

**CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD  
SAN DIEGO REGION**

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**RESPONSIVENESS SUMMARY  
INCLUDING RESPONSES TO COMMENTS**

**TENTATIVE ORDER NO. R9-2009-0038  
AMENDING  
ORDER NO. R9-2006-0065 (NPDES NO. CA0109223)  
WASTE DISCHARGE REQUIREMENTS FOR  
THE POSEIDON RESOURCES CORPORATION  
CARLSBAD DESALINATION PROJECT  
DISCHARGE TO THE PACIFIC OCEAN VIA  
THE ENCINA POWER STATION DISCHARGE CHANNEL**

The Carlsbad Desalination Project (CDP) has been subject to extensive regulatory process before this agency and other resource agencies, and the March 27, 2009 Flow, Entrainment and Impingement Minimization Plan has been considered in several iterations at four public meetings before the Regional Board, with substantial public comment. Substantial additional comments regarding the details of the Regional Board's proposed decision were received in February, March and April of 2009, including at the public hearing held on April 8, 2009. To fully respond to this additional public comment, to provide a detailed explanation for the bases for the Board's decision on this matter, and to provide citations to the evidence upon which the Board has based its decision, the California Regional Water Quality Control Board, San Diego Region (hereinafter Regional Board) staff have prepared the following summary of significant issues and responses to comments submitted throughout the course of this proceeding as follows:

**Summary of Significant Issues**

**Description of the CDP**

On August 16, 2006, the Regional Board adopted Order No. R9-2006-0065 (NPDES No. CA0109223) (Order No. R9-2006-0065) establishing waste discharge requirements for Poseidon Resources Corporation's (Discharger) Carlsbad Desalination Project (CDP).

As described in revised Tentative Order No. R9-2009-0038, the CDP will convert approximately 107 million gallons per day (MGD) of source water into approximately 50

MGD of potable water. The other 57 MGD will be discharged as a combined waste stream comprised of concentrated saline wastewater and filter backwash wastewater. Approximately 197 MGD of additional source water will be used to dilute the 57 MGD wastewater stream, for a total discharge flow rate of approximately 254 MGD. The 197 MGD of additional source water not used for production is needed as dilution water to allow the CDP to comply with the salinity requirements of the NPDES permit. The total source water needed for conversion to potable water and dilution of the waste stream will be approximately 304 MGD.

The CDP will be located adjacent to an existing power plant referred to as the Encina Power Station (EPS). The EPS includes an intake structure that draws water from Agua Hedionda Lagoon (AHL) to supply cooling water for its electricity generation operations. After use, the cooling water the EPS withdraws from AHL is discharged to the Pacific Ocean. The CDP will use the existing intake and discharge system of the EPS to supply its source water, and discharge its wastewater stream. The CDP will use the water the EPS discharges after it has been used for cooling purposes (shown on CDP Flow Schematic – April 9, 2009 Regional Board Agenda Item No. 7, Attachment 1b). On some days, it is expected that the EPS will not discharge enough water to supply the 304 MGD needed for its desalination operations. On those days, the intake system will withdraw from AHL additional water above and beyond what the EPS is using in order to supply the CDP. Although the cooling water withdrawals of the EPS vary from year to year, information available from 2008 indicates that the EPS would have met approximately 89% percent of the CDP's water needs (i.e., 304 MGD), had the CDP been in operation in calendar year 2008 (March 27, 2009 Flow, Entrainment and Impingement Minimization Plan, Attachment 1 - EPS 2008 Daily Flow Data). Since the fifth EPS generating unit (Unit 5) was put into service in 1976, annual water use at the EPS for cooling water purposes has never dropped below 61% of the water that would be needed on a daily basis by the CDP. (Minimization Plan, 6-4.)

### **Relationship of Board Action to Prior Board Actions**

In issuing Order No. R9-2006-0065, the Regional Board previously determined the Discharger's obligations under the federal Clean Water Act, 33 U.S.C. § 1251 et seq., and the National Pollutant Discharge Elimination System (NPDES), 33 U.S.C. § 1342. Tentative Order No. R9-2009-0038 pertains exclusively to the Discharger's obligations under a provision of state law applicable to seawater intakes, specifically California Water Code (CWC) Section 13142.5(b). CWC Section 13142.5(b) provides that: "For each new or expanded coastal powerplant or other industrial installation using seawater for cooling, heating, or industrial processing, 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."

When the Regional Board reviewed the CDP in 2006 and issued Order No. R9-2006-0065, the Board determined that when the EPS is discharging sufficient water to meet the proposed source water needs of the CDP (304 MGD), the potential for the CDP to cause intake and mortality of marine life, i.e., impingement and entrainment, is *de*

*minimis*. (Order No. R9-2006-0065, Attachment F – Fact Sheet, Section VII.B.4.b.) Order No. R9-2009-0038, concerns, therefore, the situation in which the EPS is *not* generating sufficient discharge to meet the source water intake needs of the CDP (“co-location operation for CDP benefit”). Co-location operation for CDP benefit can occur under two conditions: (1) when some or all of the generating units at the EPS are temporarily shut down, or (2) when some or all of the generating units at the EPS are operating but its discharge volume is not sufficient to meet the CDP’s intake requirements.

### **Minimization Plan Provisions and Proceedings**

To ensure compliance with CWC Section 13142.5(b) when the CDP is operating in co-location mode (versus complete stand-alone mode when the EPS has permanently ceased operations), Section VI.C.2.e of Order No. R9-2006-0065 required the Discharger to submit for Regional Board approval a Flow, Entrainment and Impingement Minimization Plan (Minimization Plan) that “shall assess the feasibility of site-specific plans, procedures, and practices to be implemented and/or mitigation measures to minimize the impacts to marine organisms when CDP intake requirements exceed the volume of water being discharged by the EPS” within 180 days of adoption of the Order No. R9-2006-0065.

To satisfy Section VI.C.2.e. of Order No. R9-2006-0065, the Discharger relied upon data collected in AHL pursuant to a field study, the work plan for which was approved by the Regional Board. These data were collected for the purpose of characterizing entrainment and impingement at the EPS’s intake structure. The EPS is subject to federal Clean Water Act Section 316(b), 33 U.S.C. § 1326(b), which requires “that the location, design, construction, and capacity of cooling water intake structures reflect the best technology available for minimizing adverse environmental impact.” The work plan, entitled, “Cabrillo Power I LLC, Encina Power Station, 316(b) Cooling Water Intake Effects Entrainment and Impingement Sampling Plan,” was reviewed and approved by the Regional Board, U.S. Fish and Wildlife Service (USFWS), California Department of Fish and Game (CDFG), and other agencies. (March 27, 2009 Flow, Entrainment and Impingement Minimization Plan, Attachment 4). The results of the field program, conducted in 2004-2005, are provided in the report entitled, “CLEAN WATER ACT SECTION 316(b) IMPINGEMENT MORTALITY AND ENTRAINMENT CHARACTERIZATION STUDY, Effects on the Biological Resources of Agua Hedionda Lagoon and the Nearshore Ocean Environment, January 2008” (“E & I Study”). (Latham & Watkins comment letter dated January 26, 2009, Appendix A, Tab 3.)

On February 13, 2007, the Discharger submitted a draft Minimization Plan dated February 12, 2007 in order to comply with Section VI.C.2.e. of Order No. R9-2006-0065. After input from Regional Board staff and the public, the February 2007 draft was followed by a June 1, 2007 Minimization Plan. The Minimization Plan was divided into chapters addressing the four principal factors of CWC Section 13142.5(b) – site, design, technology, and mitigation – to be used to minimize the intake and mortality of marine life.

Regional Board staff reviewed the revised Minimization Plan over the next several months and in a letter to the Discharger dated February 19, 2008, Regional Board staff identified several issues to be addressed before the Minimization Plan would be ready for Regional Board approval. In response to staff's February 19, 2008 letter, on March 7, 2008, the Discharger submitted an updated version of the Minimization Plan, dated March 6, 2008. The Regional Board conditionally approved the March 6, 2008 version of the Minimization on April 9, 2008 (Resolution No. R9-2008-0039).

On April 17, 2008, Regional Board staff questioned the Discharger, through an email, whether the value calculated for potential impingement in the March 6, 2008 Minimization Plan was in error. The daily average of 0.96 kg appeared to have been calculated by dividing the weight of fish collected during 52 sample days by 365 days (instead of 52), and fish counts and weights presented as prorated to 304 MGD did not appear to be prorated. On April 30, 2008, the Discharger sent an email to staff confirming that the March 6, 2008 Plan contained an error in the calculation used to convert the 2004-2005 EPS sample data to a CDP daily projection. While the Discharger acknowledged the March 6 Plan contained an error, it did not provide a projection based on corrected, prorated EPS data. Instead, it provided staff with a linear regression of the 2004-2005 EPS data for fish weight, exclusive of two high days of impingement, as an approach it wished staff to consider. This new approach estimated impingement at 1.56 kg/day. The Discharger revised the March 6, 2008 Minimization Plan then pending before the Board to remove the incorrectly presented data when it submitted the March 9, 2009, Minimization Plan.

While the March 6, 2008 Minimization Plan was pending before the Regional Board, the California Coastal Commission also was evaluating the potential for entrainment and impingement at the CDP, as part of the proceedings related to the Coastal Development Permit for the CDP. The Discharger prepared the Marine Life Mitigation Plan (MLMP) both to satisfy conditions imposed by the Coastal Commission and to satisfy the requirements of Resolution No. R9-2008-0039 to evaluate mitigation options for the CDP. On November 18, 2008, the Discharger submitted the final MLMP to the Regional Board as an amendment to the mitigation provisions in the March 6, 2008 Minimization Plan to satisfy the conditions of Resolution No. R9-2008-0039.

On February 11, 2009, the Regional Board held a hearing to consider whether the MLMP satisfied the conditions established in Resolution No. R9-2008-0039, and, if not, whether the Resolution was thereby inoperative by its own terms. At the commencement of the meeting, the Executive Officer identified a narrowed list of staff's outstanding issues concerning the March 6, 2008 Minimization Plan, as supplemented by the MLMP, including "(3) Poseidon to provide the flow-proportioned calculations for Poseidon's impacts due to impingement, to help support the Board's determination that these impacts are *de minimis*."

Regional Board staff and the Discharger met to discuss the outstanding issue no. 3 on numerous occasions following the February 11, 2009 meeting. During these

discussions, the Discharger submitted “flow-proportioned calculations,” corrected as compared to the March 6, 2008, Minimization Plan, which resulted in an estimated projected impingement of 3.74 kg/day, derived by prorating all 52 samples to 304 MGD. When two days of data considered by the Discharger to be “outliers” are excluded, the “flow-proportioned calculations” result in an estimated projected impingement of 2.11 kg/day. As a result of the discussions, the Discharger also developed several other estimates of impingement using variations on these methodologies.

On March 9, 2009, the Discharger submitted a revised Minimization Plan, including the MLMP, for Regional Board consideration. The March 9, 2009 Minimization Plan included revisions to Chapter 6 regarding mitigation, including the incorporation of the MLMP, additional provisions placing the Regional Board on equal footing with the Coastal Commission to address outstanding issue no. 1, and provisions identifying the five sites within the Regional Board boundaries as priority mitigation sites to address outstanding issue no. 2. It also included Attachment 5, which explained and identified several possible approaches to estimating impingement, including a flow-proportioned approach and a linear regression approach, and three variations of the other two approaches. Among these approaches is “Proportional Approach 3-B” which results in an estimate of 4.7 kg/day of projected impingement.

The Discharger believes that other approaches resulting in lower estimates are more appropriate and submitted revisions to the Minimization Plan on March 27, 2009 to provide additional analysis to support its claim that two days of high impingement during the 2004-2005 sample period are “outliers” and should be excluded from impingement estimates. While staff and the Discharger disagree about whether it is appropriate to exclude two high impingement days from the 2004-2005 EPS sample period, it is unnecessary to resolve this dispute because, at the April 8, 2009 meeting, the Discharger agreed that the estimate of 4.7 kg/day, resulting from Proportional Approach 3-B, is a reasonable approach for projecting impingement associated with CDP’s operations. The Board staff believes that 4.7 kg/day is a reasonable, conservative, estimate of impingement.

After receiving extensive public comment at its April 8, 2009 hearing regarding the Minimization Plan, the Regional Board closed the record and continued the matter for final decision at its May 13, 2009 meeting.

### SITE

Chapter 2 of the Minimization Plan addresses the “site” factor of CWC Section 13142.5(b). The CDP will be co-located with the EPS and use the EPS’s existing intake and discharge facilities, which draw cooling water from AHL and discharge into the Pacific Ocean. A number of commenters requested that the Regional Board consider alternative sites for the CDP outside of the Carlsbad area, including areas elsewhere in San Diego County and elsewhere in California. To determine whether these alternative sites are feasible under conditions of co-location operation for CDP benefit, the Board has examined the fundamental project objectives of the CDP, based on the evidence

before it, including the objectives as described by the Discharger and the City of Carlsbad in its comments, the objectives as described in the EIR certified by the City of Carlsbad, and the project objectives as described in the August 6, 2008 findings of the Coastal Commission.

As described by the Discharger, the approximately 50 MGD of potable water that the CDP will produce will be enough water to supply approximately 300,000 San Diego County residents, or approximately 112,000 households. The Discharger is under contract to provide the water from the CDP to various water agencies in the San Diego region. The City of Carlsbad has contracted with the Discharger to allow the City to take up to 100 percent of its water needs from the desalination plant, approximately 25 MGD or 27,990 af/yr. Carlsbad has contract rights to 25 MGD and will take water based on daily demand projected at between 10 MGD and 25 MGD. The following additional cities and water districts have contracts with the Discharger to provide desalinated water to the customers in their service territories: City of Oceanside for up to 5,000 af/yr; Olivenhain Water District for up to 5,000 af/yr; Rainbow Municipal Water District for up to 7,500 af/yr; Rincon Del Diablo Municipal Water District for up to 4,000 af/yr; Santa Fe Irrigation District for up to 2,000 af/yr; Sweetwater Authority for up to 2,400 af/yr; Vallecitos Water District for up to 7,500 af/yr; Valley Center Municipal Water District for up to 7,500 af/yr. (Latham & Watkins comment letter dated April 2, 2009, Appendix C, Tab 31.)

The Discharger defines the CDP's fundamental project objectives as: (1) allowing Carlsbad to purchase 100 percent of its potable water supply needs from the desalination plant, thus providing a secure, local water supply that is not subject to the variations of drought or political or legal constraints; (2) reducing local dependence on water imported from outside the San Diego County area and from outside of Carlsbad and surrounding areas; (3) providing water at or below the cost of imported water supplies; and (4) meeting the CDP's planned contribution of desalinated water as a component of regional water supply planning goals. The objectives are summarized in the Environmental Impact Report certified by the City of Carlsbad for the CDP and related findings adopted by the City, and on page 14 of 106 of the findings adopted on August 6, 2008 by the California Coastal Commission for the Coastal Development Permit adopted for the project.

Among the fundamental project objectives of the CDP as defined by the Discharger is the objective to provide a local and reliable water source. The record indicates that the City of Carlsbad will be able to meet 100 percent of its potable water supply needs from the desalination plant, a secure, local water supply not subject to the variations of drought or political or legal constraints. Any site for the project outside the City of Carlsbad might subject the project to the control of other water agencies or governmental jurisdictions. For example, if the project were to be sited in another city, that city might exercise its police powers to utilize the water within its own jurisdiction, or to regulate or prohibit the transmission of water outside of its municipal boundaries. Thus, sites outside of Carlsbad could potentially conflict with this fundamental project objective, which would mean that any such site is neither available nor feasible for use

by the CDP, under conditions of co-located operation, within the meaning of Water Code section 13142.5(b).

A second fundamental project objective of the CDP as defined by the Discharger is reducing local dependence on water imported from outside the San Diego County area and from outside of Carlsbad and surrounding areas. Importation of water over substantial distances increases the cost of the water, increases the energy necessary to deliver the water, and makes the supply of water less secure and more vulnerable to disruption from broken or inoperable pipelines due to earthquakes or other natural disasters. Also, as noted on page 2-6 of the Minimization Plan, long-distance transportation of water from the CDP to its intended users would cause an increase in carbon emissions because significant additional energy would be required to accomplish it, thereby increasing greenhouse gas emissions associated with the Project. Any site too remote from Carlsbad and surrounding areas would simply be another form of "imported water" that would have to be transported to the location of the agencies that are purchasing the water. While one of the agencies purchasing the water from the CDP is located in southern San Diego County, the remaining agencies provide water service within Northern San Diego County and the vicinity of Carlsbad. Considering this fundamental project objective, the Regional Board concludes that alternative sites that are too remote from Carlsbad would not be feasible to minimize the intake and mortality of all forms of marine life pursuant to Section 13142.5(b) under conditions of co-located operation for the CDP benefit.

A third fundamental project objective of the CDP identified by the Discharger is providing water at or below the cost of imported water supplies. Alternative sites would each require the construction of a new form of seawater intake system. The construction of a new seawater intake system of any type, such as a new seawater intake at the Encina Water Pollution Control Facility (see, e.g., Minimization Plan at 2-5) or the construction of a new seawater intake infiltration gallery, (see e.g., Coastal Commission August 6, 2008 findings at Page 51 of 106), would be very costly or "cost prohibitive" and increase the cost of production of the water well above the cost of imported water supplies. Under conditions of co-located operation, the existing intake may be used while EPS is operating. Therefore, alternative sites requiring the construction of a new seawater intake system are not feasible to minimize the intake and mortality of all forms of marine life pursuant to Section 13142.5(b) under these circumstances.

Another important objective of the CDP is its planned contribution of desalinated water as a component of meeting regional water supply planning goals. The Discharger reports that CDP's expected output of 50 MGD will supply about 10 percent of the desalinated water needed in California by 2030, according to the Department of Water Resources, and 56,000 af/yr out of the 150,000 af/yr of desalinated water that is needed to ensure regional reliability, according to the Metropolitan Water District of Southern California. In order to satisfy this objective, the CDP must be constructed at a site that can accommodate a 50 MGD facility, so that the CDP's output will be sufficient to satisfy Carlsbad's demand, the demand of other local agencies, and the CDP's planned

contribution of desalinated water as a component of regional water supplies. The Project Environmental Impact Report (EIR), certified by Carlsbad on June 13, 2006, analyzed a reduced output (25 MGD) alternative but found that the alternative would be insufficient to satisfy the CDP's planned contribution to regional water supplies or the demand of local agencies other than Carlsbad. Considering this fundamental project objective alternative sites that can not accommodate a 50 MGD facility are not feasible to minimize the intake and mortality of all forms of marine life pursuant to Section 13142.5(b) under conditions of co-located operation for CDP benefit.

As described on Page 2-4 of the Minimization Plan, the EIR, certified by the City of Carlsbad on June 13, 2006, analyzed a number of alternative sites within the boundaries of the EPS and alternative sites within the boundaries of the Encina Water Pollution Control Facility. The Coastal Commission staff requested an evaluation of other potential locations for the desalination facility and its associated infrastructure. As a result, the Discharger added the Maerkle Reservoir site to the list of alternative sites considered. Each of these sites is neither available nor feasible for the reasons set forth in the Minimization Plan Sections 2.2.1, 2.2.2 and 2.2.3, and the findings adopted by the City of Carlsbad on June 13, 2006 and the California Coastal Commission on August 8, 2008. These facts support the Board's determination that the site proposed by the Discharger is the best available site feasible to minimize the intake and mortality of all forms of marine life pursuant to Section 13142.5(b) under conditions of co-location operation for the CDP benefit.

In its findings adopted on August 6, 2008, the Coastal Commission found that "[t]here are no feasible and less environmentally damaging alternative locations to draw in the needed seawater (e.g. subsurface or offshore)." (Page 28 of 106.) The Coastal Commission further noted on page 48 of 106 of its findings, based on evidence presented in the City of Carlsbad Environmental Impact Report, that alternative intake systems at other sites, such as horizontal wells, vertical beach wells or infiltration galleries in lieu of the CDP's use of the EPS power plant intake system at the proposed EPS site "would cause more significant impacts than those caused by the existing [EPS site] power plant intake and that they would be economically infeasible." On page 51 of 106, the Coastal Commission found that alternative sites using proposed or potential (but unbuilt) alternative seawater intake systems, such as slant wells at Dana Point or elsewhere, infiltration galleries, horizontal wells, vertical beach wells or other types of subsurface intakes would be infeasible alternative sites for the CDP project: "[T]he proposed alternatives would result in greater environmental impacts than the proposed project due to the destruction of coastal habitat from construction of intake systems, the loss of public use of coastal land due to numerous intake collector wells that would be located on the beach, and the adverse environmental impacts to coastal resources during construction, including but not limited to the creation of negative traffic, noise, and air pollution impacts."

The Coastal Commission's finding that there are no feasible and less environmentally damaging alternative locations available to the Project is noted and cited on page 2-8 and note 6 of the Minimization Plan. The Regional Board has considered these



conclusions and gives them great weight in finding that the site proposed by the Discharger is the best available site feasible to minimize the intake and mortality of all forms of marine life pursuant to Section 13142.5(b) under conditions of co-location operation for the benefit of CDP.

When the Board adopted Order No. R9-2006-0065 in 2006 granting approval of the CDP, it determined that the EPS site was appropriate for the project under Section 13142.5(b), despite the possibility of impacts to marine life for operations when the EPS was *not* generating sufficient discharge to meet the source water intake needs of the CDP. The Board required that a Minimization Plan be prepared to assess the feasibility of “site-specific” plans, procedures, practices and mitigation measures to minimize impacts and address any “additional review” required by Section 13142.5(b). Thus the Board determined in 2006 that the EPS site was the best available site feasible to minimize the intake and mortality of all forms of marine life pursuant to Section 13142.5(b) under conditions of co-location operation for the benefit of CDP. Such 2006 determination constitutes a separate and independent basis for a determination that the CDP has complied with 13142.5(b) for co-location operation. However, because of the possibility that such 2006 determination might be challenged indirectly through an attack on the Board’s approval of the Minimization Plan, as a separate and alternative ground, the Board (at the Discharger’s request) has reexamined anew without regard to its 2006 determination, the question of the appropriate site for the CDP and has made the determination in this Order, including review of the information set forth above, that the proposed site is the best available site feasible to minimize the intake and mortality of all forms of marine life pursuant to Section 13142.5(b) under conditions of co-located operations.

One commenter at the April 8, 2009 hearing suggested that a feasible alternative site for the CDP would be to locate the CDP somewhere else in San Diego County, and then use the San Diego County Water Authority Pipeline to transfer the water or use “paper water credits” to allow project users to get the benefit of water production. Such an alternative site would neither be available nor feasible within the meaning of Section 13142.5(b) for the reasons that (1) no alternative location with access to seawater was described by the commenter; (2) locations remote from the ocean would be infeasible due to the lack of access to seawater, or the extremely high costs and logistical problems of pumping seawater and brine to and from the desalination facility remote from the ocean; and (3) another location in San Diego County would require the construction of a new seawater intake system. The construction of new seawater intake systems at sites other than the EPS was found to be infeasible due to the costs of constructing a completely new intake system when the existing intake operated at EPS is available to meet CDP’s intake needs while under co-located operation.

### **MITIGATION**

Chapter 6 of the March 27, 2009 Minimization Plan addresses the best available mitigation feasible to minimize the intake and mortality of marine life pursuant to CWC Section 13142.5(b).

The Minimization Plan provides for the implementation of mitigation in addition to, as opposed to in lieu of, site, design, and technology measures to minimize the intake and mortality of marine life.

Chapter 5 of the Minimization Plan estimates potential entrainment and impingement that may be associated with the CDP under conditions tantamount to stand-alone operations with a permanent shutdown of the EPS. That is, these estimates assume that the CDP receives all 304 MGD of its source water from AHL and no water from the EPS's discharges. These estimates are not reduced to account for co-located operations, although the Order will require review under Water Code section 13142.5(b) of mitigation if CDP proposes to operate in stand-alone mode, with permanent shut down of EPS generating units.

Chapter 6 of the Minimization Plan prescribes mitigation requirements, the implementation of which is expected to fully compensate for the potential entrainment and impingement identified in Chapter 5. The Order requires productivity monitoring through establishment of a fish productivity standard, or biological performance standard, of 1,715.5 kg/year. In addition, the success of mitigation for entrainment associated with CDP's operations will be measured through the MLMP.

### **Entrainment**

For purposes of preparing the MLMP, the CDP's entrainment was projected using the Empirical Transport Model ("ETM"), which is a widely used model to estimate mortality rates resulting from water intake systems. The ETM calculates what is known as the Area of Production Foregone (APF)—a value that represents the number of acres of habitat that will provide wetlands benefits sufficient to mitigate for the fish larvae that pass through the intake screens and become entrained in a water intake system.

As discussed in the Minimization Plan, the ETM is an algebraic model that incorporates two basic variables: Source Water Body (SWB) and Proportional Mortality (Pm). The Source Water Body (SWB) represents the number of acres in which larvae populations are subject to entrainment. The SWB value is limited to the area in which mature fish produce eggs and larvae. If mature fish do not spawn in a given area, that area will contain no entrainable organisms—i.e., no larvae to be drawn into and entrained by the intake system. The SWB for the CDP is primarily AHL.

Proportional Mortality (Pm) represents the percentage of the population of a marine species in a given water body that will be drawn in and entrained by a water intake system. The Pm ratio is calculated by dividing (a) the number of larvae that are entrained in a water intake system by (b) the number of larvae in the same water body that are subject to entrainment (i.e., entrainable).

Tenera Environmental ("Tenera") collected entrainment samples in AHL as part of its entrainment and impingement study. Based on the entrainment data derived from sampling at the EPS intake, Tenera estimated the proportional entrainment mortality (Pm) of the most commonly entrained larval fish living in AHL by applying the ETM to

the data. To estimate the CDP's potential entrainment, Tenera computed the values based on a total flow rate of 304 MGD. Tenera concluded that the entrainment effect of the Project's stand-alone operation would influence 36.8 acres of Agua Hedionda Lagoon (i.e., APF = 36.8 acres). The ETM results presented in the Minimization Plan incorporated the assumptions of 100% mortality of all marine organisms entering the intake and that species are evenly distributed throughout the entire depth and volume of the water body.

In March 2008, the Discharger provided a copy of its entrainment study to the Coastal Commission as required by Special Condition 8 of the CDP's Coastal Development Permit. Coastal Commission staff forwarded the study to Dr. Pete Raimondi for his review and recommendations. Dr. Raimondi provided the initial results of his review and recommendations to the California Coastal Commission (CCC) in April 2008. In consultation with Dr. Peter Raimondi, the CCC evaluated the data provided by Poseidon, and determined it appropriate to apply an 80% confidence interval to the APF results, resulting in 49 acres of mitigation. For impacts to nearshore ocean waters, the CCC imposed an additional 6.4 acres of wetland mitigation, on the basis that wetland habitat would be ten times more productive than nearshore habitat. The CCC concluded that 55.4 acres of wetland mitigation, to be implemented in two phases (an initial 37 acres, followed by an additional 18.4 acres), would adequately compensate for entrainment impacts for operation of the CDP at 304 MGD.

After reviewing Tenera and Dr. Raimondi's work, the Coastal Commission concluded that by creating or restoring up to 55.4 acres of estuarine wetlands, the Discharger "will ensure the project's entrainment-related impacts will be fully mitigated and will enhance and restore the marine resources and biological productivity of coastal waters..." (Condition Compliance Findings for Special Condition 8, Marine Life Mitigation Plan, November 21, 2008, (approved December 10, 2008), p. 19 of 19.)

No new entrainment data has been generated since evaluation by the CCC. Therefore, it is appropriate for the Regional Board to rely on the CCC's findings with regards to the adequacy of mitigation for entrainment impacts

## **IMPINGEMENT**

Like the entrainment projection, the CDP's impingement projection was calculated using data collected pursuant to the EPS's Regional Board-approved 316(b) Impingement Mortality and Entrainment Characterization Study plan. Tenera collected 52 impingement samples on a weekly basis from June 24, 2004 to June 15, 2005.

As a result of extensive discussions following the February 11, 2009 meeting, the Discharger submitted a revised Minimization Plan on March 27, 2009, including five (5) approaches that could be used to estimate the potential for impingement when the CDP operates in stand-alone mode. (See Minimization Plan Attachment 5.)

