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File No. 036182-0011

May 7, 2009

BY HAND DELIVERY

Michelle Mata
San Diego Regional Water Quality Control Board
9174 Sky Park Court, Suite 100
San Diego, CA 92123-4340

Re: Item 11- Poseidon Resources Corporation, Proposed Carlsbad Desalination Project - Response to Comments

Dear Ms. Mata

Enclosed please find 15 copies of Poseidon Resources Corporation's Proposed Response to Comments (Responsiveness Summary), pursuant to 40 C.F.R. 40 CFR 124.17, for the Board's consideration. This material was also submitted electronically to Catherine Hagan on May 6, 2009. Poseidon's Proposed Response to Comments replaces prior drafts submitted April 8, 2009, April 22, 2009 and May 5, 2009, which are hereby withdrawn. We respectfully request that these Responses to Comments be placed in the administrative record and considered by the Board as part of its adoption of an Order in this matter.

Sincerely,

on behalf of.

Amanda Halter
of LATHAM & WATKINS LLP

Attachment

CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD SAN DIEGO REGION

TENTATIVE ORDER NO. R9-2009-0038
AMENDING ORDER NO. R9-2009-0065 (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

RESPONSES TO COMMENTS RECEIVED ON OR BEFORE APRIL 8, 2009

These materials have been submitted by Poseidon Resources Corporation and provided to Regional Board Staff.

CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD
SAN DIEGO REGION
TENTATIVE ORDER NO. R9-2009-0038

AMENDING ORDER NO. R9-2009-0065 (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

RESPONSES TO COMMENTS RECEIVED ON OR BEFORE APRIL 8, 2009

Order No. R9-2006-0065 (NPDES NO. CA109223) will be amended as stated in Order No. R9-2009-0038 for the reasons stated herein and as explained more fully in the following responses.

No.	Comment	Responses
WRITTEN COMMENTS		
1. 3/19/2008 letter from San Diego Coastkeeper and Surfrider Foundation		
1.	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 comment is moot. The conditional approval by the San Diego Regional Water Quality Control Board ("Regional Board") of the March 6, 2008 Flow, Entrainment and Impingement Minimization Plan ("Minimization Plan"), Resolution No. R9-2008-0039, for the Carlsbad Desalination Project ("CDP") is to be superseded by its action on May 13, 2009. Moreover, a 30-day public comment period for the Regional Board's April 9, 2008 action to review the Minimization Plan was not required. A 30-day public comment period is required for National Pollutant Discharge Elimination System ("NPDES") permit amendments; however, in April 2008, the Regional Board did not consider amending the NPDES/Waste Discharge Requirements ("WDR") permit for the CDP.
2.	In approving Tentative Order No. R9-2006-0065, granting NPDES Permit No. CA0109223 (NPDES permit), the Regional Board considered public comments received during 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	See Response No. 1 regarding the public comment period. The Discharger, Poseidon Resources, submitted the initial draft of its Minimization Plan on February 12, 2007. The Regional Board issued a public notice of availability regarding the Minimization Plan on February 21, 2007. On June 29, 2007, the Discharger submitted a revised version of the Minimization Plan, followed by the March 6, 2008 version on March 7, 2008, which the Board reviewed

