Application Addendum and VPDES or VPA permit application to the DEQ if these documents are already on file at the Regional Offices and no changes have occurred that require submission of new or more current information per [9 VAC25-740-100.B.6](#) of the regulation. However, VDH offices may not maintain the same documents in their records. Therefore, provide a copy of both the Application Addendum and associated VPDES or VPA permit application for the proposal to the VDH at the address noted above.

The Field Services Engineer of the VDH, Office of Drinking Water (ODW) will distribute the proposal for comment to the appropriate parties within VDH, including but not limited to, the appropriate ODW field office(s), the appropriate local health department(s), Office of Epidemiology, and the Office of Environmental Health Services. The Field Service Engineer will then provide a compiled response back to DEQ. VDH will have 30 days to review and provide comments on proposals for unlisted reuses of reclaimed water or listed reuses of reclaimed industrial wastewater. Although Guidance Memo No. 04-2012 (Guidance on Coordination of Water Permit Programs with the VDH) states that "VDH will respond to DEQ within 14 days of receipt of a permit document except for Sludge Management Plans (SMPs) ...", this guidance supersedes Guidance Memo No. 04-2012 with respect to only proposed unlisted reuses of reclaimed water or listed reuses of reclaimed industrial wastewater.

Comments and recommendations provided by the VDH-ODW Field Services Engineer to the DEQ Regional Office on a proposed water reclamation and reuse project, particularly those pertaining to the protection of public health, should be given full consideration and addressed, as appropriate, in the permit or administrative authorization.

b. Reliability classification

Two terms, specifically “Class I Reliability” in the Water Reclamation and Reuse Regulation and “Reliability Class I” in the SCAT Regulations, refer to the same reliability classification for reclamation systems or satellite reclamation systems. There is no similar dual terminology in the Water Reclamation and Reuse Regulation for Reliability Classes II or III of the SCAT Regulations. Class I Reliability (or Reliability Class I) is required for all reclamation systems and satellite reclamations that will produce Level 1 reclaimed water “unless there is a permitted alternate treatment or discharge system available which has sufficient capacity to handle any reclaimed water flows which do not meet the reclaimed water standards of [the regulation] or performance criteria established in the operations and maintenance manual” ([9VAC25-740-130.B](#)). The DEQ, if applicable, will establish Class I Reliability for Level 1 reclamation systems or satellite reclamation systems with concurrence from field offices of the VDH, Office of Drinking Water (ODW). For each reclamation system or satellite reclamation system of municipal wastewater or sewage that will produce Level 2 reclaimed water, or for a similar system that will produce Level 1 reclaimed water and for which the DEQ has not established Class I Reliability per [9VAC25-740-130.B](#), the DEQ will establish a Reliability Class (i.e., I, II or III as described in the SCAT Regulations) based on recommendations of the VDH-ODW field offices. However, VDH-ODW may choose not to recommend a Reliability Class for a reclamation system where it is or will become part of a conjunctive system with an existing WWTF and the WWTF has already been assigned a Reliability Class.

c. Combination onsite wastewater disposal systems and irrigation reuse systems

(1) Jurisdiction of DEQ and VDH

Periodically, projects are proposed that include both an onsite wastewater disposal system (OWDS) for treatment and disposal of wastewater and/or reclaimed water, and an irrigation system (above or below ground) for reuse of reclaimed water. In this and other situations typically anticipated, the VDH, Division of Onsite Sewage and Water Services (DOSWS) and DEQ will divide their regulatory jurisdiction of the projects as follows:

- (i) A WWTF utilizing an OWDS for 100 percent disposal of the treated wastewater will be permitted by the VDH;
- (ii) A WWTF utilizing an irrigation system (above or below ground) for 100 percent reuse of the treated or reclaimed wastewater will be permitted by DEQ; and
- (iii) A WWTF utilizing an OWDS, and a separate irrigation reuse system (above or below ground) during alternate seasons or simultaneously, will be permitted by both the VDH and DEQ. Proposals such as this will likely require direct coordination between DEQ Regional Offices and the VDH-OEHS, DOSWS in addition to that provided through the initial coordination with the VDH-ODW. The VDH will issue a permit for the OWDS and DEQ will issue a permit for the WWTF and the irrigation reuse system. Issuance of the DEQ permit will be contingent upon issuance of the VDH permit for the OWDS. The OWDS must be capable of handling the full design flow of the WWTF unless

storage or an alternate disposal or reuse option for the treated wastewater is available and permitted by either VDH or DEQ. Therefore, DEQ regional water permit staff should obtain a copy of the VDH permit for the OWDS and, as applicable, verify that the design capacity of the OWDS is adequate. The DEQ permit will incorporate effluent limits (e.g., for nitrate) for the discharge to the OWDS that are recommended by the VDH. VDH, however, will maintain regulatory jurisdiction over the OWDS and will be responsible for monitoring the compliance of this system. Disinfection standards for reclaimed water to be included in the DEQ permit will not apply to the OWDS unless specifically requested by the VDH. VDH may also request the addition of special conditions to DEQ's permit related to the connection of the OWDS to the WWTF, during DEQ's permit application review and draft permit public participation processes.

(2) Monitoring requirements

Where a WWTF will utilize an irrigation reuse system (above or below ground) and an OWDS to manage its treated wastewater, both reclaimed water discharged to the irrigation system and effluent discharged to the OWDS by the WWTF must be monitored to verify compliance with reclaimed water standards or effluent limits contained in the permit. Where the two discharges have the same or non-conflicting monitoring requirements, one monitoring location representative of both discharges and one monthly monitoring report may be used. Where the two discharges have differing monitoring requirements, it may be necessary to have separate monitoring locations and monthly monitoring reports for each. For example, reclaimed water sent to the drip irrigation system must be disinfected, while effluent sent to the OWDS will not require disinfection unless recommended by the VDH. If the VDH does not require disinfection of the effluent discharged to the OWDS, then separate monitoring locations and monthly monitoring reports for the two discharges will be necessary.

3. DCR

A nutrient management plan (NMP) prepared by a DCR certified nutrient management planner is required for all bulk irrigation reuse sites that receive non-BNR reclaimed water, and for other bulk irrigation reuse sites under limited circumstances unrelated to the nutrient content of the reclaimed water. The latter sites will also require DCR approval of the NMP. DEQ regional water permit staff should verify that NMPs and, as applicable, DCR approval letters for NMPs are submitted with the Application Addendum when required.

Because all irrigation reuse of reclaimed water must be at supplemental rates (see [subdivision III.C.5](#)), the rate at which reclaimed water will be applied to an irrigation site will, in most cases, be much lower and less predictable than rates of application for land treatment sites. Therefore, nutrient management planners must consider more carefully the effect that supplemental irrigation, influenced by changing weather conditions and precipitation, will have on the quantity and timing of nutrients applied from reclaimed water relative to the operator's goals for the irrigated vegetation.

a. Nutrient management plans (NMPs) for bulk irrigation reuse sites of non-

BNR reclaimed water

Bulk irrigation reuse of non-BNR reclaimed water during the winter will be much lower than in other seasons, and shall be in accordance with the timing requirements outlined in Virginia Nutrient Management Standards and Criteria, revised October 2005 and 4VAC5-15-150.

For NMPs of bulk irrigation reuse sites receiving non-BNR reclaimed water, split applications of nutrients shall be required on environmentally sensitive sites and should be recommended by the planner on other sites. If the spring application of nutrients in combination with bulk irrigation reuse of non-BNR reclaimed water does not meet the nutrient recommendations required by the irrigated vegetation, particularly during periods of normal or excessive rainfall, other additional sources of fertilizer may be applied to meet the nutrient recommendations. Supplemental nutrients should be applied within the appropriate application window to achieve the expected crop yield determined by Virginia Nutrient Management Standards and Criteria, revised October 2005.

In anticipation of those circumstances where an operator has: (i) applied nitrogen and phosphorus required by the irrigated vegetation via bulk irrigation reuse of non-BNR reclaimed water alone or in combination with a spring application of these nutrients from other sources, and (ii) met the nitrogen and/or phosphorus recommendations of the irrigated vegetation for the growing season but has additional need for irrigation water during a drought year, the planner should include the following conditions in the NMP:

- (i) The operator shall monitor the amount of nitrogen applied via bulk irrigation reuse of non-BNR reclaimed water throughout a single growing season such that no over application of nitrogen occurs. Once the nitrogen recommendation for the irrigated vegetation is met and there is additional need for irrigation water, the operator must switch to another source of water that does not contain nitrogen to irrigate the site.
- (ii) Additional phosphorus may be applied to the bulk irrigation reuse site in any one year from any nutrient source, including reclaimed water, but the total phosphorus applied can not exceed the sum of phosphorus recommendations shown in the plan for any field within the bulk irrigation reuse site.

b. NMPs for bulk irrigation reuse sites independent of reclaimed water nutrient content

Per [9VAC25-740-100.C.4](#) of the regulation, a bulk irrigation reuse site shall require a NMP independent of the nutrient content of the reclaimed water applied to the site, where:

“a. A wastewater treatment works, a reclamation system, satellite reclamation system or reclaimed water distribution system and the irrigation reuse site or sites are under common ownership or management, and

b. In addition to irrigation reuse:

- (1) There is no option to dispose of the reclaimed water through a VPDES permitted

discharge, or

(2) There is an option to dispose of the reclaimed water through a VPDES permitted discharge, but the VPDES permit does not allow discharge of the full nutrient load under design flow (e.g., a treatment works with a VPDES permitted discharge implements water reclamation and reuse in lieu of providing treatment to meet nutrient effluent limits at design flow).”

NMPs prepared for these bulk irrigation reuse sites must be approved by DCR and submitted with the RWM plan to DEQ. The applicant or permittee is responsible for submitting the NMP to the DCR Richmond Office for approval and must provide a copy of DCR’s approval letter with the NMP when submitted to DEQ.

J. CEDS

To make it possible to track water reclamation and reuse projects, a checkbox entitled "Reclamation & Reuse Approved" has been added to the "General Information" tab in CEDS for both VPDES and VPA permits. The checkbox is located in the upper right corner of the "General Information" tab for VPDES permits, and in the lower right corner for VPA permits. Permit writers should check this box for:

- (i) Any VPDES or VPA permit that is issued or reissued with water reclamation and reuse standards, monitoring requirements and special conditions.
- (ii) The modification (minor or major) of any existing VPA permit to add water reclamation and reuse standards, monitoring requirements and special conditions.
- (iii) An administrative authorization of water reclamation and reuse standards, monitoring requirements and special conditions associated with a VPDES permit. This administrative authorization is described under [9VAC25-740-30.B](#) of the regulation and is not a VPDES permit modification.
- (iv) A major modification of a VPDES permit to add water reclamation and reuse standards, monitoring requirements and special conditions. Such a modification will be required in lieu of an administrative authorization where the standards, monitoring requirements and special conditions effectively alter other conditions of the permit specifically related to the effluent discharge for which the permit was originally issued.

For a minor modification of a VPA permit or an administrative authorization associated with a VPDES permit as described above, perform the following in only the CEDS **active** record of the existing VPA or VPDES permit:

- (i) Add water reclamation and reuse special conditions, as applicable;
- (ii) Make a note in the Comments box of the General Information tab indicating when the minor VPA permit modification or administrative authorization associated with a VPDES permit was signed. Do not change the “Activity” in the General Information

tab of the active record; and

- (iii) For only administrative authorizations, add internal outfalls for water reclamation and reuse.

Follow standard CEDS data entry procedures for the issuance, reissuance or major modification of a VPDES or VPA permit to include standards, monitoring requirements and special conditions for water reclamation and reuse. This requires the creation of an application record and selection of the appropriate “Activity” type in the General Information tab.

New water reclamation and reuse (Water R/R) special conditions have been added to the drop down list under the Special Conditions tab for both the VPDES and VPA Individual Permit modules. They include:

- Annual reports for bulk irrigation reuse and storage (up to 5 for a VPDES permit or an administrative authorization associated with a VPDES permit, and up to 10 for a VPA permit)
- Monthly reports for bulk irrigation reuse and storage (up to 60 for a VPDES permit or an administrative authorization associated with a VPDES permit, and up to 120 for a VPA permit)
- Annual reports for reclaimed water distribution systems (up to 5 for a VPDES permit or an administrative authorization associated with a VPDES permit, and up to 10 for a VPA permit)

These special conditions should be selected and submittal dates entered for each where the conditions are included in the VPA or VPDES permit or an administrative authorization associated with a VPDES permit.

Information regarding CEDS special conditions and the development of monitoring reports (in addition to guidance under [subdivision III.F.4.b](#)) for water reclamation and reuse will be provided in CEDS User Manuals for VPDES and VPA permits to be posted on the DEQNET. Although DEQ Regional Offices will be notified of periodic enhancement to CEDS, regional water permit staff should always refer to the latest version of the applicable CEDS User Manual when developing permit records for water reclamation and reuse in CEDS.

K. Compliance and Enforcement

1. Compliance

Major components of permit compliance for water reclamation and reuse include monitoring and reporting by the permittee, inspections conducted by Regional Office staff, and compliance auditing.

a. Monitoring and reporting by the permittee

Permitted generators and distributors of reclaimed water are required to monitor and report on the performance of their reclamation system, satellite reclamation system, and/or reclaimed water distribution system to verify compliance with water reclamation and reuse standards and conditions in their permits. Most end users of reclaimed water will not be required to have a permit and will not, therefore, have compliance monitoring and reporting requirements. However, end users that blend reclaimed water and are required to have a permit as described in [subdivision III.B.5](#), may also be required to monitor and report on the quality of reclaimed water they blend and distribute to other end users.

Monitoring includes sampling and analyses. Per [9VAC25-740-80.B](#), “Samples collected for TSS, BOD₅ or CBOD₅, and fecal coliform, E. coli or enterococci analyses, shall be analyzed by laboratory methods accepted by the board.” “Methods accepted by the board” shall be the same methods currently used to analyze these parameters in effluent discharged by WWTFs to surface waters (authorized by a VPDES permit) or in wastewater applied to land treatment systems (typically authorized by a VPA permit).

Reporting required by the permit for water reclamation and reuse will, in most cases, be monthly, annual or periodic.

(1) Monthly reporting

Monthly reporting is required for reclamation systems and satellite reclamation systems that will produce and discharge reclaimed water to a reclaimed water distribution system, a non-system storage facility, or directly to a reuse; and may be required for reclaimed water distribution systems and certain end users. Monthly monitoring reports and associated attachments must be submitted to the DEQ Regional Offices. VPDES permitted reclamation systems and satellite reclamation systems will also have the option to submit monthly monitoring reports via e-DMR.

Under [9VAC25-740-80.C](#) of the Water Reclamation and Reuse Regulation, permittees of reclamation systems that produce reclaimed water intermittently or seasonally are required to monitor “only when the reclamation system discharges to a reclaimed water distribution system, a non-system storage facility, or directly to a reuse.” This provision also applies to reclamation systems that produce reclaimed water throughout the year but discharge only intermittently or seasonally to a reclaimed water distribution system, a non-system storage facility, or directly to a reuse.

Example: A VPA permitted reclamation system that produces reclaimed water 12 months out of the year but sends part of the reclaimed water to seasonal storage during the winter months rather than discharging it.

However, any time for any duration within a period of a month that a VPDES or VPA permitted reclamation system discharges to a reclaimed water distribution system, a non-system storage facility, or directly to a reuse, the reclamation system must monitor the reclaimed water in accordance with the permit and submit a monthly monitoring report. When a reclamation system

or satellite reclamation system does not discharge reclaimed water to a reclaimed water distribution system, a non-system storage facility, or directly to a reuse during a monthly monitoring period, the permittee must submit a monthly monitoring report for that period with “NR” or “Not Required” noted in the “Comments” box of the report.

Daily and monthly averages for reclaimed water standards are not flow weighted averages. They are to be calculated using monitoring data available for the monitoring period, similar to daily and monthly average calculations for effluent limits. For the purpose of calculating monthly geometric means for bacteria reclaimed water standards, bacteria analytical results below the detection level of the analytical method used are to be reported as values equal to the detection level.

(a) Point of compliance

Monthly monitoring to verify compliance with reclaimed water standards must be conducted at points of compliance (POCs) specified in the operations and maintenance manual of the reclamation system. . In accordance with [9VAC25-740-70 B](#), “The point of compliance for Level 1 and Level 2 treatment shall be after all reclaimed water treatment and prior to discharge to a reclaimed water distribution system. There are exceptions, however, for the turbidity standard of Level 1 treatment and TRC (Level 1 and Level 2 treatment) when chlorine is used for disinfection. The POC for turbidity must be just upstream of disinfection ([9VAC25-740-70.B](#)) and the POC for TRC must be at the end of the chlorine contact tank or contact period ([9VAC25-740-80.A.2](#)).

(b) Corrective action thresholds (CATs)

Both Level 1 and Level 2 reclaimed water standards have CATs for bacteria and TRC, while only Level one has a CAT for turbidity. TRC, turbidity and bacteria CATs for a reclamation system will be included in the reclaimed water standards page of Part I.A in the permit.

When monitoring results for TRC, turbidity or bacteria fail to comply with the CATs for these parameters in the permit, the operator of the reclamation system must immediately initiate a review of treatment operations and data to identify the cause of the non-compliant monitoring results to bring the TRC, turbidity or bacteria back into compliance with their CATs. Procedures for the operational review are to be described in an approved operations and maintenance manual for the reclamation system.

Within one hour of the first monitoring result falling below the CAT for TRC or exceeding the CAT for turbidity, the operator of the reclamation system must resample the water undergoing reclamation to verify that it complies with the TRC or turbidity CAT in the permit. If the water remains out of compliance with the TRC or turbidity CAT, the operator must:

- (i) divert the substandard (or reject) water to storage for subsequent additional treatment (or retreatment) or to another permitted reuse system requiring a lower level of treatment not less than Level 2, **OR**

- (ii) discharge the reject water through a VPDES permitted effluent disposal system provided the reject water meets the effluent limits of the permit.

If the reclamation system is unattended, the diversion of reject water shall be initiated and performed with automatic equipment. However, there shall be no automatic restarts to distribute reclaimed water to reuses until the treatment problem is corrected.

If after one hour the water undergoing reclamation remains out of compliance with the TRC or turbidity CAT and the operator fails to divert or discharge the reject water, this will be considered a violation of the regulation. Permittees will be required to report the number of turbidity and TRC CAT occurrences and the number of reject water diversions associated with these occurrences on either the monthly monitoring report for a VPA permit or an attachment to the monthly monitoring report for a VPDES permit entitled “Additional Reporting for Reclamation Systems Authorized by or in Association with a VPDES Permit” (see [Attachment C](#)). The permittee must also report the following:

- (i) Supplemental information regarding each turbidity or TRC CAT diversion, indicating the date and time of the diversion;
- (ii) The first measurement of the turbidity or TRC CAT occurrence;
- (iii) The period between the first measurement of the turbidity or TRC CAT occurrence and the diversion;
- (iv) The non-compliant CAT measurement of turbidity or TRC resulting in the diversion; and
- (v) The duration of the diversion.

This information must be attached to all monthly monitoring reports for reclamation systems or satellite reclamation systems.

The bacteria CAT serves to verify the results of the TRC and turbidity CATs for the same sampling period. Water undergoing reclamation that fails to meet the bacteria CAT is not diverted or discharged as this should occur in response to non-compliant CAT monitoring results for TRC and/or turbidity long before non-compliant bacteria CAT monitoring results for bacteria are obtained. However, all permittees of reclamation systems or satellite reclamation systems must attach to their monthly monitoring report a “Monthly Log Sheet for Reclaimed Water Bacteria Monitoring” (see [Attachment C](#)). Based on information contained in the Log Sheet, the permittee must indicate if the system had two or more consecutive monitoring results exceeding the bacteria CAT of the permit. This is to be reported on the monthly monitoring report for a VPA permit or an attachment to the monthly monitoring report for a VPDES permit entitled “Additional Reporting for Reclamation Systems Authorized by or in Association with a VPDES Permit”. Two consecutive routine bacterial monitoring results that exceed the bacteria CAT will be a violation.

Applicable only to reclamation systems or satellite reclamation systems that will produce Level 1 reclaimed water, permittees must also indicate whether or not bacterial monitoring occurred outside the period of 10:00 a.m. to 4:00 p.m. as part of their monthly reporting. This period may differ for permittees who have been granted an exception by DEQ to monitor outside the period of 10:00 a.m. to 4:00 p.m. and will be indicated on the appropriate reporting forms.

Per [9VAC25-740-70.C.3](#), repeated, although temporary, failure to comply with all other standards by the reclamation system may be considered a violation of the regulation determined by the frequency and magnitude of the non-compliant monitoring results and other relevant factors. It is a violation of the regulation for a failure to:

- (i) Resample after determining that monitoring results are not in compliance with the standards in order to make adjustments to the treatment process and, thereby, bring the reclaimed water back into compliance with the standards; or
- (ii) Divert water determined to be substandard based on TRC or turbidity CAT monitoring results.

(c) Bypasses

Per [9VAC25-740-50.B](#), bypasses “of untreated or partially treated wastewater from a reclamation system or any intermediate unit process to the point of reuse” are prohibited. However, a bypass for essential maintenance to assure efficient operation is not prohibited provided the bypass complies with the reclaimed water standards of the permit. All permittees of reclamation systems, satellite reclamation systems or reclaimed water distribution systems with reclaimed water monitoring requirements must report the total number of bypass occurrences (both allowed and prohibited) and the total flow of all bypasses occurrences on either the monthly monitoring report for a VPA permit or an attachment to the monthly monitoring report for a VPDES permit entitled “Additional Reporting for Reclamation Systems Authorized by or in Association with a VPDES Permit”. Attached to all monthly monitoring reports, the permittee must also provide supplemental information for each bypass occurrence generally describing:

- (i) The circumstances resulting in the bypass of the reclamation system, satellite reclamation system, reclaimed water distribution system and, if applicable, appurtenances;
- (ii) The flow of the bypass;
- (iii) The duration of the bypass; and
- (iv) Whether the bypass water did or did not comply with the reclaimed water standards of the permit.

A bypass is presumed to reach “the point of reuse”. Therefore, any bypass of water that does not comply with the reclaimed water standards of the permit is a violation.

(2) Annual reporting

Permittees that distribute reclaimed water, including some end users that blend and redistribute reclaimed water from different generators or distributors, are required to submit an annual report in accordance with [9VAC25-740-200.C](#). Another annual report is required for bulk irrigation reuse sites and associated storage that are owned or operated by the permittee. Items to be included in the annual reports are specified in permit special conditions of [Attachment B](#). All annual reports are to be submitted on or before February 10 of the following year. Failure to submit an annual report is a violation.

(3) Reporting of periodic incidents

Permittees are required to report to the DEQ Regional Offices incidents involving the interruption or loss of reclaimed water supply, unauthorized discharges and noncompliances. These incidents will, in most cases, be unplanned and will typically occur periodically.

(a) Reporting in accordance with 9VAC25-740-200.B

Per [9VAC25-740-200.B](#), “Interruption or loss of reclaimed water supply or discharge of any untreated or partially treated water that fails to comply with standards specified in the VPDES or VPA permit to the service area of intended reuse, shall be reported in accordance with procedures specified in the permit. This report shall also contain a description of any notification provided in accordance with [9VAC25-740-170 A 2](#).” Interruption or loss of reclaimed water supply is not a non compliance but failure to report such an occurrence is a violation. For each interruption or loss of reclaimed water supply, the permittee is required to report:

- (i) The service area affected,
- (ii) The initial date and time, duration, and cause of the occurrence, indicating whether it was planned or unplanned; and
- (iii) A description of steps taken to correct and prevent recurrence of interruption or loss of reclaimed water supply.

“Discharge” used in the context of [9VAC25-740-200.B](#) refers to a discharge from the reclamation system to the reclaimed water distribution system. Where this discharge may adversely affect state waters or may endanger public health, reporting requirements in both VPDES and VPA permits under Part II, “Reports of Noncompliance” shall apply. Reports of noncompliance for a discharge described in [9VAC25-740-200.B](#) are to be submitted with the reclamation and reuse monthly monitoring report and must contain the same information as a five-day report. Failure to report such a discharge under the circumstances described above is a violation.

(b) Reporting in accordance with 9VAC25-740-200.B – Education and

Notification Program

Per [9VAC25-740-170.A](#), a provider of reclaimed water must have and implement an approved education and notification program where reuses within the service area of the RWM plan require Level 1 reclaimed water, will be in areas accessible to the public, or are likely to have human contact. Requirements of [9VAC25-740-170.A](#) generally apply to providers of reclaimed water but may also apply to generators of reclaimed water where both the generator and provider are covered by the same permit. In accordance with the education and notification program, [9VAC25-740-170.A.2](#) requires a permittee to “notify end users and the affected public of treatment failures at the reclamation system that can adversely impact human health, or result in loss of reclaimed water service.

Where treatment of the reclaimed water fails more than once during a seven-day period to comply with Level 1 disinfection or other standards developed in accordance with [9VAC25-740-70.D](#) or [9VAC25-740-70.E](#) [reclaimed water standards in the permit] for the protection of human health, and the non-compliant reclaimed water has been discharged to the reclaimed water distribution system, the permittee shall notify the end user of the treatment failures and advise the end user of precautions to be taken to protect public health when using the reclaimed water in areas accessible to the public or where human contact with the reclaimed water is likely. These precautions shall be implemented for a period of seven days or greater depending on the frequency and magnitude of the treatment failure.

Where reclaimed water service to end users will be interrupted due to planned causes, such as scheduled repairs, the permittee shall provide advance notice to end users of the anticipated date and duration of the interrupted service. Where reclaimed water service to end users is disrupted by unplanned causes, such as an upset at the reclamation system, the permittee shall notify end users and the affected public of the disrupted service if it can not or will not be restored within eight hours of discovery.”

Although notification requirements of [9VAC25-740-170.A.2](#) (included as a permit special condition in [Attachment B](#)) are in addition to reporting requirements of [9VAC25-740-200.B](#), notifications per [9VAC25-740-170.A.2](#) must also be described and reported in accordance with [9VAC25-740-200.B](#) as previously discussed.

(c) Reclaimed water distribution system leaks and main breaks

All leaks and main breaks of reclaimed water distribution systems must be reported upon discovery. Where the leak or main break discharges or causes or allows a discharge of reclaimed water that may reasonably be expected to enter state waters (surface or ground water), reporting requirements in both VPDES and VPA permits under Part II, “Reports of Unauthorized Discharges” shall apply. Where the leak or main break does not discharge or cause or allow a discharge of reclaimed water that may reasonably be expected to enter state waters, but may adversely affect state waters or may endanger public health, reporting requirements under Part II, “Reports of Noncompliance” shall apply. Although reports of unauthorized discharges and noncompliance have 24-hour and five day reporting requirements, reports of noncompliance for leaks and main breaks of reclaimed water distribution systems are to be submitted only with the

monthly monitoring report and shall contain the same information as a five-day report. Failure to report leaks and main breaks under the circumstances described above is a violation.

b. Inspections conducted by Regional Office staff

Water reclamation systems, satellite reclamation systems and reclaimed water distribution systems that are permitted by the DEQ are to be inspected by the regional water compliance staff. Because the treatment processes for water reclamation are essentially the same as those for wastewater treatment (municipal or industrial), inspections of reclamation systems and satellite reclamation systems should be the same as those for WWTFs having the same design capacity and unit treatment processes. Where a WWTF and a reclamation system are one in the same facility or are physically connected at the same location, one inspection of both the WWTF and the reclamation system may be conducted.

Although inspections of permitted reclaimed water distribution systems are required, they will be a lower priority compared to inspections of reclamation systems and satellite reclamation systems. Inspections for reclaimed water distribution systems will be addressed in the future Water Inspection Standard Operating Procedures Manual to be developed by the DEQ Water Division, Office of Water Permits and Compliance Assistance.

Upon receipt of an Application Addendum ([Attachment A](#)), regional water permit writers and water compliance inspectors should review the reclaimed water management (RWM) plan included in the Application Addendum. Inspectors should review items of the RWM plan that they will inspect after a water reclamation and reuse project is permitted or authorized. Deficiencies of the RWM plan identified by the inspector should be included in the deficiency letter prepared by the permit writer to the applicant or permittee.

The cross-connection and backflow prevention (CC&BP) program included in the RWM plan for reclaimed water distribution systems is a significant item for inspector review. Although the regulation specifies periodic inspections of the reclaimed water distribution system by the applicant or permittee to prevent cross-connection and backflow from industrial end users, a minimum of annual inspections by the applicant or permittee should be required in the CC&BP program. The inspector should note an inspection frequency less than annually in the CC&BP program as a deficiency of RWM plan.

Where an Application Addendum is submitted for a water reclamation system, regional water permit writers should coordinate with regional water inspectors to check the compliance history of all WWTFs that will provide source water to the reclamation system. Water compliance inspectors should notify water permit writers of any compliance problems associated with the WWTFs.

c. Compliance auditing

Non-compliance with statutory, regulatory or permit requirements for water reclamation and reuse should be assigned points according to the Water Compliance Auditing Manual for potential referral to enforcement.

Because reclaimed water standards, excluding CAT standards, for VPDES permitted reclamation systems will be entered into CEDS to generate monthly monitoring reports, points for violations of these standards will be automatically generated. However, the automatic points are for effluent limits violations that differ from those for violations of reclaimed water standards. Until points for reclaimed water standards violations can be programmed into CEDS, regional compliance auditors will need to overwrite the automatic points with the correct points for reclaimed water standards violations.

Points for reclaimed water standards violations by VPA permitted reclamation systems and satellite reclamation systems are not automatically generated by CEDS. Therefore, the regional compliance auditor must manually enter the points into CEDS for these violations pertaining to VPA permits.

For VPDES and VPA permitted water reclamation and reuse projects, points for violation of turbidity, TRC and bacteria CAT standards; and any of several special conditions that are unique to water reclamation and reuse must be manually entered by the regional compliance auditor. Regional water permit staff are responsible for reviewing any CAT information submitted in or with the monthly monitoring report for a reclamation system to identify any CAT violations, and for reporting these violations to the compliance auditor.

New water reclamation and reuse special conditions with specific due dates have been developed for the CEDS Special Conditions tab of both VPDES and VPA permits. As with all VPDES and VPA permits, the regional water permit staff are responsible for selecting the applicable special conditions and entering the due date for each condition in the Special Conditions tab. Points for late special condition submittals will be automatically assigned by CEDS, and will not require correction by the regional compliance auditor.

Lastly, regional water permit staff will need to coordinate with the regional compliance auditor on reclaimed water standards for permitted reclamation of industrial wastewater. Standards for each reclaimed industrial wastewater will be developed on a case-by-case basis and may be assigned different violation points where a standard is established for the protection of human health, particularly for reuses of the reclaimed industrial wastewater that have potential for public or worker contact. The regional compliance auditor will need this information to ensure that appropriate points are assigned for violations of reclaimed industrial wastewater standards.

2. Enforcement

Referral of non-compliant water reclamation and reuse projects or activities to enforcement should adhere to existing procedures established for other activities covered by VPDES or VPA permits.

L. Miscellaneous Technical Issues

1. UV disinfection

For water reclamation and reuse, chlorination is anticipated to be the most commonly used method of disinfection, although other disinfection methods, including ultraviolet irradiation (UV), are allowed. UV disinfection produces no residual chemical, thereby eliminating the need for any effluent limit or reclaimed water standard and associated monitoring for residual disinfectant. However, bacterial limits or standards and associated monitoring will be required to demonstrate acceptable disinfection by UV. The Sewage Collection and Treatment (SCAT) Regulations under [9VAC25-790-770](#) specify a minimum average UV dose for wastewater receiving secondary treatment that meets the Level 2 reclaimed water standard for fecal coliform (200 colonies/100 ml of sample). This same dose has effectively met other Level 2 bacterial standards. However, the SCAT Regulations do not specify a UV dose to achieve the Level 1 reclaimed water standards for fecal coliform, E. coli and enterococci. Therefore, it is recommended that UV disinfection doses for Level 1 reclaimed water be based on the “Ultraviolet Disinfection Guidelines for Drinking Water and Water Reuse, 2nd Ed.” published by the National Water Research Institute (NWRI) (2003), hereafter referred to as the NWRI Guidelines.

