

Santa Ana Regional Water Quality Control Board

October 6, 2015

R. Kevin Ketchum
Marina Recreation Association
915 L Street, #C107
Sacramento, CA 95815

Response to the Marina Recreation Association's (MRA) Letter to Chairman Ruh regarding Newport Bay Copper TMDL and Non-TMDL Action Plans for Other Metals

Dear Mr. Ketchum:

This letter provides Regional Board staff's response to the Marina Recreation Association's comments/concerns stated in your July 23, 2015 letter to Chairman Ruh and Regional Board members regarding the Newport Bay Copper TMDL and Non-TMDL Action Plans for Other Metals.

First, we acknowledge and appreciate the Marina Recreation Association's (MRA's) support of healthy and diverse marine habitats and of efforts to protect our oceans from contaminants, including copper. We also acknowledge the importance of stakeholder buy-in to TMDLs and other regulations that affect contaminant loading, where such agreement is feasible. The Regional Board strives to assure that the best available science is employed when establishing such regulations.

MRA comment/concern 1. Use of the California Toxics Rule (CTR) criteria for metals

"Our primary concern is the utilization of the California Toxic Rule (CTR) to establish numeric target values. The CTR copper value is overly conservative, does not use the best science, and therefore will potentially initiate the wrong implementation strategy. The USEPA acknowledges the CTR copper value is overprotective."

1.1. "The CTR copper value is overly conservative ..."

Board Staff Response 1.1. Board staff agree that the California Toxics Rule (CTR) copper (Cu) criteria may be overprotective for some water bodies but these Cu criteria are not overprotective for Newport Bay. The CTR chronic Cu criterion may also be overprotective at times when the dissolved organic carbon (DOC) concentrations are high, but it is not overprotective when DOC concentrations are low (below 1mg/L). This is shown for Newport Bay in a Biotic Ligand Model (BLM) analysis of data from a Cu-Metals Marina study in the Bay. Samples were collected in May, August and December (2006) and analyzed for Cu (and other metals), DOC, and other water quality parameters such as pH and salinity. The DOC varied seasonally (for one year's data). Board staff then ran the BLM with the Cu and DOC data and found that when the DOC concentrations were below 1mg/L, the Cu BLM criteria were close to the CTR acute Cu criterion (4.8µg/L); when the DOC concentrations were below 0.5mg/L, the Cu BLM criteria were close to the CTR chronic Cu criterion (3.1µg/L). DOC data from Newport Bay, collected by the County of Orange, were also highly variable.

Since the DOC concentrations are variable in the Bay, we must use the lower DOC concentrations in determining a Cu BLM criterion to be protective of this water body under all DOC concentrations, and the lower DOC data yield Cu BLM criteria nearly equal to the CTR chronic Cu criterion; therefore, the CTR Cu criterion of 3.1µg/L is an appropriate water quality objective. Based on the above evaluation, the saltwater CTR Cu criteria are not overly conservative for Newport Bay.

1.2 “The CTR copper value... does not use the best science...”

Board Staff Response 1.2. The MRA letter does not specify the basis for this assertion. The saltwater CTR Cu criteria, including the acute and chronic Cu criteria, were derived by USEPA using the best available science. The CTR acknowledges that site-specific criteria for certain metals, including Cu, may be appropriate, and provides for the development of a Water Effects Ratio (WER) to justify revisions to the CTR Cu criteria. Furthermore, USEPA is now considering the publication of the Saltwater Cu BLM to determine the Cu criteria for a water body. As discussed in the previous response, Board staff’s use of the BLM to determine Cu BLM criteria confirms the appropriateness of the current CTR chronic Cu criterion (3.1µg/L). The proposed revised Cu TMDL allows for revisions of the applicable water quality objectives based on WER studies (or Saltwater Cu BLM criteria determinations, if the Saltwater Cu BLM is approved by USEPA), should one or more parties elect to pursue WER studies or BLM determinations.

See also Attachment 1 (an excerpt of testimony by Dr. Cindy Lin, USEPA, to the Los Angeles Regional Board as part of the consideration of the revised Marina del Rey Toxics TMDLs including a Cu TMDL), in which Dr. Lin notes the appropriateness of the CTR Cu criteria.

Board staff agree that the best available science should be used to develop this Cu TMDL and we strive to use the most current criteria and methodology, which currently includes the CTR Cu criteria. We have also recalculated the Cu input from Cu AFPs on boat hulls based on Earley et al’s study (2013) which is the latest study on Cu loading from boats. In addition, a separate model was used to determine the total allowable Cu that the Bay can assimilate and still remain below the CTR chronic Cu criterion, and Cu allocations for each source were calculated from the total allowable Cu.

