Item 6

Change Sheet
Waste Discharge Requirements
Order No. R1-2021-0002
National Pollutant Discharge Elimination System (NPDES)
for
Russian River County Sanitation District and Sonoma Water

Russian River Wastewater Treatment Facility
Regional Water Quality Control Board, North Coast Region
June 17, 2021

Staff Initiated Changes to Permit

Late changes to the Proposed Permit were made by Regional Water Board Staff as follows:

Staff discovered an error in the reasonable potential analysis for aluminum that is discussed in the Response to Comments document. There is a monitoring result that had been reported by the Permittee that was inadvertently not included in the Staff's reasonable potential analysis. Staff have recalculated the reasonable potential analysis which resulted in a higher effluent limit than that previously included in the Proposed Permit. The corrected (changed) effluent limit for aluminum has been made in all applicable sections of the Proposed Permit as described in this Change Sheet document.

Since these sections were previously modified in response to the comments received during the public comment period by Russian River County Sanitation District and Sonoma Water (Permittee), those comments and Staff's modified responses (Comment A.1 and Response A.1) have been included below.

Comment A.1: The Permittee is concerned that reasonable potential for aluminum was based on the 1988 U.S. EPA Aluminum Criteria which has been superseded by the 2018 U.S. EPA Aluminum Criteria. The Permittee proposes that the secondary drinking water maximum contaminant level (SMCL) of 200 ug/L be used as a currently defensible criteria to derive effluent limitations until there is sufficient receiving water data to calculate limits using the 2018 criteria.

Staff Response A.1: Effluent limitations in the Draft Permit were derived based on the 1988 U.S. EPA Aluminum Criteria because insufficient receiving water data for dissolved oxygen, pH, and dissolved organic carbon is available to calculate limits using the 2018 criteria. Staff agrees that the 1988 criteria is no longer applicable. Since the 303(d) listing for aluminum in the Lower Russian River is based on a comparison of existing data to the California Department of Public Health SMCL, Staff agrees with the Permittee's request that the reasonable potential analysis for aluminum also be based on the SMCL. Therefore, the reasonable potential analysis for aluminum has been reevaluated using the SMCL, resulting in a finding of reasonable potential, and effluent limitations have been recalculated using the SMCL.

The Proposed Permit has been modified as follows:

Note that text added to the Proposed Permit in response to Comment A.1 is identified by underline and text to be deleted from the Proposed Permit is identified by ~~strike-through~~ in this document and additional changes related to this Change Sheet are shown with gray highlighting. Page numbers in parentheses reflect page numbers in the Proposed Order in the Agenda Package.

Section 4.1.2.1, Table 3 (page 8) has been modified to remove the aluminum effluent limitations that were based on the 1988 U.S. EPA criteria and to include aluminum effluent limitations that were calculated based on the SMCL, as follows:

Table 3. Effluent Limitations – Discharge Points 002 and 005 (Monitoring Locations EFF-002 and EFF-005)

Parameter[1]	Units	Average Monthly[2]	Maximum Daily[2]	Instantaneous Minimum[2]	Instantaneous Maximum[2]
pH	standard units	--	--	6.5	8.5
Aluminum, Total Recover-able	µg/L	~~58~~200	~~160~~555606	--	--

Table Notes:

1. In the event of a direct discharge to the Russian River, BOD_5 and TSS effluent limitations in Table 2 and total coliform effluent limitations in section 4.1.1.3 apply at Discharge Point 002.
2. See Definitions in Attachment A and Compliance Determination discussion in section 7 of this Order.

Fact Sheet section 4.3.3.3, Table F-5 (Fact Sheet page 40) has been modified as follows:

Table F-5. Summary of Reasonable Potential Analysis Results for Priority Pollutants, Ammonia, and Title 22 Pollutants

CTR #	Pollutant	Unit	C or Most Stringent WQO/WQC	MEC or Minimum DL [1]	B or Minimum DL [1, 2]	RPA Results [3]
Not Applicable	Aluminum	µg/L	200	~~120~~ 220	580	Yes (Trigger 1)

Fact Sheet section 4.3.3.1.5 (paragraphs 2, 3, and 4) (Fact Sheet pages 37 and 38) has been modified as follows:

"*The 2018 Aluminum Criteria reflect the latest science and allow for development of criteria reflecting the impact of local receiving water chemistry on aluminum toxicity to aquatic life. The updated criteria account for the site-specific bioavailability of aluminum in receiving waters, which is dependent on pH, dissolved organic carbon, and hardness. Due to a lack of sufficient receiving water information (pH, dissolved organic carbon, and hardness) for calculating criteria, the 2018 NAWQC criteria has not been implemented in this permit. Instead, the MRP includes requirements to monitor effluent for aluminum and receiving water for aluminum, pH, dissolved organic carbon, and hardness in order to have sufficient data to evaluate ~~and~~ for aluminum toxicity ~~has been evaluated~~ based on the ~~1988~~ 2018 NAWQC.*

Since the Russian River 303(d) list identifies the Lower Russian River as impaired for aluminum based on the California Division of Drinking Water secondary maximum contaminant level (SMCL) of 200 µg/L, effluent limitations for aluminum have been established in this Order based on the SMCL.

