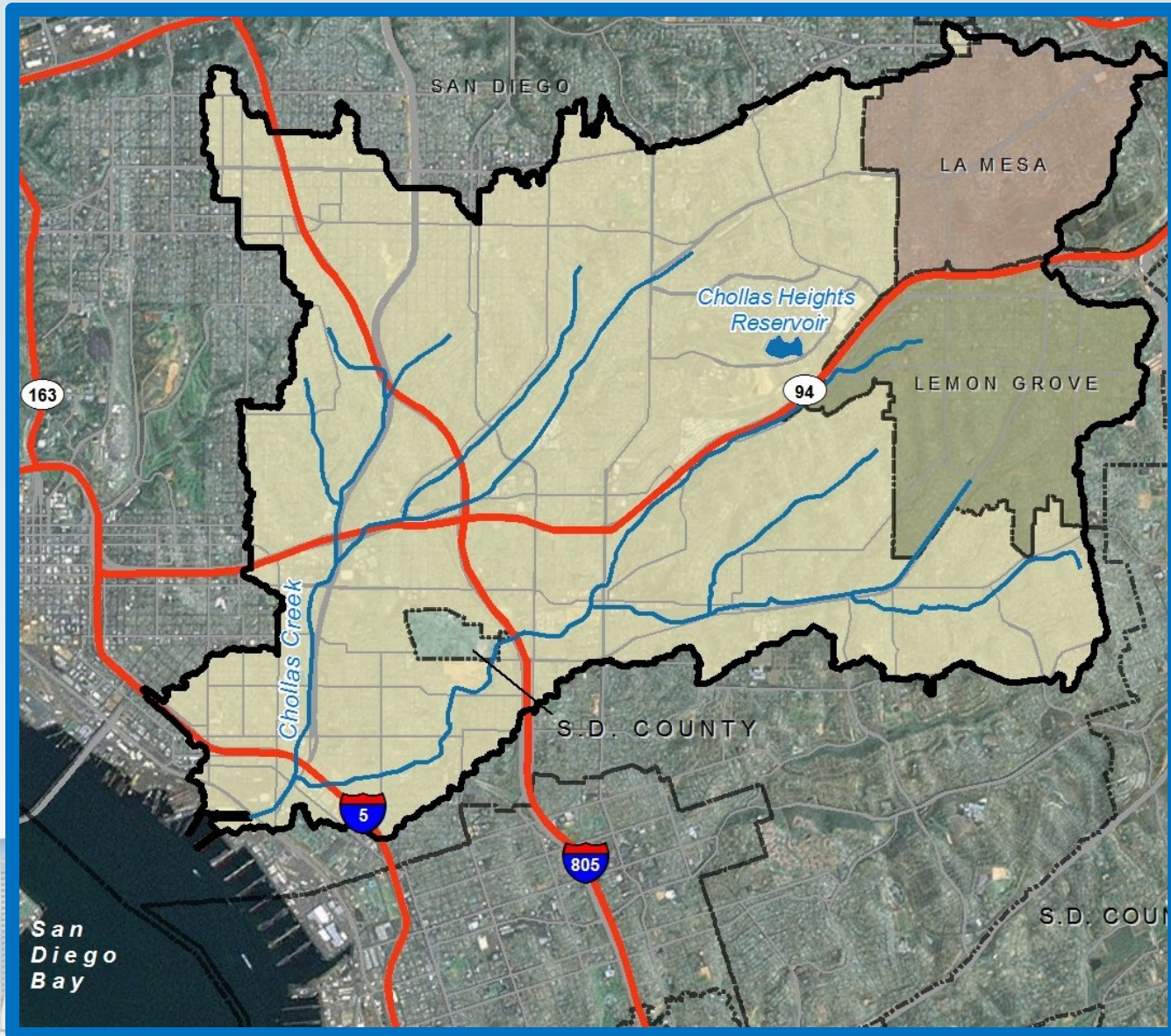


**Tentative Resolution No. R9-2016-0148:
A Resolution Amending the Water
Quality Control Plan for the San Diego
Basin to Incorporate Site-Specific Water
Effect Ratios into Water Quality
Objectives for Toxic Pollutants and
Total Maximum Daily Loads for Copper
and Zinc in Chollas Creek**