While the Discharger believes that the amount of impingement from the CDP under standalone operations will be less 1.56 kg/day rather than 4.7 kg/day resulting from Proportional Approach 3-B set forth in Attachment 5, the Discharger has agreed to provide mitigation for impingement at an amount equal to 4.7 kg/day through a commitment to produce up to 4.7 kg/day (1715.5 kg/year) of "available" fish biomass in the mitigation wetlands, meeting a fish productivity standard of 1,715.5 kg/year. Fish productivity studies indicate that the mitigation wetlands will likely produce approximately 150 kg/acre/year of available fish biomass. (Larry G. Allen, Seasonal Abundance, Composition, and Productivity of the Littoral Fish Assemblage in Upper Newport Bay, California, 80 Fishery Bull. 769 (1982), referenced in Attachment 7 to the Minimization Plan.)

The Discharger has explained that the mitigation proposed in the MLMP was designed to compensate for the three most commonly entrained lagoon fish groups, and the 5 most commonly entrained ocean species. Under this assumption, the mitigation wetlands are expected to produce fish biomass in excess of that which is earmarked for entrainment mitigation as described in Attachment 7 to the Minimization Plan. Based on the acreage designated for intertidal/sub-tidal (27) and nearshore/ocean (6.4), mitigation by the CCC, to the extent that the mitigation wetlands produce:

- a. The three (3) most commonly entrained lagoon species, 12% (i.e., 6.4/55.4 acres) of their biomass would be available to count toward productivity for impingement;
- b. The five (5) most commonly entrained ocean species, 88% (i.e., 37/55.4 acres) of their biomass is available to contribute toward productivity for impingement; and
- c. All other fish, 100% of their biomass is available to contribute toward productivity for impingement.

Although 12% of the biomass of the three (3) most commonly entrained lagoon species is not reserved for entrainment mitigation and, as a logical matter, may be used to offset potential impingement, the Discharger proposed in its Minimization Plan to exclude this biomass from the impingement mitigation accounting. For present purposes, therefore, the biomass of these three identified most commonly entrained lagoon species is never available as impingement mitigation credit.

By committing to creating or restoring up to 55.4 acres of estuarine wetlands, the Discharger provides a reasonable basis for concluding that the mitigation wetlands will produce more than 1715.5 kg/year of fish biomass which is available to fully mitigate for impingement associated with CDP's operations. The Discharger has provided expert opinion that the mitigation site(s) provided for under the MLMP will result in a net productivity of fish biomass and provide mitigation for both entrainment and impingement. Specifically, the Discharger concludes that every acre of subtidal mudflats and/or intertidal habitat will produce approximately 150 kg/year of fish biomass. The MLMP's minimum standards provide that the mitigation site(s) must have

potential for extensive intertidal and subtidal areas. Assuming 60% of the restored habitat consists of new subtidal and intertidal wetlands, the 37 acres to be constructed in Phase I are expected to yield approximately 3,330 wet weight (ww)/year of fish biomass, and the mitigation of 55.4 acres of such habitat are expected to yield approximately 4,986 kg ww/yr of fish biomass.

To demonstrate that the mitigation wetlands produce at least 1715.5 kg/year of fish biomass available to compensate for impingement losses, as described in the Minimization Plan, the Discharger must conduct productivity monitoring in accordance with a plan submitted by the Discharger for review to the CCC's Scientific Advisory Panel and review and approval by the Executive Officer pursuant to this Order. This monitoring will be for purposes of measuring fish productivity according to specific methodologies used by Allen, , Seasonal Abundance, Composition, and Productivity of the Littoral Fish Assemblage in Upper Newport Bay, California, 80 Fishery Bull. 769 (1982), referenced in Attachment 7 to the Minimization Plan. The Discharger may propose additional or different methodologies, subject to review by the Scientific Advisory Panel and review and approval by the Executive Officer.

The Discharger will also be required to monitor impingement associated with CDP operations once they commence operations and may propose that the Executive officer adjust the fish productivity standard as appropriate. This monitoring program provides for empirical verification of both the CDP's impingement and the effective offset of such impingement in the mitigation site(s).

### **Board Interpretation And Application Of Section 13142.5(b)**

Under Section VI.C.2.e. of Order No. R9-2006-0065, the Regional Board reviews the Minimization Plan to assure that the Project will be in compliance with CWC Section 13142.5(b), which provides that: "For each new or expanded coastal power plant or other industrial installation using seawater for cooling, heating or industrial processing, 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."

Order No. R9-2006-0065 requires an approved Minimization Plan to ensure that the CDP complies with CWC Section 13142.5(b) when under conditions of co-location operation for CDP benefit. To approve the Minimization Plan, the Regional Board must determine that it provides for the use of the best available site, design, technology, and mitigation feasible to minimize intake and mortality of all forms of marine life under these operating conditions.

Counsel for Surfrider and Coastkeeper have argued in numerous public comments and pending litigation that the Regional Board's interpretation of CWC Section 13142.5(b) must be harmonized with judicial interpretation of Section 316(b) of the federal Clean Water Act, specifically *Riverkeeper, Inc. v. U.S. E.P.A.*, 475 F.3d 83 (2007), *rev'd, remanded sub nom. Entergy Corp. v. Riverkeeper, Inc.*, No. 07-588, 2009 U.S. LEXIS 2498 (U.S. Apr. 1, 2009). To clarify, as found in R9-2006-0065, the Regional Board

finds that the Project is not subject to Clean Water Act Section 316(b), and further finds that it is unnecessary to determine whether CWC Section 13142.5(b) should be interpreted in accordance with Clean Water Act Section 316(b). The Regional Board has analyzed the Minimization Plan to ensure that it provides for the use of the best available site, design, technology, and mitigation feasible to minimize intake and mortality of all forms of marine life, as is required to satisfy CWC Section 13142.5(b).

Counsel for Surfrider and Coastkeeper have also argued in numerous public comments that CWC Section 13142.5(b) must be interpreted to require avoidance of intake and mortality first, and then mitigation of any residual intake and mortality that cannot be avoided. In accordance with this theory, they argue that CWC Section 13142.5(b) creates a hierarchy for minimization, pursuant to which site, design, and technology approaches must be selected first, with resort to mitigation only if those three approaches do not minimize intake and mortality. In this instance, this theory is irrelevant as those mitigation measures set forth under the Minimization Plan and, correspondingly the MLMP, are being made in addition to, and not in place of, measures taken under the site, design and technology elements of CWC Section 13142.5(b) to minimize intake and mortality of marine organisms by impingement and entrainment.

The theory put forth by counsel for Surfrider and Coastkeeper that CWC Section 13142.5(b) creates a hierarchy of actions also is incorrect. CWC Section 13142.5(b) does not express any preference for site, design and technology, over mitigation. It does not characterize the former three approaches as avoidance approaches, to be distinguished from mitigation. It does not reserve mitigation only for those situations where intake and mortality cannot be avoided. Rather, CWC Section 13142.5(b) provides discretion to the Regional Board to strike an appropriate balance among these various factors, as may be achieved through a variety of approaches relying to greater and lesser degrees on the four approaches authorized by the California Legislature to minimize intake and mortality.

While unnecessary, the Regional Board has determined that its interpretation of CWC Section 13142.5(b) corresponds with the interpretation set forth by the California Court of Appeal, Sixth District in *Voices of the Wetlands v. California State Water Resources Control Board*, 157 Cal. App. 4th 1268, 1351 (2007), *modified, reh'g granted*, No. H028021, 2008 Cal. App. LEXIS 28 (Cal. Ct. App. Jan. 10, 2008), *review granted, depublished by*, 74 Cal. Rptr. 3d 453 (2008), *reserved by*, No. S160211, 2009 Cal. LEXIS 450 (Cal. Jan. 14, 2009), which states: "California law makes mitigation a legitimate factor in certain circumstances. For example, a provision of state water law contained in the Porter-Cologne Act, which governs 'each new or expanded coastal power plant,' expressly recognizes the availability of 'mitigation measures' as one way 'to minimize the intake and mortality of all forms of marine life.' (Wat. Code, § 13142.5, subd. (b).)"

### **GENERAL**

Implementation of the Minimization Plan, including its provisions related to impingement and entrainment, is not required by the federal Clean Water Act and does not represent an effluent standard or limitation within the meaning of Section 1365 of the federal Clean Water Act, 33 U.S.C.S. § 1365. By requiring implementation of the Minimization Plan, the Regional Board is requiring compliance with California Water Code Section 13142.5(b) and is mandating through this permit amendment a greater scope of coverage than that required by the federal Clean Water Act and its implementing regulations. These requirements are imposed solely as a function of state law for which there is no federal corollary, do not relate to state water quality standards, and do not relate to the planning, monitoring, and reporting requirements of the receiving waters limitations and/or effluent limitations of the CDP's NPDES permit, or any other element of the Clean Water Act's enforcement procedures.

**SAN DIEGO REGIONAL BOARD RESPONSES TO COMMENTS  
POSEIDON RESOURCES CORPORATION, CARLSBAD DESALINATION PROJECT  
FLOW, ENTRAINMENT AND IMPINGEMENT MINIMIZATION PLAN  
ORDER NO. R9- 2009-0038, AMENDING ORDER NO. R9-2006-0065, NPDES NO. CA0109223**

<i>COMMENT NUMBER</i>	<i>COMMENTS and/or CONCERNS</i>	<i>REGIONAL BOARD RESPONSE</i>
<b>3/14/2008 letter from San Diego Desal Partners</b>		
1.	In anticipation that the Encina Power Station (EPS) might not always satisfy the CDP's source water demands, the Regional Board required Poseidon to submit a Flow, Entrainment and Impingement Minimization Plan (Plan) to assess the feasibility of site specific plans, procedures, and practices to be implemented and/or mitigation measures to minimize the impacts to marine organisms when the CDP intake requirements exceed the volume of water being discharged by the EPS. The Regional Board review and approval of the Plan will address any additional review of the proposed desalination facility required pursuant to Water Code. The Plan has been available for public comment for the past 12 months and extensively revised on two occasions in response to Regional Board and public comments. As elected and appointed public officials, we urge your approval of the revised Flow, Entrainment & Impingement Minimization Plan before you.	Comments noted.
<b>3/19/2008 letter from San Diego Coastkeeper and Surfrider Foundation</b>		
2.	We request a 30-day public comment period on the revised "Flow, Entrainment and Impingement Minimization Plan" (Minimization Plan) that was submitted by Poseidon Resources to the Regional Board on March 6, 2008.	This order would approve the March 9, 2009 Minimization Plan as revised March 27 (hereafter March 27, 2009 Minimization Plan) and would supersede Resolution No. R9-2008-0039 adopted on April 9, 2008. The Regional Board has met all applicable public notice requirements for this Order.
3.	In approving Tentative Order No. R9-2006-0065, granting NPDES Permit No. Ca0109223 (NPDES permit), the Regional Board considered public comments received during	This order would approve the March 9, 2009 Minimization Plan as revised March 27 (hereafter March 27, 2009 Minimization Plan)

Supporting Document No. 11



**SAN DIEGO REGIONAL BOARD RESPONSES TO COMMENTS  
POSEIDON RESOURCES CORPORATION, CARLSBAD DESALINATION PROJECT  
FLOW, ENTRAINMENT AND IMPINGEMENT MINIMIZATION PLAN  
ORDER NO. R9- 2009-0038, AMENDING ORDER NO. R9-2006-0065, NPDES NO. CA0109223**

<b>COMMENT NUMBER</b>	<b>COMMENTS and/or CONCERNS</b>	<b>REGIONAL BOARD RESPONSE</b>
	<p>an extensive comment period. The original NPDES permit comment period started on May 8, 2006 and closed on June 14, 2006. After revisions to the NPDES permit were made, a second comment period was conducted until August 9, 2006. Thus, the original approval of the NPDES permit provided for almost 60 days of public comment. In contrast, today's post of the agenda on the Board's website provides only seven days for written comments (which will be extensive in keeping with the voluminous documents submitted by Poseidon) and a maximum comment period of 21 days before the hearing itself.</p>	<p>and would supersede Resolution No. R9-2008-0039 adopted on April 9, 2008. The Regional Board has met all applicable public notice requirements for this Order.</p>
<p>4.</p>	<p>As a consolidated permit issued pursuant to section 402 of the Federal Clean Water Act (CWA) and Chapter 5.5, Division 7 of the California Water Code (CWC), Poseidon's permit is subject to section 10206 of the California Code of Regulations. Section 10206 states that a "summary of all decisions made pursuant to the consolidated permit for the project shall be made available for public review and comment upon the filing of the consolidated permit application form or the permit applications." (emphasis added). Because the Minimization Plan is subject to approval and modification by the Regional Board, review of the Minimization Plan qualifies as a "decision made pursuant" to the NPDES permit.</p>	<p>A consolidated permit is defined in Title 27 Section 10100 (c) as "a permit incorporating the environmental permits granted by environmental agencies for a project and issued in a single permit document by the consolidated permit agency."</p> <p>Order No. R9-2006-0065 does not fall within the definition of a consolidated permit as defined in Title 27 Section 10100.</p>
<p>5.</p>	<p>To allow time for coordination of a stakeholder meeting, adequate review by our experts, and full public participation, we request a formal public comment period. This action is necessary given that this project presents a new interpretation and implementation of the language in CA Water Code § 13142.5(b). Granting a formal comment period, with responses from staff, will assure that Board</p>	<p>This comment is no longer applicable.</p>

**SAN DIEGO REGIONAL BOARD RESPONSES TO COMMENTS  
POSEIDON RESOURCES CORPORATION, CARLSBAD DESALINATION PROJECT  
FLOW, ENTRAINMENT AND IMPINGEMENT MINIMIZATION PLAN  
ORDER NO. R9- 2009-0038, AMENDING ORDER NO. R9-2006-0065, NPDES NO. CA0109223**

<b>COMMENT NUMBER</b>	<b>COMMENTS and/or CONCERNS</b>	<b>REGIONAL BOARD RESPONSE</b>
	<p>members have all information before considering this important issue. Providing a sufficient amount of time may also avoid unnecessary complications in the permitting process in the future. We believe this project deserves extraordinary scrutiny in that the outcome has the potential to set important precedent for numerous similar project proposals statewide.</p>	
<b>3/20/2008 letter from Coastal Commission</b>		
6.	<p>For the reasons provided below, we recommend the Board not take action on the Revised Plan at this time.</p> <p>In November 2007, the Coastal Commission approved a coastal development permit for Poseidon's desalination facility. Among the Commission's conditions of approval was a requirement that Poseidon submit its complete entrainment study and an acceptable Marine Life Mitigation Plan for further Commission review and approval before it can be issued a coastal development permit. For several reasons, we have determined that Poseidon's current Revised Plan is not yet adequate for Commission consideration - for instance, until we complete our review of Poseidon's entrainment study, we cannot determine whether Poseidon's proposed mitigation is appropriate or adequate to address the project's entrainment impacts; additionally, the mitigation options described in the Revised Plan do not include enough certainty or detail to show how they will actually mitigate for any anticipated impacts.</p> <p>We have taken steps to address the Revised Plan's current shortcomings. Regarding the entrainment study, Poseidon submitted additional necessary information about the study last week, and we have hired an independent science team to review that information for adequacy. We expect that</p>	Comments noted.

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POSEIDON RESOURCES CORPORATION, CARLSBAD DESALINATION PROJECT  
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	<p>review to be completed by mid-April. Additionally, we have been working with involved agencies, including Regional Board staff, to help Poseidon develop the mitigation measures suitable for Commission approval.</p> <p>With these coordination efforts underway, we believe it would be in the best interest of all parties for the Regional Board to refrain from taking action on Poseidon's current Revised Plan until the above-described interagency coordination initiatives have occurred. Although the Board is reviewing Poseidon's project under standards different from those of the Coastal Commission, we believe that deferral by the Board of its decision will facilitate coordination efforts between our two agencies and will result in a mitigation plan that fulfills the standards of the Regional Board, the State Lands Commission, and the Coastal Commission, all of which have common but distinct interests in protecting water quality and marine life. Further, if the Board were to approve the Revised Plan in its current form, Poseidon would still need to incorporate significant additional information and changes into its Plan to provide the certainty needed for the required Commission review and approval.</p> <p>Finally, we are concerned that action by the Board at this time on the Revised Plan would create a real or perceived conflict between the Board's action and the requirements imposed by the Commission in its November 2007 approval of Poseidon's project. This is likely to slow or confuse our ongoing review and coordination process, resulting in delay for Poseidon's project.</p>	
<b>3/26/2008 letter from Industrial Environmental Association</b>		
7.	In October 2006, your Board issued a discharge permit for this project but further required a Flow, Entrainment and	Comments noted.

**SAN DIEGO REGIONAL BOARD RESPONSES TO COMMENTS  
POSEIDON RESOURCES CORPORATION, CARLSBAD DESALINATION PROJECT  
FLOW, ENTRAINMENT AND IMPINGEMENT MINIMIZATION PLAN  
ORDER NO. R9- 2009-0038, AMENDING ORDER NO. R9-2006-0065, NPDES NO. CA0109223**

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	<p>Impingement Minimization Plan be submitted to provide additional regulatory safeguards. That plan was submitted and has been revised twice at the request of your staff.</p> <p>The San Diego Regional Board will be voting on whether or not to accept and approve that plan on April 9. We believe that Poseidon has clearly demonstrated that they are using all feasible methods to reduce their entrainment and impingement impacts on the lagoon.</p> <p>Until your board approves this mitigation plan, the project cannot return to the State Lands Commission and the California Coastal Commission for the final project approvals needed before construction can begin.</p>	
<b>3/26/2008 letter from City of Carlsbad, Office of the City Council</b>		
8.	<p>It's important to know that every regulatory agency that has reviewed the project, including the Coastal Commission itself, has determined the project to be necessary and environmentally sound. An unbiased, scientific review of the project has concluded that the Carlsbad desalination facility is a critical water supply project and an environmental preservation and enhancement project. It's a win-win.</p> <p>The Flow, Entrainment and Impingement Minimization Plan contains full and comprehensive response to the Regional Board's requirement that Poseidon assess the feasibility of the best available site, design, technology and mitigation for protection of the Pacific Ocean and Agua Hedionda Lagoon marine ecosystem. Your board's decision to accept and finalize this plan should be dependent solely on the merit of the plan - not by another agency's attempt to overstep its authority and undermine yours. Furthermore the plan complies with California Water Code Section 13142.5(b) and</p>	Comments noted.

**SAN DIEGO REGIONAL BOARD RESPONSES TO COMMENTS  
POSEIDON RESOURCES CORPORATION, CARLSBAD DESALINATION PROJECT  
FLOW, ENTRAINMENT AND IMPINGEMENT MINIMIZATION PLAN  
ORDER NO. R9- 2009-0038, AMENDING ORDER NO. R9-2006-0065, NPDES NO. CA0109223**

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	<p>by taking action the Regional Board is in no way violating the spirit or letter of the Porter-Cologne Act, as insinuated by Coastal Commission staff.</p>	
<b>3/26/2008 letter from Hubbs- Sea World Research Institute</b>		
<p>9.</p>	<p>Over the years, HSWRI has provided written and oral testimony in support of the Carlsbad Desalination Project after reviewing the project very thoroughly to ensure that it would not have a negative impact on our operations. We have also studied their Flow, Entrainment and Impingement Minimization Plan which your board requested after approving a discharge permit for the project in 2006.</p> <p>We find that the desalination project has been designed with more than adequate coastal protections and mitigation measures to ensure the health of the marine ecosystem.</p> <p>It's also important to know approval of the project will result in additional lagoon acreage to be dedicated to the City of Carlsbad for the expansion of our white seabass enhancement program or related marine research. This dedication is in addition to the project's proposed mitigation plan and constitutes added environmental value.</p> <p>We have also reviewed the recently released draft Flow, Entrainment and Impingement Minimization Plan, which we believe to be a clear demonstration of the project's regard for the marine environment, especially the nearby lagoon which supports some endangered species.</p> <p>I urge you to approve this plan and bring our region one step closer to a reliable, affordable supply of water</p>	<p>Comments noted.</p>

**SAN DIEGO REGIONAL BOARD RESPONSES TO COMMENTS  
POSEIDON RESOURCES CORPORATION, CARLSBAD DESALINATION PROJECT  
FLOW, ENTRAINMENT AND IMPINGEMENT MINIMIZATION PLAN  
ORDER NO. R9- 2009-0038, AMENDING ORDER NO. R9-2006-0065, NPDES NO. CA0109223**

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<b>3/26/2008 letter from San Diego North Economic Development Council</b>		
10.	<p>Seawater desalination is a critical component of the region's water supply strategy.</p> <p>Once approved, the Carlsbad Desalination Project will provide as much as 10% of our region's water needs at no additional costs to government or taxpayers. It is a win-win for the entire county which will benefit from an abundant, affordable and environmentally-benign water supply.</p> <p>Poseidon Resources' Flow, Entrainment and Impingement Minimization Plan before you on April 9th meets the requirements of the discharge permit the Regional Board issued in 2006. The Regional Board has the full discretion to approve the Plan and advance the project.</p> <p>On behalf of our members and all of their employees, we respectfully ask the Board to finalize approval of the discharge permit. It's the right decision for the region.</p>	Comments noted.
<b>3/26/2008 letter from Andrew Davis, Carlsbad Aquafarm</b>		
11.	<p>My business cannot operate if the Agua Hedionda Lagoon is not healthy. At some point in the future, the Encina Power Plant will be decommissioned and their stewardship of the lagoon will end. That is why it is so important for the Carlsbad Desalination Project to be approved. The owners of the project, Poseidon Resources, have agreed to maintain and dredge the lagoon in perpetuity, guaranteeing it stays healthy. Poseidon's <i>Flow, Entrainment and Impingement Minimization Plan</i> clearly lays out how they will minimize impacts in the lagoon and identifies a feasible mitigation plan to protect marine life.</p> <p>While I appreciate the input of outside organizations like the</p>	Comments noted.

**SAN DIEGO REGIONAL BOARD RESPONSES TO COMMENTS  
POSEIDON RESOURCES CORPORATION, CARLSBAD DESALINATION PROJECT  
FLOW, ENTRAINMENT AND IMPINGEMENT MINIMIZATION PLAN  
ORDER NO. R9- 2009-0038, AMENDING ORDER NO. R9-2006-0065, NPDES NO. CA0109223**

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	<p>Surfrider Foundation, I hope that you will take into consideration the opinion of someone who relies entirely on the health of Agua Hedionda Lagoon for the success of my business. I am satisfied that the applicant has taken all necessary steps to ensure a healthy lagoon and marine environment. Please approve the Carlsbad Desalination Project minimization plan.</p>	
<b>3/27/2008 letter from Sweetwater Authority</b>		
12.	<p>Poseidon Resources' desalination project has gained enthusiastic support from water agencies, cities, businesses, residents, and elected officials, including our entire state and federal delegation. While we appreciate the due diligence that regulatory agencies have taken to ensure this is the most environmentally-benign project possible, we believe it has been thoroughly vetted and utilizes every possible avenue for reducing impacts to the marine environment.</p> <p>The Sweetwater Authority Board of Directors asks you to make the right decision and approve the Flow, Entrainment and Impingement Minimization Plan for the Carlsbad Desalination Project.</p>	Comments noted.
<b>3/27/2008 letter from Christine Kehoe, Senate, 39th District</b>		
13.	<p>This minimization plan has been prepared and available for your review for the past year. The discharge permit and related minimization plan offer far-reaching design, technology and mitigation measures that will ensure that the plant is operated in a manner consistent with state law.</p> <p>As Chair of the Senate Committee on Energy, Utilities and Communications and as a longtime member of the Senate Committee on Natural Resources and Water, I know how important it is to have a reliable local water supply to serve</p>	Comments noted.

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POSEIDON RESOURCES CORPORATION, CARLSBAD DESALINATION PROJECT  
FLOW, ENTRAINMENT AND IMPINGEMENT MINIMIZATION PLAN  
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	<p>the San Diego region's needs. This important project has enjoyed the unanimous support of the San Diego's state legislative delegation as expressed in a letter to the California Coastal Commission when they considered the issuance of the project's coastal development permit this past summer.</p> <p>I respectfully urge the RWQCB to now approve the discharge permit to help the San Diego region achieve a new, local, drought-proof water supply.</p>	
<b>3/27/2008 letter from San Diego Regional Economic Development Corporation</b>		
14.	<p>EDC would like to offer its full support of the Carlsbad desalination plant. We believe that this project will provide San Diego with the diverse, reliable, environmentally sound water supply that it desperately needs.</p> <p>Your Board has already issued a discharge permit for this project. Poseidon Resources is complying with the permit's conditions by submittal of its Flow, Entrainment and Impingement Minimization Plan. The plan identifies feasible mitigation opportunities and provides regulatory assurances that the implementation of the mitigation plan will continue to be subject to a state-agency's coordinated process to ensure the best available mitigation feasible.</p>	Comments noted.
<b>3/27/2008 letter from San Dieguito River Valley Regional Open Space Park</b>		
15.	<p>Our interest in the Carlsbad Desalination Project is linked to Poseidon Resources proposed coastal habitat restoration project.</p> <p>In the summer of 2007, the River Park responded to Poseidon's request for expressions of interest for the development and implementation of a coastal habitat restoration project. As you are aware, a major restoration</p>	Comments noted.



**SAN DIEGO REGIONAL BOARD RESPONSES TO COMMENTS  
POSEIDON RESOURCES CORPORATION, CARLSBAD DESALINATION PROJECT  
FLOW, ENTRAINMENT AND IMPINGEMENT MINIMIZATION PLAN  
ORDER NO. R9- 2009-0038, AMENDING ORDER NO. R9-2006-0065, NPDES NO. CA0109223**

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	<p>project is underway in the San Dieguito River Valley about 12 miles south of Poseidon's proposed desalination facility. This Project is being funded by Southern California Edison as mitigation for the entrainment and impingement impacts from its San Onofre Power Plant.</p> <p>The restoration proposal we provided Poseidon will expand the number of acres of functional wetlands and associated habitat in the San Dieguito Lagoon area, by supplementing the 115-acre Wetlands Restoration Project, which is currently underway.</p> <p>The proposed restoration projects will create approximately 37 acres of marine wetlands and additional acres of associated native grassland habitat from what is now entirely disturbed land. The project includes maintenance and monitoring to ensure the successful re-establishment of planted species. A second component of this project is funding for enhanced water quality sampling, testing and monitoring of the proposed water quality treatment ponds.</p> <p>We are currently doing a feasibility study to ensure that Poseidon's proposed coastal habitat restoration project will complement the ongoing restoration project while providing additional restored habitat in the San Dieguito Lagoon that closely matches the habitat in Agua Hedionda Lagoon.</p>	
<b>3/27/2008 letter from California Coastal Coalition</b>		
16.	<p>CalCoast has spoken out on behalf of the Carlsbad Desalination Project numerous times because we believe that this project has been designed and will be operated with careful consideration of the coastal environment and habitat.</p> <p>We have given considerable consideration to Poseidon's</p>	Comments noted.

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	<p>proposal and find that the project includes the necessary design, technology and mitigation measures for one to conclude it represents an environmentally responsible use of coastal property and public trust resources.</p> <p>Over the last several years we have provided written and/or oral testimony before the Regional Board, State Lands Commission and California Coastal Commission. After considerable regulatory scrutiny, it is clearly time to move this project forward. The desalination facility would offer many benefits to the region and the California Coastal Coalition is pleased to offer our full support of the desalination project.</p>	
<b>3/27/2008 letter from San Diego County Building &amp; Construction Trades Council, AFL-CIO</b>		
17.	<p>The Carlsbad desalination project will have significant economic benefit for the region, including an estimated \$170 million in spending during construction, 2,100 jobs created during construction, and \$37 million in annual spending throughout the region once the desalination plant is operational.</p> <p>The building trades industry has a strong record of promoting and protecting the environment. We believe that this particular project strikes the right balance between strengthening the economy and preserving the coastal marine environment, especially the Agua Hedionda Lagoon.</p> <p>For the region, the desalination facility will create jobs, generate tax revenue, improve water quality and enhance water reliability with a new drought-proof supply. We urge your approval of the Carlsbad Desalination Project, which will bring this region one step closer to a safe, reliable and cost-effective water supply.</p>	Comments noted.