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	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.	on April 9, 2008. The Regional Board provided legally adequate time for public comments for its April 9, 2008 action to review the March 6, 2008 Minimization Plan. In addition, the Regional Board's April 9, 2008 conditional approval of the March 6, 2008 Minimization Plan, Resolution No. R9-2008-0039, is to be superseded by its action May 13, 2009, in which the Board will consider the March 27, 2009 Minimization Plan.
3.	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.	The comment is incorrect in stating that the NPDES/WDR permit issued for the CDP, Order No. R9-2006-0065, is a consolidated permit. It is not. A "consolidated permit" requires the collaboration of two or more "environmental agencies," as defined by Section 10100(c) of Title 27 of the California Code of Regulations. This section defines a "consolidated permit" 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. Here, the Regional Board was the only "environmental agency" that issued Order No. R9-2006-0065, which does not incorporate the permits of other agencies. Other agencies' permits, such as the Coastal Commission's Coastal Development Permit for the CDP, E-06-013, were issued separately by those agencies. Order No. R9-2006-0065, therefore, is not a consolidated permit, as defined by the California Code of Regulations. That the Regional Board issues NPDES permits under the dual authorities of the federal Clean Water Act and the California Water Code does not make Order No. R9-2006-0065 a consolidated permit. Accordingly, the Minimization Plan is not subject to section 10206 of Title 27 of the California Code of Regulations. The comment refers to no law that would require such a result. In addition, various versions of the Minimization Plan have been made available for public review and comment since February 2007, and substantial and extensive public comment has been made. See Response No. 2. In addition to agency action regarding the NPDES/WDR permit for the project, the May 13, 2009 meeting will be the fourth time the Regional Board has considered the Minimization Plan in a public meeting.
4.	To allow time for coordination of a stakeholder meeting, adequate review by our experts, and full public participation,	See Response No. 1 regarding the public comment period. In addition, this comment has been rendered moot by subsequent, superseding agency

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	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 Section 13142.5(b). Granting a formal comment period, with responses from staff, will assure that Board 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.	action. The Discharger's mitigation proposal was not approved at the Regional Board's April 9, 2008 meeting. Instead, consistent with the Regional Board's directive, the Discharger engaged in a months-long interagency process to develop the mitigation proposal: the Marine Life Mitigation Plan ("MLMP") now incorporated in the Minimization Plan as Part A of Chapter 6. A stakeholder meeting was held on May 1, 2008, which included, among others, staff and experts from the California Coastal Commission ("Coastal Commission"), the Regional Board, State Lands Commission, California Department of Fish & Game, and the National Marine Fisheries Service. See Response No. 16 for additional discussion of the interagency process. After this interagency coordination and consideration of substantial public comment, the MLMP was approved by the Coastal Commission on August 6, 2008. (It should be noted that interagency review and coordination does not mean a consolidated permit was issued. See Response No. 3.) Following the Coastal Commission's approval on August 6, 2008, the Regional Board considered the Minimization Plan and MLMP on February 11, 2009 and April 8, 2009. The Regional Board will again consider the Minimization Plan on May 13, 2009. Through the various agencies' review of the Minimization Plan and the Regional Board's four public meetings to consider the Minimization Plan, the public has been given ample opportunity to provide comment on the Minimization Plan and the MLMP. Indeed, substantial public comment has been provided, including as to the comment's assertion that this matter presents a new interpretation and implementation of California Water Code Section 13142.5(b) ("CWC Section 13142.5(b)") (a section of the Porter-Cologne Water Quality Control Act ("Porter-Cologne Act") (CWC Section 13000 *et seq.*)). The comment's assertion that this matter warrants extraordinary scrutiny is noted; in fact, this matter was subject to such scrutiny.
2. 3/31/2008 letter from Sierra Club, San Diego Chapter		
5.	The Report [Minimization Plan] fails to provide a site specific conceptual food web model. This model serves to show the relationship among the various species and their interactions	This project is reviewed under CWC Section 13142.5(b), which requires that the project use the best available site, design, technology, and mitigation measures feasible to minimize the intake and mortality of all forms of marine

