Comment Summary and Responses
Calleguas Creek Watershed Metals and Selenium TMDL Reconsideration

Comments from Calleguas Creek Watershed Management Plan Stakeholder Group (September 23, 2016)

No.	Comment	Response
1	As a starting point, it is important to recognize that all reaches of the Calleguas Creek Watershed, except copper in Revolon Slough, are no longer impaired for copper and nickel and could be delisted. And in fact there have been no exceedances in over 5 years and only 1 exceedance of nickel in the past 8 years. This fact should be celebrated and rewarded as part of this process and the Stakeholder efforts towards implementing programs that have resulted in water quality improvement should be acknowledged. In the development of this reopener, the Stakeholders requested that the TMDL be modified to remove the allocations in the reaches that were no longer impaired, consistent with what was done for zinc during the development of the original TMDL. This would entail removal of load-based copper and nickel allocations for Hill Canyon and Camarillo POTWs, and agricultural and MS4 discharges to Calleguas Creek and Conejo Creek, as well as nickel allocations for agricultural and MS4 discharges to Revolon Slough. As Revolon Slough is still impaired for dissolved copper, the copper allocations for discharges to Revolon Slough would remain in effect.	The Regional Board recognizes that two out of three reaches listed as impaired due to metals and selenium -- Mugu Lagoon and Calleguas Creek Reach 2 -- are currently meeting the numeric target for copper as a result of implementing programs to reduce copper loading to Calleguas Creek and Mugu Lagoon. The Regional Board also notes that Revolon Slough, which drains the agricultural land in the western portion of the watershed and outlets to Mugu Lagoon, is not yet meeting the numeric target. Based on the review of current conditions using data from March 2007 to June 2015, a decreasing trend in dissolved copper concentration was only found in Calleguas Creek Reach 2. There are no significant decreasing trends in dissolved copper or dissolved nickel concentrations in other reaches, and a slightly increasing trend found for Reach 3. The Regional Board finds that allocations assigned to all sources including POTWs, agricultural, and MS4 discharges to Calleguas Creek and Conejo Creek are necessary to maintain

No.	Comment	Response
		current conditions in Mugu Lagoon and Calleguas Creek Reach 2.
2	Removing allocations for copper and nickel for discharges that impact unimpaired reaches is consistent with the justification in the Calleguas Creek Metals TMDL for excluding allocations for zinc. Available data indicated that receiving water targets for zinc had been attained, and so allocations for zinc were not included in the TMDL. This is still the preferred approach from the Stakeholders' perspective to reflect the efforts that have been conducted in the watershed. We also feel this is protective of beneficial uses due to the existing and future controls that are in place in the watershed to control metals that will maintain the existing quality without the need for allocations.	According to the assessment of current conditions in the original TMDL, there were no impairments due to zinc in Calleguas Creek. Therefore, allocations were not developed, but numeric targets were established in the TMDL and monitoring for zinc was required to ensure the targets are attained. The required copper allocations to discharges to Revolon Slough, which is currently not meeting the target; and other upstream reaches that contribute loadings to Mugu Lagoon should be remain in place to ensure that copper impairments are eliminated and numeric targets continue to be attained.
3	Specifically, a number of protections are in place, including NPDES permit and Conditional Waiver requirements, to prevent increases in metals discharges from occurring if allocations are removed. All of the dischargers are subject to basic discharge requirements involving implementation of best management practices. These requirements will not decrease in the future and are likely to be more stringent as the new Conditional Waiver adopted in April 2016 is implementation and a new MS4 permit is adopted in early 2017. Substantial copper reductions resulted from Hill Canyon POTW's project to investigate the effectiveness of a chemical addition for removal of copper from POTW effluent which began in August 2014. The use of the Metalsorb PCZ resulted in a 45.7% reduction in effluent concentrations. In addition, statistically significant reductions in both copper and nickel have been observed in Hill Canyon POTW	The Regional Board agrees that there are a number of measures in place in the NPDES permits for discharges from POTWs, the MS4 permit, and the Conditional Waiver for Discharges from Irrigated Agricultural Lands to control discharges of metals to Calleguas Creek. If the source of the metals was any one of these sources alone, it would be possible to use a single regulatory action, such as one of these permits/waivers of waste discharge requirements, to establish and

