

**CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD
SAN DIEGO REGION**

RESOLUTION NO. R9-2017-0015

**A RESOLUTION AMENDING
THE WATER QUALITY CONTROL PLAN FOR THE SAN DIEGO BASIN TO
INCORPORATE SITE-SPECIFIC WATER EFFECT RATIOS
INTO WATER QUALITY OBJECTIVES FOR TOXIC POLLUTANTS AND
TOTAL MAXIMUM DAILY LOADS FOR COPPER AND ZINC
IN CHOLLAS CREEK**

WHEREAS, the California Regional Water Quality Control Board, San Diego Region (hereinafter, San Diego Water Board), finds that:

- 1. Water Quality Control Plan for the San Diego Basin (Basin Plan).** The San Diego Water Board Basin Plan, adopted on September 8, 1994, designates beneficial uses, establishes water quality objectives, and contains implementation programs and policies to achieve those objectives for receiving waters addressed through the plan. The Basin Plan was approved by the State Water Resource Control Board (State Water Board) on December 13, 1994. Subsequent revisions to the Basin Plan have also been adopted by the San Diego Water Board and approved by the State Water Board.
- 2. Water Quality Objectives.** The Basin Plan establishes the following narrative water quality objectives for toxicity:

All waters shall be maintained free of toxic substances in concentrations that are toxic to, or that produce detrimental physiological responses in human, plant, animal, or aquatic life. Compliance with this objective will be determined by use of indicator organisms, analyses of species diversity, population density, growth anomalies, bioassays of appropriate duration, or other appropriate methods as specified by the Regional Board.

The survival of aquatic life in surface waters subjected to a waste discharge or other controllable water quality factors, shall not be less than that for the same water body in areas unaffected by the waste discharge or, when necessary, for other control water that is consistent with requirements specified in USEPA, State Water Resources Control Board or other protocol authorized by the Regional Board. As a minimum, compliance with this objective as stated in the previous sentence shall be evaluated with a 96-hour acute bioassay.

In addition, effluent limits based upon acute bioassays of effluents will be prescribed where appropriate, additional numerical receiving water objectives for specific toxicants will be established as sufficient data become available, and source control of toxic substances will be encouraged.

For inland surface waters, enclosed bays, and estuaries, the Basin Plan also establishes numeric water quality objectives for toxic pollutants as prescribed by the California Toxics Rule (CTR) promulgated by the United States Environmental Protection Agency (USEPA) and codified under the Code of Federal Regulations (CFR) Title 40 Part 131.38 (40 CFR 131.38).

3. Total Maximum Daily Loads for Copper, Lead, and Zinc in Chollas Creek.

On June 13, 2007, the San Diego Water Board adopted Resolution No. R9-2007-0043, amending the Basin Plan to incorporate the *Total Maximum Daily Loads for Copper, Lead, and Zinc in Chollas Creek, tributary to San Diego Bay* (Chollas Creek Metals TMDLs). The Chollas Creek Metals TMDLs were subsequently approved by the State Water Board through Resolution No. 2008-0054 on July 15, 2008. The State Office of Administrative Law (OAL) approved the Chollas Creek Metals TMDLs on October 22, 2008 as File No. 2008-0909-01. USEPA approved the Chollas Creek Metals TMDLs on December 18, 2008. The effective date for these TMDLs, based on the OAL approval date, is October 22, 2008.

4. Numeric Targets and Wasteload Allocations. Numeric targets must be established for the purposes of calculating TMDLs and wasteload allocations (WLAs). The Chollas Creek Metals TMDLs copper, lead, and zinc numeric targets were selected based on the water quality criteria of the CTR, and expressed as hardness-based equations for dissolved copper, lead, and zinc pursuant to 40 CFR 131.38(b)(2). Hardness is a measure of divalent cations in the water. In most cases, hardness is predominately a measure of the dissolved calcium (Ca^{2+}) and dissolved magnesium (Mg^{2+}) present. Hardness-based equations are used to derive numeric targets because the toxicity of copper, lead, and zinc varies significantly depending on hardness.

5. Water Effect Ratio. The CTR allows for the adjustment of certain numeric metals criteria through the use of a water effect ratio (WER; 40 CFR 131.38(b)(2) and (c)(4)(iii)). A WER represents the correlation between the concentration that is present (measured in water sample) and the concentration that is biologically available and toxic to aquatic life. "Biologically available" refers to the metal being present in its free ionic state as a dissolved metal and able to take part in the biological processes of the aquatic life. The default value of a WER is 1.0. A site-specific WER may be calculated by dividing an appropriate measure of toxicity of a material in the receiving water by the same measure of toxicity of the same material in laboratory test water. If the value of a WER is greater than 1.0, the site water reduces the toxicity of certain metals. If the value of a WER is less than 1.0, the site water increases the toxicity of these metals.