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	in response to the impingement and entrainment impacts. It is an essential tool for the ecosystems based management of the CDP project.	life. The statute does not mandate the use of a particular model, such as a site-specific conceptual food web model as the comment suggests. Consistent with CWC Section 13142.5(b), the purpose of the Minimization Plan is to evaluate intake and mortality, i.e., entrainment and impingement, of all forms of marine life, and to minimize these effects. To account for entrainment, the Minimization Plan applies the Empirical Transport Model ("ETM"). This ETM model is widely accepted in California by the scientific and regulatory community and has been used in other recent studies conducted in California, such as those regarding the AES Huntington Beach Generating Station and the Duke Energy South Bay Power Plant. Here, in approving the MLMP, the Coastal Commission relied upon and adopted the ETM model, which was also used by its expert Dr. Peter Raimondi. The Regional Board similarly relies on the ETM model. To account for impingement, the Minimization Plan applies biomass productivity estimates of comparable estuarine habitats as calculated by Larry Glen Allen and applied in this case by Christopher Nordby. See Larry Glen Allen, Seasonal Abundance, Composition and Productivity of the Littoral Fish Assemblage in Upper Newport Bay, California, 80 Fishery Bulletin 4, 769-90 (1982); Christopher Nordby, "Mitigation Computation Based on Impingement Assessment", Minimization Plan Attachment 7. Instead of using food as the basis to characterize impingement and entrainment, the ETM and biomass productivity approaches reasonably rely on the benefits associated with increases in estuarine habitat. The comment assumes that an "ecosystems-based approach" is required and preferable. An ecosystems-based approach is not applicable to this case, however, because the affected ecosystem, Agua Hedionda Lagoon, is not wholly removed (as is generally done when evaluating compensatory mitigation for impacts of fill in a Clean Water Act ("CWA") Section 401 certification). Rather, in this case, only specific components of the ecosystem – rather than the entire ecosystem – are being altered, due to impingement and entrainment. Therefore, the mitigation provided for in the Minimization Plan, which will fully offset impingement and entrainment, is appropriate. It should be noted, however, that the Minimization Plan does give

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		consideration to the ecosystems affected. For example, Sections 3.1 and 3.2 of the MLMP, incorporated in Chapter 6, provide minimum standards and objectives for the mitigation site(s). These standards and objectives, among other things, provide that a site shall include habitat similar to the affected habitats in Agua Hedionda Lagoon and should provide maximum overall ecosystem benefits, e.g., maximum upland buffer and transition areas, enhancement of downstream fish values, regionally scarce habitat, potential for local ecosystem diversity, substantial fish habitat, rare or endangered species habitat, and provision for reproductively isolated populations of native California species. See Response No. 10(c) for more details.
6.	Mortality and injury to marine life caused during transport through intake and discharge tunnels are not addressed. The Report [Minimization Plan] 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.	Intake and mortality of marine life was determined based on the Impingement and Entrainment Mortality Characterization Study ("IM&E" Study") conducted by Tenera Environmental ("Tenera") in accordance with a Regional Board-approved 316(b) Study Plan. To the extent the comment suggests that the Impingement and Entrainment Mortality Characterization Study ("IM&E Study") was deficient, see Response No. 10(c). A detailed IM&E sampling plan was developed for the IM&E Study and previously was submitted to the Regional Board in August 2004. The Regional Board approved a sampling plan, and the sampling was conducted for one year starting in June 2004 and continuing to June 2005. The approved study included the following elements: (1) Taxonomic identifications of all life stages of fishes, shellfishes, and any threatened or endangered species collected in the vicinity of the cooling water intake system and are susceptible to impingement and entrainment mortality ("IM&E"); (2) Characterization of all life stages of the target taxa in the vicinity of the cooling water intake system and a description of the annual, seasonal, and diel variations in IM&E; and (3) Documentation of the current level of IM&E of all life stages of the target taxa. The sampling methodologies and analysis techniques were derived from recent impingement and entrainment studies conducted for the AES Huntington Beach Generating Station (MBC and Tenera 2005) and the Duke Energy South Bay Power Plant (Tenera 2004). Commenter is precluded from attacking the IM&E field program conducted in 2004-2005, as that program was subject to a public process and Regional Board approval, and Commenter could have, but did not, provide this critique at that time; any objection is therefore waived.