No.	Comment	Response
	effluent from the effective date of the TMDL. Additionally, the majority of Hill Canyon's effluent is now reused by the Camrosa Water District through the Conejo Creek Diversion. Using flow records from monitoring locations in the watershed, we estimated that less than 5% of the inflow to Mugu Lagoon is comprised of Hill Canyon's effluent. Similarly, Camarillo is increasing recycled water use in the watershed, resulting in lower loads into Mugu Lagoon. While Hill Canyon and Camarillo would not have specific allocations in the TMDL, the NPDES permit would include concentration-based effluent limits calculated based on the procedures in the State Implementation Plan (SIP) as were included in the 2014 permit. The Ventura County MS4 permit includes implementation requirements for best management practices (BMPs) to address sources of copper and nickel. These include outreach and education programs for copper-containing pesticides, vehicle fluids and other products that are sources of metals, street sweeping, hazardous waste collection programs, activities as part of municipal construction and planning and new development programs, and addressing illicit discharges. The VCAILG Water Quality Management Plan (WQMP) submitted to the Regional Board includes a survey of BMPs to track implementation among members of VCAILG. BMPs implemented by VCAILG members include irrigation management, sediment management and pesticide management practices that will reduce discharges of metals contained in the water supply, soils and in pesticides to Calleguas Creek Watershed. The development of the WQMP is consistent with the Non-Point Source Policy approach to addressing pollutant discharges from agriculture and provides an effective mechanism for implementing best management practices to reduce discharges of metals to the watershed. The participation in the California Brake Pad Partnership has successfully led to legislation that will reduce the amount of copper in brake pads over time. Based on information collected on the copper content of brake pads, concentrations of copper in brakepads have decreased by over 30% since 2006 and it is anticipated that this source will only decrease over time.	implement an allocation. However, where there are multiple sources of a pollutant, which are regulated through multiple Regional Board orders, it is appropriate to establish and maintain allocations in a TMDL, since a TMDL considers all sources in combination relative to the loading capacity of the waterbody, including downstream areas. Also see response to comment 1.

No.	Comment	Response
4	In conclusion, it is likely that the existing controls and actions taken by dischargers to date would result in continuing to meet receiving water objectives without allocations. In addition, the dischargers will continue to monitor discharges and receiving waters in accordance with both the TMDL monitoring program and permit and conditional waiver requirements. These monitoring programs will allow evaluation of trends over time to assess if concentrations are increasing and if concentrations are nearing the water quality objective.	The Regional Board has proposed revisions to the allocations in consideration of the current conditions in the receiving waters and the need to maintain the high quality of waters consistent with the federal and state anti-degradation policies.
	While the preferred approach to the reopener is to remove the allocations, we recognize the Regional Board staff has some concerns with this approach. As a result, the proposed approach for revising the copper wasteload allocations (WLAs) for the Hill Canyon WWTP and Camarillo WRP is based on current discharge concentrations. The Stakeholders support this alternative approach but believe that the values selected as representative of current conditions are overly stringent and present potential compliance concerns. In addition, the Stakeholders have concerns with the use of the Mugu Lagoon WER of 1.51 to calculate the allocations for agricultural and urban dischargers and feel that the 3.69 WER for Calleguas Creek Reach 2 should be used instead or the allocations should be removed as requested above. More detailed information to support these requests is presented in the remainder of this letter.	Detailed responses to the values selected as representative of current conditions and the application of the WER of 1.51 to agricultural and urban dischargers are provided in responses to comments 5-13 below.
Wasteload Calculation for Camarillo and Hill Canyon *[several comments, see pages 3-6 of comment letter]*		
5	While the approach of setting allocations based on current effluent concentrations is appropriate, the values selected to be representative of current performance results in the proposed WLAs being overly protective and presenting potential compliance problems for the POTWs. An alternative approach is presented below that is consistent with available guidance and ensures continued protection of beneficial uses. In the Draft Basin Plan Amendment for the Calleguas Creek Watershed Metals and Selenium TMDL, Waste Load Allocation (WLAs) for copper are determined based on current treatment plant effluent quality for the Hill Canyon WWTP and the	The Regional Board disagrees that the proposed WLAs are overly protective and presenting potential compliance problems for the POTWs. USEPA's Technical Support Document for Water Quality Based Toxics Control[1] (TSD) includes a recommendation for calculation of permit limits (page 110 and E-1):

No.	Comment	Response
	Camarillo WRP. WLAs are set at 6.0 µg/L or 0.7 lb/day as a monthly average for the Hill Canyon WWTP and set at 8.4 µg/L or 0.51 lb/day for the Camarillo WRP. As stated on p. 5, footnote (a) "Final Mass-based WLAs were calculated using current performance concentrations and design capacities applicable to POTWs. Current performance concentrations were calculated based on the 95th percentile of 2010-2015 data." Data for each facility are compared to the proposed WLAs in Figures 1 and 2. Both facilities may have difficulty consistently complying with the proposed WLAs. The approach used assumes that the 95th percentile is the appropriate value for setting a WLA or effluent limit and that the data set has a normal distribution. Using the 95th percentile is not the only option available for reflecting current performance and puts the dischargers at risk of violating the WLA even though receiving waters are meeting objectives. As discussed below, an alternative calculation method, such as the maximum value as used in the Tentative Malibu Creek TMDL Implementation Plan, or a 97.2 percentile value is consistent with the guidance developed by EPA for calculating effluent limits and would present less compliance risk for the POTWs. Additionally, the data do not appear to be normally distributed. *[See comment letter for Figure 1 and 2]* There is no specific guidance for calculating effluent limits or WLAs reflective of current effluent quality in either USEPA's Technical Support Document for Water Quality Based Toxics Control (TSD) or the State Implementation Plan (SIP). Therefore, the Regional Board has discretion in the approach to use when calculating WLAs. The Stakeholders request that the WLAs be calculated using the maximum observed concentration in the past five years. The maximum effluent concentration was proposed as the method for determining performance for the Tapia WRP in the Tentative Basin Plan Amendment for an *Implementation Plan for the U.S. EPA*-	"***Section 5.5.4 Probability Basis*** … Where a permitting authority does not have specific guidance for the probability basis, EPA recommends the following: For calculation of permit limits from the most limiting Long-term average concentration (LTA) • MDL – .01 probability basis (99th percentile level) • AML - .05 probability basis (95th percentile level)." The above EPA-recommended method has been used consistently by the Regional Board and found to be appropriate to calculate current performance. Daily maximum effluent limit column was inserted back to the Interim and Final WLAs for total Recoverable Copper in Water Column. This will allow the permit writers to translate applicable waste load allocations into daily maximum effluent limits for the major, minor and general NPDES permits by applying the effluent limitation procedures in Section 1.4 of the SIP, the TSD, or other applicable engineering practices authorized under

