



## San Diego County Water Authority

4677 Overland Avenue • San Diego, California 92123-1233  
(858) 522-6600 FAX (858) 522-6568 www.sdcwa.org



August 18, 2014

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

#### MEMBER AGENCIES

Carlsbad  
Municipal Water District

City of Del Mar

City of Escondido

City of National City

City of Oceanside

City of Poway

City of San Diego

Fallbrook  
Public Utility District

Helix Water District

Lakeside Water District

Olivenhain  
Municipal Water District

Otay Water District

Padre Dam  
Municipal Water District

Camp Pendleton  
Marine Corps Base

Rainbow  
Municipal Water District

Ramona  
Municipal Water District

Rincon del Diablo  
Municipal Water District

San Dieguito Water District

Santa Fe Irrigation District

South Bay Irrigation District

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 Amendments to California Ocean Plan

Dear Members of the Board:

#### INTRODUCTION

The San Diego County Water Authority appreciates the opportunity to comment on the Desalination Amendments to the Water Quality Control Plan for Ocean Waters of California (Ocean Plan) addressing desalination facility intakes and brine discharges (Desalination Amendments), released on July 3, 2014. This letter summarizes the Water Authority's key concerns regarding the Desalination Amendments. In addition to the comments in this letter, the Water Authority fully supports the comment package dated August 18, 2014, submitted by Poseidon Resources, including the redlined version of the July 3<sup>rd</sup> Desalination Amendments.

As you know, the Water Authority participated in multiple stakeholder meetings and public workshops and provided written comments to the State Board regarding the Desalination Amendments. We commend the Board and the staff, not just for this opportunity, but for the multiple opportunities provided over the last three plus years to offer comments and input during the development of the Desalination Amendments. We also acknowledge the amount of work that went into preparing the Desalination Amendments and the Substitute Environmental Document (SED).

We are pleased to see that one of the stated goals of the Desalination Amendments is to "...support the use of ocean water as a reliable supplement to traditional water supplies." In San Diego County, this goal is rapidly becoming reality. The Carlsbad Desalination Project, a 50 million gallon per day seawater desalination facility, is now close to 60 percent completed. This project is the result of an innovative Water Purchase Agreement executed in November 2012 between the Water Authority and Poseidon Water, the owner and operator of the project. As our state faces an unprecedented fourth consecutive year of drought, this new, drought-proof source of water cannot arrive too soon. The facility

is expected to be on-line by the fall of 2015. When it begins operations, the Carlsbad Project will provide seven percent of our region's supply and will more than double the amount of local water that has been developed in our region since 1991. In addition, the Carlsbad project will deliver several environmental benefits through the use of cutting-edge technology to recapture energy used in the desalination process, the offset of indirect carbon emissions, and the restoration of productive tidal wetlands for the benefit of marine life populations along the San Diego County coastline.

Poseidon has received notification that the Encina Power Station will cease operations as early as June 1, 2017. Because the permit issued by the Regional Water Board for the Carlsbad project is predicated on operation of the power station and associated cooling water flows, the transition to stand-alone operation of the desalination plant will require planned upgrades to the intake system. The Water Authority offers these comments to assure that these upgrades will not be made infeasible by the Desalination Amendments and to assure that potential future desalination projects are evaluated based on appropriate site-specific considerations and statewide objectives.

The expressed intent of the Desalination Amendments is to provide consistent statewide guidance for evaluation and permitting of desalination facility intakes and discharges. However, California does not have a uniform coastline and the considerations applicable to a permitting decision vary by location. The current system of evaluating and permitting projects at the regional level, based on site-specific considerations, has worked well. The Carlsbad Project is a good example. Therefore, we support the recognition in the Desalination Amendments that a one-size-fits-all approach to the state's desalination regulations is not appropriate and that site-specific considerations must be taken into account. The Desalination Amendments specifically provide alternative paths to compliance based on site-specific factors. This is a key issue that the Water Authority, other water suppliers, Poseidon, and CalDesal have all emphasized.

We appreciate that the Desalination Amendments address a number of key concerns raised by the Water Authority and Poseidon about the application of the regulations to the Carlsbad project. However, the Water Authority believes that more needs to be done to account for the practicality of implementation, provide for alignment with previous project permit requirements (including implementation of existing, ongoing mitigation efforts), and to give additional clarity to the regional water boards to aid in site-specific determinations. It is also important that the Desalination Amendments implement Governor Brown's California Water Action Plan by providing clear direction and streamlining the already lengthy process for permitting desalination projects.