UV dose (mWsec/cm^2 or uWsec/cm^2) is the product of UV intensity expressed in milliwatts per square centimeter (mW/cm^2), and the exposure time of the fluid or particle to be treated expressed in seconds (s). Design dose is that dose required for a specific log inactivation of the target organism and is used for sizing the UV disinfection system. Operational dose is established according to the equipment validation results and can be used to make the most efficient use of the UV disinfection system (e.g., reduce power demand, reduce number of reactors or trains on line) while maintaining the design UV dose. For any UV disinfection system, the engineer must certify that the operational UV dose achieves the design UV dose as described.

Per the reclaimed water standards in [9VAC25-740-70.A](#), Level 1 requires secondary treatment with filtration and higher-level disinfection, and Level 2 requires secondary treatment and standard disinfection. Filtration, one of the major differences between Level 1 and Level 2 reclaimed water standards, is not a substitute for disinfection but must be used in combination with disinfection to provide the required disinfection for Level 1. Generally, the more highly filtered the reclaimed water prior to UV disinfection, the lower will be the UV dose.

Currently, there is no UV dosage for Level 1 in the SCAT Regulations. Therefore, it is recommended that engineers consider using the NWRI Guidelines for UV disinfection dosage, even though these doses are set to produce an effluent with a lower bacterial standard than required for Virginia’s Level 1 standards. The NWRI recommendations are as follows:

- Non-membrane filtration (i.e., granular, or other synthetic media) – at least 100,000 uWsec/cm^2 under maximum daily flow
- Membrane filtration (i.e., micro (MF) and ultra (UF)) - at least 80,000 uWsec/cm^2 under maximum daily flow
- Reverse osmosis - at least 50,000 uWsec/cm^2 under maximum daily flow

Other design doses may be justified and according to other states, UV design doses of 35,000 to 70,000 uWsec/cm² have been used successfully to achieve disinfection that would meet Level 1 disinfection standards.

According to the NWRI Guidelines, the “continuous monitoring of parameters used to adjust the operational UV dose, UV disinfection system components, and proper calibration of on-line monitoring equipment are critical to maintaining the effectiveness of UV disinfection systems.” Parameters recommended by the NWRI Guidelines for continuous monitoring include flow rate, UV intensity, UV transmittance and turbidity. Flow rate, UV transmittance and UV intensity measurement are needed to establish UV operational dose. The procedures for establishing the operational UV does should be included in the operation and maintenance (O&M) Manual.

The O&M Manual of the reclamation system producing either Level 1 or 2 reclaimed water must specify the design dose of the UV disinfection system because reclaimed water standards that address UV disinfection are not contained in the Water Reclamation and Reuse Regulations as they are for TRC. This requirement has been included among items to be addressed in the permittee’s O&M Manual for the reclamation system (see permit special conditions in Attachment B), applicable only where UV will be used for disinfection.

Both high and low priority alarms should be required for the operation of a UV disinfection system within a reclamation system or satellite reclamation system. The NWRI Guidelines provide both high and low priority UV equipment alarms that can be used for Level 1 reclaimed water. The set points for these alarms should be specified in the O&M Manual and allow for adequate response time based on the importance of the alarm and consequences.

Requirements for the design, operation and maintenance of UV disinfection systems specified in the SCAT Regulations should apply where the same requirements are not addressed in the manufacturer’s specifications for the UV disinfection system, or in the case of UV disinfection for Level 1 reclamation systems and satellite reclamation systems, in the NWRI Guidelines.

2. Stormwater management facilities used for reclaimed water storage

The regulation does not prohibit the mixing and storage of reclaimed water with stormwater in the same facility for subsequent reuse, such as irrigation. However, [9VAC25-740-110.C](#) of the regulation, which contains design requirements for reclaimed water storage facilities, specifically states that "All storage facilities, including landscape impoundments used for non-system 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 25-year 24-hour storm." Most existing stormwater management facilities are designed to discharge and usually for storm events of a magnitude less than a 25-year 24 hour storm. Therefore, such facilities are not appropriate for the storage of reclaimed water unless retrofitted to discharge for a storm event greater than a 25-year 24 hour storm.

3. Intentional indirect reuse

Indirect reuse is defined in the regulation as the “use of reclaimed water subsequent to discharge to surface waters of the state, including wetlands, pursuant to a VPDES permit.” Per [9VAC25-740-50.A](#), indirect reuse with the exception of indirect potable reuse is excluded from the requirements of the regulation. The exclusion of indirect reuse was meant to address circumstances where the indirect reuse of a discharge was not planned or intended but occurred incidentally. This is the case for numerous WWTFs in Virginia that discharge to streams or impoundments located upstream or in proximity of downstream water withdrawals. Currently, there is only one WWTF in Virginia that intentionally discharges to an impoundment to augment drinking water supply, also referred to as indirect potable reuse. Indirect potable reuse is not excluded from the requirements of the regulation. To develop reclaimed water standards for indirect potable reuse projects, refer to [subdivision III.F.3.d](#).

The primary concerns regarding indirect reuse are potential public health impacts. Although indirect reuse (other than indirect potable reuse) is excluded from the requirements of the regulation, VDH may provide comments on a WWTF’s discharge for the protection of public health where any portion of the discharge may be withdrawn for an indirect reuse, particularly where the reuse has potential for human contact. VDH comments may be addressed in the VPDES permit for the discharge (i.e., as more stringent disinfection requirements) where appropriate. Whenever a WWTF proposes to locate or relocate its effluent discharge to intentionally augment a surface water with a known indirect reuse other than indirect potable reuse, the regional water permit staff should consult with the VDH, Office of Drinking Water (ODW) per the procedures discussed in [subdivision III.I.2.a](#) to determine the acceptability of the proposed discharge relative to the intentional indirect reuse, and establish the level of wastewater treatment required to protect public health. Should VDH recommend more stringent disinfection requirements based on the potential for public health impacts, regional water permit staff should consider (in consultation with VDH) whether or not to include monitoring of surrogate parameters to verify adequate disinfection of the effluent more quickly than can be achieved through the use of bacteria standards alone. These may include more stringent TRC limits prior to dechlorination, more frequent TRC monitoring, turbidity monitoring and/or limits, or more stringent TSS limits. Upon reissuance of a VPDES permit for a discharge with an intentional indirect reuse, VDH re-evaluation of the discharge should not be necessary provided there are no changes to the location or volume of the discharge, or to the type, number and location of intentional indirect reuses following the initial VDH evaluation.

4. Land treatment systems converting to irrigation reuse

Although irrigation reuse may require more land area to utilize the same volume of water disposed by land treatment, there may be circumstances where permittees owning or managing land treatment systems may want to: (i) convert their land treatment sites to irrigation reuse sites, or (ii) continue land treatment with an option to divert all or a portion of wastewater to reclamation and reuses by the permittee or other end users.

Conversion of a land treatment site to an irrigation reuse site is allowable, provided:

- (i) The irrigation reuse site is no longer operated as a land treatment system,

- (ii) The rate of irrigation with reclaimed water will be supplemental (as discussed in [subsection III.C.5](#)),
- (iii) There is sufficient storage for the reclaimed water in accordance with [9VAC25-740-110.C.8.b\(2\)](#) where there is no option to suspend generation of reclaimed water for planned periods, or discharge the reclaimed water to an alternate reuse and/or to surface waters under a VPDES permit; and
- (iv) The reclaimed water to be applied to the site meets the appropriate reclaimed water standards specified in [9VAC25-740-90.A](#) or developed on a case-by-case basis for reclaimed industrial wastewater.

The point of compliance (POC) for reclaimed water monitoring will follow all treatment, excluding the land treatment site converted to irrigation reuse. Groundwater monitoring if required for the land treatment site, will no longer be necessary once the site is converted to irrigation reuse.

Land treatment systems with no option to discharge will, in most cases, have seasonal storage that may be converted to system storage for reclaimed water. System storage is defined in the regulation as storage on or off the site and considered part of a reclamation system, satellite reclamation system, or reclaimed water distribution system that is used to store reclaimed water produced by the reclamation system or satellite reclamation system and to equalize flow to or within a reclaimed water distribution system. Land treatment seasonal storage converted to reclaimed water system storage must meet the design, construction and operation requirements for system storage specified in [9VAC25-740-110.C.6](#) unless exempted per [9VAC25-740-110.C.7](#) of the regulation. Where the system storage will be seasonal or greater than 24 hours, a separate point of compliance for monitoring and flow metering or other means to determine daily flows, and a separate monthly monitoring report form should be required for the discharge of the storage facility. More details regarding appropriate monitoring requirements and a contingency plan for system storage are provided in [subdivision III.F.4.i](#).

5. Minimum instream flow

Discharges from WWTFs may augment and during certain times of the year, constitute the entire flow in a stream. Where a WWTF chooses to reclaim for reuse all or a portion of the wastewater that it receives, this will reduce the amount of treated effluent discharged by that facility. The reduced discharge, in turn, may reduce flow in the stream and impact the beneficial uses of the water in the stream at and downstream of the discharge. The degree to which this may become a problem, particularly for water supply planning, will vary with several factors, including characteristics of the receiving stream, beneficial uses of the stream, the size and number of WWTFs discharging to the stream, and of these facilities, the number that will divert all or a portion of their discharge to water reclamation and reuse. Some of these factors will also change over time.

Currently, the Water Reclamation and Reuse Regulation does not require a cumulative impact analysis for discharging WWTFs that choose to divert all or a portion of their permitted

discharge to water reclamation and reuse. However, it is possible in some cases to observe changes to instream flow attributed primarily to reduced WWTF discharges, through the use of stream gage data. This will be monitored by the Office of Surface and Ground Water Supply Planning (OS&GWSP). For existing VPDES permitted WWTFs that will be authorized to reclaim all or a portion of their permitted discharge for reuse, copy the OS&GWSP on the transmittal letter of the modified VPDES permit or administrative authorization in association with a VPDES permit to the owner (see [Attachment E](#)). The same shall apply for WWTFs constructed in the future that choose to do reclamation and reuse through a modification or upgrade to the facilities in place at the time.

M. Future Guidance

1. New or amended guidance

This guidance may be amended or additional separate guidance may be developed to address future amendments to the Water Reclamation and Reuse Regulation and unanticipated significant issues that arise related to water reclamation and reuse. Any new or amended guidance and subsequent updates to the VPDES and VPA permit manuals shall be posted on the DEQNET. Therefore, regional water permit staff are advised to refer to the DEQNET for the most current guidance and permitting procedures.

2. Reclamation and reuse of stormwater

A recent amendment to §10.1-603.4 of the Code of Virginia, which gives authority to the Virginia Soil and Water Conservation Board to adopt regulations for stormwater management programs in Virginia, requires the DCR to develop a regulation specifically for the reclamation and reuse of stormwater. This may affect the use of stormwater management facilities for non-system storage of reclaimed municipal or industrial wastewater. DEQ regional water permit staff will be notified of any impacts that the DCR's regulation for stormwater reclamation and reuse will have on the implementation of the Water Reclamation and Reuse Regulation through updates to this guidance.

IV. List of Attachments

- A. Water Reclamation and Reuse Addendum to an Application for a VPDES or VPA Permit**
- B. Permit Cover Pages, Standards and Special Conditions for Water Reclamation and Reuse**
- C. Monthly Monitoring Report and Attachments**
- D. Checklist for Service Agreements or Contracts**
- E. Correspondence**

**Attachment A - Water Reclamation and Reuse Addendum to an Application for a VPDES
or VPA Permit**

WATER RECLAMATION AND REUSE ADDENDUM TO AN APPLICATION FOR A VIRGINIA POLLUTANT DISCHARGE ELIMINATION SYSTEM PERMIT OR A VIRGINIA POLLUTION ABATEMENT PERMIT

A. Applicant Information

1. Name of Facility: _____
2. Facility Owner: _____
3. Owner's Mailing Address
 - a. Street or P.O. Box _____
 - b. City or Town _____ c. State ____ d. Zip Code _____
 - e. Phone Number _____ f. Fax Number _____
 - g. E-mail address _____
4. Facility Location: _____

Street No., Route No., or Other Identifier

County

Latitude: _____ Longitude: _____
5. Is the operator of the facility also the owner? ___ Yes ___ No
If No, complete A.6. and A.7.
6. Name of Operator: _____
7. Operator's Mailing Address
 - a. Street or P.O. Box _____
 - b. City or Town _____ c. State ____ d. Zip Code _____
 - e. Phone Number _____ f. Fax Number _____
 - g. E-mail address _____

B. Permitting Information

1. This addendum is for a new (check all that apply):

- Reclamation system.
- Satellite reclamation system.
- Reclaimed water distribution system.
- End user¹.
- Not applicable. Proceed to B.2.

Will the above new system or systems or end user be an expansion or modification² to an existing permitted system or end user¹?

- No. Proceed to item B.3.
- Yes. Proceed to item B.2.

¹. Refers specifically to an end user that receives reclaimed water from more than one reclamation system, satellite reclamation system, reclaimed water distribution system, or a combination thereof.

². For the purposes of this addendum, modification to an existing system (i.e., reclamation system, satellite reclamation system or reclaimed water distribution system) or end user¹ is any change to the facilities or reuses of that system or end user¹, respectively, warranting the inclusion of new reclaimed water standards, monitoring requirements or conditions in the permit currently issued to the existing system or end user¹.

2. This addendum is for an existing (check all that apply):

- Reclamation system.
- Satellite reclamation system.
- Reclaimed water distribution system.
- End user¹.

a. Provide the following information for each existing system or end user¹:

System or End User ¹ Name	Type of current permit issued (VPDES or VPA)	Permit Number	Permit Expiration Date

b. List by name all existing permitted systems or end users¹ in B.2.a of the addendum to be expanded or modified².

3. For reclamation systems, satellite reclamation systems, reclaimed water distribution systems and end users¹ that are (i) new, (ii) existing but unpermitted, or (iii) existing, permitted and to be expanded or modified²:

a. Is or will there be any combination of the systems, end users¹, or wastewater treatment works under common ownership or management, including those physically separated from each other?

- No. Proceed to B.3.d.
- Yes. Provide the following information for all systems, end users¹ or wastewater treatment works under common ownership or management:

Designation of Facility*	Name of System, End User ¹ or Wastewater Treatment Works	Name of Common Ownership or Management

* Designation of facility refers to reclamation system, satellite reclamation system, reclaimed water distribution system, end user¹ or wastewater treatment works.

¹ Refers specifically to an end user that receives reclaimed water from more than one reclamation system, satellite reclamation system, reclaimed water distribution system, or a combination thereof.

² For the purposes of this addendum, modification to an existing system (i.e., reclamation system, satellite reclamation system or reclaimed water distribution system) or end user¹ is any change to the facilities or reuses of that system or end user¹, respectively, warranting the inclusion of new reclaimed water standards, monitoring requirements or conditions in the permit currently issued to the existing system or end user¹.

b. Identify by name any combination of the systems (i.e., reclamation, satellite reclamation, reclaimed water distribution), end users¹ or wastewater treatment works with common ownership or management listed in B.3.a. to be covered by one permit. (See addendum instructions)

c. Identify by name any of the systems, end users¹ or wastewater treatment works with common ownership or management listed in B.3.a. to be covered by separate permits.

d. Will a wastewater treatment works, reclamation system, satellite reclamation system or reclaimed water distribution system provide reclaimed water to irrigate property under common ownership or management with that wastewater treatment works, reclamation system, satellite reclamation system or reclaimed water distribution system?

- No.
- Yes. Provide the following information.

Name of Wastewater Treatment Works or System (Reclamation, Satellite Reclamation, Reclaimed Water Distribution)	Location of Irrigation Property*

* Refers to irrigation property that receives or will receive reclaimed water from and is under common ownership or management with the named wastewater treatment works or system in the first column. (See addendum instructions)

e. Will a reclaimed water distribution system that receives reclaimed water from a reclamation system or satellite reclamation system under separate ownership from the reclaimed water distribution system, distribute reclaimed water to end users other than the owner or management of the reclaimed water distribution system?

- Yes.
- No.

If no, will there be a service agreement established between the permittee of the reclamation system and the ownership or management of the reclaimed water distribution system?

- Yes.
- No.

4. For each end user¹, list all the reclamation systems, satellite reclamation systems and reclaimed water distributions from which the end user¹ will receive reclaimed water; and for each listed system, indicate the Level of reclaimed water (i.e., Level 1, Level 2 or both) that it will provide to the end user¹ and if the end user¹ has a service agreement or contract with that system.

¹ Refers specifically to an end user that receives reclaimed water from more than one reclamation system, satellite reclamation system, reclaimed water distribution system, or a combination thereof.

Name of System (Reclamation, Satellite Reclamation, Reclaimed Water Distribution)	Level of Reclaimed Water Provided to End User ¹ (Level 1, Level 2 or both)	Service Agreement or Contract with End User ¹ (Yes/No)

a. Will the end user¹ be under common ownership or management with any of the reclamation systems, satellite reclamation systems or reclaimed water distribution systems listed above?

- No.
- Yes.

If yes, will the end user¹ be covered by the permit of the system?

- No.
- Yes. Indicate the name of the system: _____

b. For all systems listed in B.4 with which the end user¹ has a service agreement or contract, has the end user¹ received notice of failure to comply with the service agreement or contract from any of these systems?

- No.
- Yes. If yes, indicate below the name(s) of the system(s) that issued notice(s) of failure to comply, the date of all notices and a brief description of cause for each notice. Additional information may be attached as necessary. If more than one system has issued a notice of failure to comply to the end user¹, complete D.1.a, D.1.b and D.1.c; D.2 if the reuse of the end user¹ includes irrigation, and E of the addendum. (See addendum instructions)

Name of System that Issued Notice	Date of Notice	Description of Cause for Notice

c. Will the end user¹ blend the reclaimed water that it receives from two or more of the systems listed in B.4?

- No.
- Yes.

If yes, will the end user¹ blend Level 1 and Level 2 reclaimed water?

- No.
- Yes.

¹. Refers specifically to an end user that receives reclaimed water from more than one reclamation system, satellite reclamation system, reclaimed water distribution system, or a combination thereof.

d. Will the end user¹ distribute an portion of the blended reclaimed water to other end users not under common ownership or management with the end user¹?

No.

Yes. If yes, complete applicable sections in C and D of this addendum. (See addendum instructions)

C. General Project Information (See addendum instructions)

For reclamation systems, satellite reclamation systems, and reclaimed water distribution systems, provide the following information. For projects that involve exclusively the distribution of reclaimed water, provide information for only items C.1., C.2., and C.6.

1. A description of the design and a site plan of each system. (See addendum instructions)
2. A general location map. (See addendum instructions)
3. Information regarding each wastewater treatment works that diverts or will divert effluent or source water to the reclamation system to be permitted.

a. Name of Wastewater Treatment Works	VPDES or VPA Permit No. of Facility	General VPDES Watershed Permit No.*

* Refers to a permit issued in accordance with the General VPDES Watershed Permit Regulation for Total Nitrogen and Total Phosphorus Discharges and Nutrient Trading in the Chesapeake Bay Watershed in Virginia (9VAC25-820), and applies only to facilities with existing individual VPDES permits.

b. List all unit wastewater treatment processes used at each wastewater treatment works prior to diversion to the reclamation system.

c. For only those wastewater treatment works listed in C.3.a with one or more significant industrial users (SIUs) indirectly discharging to the treatment works, provide the following information. (See addendum instructions)

¹. Refers specifically to an end user that receives reclaimed water from more than one reclamation system, satellite reclamation system, reclaimed water distribution system, or a combination thereof.

Name of Wastewater Treatment Works	Name of All SIUs Indirectly Discharging to Each Wastewater Treatment Works	Approved Pretreatment Program (Yes/No/NA)*

* A pretreatment program applies only to VPDES permitted POTWs (publicly owned treatment works) with SIUs and may or may not be approved by the Department of Environmental Quality. "NA" means "not applicable".

d. Provide analyses of the effluent or source water to be diverted by each wastewater treatment works to the reclamation system. (See addendum instructions)

4. Information regarding the sewage collections system that diverts or will divert sewage to the satellite reclamation system to be permitted.

a. The name of the sewage collection system and the owner of that system.

b. For the treatment works at the end of the sewage collection system that receives or will receive all remaining sewage, provide:

Name of the treatment works: _____

VPDES or VPA permit no.: _____

c. Provide the following information for each SIU that discharges directly or indirectly to the sewage collection pipeline from which sewage or municipal wastewater is or will be diverted to the satellite reclamation system, excluding any downstream SIUs whose discharge has no potential to backflow to the satellite reclamation system intake.

Name of SIU	Location (Latitude & Longitude) of SIU	Distance Between SIU and Satellite Reclamation System*

* Distance along the length of the sewage collection system line or lines.

d. Provide concentrations of the following parameters for sewage or municipal wastewater to be diverted from the sewage collection system to the satellite reclamation system at the point of diversion.

Analyses for other parameters may be provided, if available. Analyses of the sewage or municipal wastewater for pollutants of concern believed to be discharged by the SIUs identified in C.4.c may also be required. (See addendum instructions)

BOD₅ (mg/l) _____

TSS (mg/l) _____

Other (if available or required for SIU discharges): _____

5. Information regarding the reclamation system or satellite reclamation system to be permitted.

a. Indicate if the system will reclaim industrial wastewater as follows: (See addendum instructions)

- At an industrial facility for reuse exclusively on the property of the industrial facility. Complete C.5.b.
- At an industrial facility for reuse on and off, or exclusively off the property of the industrial facility
- As part of a mixture with sewage or municipal wastewater where the industrial wastewater composes less than or equal to 90 % of the mixture
- As part of a mixture with sewage or municipal wastewater where the industrial wastewater composes greater than 90 % of the mixture

b. For reuse of reclaimed industrial wastewater on exclusively the property of the industrial facility where the reclaimed water is produced, check all that apply:

- The reclaimed industrial wastewater for reuse does not contain or is not expected to contain pathogens or other constituents in sufficient quantities and with a potential for human contact that may be harmful to human health.
- Reuse of the reclaimed industrial wastewater involves a closed or isolated system that prevents worker contact with reclaimed water of the system.
- Other measures are in place including but not limited to, applicable federal and state occupational safety and health standards and requirements to adequately inform and protect employees from pathogens or other constituents that may be harmful to human health in the reclaimed industrial water to be reused at the industrial facility.

If none of the above apply, complete the remainder of the addendum. If any of the above apply, complete only C.5.c, C.5.d and section E of the addendum following C.5.b. (See addendum instructions)

c. Identify the quality of reclaimed water to be produced relative to the planned reuse or reuses of the reclaimed water: (See addendum instructions)

- Level 1
- Level 2
- Level 1 and Level 2
- Industrial (applicable to reclamation of industrial wastewater)
- Unknown (applicable to unlisted reuses)

d. List any other physical, chemical, and biological characteristics and constituent concentrations that may affect the intended reuse of the reclaimed water with respect to adverse impacts to public health or the environment. (See addendum instructions)

e. Indicate the designated design capacity of the reclamation system or satellite reclamation system. (See addendum instructions)

6. For each proposed reuse of reclaimed municipal wastewater that is not listed in 9VAC25-740-90 A of the Water Reclamation and Reuse Regulation or for any reuse of reclaimed industrial wastewater, provide the following information.

a. Describe the proposed reuse.

b. Describe any known risks of the proposed reuse to public health.

c. Describe the degree of public access and human exposure, including worker contact, that is or will be caused by the proposed reuse.

d. Indicate the reclaimed water treatment necessary to prevent nuisance conditions by the proposed reuse.

e. Describe the potential for improper or unintended use of reclaimed water resulting from the proposed reuse. (See addendum instructions)

f. For new indirect potable reuse proposals, provide the following information:

(1) Name of the surface water to receive the reclamation system discharge and from which water will be withdrawn for potable water supply: (See addendum instructions)

(2) Receiving water body type:

- Lake or pond
 River or stream

(3) Name of water treatment facility that will withdraw water for potable water supply:

(4) Attach a map that shows the location of both the discharge from the reclamation system and the intake of the water treatment facility.

(5) Approximate the shortest distance by way of the surface water named in C.6.f (1) above, between the discharge of the reclamation system and the intake of the water treatment facility:
_____ (feet)

(6) Approximate the residence or transport time between the discharge of the reclamation system and the intake of the water treatment facility: _____

(7) Approximate the mixing ratio of reclaimed water to ambient water at the intake of the water treatment facility: _____

D. Reclaimed water management (RWM) plan

1. For a reclamation system, satellite reclamation system or reclaimed water distribution system that provides or will provide reclaimed water directly to an end user or end users, including an end user that is also the applicant or permittee, submit a Reclaimed Water Management (RWM) plan to contain the following information. (See addendum instructions)

- a. A description and map of the expected service area to be covered by the RWM plan for the term of the permit for the project.
- b. A current inventory of impoundments, ponds or tanks within the service area under D.1.a of the addendum, used for:
 - (1) System storage of reclaimed water and, as applicable, reject water storage that are under the control of the applicant or permittee; and
 - (2) Non-system storage of reclaimed water.
- c. A water balance that accounts for the volumes of reclaimed water to be generated, stored, reused and discharged.
- d. An example of service agreements or contracts to be established by the applicant or permittee with end users regarding implementation of and compliance with the RWM plan.
- e. A description of monitoring of end users by the applicant or permittee to verify compliance with the terms of their agreements or contracts. Monitoring must include, at a minimum, metering the volume of reclaimed water consumed by end users.
- f. An education and notification program.
- g. A cross-connection and backflow prevention program.
- h. A description of how the quality of reclaimed water in the reclaimed water distribution system will be maintained to meet standards for the intended reuse(s) of that reclaimed water.

2. Supplemental irrigation rates, nutrient management plans (NMPs) and site plans for irrigation reuse of reclaimed water.

a. Do the reuse categories identified within the service area under D.1.a of the addendum include irrigation reuses of reclaimed water as follows? (See addendum instructions)

- Bulk irrigation reuse.
- Non-bulk irrigation reuse.
- There will be no irrigation reuses. (Proceed to E.)

b. Will all irrigation with reclaimed water within the service area of the RWM plan be supplemental irrigation? (See addendum instructions)

- Yes. Explain how supplemental irrigation rates will be achieved for bulk and non-bulk irrigation reuse of reclaimed water.
- No. (Proceed to E.)

c. Indicate the concentration of total nitrogen (N) and total phosphorus (P) present or expected to be present in the reclaimed water for irrigation reuse:

- Annual average concentration of total N and total P greater than 8.0 mg/l and 1.0 mg/l, respectively

(> Biological Nutrient Removal or BNR);

or

Annual average concentration of total N and total P less than or equal to 8.0 mg/l and 1.0 mg/l, respectively (\leq BNR).

d. For each irrigation property listed under B.3.d of this addendum that is a bulk irrigation reuse site, submit the following with the RWM plan: (See addendum instructions)

(1) A nutrient management plan if:

(a) The reclaimed water applied to the irrigation reuse site is > BNR (see D.2.c above), or

(b) Independent of the reclaimed water nutrient content and in addition to irrigation reuse (i) there is no option to dispose of the reclaimed water through a VPDES permitted discharge, or (ii) there is an option to dispose of the reclaimed water through a VPDES permitted discharge, but the VPDES permit does not allow discharge of the full nutrient load under design flow. With the nutrient management plan, provide a copy of the letter from the Department of Conservation and Recreation, Division of Soil and Water Conservation approving the nutrient management plan.

(2) A site plan.

e. For all non-bulk irrigation reuse of reclaimed water that is > BNR (see D.2.c above) within the service area specified in D.1.a, including each irrigation property listed under B.3.d that is a non-bulk irrigation reuse site, describe measures that are or will be implemented to manage nutrient loads from the non-bulk irrigation reuse. Attach additional information as needed. (See addendum instructions)

E. Certification Statement (See addendum instructions)

I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

Signature: _____ Date: _____

Signature: _____ Date: _____

Name of person(s) signing above (printed or typed):

Title(s) of person(s) signing above:

WATER RECLAMATION AND REUSE ADDENDUM TO AN APPLICATION FOR A VIRGINIA POLLUTANT DISCHARGE ELIMINATION SYSTEM PERMIT OR A VIRGINIA POLLUTION ABATEMENT PERMIT

ADDENDUM INSTRUCTIONS

WHO MUST COMPLETE THE ADDENDUM

Owners or operators of **existing permitted** reclamation systems, satellite reclamation systems, reclaimed water distribution systems, and end users¹ must complete this addendum with the application to reissue a VPDES or VPA permit or independent of the permit application and for **only expansion or modification² of the existing permitted facilities**.

Owners or operators of **new or existing unpermitted** reclamation systems, satellite reclamation systems, reclaimed water distribution systems or end users¹ must complete this addendum to submit with an application for either a Virginia Pollutant Discharge Elimination System (VPDES) permit or Virginia Pollution Abatement (VPA) permit.

WHERE TO FILE THE ADDENDUM

The completed addendum must be submitted to the DEQ regional office covering the area where the project is or will be located. DEQ regional office information can be found on the DEQ internet website at <http://www.deq.virginia.gov/regions/homepage.html> or can be obtained by calling the DEQ Central Office in Richmond, Virginia at (804) 698-4000.

INSTRUCTIONS TO COMPLETE THE ADDENDUM

This addendum is to be submitted as part of a VPDES or VPA permit application or permit modification for water reclamation and reuse projects. Complete all items unless indicated otherwise, or enter "NA" for "not applicable". Requested information should be entered on the lines or spaces and in the boxes provided in the addendum, or as attachments to the addendum if needed.

Instructions are only provided for specific items contained in the addendum. Applicants will be referred to the instructions to complete these items by the notation "(See addendum instructions)".

Definitions for terms used in the addendum are available in 9VAC25-740-10 of the Water Reclamation and Reuse Regulation.

Note: Information required for Sections A, B, C and D of the addendum may be provided, in part, by referencing specific information previously submitted to the DEQ unless changes have occurred that require the submission of new or more current information.

¹ Refers specifically to an end user or end users that receives reclaimed water from more than one reclamation system, satellite reclamation system, reclaimed water distribution system, or a combination thereof.

² For the purposes of this addendum, modification to an existing system (i.e., reclamation system, satellite reclamation system or reclaimed water distribution system) or end user¹ is any change to the facilities or reuses of that system or end user¹, respectively, warranting the inclusion of new reclaimed water standards, monitoring requirements or conditions in the permit currently issued to the existing system or end user¹.

B. Permitting Information

B.1.a., B.2.c and B.3 For the purposes of this addendum, modification to an existing system (i.e., reclamation system, satellite reclamation system or reclaimed water distribution system) or end user¹ is any change to the facilities or reuses of that system or end user¹, warranting the inclusion of new reclaimed water standards, monitoring requirements or conditions in the permit currently issued to the existing system or end user¹.

B.3.b. An end user¹ may be authorized under the permit issued to one of the reclamation systems, satellite reclamation systems, or reclaimed water distribution systems that supply reclaimed water to the end user provided the end user is under common ownership or management with the permitted system.

B.3.d. In the table under the column heading “Location of Irrigation Property”, briefly describe the location of the irrigation property to receive reclaimed water that is under common ownership or management with the wastewater treatment works or system identified in the first column of the table on the same row. Also, identify the location of the irrigation property on a map to attach to the addendum or on the service area map in the Reclaimed Water Management plan described in D.1.a of the addendum.

B.4.b. If an end user¹ fails to comply with the terms and conditions of a service agreement or contract between the end user¹ and more than one reclamation system, satellite reclamation system and/or reclaimed water distribution system from which the end user¹ receives reclaimed water, complete D.1.a, D.1.b and D.1.c; D.2 if the reuse of the end user¹ includes irrigation, and E of the addendum.

B.4.d. Where an end user¹ will blend the reclaimed water that it receives from more than one reclamation system, satellite reclamation system and/or reclaimed water distribution system for subsequent distribution to other end users not under common ownership or management with the end user¹, the end user¹ is considered a reclaimed water agent and is required to complete information pertaining to reclaimed water distributions systems and providers of reclaimed water in sections C and D of the addendum.