No.	Comment	Response
	Established Malibu Creek Nutrients TMDL and the U.S. EPA-Established Malibu Creek and Lagoon Sedimentation and Nutrients TMDL to Address Benthic Community Impairments. "Interim nutrient WLAs are established based on current performance equal to the maximum effluent concentration …" The use of the maximum effluent concentration would also be consistent with other permits adopted by the Los Angeles Regional Water Quality Control Board and reflect that no exceedances of the water quality objectives have been observed during the past five years at any concentration discharged from the POTWs. (Pages 5-6)	federal regulations. Furthermore, the Tapia effluent limit, which is proposed to be derived from the maximum observed concentration in the Malibu Nutrient TMDL Implementation Plan, is an *interim* limit; the *final* limit is water quality-based and not derived from performance. As an interim limit for nutrients, the maximum observed concentration for Tapia is a useful stop-gap until the final, water quality-based allocations can be achieved. In addition, unlike the proposed Calleguas Metals TMDL revisions, the Malibu Nutrient TMDL and the proposed Implementation Plan is intended to improve existing conditions rather than maintain them.
6	If the maximum concentration is not used, the Stakeholders request the WLAs be calculated using a different probability level based on an acceptable frequency for excursion above criteria per the TSD. The TSD discusses the format used to express water quality criteria in Appendix D stating that: "The format that was selected for expressing water quality criteria for aquatic life consists of recommendations concerning concentrations, durations of averaging periods, and average frequencies of allowed excursions. Use of this concentration-duration-frequency format allows water quality criteria for aquatic life to be adequately protective without being as overprotective as would be necessary if criteria were expressed using a simpler format [based on concentration only]." (p. D-1)	The TSD does not include specific guidance on calculating effluent limits or allocations reflective of current effluent quality. The EPA-recommended method of using the 95^{th} percentile concentration as the basis for an average monthly limit has been used consistently by the Regional Board and found to be appropriate to calculate current performance.

No.	Comment	Response
	The WLAs are listed as average monthly values in the Draft BPA which correspond to assessment of a chronic condition. Chronic criteria are intended to be the highest concentration that could be maintained indefinitely in receiving water without causing an unacceptable effect on the aquatic community. Additionally, the TSD notes that organisms can tolerate higher concentrations for short periods of time (i.e., the duration component of the criteria, average monthly or daily, etc.) and that excursions can occur without causing unacceptable effects if the frequency of such excursions is appropriately limited. (p. D-1) With respect to the appropriate frequency, the TSD states that "as a general rule, the purpose of the average frequency of allowed excursions will be achieved if the frequency is set at once every 3 years on average." (p. D-4) When evaluating the probability of compliance with a monthly average limit or WLA, that would mean that, on average, no more than 1 out of 36 measurements (once in 3 years) could exceed the WLA or, conversely, 35 out of 36 measurements are below the WLA. Complying 35 times out of 36 corresponds to complying 97.2% of the time. Therefore, setting a performance based WLA at the 97.2nd percentile of the data set would result in a value that would not be exceeded under normal circumstances and would maintain the current condition where numeric targets are being met in the receiving water.	In addition, this Board has not used the 97.2 percentile in the derivation of allocations or permit limits and it is an unanticipated use in the TSD; as such, use of the 97.2 percentile would require additional supporting analysis as well as public notice, so other stakeholders would have the opportunity to comment.
7	In addition to using the 95th percentile value, data set statistics were determined based on the assumption that the data set is normally distributed. Appendix E of the TSD discusses statistical methodology including the appropriate use of normal and lognormal distributions. The TSD recommends the lognormal distribution because "Usually environmental data sets possess the basic lognormal characteristics of positive values and positive skewness. In addition, the lognormal distribution is flexible enough to model a range of nearly symmetric data."	Regional Board staff performed additional statistical analysis on the effluent data for Hill Canyon WWTP and Camarillo WRP, using both normal and lognormal distributions. The Minitab program was used to perform the statistical analysis. The Anderson-Darling (AD) statistic measures for both normal and lognormal distributions were

