Tentative 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

February 8, 2017
Tentative Resolution No. R9-2017-0015

- Recap

- Issues raised at December 14, 2016 Board meeting
Update to TMDLs Adopted in 2007

• Where? Chollas Creek
Update to TMDLs Adopted in 2007

• **Where?** Chollas Creek

• **What?** copper and zinc

The WER must be determined as set forth in Interim Guidance on USEPA’s Determination and Use of Water Effect Ratios or alternatively, other scientifically defensible methods adopted by the State as part of its water quality standards program and approved by USEPA.
Update to TMDLs Adopted in 2007

- **Where?** Chollas Creek

- **What?** copper and zinc

- **Why?** prevent toxicity (protect BUs of WILD and WARM)
Update to TMDLs Adopted in 2007

- **Where?** Chollas Creek
- **What?** copper and zinc
- **Why?** prevent toxicity (protect BUs of WILD and WARM)
- **How?** replace “placeholder” WER with site-specific WER

\[
\begin{array}{|c|c|c|c|c|}
\hline
\text{Metal} & m_A & b_A & m_C & b_C \\
\hline
\text{Cadmium} & 1.128 & -3.6867 & 0.7852 & -2.715 \\
\text{Copper} & 0.9422 & -1.700 & 0.8545 & -1.072 \\
\text{Chromium (III)} & 0.8190 & 3.688 & 0.8190 & 1.561 \\
\text{Lead} & 1.273 & -1.460 & 1.273 & -4.705 \\
\text{Nickel} & 0.8460 & 2.255 & 0.8460 & 0.0584 \\
\text{Silver} & 1.72 & -6.52 & 0.8473 & 0.884 \\
\text{Zinc} & 0.8473 & 0.884 & 0.8473 & 0.884 \\
\hline
\end{array}
\]

Note to Table 1: The term “exp” represents the base e exponential function.
What is the maximum amount of metals that can be present in Chollas Creek without creating toxic effects in toxicity test organisms?
December 14, 2016 Board Meeting

Issues raised:

1. Industrial site contributions;

2. Sampling methods for determining water quality criteria versus determining compliance; and

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Industrial Site Contributions
Although individual industrial facilities could potentially discharge high concentrations of copper or zinc during storm events, based on land use modeling, industrial facilities represent less than six percent of the total expected loading in the watershed.
December 14, 2016 Board Meeting

Issues raised:

1. Industrial site contributions;

2. Sampling methods for determining water quality criteria versus determining compliance; and

Monitoring and Assessment

- Conditions
- Planning
- Compliance
- Investigation
- Enforcement
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Water quality sampling procedures vary based on the purpose of the sampling. Flow-weighted composite methods are well suited for establishing water quality objectives and for monitoring at mass-loading stations, while grab samples are well suited for assessing performance of best management practices in storm water runoff from industrial sites.
Issues raised:

1. Industrial site contributions;

2. Sampling methods for determining water quality criteria versus determining compliance; and

WQOs in the Basin Plan, like the beneficial uses they protect, **apply to the receiving waters** themselves.

WQOs are the maximum amounts of copper and zinc that can be present in Chollas Creek without creating acute or chronic toxic effects in aquatic organisms.
Waste discharge requirements are crafted to ensure that WQOs will be met in the receiving waters.

Waste discharge requirements are currently in effect for:

- Municipal Storm Water Dischargers
- Caltrans
- U.S. Navy
- Industrial Storm Water Dischargers
- Construction Storm Water Dischargers
- City of San Diego - South Chollas Landfill (Groundwater)
- Groundwater Extraction Dischargers
Waste discharge requirements are the **appropriate regulatory tool** for addressing discharge-type conditions. In the case of industrial storm water, this is through the Industrial General Permit, which went into effect in July 2015.
Next Steps

How the criteria that apply to the creek are met (by controlling discharges in the watershed) is the next step.

That is carried out through waste discharge requirements.
For example, for the December 20 event:

\[
\text{SD8(1) LC50 divided by SMAV} = \frac{144.0}{22.11} = 6.512
\]
For example, for the December 20 event:

SD8(1) LC50 divided by SMAV = 157.6/22.11 = 7.130
Zinc Water Effect Ratios

For example, for the December 20 event:

\[
\text{SD8(1) LC50 divided by DMW LC50} = \frac{341.5}{171.2} = 1.995 \\
\text{DPR2 LC50 divided by DMW LC50} = \frac{339.1}{171.2} = 1.980
\]
Revisions

• An addition to Finding No. 7 to clarify that the amendment is not self-implementing; and

• A new Finding No. 13 to include the errata discussed by the Board at the December hearing regarding future revisions to the water quality objectives.
Recommendation

Adopt Resolution No. R9-2017-0015 with Errata

- Process for developing the water effect ratios in accordance with USEPA-promulgated standards;
- Scientific rationale verified by staff and external scientific peer review;
- Consistent with the Practical Vision; and
- One of our top three 2014 Triennial Review priorities.