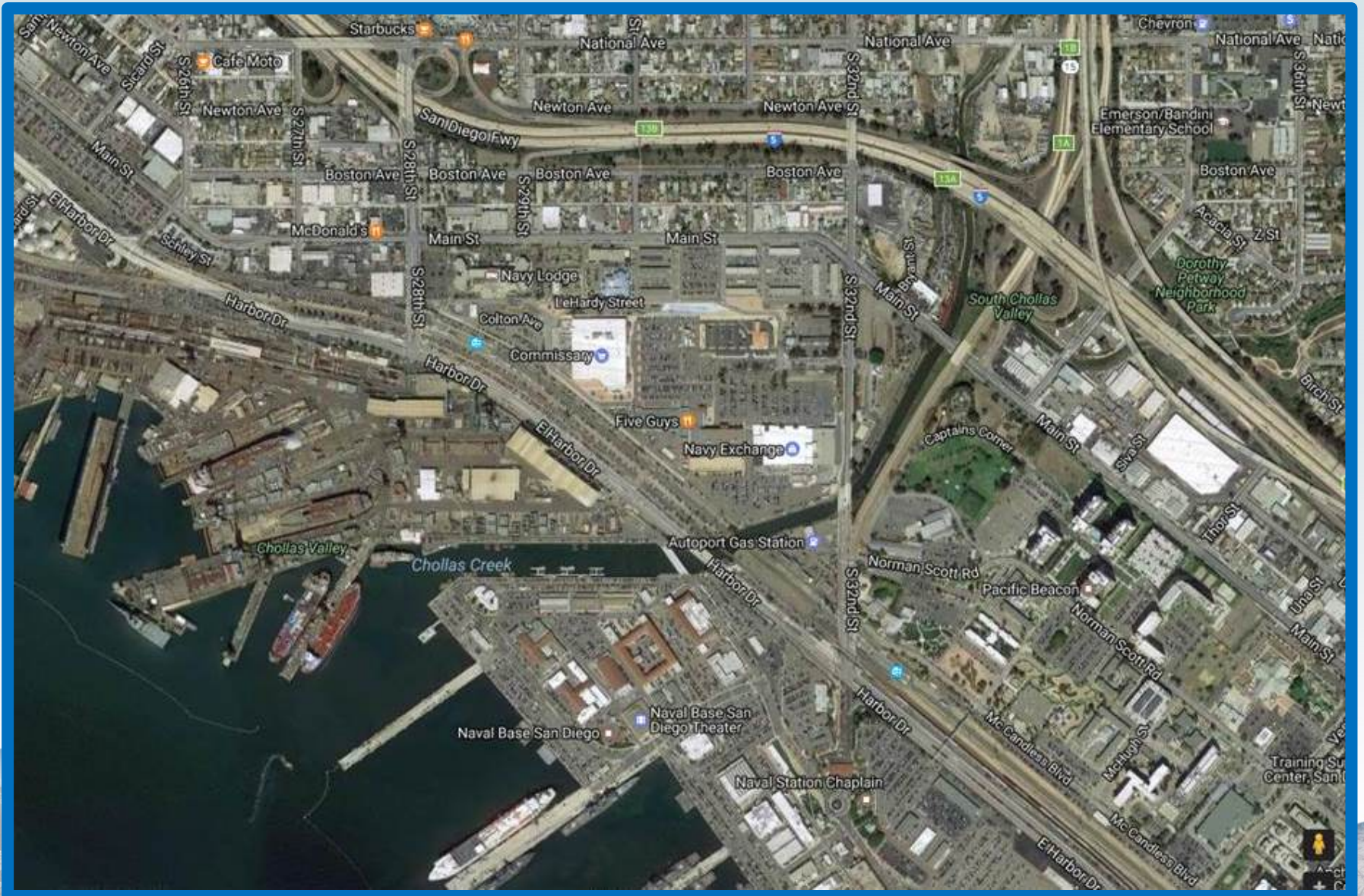
December 14, 2016



Chollas Creek Watershed



Mouth of Chollas Creek (San Diego Bay)



Chollas Creek Stewardship

Jacobs PRESENTS Performances and Cultural Experiences

FREE! **Dia de los Muertos**

IZCALLI November 1 | 12-9PM

Izcalli's 2nd annual Dia de los Muertos Celebration features performances by Grammy award winning Latin band **Quetzal** and nationally recognized comedy troupe **Teatro Izcalli**. Live entertainment will also feature traditional native dances including **Danza de Viejitos**, **Danza de Chinelos**, and **Danza de Diablitos**.