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		Moreover, the concerns expressed in the comment are moot because the Minimization Plan conservatively assumes that a number of stressors (e.g., high pressures, significant changes in salinity, temperature differences) will result in 100% mortality of entrained species, even though some organisms may survive upon discharge. See Response No. 8 for additional discussion.
7.	The Report [Minimization Plan] (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's present evaluation of the proposed project is limited to minimization efforts applicable only to the co-location of the CDP with the Encina Power Station ("EPS") for CDP benefit. Discussion on the use of scrubbing balls is an example of a potential alternative to heat treatment that could be used to control bio-fouling in the intake when and if the power plant ceases to use the circulating water system. Additional evaluation of CDP's operations, including possible use of scrubbing balls, would be necessary if the EPS permanently ceases power generation operations, and if the Discharger proposes, through submittal of a new Report of Waste Discharge, to operate the EPS's seawater intake and outfall independently for the benefit of the CDP in a "stand-alone" capacity. Evaluation of possible alternatives to heat treatment, such as the use of scrubbing balls, is premature at this time. The comment's objection to a practice it believes may be occurring at the EPS regarding the disposal of heat treatment debris is beyond the scope of this action and irrelevant, as the proposed CDP operations will not increase heat treatment at the EPS, which will occur on a periodic basis irrespective of CDP's operations.
8.	Micro-screens effectiveness to minimize impingement and entrainment losses is problematical. The Report [Minimization Plan] 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	The comment addresses potential concerns related to the use of micro-screens to minimize impingement and entrainment. This comment has been rendered moot by subsequent actions as follows: In the March 6, 2008 version of the Minimization Plan, the Discharger proposed the installation of micro-screens and the use of a low-pressure membrane pretreatment system to increase the potential to capture marine organisms and to return them successfully to the ocean. Based upon the use of these proposed technology measures, the Discharger initially considered the mortality rate of the entrained marine organisms to be less than 100%. Subsequent to that proposal, the Coastal Commission and the Scientific

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	plan to quantify taxa, their abundance, and the survivability of the marine organisms at the ocean outfall.	Advisory Panel ("SAP") determined that these technology measures would not be effective in returning viable organisms to the ocean and would not result in any minimization or reduction of entrainment. The Coastal Commission found that the CDP's entrained organisms would be subject to a number of stressors – including high pressures, significant changes in salinity, possible high temperature differences if the power plant is operating, etc. – and that the organisms would then be discharged to a different environment than is found in Agua Hedionda Lagoon. See Coastal Commission, Recommended Revised Condition Compliance Findings, MLMP for Coastal Development Permit E-06-013, Poseidon Resources Carlsbad Desalination Project, November 21, 2008, at 13, available at http://documents.coastal.ca.gov/reports/2008/12/W16a-12-2008.pdf. The Coastal Commission concluded that any one or a combination of these stressors could result in mortality of the marine organisms prior to the return to the ocean. *Id*. Further, it is uncertain whether the returned marine organisms would survive past the initial release into the ocean or thereafter contribute reproductively to the population. Ferry-Graham, Dorin, and Lin, *Understanding Entrainment at Coastal Power Plants: Informing a Program to Study Impacts and Their Reduction*, CEC-500-2007-120 at 36 (March 2008). Because of this uncertainty, the Minimization Plan conservatively assumes 100% mortality of entrained species, consistent with guidance from the U.S. Environmental Protection Agency ("EPA") and reflecting the practice of California's State Water Resources Control Board ("State Board") and the Regional Water Quality Control Boards, the California Energy Commission, and the Coastal Commission in conducting and evaluating these studies. Coastal Commission. *Recommended Revised Condition Compliance Findings, MLMP for Coastal Development Permit E-06-013, Poseidon Resources Carlsbad Desalination Project*, November 21, 2008, at 13. Available at http://documents.coastal.ca.gov/reports/2008/12/W16a-12-2008.pdf. Thus, these technology measures were removed from the Minimization Plan. It would not be necessary or reasonable to conduct biological monitoring at the outfall for organisms returned to the ocean. Because these technology measures have been removed from the Minimization Plan, the comment has been rendered moot. Moreover, the Minimization Plan provides for mitigation sufficient to fully offset projected entrainment and impingement.