The Chollas Creek Metals TMDLs adopted in 2007 utilize the default WER value of 1.0. Appendix H of the Technical Report for Resolution No. R9-2007-0043 states, “*If and when site-specific copper, lead, and zinc water quality objectives are developed for Chollas Creek, this TMDL will be modified accordingly.*” A Basin Plan amendment is required to revise the copper, lead, and/or zinc WERs to a value other than 1. Derivation of a site-specific WER does not change the intended level of protection of aquatic life in Chollas Creek, but rather it more accurately measures local environmental conditions.

6. **Chollas Creek WER Study.** To use a WER other than the default of 1.0, 40 CFR 131.38(c)(4)(iii) of the CTR requires the WER to be determined as set forth in *Interim Guidance on Determination and Use of Water Effect Ratios for Metals, EPA-823-B-94-001* (USEPA, 1994). The City of San Diego conducted a WER study for Chollas Creek in accordance with USEPA’s *Interim Guidance on Determination and Use of Water Effect Ratios for Metals*. The City of San Diego submitted a final report titled *Development of Site-Specific Water Quality Objectives for Trace Metals in Chollas Creek: Water-Effect Ratio Study for Copper and Zinc, and Recalculation of Lead*, dated October 28, 2014. Results of the WER study demonstrate that the chemical conditions in Chollas Creek make copper and zinc less bioavailable and therefore, less toxic to aquatic life. WERs of 6.998 and 1.711 were determined for copper and zinc, respectively, during wet weather events in the Chollas Creek watershed and were recommended to replace the default WER value of 1.0.

Although the original Chollas Creek Metals TMDLs include lead, at this time, there is no site-specific WER developed for lead due to neutral pH conditions (making lead very insoluble) and low concentrations of lead detected in Chollas Creek. In absence of a site-specific value, the WER for lead will remain the default value of 1.0.

As explained in the WER study, the site-specific WERs were developed for wet weather conditions and will not be applied to dry weather conditions. Wet weather is typically defined in applicable monitoring requirements. It is commonly defined as a storm event with greater than 0.1 inch of rainfall. During dry weather, WERs are considered to be equal to the national and statewide default WER value of 1.0.

7. **Incorporation of Site-Specific and Chemical-Specific WERs for Chollas Creek.** The San Diego Water Board is amending the Chollas Creek Metals TMDLs and the corresponding site-specific water quality objectives in the Basin Plan. The site-specific WERs for Chollas Creek apply to wet weather conditions. This amendment does not affect the existing TMDL implementation plan or compliance schedule to meet interim and final goals. Amendments to the Chollas Creek Metals TMDLs are not self-implementing and must be implemented through subsequent permitting or other implementation actions. Existing individual and general permits may be modified with new effluent limits as appropriate.
8. **Clarify Application of WERs in Determining Water Quality Objectives.** The San Diego Water Board is also amending the discussion of the water quality objectives for toxic pollutants to clarify that the CTR allows for WERs to be established on a site-specific basis to establish site-specific water quality objectives for metals.

- 9. California Water Code Sections 13240, 13241, and 13242 Considerations.** The San Diego Water Board considered the requirements set forth in Sections 13240, 13241, and 13242 of the California Water Code.
- 10. Technical Report.** The San Diego Water Board has prepared a technical report entitled *Technical Report for Tentative Resolution No. R9-2017-0015, Resolution Amending the Water Quality Control Plan for the San Diego Basin to Incorporate Site-Specific Water Effect Ratios into the Total Maximum Daily Loads for Copper, Lead, and Zinc in Chollas Creek* (Technical Report). The Technical Report analyzes and describes the specific necessity and rationale for this Basin Plan amendment and is hereby incorporated into this Resolution and constitutes part of the Findings of this Resolution.
- 11. Scientific Peer Review.** In 2016, the scientific basis for this Basin Plan amendment went through external scientific peer review pursuant to Health and Safety Code section 57004. The San Diego Water Board has considered and responded to the peer review panel's comments and has amended the Technical Report as appropriate.
- 12. California Environmental Quality Act (CEQA).** Pursuant to Public Resources Code (PRC) section 21080.5, the Resources Agency has approved the Regional Water Boards' basin planning process as a "certified regulatory program" that adequately satisfies the CEQA requirements (PRC section 21000 et seq.) for preparing environmental documents (California Code of Regulations, Title 14 (14 CCR) section 15251(g)] and 23 CCR section 3775). The San Diego Water Board previously prepared "substitute environmental documents" for the establishment of the Chollas Creek Metals TMDLs. Those documents contained the required environmental documentation under the State Water Board's CEQA regulations (23 CCR section 3777).