<table>
<tr><th>No.</th><th>Comment</th><th>Response</th></tr>
<tr><td></td><td>(p. E-2)

“For environmental data the lognormal distribution is usually appropriate….Although the lognormal does not provide an exact fit in all cases, it usually provide [sic] an appropriate and functional fit to observed environmental data.” (p. E-3)

In addition, the TSD states that, “In most cases, the normal distribution is not an appropriate model for individual pollutant measurement.” (p. E-3)

As discussed below, the statistical evaluation of the POTW data sets indicates that assuming a lognormal distribution is appropriate.

To evaluate current effluent quality, effluent data was evaluated for the period from January, 2010 to June 2015. The 2010-2015 datasets for Camarillo and Hill Canyon were evaluated using Excel (normal distribution assumed) and using the Excel Data Analysis Tool (DAT, lognormal distribution assumed). The R^2 values provided by the DAT are close to 1.0, therefore the datasets are lognormally distributed and the percentiles calculated by the DAT are more representative.

The dataset statistics for Camarillo and Hill Canyon using a lognormal distribution are shown in Tables 1 and 2.
Table 1. Copper Dataset Statistics: Camarillo
<table>
<tr><th></th><th>Effluent
Jan 2010-June 2015</th></tr>
<tr><td>n</td><td>40</td></tr>
<tr><td>Mean</td><td>5.39</td></tr>
<tr><td>Standard Deviation</td><td>1.83</td></tr>
<tr><td>Maximum Detected</td><td>10</td></tr>
<tr><td>95th percentile</td><td>8.93</td></tr>
<tr><td>97.22nd percentile</td><td>9.79</td></tr>
</table></td><td>compared to see how well the data fit the distributions. The results suggest use of the normal distribution for the Hill Canyon WWTP and the lognormal distribution for the Camarillo WRP. The Minitab project report can be provided so that the commenter can examine the statistical analysis.

The WLAs for Hill Canyon WWTP and Camarillo WRP have been recalculated using the 95th percentile of the normal distribution for Hill Canyon and lognormal distribution for Camarillo.

The Tentative BPA and the Staff Report have been revised accordingly.</td></tr>
</table>

<table>
<tr><th>No.</th><th>Comment</th><th>Response</th></tr>
<tr><td></td><td>Table 2. Copper Dataset Statistics: Thousand Oaks Hill Canyon
<table>
<tr><th></th><th>Effluent
Jan 2010-June 2015</th></tr>
<tr><td>n</td><td>72</td></tr>
<tr><td>Mean</td><td>3.77</td></tr>
<tr><td>Standard Deviation</td><td>1.35</td></tr>
<tr><td>Maximum Detected</td><td>8.3</td></tr>
<tr><td>95th percentile DAT</td><td>6.81</td></tr>
<tr><td>97.22nd percentile DAT</td><td>7.59</td></tr>
</table>

Given that neither the TMDL nor available State and federal guidance specify the means to calculate WLAs based on current effluent quality, we request the Regional Board utilize their discretion to consider alternative approaches to calculate WLAs that 1) do not pose a compliance issue for POTWs and 2) are consistent with information on discharge concentrations which will ensure the protection of the environment.

Requested modification: Modify the average monthly WLA for copper to maximum observed concentration of 10 µg/L (or 97.22 percentile concentration of 9.8 µg/L) for Camarillo and 8.3 µg/L (or 7.6 µg/L) for Hill Canyon and adjust the mass-based allocations accordingly.</td><td></td></tr>
<tr><td colspan="3">Wasteload Allocations for urban and agricultural dischargers [several comments, see pages 8-13 of comment letter]</td></tr>
<tr><td>8</td><td>The Stakeholders have significant concern with the use of the Mugu Lagoon WER of 1.51 to calculate the allocations for urban and agricultural dischargers in Calleguas Creek and Conejo Creek and request that the WER of 3.69 be used to calculate the allocations for those reaches. The Stakeholders feel that using a WER of 1.51 is not needed to be protective of the beneficial uses in Mugu Lagoon for the following reasons:
1. Current concentrations in Calleguas Creek are higher than Mugu Lagoon and are not causing exceedances in Mugu Lagoon.
2. When the TMDL was developed, it was determined that applying the Mugu</td><td>Detailed responses to points 1-4 of this comment are provided below.