C. General Project Information

C.1 For each reclamation system, satellite reclamation system, and reclaimed water distribution system, provide a design description and site plan showing operations and unit processes of the system, including and as applicable, treatment, storage, distribution, reuse and disposal facilities, and reliability features and controls. Wastewater treatment works, reclamation systems and reclaimed water distribution systems previously permitted need not be included unless they are directly tied into the new units or are critical to the understanding of the complete project.

For a reclamation system that receives source water from more than one wastewater treatment works, list all the unit treatment processes of only the reclamation system. For a satellite reclamation system or where a wastewater treatment works and a reclamation system are or will be one in the same facility and will be covered by a single VPDES or VPA permit, list all the unit treatment processes for the satellite reclamation system or combined wastewater treatment works and reclamation system.

C.2 For each reclamation system, satellite reclamation system, and reclaimed water distribution system, provide a general location map that shows the orientation of the system with reference to at least two geographic features (e.g., numbered roads, named streams or rivers, etc.). A general location map for a reclaimed water distribution system may be included in the map of the service area to be submitted in the Reclaimed Water Management (RWM) plan per D.1.a of the addendum instructions.

C.3.c For all those wastewater treatment works listed in C.3.a of the addendum with one or more significant industrial users (SIUs) indirectly discharging to the treatment works, list the name of the wastewater treatment works, the names of all SIUs indirectly discharging to that wastewater treatment works, and indicate if the wastewater treatment works has an approved pretreatment program to manage pollutants of concern discharged

¹ Refers specifically to an end user that receives reclaimed water from more than one reclamation system, satellite reclamation system, reclaimed water distribution system, or a combination thereof.

by SIUs. Some of this information may be obtained from VPDES or VPA permit files or, if applicable, the pretreatment program files of some VPDES permitted facilities. For **only** a VPDES permitted publicly owned treatment works (POTW) with SIUs, this information is available on Form 2A, Part F of the VPDES permit application and in the pretreatment program file if the facility is also required to have a pretreatment program. For VPA permitted wastewater treatment works with SIUs, this information may be available under Form C, Part C-I or Form D, Part D-I of the VPA permit application. If permit or pretreatment program files are referenced, please verify that they actually contain the requested information before doing so. Additional references should be used to provide complete, current and accurate information.

Only VPDES permitted POTWs with SIUs may be required to have a pretreatment program and not all pretreatment programs are or will be approved. Information regarding the approval status of a pretreatment program for a particular facility can be obtained from the DEQ Regional Office where the project is or will be located.

C.3.d Provide analyses of the effluent or source water to be diverted by each wastewater treatment works to the reclamation system. Provide effluent analyses and data submitted with the application for either a VPDES permit in accordance with 9VAC25-31-100 or for a VPA permit application in accordance with 9VAC25-32-60 and VPA Permit Application Form C, Part C-I or Form D, Part D-IV, for each wastewater treatment works as applicable.

C.4.c For each SIU that discharges directly or indirectly to the sewage collection pipeline from which sewage or municipal wastewater is or will be diverted to the satellite reclamation system, excluding any downstream SIUs whose discharge has no potential to backflow to the satellite reclamation system intake, provide the name of the SIU, the location in terms of latitude and longitude of the SIU, and distance between the SIU and the satellite reclamation system along the sewage collection system line or lines.

Some of this information may be obtained from the VPDES or VPA permit files or, if applicable, the pretreatment program files of a VPDES permitted treatment works at the end of the sewage collection system that receives or will receive all remaining sewage. For only a VPDES permitted POTW with SIUs, some information is available on Form 2A, Part F of the VPDES permit application and in the pretreatment program file if the facility is also required to have a pretreatment program. For VPA permitted wastewater treatment works with SIUs, this information may be available under Form C, Part C-I or Form D, Part D-I of the VPA permit application. If permit or pretreatment program files of the treatment works at the end of the sewage collection system are referenced, please verify that they actually contain the requested information before doing so. Additional references should be used to provide complete, current and accurate information regarding the SIUs, particularly for the location (latitude and longitude) and distance between each SIU and the satellite reclamation system.

C.4.d For all satellite reclamation systems, provide, at a minimum, the concentration of BOD₅ and Total Suspended Solids (TSS) in the municipal wastewater or sewage that is received by the satellite reclamation system from the sewage collection system. The BOD₅ and TSS concentrations should be based on either actual analyses or expected concentrations from a wastewater treatment design reference deemed acceptable by the DEQ, and should be representative of the municipal wastewater or sewage at the point of diversion from the sewage collection system to the satellite reclamation system. If other data regarding the characteristics of the municipal wastewater or sewage are available, this information may also be submitted.

For a satellite reclamation system with SIUs that discharge directly or indirectly to the sewage collection pipeline from which sewage or municipal wastewater is or will be diverted to the satellite reclamation system, excluding any downstream SIUs whose discharge has no potential to backflow to the satellite reclamation system intake, analyses of the sewage or municipal wastewater received by the satellite reclamation system from the sewage collection system may be required. The analyses for parameters in addition to BOD₅ and TSS will be based on pollutants of concern discharged by the SIUs.

C.5.a Check all the boxes that apply to the reclamation system to be permitted. If the first box is checked for reuse of reclaimed industrial wastewater on exclusively the property of the industrial facility where the

reclaimed water is produced, continue to C.5.b. For a reclamation system that reclaims or will reclaim industrial wastewater combined with sewage or municipal wastewater, and the industrial wastewater will compose less than or equal to 90 % of the mixture, check the 3rd box. For a reclamation system that reclaims or will reclaim industrial wastewater combined with sewage or municipal wastewater, and the industrial wastewater will compose greater than 90 % of the mixture, check the 4th box. Other categories with boxes are self-explanatory.

C.5.b Check all boxes that apply to the reuse of reclaimed industrial water on exclusively the property of the industrial facility where the reclaimed water is produced. If none of the boxes are checked, complete the remainder of the addendum. If one or more of the boxes are checked, complete only C.5.c, C.5.d and section E of the addendum following C.5.b. The DEQ Regional Office may arrange to inspect the reclamation system and reuse of reclaimed industrial water at the industrial facility to determine if it may be excluded from the requirements of the Water Reclamation and Reuse Regulation (9VAC25-740).

C.5.c Indicate the quality of reclaimed water to be produced relative to the planned reuse or reuses of the reclaimed water. Following the instructions below, check only one box that is most applicable to the reclamation system or satellite reclamation system to be permitted.

Reclamation systems and satellite reclamation systems that reclaim municipal wastewater

Step 1. For an existing or proposed reclamation system that reclaims or will reclaim municipal wastewater or a satellite reclamation system that reclaims or will reclaim sewage, refer to 9VAC25-740-70 A of the Water Reclamation and Reuse Regulation to determine which standards the system meets or will be capable of meeting. If the system is not capable of meeting standards for Level 2 reclaimed water at a minimum, the water produced by the system is not reclaimed for the purpose of reuse as defined in the Water Reclamation and Reuse Regulation.

Step 2. The reclaimed water standards to be included in the permit for the reclamation systems or satellite reclamation system will be determined by: (a) the treatment capabilities of the proposed or existing system, and (b) the proposed or existing reuses of reclaimed water produced by the system. Refer to 9VAC25-740-90 A of the Water Reclamation and Reuse Regulation to identify existing or planned reuses of reclaimed water from the reclamation system or satellite reclamation system and the minimum standard requirements, either Level 1 or Level 2, required for those reuses. If all reuses require Level 1 or a combination of Level 1 and Level 2, the reclamation system or satellite reclamation system must be capable of producing a minimum of Level 1 reclaimed water. If all reuses require Level 2, the reclamation system or satellite reclamation system must be capable of producing a minimum of Level 2 reclaimed water.

For any proposed or existing reuses **not** specifically listed in 9VAC25-740-90 A, it may be necessary to develop minimum standard requirements for reclaimed water on a case-by-case basis. In this situation, check the box in C.5.b. for “Unknown (applicable to unlisted reuses)” and complete C.6. of the addendum.

Step 3. Confirm that the treatment capabilities of the proposed or existing reclamation system or satellite reclamation system (Step 1) correspond with the appropriate minimum standard requirement (Level 1 or Level 2) for the proposed or existing reuses of reclaimed water from that system (Step 2). Where they correspond, check the box in C.5.b. for either “Level 1” or “Level 2”, as applicable. In some cases, an existing or proposed reclamation system or satellite reclamation system has or will have the option to produce both Level 1 and Level 2 reclaimed water with separate storage and delivery to separate distribution systems for each of Level 1 and Level 2 reclaimed water. In this case, check the box in C.5.b. for the combination of “Level 1 and Level 2”.

Where the treatment capabilities of the proposed or existing reclamation system or satellite reclamation system (Step 1) do not correspond with the appropriate minimum standard requirement (Level 1 or Level 2) for the proposed or existing reuses of reclaimed water from that system (Step 2), (i.e., the reuses require a minimum of Level 1 reclaimed water but the reclamation system or satellite reclamation system is only capable of producing Level 2 reclaimed water), the reuses must be limited to those that can accept Level 2 reclaimed water or the treatment capabilities of the system must be upgraded to produce Level 1 reclaimed water. If the reuses will be limited to correspond to the treatment capabilities of the reclamation system or satellite reclamation system, check the box in C.5.b. of the standard (Level 1 or Level 2) identified in Step 1 that can be met by the system. If

the reclamation system or satellite reclamation system will be modified or upgraded to meet the minimum standard requirement of the reuse(s) identified in Step 2, check the box in C.5.b. that corresponds with the minimum standard requirement (Level 1 or Level 2) for the reuse(s).

Reclamation systems that reclaim industrial wastewater

There are no specific standards for the reclamation of industrial wastewater. These are to be established on a case-by-case for each proposal to reclaim industrial wastewater. If the project involves the reclamation of industrial wastewater check “Industrial (applicable to reclamation of industrial wastewater)”.

If the project involves the reclamation of industrial wastewater, which will not be distributed for reuses off the industrial site, the project may be excluded from the requirements of the Water Reclamation and Reuse Regulation (9VAC25-740-50 A). Please contact the DEQ Regional Office that covers the project location to determine whether or not a permit may be required.

C.5.d The Water Reclamation and Reuse Regulation allows for the reclamation of industrial water in addition to municipal wastewater or sewage. Due to the variable composition of industrial wastewater compared to municipal wastewater or sewage, and the absence of analogous pretreatment program requirements for reclamation systems of industrial wastewater in the regulation, the applicant or permittee must provide other physical, chemical, and biological characteristics and constituent concentrations that may affect the intended reuse of the reclaimed water with respect to adverse impacts to public health or the environment.

The applicant or permittee must also provide this information for the reclamation of municipal wastewater or sewage to produce Level 2 reclaimed water where the wastewater treatment works providing effluent or source water to the reclamation system has significant industrial users but is not required to have a pretreatment program or the equivalent to a pretreatment program in accordance with 9VAC25-740-150 A.

C.5.e The designated design capacity of a reclamation system or satellite reclamation system will be the design flow or some percentage of the design flow for a wastewater treatment facility (WWTF) that provides source water or effluent to the reclamation system or satellite reclamation system. The permitted design flow of a WWTF is based on the design capacity of the facility, which is determined as the average rate of influent flow per 24 hours that can be reliably treated by that facility based on projected flow estimates to be received at full buildout. The WWTF must be designed to process this influent flow 365 days a year with appropriate peak factors provided to meet reliability and redundancy requirements.

When all the effluent of a WWTF will be discharged to a reclaimed water distribution system, a non-system storage facility or directly to a reuse (water reclamation and reuse) with little or no additional separate treatment, the designated design capacity of the reclamation system shall be the design flow of the WWTF. This applies to satellite reclamation systems and some reclamations systems that will not have the option to discharge to surface waters.

When a WWTF will have an effluent discharge to surface waters and will divert a portion of the treated effluent that it produces with little or no additional treatment to reclamation and reuse, the designated design capacity of the reclamation system shall be the maximum amount of treated effluent the WWTF shall divert to reclamation and reuse at any one time. For example, if the permitted design flow of a WWTF is 1.0 MGD and a maximum of 50% of its design flow may be diverted to reclamation and reuse at any one time, the designated design capacity of the reclamation system shall be 0.5 MGD.

When additional separate treatment must be provided to the effluent of the WWTF in order to produce reclaimed water suitable for specific end uses, the designated design capacity of the reclamation system will be the design capacity of only those additional, separate treatment components used to produce the higher quality reclaimed water. For example, the permitted design flow of a WWTF capable of producing Level 2 reclaimed water is 2.0 MGD. However, the same facility will divert a maximum of 5% (or 0.1 MGD) of its design flow to filtration and higher level disinfection to produce Level 1 reclaimed water. The designated design capacity of the Level 1 reclamation system shall be 0.1 MGD. In this same example, the designated design capacity of the

Level 2 reclamation system shall be 2.0 MGD for a non-discharging WWTF or some percentage of 2.0 MGD if the permittee also has an effluent discharge to surface waters.

C.6.e For each proposed reuse of reclaimed municipal wastewater that is not listed in 9VAC25-740-90 A of the Water Reclamation and Reuse Regulation or for any reuse of reclaimed industrial wastewater, provide a general narrative statement that describes features of the water reclamation and reuse project or steps to be taken by the applicant or permittee to prevent improper or unintended use of reclaimed water resulting from the proposed reuse. Based on this statement, also indicate the potential for such improper or unintended use.

C.6.f For new indirect potable reuse projects that are proposed after October 1, 2008, provide the information requested for items C.6.f (1) through C.6.f (7). Associated with each indirect potable reuse project, there will be a potable water withdrawal by a water treatment plant located on the surface water to which the reclamation system will discharge. Enter the name of the water treatment plant for item C.6.f (3). The location information requested for item C.6.f (4), should be submitted on a USGS topographic map, preferably 7.5 minute series where available.

D. Reclaimed water management (RWM) plan.

D.1. A Reclaimed Water Management (RWM) plan is required for a reclamation system, satellite reclamation system or reclaimed water distribution system that provides reclaimed water directly to an end user or end users, including an end user that is also the applicant or permittee. Submit one RWM plan for each reclamation system, satellite reclamation system, reclaimed water distribution system or combination thereof, to be authorized by a separate permit.

Where the applicant or permittee is the provider of reclaimed water and the exclusive end user of that reclaimed water, or an end user¹ that fails to comply with the terms and conditions of a service agreement or contract between the end user¹ and more than one provider from which it receives reclaimed water, submit information for only D.1.a, D.1.b and D.1.c.

D.1.a. The description and map of the area served reclaimed water by the provider (service area) must include existing and anticipated expansion of the service area that is likely to occur within the term of the permit to be issued (i.e., five years for a VPDES or ten years for a VPA permit). The map must identify all reuses according to reuse categories specified in 9VAC25-740-90 A of the Water Reclamation and Reuse Regulation (or other categories that may be developed for reuses that are identified and described in C.6 of the addendum) and their locations within the service area. The map must also identify and show the location of all public potable water supply wells and springs, and public water supply intakes, within the boundaries of the service area. If this addendum is to reissue a permit for existing systems that have been expanded or modified² since the issuance or last reissuance of the permit, provide an updated description and map of the service area identifying any changes to the service area, if applicable.

Where the applicant or permittee is the provider of reclaimed water and a non-exclusive end user of that reclaimed water, the description and map of the service area must include property under common ownership or management with the applicant or permittee if the property is to receive reclaimed water for reuse from the applicant or permittee.

D.1.b. Submit a current inventory of reject water storage, system storage and non-system storage facilities located within the service area of the RWM plan. For a previously permitted reclamation system, satellite reclamation system or reclaimed water distribution system with an existing inventory, include any amendments

¹. Refers specifically to an end user that receives reclaimed water from more than one reclamation system, satellite reclamation system, reclaimed water distribution system, or a combination thereof.

². For the purposes of this addendum, modification to an existing system (i.e., reclamation system, satellite reclamation system or reclaimed water distribution system) or end user¹ is any change to the facilities or reuses of that system or end user¹, respectively, warranting the inclusion of new reclaimed water standards, monitoring requirements or conditions in the permit currently issued to the existing system or end user¹.

to the inventory that have been made since the permit issuance or last permit reissuance for the system. The inventory must include the following:

1. Name or identifier for each storage facility,
2. Location of each storage facility (including latitude and longitude),
3. Function of each storage facility (i.e., reject water storage, system storage or non-system storage),
4. Type of each storage facility (i.e., covered tank, uncovered tank, lined pond, unlined pond, etc.), and
5. Location (latitude and longitude) and distance of the nearest potable water supply well and spring, and public water supply intake, to each storage facility within 450 feet of that facility.

D.1.c. Submit a water balance that accounts for the volumes of reclaimed water to be:

1. Generated by the reclamation system or satellite reclamation system. This is assumed to be the designated design flow of the system. See C.5.e of the addendum instructions for the definition of designated design flow.
2. Stored in reject water storage, system storage and non-system storage facilities. For non-system storage, include the volumes of only those facilities under common ownership or management with the reclaimed water provider. All storage facilities, including landscape impoundments used for non-system storage, can not discharge to surface waters of the state except in the event of a storm greater than the 25-year 24-hour storm.
3. Reused by reuse categories specified in D.1.a. of the addendum. The water balance must include for each reuse category:
 - (a) Water delivered or to be delivered to all end users downstream of their service connection to the reclaimed water distribution system, excluding reclaimed water in storage facilities specified in D.1.c.2 of the addendum instructions; and
 - (b) Seasonal and annual reclaimed water demand based on projected volumes for new projects or actual volumes for existing projects.
4. Discharged through a VPDES permitted outfall for reclamation systems, back to a sewage collection system for satellite reclamation systems, or otherwise disposed (e.g., via a land treatment system).

D.1.d. Submit examples of a service agreements or contracts to be established between the provider of the reclaimed water and end users. More than one example service agreement or contract may be developed by a provider of reclaimed water for different end users or reuse categories. Each example service agreement or contract must contain, at a minimum, the following:

1. Prohibitions and requirements specified in 9VAC25-740-50 B and 9VAC25-740-170 that apply to the particular planned reuse of each end user.
2. A requirement for property owners to report all potable and non-potable water supply wells on their property to the provider of the reclaimed water and to comply with appropriate setback distances for wells where reclaimed water will be used on the same property.
3. A statement that the provider of reclaimed water shall also reserve the right to terminate the agreement and withdraw service for any failure by the end user to comply with the terms and conditions of the agreement or contract if corrective action for such failure is not taken by the end user.
4. Language explaining the proper use of reclaimed water by the end user for the purpose of managing nutrients from non-bulk irrigation reuse of reclaimed water that is > BNR (i.e., has an annual average concentration of total N and total P greater than 8.0 mg/l and 1.0 mg/l, respectively) within the service area specified in D.1.a of the addendum.
5. A requirement for the end user to submit the following for each bulk irrigation reuse site that is not

under common ownership or management with the wastewater treatment works, reclamation system, satellite reclamation system or reclaimed water distribution system from which it receives reclaimed water:

(a) A nutrient management plan (NMP) for each irrigation reuse site that receives or will receive reclaimed water that is > BNR (i.e., has an annual average concentration of total N and total P greater than 8.0 mg/l and 1.0 mg/l, respectively). The NMP must be prepared by a nutrient management planner certified by the Department of Conservation and Recreation (DCR) and must be current in accordance with the Nutrient Management Training and Certification Regulations, 4 VAC 5-15-10 et seq.

(b) A site plan as described under D.2.d (2) of the addendum instructions.

D.1.e. Describe how end users will be monitored via metering of reclaimed water consumed and other means to verify compliance with the terms of their service agreements or contracts with the provider of reclaimed water. Other means of monitoring may include periodic, random inspection of end user facilities and records related to reclaimed water reuse.

D.1.f. Submit an education and notification (E&N) program only if reuses of reclaimed water within the service area will:

- Require Level 1 reclaimed water,
- Be in areas accessible to the public, **or**
- Are likely to have human contact.

The E&N program has separate components for education and notification. For the education component, the E&N program must contain, at a minimum, the following:

1. Information to be provided to end users and the public likely to have contact with reclaimed water, regarding the origin, nature, and characteristics of the reclaimed water; the manner in which the reclaimed water can be used safely; and uses for which the reclaimed water is prohibited or limited.
2. A description of all modes of communication to be used for education and distribution of information, including, but not limited to, meetings, distribution of written information, the news media (i.e., news papers, radio, television or the internet), and advisory signs as described in 9VAC25-740-160.
3. A description and schedule of educational activities for individual end users. End users must receive program education at the time of their initial connection to the reclaimed water distribution system. For non-bulk irrigation end users of reclaimed water > BNR (i.e., reclaimed water having an annual average concentration of total N and total P greater than 8.0 mg/l and 1.0 mg/l, respectively), program education must be provided at least annually.

The notification component of the E&N program must contain procedures to notify end users and the affected public of treatment failures at the reclamation system that:

1. Can adversely impact human health, or
2. Result in loss of reclaimed water service.

At a minimum, notification procedures described in 9VAC25-740-170 A 2 must be included in the E&N program.

D.1.g. Submit a cross-connection and backflow prevention program that:

1. Evaluates the potential for cross-connections of the reclaimed water distribution system to a potable water system and backflow to the reclaimed water distribution system from industrial end users,
2. Evaluates the public health risks associated with possible backflow from industrial end users,
3. Describes inspections to be performed by the owner or management of the reclaimed water distribution system at the time end users connect to the system and periodically thereafter to prevent cross-connections to a potable water system and backflow from industrial end users as determined necessary through the

program evaluation, and

4. Insures that cross-connection and backflow prevention design criteria specified in 9VAC25-740-110 B for reclaimed water distribution systems are implemented.

Note: A backflow prevention device is required on the reclaimed water service connection to an industrial end user, unless evaluation by the cross-connection and backflow prevention program determines that there is minimal risk to public health associated with possible backflow from the industrial end user or that there will be no backflow from the industrial end user capable of contaminating the reclaimed water supply.

D.1.h. Describe how reclaimed water quality will be maintained in the reclaimed water distribution system to meet the standards for the intended reuse(s) of the reclaimed water in accordance with 9VAC25-740-90. The detail of the description will vary according to the size of the reclaimed water distribution system, volume and type (e.g., covered or uncovered) of system storage within the distribution system, and minimum standards required for all end uses of reclaimed water delivered by the distribution system. Distribution systems should consider, at a minimum, accurate flow recording throughout the system and the ability to monitor disinfection residual (i.e., chlorine or other) to prevent bacteria regrowth and increased turbidity.

D.2.a. Check all boxes that apply. Per the Water Reclamation and Reuse Regulation, bulk irrigation reuse is defined as reuse of reclaimed water for irrigation of an area greater than five acres on one contiguous property and non-bulk irrigation reuse is defined as reuse of reclaimed water for irrigation of individual areas less than or equal to five acres. If irrigation is not identified as a reuse of reclaimed water within the service area of the RWM plan (see addendum instructions for D.1.a), proceed to E. of the addendum.

D.2.b. Supplemental irrigation is defined in the Water Reclamation and Reuse Regulation (9VAC25-740) as irrigation, which in combination with rainfall, meets but does not exceed the water necessary to maximize production or optimize growth of the irrigated vegetation. If irrigation (bulk or non-bulk) with reclaimed water within the service area of the RWM plan shall be supplemental, check “Yes” and provide the following:

1. For non-bulk irrigation reuse, a description of educational materials and instructions for non-bulk irrigation end users explaining how supplemental irrigation is to be achieved, and a description of how this information will be distributed; and
2. For bulk irrigation reuse by the applicant and end users other than the applicant, the methodology(s) that will be used to calculate supplemental irrigation. By definition, supplemental irrigation allows the application of water up to but not in excess of the amount necessary to “maximize production or optimize growth of the irrigated vegetation”. Where it is demonstrated that irrigation with reclaimed water has or will adversely impact the productivity or growth of the irrigated vegetation related to the salt content of the reclaimed water, the definition allows the application of additional water, as necessary, to leach salts beyond the root zone of the irrigated vegetation. Therefore, a volume of reclaimed water less than or equal to ten percent of the water lost by evapotranspiration from the irrigated vegetation may be used for leaching and shall be included in the calculation of supplemental irrigation. Any additional volume of water required for leaching to maximize production or optimize growth of the irrigated vegetation shall be provided from sources other than reclaimed water (e.g., rainwater, potable water, etc.) and shall also be included in the calculation of supplemental irrigation.

Irrigation with reclaimed water at rates greater than supplemental irrigation shall not be permitted as irrigation reuse, but may be permitted as land treatment in accordance with the design criteria of the Sewage Collection and Treatment Regulations, 9VAC25-790. If irrigation with reclaimed water within the service area of the RWM plan will not be supplemental irrigation, check “No” and proceed to E. of the addendum.

D.2.d. Where the treatment works or system to be permitted and the property to which the system distributes or will distribute reclaimed water for bulk irrigation reuse are identified in B.3.d of the addendum, submit the following with the RWM plan required per D.1 of the addendum:

- (1) A nutrient management plan (NMP) for each of the bulk irrigation reuse site if:
 - (a) The reclaimed water applied to the irrigation reuse site is > BNR (i.e., has an annual average

concentration of total N and total P greater than 8.0 mg/l and 1.0 mg/l, respectively). The NMP must be prepared by a nutrient management planner certified by the Department of Conservation and Recreation, Division of Soil and Water Conservation (DCR) and must be current in accordance with the Nutrient Management Training and Certification Regulations, 4 VAC 5-15; **or**

(b) Independent of the reclaimed water nutrient content and in addition to irrigation reuse (i) there is no option to dispose of the reclaimed water through a VPDES permitted discharge, or (ii) there is an option to dispose of the reclaimed water through a VPDES permitted discharge, but the VPDES permit does not allow discharge of the full nutrient load under design flow. The latter situation would typically, but not exclusively, apply to a treatment works with a VPDES permitted discharge, implementing water reclamation and reuse in lieu of providing treatment to meet nutrient effluent limits at design flow. The NMP must be prepared as specified in D.2.d(1)(a) of the addendum instructions and must, under these circumstances, be approved by the DCR. With the NMP, provide a copy of the letter from DCR approving the NMP.

(2) A site plan displayed on the most current USGS topographic maps (7.5 minutes series, where available) and showing the following:

(a) The boundaries of the irrigation site;

(b) The location of the following within 250 feet of the irrigation site:

- all potable and non-potable water supply wells and springs, public water supply intakes
- occupied dwellings
- property lines
- areas accessible to the public
- outdoor eating, drinking and bathing facilities
- Surface waters, including wetlands
- Limestone rock outcrops and sinkholes

(c) Setbacks areas around the irrigation site in accordance with 9VAC25-740-170.

Where expansion of an existing irrigation site is anticipated, provide the same information in the site plan for the area of proposed expansion.

D.2.e. For non-bulk irrigation reuse of reclaimed water that is > BNR (i.e., has an annual average concentration of total N and total P greater than 8.0 mg/l and 1.0 mg/l, respectively), a NMP will not be required. However, the RWM plan must describe other measures to be implemented by the applicant or permittee to manage nutrient loads by non-bulk irrigation reuse of reclaimed water that is > BNR within the service area specified in D.1.a. The service area includes irrigation property under common ownership or management with the applicant or permittee listed under B.3.d of the addendum that is used for non-bulk irrigation reuse.

Other measures to manage nutrient loads by non-bulk irrigation reuse of reclaimed water that is > BNR must include, but are not limited to the following:

(1) Reclaimed water metering of individual non-bulk irrigation end users, which may be addressed by information submitted for D.1.e of the addendum;

(2) Routine distribution of literature not less than annually, to individual non-bulk irrigation end users addressing the proper use of reclaimed water for irrigation in accordance with 9VAC25-740-170 A (applicable only to reuses that require Level 1 reclaimed water, will be in areas accessible to the public, or are likely to have human contact); and

(3) Monthly monitoring of nitrogen (N) and phosphorus (P) loads by non-bulk irrigation reuses to the service area of the RWM plan based on the total monthly metered use of reclaimed water for the service area and the monthly average concentrations of total N and total P in the reclaimed water.

E. Certification Statement

To complete the Water Reclamation and Reuse Addendum for the application of either a Virginia Pollutant Discharge Elimination System (VPDES) permit or a Virginia Pollution Abatement (VPA) permit, section E. of the addendum must be completed by the appropriate signatory authority specified in 9VAC25-31-110 of the VPDES Permit Regulation or 9VAC25-32-70 of the VPA Permit Regulation, respectively.

**Attachment B - Permit Cover Pages, Standards and Special Conditions for Water
Reclamation and Reuse**

General Instructions

Attachment B contains permit cover pages, an administrative authorization cover page (applicable only to existing VPDES permits), Level 1 and Level 2 standards pages, and special conditions related to water reclamation and reuse. These are to be used to draft VPDES and VPA permits or an administrative authorization in association with an existing VPDES permit for water reclamation and reuse projects.

Reclaimed water standards for Level 1 and Level 2 and associated monitoring requirements should be added to Part I.A, and special conditions for water reclamation and reuse should be added to Part I.B or other appropriate subpart (i.e., C, D, E, etc.) of a VPA or VPDES permit. Because an administrative authorization is associated with an existing VPDES permit, it should consist of only Part I with subparts A and B. Part I.A should contain the reclaimed water standards and monitoring requirements, and Part I.B should contain the water reclamation and reuse special conditions of the administrative authorization.

Special conditions contained in Attachment B are divided among the categories listed below. Special conditions may have notes either preceding the condition in parentheses “()” or within the condition, italicized and in brackets “[]”. These notes are for the use of DEQ staff and are to be deleted from the special condition in the draft permit or administrative authorization. Headings for the following special condition categories should also be deleted and all special conditions placed under Part I.B of the permit or administrative authorization.

- Conditions applicable to all water reclamation and reuse projects
- Conditions applicable to reclamation systems and satellite reclamation systems
- Conditions applicable to reclaimed water distribution systems
- Conditions applicable to reject water and reclaimed water storage facilities
- Conditions related to design and construction of water reclamation and reuse projects
- Conditions requiring access control and advisory signs
- Conditions applicable to irrigation reuses of reclaimed water
- Conditions applicable to non-irrigation reuses of reclaimed water
- Conditions applicable to notifications, record keeping and reporting

A “Basis” is provided for each special condition contained in Attachment B immediately following the condition. The basis is the agency’s minimum justification for including the condition in a permit or an administrative authorization. It is to be inserted in the fact sheet, but not in a permit or an administrative authorization. A Regional Office can expand on the basis and is encouraged to provide more details where “best professional judgment” is stated as the basis for a condition contained in this attachment.

Special conditions that are relevant to each other may be combined or consolidated provided the basis for each condition is included in the fact sheet for the new condition.

Permit and Administrative Authorization Cover Pages

VPDES Permit Cover Page for Issuances and Reissuances Including Water Reclamation and Reuse

DEQ Letterhead [*Note: No Board Members, No Regional Letterhead*]

Permit No. VA0000000

Effective Date:

Expiration Date:

AUTHORIZATION TO DISCHARGE UNDER THE VIRGINIA POLLUTANT DISCHARGE
ELIMINATION SYSTEM AND THE VIRGINIA STATE WATER CONTROL LAW, AND TO
PRODUCE OR DISTRIBUTE RECLAIMED WATER UNDER THE WATER RECLAMATION AND
REUSE REGULATION

In compliance with the provisions of the Clean Water Act as amended and pursuant to the State Water Control Law and regulations adopted pursuant thereto, the following permittee is authorized to discharge and to produce or distribute reclaimed water in accordance with the information contained in the permit application, the Water Reclamation and Reuse Addendum to an Application, this permit cover page, and Parts I and II of this permit [*Note: list other permit parts if applicable*] as set forth herein.