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POSEIDON RESOURCES CORPORATION, CARLSBAD DESALINATION PROJECT  
FLOW, ENTRAINMENT AND IMPINGEMENT MINIMIZATION PLAN  
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<b>3/27/2008 letter from Robert Simmons Counselor-at-Law</b>		
18.	<p>In my opinion, the project's entrainment and impingement minimization plan is a good one. As you know, the plan details procedures to minimize impacts on marine life during a temporary or permanent reduction or shutdown of the Encina power plant generation, i.e., when the project's intake requirements exceed the power station's discharges. The current productive state of the adjacent lagoon is primarily due to the good stewardship of the power station, which daily circulates seawater throughout the lagoon and dredges its entrance, annually. These actions have transformed the lagoon from the stagnant marsh of the past to the healthy ecosystem we see today.</p> <p>Opponents of this project have falsely argued to you (and unsuccessfully, to courts and other agencies) that the Federal Clean Water Act (CWA Section 316) applies to this desalination plant. This is legally incorrect! In truth, the plant is regulated under the California Water Code Section 13142.5. This provision requires industrial facilities using seawater for processing to use the best available site, design, technology, and feasible mitigation-to minimize impacts to marine life. In my opinion, the plan before you for decision on April 9 clearly meets all the requirements of this law and I urge you to approve it.</p>	Comments noted.
<b>3/27/2008 letter from Rainbow Municipal Water District</b>		
19.	I am writing today on behalf of Poseidon Resources' Carlsbad Desalination Project and asking you to approve their Flow, Entrainment and Impingement Minimization Plan. Please accept this letter as a declaration of Rainbow Municipal Water District's support and endorsement for this important project.	Comments noted.

**SAN DIEGO REGIONAL BOARD RESPONSES TO COMMENTS  
POSEIDON RESOURCES CORPORATION, CARLSBAD DESALINATION PROJECT  
FLOW, ENTRAINMENT AND IMPINGEMENT MINIMIZATION PLAN  
ORDER NO. R9- 2009-0038, AMENDING ORDER NO. R9-2006-0065, NPDES NO. CA0109223**

<b>COMMENT NUMBER</b>	<b>COMMENTS and/or CONCERNS</b>	<b>REGIONAL BOARD RESPONSE</b>
	<p>Now it is up to your Board to ensure that our efforts to protect our agricultural customers are not in vain. We understand that you will be holding a hearing on April 9th to approve the project's Flow, Entrainment and Impingement Minimization Plan. We believe this plan is in full compliance with applicable state water regulations, specifically Water Code Section 13142.5(b).</p> <p>Poseidon Resources has repeatedly accommodated requests for information and demands for additional stringent mitigation measures. On behalf of Rainbow Municipal Water District, I urge the State Water Resources Control Board to approve this project and bring us one step closer to solving our region's long-term water reliability needs.</p>	
<b>3/28/2008 letter from Vallecitos Water District</b>		
20.	<p>We have thoroughly reviewed the project's Flow, Entrainment and Impingement Minimization Plan and have determined that this plan meets the Regional Board's requirement that Poseidon assess the feasibility of the site, design, technology, and mitigation measures to minimize impacts to marine life.</p> <p>We believe that this project presents the best most environmentally expedient opportunity for siting a desalination facility in San Diego. The research that has been done verifies that the environmental impacts will be minor at this site, with or without the Encina Power Plant. Poseidon Resources has made every effort to mitigate even minor impacts and has committed to restoring 37 acres of wetland habitat, dedicating 15 acres for public access, recreation and marine research, and providing maintenance to the lagoon itself after the power plant is taken off line. These are major commitments that confirm the ecological benefits of the</p>	Comment noted. Poseidon will be required to minimize and mitigate the environmental impacts in compliance with Water Code Section 13142.5(b).

**SAN DIEGO REGIONAL BOARD RESPONSES TO COMMENTS  
POSEIDON RESOURCES CORPORATION, CARLSBAD DESALINATION PROJECT  
FLOW, ENTRAINMENT AND IMPINGEMENT MINIMIZATION PLAN  
ORDER NO. R9- 2009-0038, AMENDING ORDER NO. R9-2006-0065, NPDES NO. CA0109223**

<i>COMMENT NUMBER</i>	<i>COMMENTS and/or CONCERNS</i>	<i>REGIONAL BOARD RESPONSE</i>
	project.	
<b>3/28/2008 letter from City of Oceanside</b>		
21.	<p>Poseidon Resources submitted the Flow, Entrainment and Impingement Minimization Plan in February 2007 to RWQCB and it has been available for public review since that time. Poseidon has revised the plan several times in response to comments from the Board, staff and public. The plan fulfills the Regional Board's requirement that Poseidon assess the feasibility of site, design, technology and mitigation measures to minimize impact to the marine environment. We believe that Poseidon's proposed mitigation approach and regulatory assurances are more than adequate for this project and should be approved.</p> <p>In closing, the Carlsbad Desalination Project is a positive step in the right direction for our region's future water supply. As demonstrated in their Flow, Entrainment and Impingement Minimization Plan, it will be environmentally- responsible and proactive in minimizing any potential impacts. The City of Oceanside respectfully requests that you vote in favor of this badly-needed project.</p>	Comments noted.
<b>3/28/2008 San Diego Regional Chamber of Commerce</b>		
22.	<p>In the Chamber's opinion, Poseidon Resources has designed an environmentally-superior project that will have minimal impact to marine life found in the lagoon and surrounding coastal areas. In addition to their commitment to ongoing lagoon maintenance, Poseidon has also committed to a 37-acre wetlands restoration program and a comprehensive Climate Action Plan that will eliminate the plant's carbon footprint. We appreciate their extraordinary efforts to make this project both environmentally and fiscally responsible, while reducing our county's dependence on imported water.</p>	Comment Noted.

**SAN DIEGO REGIONAL BOARD RESPONSES TO COMMENTS  
POSEIDON RESOURCES CORPORATION, CARLSBAD DESALINATION PROJECT  
FLOW, ENTRAINMENT AND IMPINGEMENT MINIMIZATION PLAN  
ORDER NO. R9- 2009-0038, AMENDING ORDER NO. R9-2006-0065, NPDES NO. CA0109223**

<b>COMMENT NUMBER</b>	<b>COMMENTS and/or CONCERNS</b>	<b>REGIONAL BOARD RESPONSE</b>
	<p>The existence of the project's Flow, Entrainment, and Impingement Minimization Plan - a condition the Regional Board placed on the discharge permit when it was approved in 2006 - is one example of the appropriately stringent regulations that have been attached to the project. By preparing the minimization plan, Poseidon Resources has met its permit conditions and provided a roadmap that guarantees the project is built using the best available site, design, technology, and mitigation feasible to minimize impacts to marine life.</p>	
<b>3/28/2008 letter from Agua Hedionda Lagoon Foundation</b>		
23.	<p>The Regional Board has put stringent permit conditions in place that allows the desalination plant to utilize the power station's seawater intake and outfall infrastructure. In compliance with Water Code Section 13142.5(b), Poseidon Resources submitted a Flow, Entrainment and Impingement Minimization Plan to your agency. My organization has studied this plan and we are completely satisfied that there are sufficient marine environment protections in place.</p> <p>We also believe that operation of the Carlsbad Desalination Plant will be critical to the Agua Hedionda Lagoon. Poseidon's commitment to dredge the lagoon once the power plant ceases to operate will ensure that the lagoon's ecosystem will remain balanced and healthy. Additionally, Poseidon has pledged annual funding for the Foundation's Academy for Environmental Stewardship. This elementary school program reaches children at a young age so they can understand the importance of preserving our watershed and wetlands. We note that Poseidon's commitment to serve as a steward for the Agua Hedionda Lagoon and the surrounding watershed will guarantee for many years to come that the</p>	Comment Noted.

**SAN DIEGO REGIONAL BOARD RESPONSES TO COMMENTS  
POSEIDON RESOURCES CORPORATION, CARLSBAD DESALINATION PROJECT  
FLOW, ENTRAINMENT AND IMPINGEMENT MINIMIZATION PLAN  
ORDER NO. R9- 2009-0038, AMENDING ORDER NO. R9-2006-0065, NPDES NO. CA0109223**

<b>COMMENT NUMBER</b>	<b>COMMENTS and/or CONCERNS</b>	<b>REGIONAL BOARD RESPONSE</b>
	<p>citizens of Carlsbad will be able to enjoy the benefits of this clean lagoon and its surrounding beaches. This commitment will provide real environmental benefit and rises above and beyond the wetlands mitigation proposed in the Minimization Plan.</p>	
<b>3/28/2008 letter from Shapery Enterprises</b>		
24.	<p>San Diego needs to develop a cost-effective, drought-proof supply of water to augment the nearly 90% supplies we currently import. My firm believes that desalination makes sense from an economic and environmental standpoint. Poseidon Resources, in particular, has designed a top-notch project that will meet the water needs of 10% of our population at no additional cost to taxpayers. They have also put together a sensible mitigation plan to ensure that the lagoon and beaches are protected and will not be harmed by the plant's discharge.</p> <p>I think this project is a win-win for San Diego's environment and taxpayers. Shapery Enterprises respectfully requests that you approve the Carlsbad Desalination Plant on April 9th.</p>	Comments noted.
<b>3/31/2008 letter from Santa Fe Irrigation District</b>		
25.	<p>I'm writing today on behalf of Poseidon Resources' Carlsbad Desalination Project and asking you to approve their Flow, Entrainment, and Impingement Minimization Plan at the public hearing on April 9,2008.</p> <p>We are confident that the Carlsbad Desalination Project meets or exceeds all environmental regulations and will contribute to the long-term health of the lagoon and marine habitat through its careful stewardship and a broad array of design, technology and mitigation measures.</p>	Comments noted.

**SAN DIEGO REGIONAL BOARD RESPONSES TO COMMENTS  
POSEIDON RESOURCES CORPORATION, CARLSBAD DESALINATION PROJECT  
FLOW, ENTRAINMENT AND IMPINGEMENT MINIMIZATION PLAN  
ORDER NO. R9- 2009-0038, AMENDING ORDER NO. R9-2006-0065, NPDES NO. CA0109223**

<i>COMMENT NUMBER</i>	<i>COMMENTS and/or CONCERNS</i>	<i>REGIONAL BOARD RESPONSE</i>
	<p>We believe that this agreement provides our region with a reliable, affordable and environmentally benign water source to augment our imported supplies. On behalf of my Board of Directors and our thousands of customers, we urge the Water Quality Control Board approve the Flow, Entrainment, and Impingement Minimization Plan.</p>	
<b>3/31/2008 letter from Farm Bureau San Diego County</b>		
26.	<p>On behalf of the San Diego County Farm Bureau and the county's farmers, I am writing you in support of the Carlsbad Desalination Project. Our organization testified before the Regional Board in 2006 when the Board unanimously approved the project's discharge permit. The permit required Poseidon to provide the Regional Board with a Flow, Entrainment and Impingement Minimization Plan to help reduce marine impacts. Poseidon has prepare this plan met its obligations under the permit.</p> <p>San Diego County is mired in a historic drought, suffering through the driest consecutive years in our region's history. The Carlsbad Desalination Project is not a panacea, but it offers fanners and urban water users alike a new, affordable water supply. After nearly ten years in the works, it's time the Carlsbad facility was approved. San Diego County's agricultural industry - and our fanning heritage - is counting on it.</p>	Comments noted.
<b>3/31/2008 letter from Carlsbad Chamber of Commerce</b>		
27.	<p>I am writing on behalf of the Carlsbad Chamber of Commerce in support of Poseidon Resource's Carlsbad Desalination Project. The Chamber recently awarded Poseidon Resources with their first-ever Environmental Spirit Award because of their project's demonstrated commitment to the environment,</p>	Comments noted.



**SAN DIEGO REGIONAL BOARD RESPONSES TO COMMENTS  
POSEIDON RESOURCES CORPORATION, CARLSBAD DESALINATION PROJECT  
FLOW, ENTRAINMENT AND IMPINGEMENT MINIMIZATION PLAN  
ORDER NO. R9- 2009-0038, AMENDING ORDER NO. R9-2006-0065, NPDES NO. CA0109223**

<b>COMMENT NUMBER</b>	<b>COMMENTS and/or CONCERNS</b>	<b>REGIONAL BOARD RESPONSE</b>
	<p>especially the Agua Hedionda Lagoon.</p> <p>This plan has been under review for over a year and has been updated on several occasions in accordance with your staff's requests. The Chamber believes that this plan puts into a place a multitude of protections for the lagoon during the plant's operation; it also ensures that the lagoon will continue to be a clean, healthy marine environment in the long-term. As part of their due diligence, Poseidon will perform regular monitoring and conduct studies designed to reduce the entrainment and impingement of marine organisms below acceptable levels. Additionally, the desalination facility will be subject to further environment review and analysis by State Lands Commission ten years after the lease is issued, guaranteeing sufficient regulatory oversight.</p>	
<b>3/31/2008 letter from Sierra Club, San Diego Chapter</b>		
28.	<p><b>First and foremost, the Report fails to provide a site specific conceptual food web model.</b> This model serves to show the relationship among the various species and their interactions in response to the impingement and entrainment impacts. It is an essential tool for the ecosystems based management of the CDP project.</p> <p>Mortality and injury to marine life caused during transport through intake and discharge tunnels not addressed. The Report does not but should provide information on the number of fish, larvae and all other marine life that are killed, injured or dazed in the intake and discharge channels the CDP by abrasion, hard contact with the tunnel, disoriented by turbulent flow, and other mechanical means.</p>	<p>A site-specific food web model is not warranted because the mitigation area(s) are to be designed to replace the same species as those impacted. Therefore, provided that the mitigation area(s) are located sufficiently close to the intake site, no significant alterations to the food web are anticipated.</p> <p>The Minimization Plan does not need to address mortality and injury caused by transport because both the impingement and entrainment estimates assume 100% mortality of all organisms that pass through the intake structure.</p>

**SAN DIEGO REGIONAL BOARD RESPONSES TO COMMENTS  
POSEIDON RESOURCES CORPORATION, CARLSBAD DESALINATION PROJECT  
FLOW, ENTRAINMENT AND IMPINGEMENT MINIMIZATION PLAN  
ORDER NO. R9- 2009-0038, AMENDING ORDER NO. R9-2006-0065, NPDES NO. CA0109223**

<b>COMMENT NUMBER</b>	<b>COMMENTS and/or CONCERNS</b>	<b>REGIONAL BOARD RESPONSE</b>
29.	<b>Elimination of Heat Treatment Related Mortality.</b> The Report (Chapter 3.7) proposes to clean the intake and discharge system by periodically circulating plastic scrubbing balls. The Report does not indicate where the debris from the cleaning will be disposed. The Encina Power Station disposed the heat treatment debris into the receiving waters via the discharge tunnel. We objected to this practice as it is in violation of the NPDES CA 0001350, No. R9- 2006-043, Paragraph III, Discharge Prohibitions. Furthermore, it is highly likely that plastic, an ocean pollutant, will be worn off from the plastic scrubbing balls and be included in the debris. We continue to object to the practice of disposing the clean-up debris into the receiving waters.	The Regional Board is not considering the adequacy of the heat treatment replacement at this time since this is a feature that could be incorporated under stand-alone conditions. Once EPS permanently shuts down and the CDP is operated on a stand-alone basis, the Regional Board will undertake additional evaluation under CWC Section 13142.5.
30.	<b>Micro-screens effectiveness to minimize impingement and entrainment losses is problematical.</b> The Report does not provide operational information such as pilot plant tests to verify that this technology is proven and reliable. The Report makes no mention that biofouling and biofilm buildup will occur in the micro-screens to require periodic chemical (biocides) treatment. Furthermore, as questioned previously, the Report does not address the expected survivability of the entrained marine organisms after being flushed out from the micro-screen filter and transported out the lengthy (approx 1500 ft) discharge tunnel. The Report does not but should provide a monitoring plan to quantify taxa, their abundance, and the survivability of the marine organisms at the ocean outfall.	This comment is no longer applicable. The Minimization Plan assumes 100% mortality of all organisms that pass through the intake structure in estimating, and mitigating for, marine life mortality. Therefore, Poseidon determined that the installation of micro-screens and the use of a low-pressure membrane system would not be necessary.
31.	<b>Methodology for Impingement Assessment, intake flow velocity.</b> The statement that if intake through-screen velocity is below or equal to 0.5 fps, the impingement mortality of the intake screens is considered to be negligible has been disputed by the Henderson and Seaby. Their report lists nine problems that question this assertion of which six are	This comment raises concerns regarding whether the reduction of intake through-screen velocity below or equal to 0.5 FPS reduces impingement mortality to less than significant levels. Reduced intake velocity has been recognized by the USEPA (EPA

**SAN DIEGO REGIONAL BOARD RESPONSES TO COMMENTS  
POSEIDON RESOURCES CORPORATION, CARLSBAD DESALINATION PROJECT  
FLOW, ENTRAINMENT AND IMPINGEMENT MINIMIZATION PLAN  
ORDER NO. R9- 2009-0038, AMENDING ORDER NO. R9-2006-0065, NPDES NO. CA0109223**

<b>COMMENT NUMBER</b>	<b>COMMENTS and/or CONCERNS</b>	<b>REGIONAL BOARD RESPONSE</b>
	<p>applicable for the CDP. Two that not relevant here are high and low water temperatures and the third problem of flow direction with respect to gravity is not present because it is horizontal in this case. These six problems are listed below:</p> <p>1. Fish often do not know in which way to swim and so may become entrained or impinged even if they have they have the speed to escape.</p> <p>3. There is no consideration of the effects of tide, currents etc. on flow rates through the screens.</p> <p>4. There can be problems because fish orientate at 90 degrees to the screen and not the flow.</p> <p>5. The velocity is determined at the screens - at this point the fish may already be trapped</p> <p>8. Fish eggs are often free floating and are therefore vulnerable to entrainment irrespective of the intake velocity</p> <p>9. Larval fish, post-larval fish and very young fish are poor swimmers and cannot achieve 0.5 ft/sec. They also do not all react to a flow by moving away from it.</p>	<p>440/1-76/015-a. USEPA April 1976. Washington, DC.) and the SWRCB (March 2008 Scoping Document, Water Quality Control Policy on the Use of Coastal and Estuarine Water for Power Plant Cooling) as an accepted method of reducing impingement. To the extent that the Henderson &amp; Seaby study challenges these, the comment is noted.</p> <p>Nevertheless, Poseidon proposes to mitigate for all estimated impacts, without consideration to any site, design, or technology measures that will be implemented to minimize these impacts. In light of this, it is still acceptable for the Board to find that the project, in sum, complies with section 13142.5.</p>
32.	<p><b>The quantification of unavoidable impacts to marine life is not acceptable.</b> The Marine Life Protection Act requires an ecosystem based approach. This requires that the impingement and entrainment impacts be assessed for all the marine organisms from the benthos, up the food web, and to the top consumers as shown in the Generalized Aquatic Food Web shown in the NOAA power point presentation cited above. Table 5-1 tabulates the impingement of fishes, sharks and rays during June 2004 to June 2005 prorated for 304 MGD. Note that under normal operations 19,408 individuals were impinged and 97 separate species. No ecological assessment has been provided to indicate whether these losses are sustainable and can maintain a healthy biologically diverse ecosystem. Instead the Report dismisses the impingement loss by citing that it amounts to 2.11</p>	<p>The Marine Life Protection Act (Fish and Game Code, sec. 2850 et seq.) is not directly applicable to the CDP. Quantification of unavoidable impacts is not necessary because Poseidon proposes to mitigate for all estimated impacts, without consideration to any site, design, or technology measures that will be implemented to minimize these impacts.</p> <p>Also, to clarify, Table 5-1 referenced here was in error, as it did not show pro-rated data. It has been replaced in the March 27, 2009 Minimization Plan (as Table 5.3) with pro-rated data.</p>

**SAN DIEGO REGIONAL BOARD RESPONSES TO COMMENTS  
POSEIDON RESOURCES CORPORATION, CARLSBAD DESALINATION PROJECT  
FLOW, ENTRAINMENT AND IMPINGEMENT MINIMIZATION PLAN  
ORDER NO. R9- 2009-0038, AMENDING ORDER NO. R9-2006-0065, NPDES NO. CA0109223**

<i>COMMENT NUMBER</i>	<i>COMMENTS and/or CONCERNS</i>	<i>REGIONAL BOARD RESPONSE</i>
	lbs/day. Likewise, the entrainment effects methodology is flawed because it addresses only the fish larvae entrainment.	
33.	<b>Need for an ecosystem based management plan.</b> These local impingement and entrainment impacts must be evaluated to assess the connectivity with the coastal marine ecosystems to the north and south. This means that an ecosystem based management plan that is coordinated state-wide is needed.	An ecosystem approach is not entirely applicable to this case because the affected ecosystem is not wholly removed (as is generally done when evaluating compensatory mitigation for impacts of fill in a CWA Section 401 certification). Rather, specific components of that ecosystem are being altered due to impingement and entrainment.  Nevertheless, Chapter 5 of the Minimization Plan does give consideration to the ecosystems affected and Chapter 6 attempts to provide compensatory mitigation in terms of the ecosystems affected.
34.	<b>Reference site data needed to prevent shifting baselines.</b> The Report should obtain ecological health data for reference marine sites that have not been used for once-through-cooling source water and the source water marine for the CDP for comparison benchmarking. Ecological health data for the CDP marine source waters as a reference basis is not acceptable. The ecosystems management must avoid the practice of shifting or sliding baselines.	The MLMP incorporated into the Minimization Plan includes performance measures for the mitigation site(s) that are to be compared to reference wetlands (not been used for once-through-cooling). The baseline analyses of the reference wetlands may be useful in such a manner.
35.	<b>Comprehensive receiving waters monitoring program is required.</b> The Report lacks a comprehensive receiving waters monitoring program to evaluate the ecological health the marine ecosystems. The program should include sampling of benthic infauna, phytoplankton, zooplankton, benthic and piscivorous fish.	This comment should have been raised during the issuance of Order R9-2006-0065, NPDES permit (and monitoring requirements) for the CDP discharge.

**SAN DIEGO REGIONAL BOARD RESPONSES TO COMMENTS  
POSEIDON RESOURCES CORPORATION, CARLSBAD DESALINATION PROJECT  
FLOW, ENTRAINMENT AND IMPINGEMENT MINIMIZATION PLAN  
ORDER NO. R9- 2009-0038, AMENDING ORDER NO. R9-2006-0065, NPDES NO. CA0109223**

<b>COMMENT NUMBER</b>	<b>COMMENTS and/or CONCERNS</b>	<b>REGIONAL BOARD RESPONSE</b>
36.	<b>The proposed mitigation plan is severely flawed.</b> Chapter 6.2 states the conservative assumption that CDP will cause 100 percent mortality of the marine organisms that are diverted from the Agua Hedionda Lagoon to the CDP. However, the Report does not provide data on the taxa and abundance of these organisms in the seawater that reside in the Lagoon but also in the coastal waters.	By attachment (Attachment 4, Chapter 3) to the Minimization Plan, Poseidon includes baseline studies of the existing marine system in the area that could be affected by the facility.
37.	<b>California actions to implement the MLMA.</b> The above comments represent a significant departure from the approach presented in the Flow, Entrainment and Minimization Plan. These comments are based on the MLMA that was enacted in 1999. The implementation of the Plan is still underway. The Ocean Protective Council Five Year Strategic Plan Action Status February 20087 has two relevant objectives. The first is listed under Section C. Ocean and Coastal Water Quality, Objective 3, Once-through-cooling; Work to eliminate the harmful impacts of once through-cooling coastal power plants. Status: In progress. The second objective is listed in Section E. Coastal and Ocean Ecosystems, Objective 2: Marine Life Management Act; Help establish ecologically and economically sustainable fisheries.	The MLMA is not a governing statute and is not directly applicable to the Minimization Plan.
<b>3/31/2008 letter from Denise Moreno-Ducheny</b>		
38.	I am writing in support of Poseidon Resources' proposed Carlsbad Desalination Project Flow, Entrainment, and Impingement Minimization Plan.  The Carlsbad desalination plant is an excellent example of what can be accomplished when the private sector and government cooperatively strive for innovative solutions to our regional issues.	Comments noted.

**SAN DIEGO REGIONAL BOARD RESPONSES TO COMMENTS  
POSEIDON RESOURCES CORPORATION, CARLSBAD DESALINATION PROJECT  
FLOW, ENTRAINMENT AND IMPINGEMENT MINIMIZATION PLAN  
ORDER NO. R9- 2009-0038, AMENDING ORDER NO. R9-2006-0065, NPDES NO. CA0109223**

<i>COMMENT NUMBER</i>	<i>COMMENTS and/or CONCERNS</i>	<i>REGIONAL BOARD RESPONSE</i>
	I support the Carlsbad Desalination Plant and request that you approve the Flow, Entrainment, and Impingement Minimization Plan for this project.	
<b>3/31/2008 letter from Valley Center Municipal Water District</b>		
39.	<p>This project has already gone through multiple layers of approvals over the past eight years and has long since proven it's an environmentally-responsible project. I would like to remind the board that they have already given their approval for a discharge permit and that the Flow, Entrainment and Impingement Minimization Plan includes many additional protections for the surrounding marine environment. In fact, the plant will be crucial to the long-term health of the Agua Hedionda Lagoon when the Encina Power Station is decommissioned and no longer provides maintenance and dredging.</p> <p>Valley Center Municipal Water District understands that seawater desalination is a key part of the solution to the region's long-term water reliability needs. The entire San Diego region is depending on this new water supply to lessen the demand on imported water. We find no reason to delay action any longer and we strongly urge the Board to approve this project.</p>	Comments noted.
<b>4/1/2008 letter from Bill Horn, Supervisor, 5th District, County of San, Diego</b>		
40.	<p>I am writing to urge you to support the Carlsbad Desalination Project at your April 9, 2008 meeting. A large portion of the district I have been elected to represent will benefit directly from the construction of the desalination facility.</p> <p>The San Diego County Water Authority has approved a resolution in support of the Carlsbad Desalination Project,</p>	Comments noted.

**SAN DIEGO REGIONAL BOARD RESPONSES TO COMMENTS  
POSEIDON RESOURCES CORPORATION, CARLSBAD DESALINATION PROJECT  
FLOW, ENTRAINMENT AND IMPINGEMENT MINIMIZATION PLAN  
ORDER NO. R9- 2009-0038, AMENDING ORDER NO. R9-2006-0065, NPDES NO. CA0109223**

<b>COMMENT NUMBER</b>	<b>COMMENTS and/or CONCERNS</b>	<b>REGIONAL BOARD RESPONSE</b>
	<p>and has identified the desalination plant as a critical component of the region's water diversification strategy.</p> <p>Your board already approved this project in 2006 and there is no reason for further regulatory delay. I urge you to accept the project's Flow, Entrainment and Impingement Minimization Plan and move. this project closer to providing San Diego with the water it desperately needs.</p>	
<b>4/1/2008 letter from Mary Salas, 78<sup>th</sup> Assembly District</b>		
41.	<p>This letter is to inform you of my support for the Carlsbad Desalination Plant and to request that you finalize the discharge permit by approving the key permit condition that requires a project to minimization marine impacts.</p> <p>The water produced will be of the highest quality, meeting or exceeding all drinking water regulatory standards under the law. It is also guaranteed never to cost more than the rates set by the San Diego County Water Authority, ensuring that Sweetwater won't have to pass on excessively high water rates to their customers. And it has gone through rigorous testing and public scrutiny to ensure that the plant will be environmentally friendly and efficiently operated. The project developers have made every effort to comply with state and federal environmental regulations and have long since proved their project will not harm the Agua Hedionda Lagoon or ocean. In fact, their proposed mitigation measures will restore 37 acres of wetlands habitat and will provide for the annual maintenance. of the lagoon.</p> <p>I am proud to support this successful public-private partnership between Poseidon Resources with the City of Carlsbad and I urge you to approve this project at your April 9,2008 meeting.</p>	Comments noted.