Five indigenous tribes from Mexico will build authentic Dia de los Muertos altars, and more than 150 low-rider cars will also feature altar displays. Visit www.IZCALLI.org

Market Creek AMPHITHEATER
FREE parking at the Joe & Vi Jacobs Center
406 Euclid Avenue, San Diego, CA 92114

JACOBS PRESENTS JACOBSPRESENTS.COM



Discharges to Chollas Creek



Metals in Chollas Creek

**Original TMDLs:
copper, lead, and zinc**

California Regional Water Quality Control Board
San Diego Region

**Total Maximum Daily Loads for Dissolved
Copper, Lead, and Zinc in Chollas Creek,
Tributary to San Diego Bay**



Chollas Creek Watershed

**Technical Report
May 30, 2007**

**Today's item:
site-specific water effect ratios**

California Regional Water Quality Control Board
San Diego Region

TENTATIVE
Resolution No. R9-2016-0148

**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**

copper and zinc only

Site-Specific Objectives

From the California Toxics Rule

Criteria Maximum Concentration (CMC)

Acute Toxicity

The highest concentration of the metal to which aquatic life can be exposed for a short period of time without toxic effects.

$$\text{CMC} = \text{WER} \times (\text{Acute Conversion Factor}) \times (\exp \{m_A[\ln(\text{hardness})] + b_A\})$$

Criteria Continuous Concentration (CCC)

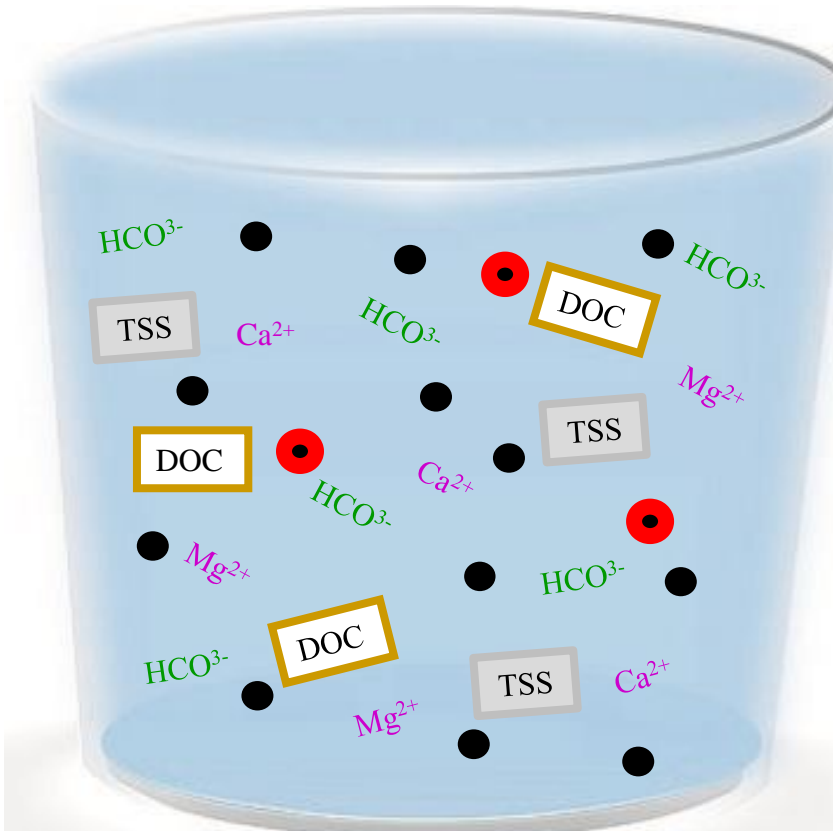
Chronic Toxicity

The highest concentration of a metal to which aquatic life can be exposed to for an extended period of time without toxic effects.

$$\text{CCC} = \text{WER} \times (\text{Chronic Conversion Factor}) \times (\exp \{m_C[\ln(\text{hardness})] + b_C\})$$

