DEPARTMENT OF THE NAVY
COMMANDER NAVY REGION SOUTHWEST
937 NO. HARBOR DR.
SAN DIEGO, CALIFORNIA 92132-0058

IN REPLY REFER TO:
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January 21, 2011

Ms. Jeanine Townsend
Clerk of the Board\
State Water Resources Control Board
1001 I Street
Sacramento, CA 95814

Subject: Comment Letter – Policy for Toxicity Assessment and Control

On behalf of the Commander, Navy Region Southwest (CNRSW), we appreciate the opportunity to provide comments below on the Water Board's Draft Policy for Toxicity Assessment and Control. We previously submitted comments on the draft policy in August 2010. The comments in this letter address our concerns with economic considerations associated with the policy, and the unguided discretion provided to Regional Boards in utilizing 100% effluent as the Instream Waste Concentration (IWC).

Economic Considerations

We believe that the State Board should not adopt this policy until it considers the full costs of implementation/compliance similar to how the Air Resources Board quantifies the costs of its proposed air quality regulations. The Staff Report provides very little consideration of the costs associated with compliance where chronic toxicity limitations are included in permits. This is particularly true if the policy provides discretion to the Regional Boards to apply chronic toxicity limitations where the IWC=100 effluent. We question whether or not compliance in this situation for storm water discharges is even consistently feasible with costly treatment and whether diversion to sanitary sewage systems is the only method to achieve compliance, if this option is even available. These potential costs were not considered in the Staff Report. We have in the past provided a number of written letters to the State and Regional Board concerning this issue. We also point to the fact that should Regional Boards apply chronic toxicity limitations utilizing an IWC=100% effluent for storm water discharges from general urban populated areas it may have tremendous costs both fiscally and socially.

We further believe that implementation of this standard may have serious impacts on the ability of several of our major installations to conduct their missions as it may prevent the ability to do ongoing maintenance activities that are a standard part of home-porting.

Instream Waste Concentration

The draft policy inappropriately provides the Regional Boards unguided discretion in utilizing whole effluent toxicity (WET) testing on discharge samples in which the instream waste concentration (IWC) is equal to 100% effluent. We believe that this is a misapplication of WET testing procedures in predicting receiving water community impacts and are concerned that this requirement would be applied in a non-uniform or inappropriate way. The allowance for Board discretion is found in the second version of the Policy which defines the Instream Waste Concentration as:

> "*Instream waste concentration (IWC) is the concentration of a toxicant or effluent in the receiving water after mixing (the inverse of the dilution factor). A discharge of 100% effluent will be considered the IWC whenever mixing zones or dilution credits are not authorized by the applicable Water Board.*"

This definition was altered from the first version of the Draft State Policy by inclusion of the second sentence, thereby allowing Water Boards authority to make the IWC=100% effluent. According to the Staff Report on the Draft Policy, the underlying rationale to use an IWC=100% effluent was for "...water for which mixing zones would not be allowed (e.g., ephemeral and low flow streams, impaired water bodies)". However, this or any other rationale has not been included in the policy and the historical usage of toxicity testing in the State has shown that Regional Boards will inconsistently utilized the IWC=100% effluent toxicity testing on all manner of receiving water conditions so that there is no standardized approach for toxicity testing. As a member of the regulated community it would be difficult or impossible to know in advance what standard would be applied. The Staff Report on the Draft Policy identifies numerous examples of current and historical requirements to evaluate toxicity at an IWC=100%, regardless of receiving water conditions, and there is no discernible, predictable regulatory pattern. This data also includes discharges from Navy facilities that are also subject to WET testing of an IWC=100% effluent, even though receiving water conditions warrant mixing zones or dilution credits.

We believe that WET testing is appropriate for evaluating potential impacts in receiving water when the stated methods, conditions, and evaluations for WET testing are conducted in accordance with how the EPA's Toxicity Support (TSD) Document, Percent Minimum Significant Difference (PMSD) Document, and Test of Significant Toxicity (TST) Document. These documents identify methods, data, and study results designed to show that WET testing is appropriate for predicting receiving water community impacts. The testing in all of these EPA studies evaluates the Instream Waste Concentration (IWC) against a control sample, where the "*IWC is the concentration of a toxicant or effluent in the receiving water after mixing. The IWC is the inverse of the dilution factor. It is sometimes referred to as the receiving water concentration (RWC).*" We agree that WET testing results can be used for the purpose of hypothesis testing that will successfully predict receiving water impacts when the test sample is the IWC. However, we do not agree that a 100% effluent sample collected at the end-of-pipe represents the IWC.

The Navy's position on this point is based on the EPA's stated goals, hypothesis testing, and its own extensive research and datasets used to develop WET test methods and guidance. To our knowledge the EPA has never published data or an evaluation of the use of 100% effluent samples in predicting receiving water impacts. In particular, the EPA's TSD specifically points out the efficacy of its large database and WET tests conducted on samples that were correctly diluted to their ambient condition and the appropriateness of considering dilution:

> "Together, these studies comprise a large data base specifically collected to determine the validity of toxicity tests to predict receiving water community impact. In order to address the correlation of effluent and ambient toxicity tests to receiving water impacts, EPA evaluated the results of the studies discussed above [29]. The results, when linked together, clearly show that if toxicity is present after considering dilution, impact will also be present."

The Navy conducted its own extensive research, described in a 2006 report and provided to the San Diego Regional Board, which conclusively showed that WET testing of 100% storm water effluent was not predictive of effects in an estuarine environment. The Navy's study showed that 34% of 64 acute toxicity tests conducted on 100% effluent samples failed (using t-testing for significance) even though acute toxicity was never found in 129 receiving water samples collected adjacent to outfall pipes. The Navy's data also showed that 90% of 40 chronic toxicity tests conducted on 100% storm water effluent samples failed even though chronic toxicity testing was found only twice in 60 (3%) receiving water samples collected adjacent to outfall pipes. The major difference in results between WET tests conducted on 100% effluent and WET tests conducted on receiving waters clearly shows a lack of test predictability. This result was the basis for the Navy recommending that samples be measured in the ambient or adjusted for true exposure conditions in the receiving environment (i.e., samples that represent the IWC) when performing WET testing instead of using 100% effluent.

The reason end-of-pipe 100% effluent tests are not predictive of effects in the receiving environment is that they do not account for the true exposure conditions that organisms in the receiving environment are subject to during storm events. While the permit-required WET tests in the study were conducted on 100% storm water over a 96-hr period, organisms in the receiving environment were subject to 100% effluent on the order of minutes, if ever, and typically at effluent concentrations less than 5% for periods of less than 12 hours. Additionally, there is a well-known capacity of estuarine waters to mitigate the toxic effects of pollutants through natural complexation (biotic ligand model) that is not taken into account in WET testing procedures on 100% effluent.

In summary, we believe that allowing Regional Boards authority to use an IWC=100% effluent is an incorrect application of WET testing procedures and lacks scientific basis as a good method of predicting receiving water impacts. In addition, Regional Boards have inconsistently applied toxicity testing to IWC=100% effluent, creating uncertainty for regulated parties. Finally, chronic WET testing on 100% effluent is an inappropriate and unproductive testing method because storm water discharges will almost always fail even though there may be no impact in the receiving water. We therefore urge you not to grant the Regional Boards authority

to allow IWC=100% effluent, or at minimum provide clear direction when an IWC=100% can be utilized (e.g., ephemeral and low flow streams, impaired water bodies).

If you have questions or concern regarding this letter I can be contacted at (619) 532-2273.

Sincerely

B. S. GORDON
By direction