1.3 “The CTR copper value ... will initiate the wrong implementation strategy”

Board Staff Response 1.3. The CTR Cu criteria are the legally applicable water quality criteria and will not “initiate the wrong implementation strategy”. The CTR chronic Cu criterion (3.1µg/L) is a national criterion and is based on species and sites that are reflective of sites throughout the nation, including Newport Bay.

The dischargers always have the option of conducting a WER to determine whether a site-specific criterion for Cu is appropriate; however, the CTR Cu criteria are the legally applicable criteria unless a site-specific criterion is developed and adopted.

1.4 “The USEPA acknowledges the CTR copper value is overprotective.”

Board Staff Response 1.4. The CTR, promulgated by USEPA, provides for site-specific adjustments to the CTR Cu criteria, acknowledging that under certain water quality conditions, the resulting site-specific Cu criteria may be either overprotective or underprotective. See Response 1.2.

MRA comment/concern 2. The CTR does not reflect true toxicity in a water body.

“Not only did the USEPA recommend developing site-specific targets for copper, they wrote guidance to develop site-specific criteria: From USEPA’s Aquatic Life Criteria Table for Copper: “When the concentration of dissolved organic carbon is elevated, copper is substantially less toxic and use of Water-Effects Ratios (WERs) might be appropriate... Simply stated, MRA’s concern is that it is widely understood that CTR does not reflect the true toxicity in a specific water body.”

Board Staff Response 2. We agree that the CTR does not reflect the toxicity in a specific water body since it is designed to be a protective value for all water bodies in the state of California rather than a threshold at which toxicity occurs. In other words, the CTR criteria are water quality standards established to protect water quality and prevent toxicity, rather than a measurement of toxicity, and the CTR Cu criteria were set to address Cu concentrations before they reach toxic concentrations.

MRA comment/concern 3. The use of site-specific objectives

“From 2002 Newport Bay Copper TMDL: “...Metals criteria calculation protocols are nearing completion which may enable States to calculate metals standards that more accurately represent the bioavailable portion of total metals loading through consideration of WERs. It may be relatively straightforward recalculate (*sic*) metals criteria based on local hardness and organic carbon data and revised WER equations. In light of the potential cost of extensive actions to further control metals loading from urban runoff in the watershed, EPA believes it may be reasonable to consider whether newly emerging criteria calculations methods would result in protective but easier-to-implement standards.” MRA supports the utilization of site-specific criteria.

Board Staff Response 3. It appears that this passage from USEPA’s Cu TMDL relates to metals in freshwater as it discusses “control[ing] metals loading from urban runoff in the watershed” and the use of “local hardness and organic carbon data” with revised WER equations (hardness is used to determine metal concentrations only in freshwater). It appears, however, that the point that MRA is making is that MRA is in favor of the use of site-specific criteria.

While Water Effects Ratios (WERs) have not been evaluated in Newport Bay to determine a site-specific objective, the BLM was run with data from the Bay to derive Cu BLM criteria (see Response 1). The Cu BLM criteria are significantly related to the DOC concentrations in saltwater. Since a Cu BLM criterion is generated for each sample analyzed, Board staff were able to determine that when DOC concentrations are below 0.5 mg/L, the Cu BLM criteria are at or close to the CTR chronic Cu criterion of 3.1 µg/L; therefore, the CTR Cu criterion is appropriate for use in Newport Bay.

Dischargers do have the option of conducting a WER for any water body; however, in the case of Newport Bay, the CTR Cu criteria must be met unless a site-specific criterion is developed and adopted. See Response 1.

MRA comment/concern 4. The use of Site-Specific Objectives

4.1. Lessons learned from Shelter Island Cu TMDL

"In your Staff's report before you, they refer to the Copper TMDL's (*sic*) that have been adopted for Shelter Island Yacht Basin and Marina del Rey. It is important that future Copper TMDL's build upon those that precede them. In this regard, we request that you pay particular attention to the lessons learned by the Port of San Diego regarding the development and implementation of the Shelter Island Yacht Basin TMDL. For your convenience, I have attached their writing to the Los Angeles Regional Water Control Board in response to their draft Copper TMDL regarding Marina del Rey. Of particular importance is their lesson learned of the value of utilizing site-specific criteria."