The Tentative Basin Plan Amendment has been revised in response to this comment. Specifically, the amendment language clarifies that if a quantitative analysis is conducted to show that downstream water quality is protected, a</td></tr>
</table>

No.	Comment	Response
	Lagoon objectives to dischargers upstream was not needed for Mugu Lagoon to meet objectives. Additionally, the model used for TMDL development demonstrated that dilution of watershed discharges occurs in Mugu Lagoon and it is not necessary for upstream dischargers to meet Mugu Lagoon objectives. 3. Even at the current loading from agricultural and urban dischargers, which is above the allocations calculated using a WER of 3.69, both Calleguas Creek and Mugu Lagoon are meeting the water quality objectives. Using the WER of 1.51 rather than 3.69 would put the urban and agricultural dischargers at more risk of exceeding allocations when the waterbody to which they are discharging is meeting objectives at all times. 4. Previous regulatory actions adopted by the Regional Board have utilized the WER of 3.69 for dischargers to Conejo Creek and made findings that this was protective of beneficial uses in Mugu Lagoon. This section provides more details to support each of the points above.	WER higher than 1.51 (but not to exceed 3.69) could be applied at the permitting stage the for the upstream MS4, agricultural, and other NPDES discharges.
9	The Draft Staff Report provides the following reasoning for using 1.51 to calculate the allocations for all reaches: "the Implementation Provisions for Priority Pollutants, contained in Chapter 3 of the Basin Plan, which include the copper WERs for Mugu Lagoon (Reach 1) and Calleguas Creek Reach 2, require that regulatory actions to achieve applicable criteria, as modified by site-specific WERs, must ensure the downstream standards will also be achieved. Therefore, the WER of 1.51 for Mugu Lagoon is selected to calculate the WLAs LAs." (Draft Staff Report, page 16) No further explanation is provided to justify that using the 1.51 to calculate the urban and agricultural allocations is necessary to protect downstream uses or ensure downstream standards will be achieved. In fact, the rest of the Draft Staff Report provides evidence showing that higher concentrations are present in the upstream reaches and Mugu Lagoon is still meeting objectives (see discussion starting on	The Regional Board agrees that Mugu Lagoon is meeting applicable water quality objectives under existing conditions as shown by the data analysis in the Staff Report. However, justification is required to apply the higher WER of 3.69 in lieu of the WER of 1.51. At this point, the Regional Board does not have sufficient data analysis to support the use of the WER of 3.69. Evidence that applying a WER of 3.69 to MS4 and agricultural allocations

<table>
<tr><th>No.</th><th>Comment</th><th>Response</th></tr>
<tr><td></td><td>page 22). As described in the Draft Staff Report, annual average concentrations in Conejo and Calleguas Creek are between 2 and 6 times higher than Mugu Lagoon and the Lagoon does not exceed objectives even with the higher concentrations in the upstream reaches (see Table 4-6 from the Draft Staff Report below).

Table 4-6. Copper Concentration Profile Using Dry Weather Data (annual average total recoverable µg/L) (Draft Staff Report page 22 modified to use Reach names)
<table>
<tr><th rowspan="2">Year</th><th colspan="5">Downstream to Upstream Reach Profile</th></tr>
<tr><th>Mugu Lagoon Reach 1</th><th>Calleguas Creek Reach 2</th><th>Calleguas Creek Reach 3</th><th>Conejo Creek Reach 9A</th><th>Conejo Creek Reach 10</th></tr>
<tr><td>2009</td><td>0.92</td><td>4.05</td><td>2.3</td><td>2.87</td><td>4.53</td></tr>
<tr><td>2010</td><td>0.73</td><td>2.33</td><td>2.85</td><td>3.28</td><td>2.73</td></tr>
<tr><td>2011</td><td>0.7</td><td>1.44</td><td>3.41</td><td>3.73</td><td>2.59</td></tr>
<tr><td>2012</td><td>0.78</td><td>1.57</td><td>3.23</td><td>3.55</td><td>3.33</td></tr>
<tr><td>2013</td><td>0.99</td><td>1.65</td><td>4.44</td><td>3.1</td><td>3.66</td></tr>
<tr><td>2014</td><td>0.68</td><td>1.27</td><td>2.68</td><td>4.97</td><td>3.31</td></tr>
<tr><td>2015</td><td>0.66</td><td>1.65</td><td>2.55</td><td>6.43</td><td>1.78</td></tr>
</table>
This data demonstrates that higher concentrations can be discharged upstream of Mugu Lagoon without resulting in Mugu Lagoon exceeding water quality objectives.</td><td>would be protective of conditions in Mugu Lagoon has not been fully demonstrated. The commenters show the number of exceedances above allocations based on a WER of 3.69 for MS4 and agriculture to support an argument that applying a WER of 3.69 to the allocations for these discharges must be protective since Mugu Lagoon meets objectives even though some exceedances occur upstream. However, the argument rests solely on the number of exceedances and does not consider the magnitude of the exceedance, or any assessment of central tendency. The analysis of the discharge data from the wastewater treatment plants, for example, is able to consider whether the data is normally distributed or better represented by a lognormal distribution. In addition, implementing an allocation based on a WER of 3.69 could allow more discharges close to the allocation based on a WER of 3.69 and actually increase overall copper loading such that Mugu Lagoon was threatened.