**SAN DIEGO REGIONAL BOARD RESPONSES TO COMMENTS  
POSEIDON RESOURCES CORPORATION, CARLSBAD DESALINATION PROJECT  
FLOW, ENTRAINMENT AND IMPINGEMENT MINIMIZATION PLAN  
ORDER NO. R9- 2009-0038, AMENDING ORDER NO. R9-2006-0065, NPDES NO. CA0109223**

<i>COMMENT NUMBER</i>	<i>COMMENTS and/or CONCERNS</i>	<i>REGIONAL BOARD RESPONSE</i>
<b>4/2/2008 letter from Coast Law Group</b>		
42.	<p>The Board's consideration of approval of the Revised Flow, Entrainment and Impingement Minimization Plan at its April 9, 2008 board meeting would be both legally inappropriate and logistically imprudent. Porter-Cologne section 13225 and case law mandate that the Regional Board coordinate with other agencies similarly charged with responsibility for water quality protection prior to taking action on a matter equally within such other agencies' jurisdictions. As was made clear in the March 20, 2008 comment letter from the California Coastal Commission, significant additional resource agency input is required before Poseidon's mitigation plan can be appropriately considered for final approval by any agency.</p> <p>Only through coordination with staff from the Coastal Commission, California Department of Fish and Game, United States Fish and Wildlife Service, and National Marine Fisheries Service will the Regional Board be able to render an appropriate recommendation on the mitigation proposal. If the decision to approve is made prior to the agency coordination meeting, the record will be insufficient to support such decision, the approval will be subject to legal attack, and the project will be even further delayed. Because the project can not move forward without Coastal Commission approval of the mitigation plan anyway, it makes sense to continue the Board's consideration of the Revised Flow, Entrainment and Impingement Minimization Plan until appropriate resource agency input has been obtained.</p>	<p>The Board is considering approval of the March 9, 2009 Minimization Plan, as revised March 27, 2009. The Board's action will supersede the conditional approval of April 9, 2008 (Resolution No. R9-2008-0039). Since the April 9, 2008 Board Meeting, the Discharger participated in an interagency meeting to determine what mitigation options might be available and feasible. Thirteen state and federal agencies were invited to attend, and staff representatives from the Regional Board, Coastal Commission, California State Lands Commission, California Department of Fish and Game, California Department of Transportation, City of Carlsbad, City of Vista, and U.S. Fish and Wildlife Service attended. The Discharger also coordinated with other agencies during this time.</p> <p>Since April 2008, the MLMP was revised numerous times in response to various agencies' and public comments. The Coastal Commission approved the MLMP, with final language, in December 2008. While recent Coastal Commission comments indicate that the adequacy of the MLMP for impingement may be revisited, such potential action does not require the Board to postpone action. Order No. R9-2006-0065 specifically authorizes the Regional Board to require revisions to the Minimization Plan and the Board may require revisions, as necessary, to address any future Coastal</p>



**SAN DIEGO REGIONAL BOARD RESPONSES TO COMMENTS  
POSEIDON RESOURCES CORPORATION, CARLSBAD DESALINATION PROJECT  
FLOW, ENTRAINMENT AND IMPINGEMENT MINIMIZATION PLAN  
ORDER NO. R9- 2009-0038, AMENDING ORDER NO. R9-2006-0065, NPDES NO. CA0109223**

<b>COMMENT NUMBER</b>	<b>COMMENTS and/or CONCERNS</b>	<b>REGIONAL BOARD RESPONSE</b>
		Commission action.
43.	<p>Recently, the State Water Resources Control Board articulated an interpretation of the statute's meaning, and did so in a way inconsistent with that put forward by Poseidon in its March 7, 2008 response to the Regional Board's February 19th letter. The State Water Board Scoping Document on its "Water Quality Control Policy on the Use of Coastal and Estuarine Waters For Power Plant Cooling" (dated March, 2008) states:</p> <p style="padding-left: 40px;">Finally, the Water Boards must also consider the legislative directive in Water Code §13142.5 when regulating cooling water intake structures. Under the Clean Water Act, facilities must, at a minimum, comply with section 316(b) requirements and any more stringent applicable requirements necessary to comply with state law. Section 13142.5 has a more limited coverage than section 316(b) in that the former covers only new and expanded coastal facilities. However, section 13142.5 appears to be more stringent than section 316(b) in one respect. Section 13142.5 requires use of the best available technology feasible "to minimize the intake and mortality of all forms of marine life", without regard to whether these impacts are adverse, in contrast to section 316(b) which focuses on "minimizing adverse environmental impact."</p> <p>While Poseidon consistently argues that federal Clean Water Act section 316(b) regulations and policies do not apply to its desalination project proposal, there can be no dispute that Porter Cologne section 13142.5 is applicable to the project's seawater intake. Pursuant to the State Board's interpretation</p>	<p>As an initial matter, the State Water Board's Scoping Document is still a draft document so does not reflect final interpretation by the State Water Board. However, even if it does reflect final interpretation, the Regional Board's interpretation of Water Code section 13142.5(b) does not conflict with the commenter's view on this point. Section 13142.5(b) requires the use of the "best available site, design, technology, and mitigation measures feasible [] to minimize the intake and mortality of all forms of marine life." This statute applies without regard to whether the intake and mortality is characterized as "adverse."</p> <p>The Regional Board agrees that Water Code section 13142.5 is applicable to the CDP, as stated explicitly in Order No. R9-2006-0065. Section 13142.5(b) provides the framework for the review and approval of the March 27, 2009 Minimization Plan. Also, section 316(b) of the Clean Water Act does not apply to the CDP, as explicitly noted in Order No. R9-2006-0065, Fact Sheet, section VII.4.</p>

**SAN DIEGO REGIONAL BOARD RESPONSES TO COMMENTS  
POSEIDON RESOURCES CORPORATION, CARLSBAD DESALINATION PROJECT  
FLOW, ENTRAINMENT AND IMPINGEMENT MINIMIZATION PLAN  
ORDER NO. R9- 2009-0038, AMENDING ORDER NO. R9-2006-0065, NPDES NO. CA0109223**

<b>COMMENT NUMBER</b>	<b>COMMENTS and/or CONCERNS</b>	<b>REGIONAL BOARD RESPONSE</b>
	<p>noted above, regardless of whether applied to power plants or desalination plants, the entire legal and scientific framework under which Poseidon has crafted its mitigation proposal is just plain wrong.</p> <p>Unless the Regional Board believes it is entitled to interpret Porter Cologne in a manner inconsistent with the State Board, and we do not believe this to be so, there is no legal option but to deny Poseidon's proposed mitigation plan as inadequate, and direct that yet another revised Flow, Entrainment and Impingement Minimization Plan be submitted for agency and public review.</p>	
<b>4/2/2008 letter from San Diego Coastkeeper and Surfrider Foundation</b>		
44.	<p><b>Timing of Implementation Schedule is Arbitrary and Unnecessarily Aggressive.</b> This approval would then set an arbitrary and extremely restrictive set of dates for multiple agency coordination and separate approvals. Further, the Implementation Schedule appears to require that the Revised Plan be thoroughly reviewed by multiple agencies, in some instances, after the Regional Board has approved the Revised Plan. The Revised Plan incorrectly states that Poseidon's second submission of this Plan (Original Plan) was posted on the Regional Board website "for public review and comment" shortly after it was submitted in February 2007. Though the Original Plan was posted on the Regional Board website, it was never subject to public comment and review. Further, Poseidon admits that the Original Plan took 12 months of review by the Regional Board, yet its proposed schedule provides less than one month for review of the Revised Plan. Such a limited period is insufficient for the Regional Board and inappropriate for public review.</p>	<p>Comment noted. This comment is not relevant as since the April 9, 2008 conditional approval of the March 6, 2008 Minimization Plan, the Discharger has submitted the March 9, 2009 Plan, as revised March 27. In the intervening time, there was public agency coordination and the Regional Board has complied with applicable public notice requirements for review of the March 9, 2009 Plan, as revised on March 27.</p>
45.	<b>Porter-Cologne Act Governs Plan Elements and Has</b>	The Regional Board agrees that Water Code

**SAN DIEGO REGIONAL BOARD RESPONSES TO COMMENTS  
POSEIDON RESOURCES CORPORATION, CARLSBAD DESALINATION PROJECT  
FLOW, ENTRAINMENT AND IMPINGEMENT MINIMIZATION PLAN  
ORDER NO. R9- 2009-0038, AMENDING ORDER NO. R9-2006-0065, NPDES NO. CA0109223**

<b>COMMENT NUMBER</b>	<b>COMMENTS and/or CONCERNS</b>	<b>REGIONAL BOARD RESPONSE</b>
	<p><b>Been Disregarded by Applicant.</b> California Water Code Section 13142.5 (b) establishes the legal standards for the withdrawal and industrial use of seawater.</p> <p>Minimizing the "intake and mortality" requires "before the fact" compliance with best available site, design, technology and mitigation measures.</p> <p>The Revised Plan inaccurately summarizes this explicit language as simply " ...requir[ing] industrial facilities using seawater for processing to use the best available site, design, technology <i>and</i> mitigation feasible to minimize impacts to marine life." See: <i>Revised Plan, Executive Summary, p. E5-1</i> (emphasis in original). This summarization of the actual language omits the most critical objective of the law to "minimize the intake and mortality of all forms of marine life."</p> <p>It is critical to recognize the interaction between the terms "site," "design," "technology," and "mitigation measures." These terms should be considered in their totality, not as distinct and disconnected parts.</p> <p>It is equally critical to recognize that beside the mandate to employ the best available site, design and technology, "mitigation measures" must also "minimize the intake and mortality of all forms of marine life." In stark contrast to this plain mandate, the Revised Plan relies primarily on an, as yet undefined, "after the fact" restoration project to mitigate the so-called "unavoidable impacts." "Restorative measures" have been found inconsistent with the "technology-forcing" policies and plain reading of Clean Water Act § 316(b) in Riverkeeper II.6 Instead, the court found that: "Restoration measures <i>correct</i> for the adverse environmental impacts of impingement and entrainment...but, they do not <i>minimize</i></p>	<p>section 13142.5(b) establishes the legal standards for withdrawal and industrial use of seawater at the CDP and has reviewed the Minimization Plan under this standard.</p> <p>The Regional Board has reviewed the Minimization Plan and finds that under the circumstances of co-located operation, the Discharger will use the best available site, design and technology feasible, as well as the best available mitigation feasible to minimize the intake and mortality of marine life.</p> <p>While the Riverkeeper II case, (<i>Riverkeeper v. U.S. Environmental Protection Agency</i>, 475 F.3d 83 (2007)), applicable to power plants through CWA 316(b), precludes the use of compensatory mitigation or restoration in lieu of best technology available, it does not apply here to preclude use of mitigation because 316(b) does not apply to the CDP and because the Discharger is not substituting mitigation for technology.</p> <p>Water Code section 13142.5(b) does not distinguish temporally or otherwise between use of site, design, technology or mitigation, but requires the Regional Board to find that all elements are being used in combination to minimize intake and mortality of marine life.</p>

**SAN DIEGO REGIONAL BOARD RESPONSES TO COMMENTS  
POSEIDON RESOURCES CORPORATION, CARLSBAD DESALINATION PROJECT  
FLOW, ENTRAINMENT AND IMPINGEMENT MINIMIZATION PLAN  
ORDER NO. R9- 2009-0038, AMENDING ORDER NO. R9-2006-0065, NPDES NO. CA0109223**

<b>COMMENT NUMBER</b>	<b>COMMENTS and/or CONCERNS</b>	<b>REGIONAL BOARD RESPONSE</b>
	<p>those impacts in the first place."7 Porter-Cologne § 13142.5(b) must be read the same way. To do otherwise would be an illogical read of the mandate found in Porter Cologne to minimize impacts from the use of seawater for cooling - and by extension, any other industrial process listed in Section 13142.5(b).</p>	
<p>46.</p>	<p><b>Applicant Misconstrues "Feasible Alternatives"</b>. Definition Poseidon has chosen a definition for "feasible" by interpreting that term from the California Environmental Quality Act (CEQA) - a law with a very different purpose than Porter Cologne. CEQA is a vehicle for informing the public about the environmental impacts of potential projects in order for the public and decision-makers 'to make a fully informed decision. In that respect, the Environmental Impact Report is the heart of CEQA and its purpose is "information-forcing". In contrast, Porter-Cologne is a "technology-forcing" law for industrial uses of seawater for cooling, heating and other industrial processes. Importantly, Section 13142.5(b) expands on the protections found in the federal Clean Water Act § 316(b) by including other industrial processes beyond "cooling water intakes" to the list of regulated activities.</p> <p>In short, the Riverkeeper II decision specifically prohibited a "cost-benefit" analysis to justify an exemption from the technology-forcing policy of CWA § 316(b). The same would hold true for the policies embodied in California's Water Code § 13142.5(b). This type of .cost-benefit analysis is what is used as a justification for the continued and exacerbated intake and mortality of marine life recommended in the Revised Plan.</p>	<p>As used in Water Code section 13142.5(b), the term "feasible" is not defined. Through review of the Minimization Plan as required by section 13142.5(b), the Regional Board has interpreted the term "feasible" in a reasonable manner. The definition of "feasible" in CEQA, that is, "capable of being accomplished in a successful manner within a reasonable period of time, taking into account economic, environmental, social, and technological factors (Public Resources Code section 12061.1) is a reasonable, comprehensive definition of "feasible" for purposes of informing the Board's application of Water Code section 13142.5(b).</p> <p>As indicated in response to Comment 45, the Riverkeeper II case does not apply to the CDP because it is not a power plant governed by section 316(b) of the CWA. Moreover, the Regional Board notes that since the comment was made, the U.S. Supreme Court has reversed the Riverkeeper II court on the point of "cost-benefit" analysis. (Entergy Corp. v. Riverkeeper, Inc., et al. (2009) 556 U.S. ____ [29 S.Ct. 1498].)</p>

**SAN DIEGO REGIONAL BOARD RESPONSES TO COMMENTS  
POSEIDON RESOURCES CORPORATION, CARLSBAD DESALINATION PROJECT  
FLOW, ENTRAINMENT AND IMPINGEMENT MINIMIZATION PLAN  
ORDER NO. R9- 2009-0038, AMENDING ORDER NO. R9-2006-0065, NPDES NO. CA0109223**

<b>COMMENT NUMBER</b>	<b>COMMENTS and/or CONCERNS</b>	<b>REGIONAL BOARD RESPONSE</b>
47.	<p><b>Revised Plan Takes Flawed Approach Toward Site, Design, and Technology Issues</b></p> <p><b>Site Analysis</b>  The review of potential sites is too narrowly analyzed and excludes a combination of potential sites that could feasibly result in dramatically reducing the intake of marine life.</p> <p>In conclusion, like many of the segmented sections of the Revised Plan, this section on alternative "Site" locations is not comprehensively analyzed along with different designs, technologies, and other mitigation measures that would reduce the intake of seawater.</p>	<p>Site analysis has been completed for both the facility location and the intake location. During the CEQA process, other facility locations were evaluated, but co-location with the EPS was determined to be the preferred alternative. The Regional Board then evaluated this proposed co-location in adopting Order No. R9-2006-0065. The Regional Board has considered alternative intake locations as proposed by the Discharger in the Minimization Plan. The Regional Board finds that the alternative intake locations evaluated by the Discharger are sufficient to meet the requirements of Section 13142.5(b) and support the use of the existing EPS intake structure under conditions of co-location operation for the benefit of CDP. The Coastal Commission also determined that the alternative intake locations were infeasible and would cause more impacts than using the existing intake structure.</p> <p>Please see Responsiveness Summary for additional supporting information.</p>
48.	<p><b>Design Analysis</b>  Use of the EPS discharge for "desalination source water" does not meet the purpose of the Revised Plan to document the minimization of intake and mortality from a "stand alone" facility. The annual estimate of marine life mortality doesn't account for seasonal variations in the survival strategy and</p>	<p>The Regional Board concurs with this comment, however, the Regional Board is not evaluating a stand-alone facility at this time. Changes have been made the tentative Order to clarify the trigger for when a new Report of Waste Discharge needs to</p>

**SAN DIEGO REGIONAL BOARD RESPONSES TO COMMENTS  
POSEIDON RESOURCES CORPORATION, CARLSBAD DESALINATION PROJECT  
FLOW, ENTRAINMENT AND IMPINGEMENT MINIMIZATION PLAN  
ORDER NO. R9- 2009-0038, AMENDING ORDER NO. R9-2006-0065, NPDES NO. CA0109223**

<b>COMMENT NUMBER</b>	<b>COMMENTS and/or CONCERNS</b>	<b>REGIONAL BOARD RESPONSE</b>
	<p>spawning periods of the numerous species entrained at the site.</p>	<p>be submitted by the Discharger.</p> <p>As reflected in Tentative Order No. R9-2009-0038, additional evaluation of CDP's operations for compliance with CWC section 13142.5(b) will be necessary if EPS ceases power generation operations and Poseidon proposes, through a new Report of Waste Discharge, to independently operate EPS's seawater intake and outfall for the benefit of the CDP ("stand-alone operation").</p>
<p>49.</p>	<p>Poseidon's discharge analysis is misleading. As was the case in Poseidon's original flow estimates for EPS, the numbers estimated in the Revised Plan are unjustifiable. EPS' intake flow has historically diminished and will continue to do so. Therefore, the 2007 figures do not provide an accurate assessment of future flow. Further, it is illogical to conclude that EPS providing 61 percent of the needed dilution water reduces Poseidon's impacts by 61 percent. Poseidon, at the lowest estimate, <i>increases</i> impingement and entrainment impacts by 39 percent by perpetuating the use of the intakes.</p>	<p>The Minimization Plan does identify historic flows for 2008 and states that the EPS flows would have met the CDP's intake requirements approximately 88 % of the time. However, in any case the Regional Board is not considering historical flow data as part of its evaluation of compliance with section 13142.5.</p>
<p>50.</p>	<p>We agree that reducing intake velocity reduces impingement. However, the more intractable problem is entrainment - which is a function of volume, not velocity. Analysis of Poseidon's Original Plan reveals that the maximum velocity of all of the generating units is at least double .5 fps. In light of the future retirement of units 1, 2, and 3, Poseidon's intake water must come from units 4 and 5. Both units' maximum velocity at high and low tide is significantly higher than .5 fps. In the Original Plan, Poseidon claimed that the "relative contribution to the total impingement potential of the intake pump system" would be "proportional to the pump flow." However, in the</p>	<p>The CDP must comply with the best available design requirement in Water Code Section 13142.5(b) when EPS is operating for the benefit of CDP (whether EPS is temporarily shut down or not otherwise discharging sufficient volume of water to meet CDP's operational needs).</p> <p>Under the conditions of temporary shutdown, the Discharger has the ability to operate a modified pump configuration to reduce inlet</p>

**SAN DIEGO REGIONAL BOARD RESPONSES TO COMMENTS  
POSEIDON RESOURCES CORPORATION, CARLSBAD DESALINATION PROJECT  
FLOW, ENTRAINMENT AND IMPINGEMENT MINIMIZATION PLAN  
ORDER NO. R9- 2009-0038, AMENDING ORDER NO. R9-2006-0065, NPDES NO. CA0109223**

<b>COMMENT NUMBER</b>	<b>COMMENTS and/or CONCERNS</b>	<b>REGIONAL BOARD RESPONSE</b>
	<p>Revised Plan, Poseidon has failed to show how it will obtain 304 MGD and reduce intake velocity when only two of the five units are available for use.</p>	<p>velocity. It is this Boards understanding that although Units 1-3 are expected to be retired in the future, the circulating water system for those units will remain in place therefore allowing the Discharger to use the best combination of pumps to reduce intake velocities.</p> <p>Also, the Regional Board Regulations and Requirements concerning this project do not rely on velocity for estimating the impacts associated with impingement and entrainment. This is partly because the Regional Board is only permitting for co-location at this time.</p>
<p>51.</p>	<p>Discrepancies between the Original Plan and the Revised Plan also require attention. For example, the Original Plan states that according to 2004-2005 analysis, the maximum pumping capacity of unit 4 is 288 MGD. However, the Revised Plan states that unit 4 maximum pumping capacity is 307 MGD.</p>	<p>Comment noted.</p>
<p>52.</p>	<p>The Revised Plan states that routing intake through the condensers and reducing velocity and turbulence will reduce entrainment mortality. However, the Revised Plan fails to document any studies conducted to verify these conclusions or quantify the reduction in mortality. Further, Poseidon cannot assert that utilizing only one of two pumps for each generating unit is a design feature that mitigates impingement of marine life. As noted above, perpetuating the use of open ocean intakes results in increased impingement</p>	<p>Poseidon proposes to mitigate for all estimated impacts, without consideration to any site, design, or technology measures that will be implemented to minimize these impacts. In light of this, it is still acceptable for the Board to find that the project, in sum, complies with section 13142.5.</p>

**SAN DIEGO REGIONAL BOARD RESPONSES TO COMMENTS  
POSEIDON RESOURCES CORPORATION, CARLSBAD DESALINATION PROJECT  
FLOW, ENTRAINMENT AND IMPINGEMENT MINIMIZATION PLAN  
ORDER NO. R9- 2009-0038, AMENDING ORDER NO. R9-2006-0065, NPDES NO. CA0109223**

<b>COMMENT NUMBER</b>	<b>COMMENTS and/or CONCERNS</b>	<b>REGIONAL BOARD RESPONSE</b>
	and entrainment as compared to a scenario in which the intakes are no longer used or a sub-seafloor intake design is used.	
53.	<p>Poseidon has also provided no documentation to support the contention that reduction of pumping bears a 1:1 ratio with reduction of velocity and impingement.</p> <p>Much like the <i>claims</i> that reducing velocity and turbulence will reduce entrainment and impingement mortality, reducing entrainment mortality by eliminating exposure to heat in the condensers is not backed up with any referenced studies that verify and quantify the reduced mortality rate.</p>	Comment noted.
54.	<p>The Revised Plan asserts that replacing "heat treatment" with "scrubbing balls" will eliminate marine life mortality. Again, the Revised Plan does not document any studies to verify and quantify this assertion.</p> <p>Further, the introduction of this cleaning method comes at a significantly late stage in the review process. This method was not analyzed in the EIR, during NDPEs review, CDP review, or in the SLC permit review process. Thus, the proposed "scrubbing ball" method has not been studied for possible negative impacts, nor has it been proven a viable alternative to heat treatments. Additionally, the recapture of the balls after they are introduced into the system is not detailed. Introducing 1/2 inch plastic balls into the marine environment presents a variety of serious concerns.</p>	The Regional Board is not considering the adequacy of the heat treatment replacement at this time since this is a feature that could be incorporated under stand-alone conditions. Once EPS permanently shuts down and the CDP is operated on a stand-alone basis, the Regional Board will undertake additional evaluation under CWC Section 13142.5.
55.	<p><b>Technology Analysis</b></p> <p>The technology section of the Revised Plan begins with the assertion that the draft State Lands Commission lease precludes technologies that would interfere with the operation of the EPS. First, the future of the EPS is before the California Energy Commission for review of a "re-power"</p>	Comment noted.



**SAN DIEGO REGIONAL BOARD RESPONSES TO COMMENTS  
POSEIDON RESOURCES CORPORATION, CARLSBAD DESALINATION PROJECT  
FLOW, ENTRAINMENT AND IMPINGEMENT MINIMIZATION PLAN  
ORDER NO. R9- 2009-0038, AMENDING ORDER NO. R9-2006-0065, NPDES NO. CA0109223**

<b>COMMENT NUMBER</b>	<b>COMMENTS and/or CONCERNS</b>	<b>REGIONAL BOARD RESPONSE</b>
	<p>permit that would eliminate the use of the existing "once through cooling" system for much of the EPS capacity. The EPS intake is also the subject of ongoing litigation that may be settled if the Energy Commission approves the EPS re-power plan.</p> <p>Second, the State Lands Commission has not finalized the lease terms. Consequently, the meaning of this draft language should be coordinated through a cooperative effort by the Regional Board, State Lands Commission, Coastal Commission and the interested public before the Regional Board approves the Revised Plan.</p>	
56.	<p>The Revised Plan also asserts that the foundation for analyzing best available technology relies on the definition of "feasibility" found in CEQA. We disagree. Further, the introduction to this chapter constrains the analysis of "best available technology" to the "site specific and size of this project." As explained below, these pre-determined constraints set up and utilize an illegal cost-benefit analysis of available technologies to reduce the intake and mortality of marine life. Ironically, if the design (e.g., size of the facility and its product output) was considered in combination with the truly best available technology, the alternative sub-seafloor intake technologies outlined in the Revised Plan in Chapter 4 would have been correctly identified as far superior to those chosen for the project in the Revised Plan.</p>	See response to comment 46.
57.	<p>The intake alternatives that are reviewed are not realistic, and misrepresent the associated technology. The Revised Plan offers illustrations and discussion of pump stations on the surface of the adjacent beach that would disrupt recreational uses and inter-tidal ecological processes. However, <i>the</i> successful pilot study of sub-seafloor intakes at Doheny Beach demonstrates that the drilling of wells can be</p>	Comments noted.

**SAN DIEGO REGIONAL BOARD RESPONSES TO COMMENTS  
POSEIDON RESOURCES CORPORATION, CARLSBAD DESALINATION PROJECT  
FLOW, ENTRAINMENT AND IMPINGEMENT MINIMIZATION PLAN  
ORDER NO. R9- 2009-0038, AMENDING ORDER NO. R9-2006-0065, NPDES NO. CA0109223**

<b>COMMENT NUMBER</b>	<b>COMMENTS and/or CONCERNS</b>	<b>REGIONAL BOARD RESPONSE</b>
	done to cause only temporary disruption to both recreational opportunities and beach ecology.	
58.	Finally, the testing location that yielded groundwater of a higher salt concentration than ocean water is undisclosed. The Revised Plan merely states vaguely that an "actual intake well test completed in the vicinity of the EPS" was conducted.(emphasis added) However, the tests completed by Poseidon are not consistent with the Doheny Beach pilot study. In fact, in the Doheny study, the water quality for the intake was far superior to ocean water and eliminated the need for much of the otherwise necessary pretreatment (and associated energy consumption and costs).	Comment noted.
59.	The Revised Plan proposes micro-screening ahead of the pre-treatment equipment combined with the discharge of the entrained organisms to the ocean. However, it is not clear from the document that these micro-filters will actually improve the survival of the entrained organisms. Further, as mentioned above, the apparent design includes the micro-filtration of not only the "source water" for the desalination facility, but the additional water necessary for diluting the discharge. Arguably, a more creative design would separate these intakes and avoid the proposed plan to expose the marine organisms in the dilution water to any contact with screening technology that may impact their survival.	This comment is no longer applicable. The Minimization Plan assumes 100% mortality of all organisms that pass through the intake structure in estimating, and mitigating for, marine life mortality. Therefore, Poseidon determined that the installation of micro-screens and the use of a low-pressure membrane system would not be necessary.
60.	<b>Mitigation Analysis</b> "Mitigation measures" as it is used in Section 13142.5(b) must be interpreted to mean "before the fact" mitigation to avoid the intake and mortality of marine life. The Revised Plan offers an "after the fact" mitigation which has clearly been struck down by the federal court for cooling water intakes. There is no distinction in the language of Porter-Cologne § 13142.5(b) that would distinguish other industrial	See response to comment 45.

**SAN DIEGO REGIONAL BOARD RESPONSES TO COMMENTS  
POSEIDON RESOURCES CORPORATION, CARLSBAD DESALINATION PROJECT  
FLOW, ENTRAINMENT AND IMPINGEMENT MINIMIZATION PLAN  
ORDER NO. R9- 2009-0038, AMENDING ORDER NO. R9-2006-0065, NPDES NO. CA0109223**

<i>COMMENT NUMBER</i>	<i>COMMENTS and/or CONCERNS</i>	<i>REGIONAL BOARD RESPONSE</i>
	uses of seawater from this holding in Riverkeeper II.	
61.	<b>Revised Plan Quantification of Unavoidable Impacts to Marine Resources is Unresponsive to Regional Board Concerns.</b> The 2004-2005 impingement sampling data was conducted by EPS in accordance with 316(b) Phase II regulations. These weekly sampling events were not considered to be the focus of the assessment because the majority of impingement impacts were associated with heat treatments. Further, the method of determining the daily biomass entrained associated with a flow of 304 MGD is not given in any version of the Revised Plan or accompanying attachments.	Quantification of unavoidable impacts is not necessary because Poseidon proposes to mitigate for all estimated impacts, without consideration to any site, design, or technology measures that will be implemented to minimize these impacts.
62.	The Revised. Plan entrainment impacts assessment suffers the same flaws as the impingement assessment-lack of specificity. Regional Board staff noted that the Original Plan "does not clearly identify the supporting data or an explanation of underlying assumptions and calculations that were used to estimate proportional mortality values."	The Regional Board, in large part, relied on the Coastal Commission (and their independent expert) review and approval of the entrainment data and necessary mitigation.
63.	Of particular concern is Poseidon's contention that the future survey will adjust the restoration plan to the extent that the lagoon habitat acreage is "higher or lower." This implies that Poseidon could possibly reduce the APF calculation and therefore decrease any mitigation efforts in response to a future survey and restoration plan that is not subject to Regional Board approval.	Although the Regional Board may consider a reduction in the productivity requirement if more current impingement monitoring results support this conclusion, the Board would not be making modifications to the APF or any part of the MLMP, as approved by the Coastal Commission.
64.	Similarly, Poseidon does not address Regional Board staffs concern that the Revised Plan does not outline "how much more severe impacts may be when populations are small." Poseidon's reply is both obtuse and unresponsive. Poseidon merely states that "fish species occurring in low numbers in	Comment noted.