The environmental analysis of this current proposed Basin Plan amendment, performed pursuant to 14 CCR section 15164, constitutes an "addendum" to the previously prepared substitute environmental documents for establishment of the Chollas Creek Metals TMDLs. This addendum addresses potential environmental effects of changes to the project that could result from the adoption site-specific water quality objectives for copper and zinc by incorporating these WERs into CTR-based TMDL calculations. The addendum also evaluates impacts to tribal cultural resources and the generation of greenhouse gas emissions since these considerations became CEQA requirements subsequent to adopting the Chollas Creek Metals TMDLs. Adoption of the Basin Plan amendment will not result in an increased impact to tribal cultural resources or to the generation of greenhouse gas emissions.

On September 24, 2015, the San Diego Water Board held a CEQA scoping meeting to provide information on the proposed Basin Plan amendment and to gather public input on potential environmental effects from the adoption of site-specific WERs. The only environmental concern raised at the meeting was the potential for downstream impacts at the mouth of Chollas Creek and in San Diego Bay due to less stringent numeric water quality criteria for the metals. Consistent with 14 CCR section 15162, the San Diego Water Board has determined that no subsequent environmental documents are necessary because the addendum does not report any new significant environmental effects nor substantially increase the severity of previously identified environmental effects, mitigation measures, or alternatives as discussed in the Technical Report.

13. Future Revisions. The San Diego Water Board will continue to rely upon the latest science and information to evaluate appropriate WQOs for Chollas Creek. Just as this Resolution incorporated information subsequent to the original TMDL adoption, if results from relevant studies or data¹ reveal that applicable copper, lead, or zinc WQOs adversely affect beneficial uses in Chollas Creek or San Diego Bay, any TMDLs and site-specific objectives for Chollas Creek will be considered for revision.

14. Antidegradation Policy. This Basin Plan amendment is in conformance with the federal Antidegradation Policy described in 40 CFR 131.12, and State Water Board Resolution No. 68-16, *Statement of Policy with Respect to Maintaining High Quality Waters in California* any change in water quality in Chollas Creek is 1) consistent with the maximum benefit to people of the state, 2) will not unreasonably affect present or probably future beneficial uses in Chollas Creek, and 3) will not result in water quality less than the prescribed policies as discussed in the Technical Report.

15. Public Notice. The San Diego Water Board has notified all known interested parties and the public of its intent to consider adoption of this Basin Plan amendment in accordance with Water Code section 13244.

16. Public Hearing. The San Diego Water Board held a public hearing on December 14, 2016 and considered all comments pertaining to this Resolution and Basin Plan amendment.

THEREFORE, BE IT RESOLVED that pursuant to Water Code sections 13240, 13241, and 13242:

1. Amendment Adoption. The San Diego Water Board hereby adopts the attached Basin Plan amendment as set forth in Attachment A.

¹ Investigative Order No. R9-2015-0058, *Investigation of Sediment Quality in the Mouth of Chollas Creek in San Diego Bay*, was issued on October 26, 2015 to evaluate wastes affecting sediment quality in the mouth of Chollas Creek.

2. **State Water Board Submittal.** The Executive Officer is directed to submit this Basin Plan amendment to the State Water Board in accordance with Water Code section 13245.
3. **Agency Approvals.** The San Diego Water Board requests that the State Water Board approve the Basin Plan amendment in accordance with the requirements of the Water Code section 13245 and 13246 and forward it to the OAL and USEPA for approval.
4. **No Effect Determination Request:** The Executive Officer is authorized to request a “No Effect Determination” from the California Department of Fish and Wildlife, and/or transmit payment of the applicable fee as may be required by the California Department of Fish and Wildlife.
5. **Non-Substantive Corrections.** If, during the approval process for this amendment, the San Diego Water Board, the State Water Board, or the OAL determines that minor, non-substantive corrections to the language of the amendment are needed for clarity or consistency, the Executive Officer may make such changes, and shall inform the San Diego Water Board of any such changes.

I, David W. Gibson, Executive Officer, do hereby certify that the foregoing is a full, true and correct copy of a resolution adopted by the California Regional Water Quality Control Board, San Diego Region, on February 8, 2017.