Permittee: **[VPDES Permittee]**

Facility Name: **[Facility to which VPDES permit is issued/reissued]**

City [**or County**]: **[Either City or County as appropriate]**

Facility Location: **[Location of facility to which VPDES permit is issued/reissued]**

The owner is authorized to discharge to the following receiving stream:

[Note: Provide the information for each item below]

Stream: **[Receiving Waters name]**

River Basin:

River Subbasin:

Section:

Class:

Special Standards:

[Note: Indicate position of person delegated to sign permit here]

Department of Environmental Quality

Date

VPA Permit Cover Page for Issuances and Reissuances Including Water Reclamation and Reuse

DEQ Letterhead [*Note: No Board Members, No Regional Letterhead*]

Permit No. **VPA00000**

Effective Date:

Expiration Date:

**AUTHORIZATION TO MANAGE POLLUTANTS UNDER THE
VIRGINIA POLLUTION ABATEMENT PERMIT AND TO PRODUCE OR DISTRIBUTE
RECLAIMED WATER UNDER THE WATER RECLAMATION AND
REUSE REGULATION AND THE VIRGINIA STATE WATER CONTROL LAW**

In compliance with the provisions of the State Water Control Law and regulations adopted pursuant thereto, the following permittee is authorized to manage pollutants and to produce or distribute reclaimed water in accordance with the information contained in the permit application, the Water Reclamation and Reuse Addendum to an Application, this permit cover page, and Parts I and II of this permit [*Note: list other permit parts if applicable*] as set forth herein.

Permittee: [**VPA Permittee**]

Facility Name: [**Facility to which VPA permit is issued/reissued**]

City [**or County**]: [**Either City or County as appropriate**]

Facility Location: [**Location of facility to which VPA permit is issued/reissued**]

[*Note: Indicate position of person delegated to sign permit here*]
Department of Environmental Quality

Date

Administrative Authorization Cover Page in Association with a VPDES Permit for Water Reclamation and Reuse

DEQ Letterhead [*Note: No Board Members, No Regional Letterhead*]

Permit No. VA0000000

Effective Date:

Administrative Authorization Date:

Expiration Date:

ADMINISTRATIVE AUTHORIZATION TO PRODUCE OR DISTRIBUTE RECLAIMED WATER
UNDER THE WATER RECLAMATION AND REUSE REGULATION ATTENDING AN
AUTHORIZATION TO DISCHARGE UNDER THE VIRGINIA POLLUTANT DISCHARGE
ELIMINATION SYSTEM AND THE VIRGINIA STATE WATER CONTROL LAW

In compliance with the provisions of the Water Reclamation and Reuse Regulation (9VAC25-740-10 et seq.), the following permittee is administratively authorized to produce or distribute reclaimed water in accordance with the information contained in the permit application, the Water Reclamation and Reuse Addendum to an Application, this administrative authorization cover page, and the standards and conditions as set forth herein.

This administrative authorization shall remain in effect until expiration of the above permit for the discharge, at which time the standards and conditions of the administrative authorization shall be incorporated into the permit or eliminated.

Permittee: **[VPDES Permittee]**

Facility Name: **[Facility to which VPDES permit is issued/reissued]**

City **[or County]**: **[Either City or County as appropriate]**

Facility Location: **[Location of facility to which VPDES permit is issued/reissued]**

[Note: Indicate position of person delegated to sign permit here]

Department of Environmental Quality

Date

VPDES Permit Cover Page for a Major Modification Related to Water Reclamation and Reuse

DEQ Letterhead [*Note: No Board Members, No Regional Letterhead*]

Permit No. VA0000000

Effective Date:

Modification Date:

Expiration Date:

**AUTHORIZATION TO DISCHARGE UNDER THE VIRGINIA POLLUTANT DISCHARGE
ELIMINATION SYSTEM AND THE VIRGINIA STATE WATER CONTROL LAW, AND TO
PRODUCE OR DISTRIBUTE RECLAIMED WATER UNDER THE WATER RECLAMATION AND
REUSE REGULATION**

In compliance with the provisions of the Clean Water Act as amended and pursuant to the State Water Control Law and regulations adopted pursuant thereto, the following permittee is authorized to discharge and to produce or distribute reclaimed water in accordance with the information contained in the permit application, the Water Reclamation and Reuse Addendum to an Application, this permit cover page, and Parts I and II of this permit [*Note: list other permit parts if applicable*] as set forth herein.

Permittee: **[VPDES Permittee]**

Facility Name: **[Facility to which VPDES permit is issued/reissued]**

City **[or County]**: **[Either City or County as appropriate]**

Facility Location: **[Location of facility to which VPDES permit is issued/reissued]**

The owner is authorized to discharge to the following receiving stream:

[Note: Provide the information for each item below]

Stream: **[Receiving Waters name]**

River Basin:

River Subbasin:

Section:

Class:

Special Standards:

[Note: Indicate position of person delegated to sign permit here]

Department of Environmental Quality

Date

VPA Permit Cover Page for a Minor or Major Modification Related to Water Reclamation and Reuse

DEQ Letterhead [*Note: No Board Members, No Regional Letterhead*]

Permit No. **VPA00000**

Effective Date:

Modification Date:

Expiration Date:

**AUTHORIZATION TO MANAGE POLLUTANTS UNDER THE
VIRGINIA POLLUTION ABATEMENT PERMIT AND TO PRODUCE OR DISTRIBUTE
RECLAIMED WATER UNDER THE WATER RECLAMATION AND
REUSE REGULATION AND THE VIRGINIA STATE WATER CONTROL LAW**

In compliance with the provisions of the State Water Control Law and regulations adopted pursuant thereto, the following permittee is authorized to manage pollutants and to produce or distribute reclaimed water in accordance with the information contained in the permit application, the Water Reclamation and Reuse Addendum to an Application, this permit cover page, and Parts I and II of this permit [*Note: list other permit parts if applicable*] as set forth herein.

Permittee: [**VPA Permittee**]

Facility Name: [**Facility to which VPA permit is issued/reissued**]

City [**or County**]: [**Either City or County as appropriate**]

Facility Location: [**Location of facility to which VPA permit is issued/reissued**]

[*Note: Indicate position of person delegated to sign permit here*]
Department of Environmental Quality

Date

Standards Pages and Special Conditions based on Requirements of the Regulation

A. STANDARDS AND MONITORING REQUIREMENTS

1. **Level 1** for *[From the RWM Plan, enter either reuse categories and/ or specific reuse that require Level 1 reclaimed water]*

a. During the period beginning with the issuance of a Certificate to Operate (CTO) for the reclamation system and ending with the permit expiration date, the permittee is required to monitor pollutants in the reclaimed water as described below for reuses specified in the Reclaimed Water Management Plan:

Parameters	Standard ⁽¹⁾	Units	Frequency	Sample Type
<i>[Choose only one bacteria standard and delete this row and unused bacteria standards]</i>				
Fecal coliform ⁽²⁾	Monthly Geometric mean ⁽³⁾ : ≤ 14	Colonies/100 ml	<i>[Per 9VAC25-740-80.A.4.a]</i> ⁽⁴⁾	Grab
	CAT: > 49			
E. coli ⁽²⁾	Monthly Geometric mean ⁽³⁾ : ≤ 11	Colonies/100 ml	<i>[Per 9VAC25-740-80.A.4.a]</i> ⁽⁴⁾	Grab
	CAT: > 35			
Enterococci ⁽²⁾	Monthly Geometric mean ⁽³⁾ : ≤ 11	Colonies/100 ml	<i>[Per 9VAC25-740-80.A.4.a]</i> ⁽⁴⁾	Grab
	CAT: > 24			
Total Residual Chlorine (TRC) ⁽⁵⁾	NL	mg/l	Continuous	Recorded
	CAT: < 1.0			
pH ⁽⁶⁾	6.0 – 9.0	Standard Units	Daily	Grab
<i>[Choose either BOD₅ or CBOD₅ and delete this row and the row of the unused parameter]</i>				
BOD ₅	Monthly average: ≤ 10	mg/l	<i>[Per 9VAC25-740-80.A.3]</i>	<i>[Per 9VAC25-740-80.A.3]</i>
CBOD ₅	Monthly average: ≤ 8	mg/l	<i>[Per 9VAC25-740-80.A.3]</i>	<i>[Per 9VAC25-740-80.A.3]</i>
Turbidity ⁽⁷⁾	Daily average ⁽⁸⁾ : ≤ 2	NTU	Continuous	Recorded
	CAT: > 5			
Reclamation System Flow ⁽⁹⁾	Monthly average: NL	MGD	Continuous	TIRE
	Monthly maximum: NL			

Water Guidance Memo No. 10-2001

Implementation Guidance for the Water Reclamation and Reuse Regulation, 9VAC25-740-10 et seq.

Attachment B

Parameters	Standard ⁽¹⁾	Units	Frequency	Sample Type
<i>[For only administrative authorizations in association with existing VPDES permits, add monitoring requirement for “Influent Flow” to this page & to the DMR of the WWTF, not the monthly monitoring report of the reclamation system. For all other permit actions, add “Influent Flow” to the effluent limits page of the VPDES or VPA permit for the WWTF & to the DMR or monthly monitoring report, respectively. Then delete this row.]</i>				
Influent Flow ⁽¹⁰⁾	Monthly average: NL	MGD	[Daily (if Estimated)/Continuous (if TIRE)]	[Estimated/TIRE] ⁽¹¹⁾
	Monthly maximum: NL	MGD	[Daily (if Estimated)/Continuous (if TIRE)]	[Estimated/TIRE] ⁽¹¹⁾
<i>[If irrigation is included among reclaimed water reuses in the Reclaimed Water Management Plan, include Total N and Total P monitoring on this page. If not, delete Total N and Total P monitoring. Delete this row.]</i>				
Total Nitrogen ⁽¹²⁾	NL	mg/l	<i>[Per 9VAC25-790-960]</i>	[Grab/4, 8 or 24 HC]
Total Phosphorus ⁽¹²⁾	NL	mg/l	<i>[Per 9VAC25-790-960]</i>	[Grab/4, 8 or 24 HC]
<i>[Other parameters are added on a case-by-case basis dictated by intended reuses in RWM Plan]</i>				

NA = Not Applicable

CAT = Corrective action threshold

MGD = Million gallons per day

NL = No Limit

NTU = nephelometric turbidity unit

TIRE = Totalizing, indicating, and recording equipment

(1) With the exception of turbidity, standards must be met at the point of compliance (POC) designated as **[Insert the applicable language: (for VPDES permitted reclamation systems) internal outfall (choose an outfall # from 650 to 675)/(for VPA permitted reclamation systems) sampling location (sampling location #)]**. The POC shall be just upstream of disinfection for turbidity **[Insert this language if chlorine is used for disinfection: , at the end of the contact tank or contact period for total residual chlorine,]** and as specified in the approved operations and maintenance manual of the reclamation system for all other standards. *[Note: The POC is the location at which samples will be collected in accordance with 9VAC25-740-70.B and 9VAC25-740-80.A.2 to demonstrate compliance with the standards in the permit.]*

(2) After disinfection.

(3) For the purpose of calculating the geometric mean, bacteria analytical results below the detection level of the analytical method used shall be reported as values equal to the detection level.

(4) For reclamation systems treating municipal wastewater, bacterial samples shall be collected between 10:00 a.m. and 4:00 p.m. to coincide with peak flows to the reclamation system. *[Note: An exception to this requirement may be approved upon demonstration to the board that peak flows to the reclamation system occur outside this period.]*

(5) TRC analysis shall be continuous on-line monitoring, equipped with an automated data logging or recording device and an alarm to notify the operator when the CAT for TRC in the standard for Level 1 has been reached. TRC shall be monitored after a minimum contact time of 30 minutes at average flow or 20 minutes at peak flow. *[Note: The TRC standard applies only if chlorine is used for disinfection. TRC less than 1.0 mg/l may be authorized by the board if demonstrated to provide comparable disinfection through a chlorine reduction program in accordance with the Sewage Collection and Treatment Regulations (9VAC25-790).]*

(6) A pH meter shall be used for all pH analysis of reclaimed water.

(7) Turbidity analysis shall be performed by a continuous, on-line turbidity meter equipped with an automated data logging or recording device and an alarm to notify the

operator when the CAT for turbidity in the standard for Level 1 has been reached. Compliance with the average turbidity standard shall be determined daily, based on the arithmetic mean of hourly or more frequent discrete measurements recorded during a 24-hour period. See Part I.B.8 [*Note: Or other number that corresponds to condition 8*] for additional information regarding turbidity monitoring.

(8) Daily average is the arithmetic mean of hourly or more frequent discrete turbidity measurements recorded during a 24-hour period.

(9) The designated design capacity for the reclamation system is [xxx] MGD. [*Note: Refer to subsection III.F of this guidance to determine “designated design capacity”.*]

(10) [**Insert this footnote for only an administrative authorization in association with an existing VPDES permit for water reclamation and reuse:** The design capacity of the wastewater treatment works that will divert source water or effluent to the reclamation system is [xxx] MGD.]

(11) [**Insert this footnote for only an administrative authorization in association with an existing VPDES permit for water reclamation and reuse:** Influent flow shall be (**Insert the applicable language:** monitored at the head of the wastewater treatment works that will divert source water or effluent to the reclamation system/calculated as the sum of all authorized discharges to surface waters, land treatment and to reclaimed water distributions systems for reuse or directly to a reuse.)]

(12) [**Insert the appropriate sentence:** (*for BNR reclaimed water*) There shall be no nutrient management requirements for irrigation reuse of the reclaimed water (**Choose all that apply:** produced by the reclamation system/provided by the reclaimed water distribution system) based on an annual average concentration of total nitrogen (N) and total phosphorus (P) ≤ 8.0 and ≤ 1.0 mg/l, respectively. / (*for non-BNR reclaimed water*) Nutrient management requirements contained in this permit for irrigation reuse of the reclaimed water (**Choose all that apply:** produced by the reclamation system/provided by the reclaimed water distribution system) are based on an annual average concentration of total (N) or total phosphorus (P) > 8.0 and > 1.0 mg/l, respectively.] Annual average concentrations of total N and total P shall be the arithmetic mean of the monthly average concentrations of these nutrients for the most recent 12 consecutive months of monitoring.

- b. Results for the above parameters shall be included in the monthly monitoring report submitted to the DEQ [*Regional Office*] by the 10th of each month for the preceding month's performance.

A. STANDARDS AND MONITORING REQUIREMENTS

1. **Level 2** for *[From the RWM Plan, enter either reuse categories and/ or specific reuse that require Level 2 reclaimed water]*

- a. During the period beginning with the issuance of a Certificate to Operate (CTO) for the reclamation system and ending with the permit expiration date, the permittee is required to monitor pollutants in the reclaimed water as described below for reuses specified in the Reclaimed Water Management Plan:

Parameters	Standard ⁽¹⁾	Units	Frequency	Sample Type
<i>[Choose only one bacteria standard and delete this row and unused bacteria standards]</i>				
Fecal coliform ⁽²⁾	Monthly Geometric mean ⁽³⁾ : ≤ 200	Colonies/100 ml	<i>[Per 9VAC25-740-80.A.4.b]</i> ⁽⁴⁾	Grab
	CAT: > 800			
E. coli ⁽²⁾	Monthly Geometric mean ⁽³⁾ : ≤ 126	Colonies/100 ml	<i>[Per 9VAC25-740-80.A.4.b]</i> ⁽⁴⁾	Grab
	CAT: > 235			
Enterococci ⁽²⁾	Monthly Geometric mean ⁽³⁾ : ≤ 35	Colonies/100 ml	<i>[Per 9VAC25-740-80.A.4.b]</i> ⁽⁴⁾	Grab
	CAT: > 104			
Total Residual Chlorine (TRC) ⁽⁵⁾	NL	mg/l	<i>[Per 9VAC25-740-80.A.2.b]</i>	Grab
	CAT: < 1.0	mg/l	Resample within 1 hour of reaching CAT	
pH ⁽⁶⁾	6.0 – 9.0	Standard Units	Daily	Grab
<i>[Choose either BOD₅ or CBOD₅ and delete this row and the row of the unused parameter]</i>				
BOD ₅	Monthly average: ≤ 30	mg/l	<i>[Per 9VAC25-740-80.A.3]</i>	<i>[Per 9VAC25-740-80.A.3]</i>
	Max. weekly average: ≤ 45			
CBOD ₅	Monthly average: ≤ 25	mg/l	<i>[Per 9VAC25-740-80.A.3]</i>	<i>[Per 9VAC25-740-80.A.3]</i>
	Max. weekly average: ≤ 40			
Total Suspended Solids	Monthly average: ≤ 30	mg/l	<i>[Per 9VAC25-740-80.A.3]</i>	<i>[Per 9VAC25-740-80.A.3]</i>
	Max. weekly average: ≤ 45			
Reclamation System Flow ⁽⁷⁾	Monthly average: NL	MGD	Continuous	TIRE
	Monthly maximum: NL			
<i>[For only administrative authorizations in association with existing VPDES permits, add monitoring requirement for “Influent Flow” to this page & to the DMR]</i>				

Water Guidance Memo No. 10-2001

Implementation Guidance for the Water Reclamation and Reuse Regulation, 9VAC25-740-10 et seq.

Attachment B

Parameters	Standard ⁽¹⁾	Units	Frequency	Sample Type
<i>of the WWTF, not the monthly monitoring report of the reclamation system. For all other permit actions, add "Influent Flow" to the effluent limits page of the VPDES or VPA permit for the WWTF & to the DMR or monthly monitoring report, respectively. Then delete this row.]</i>				
Influent Flow ⁽⁸⁾	Monthly average: No Limit	MGD	[Daily (if Estimated)/Continuous (if TIRE)]	[Estimated/TIRE] ⁽⁹⁾
	Monthly maximum: No Limit	MGD	[Daily (if Estimated)/Continuous (if TIRE)]	[Estimated/TIRE] ⁽⁹⁾
<i>[If irrigation is included among reclaimed water reuses in the Reclaimed Water Management Plan, include Total N and Total P monitoring on this page. If not, delete Total N and Total P monitoring. Delete this row.]</i>				
Total Nitrogen ⁽¹⁰⁾	No Limit	mg/l	<i>[Per 9VAC25-790-960]</i>	[Grab/4, 8 or 24 HC]
Total Phosphorus ⁽¹⁰⁾	No Limit	mg/l	<i>[Per 9VAC25-790-960]</i>	[Grab/4, 8 or 24 HC]
<i>[Other parameters are added on a case-by-case basis dictated by intended reuses in RWM Plan]</i>				

NA = Not Applicable

CAT = Corrective action threshold

MGD = Million gallons per day

NL = No Limit

NTU = nephelometric turbidity unit

TIRE = Totalizing, indicating, and recording equipment

(1) Standards must be met at the point of compliance (POC) designated as **[Insert the applicable language: (for VPDES permitted reclamation systems) internal outfall (choose an outfall # from 676 to 699)/(for VPA permitted reclamation systems) sampling location (sampling location #)]**. **[Insert this sentence if chlorine is used for disinfection: The POC shall be at the end of the contact tank or contact period for total residual chlorine and as specified in the approved operations and maintenance manual of the reclamation system for all other standards.]** **[Note: The POC is the location at which samples will be collected in accordance with 9VAC25-740-70.B and 9VAC25-740-80.A.2 to demonstrate compliance with the standards in the permit.]**

(2) After disinfection.

(3) For the purpose of calculating the geometric mean, bacteria analytical results below the detection level of the analytical method used shall be reported as values equal to the detection level.

(4) For reclamation systems treating municipal wastewater, bacterial samples shall be collected between 10:00 a.m. and 4:00 p.m. to coincide with peak flows to the reclamation system. **[Note: An exception to this requirement may be approved upon demonstration to the board that peak flows to the reclamation system occur outside this period.]**

(5) TRC shall be monitored after a minimum contact time of 30 minutes at average flow or 20 minutes at peak flow. **[Note: The TRC standard applies only if chlorine is used for disinfection. TRC less than 1.0 mg/l may be authorized by the board if demonstrated to provide comparable disinfection through a chlorine reduction program in accordance with the Sewage Collection and Treatment Regulations (9VAC25-790).]**

(6) A pH meter shall be used for all pH analysis of reclaimed water.

(7) The designated design capacity for the reclamation system is **[xxx]** MGD. **[Note: Refer to subsection III.F of this guidance to determine "designated design capacity".]**

(8) **[Insert this footnote for only an administrative authorization in association with an existing VPDES permit for water reclamation and reuse: The design capacity of the wastewater treatment works that will divert source water or effluent to the reclamation system is [xxx] MGD.]**

(9) **[Insert this footnote for only an administrative authorization in association with an existing VPDES permit for water reclamation and reuse:** Influent flow shall be **(Insert the applicable language:** monitored at the head of the wastewater treatment works that will divert source water or effluent to the reclamation system/calculated as the sum of all authorized discharges to surface waters, land treatment and to reclaimed water distributions systems for reuse or directly to a reuse.)]

(10) **[Insert the appropriate sentence:** *(for BNR reclaimed water)* There shall be no nutrient management requirements for irrigation reuse of the reclaimed water **(Choose all that apply:** produced by the reclamation system/provided by the reclaimed water distribution system) based on an annual average concentration of total nitrogen (N) and total phosphorus (P) ≤ 8.0 and ≤ 1.0 mg/l, respectively. */(for non-BNR reclaimed water)* Nutrient management requirements contained in this permit for irrigation reuse of the reclaimed water **(Choose all that apply:** produced by the reclamation system/provided by the reclaimed water distribution system) are based on an annual average concentration of total (N) or total phosphorus (P) > 8.0 and > 1.0 mg/l, respectively.] Annual average concentrations of total N and total P shall be the arithmetic mean of the monthly average concentrations of these nutrients for the most recent 12 consecutive months of monitoring.

- b. Results for the above parameters shall be included in the monthly monitoring report submitted to the DEQ [*Regional Office*] by the 10th of each month for the preceding month's performance.

Conditions applicable to all water reclamation and reuse projects

1. The following are prohibited:
 - a. Direct potable reuse;
 - b. The reuse of reclaimed water for any purpose inside a residential or domestic dwelling or a building containing a residential or domestic unit;
 - c. The reuse of reclaimed water to fill residential swimming pools, hot tubs or wading pools;
 - d. The reuse of reclaimed water for food preparation or incorporation as an ingredient into food or beverage for human consumption;
 - e. Bypass of untreated or partially treated wastewater from the reclamation system or any intermediate unit process to the point of reuse unless the bypass complies with standards and requirements specified in this **[Choose one: administrative authorization/permit]** and is for essential maintenance to assure efficient operation; and
 - f. The return of reclaimed water to the reclaimed water distribution system after the reclaimed water has been delivered to an end user.

Basis: 9VAC25-740-50.B

2. There shall be no nuisance conditions (e.g., ponded water that attracts mosquitoes or other vectors; strong odors that the Department determines are the subject of frequent and wide spread complaints from the surrounding community; any condition determined by a court of law to be a nuisance condition) resulting from the distribution, storage or use of reclaimed water.

Basis: 9VAC25-740-170.D

(Reopener condition applicable to all water reclamation and reuse projects)

3. Reclamation and Reuse Reopener. The Board may modify or revoke and reissue this **[Choose one: administrative authorization/permit]** if any applicable standards or requirements for water reclamation and reuse promulgated under State Water Control Law or regulations promulgated there under, including the Water Reclamation and Reuse Regulation (9VAC25-740), are more stringent than or are in addition to any standards or requirements for water reclamation and reuse contained in this **[Choose one: administrative authorization/permit]**.

Basis: **[Choose only one of the following two statements that applies and delete “[OR]”:**
(For a VPA permit) The basis of this condition is 9VAC25-32-220, which allows staff initiated modifications to VPA permits in response to changes to State Water Control Law or DEQ regulations related to water reclamation and reuse.

[OR]

(For a VPDES permit or an administrative authorization associated with an existing VPDES permit) The basis of this condition is best profession judgment (BPJ). **(Note:** *If the applicant or permittee requests that this condition be removed from the draft VPDES permit prior to public notice, the RO must weigh the strength of the permit writer’s case for requiring the condition against the applicant or permittee’s request to remove it. For example, if there are amendments proposed to the regulation that would afford greater protection of public health and the environment for reuses of reclaimed water to be authorized by the VPDES permit, the RO would have a stronger justification based on BPJ to maintain the reopener condition in the permit.)*

Conditions applicable to reclamation systems and satellite reclamation systems

(For a reclamation system, satellite reclamation system, or a system storage facility that stores reclaimed water for periods greater than or equal to 24 hours or is not used for flow equalization, this condition applies when the system and/or storage facility discharges intermittently or seasonally to a reclaimed water distribution system, a non-system storage facility or directly to a reuse.)

4. Discharge of reclaimed water from the [**Choose all that apply:** reclamation system/satellite reclamation system/system storage facility] to a reclaimed water distribution system, a non-system storage facility or directly to a reuse of the reclaimed water at any time for any duration within a monthly reporting period, shall require monitoring in accordance with Part I.A and submittal of a monthly monitoring report for the discharge.

Basis: 9VAC25-740-80.C state that “A reclamation system that produces reclaimed water intermittently or seasonally shall monitor only when the reclamation system discharges to a reclaimed water distribution system, a non-system storage facility, or directly to a reuse.” This also applies to reclamation systems that “produce” reclaimed water throughout the year but discharge only intermittently or seasonally to a reclaimed water distribution system, a non-system storage facility, or directly to a reuse. System storage as defined by 9VAC25-740-10 is “storage on or off the site and considered part of a reclamation system, satellite reclamation system, or reclaimed water distribution system that is used to store reclaimed water produced by the reclamation system or satellite reclamation system.” Therefore, requirements of 9VAC25-740-80.C also apply to system storage of reclaimed water produced by the reclamation system.

5. Should reclaimed water reach the corrective action threshold (CAT) for [**Choose all that apply:** (**Note:** only for Level 1) turbidity /(**Note:** applicable to Level 1 or 2) TRC] specified in Part I.A of [**Choose one:** (for an administrative authorization) the VPDES permit associated with this administrative authorization/(for a VPDES or VPA permit) this permit], the operator of the reclamation system shall immediately initiate a review of treatment operations and data to identify the cause of the CAT monitoring results to bring the reclaimed water back into compliance with the standards. Resampling or diversion shall occur within one hour of first reaching the CAT. Procedures for resampling, operational review and diversion shall be as described in the approved operations and maintenance manual for the reclamation system. If subsequent monitoring results of the resamples collected within one hour of the first CAT monitoring results for [**Choose all that apply:** turbidity/TRC] continue to reach the CAT, the reclaimed water shall be considered substandard or reject water and shall be [**Choose all that apply:** diverted to either storage for subsequent additional treatment or retreatment/ discharged to another permitted reuse system requiring a lower level of treatment not less than Level 2/ discharged to a VPDES permitted effluent disposal system provided the reject water meets the effluent limits of the permit]. If the reclamation system is unattended, the diversion of reject water shall be initiated and performed with automatic equipment. There shall be no automatic restarts of distribution to reuse until the treatment problem is corrected. Failure to divert the substandard or reject water after one hour of CAT monitoring results shall be considered a violation of this [**Choose one:** administrative authorization/permit]. Upon resuming discharge of reclaimed water to the reclaimed water distribution system for which the CAT was reached, resampling for [**Choose all that apply:** turbidity/TRC] shall occur within one hour to verify proper treatment.

Basis: 9VAC25-740-70.C.1

6. Should the reclaimed water reach the CAT for [**Choose one:** fecal coliform/E. coli/enterococci] specified in Part I.A of this [**Choose one:** administrative authorization/permit] for [**Choose all that apply:** Level 1/Level 2] reclaimed water, the operator of the reclamation system shall immediately

initiate a review of treatment operations and data to identify the cause of the CAT monitoring results to bring the reclaimed water back into compliance with the standards. Procedures for operational review shall be as described in the approved operations and maintenance manual for the reclamation system. Two consecutive bacterial monitoring results that reach the CAT of the standards shall be considered a violation of this [**Choose one:** administrative authorization/permit].

Basis: 9VAC25-740-70.C.2

(This condition may be used instead, as a footnote on the reclaimed water standards page in Part I.A.)

7. Failure to resample after determination that monitoring results are not in compliance with the CAT standards for reclaimed water in Part I.A, or to divert or discharge substandard or reject water in accordance with Part I.B.5 [**Note:** or other number that corresponds to condition 5] shall be deemed a violation of this [**Choose one:** administrative authorization/permit].

Basis: 9VAC25-740-70.C.3

(Applicable to Level 1 reclamation systems and satellite reclamation systems. Choose only one of the following two paragraphs that applies and delete “[OR]”)

8. **(Where UV is used for disinfection)** Should the on-line turbidity meter for the [**Choose all that apply:** reclamation system/satellite reclamation system] go out of service for either planned or unplanned repair, samples shall be manually collected for turbidity analysis at no more than four-hour intervals up to a maximum of five days. Following the period of repair (not to exceed five days), continuous, on-line monitoring with a turbidity meter shall resume.

Basis: 9VAC25-740-80.A.1

[OR]

8. **(Where chemicals with measurable residual are used for disinfection)** Should the on-line turbidity meter or the on-line disinfectant monitoring equipment for the [**Choose all that apply:** reclamation system/satellite reclamation system] go out of service for either planned or unplanned repair, samples shall be manually collected for turbidity or disinfectant analysis, respectively, at no more than four-hour intervals up to a maximum of five days. Following the period of repair (not to exceed five days), continuous, on-line turbidity metering and disinfectant monitoring shall resume.

Basis: 9VAC25-740-80.A.1 and 2.a

(Applicable to reclamation systems and satellite reclamation systems of municipal wastewater. Where the designated design capacity (defined in subsection III.F) of the reclamation system or satellite reclamation system is the design flow of the WWTF providing source water to these systems, the operator requirement will be the same as that of the WWTF. Where the designated design capacity of the reclamation system is different than the design flow of the WWTF providing source water to the reclamation system, the operator requirement should be based on the designated design capacity of the reclamation system.)

9. **Operator requirements.** The classification[s] of the operator[s] for the [**Choose all that apply:** reclamation system/satellite reclamation system] [is/are] _____. [**Note:** The classification of both the reclamation system and the operator in responsible charge shall be the same as that specified in the Sewage Collection and Treatment Regulations (9VAC25-790) for sewage treatment works or municipal WWTF with similar treatment processes and design capacities.] The permittee shall employ or contract at least one operator who holds a current Class ____ license and the license shall be issued in accordance with Title 54.1 of the Code of Virginia and the regulations of the Board for

Waterworks and Wastewater Works Operators. The permittee shall notify the DEQ [*Regional Office*] in writing when compliance with this requirement is not being achieved or it is anticipated that compliance with this requirement will not be achieved. The notification shall include a statement of reasons and a prompt schedule for achieving compliance.

The reclamation system shall be manned while in operation and under the supervision of the Class ___ operator unless the system is equipped with remote monitoring and, as applicable, automated diversion of substandard or reject water in accordance with Part I.B.5 [*Note: or other number that corresponds to condition 5*] of this [**Choose one:** administrative authorization/permit].

Basis: 9VAC25-740-130.A

(Applicable to Level 1 reclamation systems and satellite reclamation systems.)

10. Class I reliability is required for this [**Choose all that apply:** reclamation system and/or satellite reclamation system]. DEQ may approve alternative measures to achieve Class I reliability following submittal by the permittee of an engineering report, using accepted and appropriate engineering principles and practices, demonstrating that the alternative measures will achieve a level of reliability equivalent to Class I reliability. [*Note: Class I reliability is not required for Level 1 reclamation systems and satellite reclamation systems if there is a permitted alternate treatment or discharge system available which has sufficient capacity to handle any reclaimed water flows which do not meet the reclaimed water standards of permit or performance criteria established in the operations and maintenance manual for the system. For independent reclamation systems and systems consisting of an industrial WWTF and reclamation system, the applicability of Class I reliability requirements as specified in the Sewage Collection and Treatment Regulations (9VAC25-790), shall be determined for each proposed or existing system.*]

Basis: 9VAC25-740-130.B and C

(O&M Manual for reclamation systems and satellite reclamation systems operating independent of the WWTF(s) that provide wastewater or the sewage collection system that provides sewage, respectively, to these systems for reclamation.)