**SAN DIEGO REGIONAL BOARD RESPONSES TO COMMENTS  
POSEIDON RESOURCES CORPORATION, CARLSBAD DESALINATION PROJECT  
FLOW, ENTRAINMENT AND IMPINGEMENT MINIMIZATION PLAN  
ORDER NO. R9- 2009-0038, AMENDING ORDER NO. R9-2006-0065, NPDES NO. CA0109223**

<b>COMMENT NUMBER</b>	<b>COMMENTS and/or CONCERNS</b>	<b>REGIONAL BOARD RESPONSE</b>
	<p>the Poseidon study entrainment samples are ocean species, and conversely larval fish entrained in the highest number were lagoon species." The support for such a contention is lacking. Fish species occurring in lower numbers in entrainment samples are not necessarily ocean species. These fish, or some subpopulation of these fish, may very well be lagoon species. In either case, fish with smaller populations are likely to be highly affected by any amount of entrainment.</p>	
65.	<p><b>An Independent Baseline Study of the Agua Hedionda Lagoon Marine Environment is Required.</b>  Although Poseidon has submitted three different versions of the same study, it has yet to submit an independent baseline study of the marine system in Agua Hedionda Lagoon and the surrounding area. As mentioned above, Poseidon's Revised Plan is simply an adaptation of the EPS Phase II PIC Study conducted in 2004-2005.</p>	Attachment 4, Chapter 3, of the March 27, 2009 Minimization Plan is intended to serve this purpose.
<b>4/2/2008 letter from San Diego County Water Authority</b>		
66.	<p>The San Diego County Water Authority encourages the San Diego Regional Water Quality Control Board (Regional Board) to approve the Carlsbad Desalination Project's Flow, Entrainment, and Impingement Minimization Plan - #R9-2006-0065, NPDES No. CA 0109223. In 2006, the Regional Board unanimously approved a discharge permit for the desalination facility.</p>	Comment noted.

**SAN DIEGO REGIONAL BOARD RESPONSES TO COMMENTS  
POSEIDON RESOURCES CORPORATION, CARLSBAD DESALINATION PROJECT  
FLOW, ENTRAINMENT AND IMPINGEMENT MINIMIZATION PLAN  
ORDER NO. R9- 2009-0038, AMENDING ORDER NO. R9-2006-0065, NPDES NO. CA0109223**

<i>COMMENT NUMBER</i>	<i>COMMENTS and/or CONCERNS</i>	<i>REGIONAL BOARD RESPONSE</i>
<b>4/2/2008 letter from Metropolitan Water District</b>		
67.	<p>The Metropolitan Water District of Southern California joins the San Diego County Water Authority in supporting the development of seawater desalination in Carlsbad as part of a diversified water portfolio for San Diego County.</p> <p>Metropolitan and the San Diego County Water Authority are statewide leaders in water conservation, recycling, and brackish groundwater desalination. However, these accomplishments need to be complemented with other regional and local water management actions, including seawater desalination, in order to manage future challenges associated with population growth, climate change impacts, increased uncertainties in the Bay-Delta, and risk of disruptions to imported supplies due to earthquakes. The Carlsbad project is a crucial first step in developing seawater desalination as a resource for securing the region's water supply reliability.</p>	Comments noted.
<b>4/2/2008 letter from City of Coronado</b>		
68.	The City of Coronado hopes the Regional Board will continue its mission of protecting San Diego's watershed and water quality by approving the Carlsbad Desalination Project for San Diego County's future health and economic prosperity.	Comment noted.
<b>4/2/2008 letter from Assemblymember Martin Garrick, Assembly, California Legislature, 74th District</b>		
69.	I am writing to request your support for the Carlsbad Desalination Plant (Order No.R9-2006-0065, NPDES No. CA0109223). This critical local water supply project is	Comment noted.

**SAN DIEGO REGIONAL BOARD RESPONSES TO COMMENTS  
POSEIDON RESOURCES CORPORATION, CARLSBAD DESALINATION PROJECT  
FLOW, ENTRAINMENT AND IMPINGEMENT MINIMIZATION PLAN  
ORDER NO. R9- 2009-0038, AMENDING ORDER NO. R9-2006-0065, NPDES NO. CA0109223**

<b>COMMENT NUMBER</b>	<b>COMMENTS and/or CONCERNS</b>	<b>REGIONAL BOARD RESPONSE</b>
	scheduled to be reviewed by the San Diego Regional Water Quality Control Board on Wednesday, April 9, 2008.	
<b>4/7/2008 letter from California State Lands Commission</b>		
70.	Poseidon should offer modifications that can be incorporated into the design of the project to minimize entrainment and impingement before proposing marine life restoration. All such design modifications proposed have been rendered infeasible by Poseidon based on cost; however, a true cost/benefit analysis has not been conducted utilizing value recommendations of the State and Federal fish and wildlife agencies, as the value recommendations have yet to be requested.	Comment noted.
71.	CSLC staff believes that it is essential that Poseidon's Flow Plan reflect the recommendations of the State and Federal fish and wildlife agencies concerning the adequacy and appropriateness of Poseidon's aquatic life impact calculations and the quantity, type, location and duration of marine life restoration proposed within the Flow Plan. CSLC staff supports the recommendation contained in the Regional Board's February 19, 2008 letter, Item 7, that Poseidon might benefit from convening a joint meeting with the resource agencies to discuss Poseidon's Flow Plan. A meeting with the resources agencies has been scheduled for May 1st and 2nd, and CSLC will be participating in this meeting.	This comment is no longer applicable.
72.	While Poseidon provides calculations of the magnitude of the impacts to organisms in the Flow Plan dated March 6, 2008, Poseidon also wishes to base the mitigation plan on a financial cap. The final mitigation plan should be based solely on the magnitude of impacts to the organisms; as substantiated by the Trustee Agencies (USFWS, NOAA and CDFG) and agreed to by the Responsible Agencies.	This comment is no longer applicable.

**SAN DIEGO REGIONAL BOARD RESPONSES TO COMMENTS  
POSEIDON RESOURCES CORPORATION, CARLSBAD DESALINATION PROJECT  
FLOW, ENTRAINMENT AND IMPINGEMENT MINIMIZATION PLAN  
ORDER NO. R9- 2009-0038, AMENDING ORDER NO. R9-2006-0065, NPDES NO. CA0109223**

<b>COMMENT NUMBER</b>	<b>COMMENTS and/or CONCERNS</b>	<b>REGIONAL BOARD RESPONSE</b>
73.	<p>The impacted environment is a saltwater lagoon with tidal influence and circulation from the Pacific Ocean. The proposed mitigation is for an inland saltwater marsh <i>with</i> tidal influence. Currently, Poseidon favors off-site mitigation (located 12.5 miles south) based on their efforts to solicit interest from property owners within the Agua Hedionda Lagoon. This off-site mitigation will not result in in-kind mitigation and is proposed at a 1.1: 1.0 ratio. The CSLC would prefer on-site (within the Agua Hedionda Lagoon), in-kind mitigation, at a ratio which will compensate for the losses in time (2:1 minimum). If the ultimate mitigation is off site and not in-kind, then the mitigation ratio should compensate for the impacts both through time and space (Le., at a ratio greater than 2:1). Therefore, it is important that the project proponent exhaust on-site, in-kind mitigation opportunities prior to moving to an off-site plan.</p>	<p>Comment noted. Although not necessarily on-site, the Minimization Plan now provides preference to the mitigation alternatives proposed within the same region as the impacts.</p>
74.	<p>There is some concern that the method used to calculate the "replacement" habitat understates the environment needed to produce the organisms impacted by the desalination plant. This underestimation occurs both on the intake side, which appears to ignore the contribution of the watershed and the Pacific Ocean, and on the discharge side, with the impacts caused by increased salinity. We understand that the local Water Board has engaged the services of an independent expert to re-calculate these impacts. Once again, the final mitigation plan should be based on the magnitude of the impacts to the organisms, which may be ten times greater than estimated by Poseidon.</p>	<p>To clarify, at the time that this comment was submitted, review of impacts for the Regional Board were conducted solely by Regional Board staff. The March 27, 2009 Minimization Plan reflects corrections that resulted from staff inquiries to Poseidon. Therefore the Regional Board believes this comment is no longer applicable.</p> <p>Poseidon did agree to pay for an independent expert review by Dr. Pete Raimondi, to assist the Regional Board in determining the appropriate impingement assessment approach and the adequacy of mitigation, but that occurred subsequent to the submittal of this comment.</p>
75.	<p>Poseidon stated that it can reduce the velocity of the water</p>	<p>See response to comment 50.</p>

**SAN DIEGO REGIONAL BOARD RESPONSES TO COMMENTS  
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	flowing into the intake to below 0.5 fps (feet per second). Poseidon should be required to provide substantiation of the ability to operate at this flow rate.	
76.	CSLC staff agrees with Regional Water Board staff in its February 19,2008 request for information, Item 6b, that a one-time mitigation plan (particularly with many unknown components) does not appear to be adequate for the long-term impacts to resources that will be impacted. Poseidon's response is that the agencies should rely on a process and that it is Poseidon's intent "...to create habitat comparable to that in Agua Hedionda Lagoon." Because Poseidon has provided to the CSLC a list of proposed restoration locations based upon the results of a request for proposed solicitation by bidders with a bid-cap price, we do not believe that Poseidon is being specifically responsive to this issue.	The Regional Board has concluded that the MLMP contains sufficient specificity to ensure proper selection of necessary mitigation site(s), in lieu of a single proposed alternative. The Regional Board also concludes that the imposition of a productivity requirement, and necessary monitoring to determine compliance, will ensure that the proposed mitigation adequately and appropriately offsets recurring impacts from CDP operation.
<b>1/19/2009 letter from Hubbs-Sea World Research Institute</b>		
77.	Hubbs-SeaWorld Research Institute (HSWRI) supports acceptance of the measures proposed by Carlsbad Desalination Project that will ensure the continued viability of the Lagoon and the surrounding environs, and has no concerns that would prevent the Regional Board's approval of the Marine Life Mitigation Plan.	Comment noted.
<b>1/19/2009 letter from Industrial Environmental Association</b>		
78.	The IEA respectfully requests that the Regional Board approve this mitigation plan as submitted and allow the project to proceed to construction.	Comments noted.
<b>1/19/2009 letter from Carlsbad Chamber of Commerce</b>		
79.	The Carlsbad Chamber of Commerce endorses this project and requests that the Regional Board approve Poseidon's	Comments noted.



**SAN DIEGO REGIONAL BOARD RESPONSES TO COMMENTS  
POSEIDON RESOURCES CORPORATION, CARLSBAD DESALINATION PROJECT  
FLOW, ENTRAINMENT AND IMPINGEMENT MINIMIZATION PLAN  
ORDER NO. R9- 2009-0038, AMENDING ORDER NO. R9-2006-0065, NPDES NO. CA0109223**

<i>COMMENT NUMBER</i>	<i>COMMENTS and/or CONCERNS</i>	<i>REGIONAL BOARD RESPONSE</i>
	Marine Life Mitigation Plan.	
<b>1/19/2009 letter from the City of Carlsbad</b>		
80.	It has been ten years since we first launched this projected and the time has come for the Regional Water Quality Control Board to complete its approval of the Carlsbad Desalination Project. Please do so at your February 11 hearing and allow our region to move forward in creating a drought-proof, reliable local water supply.	Comments noted.
<b>1/19/2009 letter from the San Diego County Building &amp; Construction Trades Council, AFL-CIO</b>		
81.	The San Diego County Building and Construction Trades Council request the Regional Board's support for approving Poseidon' Carlsbad Desalination Project Marine Life Mitigation Plan. The San Diego County Building and Construction Trades Council is proud to be a part of the team that will be bringing a much needed, new water supply to San Diego. We ask you to consider the importance of this project to the region and help us to move forward to construction by approving the Marine Life Mitigation Plan.	Comments noted.
<b>1/21/2009 letter from Sweetwater Authority</b>		
82.	Sweetwater has carefully reviewed Poseidon's project, including the Marine Life Mitigation Plan, to ensure that Poseidon has done its due diligence in mitigating for all potential impacts. The mitigation plan was conceived through the cooperation of multiple agencies, including the Regional Water Quality Control Board, and has received approval from all other participating agencies. We are satisfied that this plan meets the standards of both the Water Code and the Coastal Act and fulfills the conditions your agency enacted when you approved the Flow, Entrainment and Impingement Minimization Plan in April 2008. With over ten years of analysis, review and revisions, this project is ready to move	Comments noted.

**SAN DIEGO REGIONAL BOARD RESPONSES TO COMMENTS  
POSEIDON RESOURCES CORPORATION, CARLSBAD DESALINATION PROJECT  
FLOW, ENTRAINMENT AND IMPINGEMENT MINIMIZATION PLAN  
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<i>COMMENT NUMBER</i>	<i>COMMENTS and/or CONCERNS</i>	<i>REGIONAL BOARD RESPONSE</i>
	on to the construction stage. The Sweetwater Authority Governing Board asks the Regional Board to make the right decision and approve the Marine Life Mitigation Plan for the Carlsbad Desalination Project.	
<b>1/21/2009 letter from San Diego County Taxpayers Association</b>		
83.	This project will generate jobs and critical revenues for local governments including \$2.4 million in property tax per year for the next 30 years, as well as \$10.4 million in sales tax during construction, and \$2.9 million per year thereafter. At a time when ratepayers are facing mandatory conservation and higher water rates, the SDCTA requests your immediate approval of the project's Marine Life Mitigation Plan.	Comments noted.
<b>1/21/2009 letter from The Flower Fields in Carlsbad, CA</b>		
84.	A reliable and affordable water supply is crucial to the survival of The Flower Fields and hundreds of small farming operations in San Diego. We strongly urge the Board to approve the Marine Life Mitigation Plan for the Carlsbad Desalination Project so that we can move forward to construction on this important new local water supply.	Comments noted.
<b>1/21/2009 letter from the Santa Fe Irrigation District</b>		
85.	The Carlsbad Desalination Project has undergone a decade of regulatory review and has long since proven its environmental credentials. We are confident that the MLMP currently under review fulfills all of the conditions of the discharge permit the Board issued in 2006. We believe that this agreement provides our region with the most dependable, cost-effective, and environmentally responsible water source to augment our imported supplies. On behalf of my Board of Directors and our thousands of customers, we urge the Board to approve the Marine Life Mitigation Plan.	Comments noted.

**SAN DIEGO REGIONAL BOARD RESPONSES TO COMMENTS  
POSEIDON RESOURCES CORPORATION, CARLSBAD DESALINATION PROJECT  
FLOW, ENTRAINMENT AND IMPINGEMENT MINIMIZATION PLAN  
ORDER NO. R9- 2009-0038, AMENDING ORDER NO. R9-2006-0065, NPDES NO. CA0109223**

<i>COMMENT NUMBER</i>	<i>COMMENTS and/or CONCERNS</i>	<i>REGIONAL BOARD RESPONSE</i>
<b>1/21/2009 letter from Olivenhain Municipal Water District</b>		
86.	Olivenhain has thoroughly reviewed the Carlsbad Desalination Project's Marine Life Mitigation Plan and we are confident in giving it our endorsement. The plan ensures that Poseidon will mitigate extensively for any impingement and entrainment impacts in the lagoon. We believe that this plan, which has been broadly vetted among the appropriate State regulators, is well conceived and should be approved at your next meeting.	Comments noted.
<b>1/21/2009 letter from Councilmember Benjamin Hueso, San Diego City Council President</b>		
87.	Poseidon should be allowed to move forward with the process that was started by the Regional Board so that it can take the steps contained in the Plan, and so that our respective staff, in accordance with the continuing interagency process, can determine at which of the mitigation site locations provided by the Plan the actual mitigation should occur, in accordance with the Plan's strict performance-based goals and success criteria. Your final approval of the Plan on February 11,2009 will allow an environmentally sound project, that has been in the works for ten years, to commence construction. I hope you will act swiftly. Thank you for your consideration of my support for the Carlsbad Desalination Project and Poseidon's Marine Life Mitigation Plan.	Comments noted.
<b>1/21/2009 letter from Martin Garrick, Assemblymember, District 74, Assembly California Legislature</b>		
88.	Collectively, the City of Carlsbad, the State Lands Commission, the Coastal Commission, and the Regional Board have done their due diligence, analyzing the project extensively and concluding there are no significant, unavoidable impacts for both the construction and on-going operation of the plant. I feel strongly that this project will have no detrimental effects on the coastline or marine habitat	Comments noted.

**SAN DIEGO REGIONAL BOARD RESPONSES TO COMMENTS  
POSEIDON RESOURCES CORPORATION, CARLSBAD DESALINATION PROJECT  
FLOW, ENTRAINMENT AND IMPINGEMENT MINIMIZATION PLAN  
ORDER NO. R9- 2009-0038, AMENDING ORDER NO. R9-2006-0065, NPDES NO. CA0109223**

<i>COMMENT NUMBER</i>	<i>COMMENTS and/or CONCERNS</i>	<i>REGIONAL BOARD RESPONSE</i>
	surrounding the plant and I urge your approval of the Marine Life Mitigation Plan.	
<b>1/21/2009 letter from Christine Kehoe, Senator, District 39, California State Senate</b>		
89.	The Carlsbad Desalination Project offers a local solution to our long term water supply needs that will reduce the region's dependence on imported water especially during this period of extended drought. I urge your favorable consideration of this project.	Comments noted.
<b>1/21/2009 letter from Don Christiansen</b>		
90.	I am a resident of Carlsbad and I have been following the progress of the Carlsbad Desalination Project for many years. As it now stands, the project has gained every endorsement and approval it needs to be built with the exception of your Board's sign off of the Marine Life Mitigation Plan. It has been a long, slow road to get this point and I think the Carlsbad Desalination Project has done everything it needs to do to gain your approval. I appreciate your time and attention to my letter.	Comments noted.
<b>1/21/2009 letter from Vallecitos Water District</b>		
91.	On behalf of the Vallecitos Water District (Vallecitos) and our Board of Directors, I am pleased to offer our endorsement of the Carlsbad Desalination Project and its Marine Life Mitigation Plan. With the recent cutbacks in San Diego's imported water supplies, Vallecitos is eager to see this project progress towards construction as soon as possible. We urge the Regional Water Quality Control Board to accept and approve Poseidon's Marine Life Mitigation Plan.	Comments noted.
<b>1/21/2009 letter from Agua Hedionda Lagoon Foundation</b>		
92.	The Agua Hedionda Lagoon Foundation requests that the Regional Water Quality Control Board approve the Marine Life Mitigation Plan (MLMP) for the Carlsbad Desalination	Comments noted.

**SAN DIEGO REGIONAL BOARD RESPONSES TO COMMENTS  
POSEIDON RESOURCES CORPORATION, CARLSBAD DESALINATION PROJECT  
FLOW, ENTRAINMENT AND IMPINGEMENT MINIMIZATION PLAN  
ORDER NO. R9- 2009-0038, AMENDING ORDER NO. R9-2006-0065, NPDES NO. CA0109223**

<i>COMMENT NUMBER</i>	<i>COMMENTS and/or CONCERNS</i>	<i>REGIONAL BOARD RESPONSE</i>
	Project. Poseidon’s Marine Life Mitigation Plan extends the benefits of a clean watershed and healthy ecosystem to wetlands in other parts of Southern California and we urge you to approve the plan without delay.	
<b>1/21/2009 letter from San Diego County Farm Bureau</b>		
93.	It is imperative that this region develop new, drought-tolerant local sources that can supplement our diminishing imported water supplies. The Carlsbad Desalination Project is a viable and timely option for our county. Any other options would take years to develop, but our need to diversify San Diego County's water supply is urgent. On behalf of San Diego's 5,000 farmers, I urge the Regional Board to approve Poseidon's Marine Life Mitigation Plan and allow the Carlsbad Desalination Project to move forward.	Comments noted.
<b>1/21/2009 letter from San Diego North Economic Development Council</b>		
94.	This desalination project will employ the most energy-efficient and environmentally-sound principles in its construction and operation. Poseidon's stewardship of the Agua Hedionda Lagoon, dedication of multiple acres for public use on the lagoon, and commitment to restore wetland habitat in other Southern California sites demonstrates the care and consideration this company has displayed towards our marine ecosystem. The mitigation plan submitted to you by Poseidon Resources has been reviewed and approved by the numerous State agencies and found to meet all the requirements of those entities. On behalf of the Council and our members, I offer our full support of the Carlsbad Desalination Project and ask you to approve its Marine Life Mitigation Plan.	Comments noted.

**SAN DIEGO REGIONAL BOARD RESPONSES TO COMMENTS  
POSEIDON RESOURCES CORPORATION, CARLSBAD DESALINATION PROJECT  
FLOW, ENTRAINMENT AND IMPINGEMENT MINIMIZATION PLAN  
ORDER NO. R9- 2009-0038, AMENDING ORDER NO. R9-2006-0065, NPDES NO. CA0109223**

<i>COMMENT NUMBER</i>	<i>COMMENTS and/or CONCERNS</i>	<i>REGIONAL BOARD RESPONSE</i>
<b>1/22/2009 letter from Mark Wyland, Senator, District 38, California State Senate</b>		
95.	<p>This project has been extensively analyzed by the City of Carlsbad, as well as a wide range of community, environmental, scientific, business and regulatory organizations. The evidence demonstrates that it will have no detrimental effects on the coastline or marine habitat surrounding the plant. In fact, Poseidon Resources has become a vital part of the lagoon's long-term health by agreeing to provide ongoing dredging and maintenance when the Encina Power Station is decommissioned. The project's Flow, Entrainment and Impingement Minimization Plan can assure the Board that the project will be operated using the best possible site, design and technology. The project's marine life mitigation plan, which includes 55 acres of wetlands restoration, will be more than adequate for its purposes. I believe that elected officials have an obligation to advance projects that are in the best interest of their constituents. On behalf of the residents of District 38, I urge you to support the Carlsbad Desalination Project's Marine Life Mitigation Plan.</p>	Comments noted.
<b>1/22/2009 letter from Robert Simmons, Counselor-at-Law</b>		
96.	<p>It is clear to me that this Poseidon Mitigation Plan fully complies with the controlling section of the California Water code (#13,142.5(B)). The 55 acre mitigation reach meets and exceeds the level of specificity required by the Regional Board. In closing, I urge the Board to be mindful of the following two facts:</p> <ol style="list-style-type: none"> <li>1. Besides protecting the marine life in coastal waters, the Regional Boards are also tasked with promoting the "beneficial uses" of such waters. Surely, providing</li> </ol>	Comments noted.

**SAN DIEGO REGIONAL BOARD RESPONSES TO COMMENTS  
POSEIDON RESOURCES CORPORATION, CARLSBAD DESALINATION PROJECT  
FLOW, ENTRAINMENT AND IMPINGEMENT MINIMIZATION PLAN  
ORDER NO. R9- 2009-0038, AMENDING ORDER NO. R9-2006-0065, NPDES NO. CA0109223**

<b>COMMENT NUMBER</b>	<b>COMMENTS and/or CONCERNS</b>	<b>REGIONAL BOARD RESPONSE</b>
	<p>potable water to 110,000 human families more than offsets the speculative marine injury that may remain after the planned mitigation.</p> <p>2. The two environmental groups that oppose the Plan's approval - Surfrider Foundation and CoastKeeper - have opposed the Poseidon project since its very inception. They oppose all coastal desalination and are out of step with the vast majority of environmentalists, who believe that the threat of severe drought injury, to the land environment, is far worse than the speculative threat posed by Poseidon to the marine environment.</p> <p>I urge you to approve the Poseidon Plan as submitted, without delay.</p>	
<b>1/23/2009 letter from San Diego Regional Chamber of Commerce</b>		
97.	<p>The Carlsbad desalination facility was designed to minimize impacts to marine life found in the Agua Hedionda Lagoon and surrounding coastal areas. Poseidon Resources has also created a substantive, comprehensive plan to ensure it mitigates fully for the impacts that are unavoidable. This plan includes ongoing lagoon maintenance and restoration of up to 55.4 acres of wetland in Southern California.</p> <p>The Chamber commends Poseidon Resource's efforts to make this project environmentally benign, while reducing our region's dependence on imported water. The MLMP clearly meets the requirements of the discharge permit you have already issued and deserves the Board's approval.</p>	Comments noted.
<b>1/23/2009 letter from Valley Center Water District</b>		
98.	The new Marine Life Mitigation Plan (MLMP) provides further evidence that Poseidon Resources takes its responsibilities to our marine environment seriously and has made numerous	Coordination among participating agencies for the amendment of the Plan as required by Section 13225 of the California Water Code

**SAN DIEGO REGIONAL BOARD RESPONSES TO COMMENTS  
POSEIDON RESOURCES CORPORATION, CARLSBAD DESALINATION PROJECT  
FLOW, ENTRAINMENT AND IMPINGEMENT MINIMIZATION PLAN  
ORDER NO. R9- 2009-0038, AMENDING ORDER NO. R9-2006-0065, NPDES NO. CA0109223**

<b>COMMENT NUMBER</b>	<b>COMMENTS and/or CONCERNS</b>	<b>REGIONAL BOARD RESPONSE</b>
	<p>binding commitments to that effect.</p> <p>The interagency approval process of the MLMP, which involved eight state agencies including Regional Board staff, Coastal Commission and State Lands Commission staff and the Department of Fish and Game, culminated in approval by the Coastal Commission in Aug. 2008 of a performance-based MLMP with 11 pre-approved candidate mitigation sites. It's important to note that the Regional Board staff participated in the review of the mitigation plan but never expressed concerns or objected to the final plan that was approved by the Coastal Commission.</p> <p>Valley Center Municipal Water District understands that seawater desalination is a key part of the solution to the region's long-term water reliability needs. The entire San Diego region is depending on this new water supply to lessen the demand on imported water. We find no reason to delay action any longer and we strongly urge the Board to approve this project.</p>	<p>was a condition imposed by the Regional Board on Poseidon with the Regional Board's approval of Resolution No. R9-2008-0039. While the Marine Life Mitigation Plan submitted to and approved by the Coastal Commission satisfied the Coastal Commission requirements, it does not necessarily satisfy the conditions required by the Regional Board. The Regional Board must independently evaluate the information submitted to the Regional Board for compliance with all applicable sections of the California Water Code.</p>
<b>1/23/2009 letter from Julianne Nygaard, Council Member, City of Carlsbad</b>		
99.	<p>This plan fully mitigates for the minimal marine impacts of the Desalination Project anticipated to occur after the Power Station is decommissioned.</p> <p>After ten years of planning and study, I firmly believe the Carlsbad desalination plant is an environmentally responsible solution to the regional water reliability needs. The Carlsbad Desalination Project is not only a water supply, but a significant water storage environmental enhancement, preservation, and restoration project. Without any hesitation,</p>	<p>It should be noted that the NPDES permit adopted by the Regional Board does not cover the situation when Encina Power Station (EPS) is no longer operating and Poseidon is a stand-alone facility. The permit covers the situation where EPS draws in more water than needed to operate the Carlsbad Desalination Plant [i.e., greater than 304 million gallons per day (MGD)], and the situation where EPS draws in less than</p>



**SAN DIEGO REGIONAL BOARD RESPONSES TO COMMENTS  
POSEIDON RESOURCES CORPORATION, CARLSBAD DESALINATION PROJECT  
FLOW, ENTRAINMENT AND IMPINGEMENT MINIMIZATION PLAN  
ORDER NO. R9- 2009-0038, AMENDING ORDER NO. R9-2006-0065, NPDES NO. CA0109223**

<b>COMMENT NUMBER</b>	<b>COMMENTS and/or CONCERNS</b>	<b>REGIONAL BOARD RESPONSE</b>
	this project deserves your full support.	304 MGD but more than 0 MGD. A new report of waste discharge in application for an NPDES permit must be submitted by Poseidon to cover the situation where EPS is no longer operating and no longer needs to draw intake water from Agua Hedionda Lagoon for power plant operations. Additional requirements for minimizing the intake and mortality of all forms of marine life may be required of Poseidon under this situation pursuant to California Water Code Section 13142.5(b).
<b>1/26/2009 letter from San Diego County Water Authority</b>		
100.	The San Diego County Water Authority's recent drought response planning contemplates the Carlsbad Desalination Project delivering water at full capacity to the region in early 2012. The Carlsbad Desalination Project is essential to the Water Authority's ability to achieve its water diversification goals. The Water Authority urges all members of the Regional Water Quality Control Board to approve the Carlsbad Desalination Project's final conditions.	Comments noted.
<b>4/2/2009 Letter from Poseidon Resources</b>		
101.	The Marine Life Mitigation Plan (MLMP) represents the culmination of a comprehensive, interagency planning process involving extensive scientific study and public involvement and ensures that potential entrainment and impingement impacts to marine resources from the Project will be fully mitigated in compliance with Resolution R9-2008-0039, Order No. R9-2006-0065, and Water Code Section 13142.5(b). Specifically, the MLMP will:	Comments noted.