From Attachment to MRA letter: "Comment and Summary Response on November 5, 2013 Draft: Reconsideration of the Total Maximum Daily Load for Toxic Pollutants in Marina del Rey Harbor" comments from Karen Holman, Port of San Diego - Consider Site-Specific Water Quality Objectives (15.3)

"The District [San Diego Unified Port District] recognizes the importance of considering site-specific factors when developing TMDLs. The Shelter Island TMDL did not use site-specific objectives in the technical methodology; however, there is an increasing body of evidence suggesting that the current water quality objective of 3.1 µg/L may be overly protective of the beneficial uses in the Shelter Island Yacht Basin. For the District and other stakeholders subject to the Shelter Island TMDL, re-opening the TMDL for Shelter Island to consider site-specific water quality objectives will be a lengthy and expensive process for both the regulated parties and the Regional Board.

As one of the parties implementing various copper reducing activities to meet the 3.1 µg/L water quality objective in the Shelter Island TMDL, the District would encourage the use of site-specific water quality objectives at the onset of the TMDL process. Because the Marina del Rey TMDL Amendment has not yet been adopted, it may be beneficial to 1) consider extending the amendment hearing until a site-specific study can be completed, or 2) include appropriate language in the TMDL resolution to enable site-specific objectives to be easily incorporated, once data is collected without another re-opener process."

Los Angeles Regional Board (LARB) staff Response to Port comments. "The TMDL may be revised at any time to incorporate the results of new scientific study, including a site-specific objective if appropriate. The potential water column impairment due to copper in the water column was discussed in the Staff Report for the original Marina del Rey Harbor Toxic Pollutants TMDL. As no special studies have been conducted investigating a potential site-specific objective since the original TMDL became effective in 2006, water quality objectives promulgated by the California Toxics Rule are the appropriate water quality criteria for copper in the water column of Marina del Rey Harbor."

Board Staff Response 4.1. Board staff agree that future copper TMDLs should consider and, where appropriate, build upon other established Cu TMDLs. It is for this reason that we regularly communicate with LA Regional Board and Port of San Diego staff to discuss Cu TMDL issues, including the effectiveness of implementation strategies. In addition, a number of agencies (including the Regional Boards, the State Board, the Port of San Diego, the Port of Los Angeles, the Department of Pesticide Regulation (DPR), the U.S. Navy and others) meet quarterly to discuss marina issues with an emphasis on Cu.

At this time, the CTR Cu criteria are the applicable water quality criteria for Cu. Data from Newport Bay were run in the BLM, and when DOC concentrations are below 0.5 mg/L, the Cu BLM criteria are at or close to the CTR chronic Cu criterion of 3.1 µg/L. In addition, the Cu TMDL may be revised at any time to incorporate the results of new scientific site-specific studies, and Board staff will consider recommendations for a site-specific objective if it is shown to be appropriate by new data (see Response 2).

4.2. Use of site-specific objectives for Marina del Rey

"The importance of site-specific criteria [criteria] was also underscored during the process of establishing the Copper TMDL for Marina del Rey. The State and Los Angeles Regional Water Quality Control Boards recognized the value of site-specific modeling, including Biotic Ligand Model (BLM). In that Copper TMDL, provisions were made for site-specific modeling including WERs and BLM. The County of Los Angeles is currently conducting site-specific modeling."

Board Staff Response 4.2. The proposed revised Cu TMDL for Newport Bay includes provisions that allow the dischargers to conduct site-specific studies. If the results of those investigations show that a Cu criterion different from the CTR chronic Cu criterion is appropriate, and if the revised Cu criterion is approved, then the TMDL can be reopened and revised. Note that a site-specific Cu criterion may be higher or lower than the CTR Cu criteria (see Response 2).

In addition, it is our understanding that the County of Los Angeles is only in the preliminary stages of submitting a plan to LA Regional Board staff for site-specific sampling and analysis, and is not yet conducting site-specific modeling.

4.3. Adoption of site-specific objectives for San Francisco Bay

"The San Francisco Bay Regional Water Quality Control Board has adopted the use of site-specific models in determining target values."

Board Staff Response 4.3. The San Francisco Regional Board has adopted site-specific objectives for San Francisco Bay. Note that the largest source of Cu to San Francisco Bay was determined to be Cu from Delta tributary inflows rather than Cu from Cu AFPs on boats.

MRA comment/concern 5: Successful TMDL implementation requires support from the regulated community.

"In closing... Karen Holman [wrote] to the Los Angeles Regional [Water] Quality Control Board on behalf of the Port of San Diego, "Our experience has taught us that working through the TMDL adoption process and having success in implementing pollutant reducing activities requires support from the regulated community." It is our contention that utilizing best available scientific tools in establishing target values is a critical component in obtaining support from those being regulated."