## **COMMENTS**

- 1. Desalination is a water supply activity that should be considered independently from Once-Through-Cooling**

In 2010, the State Board adopted a sweeping policy to address thermal power plant cooling water withdrawals, also known as Once-Through-Cooling (OTC). OTC is regulated under the federal Clean Water Act. Unfortunately, some four years after the State Board adopted the OTC policy and effectively settled the matter, there continue to be efforts by some to equate desalination to OTC. The final SED for the OTC policy recognized that desalination and OTC were different in terms of purpose, function and regulatory standard and nothing has changed in this regard. The final OTC policy SED includes the following statement:

*“Desalination facilities and OTC thermal power plants are fundamentally different in their use of intake water, thus the means by which BTA would be determined is also very different. For existing OTC power plants, the most effective technology is closed-cycle wet cooling, which reuses a small volume of water several times to achieve the desired cooling effect. Desalination, on the other hand, is an extractive process for which the volume of water used cannot be limited without impairing the final production.”*

In other words, desalination is fundamentally different from power production in that desalination must utilize ocean water in order to function whereas power production can occur using alternative cooling methods other than OTC. The regulatory standard for OTC remains the federal Clean Water Act while desalination intakes and discharges in California are regulated under State Water Code Section 13142.5 (b) that requires that “...the best available site, design, technology and mitigation measures feasible shall be used to minimize the intake and mortality of all forms of marine life.”

## **2. Consistent definition of “Feasible”**

The Water Authority fully supports the purpose of the Desalination Amendments to provide statewide guidance and consistency regarding the permitting of desalination facility intakes and discharges, consistent with Water Code Section 13142.5(b). In applying this State Water Code language to desalination facilities, the Amendment covers the siting of desalination facilities, intake and discharge technology and design as well as the calculation and implementation of mitigation measures. We appreciate that the Desalination Amendments also provide important, alternate paths to compliance, at the discretion of the Regional Water Boards. In order for these Regional Board processes to work effectively and consistently statewide, it is imperative that the Desalination Amendments provide the Regional Water Boards with direction regarding one of the more contentious aspects of the 13142.5(b) evaluation – the scope of the feasibility assessment. Since desalination projects are subject to CEQA and the Coastal Act, it follows that the Desalination Amendments should adhere to the same standard of “feasibility” used by the Coastal Commission and by lead agencies under CEQA: “Feasible” means “capable of being accomplished in a successful manner within a reasonable period of time, taking into account economic, environmental, social, and technological factors.” (See, Public Resources Code, §21061 and §30108.)

**3. Project size determinations must balance water supply needs and appropriate siting factors**

Throughout California, local public water supply agencies such as the Water Authority have responsibility for assuring long term water supply reliability. Urban water supply agencies are required under Water Code Sections §10610 through §10656 to prepare Urban Water Management Plans every five years that address, in detail, current and projected water supplies and demands. Agencies are statutorily required to describe opportunities for development of desalinated water projects. The Urban Water Management Plan is the vehicle to establish purpose and need for regional and local water supply projects based on projected regional and local needs for water supply reliability. Thus, first and foremost, the amount of desalinated water needed to meet water supply needs is a water planning determination, and the sizing of a desalination projects is based on these supply requirements. As desalination projects proceed to implementation, they are subject to a rigorous and public environmental review under CEQA that considers project size and project alternatives among other factors. This environmental review process occurs well before a project applies for a permit under the Desalination Amendments. This locally-based decision-making process has served our region well. For example, the Carlsbad project, including the proposed size of the project, was evaluated in the Water Authority's Regional Water Facilities Master Plan Programmatic EIR in 2003 and again in the project EIR prepared by the city of Carlsbad, certified in 2006. Although the best available site may vary based on the water production capacity (size) of a desalination plant, the water supply considerations that go into plant sizing are different from the technological, geographical, and environmental considerations that go into siting determinations.