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9.	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 Henderson and Seaby. Their report lists nine problems that question this assertion of which six are 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: 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. 3. There is no consideration of the effects of tide, currents etc. on flow rates through the screens. 4. There can be problems because fish orientate at 90 degrees to the screen and not the flow. 5. The velocity is determined at the screens - at this point the fish may already be trapped 8. Fish eggs are often free floating and are therefore vulnerable to entrainment irrespective of the intake velocity 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.	The Regional Board's present evaluation of the proposed project is limited to minimization efforts applicable to only co-location operation for CDP benefit. However, in Chapter 3 of the Minimization Plan, when or if EPS permanently ceases operations, among other design measures, the Discharger proposes to reduce the inlet screen velocity (to equal to or less than 0.5 fps) and reduce the fine screen velocity. Additional evaluation of the CDP's design features would be necessary if the EPS permanently ceases power generation operations, and if the Discharger proposes, through submittal of a new Report of Waste Discharge, to operate EPS's seawater intake and outfall independently for the benefit of the CDP in a "stand-alone" capacity. The Regional Board notes that the comment takes issue with the principle that intake through-screen velocities at or below 0.5 feet per second (fps) reduce impingement mortality to insignificant levels but also notes that this approach has been widely followed by key regulatory agencies and is backed by extensive scientific study and review. Since the 1970s, EPA has recognized the relationship between flow and impingement. ("Development Document for Best Technology Available for the Location, Design, Construction and Capacity of Cooling Water Intake Structures for Minimizing Adverse Environmental Impact. EPA 440/1-76/015-a. USEPA April 1976. Washington, DC.") EPA notes that "flow reduction serves the purpose of reducing both impingement and entrainment." (U.S. Environmental Protection Agency, Phase II, Final Rule Technical Development Document, Chapter 4 [Efficacy of Cooling Water Intake Structure Technologies], at Section 1.5, p. 4-4. Available at http://www.swrcb.ca.gov/rwqcb3/water_issues/programs/duke_energy/docs/usepa_efficacy_of_intake_technologies.pdf.) According to EPA, this explains why "[e]nvironmental commentators [have] advocated for flow reduction technologies as the most direct means of reducing fish kills from power plant intakes." National Pollutant Discharge Elimination System -- Final Regulations to Establish Requirements for Cooling Water Intake Structures at Phase II Existing Facilities, 69 Fed. Reg. 41,576, 41,612 (July 9, 2004) (to be codified at 40 C.F.R. pts. 9, 122, 123, 124, 125). Similarly, the State Board recognizes the relationship between reduced flow and reduced impingement. In its March 2008 Scoping Document on once-through cooling (OTC) at coastal power plants, the State Board reiterated