11. Within 90 days of placing the [**Choose one:** new/modified] [**Choose all that apply:** reclamation system/satellite reclamation system] into operation, the permittee shall submit a new or revised operations and maintenance (O&M) manual for the system[s] to the DEQ [*Regional Office*]. This document is an enforceable part of the permit that shall reflect the practices and procedures followed by the permittee to ensure compliance with the permit. The permittee shall maintain the manual and any changes in the practices and procedures followed by the permittee shall be documented and submitted to the DEQ [*Regional Office*] for approval within 90 days of the effective date of the changes. Upon approval, these revisions to the O&M Manual shall be incorporated into the existing documents and be an enforceable part of the permit. [*Note: Per 9VAC25-740-140.C, the O&M manual for a reclamation system may be made a part of an O&M manual for a WWTF where the reclamation system is authorized under the permit of a WWTF that provides flow to the reclamation system.*]

The operations and maintenance manual for the [**Choose one:** new/modified] [**Choose all that apply:** reclamation system/satellite reclamation system] shall be maintained on site at the facility and shall, at a minimum, contain the following:

- a. A description of unit treatment processes within the [**Choose one:** new/modified] [**Choose all that apply:** reclamation system/satellite reclamation system] and step-by-step instructions for the

operation of these processes;

- b. For all appurtenances associated with the [**Choose all that apply:** reclamation system/satellite reclamation system] (i.e., storage facilities, distribution system, etc.), a description of each, step-by-step instructions for their operation, and a description of their maintenance;
- c. Routine maintenance and schedules of maintenance for each unit treatment process in the system[s];

(Applicable to Level 1 reclamation systems or satellite reclamation systems that will use UV for disinfection)

- d. The design dose and procedures for monitoring the operational dose of the UV disinfection system for the [**Choose all that apply:** reclamation system/satellite reclamation system].
- e. The criteria and equipment used to make continuous determinations of the acceptability of the reclaimed water being produced and alarm set points for parameters measured by continuous on-line monitoring equipment;
- f. Descriptions of the following that shall comply with the standard and conditions of [**Choose one:** this administrative authorization/the permit]:
 - (1) Reclaimed water sampling and monitoring procedures and equipment. This shall include, but is not limited to, a description of sample handling, preservation and chemical analyses; and calibration and schedules of calibration for monitoring equipment;
 - (2) The sampling location[s] for the point[s] of compliance; and
 - (3) Control system, alarm functions, record keeping and reports;
- g. Hours of [**Choose all that apply:** reclamation system/satellite reclamation system] operation, hours that the system will be staffed, procedures to be followed by the staff during a period when a licensed operator in responsible charge is not present at the system, and training of the staff regarding operation and maintenance of the system;
- h. The physical steps and procedures to be followed by the operator when substandard water is being produced, including resampling and operational review required in accordance with Part I.B. [**Choose all that apply:** 5/6 (*Note: or other numbers that corresponds to conditions 5 and 6*)] of this [**Choose one:** administrative authorization/permit];
- i. The physical steps and procedures to be followed by the operator when the treatment works returns to normal operation and acceptable quality reclaimed water is again being produced;
- j. Responsible officials and their duties, roles and contact information;
- k. Information necessary for the proper management of sludge or residuals from reclamation treatment [*Note: This should be information in addition to or not specifically requested in the application for a VPDES or VPA permit*];

- l. A contingency plan to eliminate or minimize the potential for untreated or inadequately treated water to be delivered to reuse areas. The plan shall, among other things:
 - (1) Identifying persons responsible for implementing the contingency plan and their contact information;
 - [(Add this item for Level 1 reclamation systems or satellite reclamation systems)
 - (2) Reference and be coordinated with the education and notification program contained in the approved RWM Plan for any release of untreated or inadequately treated water to the reclaimed water distribution system;]
 - [(Add the next two items for Level 1 reclamation systems or satellite reclamation systems that will use UV for disinfection)
 - (3) Describe for the UV disinfection system action to be taken in response to:
 - (a) Lamp breakage and possibly mercury release;
 - (b) Low operational UV dose, low UV intensity or high turbidity alarms;
 - (c) Failure of the upstream treatment processes or the UV disinfection system; and
 - (d) Power supply interruptions where an uninterruptable power supply is not provided for the UV disinfection system.
 - (4) Describe activation of standby UV equipment to include either a standby reactor for each reactor train or a standby reactor train, or activation of an alternative to standby UV equipment, such as adequate storage or other contingency arrangements, that shall manage the substandard water flow during UV disinfection failure.]
- m. Location of back up or replacement parts critical to the operation of unit treatment processes within the [**Choose all that apply:** reclamation system/satellite reclamation system];
- n. A list of chemicals and materials in storage areas and the location of storage areas; and
- o. A plan for inactivation or closure of the [**Choose all that apply:** reclamation system/satellite reclamation system] specifying what steps will be taken to protect the environment and public health. Inactivation or closure may include, but is not limited to, replacement through expansion or upgrade of the existing [**Choose all that apply:** reclamation system/satellite reclamation system] or permanent closure of the system[s]. At a minimum, the plan shall contain the following:
 - (1) A list and characterization (i.e., volume, percent solids, nutrient content, etc.) of residual reclaimed or reject water, solids and waste products that are anticipated to be present at the [**Choose all that apply:** reclamation system/satellite reclamation system] site[s] upon inactivation or closure; and a description of treatment, removal and final disposition of the same; and
 - (2) Supplemental information. Within 90 days of initiating any activities to inactivate or close

the [**Choose all that apply:** reclamation system/satellite reclamation system], the permittee shall submit to the DEQ [*Regional Office*] for approval the following information to supplement the previously approved plan:

- (a) Verification of elimination of sources of wastewater and/or an alternate treatment scheme;
- (b) A description of removal, demolition and/or disposal of structures, equipment, piping and appurtenances;
- (c) A description of site fill material, grading, and erosion and sediment control;
- (d) A description of access control during inactivation or closure;
- (e) Proposed land use (post closure) of the site[s];
- (f) Proposed dates for beginning and completing the work; and
- (g) Any new or additional information that modifies procedures or information provided in the previously approved inactivation or closure plan.

Basis: 9VAC25-740-120.B.3.f, 9VAC25-740-140.A, and 9VAC25-740-140.D.1 [**Add this if UV will used for disinfection:** and F, “Ultraviolet Disinfection: Guidelines for Drinking Water and Water Reuse, 2nd Ed.” (NWRI, 2003)]; and DEQ Water Guidance Memo No. 10-2001 – Implementation Guidance for the Water Reclamation and Reuse Regulation, 9 VAC25-740-10 et seq.

(Applicable where a reclamation systems system is authorized under the permit for a WWTF that provides flow to the reclamation system, and the O&M Manual for the reclamation system will be made a part of the O&M Manual for the WWTF)

12. Within 90 days of placing the [**Choose one:** new/modified] reclamation system into operation, the permittee shall submit to the DEQ [*Regional Office*] changes to the operations and maintenance (O&M) manual for the [*Name of WWTF*] addressing the operation and maintenance of the reclamation system. These changes shall reflect the practices and procedures followed by the permittee to ensure compliance with [**Choose one:** this administrative authorization/the permit]. Upon approval, these changes to the O&M manual shall be incorporated into the existing document and be an enforceable part of the permit.

(Insert this paragraph if not already part of the O&M Manual special condition in the permit for the WWTF) The permittee shall maintain the O&M manual and any changes in the practices and procedures followed by the permittee shall be documented and submitted to the DEQ [*Regional Office*] for approval within 90 days of the effective date of the changes.

The O&M manual shall be maintained on site at the [*Name of WWTF*] and the [**Choose one:** new/modified] reclamation system and shall, at a minimum, contain the following related to the operations and maintenance of the reclamation system:

- a. A description of unit treatment processes within the reclamation system and step-by-step instructions for the operation of these processes;

- b. A description of all appurtenances associated with the reclamation system (i.e., storage facilities, distribution system, etc.), step-by-step instructions for their operation, and a description of their maintenance;
- c. Routine maintenance and schedules of maintenance for each unit treatment process in the system;

(Applicable to Level 1 reclamation systems that will use UV for disinfection)

- d. The design dose and procedures for monitoring the operational dose of the UV disinfection system for the reclamation system.
- e. The criteria and equipment used to make continuous determinations of the acceptability of the reclaimed water being produced and alarm set points for parameters measured by continuous on-line monitoring equipment;
- f. Descriptions of the following that shall comply with the standard and conditions of this [**Choose one:** administrative authorization/permit]:
 - (1) Reclaimed water sampling and monitoring procedures and equipment. This shall include, but is not limited to, a description of sample handling, preservation and chemical analyses; and calibration and schedules of calibration for monitoring equipment;
 - (2) The sampling location[s] for the point[s] of compliance; and
 - (3) Control system, alarm functions, record keeping and reports;
- g. Hours of reclamation system operation, hours that the system will be staffed, procedures to be followed by the staff during a period when a licensed operator in responsible charge is not present at the system, and training of the staff regarding operation and maintenance of the system;
- h. The physical steps and procedures to be followed by the operator when substandard water is being produced, including resampling and operational review required in accordance with Part I.B.[**Choose all that apply:** 5/6 (*Note: or other numbers that corresponds to conditions 5 and 6*)] of this [**Choose one:** administrative authorization/permit];
- i. The physical steps and procedures to be followed by the operator when the treatment works returns to normal operation and acceptable quality reclaimed water is again being produced;
- j. Responsible officials and their duties, roles and contact information;
- k. Information necessary for the proper management of sludge or residuals from reclamation treatment [*Note: This should be information in addition to or not specifically requested in the application for a VPDES or VPA permit*];
- l. A contingency plan to eliminate or minimize the potential for untreated or inadequately treated water to be delivered to reuse areas. The plan shall, among other things:
 - (1) Identifying persons responsible for implementing the contingency plan and their contact information;

[(Add this item for Level 1 reclamation systems)]

- (2) Reference and be coordinated with the education and notification program contained in the approved RWM Plan for any release of untreated or inadequately treated water to the reclaimed water distribution system;]

[(Add the next two items for Level 1 reclamation systems that will use UV for disinfection)]

- (3) Describe for the UV disinfection system action to be taken in response to:
- (a) Lamp breakage and possibly mercury release;
 - (b) Low operational UV dose, low UV intensity or high turbidity alarms;
 - (c) Failure of the upstream treatment processes or the UV disinfection system; and
 - (d) Power supply interruptions where an uninterruptable power supply is not provided for the UV disinfection system.
- (4) Describe activation of standby UV equipment to include either a standby reactor for each reactor train or a standby reactor train, or activation of an alternative to standby UV equipment, such as adequate storage or other contingency arrangements, that shall manage the substandard water flow during UV disinfection failure.]
- m. Location of back up or replacement parts critical to the operation of unit treatment processes within the reclamation system;
- n. A list of chemicals and materials in storage areas and the location of storage areas; and
- o. A plan for inactivation or closure of the reclamation system specifying what steps will be taken to protect the environment and public health. Inactivation or closure may include, but is not limited to, replacement through expansion or upgrade, or permanent closure of the existing system. At a minimum, the plan shall contain the following:
- (1) A list and characterization (i.e., volume, percent solids, nutrient content, etc.) of residual reclaimed or reject water, solids and waste products that are anticipated to be present at the reclamation system site upon inactivation or closure; and a description of treatment, removal and final disposition of the same; and
 - (2) Supplemental information. Within 90 days of initiating any activities to inactivate or close the reclamation system, the permittee shall submit to the DEQ [*Regional Office*] for approval the following information to supplement the previously approved plan:
 - (a) Verification of elimination of sources of wastewater and/or an alternate treatment scheme;
 - (b) A description of removal, demolition and/or disposal of structures, equipment, piping and appurtenances;

- (c) A description of site fill material, grading, and erosion and sediment control;
- (d) A description of access control during inactivation or closure;
- (e) Proposed land use (post closure) of the site;
- (f) Proposed dates for beginning and completing the work; and
- (g) Any new or additional information that modifies procedures or information provided in the previously approved inactivation or closure plan.

Basis: 9VAC25-740-120.B.3.f, 9VAC25-740-140.A, and 9VAC25-740-140.D.1 [Add this if UV will be used for disinfection: and F, “Ultraviolet Disinfection: Guidelines for Drinking Water and Water Reuse, 2nd Ed.” (NWRI, 2003)]; and DEQ Water Guidance Memo No. 10-2001 – Implementation Guidance for the Water Reclamation and Reuse Regulation, 9VAC25-740-10 et seq.

(O&M Manual for reclamation systems and satellite reclamation systems with bulk irrigation reuse sites under common ownership with the reclamation system or satellite reclamation system)

13. The operations and maintenance manual for the [**Choose all that apply:** reclamation system and/or satellite reclamation system] related to the bulk irrigation reuse sites[s] under common ownership or management with the system[s], shall include the following:

- a. Measurements and calculations used to determine supplemental irrigation rates of reclaimed water for the irrigation reuse sites [*Note: This may include an irrigation schedule and soil moisture monitoring plan*],
- b. Operating procedures of the irrigation system,
- c. Routine maintenance required for the continued design performance of the irrigation system and reuse sites,
- d. Identification and routine maintenance of reclaimed water storage facilities dedicated to bulk irrigation reuse,
- e. Schedules for harvesting and crop removal at the irrigation reuse sites,
- f. An inventory of spare parts to be maintained for the irrigation system, and
- g. Any other information essential to the operation of the irrigation system and reuse sites in accordance with the requirements of this [**Choose one:** administrative authorization/permit].
- h. Procedures for posting advisory signs or placards in accordance with [**Choose one:** (*Note: for Level 1 reclaimed water*) Part I.B.32 /(*Note: for Level 2 reclaimed water*) Part I.A.31 (*Note: or other number that corresponds to either condition 31 or 32*)].

Basis: 9VAC25-740-140.G

(95% Capacity Reopener. Where the designated design capacity (defined in subsection III.F) of the reclamation system or satellite reclamation system is equal to the design capacity of the WWTF

that provides source water to the reclamation system or satellite reclamation system, use the 95% capacity reopener condition that applies to the WWTF in lieu of this condition.)

14. When the monthly average flow into the [**Choose all that apply:** reclamation system/satellite reclamation system] reaches 95% of the designated design capacity authorized by this [**Choose one:** administrative authorization/permit] for each month of any 3 consecutive month period, a written notice and a plan of action for ensuring continued compliance with the terms of this [**Choose one:** administrative authorization/permit] shall be submitted to the Department of Environmental Quality (DEQ), [*Regional Office*]. The written notice shall be submitted within 30 days and the plan of action shall be received at the DEQ [*Regional Office*] no later than 90 days from the third consecutive month for which the flow reached 95% of the designated design capacity. The plan of action shall include the necessary steps and a prompt schedule of implementation for controlling any current problem, or any problem which could be reasonably anticipated, resulting from high flows entering the [**Choose all that apply:** reclamation system/satellite reclamation system]. Failure to submit an adequate plan in a timely manner shall be deemed a violation of this [**Choose one:** administrative authorization/permit].

Basis: 9VAC25-740-180

(BNR Reopener. Applicable to reclamation systems or satellite reclamation systems that are to produce BNR reclaimed water.)

15. When the annual average concentration of total nitrogen (N) or total phosphorus (P) in the reclaimed water exceeds 8.0 mg/l or 1.0 mg/l, respectively, for the preceding calendar year (January through December), a written notice of such nutrient reduction failure and a plan of action for ensuring the [**Choose all that apply:** reclamation system/satellite reclamation system] achieves BNR treatment of the reclaimed water shall be submitted by the permittee to the DEQ, [*Regional Office*] for review and approval. The written notice shall be submitted by February 1 and the plan of action shall be submitted no later than April 1. The plan of action shall include the necessary steps and a prompt schedule of implementation for the [**Choose all that apply:** reclamation system/satellite reclamation system] to achieve BNR treatment. Upon its approval, said plan and schedule shall become a part of and enforceable under the provisions of this [**Choose one:** administrative authorization/permit]. Failure to submit the required notice or failure to submit an adequate plan in a timely manner shall be deemed a violation of this [**Choose one:** administrative authorization/permit].

Basis: For VPDES and VPA permits, the basis of this condition is best profession judgment (BPJ). For irrigation reuse with non-BNR reclaimed water, the permit shall contain requirements to manage nutrients in the reclaimed water. In contrast, irrigation reuse with BNR reclaimed water shall not have requirements to manage nutrients in the permit. This condition, although not specifically stated in law or regulation, is intended to address those situations where the permittee's reclamation system or satellite reclamation system is unable to produce BNR reclaimed water as indicated in their permit application, and the additional nutrients in the non-BNR reclaimed water are consequently unmanaged for irrigation reuses. The permittee has the option to correct treatment of the reclaimed water to achieve BNR or in the absence of any action, face possible enforcement action that may ultimately result in a staff initiated modification of the permit to add nutrient management requirements for irrigation reuse of the non-BNR reclaimed water.

(For a reclamation system that: (1) will receive effluent from one or more WWTFs with significant industrial users (SIUs), as defined in 9VAC25-31-10, that does not have an approved pretreatment program or a program to manage pollutants of concern discharged by SIUs at the time of application; and (2) proposes to produce reclaimed water treated to Level 1 or for reuse in areas accessible to the public or where human contact with the reclaimed water is likely)

16. The permitted reclamation system shall not be authorized to produce reclaimed water treated to Level 1 or for reuse in areas accessible to the public or where human contact with the reclaimed water is likely, unless all wastewater treatment works that provide effluent to the reclamation system and that

have significant industrial users (SIUs), as defined in 9VAC25-31-10, have [**Choose all that apply:** (*Note: applicable to VPDES permitted POTWs*) a pretreatment program developed, approved and maintained in accordance with Part VII of the VPDES Permit Regulation (9VAC25-31-730 through 9VAC25-31-900) / (*Note: applicable to VPDES permitted PVOTWs and POTWs without an approved pretreatment program, and VPA permitted treatment works*) an approved program to manage pollutants of concern discharged by SIUs, equivalent to a pretreatment program required in the VPDES Permit Regulation for qualifying POTWs.] Prior to producing reclaimed water of the quality and for the reuses described above, the permittee shall provide written verification to the DEQ [*Regional Office*] demonstrating that wastewater treatment works from which the reclamation system shall receive effluent for reclamation have the approved [**Choose all that apply:** pretreatment program / program] as required.

[OR]

(For a reclamation system that: (1) will receive effluent from a single WWTF under common ownership or management with the reclamation system where the WWTF has significant industrial users (SIUs), as defined in 9VAC25-31-10, but does not have an approved pretreatment program or a program to manage pollutants of concern discharged by SIUs at the time of application; and (2) proposes to produce reclaimed water treated to Level 1 or for reuse in areas accessible to the public or where human contact with the reclaimed water is likely)

16. The permitted reclamation system shall not be authorized to produce reclaimed water treated to Level 1 or for reuse in areas accessible to the public or where human contact with the reclaimed water is likely, unless the wastewater treatment works that provides effluent to the reclamation system has [**Choose all that apply:** (*Note: applicable to VPDES permitted POTWs*) a pretreatment program developed, approved and maintained in accordance with Part VII of the VPDES Permit Regulation (9VAC25-31-730 through 9VAC25-31-900) / (*Note: applicable to VPDES permitted PVOTWs and POTWs without an approved pretreatment program, and VPA permitted treatment works*) an approved program to manage pollutants of concern discharged by significant industrial users, equivalent to a pretreatment program required in the VPDES Permit Regulation for qualifying POTWs.] Prior to producing reclaimed water of the quality and for the reuses described above, the permittee shall submit to the DEQ [*Regional Office*] for review and approval a [**Choose all that apply:** pretreatment program / program] for the wastewater treatment works.

Basis: 9VAC25-740-150.A

(Applicable to reclamation systems where: (a) the permittee of the reclamation system is not the same as the permittee of a WWTF with SIUs that provides effluent or source water to the reclamation system; and (b) the reclamation system is permitted to produce reclaimed water treated to Level 1 or for reuse in areas accessible to the public or where human contact with the reclaimed water is likely)

17. The permittee shall establish a contractual agreement with all wastewater treatment works that have SIUs and that provide effluent or source water to the reclamation system authorized by this [**Choose one:** administrative authorization/permit] to ensure that reclaimed water discharged from the reclamation system is safe for use in areas accessible to the public or where human contact is likely. Prior to execution of the contractual agreement, a draft copy of the agreement shall be submitted to the DEQ [*Regional Office*] for review and approval.

Basis: 9VAC25-740-150.B

(Applicable to a satellite reclamation system that withdraws source water from a sewage collection

pipeline receiving direct and indirect discharges from SIUs)

18. The permitted satellite reclamation system shall not be authorized to produce reclaimed water treated to Level 1 or for reuse in areas accessible to the public or where human contact with the reclaimed water is likely, unless any pollutant of concern discharged by significant industrial users (SIUs) to the sewage collection pipeline that provides source water to the satellite reclamation system are evaluated and demonstrated by the permittee not to:
- a. Cause interference with the ability of the satellite reclamation system to produce reclaimed water treated to Level 1 or that is safe for reuse in areas accessible to the public or where human contact with the reclaimed water is likely;
 - b. Cause a fire and explosion hazard in the satellite reclamation system;
 - c. Cause corrosive damage to the satellite reclamation system;
 - d. Adversely impact the health and safety of workers operating the satellite reclamation system; and
 - e. Adversely impact the beneficial use or disposal of sewage sludge produced by the satellite reclamation system.

This evaluation shall apply to each existing and new SIU that discharges directly or indirectly to the sewage collection pipeline from which the satellite reclamation system will withdraw source water for reclamation, excluding any downstream SIUs whose discharge has no potential to backflow to the satellite reclamation system.

Basis: DEQ Water Guidance Memo No. 10-2001 – Implementation Guidance for the Water Reclamation and Reuse Regulation, 9 VAC25-740-10 et seq. and best professional judgment

Conditions applicable to reclaimed water distribution systems

(Applicable to tank trucks used to distribute reclaimed water)

19. Tank trucks used to distribute reclaimed water shall:
- a. Be clearly labeled to identify the contents of the truck as non-potable water;
 - b. Not transport potable water used for drinking water or food preparation;
 - c. Not transport reclaimed water that does not meet the standards specified in Part I.A of this [Choose one: administrative authorization/permit] unless the truck has been evacuated and properly cleaned prior to the addition of the reclaimed water; and
 - d. Not be filled through on-board piping or removable hoses that may subsequently be used to fill tanks with water from a potable water supply.

Basis: 9VAC25-740-110.B.7

(Choose only one of the following two paragraphs that applies and delete “[OR]”)

20. **(Applicable to all reclaimed water distribution systems that are under common ownership or management with the reclamation system providing reclaimed water to the distribution system.)** The reclaimed water distribution system shall be maintained to minimize losses and to ensure safe and reliable conveyance of reclaimed water, such that the reclaimed water in the distribution system will not be degraded to a quality that violates the standards in this [Choose one: administrative authorization/permit] for the intended [Choose one: reuse/reuses] of the reclaimed water specified in the approved Reclaimed Water Management (RWM) Plan.

[OR]

20. **(Applicable to all reclaimed water distribution systems that are not under common ownership or management with the reclamation system providing reclaimed water to the distribution system.)** The reclaimed water distribution systems shall be maintained to minimize losses and to ensure safe and reliable conveyance of reclaimed water, such that the reclaimed water in the distribution system will not be degraded to a quality that violates the standards in the permit issued to the reclamation system that provides reclaimed water to the distribution system for the intended [Choose one: reuse/reuses] of the reclaimed water specified in the approved Reclaimed Water Management (RWM) Plan of the distribution system. The reclaimed water distribution system shall not be required to correct substandard water received from the reclamation system.

Basis: 9VAC25-740-110.B.9 and 9VAC25-740-100.C.1.h

(O&M Manual for reclaimed water distribution systems)

21. The permittee shall develop an operations and maintenance manual for the reclaimed water distribution system to be made available at a location central to the system. The permittee shall maintain the manual and include any changes in the practices and procedures followed by the permittee in the manual. *[Note: Per 9VAC25-740-140.B, the operations and maintenance manual for a reclaimed water distribution system may be included in the operations and maintenance manual for a reclamation system or satellite reclamation system where the reclaimed water distribution system and a reclamation system or satellite reclamation system, or all these facilities are covered by the same permit. In this case, condition 21 would be consolidated with condition 11]*

The operations and maintenance manual for the reclaimed water distribution system shall, at a minimum, contain the following:

- a. A description of all components within the distribution system and step-by-step instructions for the operation of specific mechanical components;
- b. Routine and unplanned inspection of the distribution system, including required inspections for the cross-connection and backflow prevention program contained in the approved RWM Plan;
- c. Routine maintenance and schedules of maintenance for all components of the distribution system. Maintenance shall include, but is not be limited to, initial and routine flushing of the distribution system, measures to prevent or minimize corrosion, fouling and clogging of distribution lines; and detection and repair of broken distribution lines, flow meters or pumping equipment. Discharge of flushing water to surface waters from the distribution system is prohibited unless authorized by a VPDES permit;
- d. Procedures to handle and dispose of any wastes or wastewater generated by maintenance of the distribution system in a manner protective of the environment;

(This item applies when according to information provided in the RWM plan, the reclaimed water distribution system will not record flow throughout the system and monitor disinfection residual.)

- e. A protocol that addresses the situation where reclaimed water from the reclaimed water distribution system is found to be non compliant with the standards required for the intended reuse(s) of that water; and
- f. A plan for inactivation or closure of the reclaimed water distribution system specifying what steps will be taken to protect the environment and public health. Inactivation or closure may include, but is not limited to, replacement through expansion or upgrade, or permanent closure of the existing reclaimed water distribution system. At a minimum, the plan shall contain the following:
 - (1) A list and characterization (i.e., volume, percent solids, nutrient content, etc.) of residual reclaimed and waste products or materials that are anticipated to be present at the site of the reclaimed water distribution system upon inactivation or closure; and a description of treatment, removal and final disposition of the same; and
 - (2) Supplemental information. Within 90 days of initiating any activities to inactivate or close the reclaimed water distribution system, the permittee shall submit to the DEQ [*Regional Office*] for approval the following information to supplement the previously approved plan:
 - (a) Verification of elimination of sources of reclaimed water or an alternate distribution system;
 - (b) A description of removal, demolition and/or disposal of structures, equipment, piping and appurtenances;
 - (c) A description of site fill material, grading, and erosion and sediment control;

- (d) A description of access control during inactivation or closure;
- (e) Proposed land use (post closure) of the site;
- (f) Proposed dates for beginning and completing the work; and
- (g) Any new or additional information that modifies procedures or information provided in the previously approved inactivation or closure plan.

Basis: Items a through e - 9VAC25-740-140.B, D.2 and F; item f - 9VAC25-740-110.B.9.; and DEQ Water Guidance Memo No. 10-2001 - Implementation Guidance for the Water Reclamation and Reuse Regulation, 9 VAC25-740-10 et seq.

(Applicable to end users that blend reclaimed water of differing levels of reclaimed water treatment (i.e., both Levels 1 and 2) or nutrient content (i.e., meeting BNR and not treated to achieve BNR as defined in 9VAC25-740-10) from more than one reclamation system, satellite reclamation system, reclaimed water distribution or a combination thereof; for subsequent distribution to end users not under common ownership or management with the blending end user. Choose only one of the following two paragraphs that applies and delete “[OR]”.)

22. Reclaimed water that is a blend of reclaimed waters meeting [**Choose all that apply:** Level 1 and Level 2 standards of treatment/BNR and not treated to achieve BNR as defined in 9VAC25-740-10], shall [**Choose all that apply:** be limited to reuses requiring a minimum of Level 2 reclaimed water/for irrigation reuses, require management of nutrients in the reclaimed water as specified in conditions 38 and 40(*Note: or other numbers that corresponds to conditions 38 and 40*) of Part I.B].

[OR]

The permittee shall monitor the blended reclaimed water in accordance with Part I.A to verify that it [**Choose all that apply:** complies with Level 1 reclaimed water standards/does not exceed BNR nutrient levels (i.e., annual average concentrations of total nitrogen (N) and total phosphorus (P) greater than 8.0 and 1.0 mg/l, respectively)]. Blended reclaimed water that does not [**Choose all that apply:** meet the Level 1 reclaimed water standards/exceeds BNR nutrient levels], shall [**Choose all that apply:** be limited to reuses requiring a minimum of Level 2 reclaimed water/for irrigation reuses, require management of nutrients in the reclaimed water as specified in conditions 38 and 40 (*Note: or other numbers that corresponds to conditions 38 and 40*) of Part I.B].

Basis: 9VAC25-740-40.E, 9VAC25-740-90.A, and 9VAC25-740-100.C.3.b and d

Conditions applicable to reject water and reclaimed water storage facilities

23. All storage facilities of reject water and reclaimed water (system and non-system), including landscape impoundments used for non-system storage of reclaimed water, 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 25-year 24-hour storm.

Basis: 9VAC25-740-110 C.14

(Applicable to reject water and system reclaimed water storage)

24. The permittee shall maintain a minimum freeboard of two feet at all times in the [**Choose all that apply:** reject water/system] storage facility. Non-compliance with the minimum two-foot freeboard requirement at any time shall be reported orally and in writing by the permittee to the DEQ [*Regional Office*] in accordance with Part II.I of [**Choose one:** *(for an administrative authorization)* the VPDES permit associated with this administrative authorization/*(for a VPDES or VPA permit)* this permit].

Basis: [**Choose all that apply:** *(for facilities not “grandfathered” by 9VAC25-740-110.C.7)* 9VAC25-740-110 C.6.a/*(for facilities “grandfathered” by 9VAC25-740-110.C.7)* best professional judgement/*(for VPA permit related actions)* 9VAC25-32-80.I.5 and 6/*(for VPDES permit related actions)* 9VAC25-31-190.L.5 through 7]

25. A current inventory of reject water storage, system storage and non-system storage facilities located within the service area of the approved RWM plan shall be maintained. For the addition of new storage facilities to the inventory after [**Choose one that applies:** issuance of the permit/issuance of the administrative authorization/reissuance of the permit], the permittee shall submit to the DEQ [*Regional Office*] an amended inventory at least 30 days before reclaimed water will be introduced into the new storage facilities. An inventory of reject water storage, system storage and non-system storage facilities shall include the following:

- a. Name or identifier for each storage facility,
- b. Location of each storage facility (including latitude and longitude at the center of the storage facility, to the nearest second),
- c. Function of each storage facility (i.e., reject water storage, system storage or non-system storage),
- d. Type of each storage facility (i.e., covered tank, uncovered tank, lined pond, unlined pond, etc.), and
- e. Location (latitude and longitude to the nearest second) and distance of the nearest potable water supply well and spring, and public water supply intake, to each storage facility within 450 feet of that facility.

Basis: 9VAC25-740-110 C.15

(Applicable to system storage of reclaimed water that is seasonal or greater than 24 hours, and is not covered or otherwise contained to prevent introduction of pollutants or bacteria that may be harmful to public health or the environment.)

26. The permittee shall monitor reclaimed water in system storage to verify that it complies with reclaimed water standards for the system storage contained in Part I.A of this [**Choose one:** administrative authorization/permit]. The permittee shall also include in the contingency plan of the

operations and maintenance manual for the reclamation system required per Part I.B. [**Choose one that applies:** 11/12] [*Note: Or other condition that corresponds to condition 11 or 12*], a description of measures to eliminate or minimize the potential to deliver inadequately treated reclaimed water from system storage to reuse areas.

Basis: 9VAC 25-740-70.D of the regulation allows DEQ to require treatment other than or in addition to the standards of 9VAC25-740-70.A if deemed necessary to protect public health and the environment. This applies to reclaimed water system storage that is seasonal or greater than 24 hours, and is not covered or otherwise contained to prevent the introduction of pollutants or bacteria that may be harmful to public health or the environment. 9VAC25-740-140.D.1.i requires the inclusion of a contingency plan in the reclamation system's operations and maintenance manual that describes how the potential to deliver untreated or inadequately treated water to reuse areas shall be eliminated or minimized. Inadequately treated water includes reclaimed water in system storage that fails to comply with reclaimed water standards applicable to the storage facility.