In comparison, the revised allocations for the two wastewater treatment plants are not based on a WER of 3.69, but are based on current plant performance.</td></tr>
</table>

No.	Comment	Response
10	Additionally, during development of the original Metals TMDL, it was recognized that upstream discharges did not need to meet the objective applicable to Mugu Lagoon in order for Mugu Lagoon to meet standards. The TMDL considered an allocation alternative that would require all upstream dischargers to meet the Mugu Lagoon objectives, but that alternative was not selected because "Upstream of the saltwater/freshwater interface, some of the discharged load is diverted for reclaimed water use, seeps into the groundwater or is diluted by other sources of water. Consequently, the load that reaches the lower portion of the watershed is not equal to the load that was discharged. Therefore, applying the saltwater target to the discharges would be overly conservative ..." (Metals and Selenium TMDL Technical Report, page 141). The modeling conducted for the TMDL development demonstrated that dilution was occurring in Mugu Lagoon which supported allowing higher loads in discharges upstream of the Lagoon. Figure 3 shows model results from the TMDL development that showed that concentrations in Mugu Lagoon (orange line) were (with one exception) always lower than concentrations entering the Lagoon from the combined flows of Calleguas Creek and Revolon Slough (blue line). Further analysis of the flow entering the Lagoon subsequent to TMDL development using the model indicates that approximately 38% of Mugu Lagoon inflow comes from Calleguas Creek resulting in a dilution factor of approximately 2.6. The WER of 3.69 is only 2.4 times higher than the WER of 1.51, which is less than the estimated dilution factor for flows from Calleguas and Conejo Creek into Mugu Lagoon. This indicates that discharges meeting an allocation calculated using a WER of 3.69 would not cause exceedances of the objective in Mugu Lagoon. (Refer to Comment Letter, page 9 for Figure 3.)	Neither the original CCW Metals TMDL nor the proposed revised CCW Metals TMDL applies the saltwater target to the dischargers. The following language was included in Section 9 of the original TMDL: " … assigning allocations based on the freshwater target * flow for discharges to freshwater reaches would not result in reductions being required for the freshwater reaches, and would not result in the achievement of the saltwater targets in the lower reaches. Assigning the saltwater target * flow as allocations for all upstream dischargers would result in compliance with the saltwater target. However, not all discharges into the freshwater reaches make it to the reaches where saltwater criteria apply" (page 133, Technical Report, 2006). The modeling conducted for the original TMDL demonstrated that the dissolved copper entering Mugu Lagoon is in general lower than the dissolved copper in the lagoon. The model did not predict a dilution factor or a specific WER value or range of WERs that when applied to the allocations would ensure the saltwater target for Mugu Lagoon would be met. In addition, as stated in the comment letter (page 2), the POTWs

No.	Comment	Response
		are planning to increase recycled water use in the watershed, which would reduce the overall inputs and lower the dilution factor into Calleguas Creek Reach 2 and Mugu Lagoon. It is premature at this point without detailed quantitative analysis to support and predict that the incorporation of a WER of 3.69 that is 2.4 times higher than the WER of 1.51 and 3.69 times higher than the default WER of 1 would not cause exceedances of the objective in Mugu Lagoon.
11	When the TMDL was developed, the urban and agricultural allocations were calculated based on estimating the mass loading from these discharges that would be needed to ensure that objectives were being met in Mugu Lagoon. The equation used to calculate the load-based allocations accounts for the watershed processes that occur between the discharge point and Mugu Lagoon and is not simply equal to the water quality objective multiplied by the applicable flow rate as was done in many TMDLs. Therefore, using 3.69 to calculate the loads is not equivalent to allowing discharges concentrations to equal the water quality objective multiplied by 3.69. As shown in the tables below, current loads from urban and agricultural dischargers are above the allocations calculated using a WER of 3.69. However, as discussed in the Draft Staff Report, the analysis of current conditions demonstrates that at the current loading from agricultural and urban dischargers, Mugu Lagoon is meeting the water quality objectives. In fact, the concentrations in Mugu Lagoon are approximately half of the objectives even though there are still some exceedances of allocations being observed and Revolon Slough is still exceeding objectives. If current loading from agricultural and urban dischargers are resulting in the objectives being met in Mugu Lagoon, and the current discharges are above an allocation calculated using a WER of 3.69, there is no evidence that using a WER of	See response to comment 9 above. In addition, the comment letter provides only the number of exceedances and does not consider the magnitude of the exceedance, or any assessment of central tendency. Implementing an allocation based on a WER of 3.69 could allow more discharges close to the allocation based on a WER of 3.69 and actually increase overall copper loading such that Mugu Lagoon was threatened. Regional Board found a detail quantitative analysis should be conducted to support the incorporation of WER of 3.69 into the assigned allocations to ensure additional loading would not cause exceedances of the objective in Mugu Lagoon.

