



## San Diego County Water Authority

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April 8, 2015

VIA EMAIL: [commentletters@waterboards.ca.gov](mailto:commentletters@waterboards.ca.gov)

#### MEMBER AGENCIES

Carlsbad  
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City of Escondido  
City of National City  
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City of Poway  
City of San Diego  
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Public Utility District  
Helix Water District  
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Vallecitos Water District  
Valley Center  
Municipal Water District  
Vista Irrigation District  
Yuima  
Municipal Water District

#### OTHER REPRESENTATIVE

County of San Diego

**Ms. Jeanine Townsend, Clerk to the Board  
State Water Resources Control Board  
1001 "T" Street, 24<sup>th</sup> Floor  
Sacramento, CA 95814**

### **Comment Letter – Desalination Amendment to California Ocean Plan**

**Dear Members of the Board:**

**Thank you for the inclusive process and the comprehensive consideration of the issues and concerns that preceded the release of the proposed final Desalination Amendment on March 20, 2015. As our state grapples with the effects of climate change and the difficult challenges resulting from a fourth consecutive year of drought, we again affirm a stated goal of the proposed final Desalination Amendment "...to support the use of ocean water as a reliable supplement to traditional water supplies, while protecting beneficial uses." As you know, we expect that later this year, the Carlsbad Desalination Project will come on-line, providing San Diego County with a substantial new, drought-proof supply of water that will more than double the amount of local water supply developed in our region since 1991.**

**We commend the Board and the staff for the thorough and comprehensive approach taken to address the numerous comments received on the draft Desalination Amendment, released last July. In particular, we appreciate your thoughtful responses to the Water Authority's August 18, 2014, comment letter. It is clear that the changes to the proposed final Amendment address many of the Water Authority concerns including the following:**

- **Consideration of site-specific conditions and alternative approaches to compliance with desalination intake and discharge requirements under Section 13142.5 (b) of the State Water Code**
- **The inclusion of the CEQA definition of feasibility in keeping with the Carlsbad Project appellate court decision**

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- The addition of a provision in the proposed final Amendment to account for previously approved mitigation projects for projects making a new Water Code Section 13142.5 (b) determination
- The adjustment of the study period required for key empirical studies such as entrainment or flow augmentation from 36 months to a more reasonable 12 months

The Water Authority has one primary area of concern outstanding regarding the regulation of brine discharges. The proposed final Amendment provides for alternative brine disposal methods, but as currently drafted, the definitions for Brine Mixing Zone and Natural Background Salinity may render it impossible to demonstrate that alternative brine disposal methods, such as flow augmentation provide a comparable level of protection to wastewater dilution and multipoint diffusers. My understanding is that the State Water Board desires to provide an opportunity for desalination project proponents to propose alternative brine disposal methods. Therefore, the comments that follow are aimed at ensuring that the proposed final Amendment provides a workable process for demonstrating such alternatives provide a comparable level of protection.

The definition of "BRINE MIXING ZONE" (Desal Amendment, Draft Final, March 20, 2015 at p. 20.) provides in part that, "The brine mixing zone shall not exceed 100 meters laterally from the points of discharge." By imposing an inflexible mixing zone limited to 100 meters, the proposed final Amendment could have two, equally problematic consequences.

First, a 100 meter mixing zone limitation could render flow augmentation, the discharge method utilized for the Carlsbad Desalination Project, infeasible due to the excessive amount of dilution water required to meet the receiving water salinity limitation.

Second, even if relying on high volumes of dilution water were deemed to be feasible, it may not necessarily result in the most environmentally beneficial discharge method for the project. The question that Regional Boards (in consultation with State Water Board staff) should require project applicants to analyze is, What are the overall, comparative and holistic impacts of all technologies? For example, a modest increase in the size of the brine mixing zone would significantly reduce the amount of dilution water required to meet the receiving water salinity limitation and could provide an environmentally preferable configuration. The proposed final Amendment should include the flexibility to require the project applicant to demonstrate the approach that is environmentally superior on an overall basis.

