

LATE REVISIONS
NEVADA COUNTY SANITATION DISTRICT NO. 1
LAKE OF THE PINES WASTEWATER TREATMENT PLANT
NEVADA COUNTY
NPDES Permit Renewal (NPDES No. CA0081612)
Regional Water Quality Control Board, Central Valley Region
Board Meeting – 17 April 2015
ITEM # 26

1. Attachment F – Fact Sheet, Hardness-Dependent CTR Metals Criteria. Section IV.C.2.e, Paragraphs 6 and 7

Clarify the use of downstream ambient hardness when calculating criteria for hardness dependent metals as shown in underline/strikeout format below:

For calculating the CTR criteria the downstream ambient hardness has been used. The SIP, CTR, and State Water Board do not require use of the minimum observed ambient hardness in the CTR equations. The hardness used must be consistent with design conditions and protective of water quality criteria under all flow conditions. The minimum effluent-downstream ambient hardness of 48 mg/L ~~represents the downstream ambient hardness under the design condition and~~ was considered for use in the CTR equations.

A downstream ambient hardness of 48 mg/L results in CTR criteria that are protective of aquatic life under all flow conditions for copper, zinc, chromium III, nickel, and cadmium (chronic). For lead, silver, and cadmium (acute), using this hardness to calculate the CTR criteria is protective during ~~the effluent dominated~~ design low flow conditions and is fully protective of aquatic life under higher flow conditions in the receiving water.

2. Attachment F – Fact Sheet, Hardness-Dependent CTR Metals Criteria. Table F-5 Lead Evaluation (Design Ambient Hardness = 48 mg/L)

Modify Table F-5 “Lead Evaluation (Design Ambient Hardness = 48mg/L)” as shown in underline/strikeout format below:

Table F-5. Lead Evaluation (Design Ambient Hardness = 48 mg/L)

		Assumed Upstream Receiving Water Lead Concentration		1.12 µg/L ¹	
		Lead Chronic Criterion ²		1.3 µg/L	
		Fully Mixed Downstream Ambient Concentration			
Mix ⁶		Hardness ³ (mg/L)	CTR Criteria ⁴ (µg/L)	Lead ⁵ (µg/L)	Complies with CTR Criteria?
High Flow	1%	44	1.1	1.1	Yes
	5%	44	1.1	1.1	Yes
↓ Low Flow	15%	45	1.1	1.1	Yes
	25%	45	1.2	1.2	Yes
	50%	46	1.2	1.2	Yes
	75%	47	1.2	1.2	Yes
	100%	48	1.3	1.3	Yes

¹ Highest assumed upstream receiving water metals concentration calculated using CTR equation (Equation 1) for chronic/acute criterion at a hardness of 44 mg/L.

² CTR criteria calculated using CTR equation (Equation 1) for chronic/acute criterion at the design ambient hardness for the particular metal (see Table F-6).

- ³ ~~Mixed-d~~Downstream ambient hardness is the mixture of the receiving water and effluent hardness at the applicable mixture using Equation 2.
- ⁴ Mixed downstream ambient criteria are the chronic/acute criteria calculated using the CTR equation (Equation 1) at the mixed hardness.
- ⁵ Mixed downstream ambient metals concentration is the mixture of the receiving water and effluent metals concentrations at the applicable mixture using Equation 2.
- ⁶ The mixture percentage represents the fraction of effluent in the downstream ambient receiving water. The mixture ranges from 1% at the high receiving water flow condition, to 100% at the lowest receiving water flow condition (i.e., effluent dominated).