Conditions related to design and construction of water reclamation and reuse projects

(Applicable to all reclamation systems, satellite reclamation systems, reclaimed water distribution systems, and reclaimed or reject water storage facilities authorized by the permit or administrative authorization)

27. All [**Choose all that apply:** reclamations systems/satellite reclamation systems/reclaimed water distribution systems/reclaimed or reject water storage facilities] authorized by this [**Choose one:** administrative authorization/permit] shall be designed in accordance with criteria of the Water Reclamation and Reuse Regulation (9VAC25-740).

Basis: 9VAC25-740-110

28. **Preliminary engineering report.** A preliminary engineering report shall be submitted for a new reclamation system, satellite reclamation system or reclaimed water distribution system; or for the modification or expansion of the same facilities where they already exist. At the request of the permittee, the DEQ [*Regional Office*] may waive the need for a preliminary engineering report or portions of a preliminary engineering report for modification or expansion of an existing reclamation system, satellite reclamation system or reclaimed water distributions system based on the scope of the proposed project.

Basis: 9VAC25-740-120.A

29. **Certificate to construct and certificate to operate.** The permittee shall not cause or allow the construction, expansion or modification of the [**Choose all that apply:** reclamation system/satellite reclamation system] except in compliance with a certificate to construct (CTC) and shall not cause or allow the operation of the same [**Choose one:** facility/**facilities**] except in compliance with a certificate to operate (CTO) issued by the DEQ.

Basis: 9VAC25-740-120.B.1

Conditions requiring access control and advisory signs

30. There shall be no uncontrolled public access to the [**Choose all that apply:** reclamation system, satellite reclamation system, and/or system storage facilities]. [**Include this sentence if there is system storage:** System storage ponds shall be enclosed with a fence or otherwise designed with appropriate features to discourage the entry of animals and unauthorized persons.]

Basis: 9VAC25-740-160.A

31. For all reuses of reclaimed water treated to Level 2, public access shall be restricted although fencing around the site boundary is not required. Advisory signs or placards shall be posted around reuse areas or reuse site boundaries. Each sign or placard shall:

- a. State the nature of the reuse and no trespassing;
- b. State, at a minimum, “CAUTION: RECLAIMED WATER – DO NOT DRINK”; and
- c. Display the equivalent standard international symbol for non potable water.

The size of the sign or placard and lettering used shall be such that it can be easily read by a person with normal vision at a distance of 50 feet. Alternate signage and wording that assures an equivalent degree of public notification and protection may be accepted upon approval by the DEQ [*Regional Office*].

Basis: 9VAC25-740-160.B and C

(Choose only of one of the following two paragraphs that apply and delete “[OR]”.)

32. For all reuses of reclaimed water treated to Level 1, advisory signs or placards shall be posted within and at the boundaries of reuse areas. Each sign or placard shall:

- a. State the nature of the reuse;
- b. State, at a minimum, “CAUTION: RECLAIMED WATER – DO NOT DRINK”; and
- c. Display the equivalent standard international symbol for non potable water.

The size of the sign or placard and lettering used shall be such that it can be easily read by a person with normal vision at a distance of 50 feet. Alternate signage and wording that assures an equivalent degree of public notification and protection may be accepted upon approval by the DEQ [*Regional Office*].

[OR]

For all reuses of reclaimed water treated to Level 1, advisory signs or placards shall be posted at [**Note:** *State the specific location for placement of advisory signs or placards. Examples of specific locations include, but are not limited to, entrances to the residential neighborhood, the entrance to the golf course, the first and tenth tees, etc.*]. Each sign or placard shall:

- a. State the nature of the reuse;

- b. State, at a minimum, “CAUTION: RECLAIMED WATER – DO NOT DRINK”; and
- c. Display the equivalent standard international symbol for non potable water.

The size of the sign or placard and lettering used shall be such that it can be easily read by a person with normal vision at a distance of 50 feet. Alternate signage and wording that assures an equivalent degree of public notification and protection may be accepted upon approval by the DEQ [*Regional Office*].

Basis: 9VAC25-740-160.B and D

33. Advisory signs shall be posted adjacent to impoundments or ponds, including landscape impoundments, used for non-system storage of reclaimed water. Each advisory sign shall meet the specifications described in Part I.B. [**Choose one:** 32 (*Note: for storage of Level 1 reclaimed water*)/31 (*Note: for storage of Level 2 reclaimed water*)/(*Note: or other number that corresponds to either condition 32 or 31*)].

Basis: 9VAC25-740-160.B, [**Choose one:** C (*Note: for storage of Level 2 reclaimed water*)/D (*Note: for storage of Level 1 reclaimed water*)] and E

34. For industrial reuses, advisory signs shall be posted around those areas of the industrial site where reclaimed water is used and at the main entrances to the industrial site to notify employees and the visiting public of the reclaimed water reuse. Access control beyond what is normally provided by the industry is not required. Each advisory sign shall meet the specifications described in Part I.B. [**Choose one:** 32 (*Note: for reuse of Level 1 reclaimed water*)/31 (*Note: for reuse of Level 2 reclaimed water*)/(*Note: or other number that corresponds to either condition 32 or 31*)].

Basis: 9VAC25-740-160.B [**Choose one:** C (*Note: for reuse of Level 2 reclaimed water*)/D (*Note: for reuse of Level 1 reclaimed water*)] and F

(Applicable to reclaimed water distribution systems)

35. All visible, above-ground portions of the reclaimed water distribution system authorized by this [**Choose one:** administrative authorization/permit], including reclaimed water piping, valves, outlets (including fire hydrants) and other appurtenances, shall be color coded, taped, labeled, tagged or otherwise marked to notify the public and employees that the source of the water is reclaimed water, not intended for drinking or food preparation. [**Insert the following where the system distributes Level 2 reclaimed water:** Such notification shall also:

- a. Inform employees to practice good personal hygiene for incidental contact with reclaimed water, and
- b. Inform the public to avoid contact with the reclaimed water.]

Basis: 9VAC25-740-110.B.8.b

Conditions applicable to irrigation reuses of reclaimed water

36. All irrigation reuses of reclaimed water shall be supplemental irrigation, which in combination with rainfall, meets but does not exceed the water necessary to maximize production or optimize growth of the irrigated vegetation. For all bulk irrigation reuse sites identified in the reclaimed water management plan for the permitted [**Choose the facility that provides reclaimed water to the owner of the bulk irrigation site:** reclamation system/satellite reclamation system/reclaimed water distribution system], the rate of supplemental irrigation shall be calculated for every day that irrigation with reclaimed water occurs.

Where it is demonstrated by the permittee or an end user other than the permittee that salts will accumulate or have accumulated in the soil of an irrigation reuse site to concentrations that adversely affect the productivity or growth of the irrigated vegetation, and the application of reclaimed water will not contribute or has not contributed significantly to the salt problem, an additional volume of reclaimed water less than or equal to 10% of the water lost to evapotranspiration by the irrigated vegetation may be used for leaching and shall be included in the calculation of supplemental irrigation. Where it is demonstrated by the permittee or an end user other than the permittee that salts will accumulate or have accumulated in the soil of an irrigation reuse site to concentrations that adversely affect the productivity or growth of the irrigated vegetation, and the application of reclaimed water will contribute or has contributed significantly to the salt problem, no additional reclaimed water shall be applied for the purpose of leaching salts from the soil at the site. Any additional volume of water required for leaching that is not or can not be reclaimed water (e.g., rainwater, potable water, etc.) shall be included in the calculation of supplemental irrigation.

Basis: 9VAC25-740-10, 9VAC25-740-100.C.2 and DEQ Water Guidance Memo No. 10-2001 – Implementation Guidance for the Water Reclamation and Reuse Regulation, 9 VAC25-740-10 et seq.

(Site plans for bulk irrigation reuse sites under common ownership or management with the permittee)

37. Where a bulk irrigation reuse site under common ownership or management with the permittee shall be added to or expanded in the approved reclaimed water management (RWM), the permittee shall submit to the DEQ [*Regional Office*] a site plan for the new or expanded site displayed on the most current USGS topographic maps (7.5 minutes series, where available) showing the following:

- a. The boundaries of the irrigation site;
- b. The location of all potable and non-potable water supply wells and springs, public water supply intakes, occupied dwellings, property lines, areas accessible to the public, outdoor eating, drinking and bathing facilities; surface waters, including wetlands; limestone rock outcrops and sinkholes within 250 feet of the irrigation site; and
- c. Setbacks areas around the irrigation site in accordance with [*Note: specify condition number that contains the setbacks for irrigation reuse of reclaimed water*].

A new bulk irrigation reuse site or the expansion area of an existing bulk irrigation reuse site shall not receive reclaimed water until approved for inclusion in the RWM plan by the DEQ [*Regional Office*].

Basis: 9VAC25-740-100.C.6 and 7

(Applicable to any bulk irrigation reuse site irrigated with non-BNR reclaimed water.)

38. For all bulk irrigation reuse sites identified in the reclaimed water management plan for the permitted [Choose the facility that provides reclaimed water to the owner of the bulk irrigation site: reclamation system/satellite reclamation system/reclaimed water distribution system], a nutrient management plan (NMP) prepared by a nutrient management planner certified by the Department of Conservation and Recreation, is required. NMPs shall be maintained current in accordance with the Nutrient Management Training and Certification Regulations (4VAC5-15) and a copy of each NMP shall be maintained at the bulk irrigation reuse site or at a location central to all irrigation sites covered by the NMP. [Where the permittee is a bulk irrigation end user of reclaimed water provided by the permitted facility, add the following: A NMP for each new bulk irrigation reuse site or the amendment of an existing NMP shall be submitted by the permittee to the DEQ [Regional Office] prior to implementation of the new or amended NMP, respectively. The new or amended NMP shall be incorporated into the RWM plan and made an enforceable part of the permit.] [Where a bulk irrigation end user of reclaimed water provided by the permitted facility is other than the permittee, add this sentence: A NMP for each new bulk irrigation reuse site or the amendment of an existing NMP shall be submitted by the end user to the permittee prior to implementation of the new or amended NMP, respectively.]

Basis: 9VAC25-740-100.C.3

(Applicable where reclaimed water produced and/or distributed by the permittee is applied to bulk irrigation reuse sites owned or managed by the permittee, and there is no option to dispose of the reclaimed water through a VPDES permitted discharge or there is an option to dispose of the reclaimed water through a VPDES permitted discharge, but the VPDES permit does not allow discharge of the full nutrient load under design flow.)

39. For all bulk irrigation reuse sites owned or managed by the permittee and identified in the reclaimed water management plan for the permitted [Choose the facility that provides reclaimed water to the owner of the bulk irrigation site: reclamation system/satellite reclamation system/reclaimed water distribution system], a nutrient management plan (NMP) prepared by a nutrient management planner certified by the Department of Conservation and Recreation (DCR), and subsequently approved by the DCR is required. NMPs shall be maintained current in accordance with the Nutrient Management Training and Certification Regulations (4VAC5-15) and a copy of each NMP shall be maintained at the bulk irrigation reuse site or at a location central to all irrigation sites covered by the NMP. A NMP for each new bulk irrigation reuse site or the amendment of an existing DCR approved NMP shall be submitted by the permittee to the DCR for review and approval. A copy of both the DCR approval letter and the new or amended NMP shall be submitted by the permittee to the DEQ [Regional Office] prior to implementation of the NMP. The new or amended DCR approved NMP shall be incorporated into the RWM plan and made an enforceable part of the permit.

Basis: 9VAC25-740-100.C.4

(Applicable when non-bulk irrigation reuse of non-BNR reclaimed water is included in the permittee's RWM plan)

40. The permittee shall manage nutrients from non-bulk irrigation reuse of reclaimed water not treated to achieve BNR in accordance with the approved RWP plan. This shall include, but is not limited to, reclaimed water metering of individual non-bulk irrigation end users; the distribution of literature not less than annually to individual non-bulk irrigation end users addressing the proper use of the reclaimed water; and monthly monitoring of nitrogen (N) and phosphorus (P) loads by non-bulk irrigation reuse to the service area of the RWM plan based on the total monthly metered use of the reclaimed water for the service area and the monthly average concentrations of total N and total P in the reclaimed water.

Basis: 9VAC25-740-100.C.3.c

(Applicable to reclaimed water distribution systems that provide non-BNR reclaimed water to individual non-bulk irrigation end users)

41. As part of the education and notification program in the approved reclaimed water management plan, the permittee shall provide education a minimum of annually for non-bulk irrigation end users of reclaimed water not treated to achieve BNR on the proper use of the reclaimed water to manage nutrients.

Basis: 9VAC25-740-170.A.1

(Applicable to all irrigation reuses of reclaimed water)

42. For all irrigation reuses of reclaimed water, the following shall be required:

- a. There shall be no application of reclaimed water to the ground when it is saturated, frozen or covered with ice or snow, and during periods of rainfall.
- b. The chosen method of irrigation shall minimize human contact with the reclaimed water.
- c. Reclaimed water shall be prevented from coming into contact with drinking fountains, water coolers, or eating surfaces.

Basis: 9VAC25-740-170.E

(Applicable to bulk irrigation [irrigation of an area > 5 acres] reuses of reclaimed water)

43. For bulk irrigation reuse of reclaimed water, the following shall be required:

- a. Irrigation systems shall be designed, installed and adjusted to:
 1. Provide uniform distribution of the reclaimed water over the irrigation site,
 2. Prevent ponding or pooling of reclaimed water at the irrigation site,
 3. Facilitate maintenance and harvesting of irrigated areas and precludes damage to the irrigation system from the use of maintenance or harvesting equipment,
 4. Prevent aerosol carry-over from the irrigation site to areas beyond the setback distances described in Part I.B. [**Choose all that apply:** 45 (*Note: for Level 1 reclaimed water*)/46 (*Note: for Level 2 reclaimed water*)/(*Note: or other number that corresponds to condition 45 and/or 46*)], and
 5. Prevent clogging from algae or suspended solids.
- b. All pipes, pumps, valve boxes and outlets of the irrigation system shall be designed, installed, and identified in accordance with design criteria for reclaimed water distribution systems in 9VAC25-740.
- c. Any reclaimed water runoff shall be confined to the irrigation reuse site.

Basis: 9VAC25-740-170.F

44. Overspray of surface waters, including wetlands, from irrigation or other reuses of reclaimed water is prohibited.

Basis: 9VAC25-740-170.G

(Setback requirements for irrigation reuses of Level 1 reclaimed water)

45. For sites irrigated with reclaimed water meeting a minimum of Level 1 standards contained in Part I.A of this [**Choose one:** administrative authorization/permit], the following setback distances are required:

- | | |
|--|----------|
| a. Potable water supply wells and springs, and public water supply intakes | 100 feet |
| b. Non-potable water supply wells | 10 feet |
| c. Limestone rock outcrops and sinkholes | 50 feet |

No setback distances are required from occupied dwellings and outdoor eating, drinking and bathing facilities. However, aerosol formation shall be minimized within 100 feet of occupied dwellings and outdoor eating, drinking and bathing facilities through the use of low trajectory nozzles for spray irrigation, above-ground drip irrigation, or other means.

Basis: 9VAC25-740-170.H.1 and 2

(Setback requirements for irrigation reuses of Level 2 reclaimed water)

46. For sites irrigated with reclaimed water meeting a minimum of Level 2 standards contained in Part I.A of this [**Choose one:** administrative authorization/permit], the following setback distances are required:

- | | |
|--|----------|
| a. Potable water supply wells and springs, and public water supply intakes | 200 feet |
| b. Non-potable water supply wells | 10 feet |
| c. Surface waters, including wetlands | 50 feet |
| d. Occupied dwellings | 200 feet |
| e. Property lines and areas accessible to the public | 100 feet |
| f. Limestone rock outcrops and sinkholes | 50 feet |

Basis: 9VAC25-740-170.H.3

47. For sites irrigated with reclaimed water meeting a minimum of Level 2 standards contained in Part I.A of this [**Choose one:** administrative authorization/permit], the setback distances specified in Part I.B.46 [**Note:** or other number that corresponds to condition 46] may be reduced as follows with the prior approval of the DEQ [*Regional Office*]:

- a. Up to but not exceeding 50 % from occupied dwellings and areas accessible to the unless alternative measures are implemented to provide an equivalent level of public health protection. Such measures shall include, but are not limited to, disinfection of the reclaimed water equivalent to meet Level 1 standards contained in [**Choose one:** Part I.A of this permit/Part I.A of this

administrative authorization/9VAC25-740], application of the reclaimed water by methods that minimize aerosol formation (e.g., low trajectory nozzles for spray irrigation, above-ground drip irrigation), installation of permanent physical barriers to prevent migration of aerosols from the reclaimed water irrigation site, or any combination thereof. Written consent of affected landowners is required to reduce setback distances from occupied dwellings.

- b. Up to 100 % from property lines with written consent from adjacent landowners.
- c. To but not less than 100 feet from potable water supply wells and springs, or public water supply intakes where it is demonstrated that disinfection of the reclaimed water is equivalent to Level 1 standards contained in [**Choose one:** Part I.A of this permit/Part I.A of this administrative authorization/ 9VAC25-740], and there are no other constituents of the reclaimed water present in quantities sufficient to be harmful to human health.
- d. To but not less than 25 feet from surface waters, including wetlands, where reclaimed water shall be applied by methods that minimize aerosol formation (e.g., low trajectory nozzles for spray irrigation, above-ground drip irrigation); or permanent physical barriers are installed to prevent the migration of aerosols from the reclaimed water irrigation site to surface waters.

Basis: 9VAC25-740-170.H.4

(Applicable to all setbacks distances for irrigation reuse of reclaimed water)

48. For irrigation reuses where more than one setback distance may apply, the greater setback distance shall govern.

Basis: 9VAC25-740-170.H.5

49. Unless specifically stated otherwise, all setback distances shall be measured horizontally.

Basis: 9VAC25-740-170.H.6

(Applicable to non-commercially processed food crops irrigated with Level 1 or Level 2 reclaimed water)

50. Reclaimed water meeting the standards for [**Choose one:** Level 1/Level 2/either Level 1 or Level 2] specified in Part I.A of this [**Choose one:** administrative authorization/permit] may be used for irrigation of food crops eaten raw, excluding root crops, only where there shall be no direct contact (or indirect contact via aerosol) between the reclaimed water and edible portions of the crop.

Basis: 9VAC25-740-90.A, footnote b

(Applicable to pastures for foraging milking animals, ornamental nurseries or sod farms irrigated with Level 2 reclaimed water)

51. For irrigation with reclaimed water meeting Level 2 standards specified in Part I.A of this [**Choose one:** administrative authorization/permit], the following shall be prohibited unless Level 1 disinfection specified in [**Choose one:** Part I.A of this permit/Part I.A of this administrative authorization/9VAC25-740] is provided:

- a. Grazing by milking animals on the irrigation reuse site for 15 days after irrigation with reclaimed water ceases, and
- b. Harvesting, retail sale or allowing access by the general public to ornamental nursery stock or sod farms for 14 days after irrigation with reclaimed water ceases.

Basis: 9VAC25-740-90.A, footnote c

(Applicable to only below-ground drip irrigation reuse of reclaimed water approved by DEQ in accordance with 9VAC25-740-90.B)

52. The below-ground drip irrigation [**Choose one:** system/systems] authorized by this [**Choose one:** administrative authorization/permit] shall reuse reclaimed water meeting [**Choose all that apply:** a minimum of Level 1 standards contained in Part I.A of this (**Choose one:** administrative authorization/permit) where the minimum in-ground depth of burial for the irrigation system piping is less than four inches below the soil surface/a minimum of Level 2 standards contained in Part I.A of this (**Choose one:** administrative authorization/permit) where the minimum in-ground depth of burial for the irrigation system piping is greater than or equal to four inches below the soil surface.]

Basis: Recommendations made by the VDH, Office of Environmental Health Services, Division of Onsite Sewage & Water Services on March 1, 2007 for below-ground drip irrigation reuse of reclaimed water.

Conditions applicable to non-irrigation reuses of reclaimed water

(Applicable to indoor aesthetic features [i.e., decorative waterfalls or fountains] using Level 1 reclaimed water)

53. A setback distance of 100 feet horizontally shall be maintained from indoor aesthetic features to adjacent indoor public eating and drinking facilities within the same room or building space where reclaimed water meeting the Level 1 standards specified in Part I.A of this [Choose one: administrative authorization/permit] is used in the aesthetic features and the aesthetic features have the potential to create aerosols.

Basis: 9VAC25-740-170.J

(Applicable to once through & recirculating cooling towers using Level 2 reclaimed water)

54. Windblown spray generated by once-through cooling or recirculating cooling towers that reuse reclaimed water meeting the Level 2 standards specified in Part I.A of this [Choose one: administrative authorization/permit], shall not reach areas accessible to workers or the public unless Level 1 disinfection specified in [Choose one: Part I.A of this permit/Part I.A of this administrative authorization/9VAC25-740] is provided.

Basis: 9VAC25-740-90.A, footnote h

(Applicable to open cooling towers using Level 2 reclaimed water)

55. A setback distance of 300 feet horizontally shall be provided from an open cooling tower to the site property line where reclaimed water meeting the Level 2 standards specified in Part I.A of this [Choose one: administrative authorization/permit] is used in the tower. No setback distance shall be required from an open cooling tower to the site property line where a drift or mist eliminator is installed and properly operated, or the reclaimed water used in the tower is treated to meet Level 1 disinfection standards contained in 9VAC25-740.

Basis: 9VAC25-740-170.K

(Applicable to all reuses under the Construction and Industrial Reuse Categories included in the RWM plan)

56. Worker contact with reclaimed water meeting the Level 2 standards specified in Part I.A of this [Choose one: administrative authorization/permit] shall be minimized. Level 1 disinfection specified in [Choose one: Part I.A of this permit/Part I.A of this administrative authorization/9VAC25-740], shall be provided when worker contact with the reclaimed water is likely.

Basis: 9VAC25-740-90.A, footnote e

(Applicable to livestock watering that involves milking animals and aquaculture production of fish to be consumed raw)

57. Reclaimed water meeting the Level 2 standards specified in Part I.A of this [Choose one: administrative authorization/permit] may be used for [Choose all that apply: livestock watering/aquaculture production]. However, Level 1 disinfection specified in [Choose one: Part I.A of this permit/Part I.A of this administrative authorization/9VAC25-740] shall be provided for [Choose all that apply: livestock watering that involves milking animals/aquaculture production of fish to be consumed raw, such as for sushi].

Basis: 9VAC25-740-90.A, footnotes f and g

Conditions applicable to notifications, record keeping and reporting

(Applicable where the permittee is the provider of reclaimed water and is required to have an approved education and notification program per 9VAC25-740-170.A)

58. Where treatment of the reclaimed water fails more than once during a seven-day period to comply with [**Choose all that apply:** (*Note: applicable to reclaimed municipal wastewater*) Level 1 disinfection standards/(*Note: applicable to reclaimed industrial wastewater or municipal wastewater with SIUs*) reclaimed water standards] contained in [**Choose one:** Part I.A of this permit/Part I.A of this administrative authorization/the permit issued to the reclamation system] for the protection of human health, and the non-compliant reclaimed water has been discharged to the reclaimed water distribution system, the permittee shall notify the end user of the treatment failures in accordance with the education and notification program of the approved RWM plan and advise the end user of precautions to be taken to protect public health when using the reclaimed water in areas accessible to the public or where human contact with the reclaimed water is likely. These precautions shall be implemented for a minimum of seven days but shall be implemented for greater than seven days when the frequency or magnitude of the treatment failure warrants extended precautions to protect public health. Where reclaimed water service to end users will be interrupted due to planned causes, such as scheduled repairs, the permittee shall provide advance notice to end users of the anticipated date and duration of the interrupted service. Where reclaimed water service to end users is disrupted by unplanned causes, such as an upset at the reclamation system, the permittee shall notify end users and the affected public of the disrupted service if it can not or will not be restored within eight hours of discovery.

The permittee shall also describe and report all notifications of end users and the affected public for causes described above in accordance with Part I.B.60 [**Add this where the permittee is both the generator and provide of reclaimed water:** and 61] [*Note: Insert other numbers that correspond to conditions 60 and 61, as applicable*].

Basis: 9VAC25-740-100.C.1.f, 9VAC25-740-170.A.2 and 9VAC25-740-200.B

(Applicable where the permittee is the provider of reclaimed water - notification for the addition of new end users to the RWM plan)

59. For the addition of new end users or new reuses not contained in the original reclaimed water management (RWM) plan submitted with the application for a permit, the permittee shall submit to the DEQ [*Regional Office*] an amendment to the RWM plan identifying the new end users or new reuses not less than 30 days prior to connection and reclaimed water service to the new end users or initiating the new reuses. For each new end user or new reuse, the permittee shall also provide all applicable information required by the Water Reclamation and Reuse Application Addendum. Should the addition of new end users or new reuses to the RWM plan require the incorporation of additional or different reclaimed water standards, monitoring requirements or special conditions into this [**Choose one:** administrative authorization/permit], modification [**Choose one:** of the administrative authorization/or alternatively revocation and reissuance of the permit] may be necessary to authorize distribution of reclaimed water to the new end users or to authorize the new reuses.

Basis: 9VAC25-740-100.C.8

(Applicable where the permittee is the provider of reclaimed water - notification for interruption or loss of reclaimed water supply)

60. For each interruption or loss of reclaimed water supply, the permittee shall report to the DEQ

[*Regional Office*] in writing the following information [**Choose one:** at the time the next reclamation and reuse monthly monitoring report is submitted/by the 10th of the month following the month in which the interruption or loss of reclaimed water supply occurs]:

- a. The service area affected by the interruption or loss of reclaimed water supply;
- b. The initial date and time of the interruption or loss of reclaimed water supply and duration;
- c. The cause of interruption or loss of reclaimed water supply, additionally indicating whether the cause was planned or unplanned; and
- d. A description of steps taken to correct the problem and to prevent the problem from recurring.

This report shall also contain a description of any notification provided in accordance with the education and notification program of the approved RWM Plan.

Basis: Although 9VAC25-740-200.B requires the interruption or loss of reclaimed water supply to be reported, specific information to be reported for such an occurrence is based on DEQ Water Guidance Memo No. 10-2001 – Implementation Guidance for the Water Reclamation and Reuse Regulation, 9 VAC25-740-10 et seq.

(Applicable where the permittee is the generator of reclaimed water - notification of discharge of untreated or partially treated water to the reclaimed water distribution system by the generator)

61. Each discharge of any untreated or partially treated water to the service area of intended reuse that fails to comply with reclaimed water standards contained in Part I.A of this [**Choose one:** administrative authorization/permit] shall be reported by the permittee to the DEQ [*Regional Office*] as a noncompliance in accordance with Part II.I [**Note:** *Or other capital letter that corresponds with condition I of Part II (Reports of Noncompliance) in VPDES and VPA permits*] of [**Choose one:** *(for an administrative authorization) the VPDES permit associated with this administrative authorization/(for a VPDES or VPA permit) this permit*]. [**Add this sentence where the permittee is both the generator and provide of reclaimed water:** This report shall also contain a description of any notification provided in accordance with the education and notification program of the approved RWM Plan.]

Basis: 9VAC25-740-200.B, DEQ Water Guidance Memo No. 10-2001 – Implementation Guidance for the Water Reclamation and Reuse Regulation, 9VAC25-740-10 et seq.; and the [**Choose one that applies:** *(for VPDES permits) VPDES Permit Regulation, 9VAC25-31-10 et seq./(for VPA permits) VPA Permit Regulation, 9VAC25-32-10 et seq.*].

(Applicable where the permittee is the provider of reclaimed water – notification of reclaimed water distribution system leaks and main breaks)

62. All leaks and main breaks of the reclaimed water distribution system shall be reported by the permittee upon discovery as follows:

- a. Where the leak or main break discharges or causes or allows a discharge of reclaimed water that may reasonably be expected to enter state waters, the incident shall be reported by the permittee to the DEQ [*Regional Office*] as an unauthorized discharge in accordance with Part II.G [**Note:** *Or other capital letter that corresponds with condition G of Part II (Reports of Unauthorized Discharge) in VPDES and VPA permits*] of [**Choose one:** *(for an administrative authorization) the VPDES permit associated with this administrative authorization/(for a VPDES or VPA*

permit) this permit].

- b. Where the leak or main break does not discharge or cause or allow a discharge of reclaimed water that may reasonably be expected to enter state waters, but may adversely affect state waters or may endanger public health, the incident shall be reported by the permittee to the DEQ [*Regional Office*] as a noncompliance in accordance with Part II.I [**Note:** *Or other capital letter that corresponds with condition I of Part II (Reports of Noncompliance) in VPDES and VPA permits*] of [**Choose one:** *(for an administrative authorization) the VPDES permit associated with this administrative authorization/(for a VPDES or VPA permit) this permit*].

Basis: DEQ Water Guidance Memo No. 10-2001 – Implementation Guidance for the Water Reclamation and Reuse Regulation, 9VAC25-740-10 et seq., and the [**Choose one that applies:** *(for VPDES permits) VPDES Permit Regulation, 9VAC25-31-10 et seq./ (for VPA permits) VPA Permit Regulation, 9VAC25-32-10 et seq.*].

(Applicable to water reclamation systems and reclaimed water distribution systems – record keeping)

63. In addition to records specified in Part II.B of [**Choose one:** *(for an administrative authorization) the VPDES permit associated with this administrative authorization/(for a VPDES or VPA permit) this permit*], the permittee shall maintain the following at [**Choose all that apply:** *the reclamation system / a central depository within the reclaimed water distribution system*] for the period specified in Part II.B:

- a. Water reclamation and reuse operating records to include all analyses required for reclaimed water in Part I.A of this [**Choose one:** *administrative authorization/permit*], records of operational problems, alarm failures, unit process and equipment breakdowns, diversions to reject storage or emergency storage, discharge to another permitted reuse system requiring a lower level of treatment, or disposal via a permitted effluent discharge; and all corrective or preventive action taken.
- b. A monthly summary of the operating records specified in a. of this condition.

Basis: 9VAC25-740-190.A and B

(Applicable to bulk irrigation reuse sites and associated storage owned or operated by the permittee - monthly reporting)

64. The permittee shall submit a monthly summary report of the previous month's bulk irrigation reuse activities and associated system storage of reclaimed water to the DEQ [*Regional Office*] by the 10th day of the following month. Reports shall include:

- a. The monthly total volume of water, including reclaimed water, applied (in gallons) per acre to each approved bulk irrigation reuse site owned or managed by the permittee, and the calculated water demands of the irrigated vegetation corresponding to the same site[s] for the same period.

(Applicable only where bulk irrigation reuse site has a NMP)

- b. Loads of nitrogen and phosphorus applied during the previous month by way of reclaimed water to each approved bulk irrigation reuse site owned or managed by the permittee. Nitrogen shall be expressed as plant available nitrogen (PAN) per acre and phosphorus shall be expressed as P₂O₅ per acre.

(c. and d. are applicable where the permittee of a reclamation system does not have an option to dispose of reclaimed water by means other than irrigation reuse on sites owned or managed by the permittee, and must have system storage.)

- c. A summary of the quantities of reclaimed water stored in and/or withdrawn from the system storage facility during the previous month and the remaining storage capacity.
- d. A summary of staff gauge readings from the system storage facility during the previous month demonstrating freeboard maintenance.

Basis: DEQ, Water Division Interim Guidance Memorandum #01-2005 and best professional judgment

(Applicable to reclaimed water distribution systems – annual reporting)

65. The permittee shall submit an annual report for the reclaimed water distribution system covering a 12-month period from January 1 through December 31 to the DEQ [*Regional Office*] on or before February 10 of the following year. The annual report shall, at a minimum, include:

- a. The estimated volume of reclaimed water distributed to the service area of the RWM plan, reported as monthly totals.

[Insert this paragraph where the permittee will deliver non-BNR reclaimed water to irrigation reuses within the service area, including irrigation reuse by the permittee]

- b. The monthly average concentrations of total N and total P in the reclaimed water, an estimate of the monthly total volume of reclaimed water used for [**Choose one:** non-bulk irrigation / bulk irrigation / non-bulk and for bulk irrigation], the monthly total nutrient loads (N and P) to the service area resulting from [**Choose one:** non-bulk irrigation / bulk irrigation / non-bulk and from bulk irrigation] reuse, and the area in active reuse for [**Choose one:** non-bulk irrigation / bulk irrigation / non-bulk and for bulk irrigation] within the service area.