No.	Comment	Response

1.51 to calculate the allocations is necessary to meet water quality objectives in Mugu Lagoon. Additionally, using a WER of 3.69 would not result in allowable loads that are higher than current loadings. A comparison of the exceedances of allocations calculated using a WER of 1.51 as compared to a WER of 3.69 are shown in Table 3 for MS4s and Table 4 for Agriculture. The loadings were calculated using flows from the HSPF model and total recoverable copper concentrations from MS4 outfall data and VCAILG monitoring location data between 2008 and 2013. Flows from the HSPF model are only available through 2013. Exceedances have occurred throughout that time period.

Table 3. Comparison of Exceedances of Final MS4 WLAs using WERs of 3.69 and 1.51

Water Body	Reach	Event Type	Total Samples	Observed Loads Exceed Allocation based on WER of 3.69	Observed Loads Exceed Allocation based on WER of 1.51
Conejo Creek	9B	Dry	19	4	16
		Wet	10	1	1
		Total	**29**	**5**	**17**

Table 4. Comparison of Exceedances of Final Agricultural LAs using WERs of 3.69 and 1.51

Water Body	Reach	Event Type	Total Samples	Observed Loads Exceed Allocation based on WER of	Observed Loads Exceed Allocation based on WER of 1.51

No.	Comment	Response

				3.69	
Calleguas Creek Reach 2	2	Dry	15	1	2
		Wet	7	4	4
		Total	**22**	**5**	**6**
Conejo Creek	9B	Dry	2	1	2
		Wet	8	8	8
		Total	**10**	**9**	**10**

Selecting the lower WER of 1.51 to calculate allocations for dischargers to Calleguas and Conejo Creek would result in more potential exceedances of final allocations even though current concentrations in Mugu Lagoon are well below objectives. Even using the higher WER, the dischargers have the potential to exceed the WLAs and LAs even though Mugu Lagoon is meeting objectives.

Based on available data, analysis from the original TMDL, and a comparison of the current discharges to an allocation calculated using a WER of 3.69, there is no evidence that it is necessary to apply the 1.51 WER to all upstream reaches to ensure Mugu Lagoon meets objectives. Applying a WER of 3.69 to calculate the objectives would be consistent with the assumptions of the original TMDL and result in Mugu Lagoon meeting water quality objectives, consistent with the requirement in Basin Plan Chapter 3 cited in the Draft Staff Report.

12	The use of the WER of 3.69 to calculate allocations for urban and agricultural dischargers is further supported by previous regulatory actions by the Regional Board where the Calleguas Creek Reach 2 WER of 3.69 was used to interpret allocations in permits for dischargers upstream of Mugu Lagoon. The 2014 NPDES permits for the Hill Canyon and Camarillo wastewater treatment plants utilized the 3.69 WER to calculate the effluent limitations. Below is the footnote from the Hill Canyon permit (Order R4-2014-0064) explaining the WER used and the support from the Fact Sheet explaining that using the 3.69 is protective of Mugu Lagoon	This TMDL revision will establish new allocations based on existing conditions and current performance for the POTWs and, in the future, the effluent limitations in the NPDES permits for those dischargers will need to be consistent with these revisions.

No.	Comment	Response
	(Reach 1). "This limitation is derived from the mass-based final WLA, as set forth in the Metals TMDL, established by the Regional Water Board on June 8, 2006, for the protection of the lower reaches of Calleguas Creek. The TMDL became effective on March 26, 2007. The mass-based WLA is expressed in terms of a formula that incorporates a Water Effects Ratio (WER). The WLA-based limit was calculated using the 3.69 copper WER approved by the Regional Water Board on November 9, 2006. Interim effluent limitations may be provided in a separate Time Schedule Order (TSO)." (Footnote to copper effluent limitations from Hill Canyon permit Order R4-2014-0064) "Calleguas Creek Watershed Metals TMDL – On June 8, 2006, the Regional Water Board adopted Resolution No. R4-2006-012, Amendment to the Water Quality Control Plan for the Los Angeles Region to Incorporate a Total Maximum Daily Load for Metals for the Calleguas Creek, its Tributaries, and Mugu Lagoon (Metals TMDL). This Resolution was approved by the State Water Board, Office of Administrative Law, and USEPA on October 25, 2006, February 6, 2007, and March 26, 2007, respectively. This Order includes effluent limitations for metals consistent with the assumptions of the Metals TMDL which became effective on March 26, 2007. Calleguas Creek Copper WER – On November 9, 2006, the Regional Water Board adopted Resolution No. R4-2006-022, Amendment to the Water Quality Control Plan for the Los Angeles Region Water Effects Ratios (WERs) for Copper in Lower Calleguas Creek and Mugu Lagoon Located in the Calleguas Creek Watershed, Ventura County (Copper WER). This Resolution was approved by the State Water Board, Office of Administrative Law, and USEPA on June 19, 2007, August 16, 2007, and August 23, 2007, respectively. The 3.69 copper WER is protective of the saltwater copper criteria for Reach 1 of Calleguas Creek. Use of the copper WER for the final	For a discussion of the use of a WER of 3.69 for the allocations assigned to MS4 and agricultural dischargers, see response to comments 9and 11 above. In addition, using 1.51 as the WER to calculate allocations is not a significant modification to the allocations for these dischargers; the original CCW Metals TMDL included a WER as part of the allocation equation. The default WER is equal to 1.0. In November of 2006, the Board adopted the WERs of 1.51 and 3.69 and specified "*…regulatory actions to achieve applicable criteria, as modified by site-specific WERs, must ensure that downstream standards will also be achieved.*" Basin Plan Chapter 3, Priority Pollutants, Implementation Provisions.