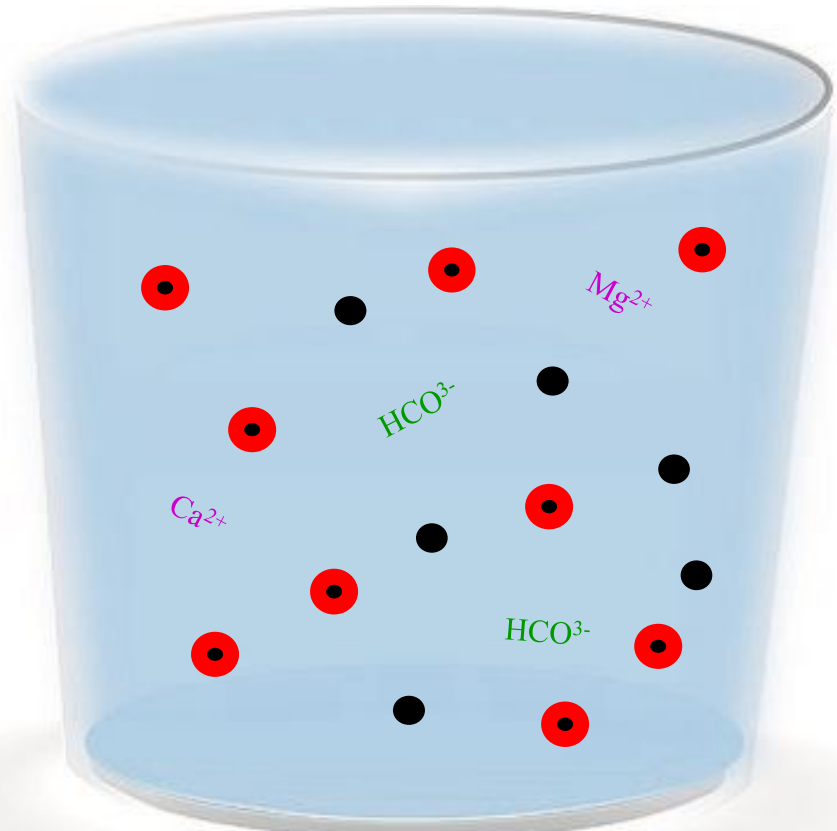


Site-Specific Water Effect Ratios



Site Water

Contains higher hardness, alkalinity, dissolved organic carbon, and total suspended solids



Lab Water

Contains lower hardness and alkalinity; negligible dissolved organic carbon and total suspended solids