[Insert this paragraph only for distribution systems that deliver or will deliver Level 1 reclaimed water]

- c. A summary of ongoing education and notification program activities. The summary shall include, at a minimum:

[Insert (1) only for irrigation reuse of non-BNR reclaimed water]

- (1) Education programs for individual non-bulk irrigation end users of the reclaimed water,
- (2) Copies of educational materials,
- (3) The number and duration of notifications to end users per month for the following causes:
 - (a) Treatment failures at the reclamation system with subsequent discharge to the reclaimed water distribution system. The report shall also indicate the number of such treatment failures independent of the notifications that occurred within the same month;
 - (b) Planned disruption of reclaimed water service to end users, and
 - (c) Unplanned disruption of reclaimed water service to end users.

Basis: 9VAC25-740-200.C [**Add this only if paragraph c is included in condition 65:** and 9VAC25-740-170.A.2]

(Applicable to bulk irrigation reuse sites and associated storage owned or operated by the permittee – annual reporting)

66. The permittee shall submit an annual report of bulk irrigation reuse activities by the permittee and associated system storage of reclaimed water covering a 12-month period from January 1 through December 31 to the DEQ [*Regional Office*] on or before February 10 of the following year. The annual summary report shall, at a minimum, include:

- a. A yearly water balance showing such items as inputs and drawdowns from reclaimed water system storage facilities.
- b. A general statement of past reclaimed water system storage performance and the compliance status of [this facility/these facilities] with the requirements of this [**Choose one:** administrative authorization/permit].
- c. The annual total volume of reclaimed water applied to each bulk irrigation reuse site owned or managed by the permittee.

[Insert d. and e. when the permittee has submitted NMPs to the DEQ for bulk irrigation reuse sites under common ownership or management with the permittee]

- d. The annual cumulative nitrogen load, expressed as plant available nitrogen (PAN) per acre, and the annual cumulative phosphorus load, expressed as P₂O₅ per acre, from reclaimed water applied to each bulk irrigation reuse site owned or managed by the permittee.
- e. A comparison of the actual annual cumulative loads of nitrogen (N) and phosphorus (P) applied from all sources of nutrients, including irrigation reuse of the reclaimed water, to annual loads of N and P specified in the nutrient management plan (NMP) for each bulk irrigation reuse site for which the permittee is required to submit a NMP. Application of N and P in excess of the annual N and P loads specified in the NMP shall be deemed a violation of this [**Choose one:** administrative authorization/permit].
- f. [**Choose the statement(s) that apply:** A summary of turf management practices that occurred during the proceeding growing season./A summary of the agronomic practices which occurred during the preceding growing season including, but not limited to, the timing and number of crop cuttings, an estimate of total crop yield (bushels/acre or tons/acre) removed from the site, the quantity of any lime, fertilizer and animal waste (specifying type of animal waste) additions made to the site; and reseeding.]

Basis: DEQ, Water Division Interim Guidance Memorandum #01-2005 and best professional judgment

Attachment C –Monthly Monitoring Report and Attachments

General Instructions

Attachment C contains the following template and forms:

- **Monthly monitoring report template for a VPA permitted facility.** This template is to be used to develop monthly monitoring reports for reclamation and reuse projects authorized by a VPA permit. Monthly monitoring reports generated by CEDS for reclamation and reuse projects authorized by a VPDES permit or an administrative authorization associated with a VPDES permit, should display similar parameters and standards.
- **Additional Reporting for Reclamation Systems Authorized by or in Association with a VPDES Permit.** This form is to be provided to the permittee for only those water reclamation and reuse projects authorized by a VPDES permit or an administrative authorization associated with a VPDES permit. It allows CAT occurrence reporting for which CEDS can not generate a report form.
- **Monthly Log Sheet for Reclaimed Water Turbidity Monitoring.** This form is to be provided to permittees that are authorized to produce Level 1 reclaimed water by a VPA or VPDES permit, or an administrative authorization associated with a VPDES permit.
- **Monthly Log Sheet for Reclaimed Water Bacteria Monitoring.** This form is to be provided to permittees that are authorized to produce reclaimed water (Level 1 or Level 2) by a VPA or VPDES permit, or an administrative authorization associated with a VPDES permit.

The monthly monitoring report for water reclamation and reuse projects must reflect the parameters and monitoring requirements shown on the reclaimed water standards page in Part I.A of the permit (VPA or VPDES) or the administrative authorization (associated with a VPDES permit).

The monthly average flow requirement for a reclamation system or satellite reclamation system is the designated design flow indicated on the reclaimed water standards page in Part I.A of the permit or administrative authorization. There is no limit (NL) for the monthly average flow requirement of a system storage facility that discharges to a reclaimed water distribution system, a non-system storage facility or directly to a reuse.

Where brackets “[]” appear on the template and forms in Attachment C, instructions and/or values within the brackets should be used to prepare the final reporting documents for the permittee. Where two or more values or parameters appear in brackets, choose the one that corresponds to parameters and monitoring requirements shown on the reclaimed water standards page in Part I.A of the permit or administrative authorization. Delete the brackets and unused values or parameters.

Other parameters and their standards not shown on the monthly monitoring report template can be added if they are included on the reclaimed water standards pages in Part I.A of the permit or administrative authorization.

“TBD” means “to be determined” for specific parameter based on the designated design flow of the reclamation system or satellite reclamation system. The frequency of analysis for each parameter on the monthly monitoring report should correspond with the same parameter shown on the reclaimed water standards page in Part I.A of the permit or administrative authorization.

As applicable, the monthly monitoring report for reclamation and reuse projects may include

“Additional Permit Requirements or Comments”. These are to be entered on the monthly monitoring report template for a VPA permitted facility, or in the DMR comments field on the outfall information screen of CEDS for reclamation systems covered by a VPDES permit or an administrative authorization associated with a VPDES permit. Additional permit requirements or comments include, but are not limited to those noted on the monthly monitoring report template for a VPA permitted facility in this attachment.

Where both Level 1 and Level 2 reclaimed water will be produced by the same reclamation system, prepare two separate sets of reporting forms. One set of forms is for reporting Level 1 reclaimed water monitoring and the second set of forms is for reporting Level 2 reclaimed water monitoring.

COMMONWEALTH OF VIRGINIA
DEPARTMENT OF ENVIRONMENTAL QUALITY
 VPA MONITORING REPORT

DEPT. OF ENVIRONMENTAL QUALITY
 (REGIONAL OFFICE)

[Regional Office]
 [Address 1]
 [Address 2]
 [Address 3]

Name: [Facility Name]
 Address: [Address 1]
 [Address 2]

VPA0
PERMIT NUMBER

Sampling Location: [Point of Compliance #]

MONITORING PERIOD						
YR	MO	DAY		YR	MO	DAY
			FROM			
			TO			

PARAMETER		QUANTITY OR LOADING			QUALITY OR CONCENTRATION				NO. EX.	FREQUENCY OF ANALYSIS	SAMPLE TYPE	RPTNG REQ
		AVERAGE	MAXIMUM	UNITS	MINIMUM	AVERAGE	MAXIMUM	UNITS				
001 FLOW	RPRTD				*****	*****	*****	***	**			
	RQMNT	[designated design capacity]	NL	MGD	*****	*****	*****	***	**	CONT	TIRE	1/M
002 PH	RPRTD	*****	*****	***		*****						
	RQMNT	*****	*****	***	6.0	*****	9.0	S.U.	0	1/DAY	GRAB	1/M
003 BOD5	RPRTD	*****	*****	***	*****							
	RQMNT	*****	*****	***	*****	[10/30]	[NL/45]	mg/l	0	[TBD]	GRAB	1/M
004 TSS	RPRTD	*****	*****	***	*****							
	RQMNT	*****	*****	***	*****	30	45	mg/l	0	[TBD]	GRAB	1/M
006 FECAL COLIFORM	RPRTD	*****	*****	***	*****				**			
	RQMNT	*****	*****	***	*****	[14/200]	NL	n/100ml	**	[TBD]	GRAB	1/M
157 TRC	RPRTD	*****	*****	***		*****	*****		**			
	RQMNT	*****	*****	***	NL	*****	*****	mg/l	**	[CONT/TBD]	[REC/GRAB]	1/M
159 CBOD5	RPRTD	*****	*****	***	*****							
	RQMNT	*****	*****	***	*****	[8/25]	[NL/40]	mg/l	0	[TBD]	GRAB	1/M
120 E COLI	RPRTD	*****	*****	***	*****				**			
	RQMNT	*****	*****	***	*****	[11/126]	NL	n/100ml	**	[TBD]	GRAB	1/M
140 ENTEROCOCCI	RPRTD	*****	*****	***	*****				**			
	RQMNT	*****	*****	***	*****	[11/35]	NL	n/100ml	**	[TBD]	GRAB	1/M
798 TURBIDITY	RPRTD	*****	*****	***	*****	*****			**			
	RQMNT	*****	*****	***	*****	*****	2	NTU	**	CONT	REC	1/M
012 PHOSPHORUS, TOTAL (AS P)	RPRTD	*****	*****	***	*****		*****		**			
	RQMNT	*****	*****	***	*****	NL	*****	mg/l	**	[TBD]	[GRAB/# HC]	1/M

**COMMONWEALTH OF VIRGINIA
DEPARTMENT OF ENVIRONMENTAL QUALITY
VPA MONITORING REPORT**

DEPT. OF ENVIRONMENTAL QUALITY
(REGIONAL OFFICE)

[Regional Office]
[Address 1]
[Address 2]
[Address 3]

Name: [Facility Name]
Address: [Address 1]
 [Address 2]

Sampling Location: [Point of Compliance #]

VPA0
PERMIT NUMBER

MONITORING PERIOD						
YR	MO	DAY		YR	MO	DAY
			FROM			
			TO			

PARAMETER		QUANTITY OR LOADING			QUALITY OR CONCENTRATION				NO. EX.	FREQUENCY OF ANALYSIS	SAMPLE TYPE	RPTNG REQ
		AVERAGE	MAXIMUM	UNITS	MINIMUM	AVERAGE	MAXIMUM	UNITS				
013 NITROGEN, TOTAL (AS N)	RPRTD	*****	*****	***	*****		*****		**			
	RQMNT	*****	*****	***	*****	NL	*****	mg/l	**	[TBD]	[GRAB/# HC]	1/M
[OTHER]	RPRTD	*****	*****	***	*****	*****	*****		**			
	RQMNT	*****	*****	***	*****	*****	*****		**			

ADDITIONAL PERMIT REQUIREMENTS OR COMMENTS:
[Insert if chlorine is monitored: For TRC, report the lowest analysis for the month.]
[Insert for only Level 1 reclaimed water monitoring: For turbidity, report the highest daily average for the month. Submit the Monthly Log Sheet for Reclaimed Water Turbidity Monitoring with this report to the DEQ *[Name of Regional Office].]*

CORRECTIVE ACTION THRESHOLD (CAT) OCCURRENCES	CAT PARAMETER	NUMBER OF CAT OCCURRENCES ¹	NUMBER OF CAT DIVERSIONS ²
	TURBIDITY <input type="checkbox"/>		
	TRC <input type="checkbox"/>		
BYPASS OCCURRENCES	TOTAL OCCURRENCES ³	TOTAL FLOW	

1. A corrective action threshold (CAT) occurrence is an event initiated by single measurement that exceeds the CAT for turbidity or falls below the CAT for TRC. Each measurement made during a CAT occurrence does not represent a separate CAT occurrence.
2. On a separate sheet attached to this monitoring report, indicate **for each turbidity or TRC CAT diversion** the date and time of the diversion, the first measurement of the turbidity or TRC CAT occurrence, the period between the first measurement of the turbidity or TRC CAT occurrence and the diversion, the non-compliant CAT measurement of turbidity or TRC resulting in the diversion, and the duration of the diversion.
3. On a separate sheet attached to this monitoring report, provide **for each bypass occurrence** a general description of circumstances resulting in the bypass of the **[Choose one:** reclamation system/satellite reclamation system/reclaimed water distribution system **(Note: Only applicable where the reclaimed water distribution system has reclaimed water monitoring requirements)]** and appurtenances, the flow of the bypass, the duration of the bypass, and whether the water of the bypass did or did not comply with the reclaimed water standards of the permit.

COMMONWEALTH OF VIRGINIA
DEPARTMENT OF ENVIRONMENTAL QUALITY
 VPA MONITORING REPORT

DEPT. OF ENVIRONMENTAL QUALITY
 (REGIONAL OFFICE)

[Regional Office]
 [Address 1]
 [Address 2]
 [Address 3]

Name: [Facility Name]
 Address: [Address 1]
 [Address 2]

Sampling Location: [Point of Compliance #]

VPA0 _____						
PERMIT NUMBER						
MONITORING PERIOD						
YR	MO	DAY		YR	MO	DAY
			TO			

Have there been two or more consecutive monitoring results greater than the CAT for [**Choose one:** fecal coliform/E. coli/enterococci] within the monitoring period of this report?
 Yes No (Submit the Monthly Log Sheet for Reclaimed Water Bacterial Monitoring with this report to the DEQ [*Name of Regional Office*])

[Note: Insert the following question only for reclamation systems or satellite reclamation systems that will produce Level 1 reclaimed water from municipal wastewater.]
 Were any bacterial monitoring samples collected outside the period of 10:00 a.m. to 4:00 p.m.? Yes No **[Note: Where the permittee has been granted an exception by DEQ to sample bacteria outside 10:00 a.m. to 4:00 p.m., replace this sampling period with the sampling period specified in the exception.]**

I hereby certify under penalty of law that this document and all attached report forms were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.	OPERATOR IN RESPONSIBLE CHARGE			DATE		
	TYPED OR PRINTED NAME	SIGNATURE	CERTIFICATE NO.	YR	MO	DAY
	PRINCIPAL EXECUTIVE OFFICER OR AUTHORIZED AGENT			DATE		
	TYPED OR PRINTED NAME	SIGNATURE	TELEPHONE	YR	MO	DAY

Additional Reporting for Reclamation Systems Authorized by or in Association with a VPDES Permit

CORRECTIVE ACTION THRESHOLD (CAT) OCCURRENCES	CAT PARAMETER	NUMBER OF CAT OCCURRENCES ¹	NUMBER OF CAT DIVERSIONS ²
	TURBIDITY <input type="checkbox"/>		
	TRC <input type="checkbox"/>		

1. A corrective action threshold (CAT) occurrence is an event initiated by single measurement that exceeds the CAT for turbidity or falls below the CAT for TRC. Each measurement made during a CAT occurrence does not represent a separate CAT occurrence.
2. On a separate sheet attached to the monthly monitoring report of the VPDES permit, indicate for **each turbidity or TRC CAT diversion** the date and time of the diversion, the first measurement of the turbidity or TRC CAT occurrence, the period between the first measurement of the turbidity or TRC CAT occurrence and the diversion, the non-compliant CAT measurement of turbidity or TRC resulting in the diversion, and the duration of the diversion.
3. On a separate sheet attached to the monthly monitoring report of the VPDES permit, provide **for each bypass occurrence** a general description of circumstances resulting in the bypass of the [**Choose one:** reclamation system/satellite reclamation system/reclaimed water distribution system (*Note: Only applicable where the reclaimed water distribution system has reclaimed water monitoring requirements*)] and appurtenances, the flow of the bypass, the duration of the bypass, and whether the water of the bypass did or did not comply with the reclaimed water standards of the permit.

Have there been two or more consecutive monitoring results greater than the CAT for [**Choose one:** fecal coliform/E. coli/enterococci] within the monitoring period of this report?
 Yes No (Submit the Monthly Log Sheet for Reclaimed Water Bacterial Monitoring with this report to the DEQ [*Name of Regional Office*])

[Note: Insert the following question only for reclamation systems or satellite reclamation systems that will produce Level 1 reclaimed water from municipal wastewater.]
 Were any bacterial monitoring samples collected outside the period of 10:00 a.m. to 4:00 p.m.? Yes No [**Note: Where the permittee has been granted an exception by DEQ to sample bacteria outside 10:00 a.m. to 4:00 p.m., replace this sampling period with the sampling period specified in the exception.**]

I hereby certify under penalty of law that this document and all attached report forms were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.	OPERATOR IN RESPONSIBLE CHARGE			DATE		
	TYPED OR PRINTED NAME	SIGNATURE	CERTIFICATE NO.	YR	MO	DAY
	PRINCIPAL EXECUTIVE OFFICER OR AUTHORIZED AGENT			DATE		
	TYPED OR PRINTED NAME	SIGNATURE	TELEPHONE	YR	MO	DAY

Monthly Log Sheet for Reclaimed Water Turbidity Monitoring	
Operator in responsible charge:	
Print or type name: _____	
Signature: _____	Certificate No.: _____
Telephone No.: _____	Date: _____

Monthly Log Sheet for Reclaimed Water Bacteria Monitoring	
Print name(s) of person(s) collecting samples: _____	Print name(s) of person(s) or contract laboratory analyzing samples: _____
Operator in responsible charge:	
Print or type name: _____	
Signature: _____	Certificate No.: _____
Telephone No.: _____	Date: _____

Attachment D – Checklist for Service Agreements or Contracts

Water Reclamation and Reuse Checklist for Service Agreements or Contracts

The following is a checklist of the minimum conditions to be included in service agreements or contracts between the applicant or permittee (the provider) and end users of reclaimed water. Conditions under Section I of this checklist are to be included in all service agreements or contracts, while conditions under Sections II through VII are to be included in service agreements or contracts for specific reuses. The reuse specific conditions are grouped according to reuse categories corresponding to 9VAC25-740-90.A of the Water Reclamation and Reuse Regulation.

The applicant or permittee is required to submit only **examples** of service agreements or contracts with the Reclaimed Water Management (RWM) Plan in the Water Reclamation and Reuse Addendum to an Application. Where reuses of more than one reuse category will occur within the service area of the RWM Plan, the applicant or permittee may submit one example service agreement or contract that consolidates the conditions below with options to identify applicable conditions or delete conditions that are redundant or not applicable in only Sections II through VII. The applicant or permittee may also add conditions to the service agreement or contract to meet the needs of their particular water reuse program and for unique arrangements between the applicant or permittee and end user. There are circumstances where conditions under a specific section (i.e., Sections II through VII) of the checklist may not apply to a reuse specified in the RWM Plan. In this case, the DEQ water permit writer can approve an example service agreement or contract with or without conditions that are not considered applicable to the reuse.

I. Conditions required for all Service Agreements or Contracts

- A. The *[name of permittee]* shall provide reclaimed water meeting a minimum of [**Choose all that apply:** Level 1/Level 2/Level 1 and Level 2] standards to the end user for the following reuses:

[List all reuses requiring Level 1 reclaimed water]

[List all reuses requiring Level 2 reclaimed water]

- B. The *[name of permittee]* shall reserve the right to terminate the agreement and withdraw service for any failure by the end user to comply with the terms and conditions of the agreement or contract if corrective action for such failure is not taken by the end user
- C. Property owners shall report all potable and non-potable water supply wells on their property to the *[name of permittee]*.
- D. The following are prohibited:
1. Direct potable reuse of reclaimed water;
 2. The reuse of reclaimed water for food preparation or incorporation as an ingredient into food or beverage for human consumption;
 3. The return of reclaimed water to the reclaimed water distribution system after the reclaimed water has been delivered to an end user; and
 4. Overspray of surface waters, including wetlands, from irrigation or other reuses of reclaimed

water.

- E. There shall be no nuisance conditions (e.g., ponded water that attracts mosquitoes or other vectors; strong odors that are the subject of frequent and wide spread complaints from the surrounding community; any condition determined by a court of law to be a nuisance condition) resulting from the distribution, storage or use of reclaimed water.
- F. For all reuses of reclaimed water treated to Level 1, advisory signs or placards shall be posted [**Choose one:** within and at the boundaries of irrigation reuse areas/*(Note: State the specific location for placement of advisory signs or placards)*]. Each sign or placard shall:
1. State the nature of the reuse;
 2. State, at a minimum, “CAUTION: RECLAIMED WATER – DO NOT DRINK”; and
 3. Display the equivalent standard international symbol for non potable water.

The size of the sign or placard and lettering used shall be such that it can be easily read by a person with normal vision at a distance of 50 feet. [*Note: Alternate signage and wording that assures an equivalent degree of public notification and protection may be accepted upon approval by the DEQ Regional Office*].

- G. For all reuses of reclaimed water treated to Level 2, public access shall be restricted although fencing around the site boundaries of reclaimed water reuse areas is not required. Advisory signs or placards shall be posted around reuse areas or reuse site boundaries. Each sign or placard shall:
1. State the nature of the reuse and no trespassing;
 2. State, at a minimum, “CAUTION: RECLAIMED WATER – DO NOT DRINK”; and
 3. Display the equivalent standard international symbol for non potable water.

The size of the sign or placard and lettering used shall be such that it can be easily read by a person with normal vision at a distance of 50 feet. [*Note: Alternate signage and wording that assures an equivalent degree of public notification and protection may be accepted upon approval by the DEQ Regional Office*].

- H. Where an end user blends reclaimed water of differing levels of reclaimed water treatment (i.e., both Levels 1 and 2) or nutrient content (i.e., meeting BNR and not treated to achieve BNR as defined in 9VAC25-740-10) from more than one reclamation system, satellite reclamation system, reclaimed water distribution or a combination thereof; and the blended reclaimed water shall be used exclusively by the blending end user, the blended reclaimed water shall be limited to reuses requiring a minimum of Level 2 reclaimed water and/or shall not be considered treated to achieve BNR, thereby requiring a nutrient management plan for bulk irrigation reuses as described below.

II. Conditions required for urban unrestricted access reuse

- A. The following are prohibited:
1. The reuse of reclaimed water for any purpose inside a residential or domestic dwelling or a building containing a residential or domestic unit; and
 2. The reuse of reclaimed water to fill residential swimming pools, hot tubs or wading pools;
- B. Tank trucks used to distribute reclaimed water shall:
1. Be clearly labeled to identify the contents of the truck as non-potable water;
 2. Not transport potable water used for drinking water or food preparation;
 3. Not transport reclaimed water that does not meet the standards specified in Part I.A of this permit unless the truck has been evacuated and properly cleaned prior to the addition of the reclaimed water; and
 4. Not be filled through on-board piping or removable hoses that may subsequently be used to fill tanks with water from a potable water supply.
- C. All irrigation reuses of reclaimed water shall be supplemental irrigation, which in combination with rainfall, meets but does not exceed the water necessary to maximize production or optimize growth of the irrigated vegetation.
1. For non-bulk irrigation reuse (irrigation of an area ≤ 5 acres) with reclaimed water, *[Permittee must insert instructions for non-bulk irrigation end users, explaining how supplemental irrigation is to be achieved. Site specific monitoring and calculations are not required to demonstrate supplemental irrigation for non-bulk irrigation reuse.]*
 2. For bulk irrigation reuse (irrigation of an area > 5 contiguous acres) with reclaimed water, the end user shall submit the methodology used to calculate supplemental irrigation. The rate of supplemental irrigation shall be calculated for every day that irrigation with reclaimed water occurs. Where it is demonstrated by the end user that bulk irrigation with reclaimed water has or will adversely impact the productivity or growth of the irrigated vegetation related to the salt content of the reclaimed water, a volume of reclaimed water less than or equal to 10% of the water lost to evapotranspiration by the irrigated vegetation may be used for leaching and shall be included in the calculation of supplemental irrigation. Any additional volume of water required for leaching to maximize production or optimize growth of the irrigated vegetation shall be provided from sources other than reclaimed water (e.g., rainwater, potable water, etc.) and shall also be included in the calculation of supplemental irrigation.
- D. For a new bulk irrigation reuse site not identified in the current service agreement or contract or for the proposed area of expansion for an existing bulk irrigation reuse site identified in the current service agreement or contract, the end user shall submit to the *[name of permittee]* a site plan displayed on the most current USGS topographic maps (7.5 minutes series, where available) showing the following:

1. The boundaries of the irrigation site;
 2. The location of all potable and non-potable water supply wells and springs, public water supply intakes, occupied dwellings, property lines, areas accessible to the public, outdoor eating, drinking and bathing facilities; surface waters, including wetlands; limestone rock outcrops and sinkholes within 250 feet of the irrigation site; and
 3. Setbacks areas around the irrigation site required by condition I [**Note:** *Or other condition that corresponds to I within Section II*] of this service agreement or contract.
- E. [**Note:** *Applicable only to bulk irrigation reuse sites that receive non-BNR reclaimed water*] For bulk irrigation reuse sites of reclaimed water, the end user shall obtain, maintain and follow a current nutrient management plan (NMP) prepared by a nutrient management planner certified by the Department of Conservation and Recreation; provide a copy of the NMP to the [*name of permittee*]; and at the request of the [*name of permittee*], provide proof of compliance with the NMP. NMPs shall be maintained current in accordance with the Nutrient Management Training and Certification Regulations (4VAC5-15) and a copy of each NMP shall be maintained at the bulk irrigation reuse site or at a location central to all irrigation sites covered by the NMP. For each new bulk irrigation reuse site, the end user shall submit a copy of a new NMP and for changes to an existing NMP (e.g., for expansion of an existing bulk irrigation reuse site, change in crops to be grown at the site, etc.), the end user shall submit a copy of an amended NMP to the [*name of permittee*] prior to implementation of the new or amended NMP, respectively.
- F. [**Note:** *Applicable only to non-bulk irrigation reuse that receives non-BNR reclaimed water*] The reclaimed water contains nitrogen (N) and phosphorus (P). These are plant nutrients beneficial to the growth of irrigated vegetation, but can also contribute to the degradation of state waters when they are applied in excess of plant nutrient needs at the site of irrigation. Therefore, non-bulk irrigation end users of the reclaimed water are advised to reduce the application of other sources of plant nutrients (i.e., commercial fertilizers, manures, etc.) where the reclaimed water will be applied. The annual average concentrations of N (as N) and P (as P₂O₅) in the reclaimed water are _____ and _____ lbs/100 gallons, respectively [**Note:** *Permittee provides the concentrations of these nutrients*]. The rate of N and P₂O₅ application may be calculated by multiplying these concentrations by the gallons of reclaimed water that are applied in an average year to the irrigated site, divided by the area of the site usually in units of acres. The pounds of N and P₂O₅ applied per unit area of the site by irrigation with the reclaimed water are subtracted from the recommended N and P₂O₅ fertilizer rates of the irrigated vegetation. This difference is the amount of nutrients needed by the irrigated vegetation that may be provided by sources other than irrigation with the reclaimed water.
- G. For all irrigation reuses of reclaimed water, the following shall be required:
1. There shall be no application of reclaimed water to the ground when it is saturated, frozen or covered with ice or snow, and during periods of rainfall.
 2. The chosen method of irrigation shall minimize human contact with the reclaimed water.
 3. Reclaimed water shall be prevented from coming into contact with drinking fountains, water coolers, or eating surfaces.

H. For bulk irrigation reuse of reclaimed water, the following shall be required:

1. Irrigation systems shall be designed, installed and adjusted to:
 - a. Provide uniform distribution of the reclaimed water over the irrigation site,
 - b. Prevent ponding or pooling of reclaimed water at the irrigation site,
 - c. Facilitate maintenance and harvesting of irrigated areas and precludes damage to the irrigation system from the use of maintenance or harvesting equipment,
 - d. Prevent aerosol carry-over from the irrigation site to areas beyond the setback distances specified in this service agreement or contract for irrigation reuse, and
 - e. Prevent clogging from algae or suspended solids.
2. All pipes, pumps, valve boxes and outlets of the irrigation system shall be designed, installed, and identified in accordance with design criteria for reclaimed water distribution systems in 9VAC25-740.
3. Any reclaimed water runoff shall be confined to the irrigation reuse site.

I. For sites irrigated with Level 1 reclaimed water, the following setback distances are required:

- | | |
|--|----------|
| 1. Potable water supply wells and springs, and public water supply intakes | 100 feet |
| 2. Non-potable water supply wells | 10 feet |
| 3. Limestone rock outcrops and sinkholes | 50 feet |

No setback distances are required from occupied dwellings and outdoor eating, drinking and bathing facilities. However, aerosol formation shall be minimized within 100 feet of occupied dwellings and outdoor eating, drinking and bathing facilities through the use of low trajectory nozzles for spray irrigation, above-ground drip irrigation, or other means.

J. For irrigation reuses where more than one setback distance may apply, the greater setback distance shall govern. All setback distances shall be measured horizontally, unless specifically stated otherwise.

K. Minimum separation distances for in-ground reclaimed water distribution pipelines specified in 9VAC25-740, shall apply to in-ground piping for irrigation systems of reclaimed water.

L. [**Note:** *Applicable to only below-ground drip irrigation reuse of Level 2 reclaimed water approved by DEQ in accordance with 9VAC25-740-90.B*] Below-ground drip irrigation reuse of the reclaimed water is allowed where the minimum in-ground depth of burial for the irrigation system piping is greater than or equal to four inches below the soil surface.

- M. All storage facilities of reclaimed water, including landscape impoundments to be used for the storage of reclaimed water, 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 25-year 24-hour storm.
- N. For a new reclaimed water storage facility, including a landscape impoundment to be used for the storage of reclaimed water, the end user shall notify the [*name of permittee*] of the new storage facility 60 days before reclaimed water is introduced into the facility. The end user's notification of the new storage facility shall include the following information:
 - 1. Location of the storage facility (including latitude and longitude at the center of the facility),
 - 2. Type of storage facility (i.e., covered tank, uncovered tank, lined pond, unlined pond, etc.), and
 - 3. Location (latitude and longitude) and distance of the nearest potable water supply well and spring, and public water supply intake, to the new storage facility within 450 feet of that storage facility.
- O. Advisory signs shall be posted adjacent to impoundments or ponds, including landscape impoundments, used for storage of reclaimed water. Each advisory sign shall meet specifications described in section I, condition F [*Note: Or other condition and section that corresponds to section I, condition F*] of this service agreement or contract.

