

Regional Water Quality Control Board
North Coast Region

Executive Officer's Summary Report
Thursday, November 21, 2013
Regional Water Board Office
Santa Rosa, California

- ITEM: 7
- SUBJECT: Public Hearing on Order No. R1-2013-0042, to consider adoption of Waste Discharge Requirements for the Town of Windsor Wastewater Treatment, Reclamation, and Disposal Facility, WDID No. 1B820370SON, NPDES No. CA0023345, Sonoma County
(Cathleen Goodwin)
- BOARD ACTION: The Board will consider adoption of Waste Discharge Requirements Order No. R1-2013-0042. The Order will serve as a National Pollutant Discharge Elimination System (NPDES) permit for a period of five years.
- BACKGROUND: The Town of Windsor (Town) owns and operates a wastewater treatment facility (Facility), which provides wastewater treatment and disposal services for residences, businesses, and industries within the Windsor area, and produces reclaimed water for irrigation for agricultural and urban use, and production of steam at the Geysers Recharge Project.
- The Facility is currently regulated under Waste Discharge Requirements Order No. R1-2007-0013, which serves as a NPDES permit for its waste discharges to surface water and a Master Water Reclamation permit for distribution and use of recycled water.
- A Draft Permit renewing the Town's waste discharge requirements was released for a 30-day public comment period on June 19, 2013. The June 2013 Draft Permit received significant comments from the Town. In addition, the Town's Draft Permit was circulated at the same time as the City of Santa Rosa's Draft Permit, which is also scheduled for a public hearing on this Agenda. The Proposed Permit under consideration by the Regional Water Board today has been revised in response to comments received on the Town's Draft Permit, as well as some comments received on the City of Santa Rosa's Draft Permit.
- The Facility provides biological secondary treatment utilizing an extended air activated sludge process; followed by tertiary filtration and ultraviolet (UV) disinfection. The Facility produces wastewater that meets title 22 guidelines for tertiary recycled water. The current Facility design treatment capacities are 2.25 million gallons per day (MGD) as an average dry weather flow (ADWF), 3.75 MGD

as a peak monthly wet weather flow, and 7.2 MGD as a peak weekly wet weather flow.

During the Basin Plan discharge prohibition season (May 15 – September 30), the Town reclaims its tertiary-treated water through irrigation on approximately 700 acres of farmlands, vineyards, and urban landscaping. Urban irrigation with recycled water occurs at Windsor Golf Course, Town-owned parks, commercial facilities, and residential properties, and through diversion to the Geysers Recharge Project for steam production. A portion of the treated and UV disinfected effluent is chlorinated and transferred to Windsor High School for toilet flushing and landscape irrigation. Treated wastewater that is not reclaimed or held in storage is discharged to Mark West Creek immediately downstream of the Trenton-Healdsburg Road bridge during the discharge season (October 1- May 14). Mark West Creek is tributary to the Russian River.

Prior to distribution to the water reclamation system or Geysers recharge pipeline, or discharge to the surface water discharge system, advanced treated effluent is discharged to an effluent storage pond system. The storage ponds, with a maximum capacity of 164 million gallons, allow the Town to control the timing, location, and volume of discharge to protect beneficial uses of the receiving water and provide a source of recycled water during the discharge prohibition period. Treated, disinfected effluent is held in storage ponds prior to reclamation, distribution to the Geysers recharge pipeline, and/or discharge to Mark West Creek.

ISSUES:

The Permittee expressed the following significant concerns in its response to the Draft Permit:

1. Effluent Limitations for Nitrogen and Phosphorus

The Draft Permit included a final effluent limitation for total phosphorus of no net loading and concentration- and mass-based interim effluent limitations for total phosphorus. The Draft Permit also included final effluent limitations for total nitrogen that were both concentration- and mass-based. The final total phosphorus limits and interim total nitrogen limits were all performance-based limits. These limitations are based on the results of a reasonable potential analysis showing no assimilative capacity in the receiving water for total phosphorus, but some remaining assimilative capacity for total nitrogen.

The Permittee objects to the final effluent limitation for total phosphorus, asserting that the “no net loading” limitation is inappropriate, unreasonable, not supported by science, and contrary to State Water Board and judicial precedent. The

Permittee's comment requested removal of the no net loading limitation. The Permittee also identified two alternatives to removal of the no net loading phosphorus limitation, including: (1) stating the interim effluent limitation for total phosphorus as a final effluent limitation in place of no net loading, or (2) extending the compliance schedule for achieving the final no net loading effluent limitation for total phosphorus. The Permittee is also concerned about being required to begin reductions of total phosphorus prior to the nutrient TMDL being completed for the greater Laguna watershed because the Permittee is concerned about investing resources to accomplish total phosphorus reductions beyond what may be required when the TMDL is adopted.