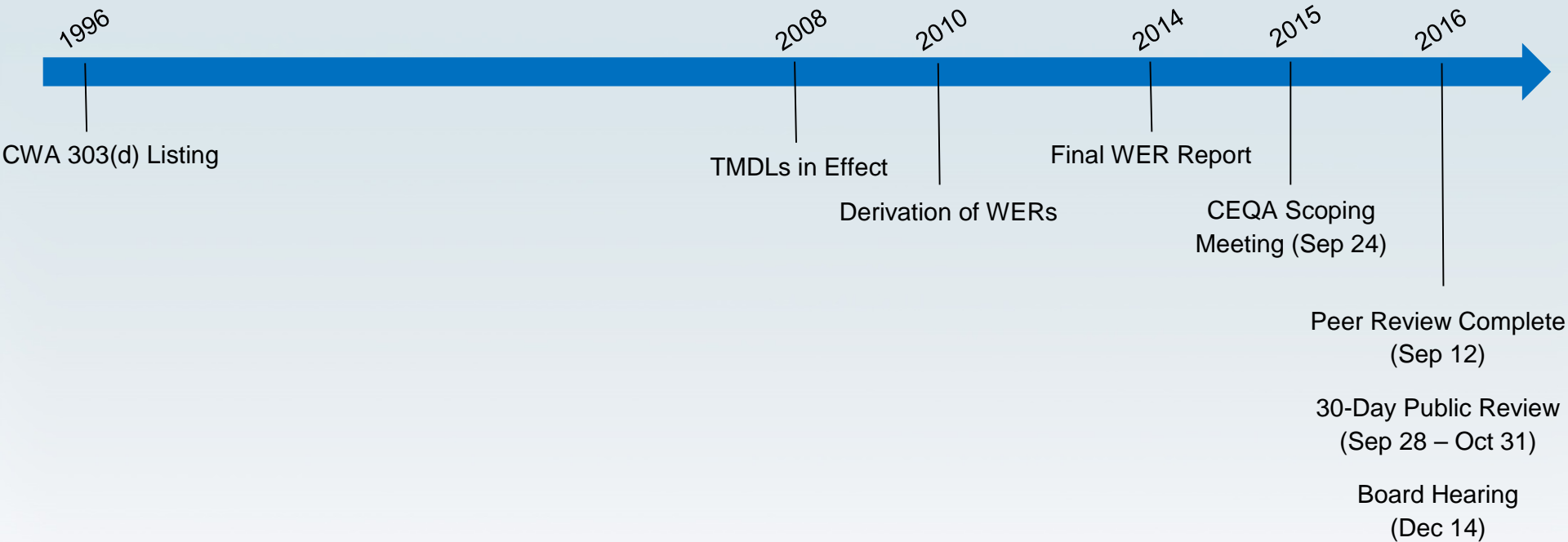
Chollas Creek Water Effect Ratios

2010 Storm Event	Copper WERs		Zinc WERs	
	North Fork	South Fork	North Fork	South Fork
February 27	7.882	4.951	1.780	1.658
April 1	16.98	10.30	3.182	2.205
October 30	8.610	6.569	2.163	1.183
December 20	6.512	7.130	1.995	1.980
Geometric Mean:	9.307	6.998	2.223	1.711

final water effect ratios



Where We Are Now



Chapter 3. Water Quality Objectives

Revise the water quality objectives discussion under Toxic Pollutants as shown below (text in red ~~strikeout~~ 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>

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.

Revisions to Chapter 3 (WQOs)

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.



Revisions to Chapter 7 (TMDLs)

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 Creek¹

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

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. Wet weather site-specific WERs for dissolved metals in Chollas Creek

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

Affected Dischargers

- Municipal Stormwater Dischargers
- Caltrans
- U.S. Navy
- Industrial Stormwater Dischargers
- Construction Stormwater Dischargers
- City of San Diego - South Chollas Landfill (Groundwater)
- Groundwater Extraction Dischargers



Public Participation Opportunities

December 8, 2014

Triennial Review Description Document finalized; public review through February 6, 2015

January 8, 2015

Triennial Review public workshop

September 29, 2015

CEQA scoping meeting held in watershed (Jacobs Center); approximately 20 participants

September 28, 2016

Draft resolution, draft technical report, and peer review comments posted online; public review through October 31, 2016



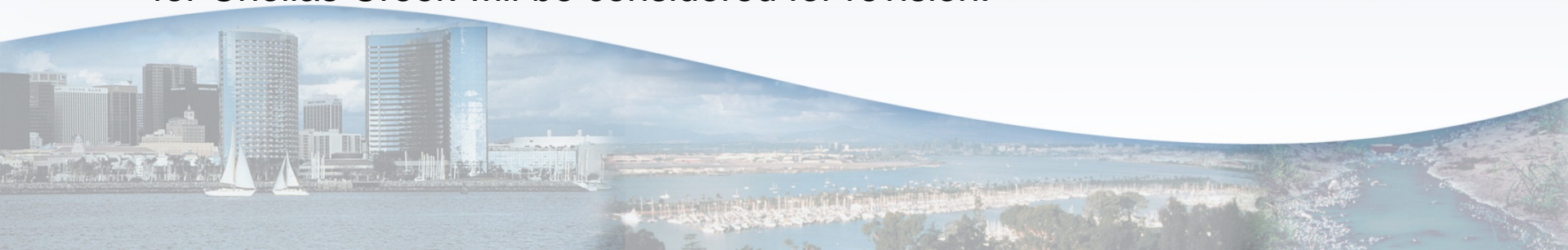
Study Procedures and Downstream Impacts

Sample Type (Grab vs. Composite)

- Flow-weighted composites best represent what the organisms are exposed to over the course of a storm.
- Staff and the peer reviewers verified the scientific rationale and adherence to the EPA guidance for determining water effect ratios.

Potential Downstream Impacts

- There is no indication that site-specific objectives would result in negative downstream impacts.
- Multiple studies have demonstrated that organics, such as PCBs, PAHs, and Chlordane are contributing to toxicity at the creek mouth.
- Errata was prepared to provide reassurance that if it becomes apparent beneficial uses are adversely affected, the TMDLs and site-specific objectives for Chollas Creek will be considered for revision.



Recommendation

Adopt Resolution No. R9-2016-0048 with Errata

- Process for developing the water effect ratios in consistent with the California Toxics Rule;
- Scientific rationale has been verified by staff and external scientific peer review;
- Consistent with the Practical Vision; and
- One of our top three 2014 Triennial Review priorities.