The proposed final Amendment provides that brine discharges from desalination facilities shall not exceed 2.0 parts per thousand (ppt) above the "NATURAL BACKGROUND SALINITY." Natural background salinity is defined as the 20-year mean monthly salinity at the project location. The database that makes up the natural background salinity for the Carlsbad Project shows a monthly mean that ranges from a low of

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33.4 ppt to a high of 33.7 ppt. Under the proposed final Amendment, with approximately 15 percent of the daily salinity measurements above the monthly mean, the Carlsbad facility would be required to operate with less than a 2 ppt increase over the ambient salinity more than 60 days per year, which would severely impact plant reliability.

To address this problem, the Water Authority is requesting the proposed final Amendment be revised such that the Natural Background Salinity is defined as the 20-year mean monthly salinity at the project location unless the actual salinity measured at the facility intake, absent any influence from the discharge, is greater than the 20 year mean monthly salinity, in which case, the Natural Background Salinity shall be the actual salinity measured at the intake, absent any influence from the discharge.

The Water Authority is prepared to support the proposed final Amendment if the definitions for Brine Mixing Zone and Natural Background Salinity are revised to accommodate the use of alternative brine disposal methods. I understand that Poseidon has provided your staff with amendment language that would address these issues. The Water Authority fully supports the inclusion of this language into the final adopted Ocean Plan Amendment.

Finally, we call your attention to two critical data errors in supporting scientific analyses that are being relied upon as the scientific basis for the receiving water salinity limitation of 2.0 ppt.

Paragraph L.3.b. of the proposed final Amendment provides that the daily maximum receiving water limit for salinity shall not exceed 2.0 parts per thousand above natural background. According to the *“Draft Staff Report Including the Draft Substitute Environmental Documentation Amendment to the Water Quality Control Plan For Ocean Waters of California Addressing Desalination Facility Intakes, Brine Discharges, and the Incorporation of Other Non-Substantive Changes”* that accompanied the Desal Amendment (hereafter, “SED”), it appears that this salinity limit was predicated on the hyper-salinity toxicity study performed by University of California, Davis, Department of Environmental Toxicology (Phillips *et al.* 2012). The Phillips, *et al.* study concluded that red abalone was one of the most developmentally sensitive species to brine, with a LOEC of 35.6 ppt. This value, in turn, was based on two definitive salinity tolerance tests performed by Granite Canyon, both of which were conducted on July 18, 2012, using adult abalone from two sources; one batch came from Monterey Bay and another from The Cultured Abalone in Goleta, California. The results of these tests were submitted to the SWRCB as supporting the basis for the Desal Amendment receiving water salinity limit of 35.5 ppt at 100 meters.

Recently, Nautilus Environmental reviewed the Granite study and the raw data made available. Nautilus Environmental discovered that the definitive test conducted with the abalone from The Cultured Abalone was invalid and should not be considered in the determination of the salinity results. Upon review of the data entry for the definitive test

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conducted with the abalone from Monterey Bay, Nautilus Environmental also discovered two data entry errors.

Based on the corrected Granite Canyon Laboratory values, the red abalone salinity test results show a LOEC of 36.7 ppt; 1.1 ppt higher than the LOEC value of 35.6 ppt originally reported. Therefore, receiving water salinity limit should be approximately 3 ppt above natural background.

It is our understanding that Nautilus Environmental has communicated the results of its review and analysis to Granite Canyon, and that Granite Canyon personnel were going to communicate this information to State Water Board staff. While our approval of the proposed final Amendment will not be contingent on addressing this data integrity concern prior to adoption, we highly recommend that the State Board address this issue, and its implications, prior to adoption of the proposed final Amendment.

Again, we appreciate your consideration of our comments. We look forward to supporting the proposed final Amendment.

Sincerely,



Maureen A. Stapleton  
General Manager