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		EPA's conclusion and observed that "[f]low reduction will reliably reduce both impingement and entrainment impacts of OTC [once through cooling]." (State Board, Scoping Document: Water Quality Control Policy on the Use of Coastal and Estuarine Waters For Power Plant Cooling (March 2008), at 45. Available at http://www.energy.ca.gov/2008publications/SWRCB-1000-2008-001/SWRCB-1000-2008-001.PDF.) The EPS intake structure is an OTC intake. According to the comment, the Henderson and Seaby study challenges certain assumptions of the EPA/State Water Board approach as described above. To the extent that the Henderson and Seaby study challenges those accepted approaches, the comment is noted, and a specific response is not necessary.
10a.	The quantification of unavoidable impacts to marine life is not acceptable.	This project is governed by CWC 13142.5(b), which requires the minimization of the intake and mortality of marine life. To identify its minimization obligations under the statute and facilitate the Regional Board's review, it is useful and allowable for the Discharger to quantify the potential for entrainment and impingement. Thus, the quantification of these effects is not only acceptable, it is important. In this instance, the Discharger has quantified projected entrainment and impingement and provided for mitigation to fully offset these effects. The March 27, 2009 Minimization Plan does not refer to unavoidable impacts, rendering this comment on an earlier version of the Minimization Plan moot. The March 27, 2009 Minimization Plan is based on minimizing the intake and mortality of all forms of marine life; in addition to site, design, and technology measures, the Minimization Plan provides for mitigation to fully offset projected entrainment and impingement (without crediting reductions in intake and mortality attributable to design and technology measures). To the extent the comment is suggesting that CWC Section 13142.5(b) requires avoidance in all instances, and that mitigation is not avoidance, such a reading of CWC Section 13142.5(b) is mistaken because it plainly provides for the use of mitigation measures.
10b.	The Marine Life Protection Act requires an ecosystem based approach.	The Marine Life Protection Act ("MLPA"), Cal. Fish & Code Section 2850 *et seq*., is not applicable to the CDP, which is instead governed by CWC

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		Section 13142.5(b). The MLPA calls for the adoption of a Marine Life Protection Program, the primary goal of which is to "protect the natural diversity and abundance of marine life, and the structure, function, and integrity of marine ecosystems." Cal. Fish & Game Code Section 2853(b)(1). Because the MLPA is not applicable here, a Marine Life Protection Program is not required. More generally, the comment refers to an "ecosystem based approach," without defining the phrase, explaining how it is required by the MLPA, and, even if that is the case, how that would impact the Regional Board's review of the Minimization Plan. Insofar as the comment is suggesting that the IM&E Study used to identify impingement and entrainment impacts was deficient, see Response Nos. 6 and 10(c). The IM&E Study approach is appropriate for this project because specific components of Agua Hedionda Lagoon may be altered due to impingement and entrainment – plainly without eliminating the entire lagoon ecosystem. Appropriate mitigation is therefore premised on these impacts. In contrast, where a wetland is being filled in or removed, as in the context of Clean Water Act Section 404 with Section 401 certification, appropriate mitigation requires ecosystem replacement. It should be noted, however, that the Minimization Plan does give consideration to the ecosystems affected, as explained more fully in Comment No. 5.
10c.	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.	The comment does not explain why the field data relied upon by the Discharger to assess impingement and entrainment are inadequate, and suggests, without explanation, that benthic sampling may be required to support such as assessment. The impingement and entrainment data relied upon by the Discharger correspond to those effects on the food web from the intake and relate directly to "intake and mortality," as required by CWC Section 13142.5(b) . CWC Section 13142.5(b) does not mention the food web as broadly referred to by the comment, but, rather, focuses on "all forms of marine life" subject to "intake and mortality." This statutory approach focuses on the particularized effects of seawater intakes, which would not necessarily correspond to the

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		comment's generalized food web approach. See Response No. 5 for additional discussion on a food web model. The comment's generalized food web approach seems to stand for basic ecological principles, as opposed to application of these principles to define a particularized effect, such as from impingement and entrainment. To the extent the comment is criticizing the data relied upon by Discharger, the comment identifies no specific problem with these data, but, rather, seems to suggest that they suffer because the entire ecosystem was not sampled. Such is neither required nor feasible to characterize intake and mortality from a seawater intake. The Discharger relied upon data that were collected pursuant to the EPS's Regional Board-approved Clean Water Act Section 316(b) ("CWA Section 316(b)") Impingement Mortality and Entrainment Characterization Study ("IM&E Study"). Before conducting the IM&E Study, EPS produced and submitted to the Regional Board a Study Plan for its review and approval pursuant to the terms of EPS's NPDES permit. Regional Board staff reviewed the plan with the assistance of Tetra Tech, its third-party consultant. Under the direction of a Technical Advisory Group comprised of staff from the Regional Board, state and federal resources agencies, EPS and Tenera Environmental ("Tenera") revised the Study Plan and submitted its final report to the Regional Board in January 2008. The IM&E Study incorporated scientifically acceptable sampling methodologies and analysis techniques that have been applied in other recent impingement and entrainment studies, including those conducted for the AES Huntington Beach Generating Station and Duke Energy South Bay Power Plant.
10d.	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.	The comment refers to a table that was included in the March 6, 2008 Minimization Plan. Although the Table 5-1 caption indicated that the table presented impingement data prorated for 304 MGD, Table 5-1 actually presented non-prorated impingement totals that represented the amount of impingement that was attributable to the EPS's operations during the 2004/2005 sampling period. When these impingement figures are prorated to reflect the CDP's relatively lower flows (i.e., 304/657), the flow-proportioned calculation of impinged individuals is less. The March 27, 2009 Minimization Plan includes a new Table 5-1, the caption