For the most part, the Desalination Amendments appear to appropriately recognize that water supply requirements drive the sizing determination for a desalination project. The direction to the Regional Water Boards for conducting statutorily-mandated "evaluations of the best available site, design, technology and mitigation measures feasible to minimize the intake and mortality of all forms of marine life at new or expanded desalination facilities" recognizes that while certain technologies, such as subsurface intakes, may be preferred, the technology preference cannot dictate project size to the detriment of supply reliability. Thus, the Desalination Amendments provide the opportunity for alternate technologies as appropriate.

However, the Water Authority has serious concerns with the last sentence of section 2. (b) (1) of the Desalination Amendments, which reads, "A design capacity in excess of the identified regional water need for desalinated\* water shall not be used by itself to declare subsurface intakes as infeasible." This sentence creates unnecessary confusion and should be deleted.

#### **4. Subsurface Intake "Requirement"**

The Water Authority recognizes the site-specific potential for subsurface intakes for new projects and in fact, recently completed detailed, site-specific ocean, marine and subsurface surveys and technical studies of the viability of both open ocean and subsurface intakes for our proposed Camp Pendleton Desalination Project (See Attachment 2). However, while these subsurface surveys and investigations provided valuable site-specific data, there remains much uncertainty regarding the viability of a subsurface intake for any desalination project proposed in California, much less the proposed Camp Pendleton project.

Currently, the Desalination Amendments compel the Regional Water Boards to "require" subsurface intakes, while allowing an alternative path to compliance if subsurface intakes are determined to be infeasible. We are concerned that use of the word "requirement" does not recognize the comparatively limited application of subsurface intakes for desalination facilities worldwide and the unproven and uncertain nature of those intakes, as discussed above. We acknowledge the "preference" for subsurface intakes, based solely on intake mortality, but a "requirement" in the Desalination Amendments reaches beyond what has been proven at this point in time. If a preference must be identified, then we request that the Desalination Amendments be revised to identify a preference, not a requirement.

#### **5. Practicality of Intake Screen Slot Size**

The Desalination Amendments provide an alternative compliance path for those projects such as Carlsbad that utilize a surface intake. The Desalination Amendments require that project owners and operators that wish to operate a surface intake install screens in the front of the intake which have extremely fine openings. A range of screen sizes proposed by staff is 0.5mm to 1.0 mm. The purpose of the small screen size is to reduce the entrainment of fish eggs and larvae.

The Water Authority is relying on the Carlsbad facility to operate as a highly reliable source of water for our region. As such, the Water Authority is making a significant investment in the Carlsbad facilities to ensure that the plant can operate at full capacity during adverse conditions, such as a severe "red tide" event. We are concerned that there is insufficient operating data from current desalination installations to determine if the screen sizes proposed in the Desalination Amendments will impact the reliability of the Carlsbad plant. The use of unproven screen technology could inhibit the flow of water and increase the maintenance requirements of the desalination facility, thereby compromising the reliability and efficiency of the plant. Further consideration should be given to the screen size recommendation to ensure the suitability of this technology for the intended use.

The Water Authority supports Poseidon's proposal to utilize the Carlsbad facility to advance screen technology science without putting the facility's reliability at risk. Upon transition to stand-alone operations, following retirement of the Encina Power Station, Poseidon would install a 1.0 mm screen at the plant for side-by-side comparison to a more standard 5 mm screen. During the following three years, Poseidon would collect operational data related to flow, fouling, and marine life mortality, and submit annual reports to the State Water Board.

#### **6. Entrainment Study Duration**

The Desalination Amendments also require project owners and operators that wish to operate surface intakes conduct an entrainment study of at least 36 consecutive months. A 36 month entrainment study would be excessive and would result in the idling of the Carlsbad project for at least two and a half years. The Desalination Amendments should require 12 months of entrainment data which conforms to the guidelines for entrainment impact assessment included in Appendix E of the Staff Report. These guidelines, written by members of the State Water Board's "Expert Review Panel on Intake Impacts and Mitigation", state that entrainment sampling done for 12 months is a reasonable period of sampling because the entrainment estimated by the ETM method is "much less subject to inter-annual variation. Therefore, a 12 month study should be adequate to account for variation in oceanographic conditions and larval abundance and diversity such that the abundance estimates are reasonably accurate.