Resolution: Regional Water Board staff has concluded that the "no net loading" limitation for phosphorus is scientifically sound and based on available evidence, and is therefore appropriate to retain in the permit. Although the TMDL is not completed, there are sufficient data available that demonstrates that there is no assimilative capacity for total phosphorus in the greater Laguna de Santa Rosa, which includes lower Mark West Creek, and data submitted by the Permittee demonstrates reasonable potential for total phosphorus to exceed water quality objectives. Discharge of phosphorus at any level will only increase the potential biostimulatory response in the greater Laguna watershed. In addition, the performance-based effluent limitation for total phosphorus proposed by the Permittee to replace the "no net loading" limitation will not prevent further degradation of water quality in the greater Laguna de Santa Rosa watershed, and therefore is inappropriate. It is not appropriate to establish final effluent limitations that are based on practices that cause or contribute to reasonable potential for exceedance of a water quality standard.

In response to the Permittee's comments, the Proposed Permit was revised to provide the Permittee with 33 extra months, giving them 8 years, to come into full compliance with the final no net loading effluent limitation for total phosphorus. Regional Water Board staff believes that this is a reasonable length of time.

The rationale for the final and interim effluent limitations for total phosphorus is discussed in detail in the Fact Sheet and in the Response to Comments to the Permittee's comments 1.A, 1.B, 2, 3, and 5.

Regional Water Board staff also determined that there is no reasonable potential for nitrogen to exceed the narrative

objective for biostimulatory substances, but there is reasonable potential for exceedances of the narrative objective for toxicity. The final performance-based limitation for nitrogen is appropriate to comply with anti-degradation requirements, is permitted under federal anti-backsliding regulations, and is achievable by the Permittee. This rationale is discussed in detail in the Fact Sheet of the Proposed Permit and in the Response to Comment 1.A.i submitted by the Permittee.

2. Disinfection Process Requirements

The permit includes disinfection process requirements that are more specific and detailed than the previous permit. The Town expressed concerns that some of the disinfection process requirements are too prescriptive and suggested changes that would provide more operational flexibility in the operation of the UV disinfection process.

Regional Water Board and California Department of Public Health (CDPH) staff are concerned about the Town's UV disinfection system in light of regular exceedances of the total coliform effluent limitation that occurred between March and July 2013. Since these exceedances were occurring during the time that the Draft Permit was under development, the Draft Permit included a requirement for the Permittee to evaluate its UV disinfection system to determine whether the system is being operated in accordance with CDPH requirements.

Resolution: Regional Water Board staff discussed the Town's comments with CDPH staff and modified UV disinfection language where appropriate to provide clarity and operational flexibility, where appropriate.

Regional Water Board staff also removed the requirement for evaluation of the UV disinfection system due to the fact that the Town hired a registered engineer to conduct the evaluation and submitted a report that identifies the findings of the evaluation on October 10, 2013. Regional Water Board staff will continue to work with the Town, with input from CDPH, to ensure that the Town's UV disinfection system meets all CDPH requirements.

SIGNIFICANT CHANGES:

The Proposed Permit, Order No. R1-2013-0042 contains several significant changes from the existing permit, Order No. R1-2007-0013, as follows:

1. Permittee's Request for Increase in Discharge Rate

The Permittee's report of waste discharge, submitted on December 14, 2011, included a request for an exception to the Basin Plan waste discharge rate limitation. Specifically, the Permittee requested that its discharge rate be increased from one percent to 10 percent of the flow of Mark West Creek. The Permittee submitted information to demonstrate consistency with the Basin Plan exception requirements.

Based on this demonstration, the permit allows the Permittee to discharge to Mark West Creek at a rate up to 10 percent of the flow between November 1 and April 30 each year. The permit also allows the Permittee to discharge at a rate up to one percent of the flow of Mark West Creek during the periods of October 1 through 30, and May 1 through 14.

It is not the Permittee's intent to utilize discharge rates above one percent of the stream flow, except as necessary to balance reclamation and discharge. It is the Permittee's intent to maximize reclamation by entering the reclamation season (May 15 – September 30) with storage maximized to the extent possible. Having the ability to discharge at this higher discharge rate will allow the Permittee to moderate discharges to Mark West Creek by discharging lower volumes of effluent during high flow periods with the knowledge that the 10 percent discharge rate allowance will permit discharges at rates up to 10 percent later in the discharge season (when creek flows are usually lower, thus resulting in a lower volume of discharge than what the Permittee could have discharged by maximizing the one percent discharge rate during higher flows), if necessary. This increased flexibility will allow operation of the discharge system to be more predictable, allowing the Town to meet storage targets and maximize reclamation.