No.	Comment	Response
	mass-based WLAs is consistent with the Metals TMDL." (Fact Sheet for Hill Canyon permit ORDER R4-2014-0064) Similar language is included in the Camarillo NPDES permit. Based on these adopted orders for the POTWs, agricultural and urban dischargers to reaches upstream of Mugu Lagoon should have allocations calculated using a WER of 3.69 to be consistent with the POTWs. Therefore, using 1.51 as the WER to calculate allocations for all reaches is a significant modification to the allocations for these dischargers that has been included in the TMDL, even though the Draft Staff Report states that no modifications to allocations for urban and agricultural dischargers have been made.	
13	Finally, as noted in the introduction to this letter and in the Draft Staff Report, copper concentrations from urban and agricultural areas are expected to decrease from actions such as the Brakepad Partnership. Both the MS4 NPDES permit and Conditional Waiver include requirements that will maintain existing controls making it unlikely that concentrations will increase in discharges from these sources, particularly to levels that would cause concentrations to more than double to exceed objectives in Mugu Lagoon. Use of existing regulatory tools, such as the Non-Point Source Policy, provide a more effective and appropriate mechanism for addressing any discharges of concern from agricultural lands than applying an overly conservative allocation in a TMDL.	Regulatory tools, such as the Non-Point Source Policy, in addition to the MS4 NPDES permit and Conditional Waiver, in compliance with an overall plan such as the TMDL provides, give the most effective approach to addressing the water quality concerns in the Calleguas Creek watershed. The revised BPA also provides language in notes to the allocation tables to allow dischargers to provide detailed quantitative analysis to demonstrate that the allocations as modified by the WER are protective of downstream reaches if they choose to apply a WER between 1.51 and 3.69 to calculate the assigned allocations. (See revised BPA and revised Staff Report.)
14	In conclusion, using a WER of 3.69 to calculate the urban and agricultural allocations would result in Mugu Lagoon meeting the water quality objectives,	As discussed above, although there is not a sufficient analysis of MS4 and

No.	Comment	Response
	consistent with the requirement in Basin Plan Chapter 3 as cited in the Draft Staff Report; be consistent with the interpretation of allocations in the 2014 POTW permits in the watershed; not result in allocations that are higher than existing discharge concentrations; and result in less risk of dischargers exceeding allocations when the receiving water is meeting objectives. Additionally, the use of the higher WER will not cause additional loads to be discharged and existing requirements and plans by urban and agricultural dischargers to meet other water quality goals in the watershed are more likely to further reduce loadings of copper in the future. Therefore, there is no justification for using 1.51 to calculate allocations in order to ensure that Mugu Lagoon is meeting water quality objectives. ***Requested modification: Modify the footnote to the final WLAs for permitted stormwater dischargers and final LAs for agricultural dischargers as follows:*** ***The approved site-specific WER of 1.51 for Mugu Lagoon <u>3.69 for Calleguas Creek</u> is used to calculate the assigned WLAs for discharges to Calleguas and Conejo Creek to ensure the downstream standard is achieved.*** ***Additionally, the staff report should be modified to be consistent with this change.***	agricultural discharge data to modify the applicable WER at this time, the Regional Board has revised the Tentative BPA to add that if a sufficient quantitative analysis is conducted to show that downstream water quality and beneficial uses are protected, a WER higher than 1.51 (but not to exceed 3.69) could be applied at the permitting stage for the upstream MS4, agricultural and other NPDES dischargers.
14	**Footnote Reference To Selenium Concentrations** The Stakeholders also request that footnote c in Table A under permitted stormwater discharges not be removed and the c to reference the footnote be included in the interim allocations for agricultural discharges for Revolon Slough. As noted in the technical report, significant potential sources of natural selenium are present in Revolon Slough that could cause exceedances of the interim limits without any anthropogenic influence. The footnote is designed to allow consideration of these natural sources in determining compliance with interim limits and should not be removed. There is no discussion or explanation regarding the removal of this footnote in either the draft BPA or the staff report.	The deleted footnote has been restored in the Revised Tentative BPA. Additionally, the footnote has been added for interim allocations for permitted storm water discharges (PSDs) and agricultural discharges to Revolon Slough, as requested. (Revised BPA, pages 8 and 11)