Board Staff Response 5. Board staff agree that the success of the TMDL adoption process and the implementation of pollutant reducing activities requires support from the regulated community. This is part of the reason that we conduct public workshops and solicit comments/concerns from stakeholders for proposed regulatory actions.

We also agree that utilizing the best available science in establishing water quality objectives is a critical component in obtaining support from those being regulated. As previously stated, the CTR Cu criteria upon which the proposed revised Cu TMDL relies are based on the best

available science. Once again, this proposed revised Cu TMDL provides for the development of site-specific Cu criteria, if justified by site-specific investigations.

MRA comment/concern 6. Comments/concerns expressed in Attachment to MRA letter: California Toxic Rule Copper Value tear sheet.

This attachment expresses similar concerns to those expressed in the MRA letter.

6.1. "The CTR copper value is overly conservative, does not use the best science, and therefore will initiate the wrong implementation strategy.

Board Staff Response 6.1. See Response 1.1.

6.2. "The USEPA acknowledges the CTR copper value is overprotective."

Board Staff Response 6.2. This assertion may be true for some water bodies, especially where DOC concentrations are high, but it is not true for all water bodies in California. Based on Board staff's use of the BLM to develop Cu BLM criteria, the CTR Cu criteria are not overprotective for Newport Bay. See Responses 1.1 and 1.4.

6.3. "From USEPA's Aquatic Life Criteria Table for Copper
"When the concentration of dissolved organic carbon is elevated, copper is substantially less toxic and use of Water-Effect Ratios (WERs) might be appropriate." "

Board Staff Response 6.3. Board staff agree with MRA's statement above; however, the reverse is also true –when the dissolved organic carbon is low (less than 0.5mg/L), Cu may be more toxic, and Board staff must use Cu criteria that are protective of water quality. See Response 1.1.

6.4. "From 2002 Newport Bay Copper TMDL "Metals criteria calculation protocols are nearing completion...It may be relatively straightforward [to] recalculate metals criteria based on local hardness and organic carbon data and revised WER equations." "

Board Staff Response 6.4. This statement must refer to freshwater since it discusses hardness measurements. See Response 2.

Summary.

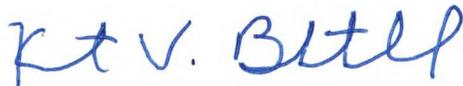
- 1) The CTR Copper (Cu) criteria are the applicable water quality criteria for Cu. The CTR chronic Cu criterion (3.1 µg/L) is a national criterion and is based on species and sites that are reflective of sites throughout the nation, including Newport Bay.
- 2) Board staff agree that utilizing the best available science is a critical component in establishing water quality objectives and in developing this Cu TMDL. The proposed revised Cu TMDL employs the best available science.
- 3) The dischargers always have the option of conducting a WER; however, the CTR Cu criteria are legally applicable unless a site-specific criterion is developed and adopted. . Accordingly, actions to achieve the CTR Cu criteria are required at this time.
- 4) The use of the Biotic Ligand Model (BLM) has also been discussed, though it has not yet been published by USEPA. Board staff did, however, run the BLM with data from Newport Bay and when the dissolved organic carbon (DOC) concentrations are below 0.5 mg/L, the BLM criteria are close to the CTR chronic Cu criterion of 3.1 µg/L.

5) As Board staff discussed at the July 24, 2015 Regional Board meeting and the two CEQA scoping meetings held on July 23, 2015, our data assessment demonstrates that Cu concentrations in the Bay continue to exceed the CTR saltwater chronic Cu criterion and the finding of continued impairment of the Bay due to Cu is justified. This Metals Impairment Assessment should be released as part of the draft staff report for the metals TMDLs in a few months.

6) In addition, a Cu TMDL for Newport Bay is currently in place and was promulgated by USEPA in 2002. Board staff are proposing a revised Cu TMDL that requires a lower reduction for Cu from boats (86%) compared to USEPA's reduction requirement (90%).

If you have any further questions/comments or would like to discuss, please contact Linda Candelaria, PhD (RB8-CuTMDL@Waterboards.ca.gov) or Joanne Schneider (jschneider@waterboards.ca.gov).

Sincerely,



Kurt V. Berchtold
Executive Officer
Santa Ana Regional Water Quality Control Board

cc: Regional Board

Attachment 1. Comments from USEPA in LA Regional Board hearing on Marina del Rey Toxics TMDLs on January 6, 2014.

[Comments addressing the appropriateness of the Copper CTR criteria are highlighted in yellow.]