#### **7. Preservation of Existing Carlsbad Desalination Project Mitigation Plan**

The wetlands project for the Carlsbad project has been under development for seven years and is in the final stages of approval. Construction of the mitigation project is expected to begin late next year. A requirement to locate the mitigation within the "source water body" would adversely affect the Carlsbad project to the extreme detriment of Poseidon and the Water Authority. The current mitigation project would have to be abandoned and new mitigation started, even though it has already been determined that there are no suitable mitigation sites within the source water body. Additionally, the Desalination Amendments would require a 250 percent increase in the size of the wetlands restoration project for the Carlsbad project even though it has already been determined that the project is fully mitigated. The Water Authority requests that the mitigation requirements included in the Desalination Amendments align with the mitigation efforts already under way on the Carlsbad project.

#### **8. Performance Standard for Diffuser Technology**

The Desalination Amendments require that proponents of alternative discharge technologies provide a comparison of the marine life impacts of the proposed technology to that of the "preferred technology" identified by staff in order to demonstrate a comparable level of environmental protection. But the Desalination Amendments fail to

provide a performance standard against which other discharge technologies can be compared. If the State Board decides to identify a "preferred technology" for brine discharge, it is imperative that the Desalination Amendments also set forth an objective standard against which other non-preferred technologies can be compared.

#### **9. Brine Mixing Zone Determination**

The definition for "Brine Mixing Zone" provides that the Desalination Amendments include a mechanism for establishing a larger mixing zone other than the default 100 meter recommendation that appears to be associated with multi-port diffusers. Correspondingly, the Desalination Amendments need to include a process for establishing a larger mixing zone that recognizes the option to utilize alternative brine disposal technologies such as flow augmentation (in the case of the Carlsbad project), or other technologies not yet developed.

#### **10. Application of Salinity Standard**

For the Carlsbad project, the historical salinity data has been measured using electrical conductivity, but the Desalination Amendments impose a salinity standard based on Total Dissolved Solids. In order to reconcile this problem, we think the measurement of salinity needs to reflect the same method as that of the historical data base.

#### **11. Receiving Water Limit for Salinity**

The Desalination Amendments provide that brine discharges from desalination facilities shall not exceed 2.0 parts per thousand above the natural background salinity. Natural background salinity is defined as the 20-year average salinity at the project location. The database that makes up the natural background salinity for the Carlsbad Project shows a mean salinity of 33.5 ppt, a minimum salinity of 27.4 ppt, and a maximum salinity of 34.2 ppt over the last 20 years. Sixty-four percent of daily salinity measurements over the last 20 years are above the 33.5 ppt average. This means that the Carlsbad facility would have to operate at less than a 2 ppt increase over the ambient salinity 64 percent of the time. This operating requirement would severely impact plant reliability. To address this problem, Desalination Amendments should be revised such that the natural background salinity shall be determined by averaging 20 years of historical salinity\* data at a location unless the actual salinity measured at the facility intake is greater than the 20 year average salinity, in which case, the natural background salinity shall be the lower of: (1) the actual salinity measured at the intake; or (2) the maximum salinity level measured in the 20 years of historical salinity data (i.e., 33.5 to 34.2 ppt in Carlsbad).

Ms. Jeanine Townsend, Clerk to the Board  
August 18, 2014  
Page 8

## CONCLUSION

Attachment 1 includes some additional detailed comments on the SED. Attachment 2 (to be hand-delivered on 08/19/2014), includes the follow-on site-specific Water Authority study on intake and brine discharge for the potential Camp Pendleton Desalination Project that appears to not have been considered in the SED.

Again, we appreciate the consideration given to our prior comments on the Desalination Amendments, as well as the State Water Board's recognition of the importance of the Carlsbad Desalination Project to San Diego County's long-term water security.

Sincerely,



Maureen A. Stapleton  
General Manager

**Attachment 1 Water Authority comments on the Draft Staff Report and the Draft Substitute Environmental Documentation for the 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**

**Attachment 2 CD of Proposed Camp Pendleton Seawater Desalination Project FINAL Seawater Intake & Brine Discharge Technical Studies Report - October 2013 (To be hand-delivered 8/19/14)**



## Attachment 1

### **Water Authority comments on the Draft Staff Report and the Draft Substitute Environmental Documentation for the 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**

#### General Comment:

1. For a programmatic document, the SED makes definitive conclusions regarding the significance of impacts and need for mitigation. This is inappropriate for this programmatic level of analysis. The report needs to remain programmatic; both in its general assessment of impacts and in its conclusions. The impacts of specific desalination proposals will be examined in project-specific environmental documentation.