**SAN DIEGO REGIONAL BOARD RESPONSES TO COMMENTS  
POSEIDON RESOURCES CORPORATION, CARLSBAD DESALINATION PROJECT  
FLOW, ENTRAINMENT AND IMPINGEMENT MINIMIZATION PLAN  
ORDER NO. R9- 2009-0038, AMENDING ORDER NO. R9-2006-0065, NPDES NO. CA0109223**

<b>COMMENT NUMBER</b>	<b>COMMENTS and/or CONCERNS</b>	<b>REGIONAL BOARD RESPONSE</b>
	<ul style="list-style-type: none"> <li>• Avoid or mitigate to less-than-significant levels all impacts to marine resources associated with potential E&amp;I from the Project's water intake;</li> <li>• Create or restore up to 55.4 acres of high-quality estuarine wetland habitat based on the best science available to mitigate Project-related impacts and likely result in a net biological benefit to the Southern California Bight;</li> <li>• Establish monitoring protocols and empower the Regional Board and the California Coastal Commission with enforcement mechanisms to ensure potential E&amp;I impacts are accurately measured over time and that mitigation success targets consistently are achieved;</li> <li>• Establish an enforceable schedule for completion of site selection (nine months), environmental review and permitting of the site(s) (24 months) and the start of construction (six months after approval of the permits);</li> <li>• Provide for significant, continuing agency oversight during the selection, development and performance monitoring of the final mitigation site(s), including by the Executive Officer if the Regional Board approves the MLMP (as the MLMP would then be equally enforceable by the Regional Board); and,</li> <li>• Authorize enforcing agencies to order remediation in the event the rigorous performance criteria are not met.</li> </ul> <p>(Comments from Latham &amp; Watkins LLP January 26, 2009 Comment Letter, pgs. 3, 12-20 and Latham &amp; Watkins LLP April 2, 2009 Comment Letter, pgs. 18-20)</p>	
102.	<p>Poseidon's submittal of the MLMP was not untimely.</p> <p>(Comments from Latham &amp; Watkins LLP January 26, 2009 Comment Letter, pgs. 37-38)</p>	<p>This comment is no longer applicable as Order R9-2009-0038 supersedes Resolution R9-2008-0039.</p>
103.	<p>The Minimization Plan properly relies upon data collected during the 2004-2005 Impingement Mortality and Entrainment Characterization Study conducted by Tenera Consultants to</p>	<p>With the submittal of the March 27, 2009 Minimization Plan, the Regional Board concurs with this statement.</p>

**SAN DIEGO REGIONAL BOARD RESPONSES TO COMMENTS  
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FLOW, ENTRAINMENT AND IMPINGEMENT MINIMIZATION PLAN  
ORDER NO. R9- 2009-0038, AMENDING ORDER NO. R9-2006-0065, NPDES NO. CA0109223**

<b>COMMENT NUMBER</b>	<b>COMMENTS and/or CONCERNS</b>	<b>REGIONAL BOARD RESPONSE</b>
	<p>assess the entrainment and impingement impacts associated with Encina's intake.</p> <p>(Comments from Latham &amp; Watkins LLP January 26, 2009 Comment Letter, pgs. 20-23)</p>	
104.	<p>On April 30, 2008, Poseidon submitted a calculation indicating that the Project's standalone impingement would be approximately 1.57 kg per day, a de minimis value. When operating in co-located mode, any impingement associated with the Project would naturally be even less.</p> <p>Based on requests from Regional Board staff, Poseidon submitted Attachment 5 to the Minimization Plan which presents several different ways to account for the direct relationship between impingement and flow in the impingement estimates. Depending on their treatment of the outlier sampling events and the extent to which they account for the relationship between flow and impingement, these approaches produce a range of possible impingement estimations of between 1.57 to 7.16 kg per day.</p> <p>Subsequent scientific analysis of the outlier events completed by experts for Poseidon conclude that the estimate values toward the lower end of the range more reasonably anticipate the Project's operations. In any event, Poseidon considers all of the various, reasonable impingement estimation approaches to result in impingement estimations that are de minimis.</p> <p>(Comments from Latham &amp; Watkins LLP January 26, 2009 Comment Letter, pgs. 23-24; Latham &amp; Watkins LLP April 2, 2009 Comment Letter, pgs. 10-12; Minimization Plan, Attachments 5, 7 and 9)</p>	<p>The Regional Board considered multiple approaches to estimating impingement associated with the CDP's projected operations under co-located conditions. The estimates derived from the multiple approaches range from 1.56kg/day to 7.16 kg/day of fish impinged. The Discharger contends that the estimate of 4.7 kg/day overstates the projected impingement associated with CDP's operations. The discharger and the Regional Board staff disagree as to whether, and to what extent, it is appropriate to exclude two days of very high impingement. The Discharger refers to the data from the two very high impingement days as "outliers." Staff disagrees that the discharger has adequately justified its characterization of the data as "outliers" and disagrees with the Discharger's proposed exclusion of the data from the estimate of future impacts. The Regional Board finds that it is unnecessary to resolve these disputes. The Regional Board finds that 4.7 kg/day is a reasonable, conservative estimate of impingement associated with CDP's projected operations under co-located conditions and notes that the Discharger has agreed to meet a fish productivity standard of 1715.5 kg/year, derived from the estimate of</p>

**SAN DIEGO REGIONAL BOARD RESPONSES TO COMMENTS  
POSEIDON RESOURCES CORPORATION, CARLSBAD DESALINATION PROJECT  
FLOW, ENTRAINMENT AND IMPINGEMENT MINIMIZATION PLAN  
ORDER NO. R9- 2009-0038, AMENDING ORDER NO. R9-2006-0065, NPDES NO. CA0109223**

<b>COMMENT NUMBER</b>	<b>COMMENTS and/or CONCERNS</b>	<b>REGIONAL BOARD RESPONSE</b>
		4.7 kg/day, in the mitigation wetlands.
105.	<p>The CDP's projected impingement when operating in stand-alone mode ranges from 1.57 to 7.1 kilograms per day ("kg/day") based on applying a linear regression analysis to EPS's 2004-05 impingement sampling data.</p> <p>The 2004-2005 EPS sampling data includes 52 samples events. During two of the sample events, January 12 and February 23, the recorded impingement was observed to be relatively higher than on the other fifty days. Importantly, these two sample days immediately follow storm events. Subsequent analysis completed by Drs. Chang and Jenkins, experts for Poseidon, indicate that the storm events preceding the January 12 and February 23 samples have a low probability of recurrence, each likely to occur no more than once every quarter century. The likelihood that both such events will occur in any given year, as they did during the 2004-2005 sample year, is even more remote.</p> <p>Because the rains preceding the two outlier collection events can be expected to occur less than once every 20 years (i.e., less than 5%), the weight of the outliers should be discounted accordingly. When the weighted-average flow-proportioned approach (3-B) incorporates an outlier probability value of less than 5%, the approach calculates an impingement estimate of less than 2.24 kg/day, with 2.24 providing a reasonable upper bound. This value provides a reasonable approximation of the CDP's potential impingement.</p> <p>(Comments from Latham &amp; Watkins LLP January 26, 2009 Comment Letter, pg. 23, fn. 45; Latham &amp; Watkins LLP April 2, 2009 Comment Letter, pgs. 10-11, Appendix B, Tab 3; Minimization Plan, Attachments 5 and 9)</p>	<p>To clarify not all values included in the range of 1.57 to 7.16 are based on applying a linear regression analysis.</p> <p>Regional Board staff disagree with the Discharger's claim that the two high impingement results were a result of storm events, and have provided testimony to demonstrate alternative causes.</p> <p>Regardless, it is unnecessary to resolve these disputes because the Regional Board finds that 4.7 kg/day is a reasonable, conservative estimate of impingement associated with CDP's projected operations under co-located conditions and notes that the Discharger has agreed to meet a fish productivity standard of 1715.5 kg/year, derived from the estimate of 4.7 kg/day, in the mitigation wetlands.</p>

**SAN DIEGO REGIONAL BOARD RESPONSES TO COMMENTS  
POSEIDON RESOURCES CORPORATION, CARLSBAD DESALINATION PROJECT  
FLOW, ENTRAINMENT AND IMPINGEMENT MINIMIZATION PLAN  
ORDER NO. R9- 2009-0038, AMENDING ORDER NO. R9-2006-0065, NPDES NO. CA0109223**

<b>COMMENT NUMBER</b>	<b>COMMENTS and/or CONCERNS</b>	<b>REGIONAL BOARD RESPONSE</b>
106.	<p>EPS's daily water requirements are approximately twice those projected for the Project. To satisfy EPS's water demands, the power plant draws water in at a flow rate that exceeds the Project's projected flow rate. When the Project operates in standalone mode, therefore, it will be able to operate the existing intake facilities at a reduced flow rate and use fewer pumps to collect the water. By lowering its flow rate below the 0.5 fps level, the Project will reduce the impingement impacts associated with the desalination plant operations to a level that the Coastal Commission acknowledged is 'a de minimis impact.'" Moreover, the EPA has recognized that a water intake flow rate equivalent to the Project's (0.5 ft/s) would minimize impingement impacts to insignificant levels.</p> <p>(Comments from Latham &amp; Watkins LLP January 26, 2009 Comment Letter, pgs. 24-26)</p>	<p>The EPS NPDES permit contains a permitted discharge flow rate of 863.5 MGD. The EPS intake flow rate needs are expected to decrease over time due to other power generating sources within the San Diego Region and elsewhere. Thus, the reduced flow rate from 863.5 to 304 MGD would result in an overall reduction of the impacts caused by impingement and entrainment of organisms at the intake structure. When the intake structure is operated for the benefit of the CDP during prolonged temporary shutdown, the Regional Board may require Poseidon to implement additional design and technology measures to reduce intake impacts, including a requirement to reduce the intake velocity to less than 0.5 fps. The Regional Board, however, has not relied specifically on a particular intake velocity in establishing its findings and requirements as contained in the Tentative Order. When CDP proposes to operate as a stand-alone facility, with EPS generating units permanently shut down, a new analysis will be required to ensure compliance with Water Code section 13142.5(b).</p> <p>See also response to comment 50.</p>
107.	<p>Using the Empirical Transport Model ("ETM") and the results of the June 2004 to June 2005 entrainment survey, Tenera Environmental concluded that the Project's entrainment</p>	<p>Comment noted.</p>

**SAN DIEGO REGIONAL BOARD RESPONSES TO COMMENTS  
POSEIDON RESOURCES CORPORATION, CARLSBAD DESALINATION PROJECT  
FLOW, ENTRAINMENT AND IMPINGEMENT MINIMIZATION PLAN  
ORDER NO. R9- 2009-0038, AMENDING ORDER NO. R9-2006-0065, NPDES NO. CA0109223**

<b>COMMENT NUMBER</b>	<b>COMMENTS and/or CONCERNS</b>	<b>REGIONAL BOARD RESPONSE</b>
	<p>impacts would result in an Area of Production Foregone (“APF”) of 36.8 acres. The calculation of 36.8 APF was an extremely conservative estimation and was based on four equally conservative assumptions:</p> <ul style="list-style-type: none"> <li>(1) Assumes 100% mortality of all marine organisms entering the intake;</li> <li>(2) Assumes 100% survival of all fish larvae in their natural environment;</li> <li>(3) Assumes species are evenly distributed throughout the entire depth and volume of the water body; and</li> <li>(4) Assumes the entire habitat from which the entrained fish larvae may have originated is destroyed.</li> </ul> <p>The entrainment model also did not account for the significant environmental benefits that extend well beyond compensating for the entrainment impacts.</p> <p>Subsequent to the March 2008 submission of the 36.8 APF calculation and supporting documents to the Regional Board, Dr. Pete Raimondi reviewed the entrainment study at the request of the Coastal Commission. As a result of this review, two additional layers of resource protection were added to the Project’s mitigation obligation. First, Dr. Raimondi added open ocean water species (e.g., the northern anchovy) to the entrainment model, even though he recognized that the water intake system’s intake system’s entrainment impact on ocean species is very small. By adding ocean species, Dr. Raimondi’s approach forces Poseidon to mitigate for a number of species that will be only minimally affected by the Project’s operations. Second, Dr. Raimondi applied an 80% confidence level APF as the basis for mitigation. This approach represents a significant departure from the way that entrainment studies have been conducted in the past and ensures that the MLMP plan will fully account for the Project’s entrainment impacts. Whereas Tenera based its APF calculation on a 50% confidence</p>	

**SAN DIEGO REGIONAL BOARD RESPONSES TO COMMENTS  
POSEIDON RESOURCES CORPORATION, CARLSBAD DESALINATION PROJECT  
FLOW, ENTRAINMENT AND IMPINGEMENT MINIMIZATION PLAN  
ORDER NO. R9- 2009-0038, AMENDING ORDER NO. R9-2006-0065, NPDES NO. CA0109223**

<b>COMMENT NUMBER</b>	<b>COMMENTS and/or CONCERNS</b>	<b>REGIONAL BOARD RESPONSE</b>
	<p>interval—i.e., the level of confidence that past entrainment studies have generally used—Dr. Raimondi used the higher 80% figure. Thus, to an 80% degree of certainty, the mitigation plan comprehensively identifies and accounts for any entrainment impacts.</p> <p>When these adjustments are combined with all of the conservative assumptions that Tenera had already incorporated in arriving at the 36.8-acre APF figure, the entrainment model generates a final APF of 55.4 acres that ensures resource protection and promotes excess mitigation.</p> <p>(Comments from Latham &amp; Watkins LLP January 26, 2009 Comment Letter, pgs. 27-31)</p>	
108.	<p>On February 19, 2008, Regional Board staff sent Poseidon a letter identifying concerns with the June 29, 2007 version of the Minimization Plan.</p> <p>(Comments from Latham &amp; Watkins LLP January 26, 2009 Comment Letter, pgs. 31-34)</p>	Comment noted.
109.	<p>The Regional Board directed Poseidon to resolve the conditions of the April Resolution through an interagency review and approval process. As a result, the MLMP was developed in a months-long interagency process and will continue to engage the agencies in site selection, restoration plan development, and performance monitoring. Such interagency actions included the May 1 and 2 interagency meeting regarding the MLMP, the Scientific Advisory Panel's review of the MLMP at the request of the Coastal Commission, the submission of various drafts of the MLMP to various interested agencies by Coastal Commission staff, Coastal Commission and State Lands Commission review</p>	Comment noted.

**SAN DIEGO REGIONAL BOARD RESPONSES TO COMMENTS  
POSEIDON RESOURCES CORPORATION, CARLSBAD DESALINATION PROJECT  
FLOW, ENTRAINMENT AND IMPINGEMENT MINIMIZATION PLAN  
ORDER NO. R9- 2009-0038, AMENDING ORDER NO. R9-2006-0065, NPDES NO. CA0109223**

<b>COMMENT NUMBER</b>	<b>COMMENTS and/or CONCERNS</b>	<b>REGIONAL BOARD RESPONSE</b>
	<p>and approval of the MLMP, and finalization of MLMP language by Coastal Commission staff</p> <p>(Comments from Latham &amp; Watkins LLP January 26, 2009 Comment Letter, pgs. 31-34)</p>	
110.	<p>The underlying data upon which the MLMP is based were collected in 2004 – 2005 under a Regional Board-approved work plan and reviewed by the agency’s third-party consultant, Tetra Tech. The data are representative, adequate, and appropriate for assessment of potential E&amp;I effects during both co-located and stand-alone operations.</p> <p>(Comments from Latham &amp; Watkins LLP January 26, 2009 Comment Letter, pgs. 31-34)</p>	<p>The Regional Board concurs that the data are adequate for estimating impingement and entrainment during 2004-2005, for the purpose of estimating impacts from CDP co-located operation.</p>
111.	<p>Although Project-related impingement and entrainment are expected to be minimal and will already be reduced by the site, design and technology elements, Poseidon has committed to mitigation under the terms of the MLMP to fully offset potential entrainment and impingement.</p> <p>(Comments from Latham &amp; Watkins LLP January 26, 2009 Comment Letter, pgs. 31-34)</p>	<p>Comment noted.</p>
112.	<p>The actual mitigation site(s), which will be selected this year, will not be locked in to San Dieguito Lagoon or other pre-determined outcome as staff were concerned in April 2008, and will be at location(s) acceptable to the Executive Officer of the Regional Board, and the Executive Director of the Coastal Commission.</p>	<p>Comment noted.</p>



**SAN DIEGO REGIONAL BOARD RESPONSES TO COMMENTS  
POSEIDON RESOURCES CORPORATION, CARLSBAD DESALINATION PROJECT  
FLOW, ENTRAINMENT AND IMPINGEMENT MINIMIZATION PLAN  
ORDER NO. R9- 2009-0038, AMENDING ORDER NO. R9-2006-0065, NPDES NO. CA0109223**

<b>COMMENT NUMBER</b>	<b>COMMENTS and/or CONCERNS</b>	<b>REGIONAL BOARD RESPONSE</b>
	(Comments from Latham & Watkins LLP January 26, 2009 Comment Letter, pgs. 33-34)	
113.	<p>Consistent with the April Resolution, Poseidon submitted eleven specific mitigation sites determined during the interagency process and submitted a specific proposal for mitigation at these identified sites. In its December 2, 2008 letter to Poseidon, staff indicated that “the MLMP does not propose a specific mitigation site or a specific proposal for mitigation at an identified site.” To the extent staff is concerned that Poseidon is not bringing to the Regional Board a single site for consideration, the concern is belated to the point of prejudice to Poseidon and is in contrast to its course of conduct.</p> <p>In the April 4, 2008 Technical Report, staff faulted Poseidon’s mitigation planning for seeming to “favor a pre-determined outcome (i.e., mitigation in San Dieguito Lagoon).” In that same Technical Report, and with apparent approval, staff acknowledged that Poseidon was considering mitigation at several possible sites, including Frazee State Beach, Loma Alta Lagoon and Buena Vista Lagoon, in addition to Agua Hedionda Lagoon and San Dieguito Lagoon. The April 4, 2008 Technical Report stated that the adoption of the Minimization Plan was premature because it did not “clearly identify the method for the final selection and agency concurrence of the preferred mitigation alternative.” In fact, both prior to the April 9, 2008 conditional approval, and during the interagency process, Poseidon was led to believe that staff viewed a short list of potential sites coupled with a rigorous screening, selection and implementation process that is evaluated against a comprehensive set of objective performance criteria as a strength of an appropriate mitigation plan.</p>	The Regional Board concludes that, in lieu of a site specific alternative, the criteria set forth in the MLMP will favor appropriate selection of the mitigation site(s).

**SAN DIEGO REGIONAL BOARD RESPONSES TO COMMENTS  
POSEIDON RESOURCES CORPORATION, CARLSBAD DESALINATION PROJECT  
FLOW, ENTRAINMENT AND IMPINGEMENT MINIMIZATION PLAN  
ORDER NO. R9- 2009-0038, AMENDING ORDER NO. R9-2006-0065, NPDES NO. CA0109223**

<b>COMMENT NUMBER</b>	<b>COMMENTS and/or CONCERNS</b>	<b>REGIONAL BOARD RESPONSE</b>
	(Comments from Latham & Watkins LLP January 26, 2009 Comment Letter, pgs. 33-34)	
114.	<p>Resolution No. R9-2008-0039 required Poseidon to address items in staff's February 19, 2008 letter (many of the items had been mooted only by the March 6, 2008 version of the Plan), and the following additional concerns:</p> <ul style="list-style-type: none"> <li>a) identification of impacts from impingement and entrainment;</li> <li>b) adequate monitoring data to determine the impacts from impingement and entrainment;</li> <li>c) coordination among participating agencies for the amendment of the Plan as required by Section 13225 of the California Water Code;</li> <li>d) adequacy of mitigation; and</li> <li>e) commitment to fully implement the amendment to the Plan.</li> </ul> <p>(Comments from Latham &amp; Watkins LLP January 26, 2009 Comment Letter, pgs. 34-35)</p>	Comment noted.
<b>1/30/2009 letter from California Environmental Protection Agency</b>		
115.	<p>This letter is to urge you to conclude that the Marine Life Mitigation Plan for the Poseidon Carlsbad Desalination Project satisfies the conditions of the Board's Resolution No. R92008- 0039. Our view is that a process-based approach with criteria for the evaluation of mitigation site options satisfies the objectives of the Resolution.</p> <p>The California Coastal Commission recently approved the Mitigation Plan by an overwhelming vote of eleven to one. The Commission approved the process-based approach with criteria for the evaluation of mitigation site options. Key agencies that have expertise in marine life mitigation, including the Department of Fish and Game, were engaged</p>	While the Marine Life Mitigation Plan submitted to and approved by the Coastal Commission satisfied the Coastal Commission requirements, it does not necessarily satisfy the conditions required by the Regional Board. The Regional Board must independently evaluate the information submitted to the Regional Board for compliance with all applicable sections of the California Water Code.

**SAN DIEGO REGIONAL BOARD RESPONSES TO COMMENTS  
POSEIDON RESOURCES CORPORATION, CARLSBAD DESALINATION PROJECT  
FLOW, ENTRAINMENT AND IMPINGEMENT MINIMIZATION PLAN  
ORDER NO. R9- 2009-0038, AMENDING ORDER NO. R9-2006-0065, NPDES NO. CA0109223**

<b>COMMENT NUMBER</b>	<b>COMMENTS and/or CONCERNS</b>	<b>REGIONAL BOARD RESPONSE</b>
	in the development of the Plan. Other interested federal, state, and local agencies were also engaged in the development of the Plan, including the Department of Transportation and the State Lands Commission.	
<b>2/2/2009 letter from California Department of Food &amp; Agriculture</b>		
116.	I am writing to express my enthusiastic support for the Poseidon Desalination Project proposal. As you know, California is in the third year of an extreme drought and the clear evidence of snow pack and accumulated rainfall totals at this time shows that the situation is worsening. The historic low levels of water in the state's major reservoirs are already leading to dramatic cutbacks in water deliveries and alarming predictions of further water rationing.	Comments noted.
<b>2/2/2009 letter from Governor Arnold Schwarzenegger, State of California</b>		
117.	I am writing to urge you to approve the Marine Life Mitigation Plan for the Carlsbad Desalination Project at your February 11 meeting. Desalination must be part of a diverse approach to improving water supply, especially as California confronts what may be the worst drought in our state's modern history. Ignoring desalination as part of a region's water supply portfolio would ill serve both the region and the state.  As the Board evaluates the Carlsbad Desalination. Project's Marine Life Mitigation Plan, I urge you to consider the critical role desalination plays in ensuring water supply reliability for San Diego and for the state.	Comments noted.
<b>2/2/2009 letter from California Natural Resources Agency</b>		
118.	I write in support of the Poseidon Carlsbad Desalination Project and of the sufficiency of Poseidon's Marine Life Mitigation Plan (MLMP), a critical component to addressing	Comments noted.

**SAN DIEGO REGIONAL BOARD RESPONSES TO COMMENTS  
POSEIDON RESOURCES CORPORATION, CARLSBAD DESALINATION PROJECT  
FLOW, ENTRAINMENT AND IMPINGEMENT MINIMIZATION PLAN  
ORDER NO. R9- 2009-0038, AMENDING ORDER NO. R9-2006-0065, NPDES NO. CA0109223**

<i>COMMENT NUMBER</i>	<i>COMMENTS and/or CONCERNS</i>	<i>REGIONAL BOARD RESPONSE</i>
	<p>the Board's prior conditional approval in Resolution No. R9-2008-0039.</p> <p>The Poseidon Carlsbad Desalination Project is an important infrastructure project and I urge you to determine that the MLMP satisfies sufficiently the conditions that the Regional Board established in Resolution No. R9-2008-0039.</p>	
<b>2/2/2009 letter from California Department of Fish and Game</b>		
119.	<p>The Department of Fish and Game (Department) offers the following information in support of the Poseidon Carlsbad Desalination Project (Project) and the associated Marine Life Mitigation Plan (MLMP). Department staff was actively involved in the review of the Project and MLMP. In addition,</p> <p>Department staff was involved with the analysis and determination of impingement and entrainment impacts due to operations of the desalination plant and collaborated with the California Coastal Commission (Coastal Commission), the State Lands Commission, and other state agencies on the development of the MLMP. Also, we have been in contact with Project representatives in the context of discussing potential wetland mitigation sites.</p> <p>The Department agrees that the mitigation measures the Coastal Commission determined to be appropriate are adequate to mitigate the impacts of the project. The Department supports the Coastal Commission's procedures for determining the mitigation for these impacts in addition to the sound scientific methodology that was used.</p>	Comments noted.
<b>2/3/2009 letter from Assemblymember Mary Salas, Assembly, California Legislature, 79th District</b>		
120.	This letter is to inform you of my support for the Carlsbad Desalination Plant and to request your approval of	Comments noted.

**SAN DIEGO REGIONAL BOARD RESPONSES TO COMMENTS  
POSEIDON RESOURCES CORPORATION, CARLSBAD DESALINATION PROJECT  
FLOW, ENTRAINMENT AND IMPINGEMENT MINIMIZATION PLAN  
ORDER NO. R9- 2009-0038, AMENDING ORDER NO. R9-2006-0065, NPDES NO. CA0109223**

<b>COMMENT NUMBER</b>	<b>COMMENTS and/or CONCERNS</b>	<b>REGIONAL BOARD RESPONSE</b>
	<p>Poseidon's Marine Life Mitigation Plan.</p> <p>This project has gone through rigorous testing and public scrutiny to ensure that it will be environmentally friendly and efficiently operated. The project developers have made every effort to comply with state and federal environmental regulations and have long since proved their project will not harm the Agua Hedionda Lagoon or ocean. In fact, their proposed mitigation measures will restore more than 55 acres of wetlands habitat and will provide for the annual maintenance of the lagoon.</p>	
<b>2/5/2009 letter from Sierra Club</b>		
121.	<p>In reviewing the MLMP we find that it fails to apply an ecosystems based approach in assessing and mitigating the impingement and entrainment the impacts of the project.</p> <p>The MLMP uses a limited data base that sampled the source water that would be extracted by the proposed desalination plant. It should be noted that the marine life in this source water has been subjected to impingement and entrainment stresses by the Encina Power Station since 1954 when the plant first came on line.</p>	<p>An ecosystem approach is not entirely applicable to this case because the affected ecosystem is not wholly removed (as is generally done when evaluating compensatory mitigation for impacts of fill in a CWA Section 401 certification). Rather, specific components of that ecosystem are being altered due to impingement and entrainment. Therefore, a good mitigation project would seek to offset the specific alterations from the proposed impacts. That been said, Chapter 5 of the Minimization Plan does give consideration to the ecosystems affected (Table 5.7) and Chapter 6 does attempt to provide compensatory mitigation in terms of the ecosystems affected (i.e. mudflat/tidal channel, and open water).</p> <p>Staff recognizes the limitations of the data set used for these analyses, including the fact that the conditions for baseline</p>

**SAN DIEGO REGIONAL BOARD RESPONSES TO COMMENTS  
POSEIDON RESOURCES CORPORATION, CARLSBAD DESALINATION PROJECT  
FLOW, ENTRAINMENT AND IMPINGEMENT MINIMIZATION PLAN  
ORDER NO. R9- 2009-0038, AMENDING ORDER NO. R9-2006-0065, NPDES NO. CA0109223**

<i>COMMENT NUMBER</i>	<i>COMMENTS and/or CONCERNS</i>	<i>REGIONAL BOARD RESPONSE</i>
		evaluation are already affected by the impacts due to EPS operations.
<b>2/6/2009 letter from Mayor Jerry Sanders</b>		
122.	<p>The Carlsbad Desalination Plant's Marine Life Mitigation Plan has now been approved by the California Coastal Commission and the State Lands Commission. The plan, which you are now being asked to approve, is a byproduct of the permit you issued the project back in 2006. Per the Board's April 9, 2008 resolution, this plan was subject to a lengthy interagency review process to ensure that it met all the requirements of the discharge permit you originally issued in 2006. There is no doubt that the plan and its components are fully compliant with your April resolution.</p> <p>I urge your support for the Marine Life Mitigation Plan. You can approve the plan with confidence knowing that water quality standards and the coastal marine environment are fully protected.</p>	Comments noted.
<b>2/10/2009 letter from Coast Law Group</b>		
123.	The record on the CDP contains a substantial number of documents previously submitted by the Environmental Groups detailing the failure of the Regional Board to	See response to Comment 45.

