



October 31, 2016

Melissa Valdovinos  
San Diego Regional Water Quality Control Board  
2375 Northside Drive Suite 100  
San Diego, CA 92108

VIA EMAIL

Melissa.Valdovinos@waterboards.ca.gov

**Re: Basin Plan Amendments to Incorporate Chollas Creek Water Effects Ratios  
Comments Regarding Insufficiency of WER Analysis**

Dear Ms. Valdovinos:

On behalf of Coastal Environmental Rights Foundation (“CERF”) and San Diego Coastkeeper (“Coastkeeper”), we submit the following comments on *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, Lead, And Zinc In Chollas Creek* (“Tentative Resolution”). San Diego Coastkeeper works to protect and restore the waters of the San Diego region through water quality monitoring, advocacy, education, community engagement, and enforcement. CERF is a nonprofit environmental organization founded by surfers in North San Diego County and active throughout California’s coastal communities. CERF was established to aggressively advocate, including through litigation, for the protection and enhancement of coastal natural resources and the quality of life for coastal residents. We appreciate this opportunity to provide comments on the Tentative Resolution.

The Tentative Resolution would revise the Basin Plan to incorporate site-specific water effect ratios (“WERs”) into water quality objectives (“WQOs”) for toxic pollutants and total maximum daily loads (“TMDLs”) for copper, lead, and zinc in Chollas Creek. While we acknowledge the effort and resources the San Diego Regional Water Quality Control Board (“Regional Board”) and stakeholders have put into the Tentative Resolution, proposed WERs remain premature and require further data collection and analyses to justify their incorporation in the Chollas Creek Metals TMDL and San Diego Region Water Quality Control Plan (“Basin Plan”). Most notably, we believe Appendix A, the City of San Diego’s Development of Site-Specific Water Quality Objectives for Trace Metals in Chollas Creek: Water-Effect Ratio Study for Copper and Zinc, and Recalculation for Lead (“WER Report”), has serious limitations and thus cannot justify the proposed Basin Plan Amendment.

**A. The WERs Fail to Account for the Period of Greatest Bioavailability**

CERF and Coastkeeper incorporate the concerns expressed in the peer review document, in total. Specifically, we wish to echo concerns related to the justification for basing the WER

on the geometric mean of four sampling events in the context of the 1994 Interim Guidance. We do not agree that the sampling events upon which the Tentative Resolution is based are able to capture site-specific variability associated with temporal seasonality and flow, nor do we believe the sampling events are representative of conditions during which metals are most bioavailable.

Further, wet weather samples are not indicative of dry weather conditions. In fact, the WER study for the LA River recognized dry weather conditions as “critical conditions”, i.e. that time when metals are most bioavailable. The 2014 City of San Diego study further included a footnote stating, “during wet weather, the WERs for dissolved copper and dissolved zinc are 6.998 and 1.711, respectively. During dry weather the WERs are equal to 1.” Though the Regional Board’s response to peer review comments indicates the dry weather WERs will be 1, the Basin Plan amendment language does not include this distinction. (See Tentative Resolution, pp. 1-2).

Factors influencing the toxicity of metals, and thus the value of WERs, include the form of metal (i.e., whether it is in a more bioavailable ionic state or bound with another compound); presence of organic compounds in the water column; pH; turbidity; temperature; and water hardness, among other factors. The bioavailability of all forms of metals (and thus the potential toxicity) depends on constantly fluctuating environmental conditions. As a result, the value of a WER is constantly changing in response to a changing environment.

Wet weather involves heavy loading of metals into Chollas Creek through stormwater runoff. However, the initial flush of metals also typically occurs with turbidity and an influx of organic particulate matter carried with the stormwater. The turbidity and particulates help mitigate the toxicity of metals during and immediately following wet weather because metals can bind to the organic and other particulates, lowering the bioavailability of the metals. To an extent, the different types of pollution help cancel each other out in the very short term. After several days of dry weather, however, the turbidity/organic matter drops significantly, providing less opportunity for metals to bind. Thus, any metals in the water become increasingly bioavailable and increasingly toxic, and the WERs drop correspondingly. It is our understanding that sampling conducted to support the WERs did not include this critical time period. It is therefore neither reasonable nor prudent to apply WERs developed for wet weather events to dry weather conditions.

WERs also vary with environmental conditions. Therefore, to ensure that SSOs based on WERs remain protective of all designated beneficial uses at all times and also remain consistent with the narrative WQS, a WER study must analyze the “critical condition.” The critical condition is the point in the hydrologic cycle when the WER is at its lowest value – reflecting the point of highest toxicity of a pollutant in a waterbody. Conversely, if the WER study does not analyze the critical condition, the calculated WER value will not accurately reflect the relative toxicity and any SSOs and TMDLs multiplied by the WER could result in toxic levels of pollution in the waterbody or otherwise fail to provide an appropriately protective standard to support the designated beneficial uses. By monitoring only during wet weather (as opposed to

dry weather, **or dry weather during the wet season**), the study fails to adequately capture the critical condition.