III. Conditions required for irrigation-unrestricted access reuse

- A. All irrigation reuses of reclaimed water shall be supplemental irrigation, which in combination with rainfall, meets but does not exceed the water necessary to maximize production or optimize growth of the irrigated vegetation.
 - 1. For non-bulk irrigation reuse (irrigation of an area ≤ 5 acres) with reclaimed water, [*Permittee must insert instructions for non-bulk irrigation end users, explaining how supplemental irrigation is to be achieved. Site specific monitoring and calculations are not required to demonstrate supplemental irrigation for non-bulk irrigation reuse.*].
 - 2. For bulk irrigation reuse (irrigation of an area > 5 contiguous acres) with reclaimed water, the end user shall submit the methodology used to calculate supplemental irrigation. The rate of supplemental irrigation shall be calculated for every day that irrigation with reclaimed water occurs. Where it is demonstrated by the end user that bulk irrigation with reclaimed water has or will adversely impact the productivity or growth of the irrigated vegetation related to the salt content of the reclaimed water, a volume of reclaimed water less than or equal to 10% of the water lost to evapotranspiration by the irrigated vegetation may be used for leaching and shall be included in the calculation of supplemental irrigation. Any additional volume of water required for leaching to maximize production or optimize growth of the irrigated vegetation shall be provided from sources other than reclaimed water (e.g., rainwater, potable water, etc.) and shall also be included in the calculation of supplemental irrigation.
- B. For a new bulk irrigation reuse site not identified in the current service agreement or contract or

for the proposed area of expansion for an existing bulk irrigation reuse site identified in the current service agreement or contract, the end user shall submit to the [name of permittee] a site plan displayed on the most current USGS topographic maps (7.5 minutes series, where available) showing the following:

1. The boundaries of the irrigation site;
 2. The location of all potable and non-potable water supply wells and springs, public water supply intakes, occupied dwellings, property lines, areas accessible to the public, outdoor eating, drinking and bathing facilities; surface waters, including wetlands; limestone rock outcrops and sinkholes within 250 feet of the irrigation site; and
 3. Setbacks areas around the irrigation site required by condition G [**Note:** *Or other condition that corresponds to G within Section III*] of this service agreement or contract.
- C. [**Note:** *Applicable only to bulk irrigation reuse sites that receive non-BNR reclaimed water*] For bulk irrigation reuse sites of reclaimed water, the end user shall obtain, maintain and follow a current nutrient management plan (NMP) prepared by a nutrient management planner certified by the Department of Conservation and Recreation; provide a copy of the NMP to the [name of permittee]; and at the request of the [name of permittee], provide proof of compliance with the NMP. NMPs shall be maintained current in accordance with the Nutrient Management Training and Certification Regulations (4VAC5-15) and a copy of each NMP shall be maintained at the bulk irrigation reuse site or at a location central to all irrigation sites covered by the NMP. For each new bulk irrigation reuse site, the end user shall submit a copy of a new NMP and for changes to an existing NMP (e.g., for expansion of an existing bulk irrigation reuse site, change in crops to be grown at the site, etc.), the end user shall submit a copy of an amended NMP to the [name of permittee] prior to implementation of the new or amended NMP, respectively.
- D. [**Note:** *Applicable only to non-bulk irrigation reuse that receives non-BNR reclaimed water*] The reclaimed water contains nitrogen (N) and phosphorus (P). These are plant nutrients beneficial to the growth of irrigated vegetation, but can also contribute to the degradation of state waters when they are applied in excess of plant nutrient needs at the site of irrigation. Therefore, non-bulk irrigation end users of the reclaimed water are advised to reduce the application of other sources of plant nutrients (i.e., commercial fertilizers, manures, etc.) where the reclaimed water will be applied. The annual average concentrations of N (as N) and P (as P₂O₅) in the reclaimed water are _____ and _____ lbs/100 gallons, respectively [**Note:** *Permittee provides the concentrations of these nutrients*]. The rate of N and P₂O₅ application may be calculated by multiplying these concentrations by the gallons of reclaimed water that are applied in an average year to the irrigated site, divided by the area of the site usually in units of acres. The pounds of N and P₂O₅ applied per unit area of the site by irrigation with the reclaimed water are subtracted from the recommended N and P₂O₅ fertilizer rates of the irrigated vegetation. This difference is the amount of nutrients needed by the irrigated vegetation that may be provided by sources other than irrigation with the reclaimed water.
- E. For all irrigation reuses of reclaimed water, the following shall be required:
1. There shall be no application of reclaimed water to the ground when it is saturated, frozen or covered with ice or snow, and during periods of rainfall.

2. The chosen method of irrigation shall minimize human contact with the reclaimed water.
 3. Reclaimed water shall be prevented from coming into contact with drinking fountains, water coolers, or eating surfaces.
- F. For bulk irrigation reuse of reclaimed water, the following shall be required:
1. Irrigation systems shall be designed, installed and adjusted to:
 - a. Provide uniform distribution of the reclaimed water over the irrigation site,
 - b. Prevent ponding or pooling of reclaimed water at the irrigation site,
 - c. Facilitate maintenance and harvesting of irrigated areas and precludes damage to the irrigation system from the use of maintenance or harvesting equipment,
 - d. Prevent aerosol carry-over from the irrigation site to areas beyond the setback distances specified in this service agreement or contract for irrigation reuse, and
 - e. Prevent clogging from algae or suspended solids.
 2. All pipes, pumps, valve boxes and outlets of the irrigation system shall be designed, installed, and identified in accordance with design criteria for reclaimed water distribution systems in 9VAC25-740.
 3. Any reclaimed water runoff shall be confined to the irrigation reuse site.
- G. For sites irrigated with Level 1 reclaimed water, the following setback distances are required:
- | | |
|--|----------|
| 1. Potable water supply wells and springs, and public water supply intakes | 100 feet |
| 2. Non-potable water supply wells | 10 feet |
| 3. Limestone rock outcrops and sinkholes | 50 feet |
- No setback distances are required from occupied dwellings and outdoor eating, drinking and bathing facilities. However, aerosol formation shall be minimized within 100 feet of occupied dwellings and outdoor eating, drinking and bathing facilities through the use of low trajectory nozzles for spray irrigation, above-ground drip irrigation, or other means.
- H. For irrigation reuses where more than one setback distance may apply, the greater setback distance shall govern. All setback distances shall be measured horizontally, unless specifically stated otherwise.
- I. Reclaimed water may be used for irrigation of food crops eaten raw, excluding root crops, only where there shall be no direct contact (or indirect contact via aerosol) between the reclaimed water and edible portions of the crop.

- J. Minimum separation distances for in-ground reclaimed water distribution pipelines specified in 9VAC25-740, shall apply to in-ground piping for irrigation systems of reclaimed water.
- K. [*Note: Applicable to only below-ground drip irrigation reuse of Level 2 reclaimed water approved by DEQ in accordance with 9VAC25-740-90.B*] Below-ground drip irrigation reuse of the reclaimed water is allowed where the minimum in-ground depth of burial for the irrigation system piping is greater than or equal to four inches below the soil surface.
- L. All storage facilities of reclaimed water, including landscape impoundments to be used for the storage of reclaimed water, 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 25-year 24-hour storm.
- M. For a new reclaimed water storage facility, including a landscape impoundment to be used for the storage of reclaimed water, the end user shall notify the [*name of permittee*] of the new storage facility 60 days before reclaimed water is introduced into the facility. The end user's notification of the new storage facility shall include the following information:
 - 1. Location of the storage facility (including latitude and longitude at the center of the facility),
 - 2. Type of storage facility (i.e., covered tank, uncovered tank, lined pond, unlined pond, etc.), and
 - 3. Location (latitude and longitude) and distance of the nearest potable water supply well and spring, and public water supply intake, to the new storage facility within 450 feet of that storage facility.
- N. Advisory signs shall be posted adjacent to impoundments or ponds, including landscape impoundments, used for storage of reclaimed water. Each advisory sign shall meet specifications described in section I, condition F [*Note: Or other condition and section that corresponds to section I, condition F*] of this service agreement or contract.

IV. Conditions required for irrigation-restricted access reuse

- A. All irrigation reuses of reclaimed water shall be supplemental irrigation, which in combination with rainfall, meets but does not exceed the water necessary to maximize production or optimize growth of the irrigated vegetation.
 - 1. For non-bulk irrigation reuse (irrigation of an area ≤ 5 acres) with reclaimed water, [*Permittee must insert instructions for non-bulk irrigation end users, explaining how supplemental irrigation is to be achieved. Site specific monitoring and calculations are not required to demonstratd supplemental irrigation for non-bulk irrigation reuse.*].
 - 2. For bulk irrigation reuse (irrigation of an area > 5 contiguous acres) with reclaimed water, the end user shall submit the methodology used to calculate supplemental irrigation. The rate of supplemental irrigation shall be calculated for every day that irrigation with reclaimed water occurs. Where it is demonstrated by the end user that bulk irrigation with reclaimed water

- has or will adversely impact the productivity or growth of the irrigated vegetation related to the salt content of the reclaimed water, a volume of reclaimed water less than or equal to 10% of the water lost to evapotranspiration by the irrigated vegetation may be used for leaching and shall be included in the calculation of supplemental irrigation. Any additional volume of water required for leaching to maximize production or optimize growth of the irrigated vegetation shall be provided from sources other than reclaimed water (e.g., rainwater, potable water, etc.) and shall also be included in the calculation of supplemental irrigation.
- B. For a new bulk irrigation reuse site not identified in the current service agreement or contract or for the proposed area of expansion for an existing bulk irrigation reuse site identified in the current service agreement or contract, the end user shall submit to the [name of permittee] a site plan displayed on the most current USGS topographic maps (7.5 minutes series, where available) showing the following:
1. The boundaries of the irrigation site;
 2. The location of all potable and non-potable water supply wells and springs, public water supply intakes, occupied dwellings, property lines, areas accessible to the public, outdoor eating, drinking and bathing facilities; surface waters, including wetlands; limestone rock outcrops and sinkholes within 250 feet of the irrigation site; and
 3. Setbacks areas around the irrigation site required by condition G [*Note: Or other condition that corresponds to G within Section IV*] of this service agreement or contract..
- C. [*Note: Applicable only to bulk irrigation reuse sites that receive non-BNR reclaimed water*] For bulk irrigation reuse sites of reclaimed water, the end user shall obtain, maintain and follow a current nutrient management plan (NMP) prepared by a nutrient management planner certified by the Department of Conservation and Recreation; provide a copy of the NMP to the [name of permittee]; and at the request of the [name of permittee], provide proof of compliance with the NMP. NMPs shall be maintained current in accordance with the Nutrient Management Training and Certification Regulations (4VAC5-15) and a copy of each NMP shall be maintained at the bulk irrigation reuse site or at a location central to all irrigation sites covered by the NMP. For each new bulk irrigation reuse site, the end user shall submit a copy of a new NMP and for changes to an existing NMP (e.g., for expansion of an existing bulk irrigation reuse site, change in crops to be grown at the site, etc.), the end user shall submit a copy of an amended NMP to the [name of permittee] prior to implementation of the new or amended NMP, respectively.
- D. [*Note: Applicable only to bulk irrigation reuse sites that receive non-BNR reclaimed water*] For new or expanded bulk irrigation reuse sites, the end user shall obtain, maintain and follow a current nutrient management plan (NMP) prepared by a nutrient management planner certified by the Department of Conservation and Recreation; submit a copy of the new or updated NMP to the [name of permittee] prior to initiating irrigation with reclaimed water at the site; and provide proof of compliance with the NMP at the request of the [name of permittee].
- E. For all irrigation reuses of reclaimed water, the following shall be required:
1. There shall be no application of reclaimed water to the ground when it is saturated, frozen or covered with ice or snow, and during periods of rainfall.

2. The chosen method of irrigation shall minimize human contact with the reclaimed water.
 3. Reclaimed water shall be prevented from coming into contact with drinking fountains, water coolers, or eating surfaces.
- F. For bulk irrigation reuse of reclaimed water, the following shall be required:
1. Irrigation systems shall be designed, installed and adjusted to:
 - a. Provide uniform distribution of the reclaimed water over the irrigation site,
 - b. Prevent ponding or pooling of reclaimed water at the irrigation site,
 - c. Facilitate maintenance and harvesting of irrigated areas and precludes damage to the irrigation system from the use of maintenance or harvesting equipment,
 - d. Prevent aerosol carry-over from the irrigation site to areas beyond the setback distances specified in this service agreement or contract for irrigation reuse, and
 - e. Prevent clogging from algae or suspended solids.
 2. All pipes, pumps, valve boxes and outlets of the irrigation system shall be designed, installed, and identified in accordance with design criteria for reclaimed water distribution systems in 9VAC25-740.
 3. Any reclaimed water runoff shall be confined to the irrigation reuse site.
- G. For sites irrigated with Level 2 reclaimed water, the following setback distances are required:
- | | |
|--|----------|
| a. Potable water supply wells and springs, and public water supply intakes | 200 feet |
| b. Non-potable water supply wells | 10 feet |
| c. Surface waters, including wetlands | 50 feet |
| d. Occupied dwellings | 200 feet |
| e. Property lines and areas accessible to the public | 100 feet |
| f. Limestone rock outcrops and sinkholes | 50 feet |
- I. For irrigation reuses where more than one setback distance may apply, the greater setback distance shall govern. All setback distances shall be measured horizontally, unless specifically stated otherwise.
- J. Reclaimed water may be used for irrigation of food crops eaten raw, excluding root crops, only where there shall be no direct contact (or indirect contact via aerosol) between the reclaimed

water and edible portions of the crop.

- K. [*Note: Applicable where Level 2 reclaimed water shall be provided for irrigation-restricted access reuses without additional treatment to meet Level 1 disinfection standards specified in 9VAC25-740*] The following shall be prohibited after irrigation with the reclaimed water:
1. Grazing by milking animals on the irrigation reuse site for 15 days after irrigation with reclaimed water ceases, and
 2. Harvesting, retail sale or allowing access by the general public to ornamental nursery stock or sod farms for 14 days after irrigation with reclaimed water ceases.
- L. Minimum separation distances for in-ground reclaimed water distribution pipelines specified in 9VAC25-740, shall apply to in-ground piping for irrigation systems of reclaimed water.
- M. All storage facilities of reclaimed water, including landscape impoundments to be used for the storage of reclaimed water, 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 25-year 24-hour storm.
- N. For a new reclaimed water storage facility, including a landscape impoundment to be used for the storage of reclaimed water, the end user shall notify the [*name of permittee*] of the new storage facility 60 days before reclaimed water is introduced into the facility. The end user's notification of the new storage facility shall include the following information:
1. Location of the storage facility (including latitude and longitude at the center of the facility),
 2. Type of storage facility (i.e., covered tank, uncovered tank, lined pond, unlined pond, etc.), and
 3. Location (latitude and longitude) and distance of the nearest potable water supply well and spring, and public water supply intake, to the new storage facility within 450 feet of that storage facility.
- O. Advisory signs shall be posted adjacent to impoundments or ponds, including landscape impoundments, used for storage of reclaimed water. Each advisory sign shall meet specifications described in section I, condition G [*Note: Or other condition and section that corresponds to section I, condition G*] of this service agreement or contract.

V. Conditions required for landscape impoundments reuse

- A. [*Note: Applicable only where Level 1 reclaimed water will be reused in indoor aesthetic features.*] A setback distance of 100 feet horizontally shall be maintained from indoor aesthetic features to adjacent indoor public eating and drinking facilities within the same room or building space where Level 1 reclaimed water is used in the aesthetic features and the aesthetic features have the potential to create aerosols.
- B. All storage facilities of reclaimed water, including landscape impoundments to be used for the

storage of reclaimed water, 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 25-year 24-hour storm.

- C. For a new reclaimed water storage facility, including a landscape impoundment to be used for the storage of reclaimed water, the end user shall notify the [*name of permittee*] of the new storage facility 60 days before reclaimed water is introduced into the facility. The end user's notification of the new storage facility shall include the following information:
1. Location of the storage facility (including latitude and longitude at the center of the facility),
 2. Type of storage facility (i.e., covered tank, uncovered tank, lined pond, unlined pond, etc.), and
 3. Location (latitude and longitude) and distance of the nearest potable water supply well and spring, and public water supply intake, to the new storage facility within 450 feet of that storage facility.
- D. Advisory signs shall be posted adjacent to impoundments or ponds, including landscape impoundments, used for storage of reclaimed water. Each advisory sign shall meet specifications described in section I, [**Choose all that apply:** condition F for storage of Level 1 reclaimed water/condition G for storage of Level 2 reclaimed water/(*Note: Or other section and condition(s) that correspond to section I and condition F or G*)] of this service agreement or contract.

VI. Conditions required for construction reuse

- A. Tank trucks used to distribute reclaimed water shall:
1. Be clearly labeled to identify the contents of the truck as non-potable water;
 2. Not transport potable water used for drinking water or food preparation;
 3. Not transport reclaimed water that does not meet the standards specified in Part I.A of this permit unless the truck has been evacuated and properly cleaned prior to the addition of the reclaimed water; and
 4. Not be filled through on-board piping or removable hoses that may subsequently be used to fill tanks with water from a potable water supply.
- B. [*Note: Applicable where Level 2 reclaimed water shall be provided for construction reuses without additional treatment to meet Level 1 disinfection standards specified in 9VAC25-740*] Worker contact with the reclaimed water shall be minimized.
- C. All storage facilities of reclaimed water, including landscape impoundments to be used for the storage of reclaimed water, 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 25-year 24-hour storm.

- D. For a new reclaimed water storage facility, including a landscape impoundment to be used for the storage of reclaimed water, the end user shall notify the [*name of permittee*] of the new storage facility 60 days before reclaimed water is introduced into the facility. The end user's notification of the new storage facility shall include the following information:
1. Location of the storage facility (including latitude and longitude at the center of the facility),
 2. Type of storage facility (i.e., covered tank, uncovered tank, lined pond, unlined pond, etc.), and
 3. Location (latitude and longitude) and distance of the nearest potable water supply well and spring, and public water supply intake, to the new storage facility within 450 feet of that storage facility.
- E. Advisory signs shall be posted adjacent to impoundments or ponds, including landscape impoundments, used for storage of reclaimed water. Each advisory sign shall meet specifications described in section I, condition G [*Note: Or other condition and section that corresponds to section I, condition G*] of this service agreement or contract.

VII. Conditions required for industrial reuse

- A. Tank trucks used to distribute reclaimed water shall:
1. Be clearly labeled to identify the contents of the truck as non-potable water;
 2. Not transport potable water used for drinking water or food preparation;
 3. Not transport reclaimed water that does not meet the standards specified in Part I.A of this permit unless the truck has been evacuated and properly cleaned prior to the addition of the reclaimed water; and
 4. Not be filled through on-board piping or removable hoses that may subsequently be used to fill tanks with water from a potable water supply.
- B. For industrial reuses, advisory signs shall be posted around those areas of the industrial site where reclaimed water is used and at the main entrances to the industrial site to notify employees and the visiting public of the reclaimed water reuse. Access control beyond what is normally provided by the industry is not required. Each advisory sign shall meet specifications described in section I, [**Choose all that apply:** condition F for reuse of Level 1 reclaimed water or Level 2 reclaimed water treated to meet Level 1 disinfection standards/condition G for reuse of Level 2 reclaimed water/(*Note: Or other section and condition(s) that correspond to section I and condition F or G*)] of this service agreement or contract.

[*Note: Conditions C, D, E and F are applicable where Level 2 reclaimed water shall be provided for industrial reuses without additional treatment to meet Level 1 disinfection standards specified in 9VAC25-740*]

- C. Worker contact with the reclaimed water shall be minimized.
- D. The reclaimed water may be used for [**Choose all that apply:** livestock watering that does not include milking animals/aquaculture production that does not include fish to be consumed raw, such as for sushi].
- E. Windblown spray generated by once-through cooling or recirculating cooling towers that use the reclaimed water, shall not reach areas accessible to workers or the public.
- F. A setback distance of 300 feet horizontally shall be provided from an open cooling tower to the site property line where reclaimed water is used in the tower. No setback distance shall be required from the open cooling tower to the site property line where a drift or mist eliminator is installed and properly operated.
- G. All storage facilities of reclaimed water, including landscape impoundments to be used for the storage of reclaimed water, 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 25-year 24-hour storm.
- H. For a new reclaimed water storage facility, including a landscape impoundment to be used for the storage of reclaimed water, the end user shall notify the [*name of permittee*] of the new storage facility 60 days before reclaimed water is introduced into the facility. The end user's notification of the new storage facility shall include the following information:
 - 1. Location of the storage facility (including latitude and longitude at the center of the facility),
 - 2. Type of storage facility (i.e., covered tank, uncovered tank, lined pond, unlined pond, etc.), and
 - 3. Location (latitude and longitude) and distance of the nearest potable water supply well and spring, and public water supply intake, to the new storage facility within 450 feet of that storage facility.
- I. Advisory signs shall be posted adjacent to impoundments or ponds, including landscape impoundments, used for storage of reclaimed water. Each advisory sign shall meet specifications described in section I, [**Choose all that apply:** condition F for storage of Level 1 reclaimed water or Level 2 reclaimed water treated to meet Level 1 disinfection standards/condition G for storage of Level 2 reclaimed water/(**Note:** *Or other section and condition(s) that correspond to section I and condition F or G*)] of this service agreement or contract.

Attachment E – Correspondence

Transmittal Letter for a Final VPDES Permit Issuance, Reissuance or Major Modification to Include Water Reclamation and Reuse

Regional DEQ Letterhead
Date

Facility Contact
Facility Name
Address

CERTIFIED MAIL
RETURN RECEIPT REQUESTED

RE: VPDES Permit No. VA0000000, [Issuance/Reissuance/Modification]

Dear [Permittee]:

Your VPDES permit is enclosed. [For Revocation and Reissuances add the following language: This permit supersedes the previous VPDES Permit VA00XXXXX issued to this facility.] A Discharge Monitoring Report (DMR) form is included with the permit. Please make additional copies of the DMR for future use. The first DMR required by this permit for [monthly/bimonthly/quarterly/semiannually/annually monitored parameters] [if parameters are monitored at more than one frequency, specify the first monitoring period and due date for each] is due on [date] for the period [months in monitoring period]. If you still have DMR data to report as required by the previous permit please submit it as an attachment to the first DMR required by this permit.

[For the addition of water reclamation and reuse standards, monitoring requirements and special conditions to the permit, insert this paragraph: Also included with the permit is a reclamation and reuse monthly monitoring report (Add this to the sentence if the permit requires reclaimed water monitoring for CAT parameters: and two attachments entitled “Additional Reporting for Reclamation Systems Authorized by or in Association with a VPDES Permit” and “Monthly Log Sheet for Reclaimed Water Bacterial Monitoring”) for the authorized (Choose all that apply: reclamation system/satellite reclamation system/reclaimed water distribution system/reclaimed water system storage/(specify other if applicable)). Please make additional copies of the monthly monitoring report (Insert when applicable: and attachments) for future use. The first monthly monitoring report (Insert when applicable: with attachments) is due on (date) for (month)].

Monitoring results on the DMRs [Insert if applicable: and the reclamation and reuse monthly monitoring reports] should be reported to the same number of significant digits shown for each monitoring parameter on the effluent limits [Insert if applicable: and reclaimed water standards] page of the permit. Please send DMRs [Insert if applicable: and reclamation and reuse monthly monitoring reports] to:

[Regional Office and Address]

Note that DEQ has launched an e-DMR program that allows you to submit effluent [Insert if applicable: and reclaimed water] monitoring data electronically. If you are interested in participating in this program please visit the following website for details:

<http://www.deq.virginia.gov/water/edmrfaq.html>

[For any TWTDS > 1,000 gpd that land apply, incinerate or surface dispose of sludge, insert this paragraph: Please note that compliance with the permit's requirements for use and disposal of sewage sludge does not relieve you of your responsibility to comply with federal requirements set forth in 40 CFR Part 503. Until DEQ seeks and is granted authority to administer the Part 503 regulations by EPA, treatment works treating domestic sewage should continue to work directly with EPA to comply with them. For more information, you can call the EPA Region III office in Philadelphia at 215-814-5735]

[For facilities with discharges greater than 1.0 MGD or that have pretreatment programs, insert this paragraph: Please note that if this permit is to be reissued in five years, there are specific testing requirements associated with the Form 2A reissuance application that are different from the testing requirements in your permit. In order to provide the necessary data for Form 2A you may need to begin additional sampling during the term of this permit prior to receiving a reissuance reminder letter from this agency. Please look at Form 2A Part D (Expanded Effluent Testing Data) and Part E (Toxicity Testing Data) for the sampling requirements.]

As provided by Rule 2A:2 of the Supreme Court of Virginia, you have thirty days from the date of service (the date you actually received this decision or the date it was mailed to you, whichever occurred first) within which to appeal this decision by filing a notice of appeal in accordance with the Rules of the Supreme Court of Virginia with the Director, Department of Environmental Quality. In the event that this decision is served on you by mail, three days are added to that period.

Alternatively, any owner under §§ 62.1 - 44.16, 62.1 - 44.17, and 62.1 - 44.19 of the State Water Control Law aggrieved by any action of the State Water Control Board taken without a formal hearing, or by inaction of the Board, may demand in writing a formal hearing of such owner's grievance, provided a petition requesting such hearing is filed with the Board. Said petition must meet the requirements set forth in §1.23(b) of Procedural Rule No. 1. In cases involving actions of the Board, such petition must be filed within thirty days after notice of such action is mailed to such owner by certified mail.

If you have any questions regarding the permit, please contact me at (XXX) XXX-XXXX or [e-mail address]@deq.virginia.gov.

Sincerely,

[Permit Writer]

Enclosure[s]:

Permit No. VA0000000
Discharge Monitoring Report
[Insert the following for water reclamation and reuse projects that have monthly monitoring and reporting requirements in the permit:
Reclamation and Reuse Monthly Monitoring Report]
[Insert the following if the permit requires reclaimed water monitoring for CAT parameters:
Additional Reporting for Reclamation Systems Authorized by or in Association with a
VPDES Permit

Water Guidance Memo No. 10-2001
Implementation Guidance for the Water Reclamation and Reuse Regulation, 9VAC25-740-10 et seq.
Attachment E

Monthly Log Sheet for Reclaimed Water Bacterial Monitoring]

cc: OWP&CA
OLAP
EPA, Region III-3WP12

[Insert the following for a the addition of water reclamation and reuse standards, monitoring requirements and special conditions to an existing VPDES permit through reissuance or major modification:

Office of Surface and Ground Water Supply Planning]
Permit application file
DEQ-RO Compliance Auditor

Transmittal Letter for an Administrative Authorization for Water Reclamation and Reuse in Association with a VPDES Permit

Regional DEQ Letterhead
Date

Facility Contact
Facility Name
Address

CERTIFIED MAIL
RETURN RECEIPT REQUESTED

RE: VPDES Permit No. VA0000000, Administrative Authorization for Water Reclamation and Reuse

Dear *[Permittee]*:

Your administrative authorization for water reclamation and reuse in association with VPDES Permit No VA0000000 is enclosed. A reclamation and reuse monthly monitoring report [**Add this to the sentence if the administrative authorization requires reclaimed water monitoring for CAT parameters:** and two attachments entitled “Additional Reporting for Reclamation Systems Authorized by or in Association with a VPDES Permit” and “Monthly Log Sheet for Reclaimed Water Bacterial Monitoring”] for the authorized [**Choose all that apply:** reclamation system/satellite reclamation system/reclaimed water distribution system/reclaimed water system storage/*(specify other if applicable)*] [is/are] included with the administrative authorization. Please make additional copies of the monthly monitoring report (**Insert when applicable:** and attachments) for future use. The first monthly monitoring report (**Insert when applicable:** with attachments) is due on (**date**) for (**month**).

Monitoring results on the reclamation and reuse monthly monitoring reports should be reported to the same number of significant digits shown for each monitoring parameter on the reclaimed water standards page of the administrative authorization. Please send reclamation and reuse monthly monitoring reports to:

[Regional Office and Address]

Note that DEQ has launched an e-DMR program that allows you to submit reclaimed water monitoring data electronically. If you are interested in participating in this program please visit the following website for details:

<http://www.deq.virginia.gov/water/edmrfaq.html>

As provided by Rule 2A:2 of the Supreme Court of Virginia, you have thirty days from the date of service (the date you actually received this decision or the date it was mailed to you, whichever occurred first) within which to appeal this decision by filing a notice of appeal in accordance with the Rules of the Supreme Court of Virginia with the Director, Department of Environmental Quality. In the event that this decision is served on you by mail, three days are added to that period.

Alternatively, any owner under §§ 62.1 - 44.16, 62.1 - 44.17, and 62.1 - 44.19 of the State Water Control Law aggrieved by any action of the State Water Control Board taken without a formal hearing, or by inaction of the Board, may demand in writing a formal hearing of such owner's grievance, provided a petition requesting such hearing is filed with the Board. Said petition must meet the requirements set forth

Water Guidance Memo No. 10-2001

Implementation Guidance for the Water Reclamation and Reuse Regulation, 9VAC25-740-10 et seq.
Attachment E

in §1.23(b) of Procedural Rule No. 1. In cases involving actions of the Board, such petition must be filed within thirty days after notice of such action is mailed to such owner by certified mail.

If you have any questions regarding the administrative authorization, please contact me at (XXX) XXX-XXXX or [e-mail address]@deq.virginia.gov.

Sincerely,

[Permit Writer]

Enclosure[s]:

[Insert the following for water reclamation and reuse projects that have monthly monitoring and reporting requirements in the administrative authorization:

Reclamation and Reuse Monthly Monitoring Report]

[Insert the following if the administrative authorization requires reclaimed water monitoring for CAT parameters:

Additional Reporting for Reclamation Systems Authorized by or in Association with a
VPDES Permit

Monthly Log Sheet for Reclaimed Water Bacterial Monitoring]

cc: OWP&CA
OLAP
Office of Surface and Ground Water Supply Planning
Permit file
DEQ-RO Compliance Auditor

**Transmittal Letter for a Final VPA Permit Issuance, Reissuance or Modification (Minor or Major)
to Include Water Reclamation and Reuse**

[Regional Letterhead]

[Date]

[Permittee's Name]
[Address]

CERTIFIED MAIL
RETURN RECEIPT REQUESTED

RE: [Issuance/Reissuance/Modification] of VPA Permit No. VPA00000
[Facility name]

Dear [Permittee]:

Your Virginia Pollution Abatement (VPA) permit is enclosed. **[For revocation and reissuances, add this sentence:** This permit supersedes the previous VPA Permit No. VPA00000 issued to this facility.]

A monitoring report form for the authorized pollutant management activity is included with the permit. Please make additional copies of the form for future use. The first monitoring report required by this permit for parameters that are monitored [monthly/bimonthly/quarterly/semiannually/annually] is due on [Insert date to be on 10th day of the month immediately following the first full monitoring period (i.e., May 10, 20XX)] for the period [Insert months in monitoring period]. *[Note: If parameters are monitored at more than one frequency, specify the first monitoring period and due date for each]* **[For reissuances, add this sentence:** If you still have monitoring data to report as required by the previous permit, please submit it as an attachment to the first monitoring report required by this permit.]

[For the inclusion or addition of water reclamation and reuse standards, monitoring requirements and special conditions to the permit, insert this paragraph in place of or in addition to the second paragraph where applicable: Also included with the permit is a reclamation and reuse monthly monitoring report form and one attachment entitled "Monthly Log Sheet for Reclaimed Water Bacterial Monitoring" for the authorized [Choose all that apply: reclamation system/satellite reclamation system/reclaimed water distribution system/reclaimed water system storage/(specify other if applicable)]. Please make additional copies of the monthly monitoring report form and attachment for future use. The first monthly monitoring report with attachment is due on [Insert date to be on 10th day of the month immediately following the first complete month of monitoring (i.e., May 10, 20XX)] for [Insert first complete month of monitoring]. **[Insert this sentence only where the VPA permit requires monitoring of reclaimed water quality:** Monitoring results on the reclamation and reuse monthly monitoring reports should be reported to the same number of significant digits shown for each monitoring parameter on the reclaimed water standards page of the permit.]

Please send [Choose all that apply: pollutant management activity monitoring reports/reclamation and reuse monthly monitoring reports] to:

[Regional Office and Address]

Water Guidance Memo No. 10-2001

Implementation Guidance for the Water Reclamation and Reuse Regulation, 9VAC25-740-10 et seq.
Attachment E

As provided by Rule 2A:2 of the Supreme Court of Virginia, you have thirty days from the date of service (the date you actually received this decision or the date it was mailed to you, whichever occurred first) within which to appeal this decision by filing a notice of appeal in accordance with the Rules of the Supreme Court of Virginia with the Director, Department of Environmental Quality. In the event that this decision is served on you by mail, three days are added to that period. Refer to Part 2A of the Rules of the Supreme Court of Virginia for additional requirement governing appeals from administrative agencies.

Alternatively, any owner under §§ 62.1 - 44.16, 62.1 - 44.17, and 62.1 - 44.19 of the State Water Control Law aggrieved by any action of the State Water Control Board taken without a formal hearing, or by inaction of the Board, may petition in writing a formal hearing of such owner's grievance, provided a petition requesting such hearing is filed with the Board. Said petition must meet the requirements set forth in 9VAC25-230-130(B) of the Board's Procedural Rule No. 1. In cases involving actions of the Board, such petition must be filed within thirty days after notice of such action is mailed to such owner by certified mail.

If you have any questions regarding the permit, please contact me at (XXX) XXX-XXXX or [e-mail address]@deq.virginia.gov.

Sincerely,

[Permit Writer]

Enclosure:

VPA Permit No. VPA00000

[Insert the following for water reclamation and reuse projects that have monthly monitoring and reporting requirements in the permit:

Reclamation and Reuse Monthly Monitoring Report]

[Insert the following if the permit requires reclaimed water monitoring for a bacteria CAT parameter:

Monthly Log Sheet for Reclaimed Water Bacterial Monitoring]

cc: OWP&CA
OLAP
Permit application file
DEQ-RO Compliance Auditor