DAVID W. GIBSON
Executive Officer

ATTACHMENT A TO RESOLUTION NO. R9-2017-0015

Chapter 3. Water Quality Objectives

Revise the water quality objectives discussion under Toxic Pollutants as shown below (text in red strikethrough indicates deleted text, and text in blue underline indicates inserted text):

TOXIC POLLUTANTS

The USEPA promulgated a final rule prescribing water quality criteria for toxic pollutants in inland surface waters, enclosed bays, and estuaries in California on May 18, 2000 (The California Toxics Rule or “CTR;” [40 CFR 131.38]). CTR criteria constitute applicable water quality criteria in California. In addition to the CTR, certain criteria for toxic pollutants in the National Toxics Rule [40 CFR 131.36] constitute applicable water quality criteria in California as well.

Pursuant to 40 CFR 131.38(b)(2) and (c)(4)(iii), the CTR describes the method for calculating acute and chronic water quality objectives for metals, which are a function of hardness and a water effect ratio (WER). The default value of the WER is 1, unless a pollutant-specific and site-specific WER is established in a manner consistent with State and Federal law.

Site-Specific Water Quality Objectives for Toxic Pollutants:

Pollutant-specific and site-specific WERs have been established for the following water body and shall be used to establish site-specific objectives for pollutants contributing to acute and chronic toxicity. These site-specific objectives shall be calculated in accordance with the criteria maximum concentration (CMC) and criteria continuous concentration (CCC) methods set forth in the CTR.

Table 3-7. Pollutant-Specific Water Effect Ratios for Specific Water Bodies

<u>Water Body</u>	<u>Hydrologic Unit Basin Number</u>	<u>Applicable Extent</u>	<u>Constituent</u>	<u>Water Effect Ratio</u>
<u>Chollas Creek¹</u>	<u>908.22</u>	<u>North and South Forks of Creek</u>	<u>Dissolved Copper</u>	<u>6.998</u>
			<u>Dissolved Zinc</u>	<u>1.711</u>

¹The site-specific WER applies during “wet weather” as defined in applicable monitoring requirements. This is commonly defined as a storm event with greater than 0.1 inch of rainfall. During dry weather, the WERs are equal to 1.0.

Shelter Island Yacht Basin TMDL:

The Shelter Island Yacht Basin portion of San Diego Bay is designated as an impaired water body for dissolved copper pursuant to Clean Water Act section 303(d). A Total Maximum Daily Load (TMDL) has been adopted to address this impairment. See Chapters 2, Table 2-3, Beneficial Uses of Coastal Waters, San Diego Bay, footnote 3 and Chapter 7, Total Maximum Daily Loads.

Chollas Creek Metals TMDLs:

Chollas Creek is designated as a water quality limited segment for dissolved copper, lead, and zinc pursuant to Clean Water Act section 303(d). Total Maximum Daily Loads have been adopted to address these impairments. See Chapters 2, Table 2-2, *Beneficial Uses of Inland Surface Waters, Footnote 3* and Chapter 7, Total Maximum Daily Loads. [Pollutant -specific and site-specific WERs from Table 3-7 above are included in Chapter 7 for TMDLs for copper and zinc in Chollas Creek.](#)

Chapter 7. Total Maximum Daily Loads

Revise the Total Maximum Daily Loads (TMDLs) for Copper, Lead, and Zinc in Chollas Creek as shown below:

Table 7-21a. Water Quality Criteria/Numeric Targets for dissolved metals in Chollas Creek (wet weather only¹)

Metal	Numeric Target for Acute Conditions: Criteria Maximum Concentration	Numeric Target for Chronic Conditions: Criteria Continuous Concentration
Copper	$(+) WER * (0.96) * \{e^{[0.9422 * \ln(\text{hardness}) - 1.700]}\}$	$(+) WER * (0.96) * \{e^{[0.8545 * \ln(\text{hardness}) - 1.702]}\}$
Lead	$(+) WER * \{1.46203 - [0.145712 * \ln(\text{hardness})]\} * \{e^{[1.273 * \ln(\text{hardness}) - 1.460]}\}$	$(+) WER * \{1.46203 - [0.145712 * \ln(\text{hardness})]\} * \{e^{[1.273 * \ln(\text{hardness}) - 4.705]}\}$
Zinc	$(+) WER * (0.978) * \{e^{[0.8473 * \ln(\text{hardness}) + 0.884]}\}$	$(+) WER * (0.986) * \{e^{[0.8473 * \ln(\text{hardness}) + 0.884]}\}$

¹ The site-specific WER applies during "wet weather" as defined in applicable monitoring requirements. This is commonly defined as a storm event with greater than 0.1 inch of rainfall. During dry weather, the WERs are equal to 1.0.

Table 7-21b. Site-specific WERs for dissolved metals in Chollas Creek (wet weather only)

<u>Metal</u>	<u>Site-Specific WER</u>
<u>Copper</u>	<u>6.998</u>
<u>Zinc</u>	<u>1.711</u>