Notably, staff recognizes “USEPA’s WER guidance recommends WER testing under conditions that are representative of the site.” (Response to External Peer Review Comments, p. 2). Though stream flow may only occur when there is “sufficient precipitation to produce runoff to Chollas Creek,” the Creek has “highly variable flows” and “during dry weather, there are often extended periods of no surface flows in the creek,” but “pools of standing water may be present.” (Chollas Creek Diazinon TMDL, Technical Report, p. 11). “In general, 90% of the water flow occurs during less than 10% of the year, i.e., the most significant storm events and associated high flows usually occur during the months of December, January, and February.” (*Id.* at pp. 29-30). Here, however, sampling was conducted only during wet weather, subsequent to rain events, in an El Nino year.<sup>1</sup> Such sampling is not representative of the conditions of Chollas Creek.

Further, because a flow-weighted composite was used, the study fails to account for the critical condition and when the WER would be lowest. Use of the flow-weighted composite sampling directly impacts the sufficiency of the proposed WER. If the pollutant concentration changes quickly, drastically, or both, a flow-weighted measured pollutant concentration may not represent the average pollutant concentration accurately for the incremental volume.

Regional Board staff indicate flow-weighted composite sampling was required by the MS4 Permit and therefore the Chollas Creek WER Study used such monitoring. (Response to External Peer Review Comments, p. 2). This is nonsensical. First, the MS4 Permit was adopted after the WER Study sampling was conducted. (R9-2013-0001). Further, the MS4 Permit requires flow-weighted composite sampling to assess receiving waters throughout the County – not for development of a water-body specific WER. (See R9-2013-0001, pp. 55-56). Indeed, the MS4 Permit’s toxicity monitoring allows for either *grab or composite* sampling. (*Id.*, p. 51). The WER study’s departure from the USEPA recommendation to collect samples during first flush when metal concentrations are likely to be highest (worst case scenario) is therefore inappropriate and results in a WER that is not protective of water quality and beneficial uses.

Thus, the WERs proposed do not represent the most conservative approach to protecting beneficial uses in Chollas Creek, do not represent the true critical condition, and should not be used as the basis for the Tentative Resolution at this time.

---

<sup>1</sup> <http://www.kpbs.org/news/2014/jun/30/san-diegos-rain-year-ends-drought-continues/> and <http://www.sandiegouniontribune.com/sdut-highlights-san-diegos-wild-and-weird-2010-weather-2011jan02-htmlstory.html>

## **B. The WERs Violate State and Federal Antidegradation Policies**

If, despite these failures in the study, the Board moves forward to adopt the Tentative Resolution, at the very least, the Board should heed the recommendations in the Peer Review Comments that the most conservative lowest value for copper and zinc be adopted (i.e., 4.951 for copper and 1.183 for zinc). To do otherwise would violate anti-degradation laws.

The Clean Water Act seeks to “restore and maintain” the “integrity of the Nation’s waters.” (33 U.S.C. §1251(a)). This fundamental purpose of the Act have given rise to a robust federal anti-degradation policy, which prohibits actions which further degrade impaired waters (i.e. actions that lower the quality of waters that already do not meet water quality standards for a pollutant). (40 C.F.R. §131.12(a)(1).) California’s state anti-degradation policy (see SWRCB Resolution 68-16), which applies to both existing and potential uses, also prohibits further degradation of impaired waters, and includes additional requirements related to high quality waters. The quality of existing high quality waters must be maintained unless the State can demonstrate any degradation in quality is “consistent with the maximum benefit to the people of the State, will not unreasonably affect present and anticipated beneficial use of such water, and will not result in water quality less than that prescribed in the policies.”

The SWRCB’s Administrative Procedures Update (APU) 90-004 provides additional guidance on the content, analysis, and findings required in state anti-degradation analyses. APU 90-004 also mandates that whenever feasible, anti-degradation analyses should be integrated with CEQA analyses for projects subject to CEQA. (APU, p. 3). Taken together, the federal and state anti-degradation requirements prohibit the further degradation of impaired waters.

Here, Regional Board staff acknowledge the WER’s potential to result in degradation. (WER Draft Technical Report, p. 25 [“The Basin Plan amendment has the potential to allow degradation to water quality, because use of site-specific WERs increases the permissible copper and zinc loadings in Chollas Creek.”]). Specifically, due to the variability in samples, the use of any WER greater than the lowest WER sampled guarantees that at least some conditions under which the allowed toxicity for copper exceeds the toxicity of the Creek under the baseline WQOs. Since Chollas Creek is already impaired for copper, application of the proposed geometric mean copper WER of 6.998 is certain to further degrade water quality in Chollas Creek. Whenever the true WER in Chollas Creek falls below 6.998 (as it did for at least one instance in conjunction with the WER study), applying the WER of 6.998 will lead to *underestimation* of the bioavailability and toxicity of copper in the tributary – and a decline in actual water quality with respect to copper relative to the baseline WQOs.