#### Specific Comments:

1. Page 117, Section 12.1: States that "City of Oceanside Camp Pendleton Seawater Desalination Project Feasibility Study Report Executive Summary prepared by RBF Consulting, December 2009". This is the exact same reference cited two bullets down for the San Diego County Water Authority. The San Diego County Water Authority reference is correct. Please check the report citations.
2. Page 144, Section 12.2.4 States that "...it is likely that significant impacts to biological resources may occur with implementation of a particular desalination facility...". This broad conclusion is unsubstantiated. The significance, or not, of any specific desalination proposal on biological resources will be determined by site specific studies. Please delete such conclusory statements from the impact analysis sections throughout the document.
3. Page 153, Section 12.1.7: States that "...it is important to consider where the offset will be occurring." This is incorrect. GHG's are a global issue. The state law regulating GHG emission (AB32) setting statewide GHG reduction goals does not have a requirement that mitigation be local. Further, recent agreements executed by Governor Brown with Canada and Mexico to coordinate GHG cap and trade efforts support the fact that GHG emissions in one area can be offset in another. GHG offsets, regardless of location, reduce total GHG emissions and their effect on global climate change. Please delete the following sentences: "~~However, it is important to consider where the offset will be occurring. If the offsets are associated with a renewable energy or forest project in the Midwest, these offsets would have limited impact on local GHG emissions. Only those offsets that occur in the service area of the facility would be effective at reducing local GHG emissions.~~"
4. Page 161, Section 12.1.9: States that "...impingement and entrainment also represent a potential threat to water quality and beneficial uses...". Impingement and entrainment effects are limited to biological resources and do not affect water quality. Please revise the sentence to read: "...also represent a potential threat to ~~water quality and beneficial uses...~~".

5. Page 168, Section 12.1.13: States that "however; the existence of a reliable water supply could induce more people to reside in the area where a reliable water supply is available." There is no documentation or other evidence to support this speculative statement. Water from a desalination facility that replaces an existing source of supply does not increase water availability in a region. The same amount of water is available, just the source changes. In addition, the evaluation of whether replacement of a less reliable supply with a more reliable supply is likely to induce growth or merely avoid other impacts associated with rationing during shortage periods is an issue that should be addressed, as appropriate, in the project-specific EIR. Please delete the statement.
6. Page 172, Section 12.1.18: States that "However, these offsets may not reduce local GHG emissions....cumulative impacts on a regional scale would be significant and unavoidable." This statement is incorrect and misleading. As noted above, the state of California, via AB32, has set statewide targets for GHG reductions. There are no local targets and GHG offsets can be acquired from out of state or out of the country per the recent cap and trade agreements executed by Governor Brown. These agreements recognize the global nature of GHG emissions. Please delete the following sentences: "~~However, these offsets may not reduce local GHG emissions. If several facilities are built in California and even a small proportion of offsets are purchased from other regions of the country, the cumulative impacts on a regional scale would be significant and unavoidable.~~"
7. Page 172, Section 12.1.18: States that "the increased availability of water could result in increased growth... even if the desalination facility was intended to replace an existing source..." . There is no documentation or other evidence to support this speculative statement. Water from a desalination facility that replaces an existing source of supply does not increase water availability in a region. The same amount of water is available, just the source changes. The evaluation of whether replacement of a less reliable supply with a more reliable supply is likely to induce growth or merely avoid other impacts associated with rationing during shortage periods is an issue that should be addressed, as appropriate in a project specific EIR. Growth inducement was addressed in the project-specific EIR for the Carlsbad project as a new supply source. Please revise the sentence to read: "As described in Section 12.1.13, the increased availability of water could result in increased growth within the facility service area ~~even if the desalination facility was intended to replace an existing source or sources.~~"
8. Page 180, Section 12.4.1: Multiple alternatives state that "Therefore, these impacts are considered significant and unavoidable." Absent a specific project, it is not possible at a programmatic level to make such a definitive conclusion. The significance each proposed project will depend on the particular circumstances of the project, which will be analyzed in a project specific environmental document. Please revise the sentence to read: "Therefore, these impacts are considered may be significant and unavoidable." This conclusory sentence appears in numerous areas of the staff report (e.g., 12.4.2, 12.4.3, and 12.4.4. All instances should be changed as described above.