**SAN DIEGO REGIONAL BOARD RESPONSES TO COMMENTS  
POSEIDON RESOURCES CORPORATION, CARLSBAD DESALINATION PROJECT  
FLOW, ENTRAINMENT AND IMPINGEMENT MINIMIZATION PLAN  
ORDER NO. R9- 2009-0038, AMENDING ORDER NO. R9-2006-0065, NPDES NO. CA0109223**

<b>COMMENT NUMBER</b>	<b>COMMENTS and/or CONCERNS</b>	<b>REGIONAL BOARD RESPONSE</b>
	<p>appropriately consider and apply Porter-Cologne section 13142.5 to the COP. To no avail, we have repeatedly sought to have the Board and Poseidon consider the requirement to minimize the "intake" of marine life, yet Poseidon has instead succeeded in replacing this correct standard with a requirement to minimize marine life "impacts."</p>	
<p>124.</p>	<p>Poseidon has expressed concern that the February 11, 2009 hearing should not be an adjudicative hearing, and if it is, only the Regional Board and Poseidon should be considered designated parties." (Supporting Document No. 28). The Environmental Groups have reviewed the Regional Board's response to Poseidon's procedural objections (Supporting Document No. 42), and generally agree with the contents thereof.</p> <p>In response, the Environmental Groups propose either (a) we be afforded the same procedural safeguards as Poseidon with respect to submission of evidence and cross examination of witnesses, or (b) the matter be postponed and a pre-hearing conference set for resolution of designated party requests and establishment of procedures for a future hearing.</p>	<p>The procedures for consideration of the Minimization Plans were addressed in a letter from Regional Board counsel to Latham and Watkins on January 29, 2009.</p>
<p>125.</p>	<p>In its response to the Board Staff's notice of hearing and Executive Officer's Report, Poseidon expresses discomfort with the notion that the Regional Board would require identification of a specific site or sites where the proposed compensatory mitigation for the COP will actually take place.</p> <p>The Environmental Groups support the Board Staff's position that while it may have been appropriate to consider a multi-location MLMP at an earlier point in the permitting process, it is not inconsistent to require actual selection of a site, <i>or</i></p>	<p>The Regional Board concludes that, in lieu of a site specific alternative, the criteria set forth in the MLMP will favor appropriate selection of the mitigation site(s).</p>

**SAN DIEGO REGIONAL BOARD RESPONSES TO COMMENTS  
POSEIDON RESOURCES CORPORATION, CARLSBAD DESALINATION PROJECT  
FLOW, ENTRAINMENT AND IMPINGEMENT MINIMIZATION PLAN  
ORDER NO. R9- 2009-0038, AMENDING ORDER NO. R9-2006-0065, NPDES NO. CA0109223**

<b>COMMENT NUMBER</b>	<b>COMMENTS and/or CONCERNS</b>	<b>REGIONAL BOARD RESPONSE</b>
	<p><i>sites</i>, as a prerequisite to final Flow Plan approval. At no point in the record, including the volumes of material submitted and cited by Poseidon, does the Board or its staff appear to limit Poseidon from selecting multiple sites as alleged.</p> <p>The Environmental Groups agree with the proposition that it would be improper to approve Poseidon's Flow Plan without the selection of the site or sites where mitigation will take place. And while this does not mean we have abandoned our position that compensatory mitigation is illegal in the first instance, at the very least, the Board and the public should be able to critically assess the location(s) where the mitigation project will take place.</p>	
126.	<p>In ongoing litigation, both the Coastal Commission and Poseidon are emphatic that the Regional Board is the sole agency with discretion to assess compliance with Porter Cologne 13142.5. (See e.g. Coastal Act section 30412, which Poseidon claims precluded the Commission from taking any action inconsistent with a future action by the Regional Board). Poseidon has taken this position in numerous letters and reports to the Coastal Commission, and as noted above, utilized this argument to secure conditional approvals of the MLMP from the Coastal Commission and State Lands Commission.</p> <p>Amazingly, now Poseidon argues against any substantive review of the Flow Plan, but rather, encourages the Regional Board to rely on the Coastal Commission's approval of the MLMP under the Coastal Act. (See Supporting Document 32, Latham and Watkins comment letter on MLMP, dated January 26, 2008).</p>	This comment is no longer applicable as Poseidon has submitted a revised Minimization Plan that the Board has determined complies with Section 13142.5.
127.	At virtually every stage of COP review by staff of the Coastal Commission, State Lands Commission, and the Regional	Comment noted.



**SAN DIEGO REGIONAL BOARD RESPONSES TO COMMENTS  
POSEIDON RESOURCES CORPORATION, CARLSBAD DESALINATION PROJECT  
FLOW, ENTRAINMENT AND IMPINGEMENT MINIMIZATION PLAN  
ORDER NO. R9- 2009-0038, AMENDING ORDER NO. R9-2006-0065, NPDES NO. CA0109223**

<b>COMMENT NUMBER</b>	<b>COMMENTS and/or CONCERNS</b>	<b>REGIONAL BOARD RESPONSE</b>
	<p>Board, significant legal and practical flaws have been identified.</p> <p>There is no credible reason to believe staff from all three agencies have ulterior motives, or are doing anything more than their prescribed jobs. The Regional Board should draw a hard line at this point, which with the exception of litigation, is one of the last opportunities to ensure the COP will even be plausibly legal. To require anything less than specificity in the selection of mitigation sites and performance criteria to ensure full compensation for production foregone due to entrainment impacts would be a travesty to the coast, and a blemish on the record of the Regional Board.</p>	
<b>2/25/2009 letter from Assembly California Legislature</b>		
128.	<p>The SDCWA adopted an Urban Water Management Plan that identifies desalination as a critical component of its plan to diversify local supplies and reduce the burden on imported sources. The Carlsbad facility is integrally linked to state and regional efforts to supplement existing water supplies and is a critical component of San Diego County's future health and economic prosperity.</p> <p>The project has undergone close to ten years of planning and research to ensure that it is an environmentally responsible solution to the region's water needs. The City of Carlsbad certified the environmental document in 2006, concluding that there are no significant impacts for both the construction and on-going operation of the plant related to thirteen different areas studied, including marine impacts.</p>	Comments noted.
<b>3/31/2009 letter from Dianne Jacob, Chairwoman, Supervisor Second Circuit, San Diego County Board of Supervisors</b>		
129.	As Supervisor of San Diego County's Second Supervisorial	Comments noted.

**SAN DIEGO REGIONAL BOARD RESPONSES TO COMMENTS  
POSEIDON RESOURCES CORPORATION, CARLSBAD DESALINATION PROJECT  
FLOW, ENTRAINMENT AND IMPINGEMENT MINIMIZATION PLAN  
ORDER NO. R9- 2009-0038, AMENDING ORDER NO. R9-2006-0065, NPDES NO. CA0109223**

<i>COMMENT NUMBER</i>	<i>COMMENTS and/or CONCERNS</i>	<i>REGIONAL BOARD RESPONSE</i>
	<p>District, I'm writing in support of the Carlsbad Desalination Project.</p> <p>The project has undergone close to ten years of planning and research to ensure that it is an environmentally responsible solution to the region's water needs. The City of Carlsbad certified the environmental document in 2006, concluding there are no significant impacts for both the construction and on-going operation of the plant related to thirteen different areas studied, including marine impacts.</p>	
<b>4/1/2009 letter from Sierra Club, San Diego Chapter</b>		
130.	<p><b>Impingement Impacts.</b> The impingement impacts in the past and latest March 9 report focuses on minimizing the approach velocity at the travelling fine screens. These reports fail to address that there is no escape path for the larger marine life that can swim away from the screen except to swim back up the intake tunnel. We are not aware of any reports that monitor the number of mobile marine life that have escaped in this manner.</p> <p>With the Encina Power Station operating with all intake pumps operating the average velocities<sup>1</sup> at left and right tunnels are 10.2 and 2.3 feet/second, respectively. The Poseidon reports cite the average velocities but neglects the</p>	<p>Poseidon proposes to mitigate for all estimated impacts, without consideration to any site, design, or technology measures that will be implemented to minimize these impacts. In light of this, it is still acceptable for the Board to find that the project, in sum, complies with section 13142.5.</p> <p>Also see response to Comment 50.</p>

<sup>1</sup> The average velocity is computed by dividing the flow rate by the cross sectional area of the channel.

**SAN DIEGO REGIONAL BOARD RESPONSES TO COMMENTS  
POSEIDON RESOURCES CORPORATION, CARLSBAD DESALINATION PROJECT  
FLOW, ENTRAINMENT AND IMPINGEMENT MINIMIZATION PLAN  
ORDER NO. R9- 2009-0038, AMENDING ORDER NO. R9-2006-0065, NPDES NO. CA0109223**

<b>COMMENT NUMBER</b>	<b>COMMENTS and/or CONCERNS</b>	<b>REGIONAL BOARD RESPONSE</b>
	fact that the actual velocity profile across the tunnel varies, increasing from the sides to the center <sup>2</sup> . This fact is important as the maximum velocity will be higher than the average dependent several factors such as the configuration and roughness of the channel. Actual flow velocity profiles should be measured.	
131.	It is our understanding that to meet the 304 MGD intake flow when the Encina Power Station is temporarily shut down or for the “stand alone” case, one pump each from Units 4 and 5 will be used to provide 316 MGD. We expect that this option would have a higher impingement impact compared to other options that use a combination of pumps from Units 1, 2, and 3 plus either one pump for Unit 4 or 5. Using pumps for Units 1, 2, and 3 reduce the travel distances, overall in tunnel velocities and the aquatic losses due to contact with the tunnel walls as compared to the option using only the Unit 4 and 5 pumps that has the highest tunnel velocity and travel distance.	<p>The CDP must comply with the best available design requirement in Water Code Section 13142.5(b) when EPS is operating for the benefit of CDP (whether EPS is temporarily shut down or not otherwise discharging sufficient volume of water to meet CDP’s operational needs).</p> <p>Under the conditions of temporary shutdown, the Discharger has the ability to operate a modified pump configuration to reduce inlet velocity. It is this Boards understanding that although Units 1-3 are expected to be retired in the future, the circulating water system for those units will remain in place therefore allowing the Discharger to use the best combination of pumps to reduce intake velocities.</p>
132.	<b>Estimating Flow Proportioned Impingement.</b> A concern that has received a good deal of attention is to explain why there was an exceptional increase in impingement data for two sample weeks; the 30th week, January 12-13, 2005 and February 23-24. Reference 5 treats these at “outliers” and does not provide a plausible reason. There is no discussion if the number of fishes in the source water beyond the small	<p>Regional Board staff disagree with the Discharger’s claim that the two high impingement results were a result of storm events, and have provided testimony to demonstrate alternative causes.</p> <p>Regardless, it is unnecessary to resolve these disputes because the Regional Board</p>

<sup>2</sup> Refer to a textbook on fluid mechanics on water flow in channels. I referred to my college fluid mechanics text book by R.C Binder

**SAN DIEGO REGIONAL BOARD RESPONSES TO COMMENTS  
POSEIDON RESOURCES CORPORATION, CARLSBAD DESALINATION PROJECT  
FLOW, ENTRAINMENT AND IMPINGEMENT MINIMIZATION PLAN  
ORDER NO. R9- 2009-0038, AMENDING ORDER NO. R9-2006-0065, NPDES NO. CA0109223**

<b>COMMENT NUMBER</b>	<b>COMMENTS and/or CONCERNS</b>	<b>REGIONAL BOARD RESPONSE</b>
	<p>number of freshwater fish that were impinged due to immigration.</p> <p>The migration and spawning characteristics of the aquatic life in the Lagoon should be evaluated to determine the source numbers aquatic life over a sufficient time. Estimating the impingement just on the 52 week sample is not sufficient. We do not believe that the analysis presented in the footnote 5 is adequate.</p>	<p>finds that 4.7 kg/day is a reasonable, conservative estimate of impingement associated with CDP's projected operations under co-located conditions and notes that the Discharger has agreed to meet a fish productivity standard of 1715.5 kg/year, derived from the estimate of 4.7 kg/day, in the mitigation wetlands.</p>
133.	<p><b>Heat treatment replacement.</b> This item remains to be addressed in a new WDR for the "stand alone" seawater desalination plant, the use of ½ inch diameter plastic balls to scrub the intake and discharge tunnels, open channels and pumps. The proponents claim that this new treatment would eliminate the heat treatment kills not cause harm to the aquatic life. If the energy in the plastic balls is adequate to remove the bio-fouling in water passageways, it does not seem logical that they would not be fatal to aquatic life as well.</p>	<p>The Regional Board is not considering the adequacy of the heat treatment replacement at this time since this is a feature that could be incorporated under stand-alone conditions. Once EPS permanently shuts down and the CDP is operated on a stand-alone basis, the Regional Board will undertake additional evaluation under CWC Section 13142.5.</p>
<b>4/1/2009 email from Coast Law Group</b>		
134.	<p>On or about March 9, 2009, you issued a notice of public hearing for the above referenced item. Therein was contemplated submission of comments on available documents by 5:00 pm today. As you surely are aware, a significant amount of new material has been added since posting of the notice.</p> <p>In addition, the staff report for the matter dated March 27, 2009 indicates significant additional information, namely critical evaluations of materials by Dr. Raimondi, were expected to be received by the Board yesterday. We have not yet seen this documentation, and it is not posted on the Board's website.</p>	<p>Comments noted. As reflected in the public notice for the April 8, 2009 meeting, the Board had requested that written comments be submitted by April 1, 2009 at 5 p.m., but the public comment period was open through the Board hearing on April 8, 2009.</p>

**SAN DIEGO REGIONAL BOARD RESPONSES TO COMMENTS  
POSEIDON RESOURCES CORPORATION, CARLSBAD DESALINATION PROJECT  
FLOW, ENTRAINMENT AND IMPINGEMENT MINIMIZATION PLAN  
ORDER NO. R9- 2009-0038, AMENDING ORDER NO. R9-2006-0065, NPDES NO. CA0109223**

<b>COMMENT NUMBER</b>	<b>COMMENTS and/or CONCERNS</b>	<b>REGIONAL BOARD RESPONSE</b>
	<p>Given the volume of documents, as well as the timing of availability to the public, we do not believe sufficient time has been afforded to review and provide meaningful comments within the originally prescribed timeframe. As such, please accept this correspondence as notice that we shall be submitting written comments up to, and possibly at, the Regional Board hearing on April 8th. Given that the matter is in litigation, and the project need not be approved at the April 8<sup>th</sup> hearing to remain on schedule, there is no credible legal rationale for requiring strict adherence to the artificial deadline of today at 5:00pm.</p>	
<b>4/2/2009 letter from Latham &amp; Watkins on behalf of Poseidon</b>		
<p>135.</p>	<p>On April 30, 2008, Poseidon submitted a calculation indicating that the Project's standalone impingement would be approximately 1.57 kg per day, a de minimis value. When operating in co-located mode, any impingement associated with the Project would naturally be even less.</p> <p>Based on requests from Regional Board staff, Poseidon submitted Attachment 5 to the Minimization Plan which presents several different ways to account for the direct relationship between impingement and flow in the impingement estimates. Depending on their treatment of the outlier sampling events and the extent to which they account for the relationship between flow and impingement, these approaches produce a range of possible impingement estimations of between 1.57 to 7.16 kg per day.</p> <p>Subsequent scientific analysis of the outlier events completed by experts for Poseidon conclude that the estimate values toward the lower end of the range more reasonably anticipate the Project's operations. In any event, Poseidon considers</p>	<p>The Discharger submitted the noted calculation to staff via email on April 20, 2008 but did not revise the then-pending March 6, 2008 Minimization Plan at that time. Regional Board staff disagree with the Discharger's claim that 1.57 kg/day is an appropriate estimate of the CDP stand-alone impingement for several reasons (e.g., it excludes two days of high impingement without sound justification, and it does not have an associated number of fish).</p> <p>Regardless, as noted in the revised Tentative Order, it is unnecessary to resolve these disputes because the Regional Board finds that 4.7 kg/day is a reasonable, conservative estimate of impingement associated with CDP's projected operations under co-located conditions and notes that the Discharger has agreed to meet a fish productivity standard of</p>

**SAN DIEGO REGIONAL BOARD RESPONSES TO COMMENTS  
POSEIDON RESOURCES CORPORATION, CARLSBAD DESALINATION PROJECT  
FLOW, ENTRAINMENT AND IMPINGEMENT MINIMIZATION PLAN  
ORDER NO. R9- 2009-0038, AMENDING ORDER NO. R9-2006-0065, NPDES NO. CA0109223**

<b>COMMENT NUMBER</b>	<b>COMMENTS and/or CONCERNS</b>	<b>REGIONAL BOARD RESPONSE</b>
	<p>all of the various, reasonable impingement estimation approaches to result in impingement estimations that are de minimis.</p> <p>(Comments from Latham &amp; Watkins LLP January 26, 2009 Comment Letter, pgs. 23-24; Latham &amp; Watkins LLP April 2, 2009 Comment Letter, pgs. 10-12; Minimization Plan, Attachments 5, 7 and 9)</p>	<p>1715.5 kg/year, derived from the estimate of 4.7 kg/day, in the mitigation wetlands.</p>
<p>136.</p>	<p>The CDP's projected impingement when operating in stand-alone mode ranges from 1.57 to 7.1 kilograms per day ("kg/day") based on applying a linear regression analysis to EPS's 2004-05 impingement sampling data. The 2004-2005 EPS sampling data includes 52 samples events. During two of the sample events, January 12 and February 23, the recorded impingement was observed to be relatively higher than on the other fifty days. Importantly, these two sample days immediately follow storm events. Subsequent analysis completed by Drs. Chang and Jenkins, experts for Poseidon, indicate that the storm events preceding the January 12 and February 23 samples have a low probability of recurrence, each likely to occur no more than once every quarter century. The likelihood that both such events will occur in any given year, as they did during the 2004-2005 sample year, is even more remote.</p> <p>Because the rains preceding the two outlier collection events can be expected to occur less than once every 20 years (i.e., less than 5%), the weight of the outliers should be discounted accordingly. When the weighted-average flow-proportioned approach (3-B) incorporates an outlier probability value of less than 5%, the approach calculates an impingement estimate of less than 2.24 kg/day, with 2.24 providing a</p>	<p>To clarify the first sentence of this comment: the lowest estimate of the CDP's projected impingement, 1.57 kg/day, is based on applying a linear regression analysis (exclusive of two days of high impingement). Other estimates in the range are based on applying other analyses/calculations.</p> <p>Staff concurs that two of the 52 weekly samples recorded relatively high impingement. Staff also concurs that the two high-impingement days are coincident with record storm events. However, staff does not agree that the samples should be excluded from the CDP projection (or reduced based on the storm probability) because, as detailed in the staff reports, high-impingement on those days could have had other causes/contributors. In addition, the mechanism by which high rainfall would translate to high impingement is not compelling. In any case, judging from some other impingement studies, it appears normal to have few high-impingement events each</p>

**SAN DIEGO REGIONAL BOARD RESPONSES TO COMMENTS  
POSEIDON RESOURCES CORPORATION, CARLSBAD DESALINATION PROJECT  
FLOW, ENTRAINMENT AND IMPINGEMENT MINIMIZATION PLAN  
ORDER NO. R9- 2009-0038, AMENDING ORDER NO. R9-2006-0065, NPDES NO. CA0109223**

<b>COMMENT NUMBER</b>	<b>COMMENTS and/or CONCERNS</b>	<b>REGIONAL BOARD RESPONSE</b>
	<p>reasonable upper bound. This value provides a reasonable approximation of the CDP's potential impingement.</p> <p>(Comments from Latham &amp; Watkins LLP January 26, 2009 Comment Letter, pg. 23, fn. 45; Latham &amp; Watkins LLP April 2, 2009 Comment Letter, pgs. 10-11, Appendix B, Tab 3; Minimization Plan, Attachments 5 and 9)</p>	<p>year, i.e., the two high-impingement events in 2004-05 do not appear to be outliers in terms of impingement.</p> <p>Regardless, it is unnecessary to resolve these disputes because the Regional Board finds that 4.7 kg/day is a reasonable, conservative estimate of impingement associated with CDP's projected operations under co-located conditions and notes that the Discharger has agreed to meet a fish productivity standard of 1715.5 kg/year, derived from the estimate of 4.7 kg/day, in the mitigation wetlands.</p>
137.	<p>The mitigation approach outlined in the Minimization Plan and MLMP to construct or restore up to 55.4 acres of estuarine wetlands does not result in any double counting. These kinds of wetlands are known to provide a wide variety of ecological functions. They provide important spawning and nursery grounds that support large larval populations, thereby compensating for potential entrainment from the CDP's intake of seawater from AHL. They also provide food and refuge for fish, whether those fish are present because they matured from locally produced larvae, or migrated into the wetlands from other nearshore or wetlands populations. By supporting populations of fish in addition to the species for which entrainment mitigation is provided, the proposed wetlands have the potential to provide substantial mitigation for impingement, in addition to entrainment.</p> <p>Wetlands required to compensate for entrainment of one species are available to compensate for impingement of a wholly different species assuming, of course, that the wetlands will produce the impinged species. As applied to the</p>	<p>At the April 2009 hearing, Poseidon provided testimony and calculations to demonstrate how the Mitigation Wetlands could serve to compensate for both impingement and entrainment impacts, on the basis that the most commonly entrained species were different from the most commonly impinged species.</p> <p>Regional Board staff provided testimony asserting that, unless all the species entrained (rather than just the most commonly entrained species, used for the estimation of APF) were proportionately excluded from Poseidon's productivity estimates, the calculations would not accurately demonstrate whether the mitigation wetlands could adequately compensate for impacts due to impingement and entrainment.</p>

**SAN DIEGO REGIONAL BOARD RESPONSES TO COMMENTS  
POSEIDON RESOURCES CORPORATION, CARLSBAD DESALINATION PROJECT  
FLOW, ENTRAINMENT AND IMPINGEMENT MINIMIZATION PLAN  
ORDER NO. R9- 2009-0038, AMENDING ORDER NO. R9-2006-0065, NPDES NO. CA0109223**

<b>COMMENT NUMBER</b>	<b>COMMENTS and/or CONCERNS</b>	<b>REGIONAL BOARD RESPONSE</b>
	<p>CDP, it turns out that entrainment mitigation was driven by three fish taxa—gobies, blennies, and garibaldi. In fact, 49 of the proposed 55.4 acres of the proposed wetlands will be designed to compensate for the potential entrainment at the CDP of these three fish taxa. Fortuitously, these three taxa rarely are impinged. Rather, other fish predominate potential impingement at the CDP. Because these other fish are expected to be present in substantial quantities in the planned wetlands, the 49 acres of wetlands can mitigate for their potential impingement losses at the CDP.</p> <p>The other 6.4 acres of the planned wetlands will be designed to compensate for the potential entrainment at the CDP of five ocean-going species—white croaker, northern anchovy, California halibut, queenfish, and spotfin croaker. These fish were detected in relatively small numbers in the 2004-2005 entrainment data upon which the analysis relies. The 6.4 acres of planned wetlands are expected to produce many fish other than these five ocean-going species. The expected production of these other fish in 6.4 acres is available to compensate for their potential impingement at the CDP.</p> <p>(Comments from Latham &amp; Watkins LLP April 2, 2009 Comment Letter, pgs. 3, 18-19, Appendix B, Tab 2)</p>	<p>Through the revised Tentative Order, the Board expects that the wetlands will be able to compensate for entrainment and impingement but the revised Tentative Order establishes a productivity standard that must be achieved as a biological performance measure. The Tentative Order will also require necessary monitoring to determine whether the mitigation wetlands could adequately compensate for impacts due to impingement and entrainment.</p>
138.	<p>On February 11, 2009 the Regional Board considered the MLMP for the first time, continuing its review to the present hearing. Staff identified four additional issues it sought to resolved concerning the March 6, 2008 Minimization Plan before recommending that the Regional Board take final action on the Minimization Plan:</p> <p>(1) placing the Regional Board and its Executive Officer on equal footing, including funding, with Coastal Commission and its Executive Director, in the MLMP, while minimizing</p>	Comments noted.



**SAN DIEGO REGIONAL BOARD RESPONSES TO COMMENTS  
POSEIDON RESOURCES CORPORATION, CARLSBAD DESALINATION PROJECT  
FLOW, ENTRAINMENT AND IMPINGEMENT MINIMIZATION PLAN  
ORDER NO. R9- 2009-0038, AMENDING ORDER NO. R9-2006-0065, NPDES NO. CA0109223**

<b>COMMENT NUMBER</b>	<b>COMMENTS and/or CONCERNS</b>	<b>REGIONAL BOARD RESPONSE</b>
	<p>redundancies (e.g., only one Scientific Advisory Panel) details of dispute resolution process to be worked out);  (2) reducing the number of [potential mitigation] sites to five, in consultation with the Coastal Commission, with the existing proviso that other sites within the Regional Board boundaries could be added;  (3) Poseidon to provide the flow-proportioned calculations for its impacts due to impingement, to help support the Regional Board's determination that these impacts are de minimis; and  (4) Poseidon to provide a consolidated set of all requirements imposed to date by the various agencies.</p> <p>(Comments from Latham &amp; Watkins LLP April 2, 2009 Comment Letter, pgs. 8-12, Appendix A)</p>	
139.	<p>In response to staff's request that the Minimization Plan clearly place the Regional Board on equal footing with the Coastal Commission, in Chapter 6 of the Minimization Plan, Poseidon clearly identified provisions of the MLMP that are enforceable by the Coastal Commission, then indicated for each of them how they are also enforceable by the Regional Board if the Plan is approved. For instance, the Plan provides that the Regional Board will have the authority to approve the final mitigation site(s) and restoration plan for the site(s), and enforce compliance with the MLMP's strict performance criteria.</p> <p>(Comments from Latham &amp; Watkins LLP April 2, 2009 Comment Letter, pgs. 8-9)</p>	Comments noted.
140.	<p>In response to staff's request to reduce the number of proposed mitigation site(s) from 11 to 5, Poseidon amended</p>	Comments noted.

**SAN DIEGO REGIONAL BOARD RESPONSES TO COMMENTS  
POSEIDON RESOURCES CORPORATION, CARLSBAD DESALINATION PROJECT  
FLOW, ENTRAINMENT AND IMPINGEMENT MINIMIZATION PLAN  
ORDER NO. R9- 2009-0038, AMENDING ORDER NO. R9-2006-0065, NPDES NO. CA0109223**

<b>COMMENT NUMBER</b>	<b>COMMENTS and/or CONCERNS</b>	<b>REGIONAL BOARD RESPONSE</b>
	<p>the Minimization Plan to provide as follows:</p> <p>“Sites located within the boundaries of the Regional Water Quality Control Board, San Diego Region, shall be considered priority sites. If Poseidon proposes one or more mitigation sites outside of these boundaries, it first shall demonstrate to the Board that the corresponding mitigation could not feasibly be implemented within the boundaries, such as when the criteria established in Section 3.0 of the MLMP [providing site criteria] are not satisfied.”</p> <p>Therefore, “among the eleven candidate sites identified in the MLMP, Poseidon will consider the five sites within the Regional Board’s boundaries as priority sites for selection.”</p> <p>(Comments from Latham &amp; Watkins LLP April 2, 2009 Comment Letter, pgs. 9)</p>	
141.	<p>On February 26, 2009, staff counsel identified certain items that would satisfy staff’s request that, “Poseidon [] provide a consolidated set of all requirements imposed to date by the various agencies.” Poseidon responded by submitting six regulatory documents from the City of Carlsbad, the California Coastal Commission and the State Lands Commission:</p> <ol style="list-style-type: none"> <li>1. City of Carlsbad Development Agreement (DA 05-01)</li> <li>2. City of Carlsbad Redevelopment Permit (RP 05-12)</li> <li>3. City of Carlsbad EIR Exhibit B, Mitigation Monitoring and Reporting Program</li> <li>4. City of Carlsbad Precise Development Plan (PDP 00-02)</li> <li>5. State Lands Commission Lease Agreement (PRC 9727.1)</li> <li>6. California Coastal Commission Condition Compliance for CDP No. E-06- 013 — Special Condition 8.</li> </ol>	Comments noted.