The SSOs based on a copper WER that is not the most conservative thus violate anti-degradation policies and are unlawful. The use of a flow-weighted composite sampling technique further fails to account for the critical condition – when the WER would be lowest – as the result does not provide for the most conservative WER under circumstances when metals are most

bioavailable. The use of the flow-weighted composite sampling technique therefore violates anti-degradation policies and is unlawful.

### **C. Adoption of the WERs Will Likely Result in Significant Environmental Impacts**

To achieve CEQA compliance here, the Regional Board purports to tier from a substitute environmental document (SED) which accompanied the adoption of the TMDLs. (Draft Technical Report, pp. 22-25). Such tiering does not absolve the Board from conducting further CEQA review. In fact, nothing in the SED or the TMDL addressed the potential significance impacts of a site-specific WER. As noted above, adoption of the WER and basin plan amendment may “allow degradation to water quality, because use of site-specific WERs increases the permissible copper and zinc loadings in Chollas Creek.” (WER Draft Technical Report, p. 25). Further, because the proposed WERs lead to underestimation of the bioavailability and toxicity of copper at least some of the time, the basin plan amendment will most certainly result in significant impacts to water quality and biology.

Notably, the 2011-2012 San Diego Copermittee San Diego Bay WMA trend assessment for Chollas Creek highlights a continued increase in concentration of numerous constituents, *including copper*, despite adoption of the TMDL. (See attached, Exhibit A). Thus, any relaxation of the TMDL will likely result in further increases in copper loading. This is particularly true where the City – through application of the WERs – falsely believes it is in compliance with the TMDL and CTR and therefore curtails implementation of additional or more robust BMPs.

In addition, the Board’s disregard for downstream impacts further undermines its position that the WERs will not result in significant environmental impacts and is equally troubling. (See Response to Comments Regarding Downstream Impacts). The Board assumes downstream impacts at the mouth of Chollas Creek will not result in a significant impact because of naturally high DOC, neutral pH of the water, and oxygenation during the mixing process. (Response, p. 3). However, a SCCWRP storm water toxicity study of the Chollas Creek plume found plume toxicity in the Bay was similar to the toxicity of the Creek itself. (Stormwater toxicity in Chollas Creek and San Diego Bay, California, p. 232).<sup>2</sup> Moreover, marine organisms were *more sensitive* to such toxicity. (*Id.* at p. 224). Thus, an increase in metal-loading to Chollas Creek will increase toxicity in the Chollas Creek plume, as well as toxicity to marine organisms in the Bay.

Likewise, the Regional Board’s reliance on Investigative Order No. R9-2015-0058 to verify the Board’s assumption that by application of the WERs will not negatively impact sediment toxicity has the process exactly backwards. (Response to Comments, p. 4). Should results of the Investigative Order show negative impacts to beneficial uses, the Board commits to “revisit” the TMDLs. Rather than approving a potentially detrimental basin plan amendment, the

---

<sup>2</sup> available at [http://ftp.sccwrp.org/pub/download/DOCUMENTS/AnnualReports/2001\\_02AnnualReport/23\\_ar15-ken.pdf](http://ftp.sccwrp.org/pub/download/DOCUMENTS/AnnualReports/2001_02AnnualReport/23_ar15-ken.pdf)

Board should confirm its assumptions and wait for the results of the Investigative Order *prior to* adopting a WER.

In summary, because the SED did not address the significant water quality and biological impacts which will likely result from the Board's adoption of the WERs and basin plan amendment, adoption of the proposed Tentative Order without further CEQA review will result in a violation of the letter and spirit of CEQA.

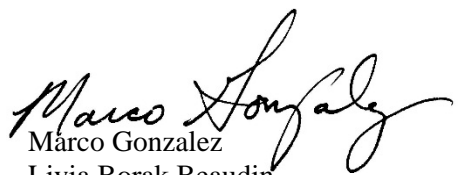
#### **D. Conclusion**

When establishing SSOs, it is essential that data used for Basin Plan and TMDL changes is representative of watershed conditions in which they apply. Robust and continual site-specific data for water chemistry, ecological function, native species, precipitation, etc., is necessary to ensure changes to WQOs will protect designated beneficial uses. CERF and San Diego Coastkeeper strongly believe SSOs should be applied with caution. Where used, it is imperative that SSOs are supported by sound and sufficient science and monitoring. CERF and San Diego Coastkeeper are likewise concerned about the lack of a defined process to evaluate the protectiveness of the SSOs over time. For that reason, and because WQOs for copper in Chollas Creek would increase by a factor of 7, we urge the Regional Board to reject the proposed Tentative Resolution until adequate and robust data supports adoption of site-specific WERs.

Thank you for your consideration of our comments.

Sincerely,

  
Matt O'Malley  
Attorney for San Diego Coastkeeper

  
Marco Gonzalez  
Livia Borak Beaudin  
Attorneys for Coastal Environmental  
Rights Foundation

# **EXHIBIT A**

## SAN DIEGO BAY WMA Chollas Creek MLS Trend Results