The Permittee sampled its discharge monthly during the discharge season between ~~October~~ May 2014 and May 2020. Effluent ~~M~~monitoring results ranged from non-detect to ~~120~~ 220 µg/L based on ~~55~~ 56 samples. The Permittee also sampled the upstream receiving water monthly during the discharge season between October 2014 and October 2015~~,~~ with ~~M~~monitoring results ranging~~ed~~ from 27 µg/L to 580 µg/L based on 11 samples. Because aluminum levels in the effluent and upstream receiving water have been measured above ~~87~~ 200 µg/L, the Regional Water Board concludes that discharges from the Facility have a reasonable potential to cause or contribute to exceedances of applicable water quality criteria for the receiving water for aluminum. In order to protect water quality, an AMEL of ~~58~~200 µg/L and an MDEL of ~~160~~ ~~555~~ 606 µg/L for aluminum have been established."

Fact Sheet section 4.3.4 (Fact Sheet Pages 44 and 45) has been modified as follows. Note that section 4.3.3 which is referenced within this discussion is on pages F-33 through F-44.

"***Step 2:*** *For each ECA based on an aquatic life criterion/objective ~~(aluminum)~~, the long-term average discharge condition (LTA) is determined by multiplying the ECA by a factor (multiplier), which adjusts the ECA to account for effluent variability. The multiplier depends on the coefficient of variation (CV) of the data set and whether it is an acute or chronic criterion/objective. Table 1 of the SIP provides pre-calculated values for the multipliers based on the values of the CV. When the data set contains less than 10 sample results, or when 80 percent or more of the data set is reported as ND, the CV is set equal to 0.6. Derivation of the multipliers is presented in section 1.4 of the SIP.*

The reasonable potential analysis described in Fact Sheet section 4.3.3 did not identify the need to calculate effluent limitations for any pollutants with aquatic life criteria, therefore Steps 2 and 3 are included to describe the procedure that would be used in the future if reasonable potential is found for any pollutant(s) with aquatic life criteria.

~~From Table 1 in the SIP, the ECA multipliers for calculating LTAs at the 99th percentile occurrence probability for aluminum are 0.161 (acute multiplier) and 0.298 (chronic mulitiplier). The LTAs are determined as follows in Table F-6.~~

~~Table F-6. Determination of Long-Term Averages~~

~~Pollutant~~	~~Units~~	~~ECA Acute~~	~~ECA Chronic 4-Day~~	~~ECA Multiplier Acute~~	~~ECA Multiplier Chronic 4-Day~~	~~LTA Acute~~	~~LTA Chronic 4-Day~~
~~Aluminum~~	~~µg/L~~	~~750~~	~~87~~	~~0.161~~	~~0.298~~	~~121~~	~~25.9~~

Step 3: *WQBELs, including an AMEL and MDEL, are calculated using the most limiting (lowest) LTA. The LTA is multiplied by a factor that accounts for averaging periods and exceedance frequencies of the effluent limitations, and for the AMEL, the effluent monitoring frequency. ~~The CV is set equal to 1.31 for aluminum~~. The sampling frequency is set equal to 4 (n = 4) for the acute criterion and chronic 4-day criterion. The 99th percentile occurrence probability was used to determine the MDEL multiplier and a 95th percentile occurrence probability was used to determine the AMEL multiplier. ~~From Table 2 of the SIP, the MDEL multiplier for aluminum is 6.21 and the AMEL multiplier is 2.24. Final WQBELs for aluminum are determined as follows~~. Since reasonable potential was not found for any pollutants with ~~human health~~aquatic life criterion/objectives, no effluent limitations were calculated for this permit.*

~~**Table F-7. Determination of Final WQBELs Based on Aquatic Life Criteria**~~

~~Pollutant~~	~~Units~~	~~LTA~~	~~MDEL Multiplier~~	~~AMEL Multiplier~~	~~MDEL~~	~~AMEL~~
~~Aluminum~~	~~µg/L~~	~~25.9~~	~~6.21~~	~~2.24~~	~~160~~	~~58~~

Step 4: *When the most stringent water quality criterion/objective is a human health criterion/objective (aluminum), the AMEL is set equal to the ECA. For a limited data set (less than 10 data points) the coefficient of variation (CV) is set equal to 0.6.* ~~*Since reasonable potential was not found for any pollutants with human health criterion/objectives, no effluent limitations were calculated for this permit.*~~ *From Table 2 of the SIP, when CV =* ~~*1.31*~~ *1.85 and n = 4, the MDEL multiplier at the 99th percentile occurrence probability equals* ~~*6.2*~~ *8.1, and the AMEL multiplier at the 95th percentile occurrence probability equals* ~~*2.2*~~ *2.7. The MDEL for protection of human health is calculated by multiplying the ECA by the ratio of the MDEL multiplier to the AMEL multiplier. Final WQBELs for aluminum are determined as follows:"*

Table F-6. Determination of Long-Term Averages

Pollutant	Units	ECA	MDEL/AMEL	MDEL	AMEL
Aluminum	µg/L	200	~~2.78~~ 3.03	~~555~~ 606	200

1. Attachment page numbering in the Proposed Permit is incorrect because section letters are missing. The adopted version of the Permit will be correctly numbered as follows:
   - Attachment A, Definitions should be numbered A-1 through A-8
   - Attachment B, Maps should be numbered B-1 through B-3
   - Attachment C, Flow Schematic should be numbered C-1
   - Attachment D, Standard Provisions should be numbered D-1 through D-12
   - Attachment E, Monitoring and Reporting Program should be numbered E-1 through E-54
   - Attachment F, Fact Sheet should be numbered F-1 through F-92
   - Attachment G, Recycled Water Findings, Use Requirements, Provisions, and Technical Report Requirements should be numbered G-1 through G-20.