**SAN DIEGO REGIONAL BOARD RESPONSES TO COMMENTS  
POSEIDON RESOURCES CORPORATION, CARLSBAD DESALINATION PROJECT  
FLOW, ENTRAINMENT AND IMPINGEMENT MINIMIZATION PLAN  
ORDER NO. R9- 2009-0038, AMENDING ORDER NO. R9-2006-0065, NPDES NO. CA0109223**

<b>COMMENT NUMBER</b>	<b>COMMENTS and/or CONCERNS</b>	<b>REGIONAL BOARD RESPONSE</b>
	<p>All of these items were publicly available, and Poseidon already had submitted the key documents, including the Coastal Commission Condition Compliance and the State Lands Commission Lease Agreement, into the record by the time of the February 11, 2009 hearing.</p> <p>(Comments from Latham &amp; Watkins LLP April 2, 2009 Comment Letter, pgs. 9-10)</p>	
142.	<p>Poseidon worked diligently with Regional Board staff to comply with this request. After conferring with staff on a number of occasions to clarify the request, Poseidon submitted Attachment 5 of the Minimization Plan which presents several different ways to account for the statistically significant relationship between the impingement effects and flows measured under normal power plant operations that occurred during the June 2004 to June 2005 impingement survey. These approaches produce a range of possible impingement estimations of between 1.57 to 4.7 kg per day. Based on additional scientific analysis of the two outlier events, which is detailed in Attachment 9 to the Minimization Plan, the estimate values toward the lower end of the range more reasonably anticipate the Project's operations.</p> <p>(Comments from Latham &amp; Watkins LLP April 2, 2009 Comment Letter, pgs. 10-12, Appendix A and Minimization Plan, Attachments 5 and 9)</p>	<p>To clarify: this comment refers to Board's request that Poseidon provide the flow-proportioned calculations for its impacts due to impingement, to help support the Regional Board's determination that these impacts are de minimis.</p> <p>Following the February 11, 2009 Board meeting, staff provided Poseidon (on February 13 via email) a list of items needed to resolve the request. The first (of four) items was: "1. Estimates of impingement losses (EPS 2004-05 results prorated to 304 MGD)." The email explained that the estimates should be for fish, for invertebrates, and in total (fish plus invertebrates), and should be in terms of individuals and biomass, and in terms of per day and per year.</p> <p>Poseidon provided prorated results on February 26, 2009.</p> <p>Poseidon submitted Attachment 5 as part of the March 9, 2009 Minimization Plan. It</p>

**SAN DIEGO REGIONAL BOARD RESPONSES TO COMMENTS  
POSEIDON RESOURCES CORPORATION, CARLSBAD DESALINATION PROJECT  
FLOW, ENTRAINMENT AND IMPINGEMENT MINIMIZATION PLAN  
ORDER NO. R9- 2009-0038, AMENDING ORDER NO. R9-2006-0065, NPDES NO. CA0109223**

<b>COMMENT NUMBER</b>	<b>COMMENTS and/or CONCERNS</b>	<b>REGIONAL BOARD RESPONSE</b>
		<p>describes six approaches to estimating the CDP impingement projection (1 A, 1B, 2A, 2B, 3A, 3B). The six approaches result in a range of estimates from 1.57 to 7.16 kg/day. Due to shortcomings of the linear regression approach in the context of this analysis, staff concludes that it is not the most appropriate approach for the CDP impingement projection.</p> <p>Regardless, it is unnecessary to resolve these disputes because the Regional Board finds that 4.7 kg/day (Approach 3B) is a reasonable, conservative estimate of impingement associated with CDP's projected operations under co-located conditions and notes that the Discharger has agreed to meet a fish productivity standard of 1715.5 kg/year, derived from the estimate of 4.7 kg/day, in the mitigation wetlands.</p>
143.	<p>Co-location of the Project at the existing EPS site represents the best site feasible to minimize the intake and mortality of marine life.</p> <p>(Comments from Latham &amp; Watkins LLP April 2, 2009 Comment Letter, pgs. 13-14)</p>	<p>The Regional Board concurs with this statement.</p>
144.	<p>The Project implements the best design features feasible that ensure the minimization of the intake and mortality of all forms of marine life.</p> <p>(Comments from Latham &amp; Watkins LLP April 2, 2009 Comment Letter, pgs. 14-15)</p>	<p>Available information shows that under the conditions of co-location operation, the Discharger has little control over the intake structure.</p> <p>Under the conditions of co-location operation,</p>

**SAN DIEGO REGIONAL BOARD RESPONSES TO COMMENTS  
POSEIDON RESOURCES CORPORATION, CARLSBAD DESALINATION PROJECT  
FLOW, ENTRAINMENT AND IMPINGEMENT MINIMIZATION PLAN  
ORDER NO. R9- 2009-0038, AMENDING ORDER NO. R9-2006-0065, NPDES NO. CA0109223**

<i>COMMENT NUMBER</i>	<i>COMMENTS and/or CONCERNS</i>	<i>REGIONAL BOARD RESPONSE</i>
		the existing intake meets the best available design criteria.
145.	<p>The Project implements the best available technology measures feasible for the Project's site-specific conditions in order to minimize the impingement and entrainment of marine organisms in the intake seawater.</p> <p>(Comments from Latham &amp; Watkins LLP April 2, 2009 Comment Letter, pgs. 15-18)</p>	<p>See response to Comment 144.</p> <p>The Regional Board concurs that the proposed technology for the CDP is the best available technology feasible under co-location operation.</p>
146.	<p>The proposed mitigation wetlands set forth in the MLMP will fully and simultaneously mitigate for any entrainment and impingement that may eventually be associated with the Project's operations, and thus represents the best mitigation feasible to minimize the impingement and entrainment of marine organisms.</p> <p>(Comments from Latham &amp; Watkins LLP April 2, 2009 Comment Letter, pgs. 18-20)</p>	<p>Comment Noted. The Tentative Order will require the Discharger to meet a productivity standard of 1,715.5 kg/year and will require implementation of a productivity monitoring plan to determine whether this standard is achieved.</p>
147.	<p>The Marine Life Mitigation Plan (MLMP) represents the culmination of a comprehensive, interagency planning process involving extensive scientific study and public involvement and ensures that potential entrainment and impingement impacts to marine resources from the Project will be fully mitigated in compliance with Resolution R9-2008-0039, Order No. R9-2006-0065, and Water Code Section 13142.5(b). Specifically, the MLMP will:</p> <ul style="list-style-type: none"> <li>• Avoid or mitigate to less-than-significant levels all impacts to marine resources associated with potential E&amp;I from the Project's water intake;</li> <li>• Create or restore up to 55.4 acres of high-quality estuarine</li> </ul>	<p>Comments noted.</p>

**SAN DIEGO REGIONAL BOARD RESPONSES TO COMMENTS  
POSEIDON RESOURCES CORPORATION, CARLSBAD DESALINATION PROJECT  
FLOW, ENTRAINMENT AND IMPINGEMENT MINIMIZATION PLAN  
ORDER NO. R9- 2009-0038, AMENDING ORDER NO. R9-2006-0065, NPDES NO. CA0109223**

<b>COMMENT NUMBER</b>	<b>COMMENTS and/or CONCERNS</b>	<b>REGIONAL BOARD RESPONSE</b>
	<p>wetland habitat based on the best science available to mitigate Project-related impacts and likely result in a net biological benefit to the Southern California Bight;</p> <ul style="list-style-type: none"> <li>• Establish monitoring protocols and empower the Regional Board and the California Coastal Commission with enforcement mechanisms to ensure potential E&amp;I impacts are accurately measured over time and that mitigation success targets consistently are achieved;</li> <li>• Establish an enforceable schedule for completion of site selection (nine months), environmental review and permitting of the site(s) (24 months) and the start of construction (six months after approval of the permits);</li> <li>• Provide for significant, continuing agency oversight during the selection, development and performance monitoring of the final mitigation site(s), including by the Executive Officer if the Regional Board approves the MLMP (as the MLMP would then be equally enforceable by the Regional Board); and,</li> <li>• Authorize enforcing agencies to order remediation in the event the rigorous performance criteria are not met.</li> </ul> <p>(Comments from Latham &amp; Watkins LLP January 26, 2009 Comment Letter, pgs. 3, 12-20 and Latham &amp; Watkins LLP April 2, 2009 Comment Letter, pgs. 18-20)</p>	
<b>4/2/2009 letter from Christine Kehoe, 39<sup>th</sup> Senate District</b>		
148.	<p>Poseidon’s Minimization Plan assures that the project will comply with Porter-Cologne Water Quality Control Act, California Water Code Section 13142.5(b). Poseidon’s obligation to create up to 55.4 acres of new, highly productive estuarine wetlands will offset the projects impacts. The Coastal Commission and State Lands Commission have reviewed and approved this project.</p> <p>I ask you to please approve this final condition of the project’s NPDES permit and help the San Diego region welcome a</p>	Comments noted.

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	new, drought proof and environmentally-responsible water supply.	
<b>4/2/2009 letter from Group of Californians dedicated to restoring and protecting our coast and ocean</b>		
149.	<p>First, we want to be clear that we are not strictly opposed to ocean desalination. However, we have warned from the beginning of the planning of this facility, and others like it, not to rely on the continued existence of "once-through cooling" intakes as source water for ocean desalination. This antiquated technology has been all but prohibited by the federal courts and is currently being reviewed for a phase-out plan by California agencies led by the State Water Resources Control Board. Sound public policy and the mandates of the Porter-Cologne Act make it clear that co-locating with power stations to share the ocean intake for the dual purposes of cooling water and desalination source water is a design whose time has passed even before these massive ocean desalination facilities are permitted.</p> <p>The documentation provided by the project proponent fails to adequately identify a design capacity for the output of the facility that is compatible with alternatives for desalination source water intake technologies to eliminate the intake and mortality of marine life.</p> <p>Instead, Poseidon Resources argues that they can "mitigate" the marine life mortality through after-the-fact restorative measures. The federal courts have found this approach illegal and inconsistent with the clear mandates of the Clean Water Act to use the best technology available to minimize adverse impacts in the first place. Similarly, the Porter-Cologne Act mandates "mitigating" the intake and mortality of marine life in the first place - not attempting to restore the damage after the fact. Importantly, California's Porter-</p>	Comments noted. See also responses to Comment Nos. 43, 45 and 46.

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	<p>Cologne Act does not distinguish cooling water intakes for coastal power plants from seawater desalination or any other industrial use of seawater. Consequently, the Regional Board should apply the same standards to ocean desalination that were established by the federal courts for cooling water intakes.</p>	
<b>4/5/2009 email from Nancy and Richard Weaver</b>		
150.	<p>We are for water desalination, but utmost respect for the Coastal areas and Marine life that will be affected, needs to be embodied in its planning and process from beginning-to-end.</p> <p>"Massive" action of desalination does not have to cause Massive death to innumerable species of Life.</p> <p>"Fixing in other locations" the massive damage that Poseidon will do locally, under its current proposal, does Nothing to alleviate or even avoid the planned, massive damage done to local life forms.</p> <p>The Sub-Sea-floor Intakes will allow far greater beneficial results for generations to come, not only for people but for all the variety of species affected.</p> <p>It is far easier and less costly to adjust planning and process before starting this precedent-setting desalination plant in Carlsbad. Being conscious now will produce fewer or less-difficult problems for both ourselves and our descendents.</p> <p>Setting precedent for wise, sustainable ocean desalination is the mandate of this time.</p>	Comments noted.



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<b>4/6/2009 letter from Coastal Commission</b>		
151.	<p>IMPINGEMENT EFFECTS AND MITIGATION: Section 5.2 of the proposed Plan includes Poseidon’s recent impingement analysis showing the Project would cause greater adverse impingement impacts than had been previously disclosed or evaluated. The Project is now expected to impinge, on average, several hundred fish per day, weighing a total of from about 4.7 to 7.2 kilograms per day. Please note that the Commission in November 2007 had found that the Project’s expected impingement impacts would be de minimis however, that finding was based in part on previous information from Poseidon showing that expected impingement would be several times lower, at 0.96 kilograms per day. The Commission did not have these recently submitted higher figures available to it and the Commission’s findings did not consider the resulting higher level of adverse impacts.</p>	Comments noted.
152.	<p>Given the problems Dr. Raimondi identified in Poseidon’s recent impingement analyses and the substantial doubts he raises about the adequacy of Poseidon’s impingement impact assessment and proposed mitigation, we recommend the Board not adopt Poseidon’s analyses as the basis of a Board decision about the amount of mitigation needed to address the Project’s impingement effects. As noted above, Poseidon’s recent identification of higher impingement levels may not be consistent with the Commission’s de minimis findings and are not included in the Commission’s determination of adequate mitigation. We instead recommend the two measures described below to ensure impingement impacts are reduced and to allow consistency with the Commission’s findings. we therefore recommend the Board adopt conditions that require Poseidon to operate at or below the above referenced flow rate and to monitor its</p>	Comment noted.

**SAN DIEGO REGIONAL BOARD RESPONSES TO COMMENTS  
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	impingement and adult fish productivity.	
153.	RATE OF MARINE LIFE MORTALITY CAUSED BY THE PROJECT: we recommend the Board find that the Project is likely to result in 100% entrainment mortality	The Board's analyses were based on the assumption of 100% mortality of all organisms impinged and entrained.
154.	STEWARDSHIP OF AGUA HEDIONDA LAGOON: We have not yet been provided with information about Poseidon's ability to act as steward (e.g., its ownership of the Lagoon or approvals from landowners in and around the Lagoon to take on stewardship activities); however, should Poseidon take on this role, we recommend the Plan be modified to properly recognize the Lagoon's many other resources and beneficial uses	Comment noted. This will be considered if/when Poseidon proposes this to the Board.
155.	TIMING OF PROJECT-RELATED IMPACTS AND MITIGATION: Poseidon's proposed Plan suggests that its facility will result in only de minimis impacts until the power plant shuts down permanently. We recommend the Board replace the Plan's references to permanent cessation of power plant operations with references to power plant operations of less than 304MGD.	To clarify, the Regional Board has already determined that when EPS flows are 304 MGD or greater, Poseidon's impacts are indeed de minimis. Order No. R9-2009-0038 serves to determine compliance with 13142.5 when the EPS intake is being operated for the benefit for the benefit of CDP. Measure that will be implemented to comply with Porter-Cologne as a stand-alone facility will be evaluated at the time that Poseidon submits a Report of Waste Discharge to operate as a stand-alone facility.
156.	SITE SELECTION: The Commission's mitigation approval allows Poseidon to conduct its wetland restoration at up to two of the eleven identified potential sites between Ventura and the Mexican border (although with additional review and approval, Poseidon may conduct restoration at more than two sites or at different sites). We recommend Poseidon and the Board consider opportunities to work with these entities and with Coastal Commission and State Lands Commission staff to create larger restoration areas.	Comments noted.

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157.	NEED FOR ONGOING ASSESSMENT AND COORDINATION TO FURTHER REDUCE PROJECT IMPACTS: We concur with the Board's proposed approach to allow ongoing review of potential alternatives that may reduce the Project's adverse marine life impacts.	Comment noted.
<b>4/6/2009 letter from Coast Law Group</b>		
158.	<p><b>Procedural Objections</b></p> <p>The fact that significant new information continues to unfold – including evidence of applicant misrepresentation and scientifically unsound data and statistical analyses – at such a late date indicates that prior agency approvals were likely premature, and importantly, that a sound foundation of data for impacts assessment was never actually generated. Because we are nearing the end of the regulatory process, these procedural problems and their implications must be understood and appreciated by the Board. The public, unquestionably more limited in resources than the applicant, has been told to respond to mitigation plans within specific comment periods, only to have the plans change and significant new “expert” reports and materials arrive at the last minute. To expect that the public, including the Environmental Groups, have the resources to provide multiple in-depth meaningful reviews of the reams of documents submitted by Poseidon at every twist and turn of the regulatory process is unrealistic and contrary to the Water Code's consideration of the public's important role in water resource issues. (See e.g. Ca. Water Code §13292)</p>	Comment noted.
159.	<p><b>Co-Located Approval v. Stand-Alone Analysis</b> The March 9, 2009 staff report indicates the CDP is being considered for approval solely as a co-located facility, but that assessment and mitigation of impacts at intake volumes reflecting stand-</p>	New language has been added as a trigger to specify under what condition the discharger must submit a new report of waste discharge to operate as a stand-alone

**SAN DIEGO REGIONAL BOARD RESPONSES TO COMMENTS  
POSEIDON RESOURCES CORPORATION, CARLSBAD DESALINATION PROJECT  
FLOW, ENTRAINMENT AND IMPINGEMENT MINIMIZATION PLAN  
ORDER NO. R9- 2009-0038, AMENDING ORDER NO. R9-2006-0065, NPDES NO. CA0109223**

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	<p>alone operations is necessary. The rationale for this approach is founded on expectation that there will likely be intermittent periods of CDP operation where the full 304mgd of CDP intake requirement will be pumped solely for the benefit of CDP. As a preliminary policy-based matter, we believe the CDP should be conditioned to allow production of potable water only at quantities supported by EPS flow requirements. The Environmental Groups therefore recommend that if for any given quarter (3 month period), the EPS intake flows are less than 50% of the CDP's needs (152mgd), then the CDP permit should be reopened and PC 13142.5 reassessment required.</p>	<p>facility.</p> <p>New language has also been added as a trigger to specify when the discharger must submit a technical report that identifies additional feasible measures the discharger can implement to reduce intake impingement and entrainment impacts if all power generating units at EPS are shut down for prolonged periods, but are not permanently shut down.</p>
<p>160.</p>	<p><b>PC Section 13142.5 Analysis – Site</b>  PC 13142.5 mandates that the project use the best available site feasible to minimize marine life mortality. The first step to appropriate site analysis for PC 13142.5 compliance is establishment of a legally viable and factually accurate project scope, also described as the project purpose or project objective.</p> <p>Poseidon's framework for restricting site alternative analysis does not take into account the means by which water is currently conveyed to and within the San Diego region.</p>	<p>See response to Comment 45.</p> <p>To determine whether the alternative sites evaluated by the Discharger are feasible under conditions of co-location operation for CDP benefit, the Board has examined the fundamental project objectives of the CDP, based on the evidence before it, including the objectives as described by the Discharger and the City of Carlsbad in its comments, the objectives as described in the EIR certified by the City of Carlsbad, and the project objectives as described in the August 6, 2008 findings of the Coastal Commission. The Discharger defines the CDP's fundamental project objectives as: (1) allowing Carlsbad to purchase 100 percent of its potable water supply needs from the desalination plant, thus providing a secure, local water supply that is not subject to the variations of drought or political or legal constraints; (2) reducing local dependence</p>

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FLOW, ENTRAINMENT AND IMPINGEMENT MINIMIZATION PLAN  
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<b>COMMENT NUMBER</b>	<b>COMMENTS and/or CONCERNS</b>	<b>REGIONAL BOARD RESPONSE</b>
		<p>on water imported from outside the San Diego County area and from outside of Carlsbad and surrounding areas; (3) providing water at or below the cost of imported water supplies; and (4) meeting the CDP's planned contribution of desalinated water as a component of regional water supply planning goals. The objectives are summarized in the Environmental Impact Report certified by the City of Carlsbad for the CDP and related findings adopted by the City, and on page 14 of 106 of the findings adopted on August 6, 2008 by the California Coastal Commission for the Coastal Development Permit adopted for the project. The Board has considered these fundamental objectives, and the availability of the existing intake at EPS in evaluating alternative sites and determining that the Minimization Plan uses the best available feasible site under conditions of co-located operation.</p>
<p>161.</p>	<p><b>PC Section 13142.5 Analysis - Design and Technology</b>  The structure and wording of PC 13142.5 clearly demonstrate the legislature's intent that coastal dependent industrial facilities be planned with a holistic consideration for minimization of marine life mortality. Hence, where technologies are available to minimize marine life mortality, industrial facilities should be designed around such opportunities.</p> <p>The CDP has not been designed with technologies to minimize marine life mortality as a standalone facility. This much is clear. Virtually every technological option described,</p>	<p>See response to Comment 160.</p> <p>Also, the Regional Board has made clear in Order No. R9-2006-0065 and in this Order that evaluation of compliance with Water Code section 13142.5(b) will be required if the CDP notifies the Board of its intent to operate as a stand-alone facility.</p>

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FLOW, ENTRAINMENT AND IMPINGEMENT MINIMIZATION PLAN  
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<b>COMMENT NUMBER</b>	<b>COMMENTS and/or CONCERNS</b>	<b>REGIONAL BOARD RESPONSE</b>
	<p>from alternative intakes to impingement reduction screens are discarded because they are not feasible in conjunction with a co-located CDP and EPS. The difficult question for the Board is when, and to what extent, design and technological alternatives can be required for the stand-alone condition. The Environmental Groups believe that PC 13142.5 requires assessment of these factors for the stand-alone condition now, as relinquishment of OTC infrastructure by the EPS is reasonably foreseeable.</p>	
162.	<p><b>Impingement</b> Poseidon's assertion that .5 feet/second (fps) velocity at inlet screens will reduce impingement to insignificant levels is unsupported. We concur with Staff's determination that most impingement intake and mortality occurs at the rotating screens rather than on the bar racks.</p>	<p>The Regional Board has not relied specifically on a particular intake velocity in establishing its findings and requirements as contained in the Tentative Order. When CDP proposes to operate as a stand-alone facility, with EPS generating units permanently shut down, a new analysis will be required to ensure compliance with Water Code section 13142.5(b).</p>
163.	<p><b>Calculation Impingement Attributable to CDP Operations</b> Poseidon's individual sampling impingement rates are calculated as follows: average impingement weight, divided by the associated flow volume for the sampling day, multiplied by 304 MGD. These resulting "weights" are then averaged. Two sampling events had higher associated impingement rates. Poseidon argues for their exclusion, while Dr. Raimondi and staff believe they should remain in the data set. We concur with Dr. Raimondi and staff: the two data points with high associated impingement rates should not be considered outliers.</p>	<p>Comments noted.</p>
164.	<p><b>Heat Treatments</b> The impingement impact calculation also seems to reflect</p>	<p>The March 27, 2009 staff report suggested that, if operation of the CDP should lead to</p>

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	<p>only "normal operations" and not heat treatments. Poseidon and Raimondi's calculations do not take into account the proportion of organisms killed during heat treatments attributable to Poseidon's flows. If EPS intake pumps are operating for the benefit of CDP, a larger number of organisms will be present in the intake channel than would occur if CDP were not operating.</p>	<p>the need for more frequent heat treatment of the EPS intake facility, then it would be reasonable to include in the CDP incremental impact a corresponding portion of the impingement impacts due to heat treatments.</p> <p>In response, Poseidon submitted a statement (Le Page Statement, April 8, 2009) indicating that the frequency of heat treatment at Encina is "a matter of industry standard" and that "since heat treatment frequency is a standard maintenance issue at set intervals regardless of flow rates, there are no logical reasons to assume that the frequency of heat treatments will change as a result of any potential increase in water flow from the CDP over the power plant's projected water demand."</p>
165.	<p><b>Poseidon's Proposed Impingement Mitigation Measures</b> Based on Dr. Raimondi's review of Chris Nordby's analysis, Poseidon's proposed mitigation for impingement is wholly inadequate. We agree with Dr. Raimondi's assessment that the approach used by Poseidon (and Nordby) is flawed</p>	<p>The Board considered Dr. Raimondi's statement, and Poseidon's rebuttal to Dr. Raimondi's statement, and decided to implement a productivity standard, and corresponding productivity monitoring, to determine whether the proposed mitigation will be sufficient.</p>
166.	<p><b>Environmental Groups' Proposed Impingement Compensatory Mitigation</b> To summarize, at a minimum, the impingement compensatory mitigation should meet the following criteria: 1) Impingement impacts should be calculated to a 95 percent confidence interval, as extrapolated by Dr. Raimondi from a 4.7kg/day (50 percent confidence interval) impact assessment.</p>	<p>1) The Board considered Dr. Raimondi's statement and determined that a 95% confidence interval was not appropriate. The Board, instead, decided to implement a productivity standard, and corresponding productivity monitoring to determine whether the proposed mitigation would be sufficient.</p>

**SAN DIEGO REGIONAL BOARD RESPONSES TO COMMENTS  
POSEIDON RESOURCES CORPORATION, CARLSBAD DESALINATION PROJECT  
FLOW, ENTRAINMENT AND IMPINGEMENT MINIMIZATION PLAN  
ORDER NO. R9- 2009-0038, AMENDING ORDER NO. R9-2006-0065, NPDES NO. CA0109223**

<b>COMMENT NUMBER</b>	<b>COMMENTS and/or CONCERNS</b>	<b>REGIONAL BOARD RESPONSE</b>
	<p>2) Impingement impacts should be calculated at a rate of 304 MGD attributable to CDP impacts, or calculated real-time.</p> <p>3) Impingement compensatory wetland productivity calculations must take into account the type of wetland created. If Poseidon's proposed mixture in the MLMP is applied to impingement mitigation, Dr. Raimondi's calculations should be used at a 95 percent confidence interval.</p> <p>4) Wetlands must be created, not restored.</p> <p>5) Penalties should be assessed when performance criteria are not met for a given period of time.</p> <p>Using the above criteria, the required compensatory mitigation for impingement only, assuming 100 percent of CDP intake is attributable to CDP operations, a minimum of 54 additional acres of newly created wetlands (40 percent intertidal or subtidal) should be required.</p>	<p>2) The CDP impingement projection of 4.7 kg/day is calculated from the EPS 2004-05 weekly impingement samples. Of the 52 samples, 50 are prorated to 304 MGD and 2 are not prorated. The 50 are prorated to 304 MGD because Poseidon considers the impingement that occurred on those days to be typical of flow-related impingement and, as such, reasonable to prorate.</p> <p>3) It is anticipated that the proposed type and mixture of wetlands will be evaluated by the Scientific Advisory Panel when they review the Productivity Monitoring Plan, concurrently with the Wetland Restoration Plan.</p> <p>4) If wetlands are to be restored, it is anticipated that the baseline productivity of these wetlands will not be counted towards mitigation for intake mortality.</p> <p>5) If compliance timelines are not met as specified in the order, the discharger is subject to penalties under Porter Cologne.</p>
<b>4/6/2009 letter from Benjamin Hueso, San Diego City Council President</b>		
167.	As one of San Diego County's representatives on the California Coastal Commission, I made the motion to support the Project's Marine Life Mitigation Plan (MLMP), which provides for 55.4 acres of highly productive estuarine wetlands to mitigate for the Project's marine life impacts. I also made a motion in support of the MLMP's findings, approved by the Commission on December 10, 2008.	Comments noted.



**SAN DIEGO REGIONAL BOARD RESPONSES TO COMMENTS  
 POSEIDON RESOURCES CORPORATION, CARLSBAD DESALINATION PROJECT  
 FLOW, ENTRAINMENT AND IMPINGEMENT MINIMIZATION PLAN  
 ORDER NO. R9- 2009-0038, AMENDING ORDER NO. R9-2006-0065, NPDES NO. CA0109223**

<b>COMMENT NUMBER</b>	<b>COMMENTS and/or CONCERNS</b>	<b>REGIONAL BOARD RESPONSE</b>
	<p>As the maker of the motion the intent behind my support of the mitigation plan was based on my understanding that the 55.4 acres was capable of providing comprehensive mitigation for the effects of the intake structures on the ecosystem of the Agua Hedionda Lagoon, and the coastal environment.</p>	
<b>4/7/2009 Email from Guy McClellan</b>		
168.	<p>All signs indicate that desalination will play an important role in California's future water portfolio. In this debate, we must address the cost, high energy use, and environmental impacts through discharge of brine, chemicals, and carbon dioxide. Desalination is still the most expensive source of water due to its high energy costs.</p> <p>The plan to mitigate damage done to the marine ecosystem by a desalination plant in Carlsbad is to plant trees inland to offset carbon dioxide emissions from increased power use. There is no chosen location for a marine mitigation project, and that is a glaring deficiency to the current plan.</p> <p>With regards to impingement and entrainment, the studies from the Encinas Power Station indicate that there will be a consistent level of destruction of small fish and fish eggs. The ocean is already overfished and we should not overlook the slaughter of small fish and fish eggs.</p>	Comments noted.