ATTACHMENT 1

MEETING

THE LOS ANGELES REGIONAL WATER QUALITY CONTROL BOARD

In the Matter of

Regular Board Meeting

THE METROPOLITAN WATER DISTRICT OF SOUTHERN CALIFORNIA

BOARD ROOM

700 NORTH ALAMEDA STREET

LOS ANGELES, CALIFORNIA

THURSDAY, JANUARY 6, 2014

9:00 A.M.

Reported by:

Martha L. Nelson

[Comments from USEPA)

MS. LIN: Good afternoon, Chair Stringer and Members of the Board. Thank you for the opportunity to comment today. My name is Cindy Lin and I am USEPA's Region 9's TMDL Coordinator to speak today on the Marina del Rey toxics reconsideration TMDL. First I want to commend your board's effort on meeting your commitment to bringing back TMDLs for reconsideration based on the additional data and analysis by the public and the stakeholders. We know that this takes great effort and resources and is a testament to the commitments you have made to the public at large to bring more information back to review additional -- the TMDLs again.

EPA has reviewed this revised TMDL and finds the TMDL meets the necessary elements of a TMDL as required under Clean Water Act section 303(d). In our review we

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noted the revised TMDL included more extensive and robust data review and analysis, particularly for the front and back basins of Marina del Harbor -- Marina del Rey Harbor. In addition, the revised TMDL looked at multiple lines of evidence which we strongly support, including looking at the sediment, the fish tissue, and the water column. We believe that that will provide more robust information to the impairment assessment. We found the review of the data appropriate and supported additional findings that were reported to you before. This includes the additional load allocations.

Furthermore, we should state that the TMDL included appropriate California Toxics Rule criteria for copper and PCBs, which are the applicable water quality standards for these water bodies. Clean Water Act section 303(c)(2)(B) states that states must adopt numeric criteria

for primary toxic pollutants if it has been shown that the pollutant would impact the beneficial uses negatively. And in this case copper and PCBs are these primary toxic pollutants. And the California Toxics Rule criteria is the applicable standard.

We support the finding of the copper impairment in the water column and sediment from copper-based anti-fouling paints used on boats. We find this specific analysis to be comparable to those conducted for the Shelter Island Yacht

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Basin Copper TMDL in the San Diego region, and also in the Newport Bay region.

EPA supported and approved the Shelter Island TMDL on February 8th, 2006, and also on the Newport Bay TMDL in 2002. Since then, specifically the San Diego Regional Board has worked with the Port of San Diego to come up with reasonable alternatives to meeting the reductions. In fact, we were recently informed that the port have met their interim goals and milestones of reducing pollutant load reductions. Alternative paint -- boat paints were used on the paints -- on many boats in the region.

We've also heard that there are recommendations and suggestions for a site-specific objective, and I wanted to comment on this. Specifically the discussion about a water -- oh. Okay. Let me skip then.

We strongly encourage the board to adopt this TMDL. As stated earlier, we have already seen improvements in similar water body situations. It would be important to begin implementation measures to begin the protection of the beneficial uses and the front and back basins of Marina del Rey Harbor. Thank you.

CHAIR STRINGER: Sorry. Is there anything that you would like to convey to us that got cut off?

MS. LIN: I guess two quick points then.

CHAIR STRINGER: Sure.

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MS. LIN: One is that I know that there is this effort on the copper words. I should just mention that that's a standards change and request that has to go through EPA standards guidance for, you know, water effects ratios. EPA standards guidance for, you know, water effects ratios. So it can't be done along with the TMDL, so that's a separate process.

CHAIR STRINGER: Got it.

MS. LIN: And you've actually -- your board has actually acted on that.

In addition, since 2006 we understood that California wanted to have a statewide effort for copperbased boat paints, but that has not come to fruition. And so we are basically eight years later and we still haven't seen that statewide, you know, guidance or rule of some sort. So we strongly support more specific actions like Marina del Rey Harbor.

Finally, I wanted to mention that EPA actually gave a grant of \$96,000 to the Department of Toxic Substances Control to look at additional alternative boat hull coatings that can be more cost effective and also have good performance. And some of those results are on our website, I want to point to folks. And they basically show that these alternative painting methods, stripping methods and paints are viable. And, in fact, one of the key things I want to mention is that this non-biocide paint, which is

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what was reviewed and evaluated, were much longer lasting, on the order of ten years, compared to your normal copperbased paint which lasts just about two years.

So those are things that are kind of the forefront of technology that we need to move forward on. And so I -- we strongly support the movement of the adoption of this TMDL. We don't believe that the technology is not there yet.

CHAIR STRINGER: Great. Thank you very much.

MS. LIN: Thank you.