The permit also includes a requirement for a special receiving water study that is intended to ensure that the discharge is not impacting the beneficial uses of Mark West Creek when discharges occur at the higher discharge rates allowed by the Proposed Permit.

2. Removal of Mass-Based Effluent Limitations for Biochemical Oxygen Demand (BOD₅) and total suspended solids (TSS)

Mass-based effluent limitations for BOD₅ and TSS have been removed from the permit. Regional Water Board staff has routinely incorporated mass-based limits (in addition to concentration-based limitations) for BOD₅ and TSS in NPDES permits to encourage correction of infiltration and inflow (I&I). For the Town of Windsor's wastewater treatment system, the application of mass-based effluent limitations for BOD₅ and TSS is not necessary to limit wet weather inflow into the wastewater

treatment facility; excessive I&I is not a significant problem and the Permittee is not in danger of exceeding treatment capacity for reasonably anticipated flows.

In addition, Regional Water Board staff has determined that mass-based effluent limitations for BOD₅ and TSS for discharges to storage ponds (i.e., for Discharge Point EFF-001) are not necessary for the reasons stated above and are allowable under federal anti-backsliding provisions.

3. Joint Use Recycled Water Program

The Permittee proposes to implement a Joint Use Recycled Water Program (Joint Use Program) with the Airport-Larkfield-Wikiup Sanitation Zone (ALWSZ) Wastewater Treatment Facility operated by the Sonoma County Water Agency. This Joint Use Program will entail transfers of recycled water between the Permittee's reclaimed water distribution system and the ALWSZ tertiary storage pond identified as the Oceanview Reservoir. The transfers of disinfected tertiary recycled water may occur between the Permittee and the ALWSZ tertiary storage pond and between the ALWSZ tertiary storage pond and the Permittee's reclamation distribution system. Under this program, the Permittee's recycled water comingled with ALWSZ recycled water will be used to meet irrigation demands in the Permittee's reclamation system.

Prior to implementation of the Joint Use Program, the Permittee is required to submit a report including the final design details and operational modifications required for implementation, a revised water balance for the Permittee's storage, reclamation, and disposal system, an operations and management plan, documentation of CEQA compliance, and recycled water transfer and use agreements.

4. Chronic Toxicity Monitoring Triggers

Revised chronic toxicity monitoring triggers have been established based on USEPA's recommendations as established in the USEPA *Technical Support Document for Water Quality-Based Toxics Control* and *Toxicity Training Tool*. The chronic toxicity trigger has been changed from a three sample median of 1 TUC and a single sample maximum of 2 TUC to a monthly median of 1.0 TUC and single-sample maximum of 1.6 TUC.

5. Source Control and Pretreatment

New source control language has been added requiring the Permittee to conduct a source control survey of all non-domestic facilities in the service area of the Facility that might discharge pollutants that could pass through or interfere with the operation or performance of the Facility and to monitor influent for priority pollutants.

6. Monitoring and Reporting Requirements

Monitoring and reporting program (MRP) requirements that have been changed in comparison to WDR Order No. R1-2007-0013 are as follows:

- a. Influent monitoring for CTR priority pollutants has been established to assess and track the effectiveness of the Source Control Program implementation.
- b. Effluent monitoring requirement changes include the removal of chlorine residual monitoring; reduction of the monitoring frequency for acute toxicity from monthly to once per discharge season; the addition of a new chronic toxicity reporting requirement; and a new monitoring requirement for radioactivity.
- c. New reclamation monitoring requirements include monthly monitoring for nitrogen to demonstrate that recycled water application is occurring at agronomic rates; monthly monitoring requirements for total dissolved solids, chloride, boron, and sodium to determine whether any of these constituents are present in the effluent at concentrations that may exceed water quality objectives; monitoring for title 22 drinking water constituents once during the permit term; and visual monitoring of recycled water use sites.
- d. Removal of receiving water monitoring requirements for BOD₅ and TSS, based on receiving water data collected during the term of Order No. R1-2007-0013 showing that the effluent discharge does not affect the concentrations of these pollutants in the receiving water.
- e. New continuous temperature monitoring requirement in the receiving water when the Town discharges in October, November, April, or May (1 – 14).

RECOMMENDATION: Adopt Order No. R1-2013-0042, as proposed.

SUPPORTING DOCUMENTS:

1. Proposed Order No. R1-2013-0042
2. Staff Response to Comments
3. Comment Letter
4. Revised Fitzgerald Memo (October 22, 2013) - (Support Document cited in the Proposed Permit and in the Staff Response to Comments)
5. Public Notice