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		to which correctly identifies the impingement data as reflecting impingement associated with the EPS's operations (i.e., "Number and weight of fishes (bony fishes, sharks and rays) and invertebrates impinged during normal operations at EPS from June 2004 to June 2005 on the sample days"). See Minimization Plan, Table 5-1, at 5-4.
10e.	No ecological assessment has been provided to indicate whether these losses are sustainable and can maintain a healthy biologically diverse ecosystem.	Agua Hedionda Lagoon is presently a healthy, biologically diverse ecosystem, sustained in part by regular maintenance dredging required to support the Lagoon's use as a source of cooling water for the EPS, without which the Lagoon would likely be cut off from tidal exchange and could return to mudflat conditions with substantially less biological diversity. There are no facts to support the view that the Agua Hedionda Lagoon's health and biological diversity will not be maintained in the event the project proceeds. To the contrary, the EPS's long-term presence and operation at the Lagoon suggests otherwise. Moreover, when the CDP is operating in stand-alone mode, its impacts will be less than the EPS's.
10f.	Instead the Report [Minimization Plan] dismisses the impingement loss by citing that it amounts to 2.11 lbs/day. Likewise, the entrainment effects methodology is flawed because it addresses only the fish larvae entrainment.	The Minimization Plan provides various approaches to estimating the impingement associated with the CDP's stand-alone operations, presuming that the CDP will draw all 304 MGD of its source water requirements from Agua Hedionda Lagoon and satisfy none with the EPS's discharge water. No reductions for design or technology measures expected to minimize entrainment and impingement are taken. Using these conservative assumptions, the Minimization Plan, Chp. 5 and Attachment 5, provides reasonable projections of impingement between 1.56 to 4.7 kg/day, depending on whether a regression analysis or flow-proportioned methodology is employed and whether two sampling days considered outliers are excluded from the calculation. The 4.7 kg/day value represents the high end of the range, using a flow-proportioned approach for 50 of the 52 impingement sampling days and making no adjustment for the 2 impingement sampling days considered outliers. The 1.57 value is calculated using a regression analysis that excludes the outlier data. The 2.11 value referenced in the comment is calculated using a flow-proportioned approach excluding the outlier data. Contrary to the comment's characterization, projected impingement is not dismissed. In addition to requiring the use of the best available site, design, and technology measures feasible to minimize intake and mortality of marine life, the Regional Board is requiring the Discharger to demonstrate that the Discharger's mitigation wetlands fully

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		offset projected impingement under the terms of impingement and fish biomass productivity monitoring plans. Employing the most resource-protective approach, the Regional Board is requiring full offset based on the most conservative reasonable impingement projection, 4.7 kg/day, or 1715.5 kg/year. To the extent the comment suggests that the IM&E Study which generated the impingement and entrainment data was deficient in some regard, see Response 10(c). As noted in Response 10(c), the IM&E Study incorporated generally accepted sampling methodologies and analysis techniques that have been applied in other recent impingement and entrainment studies, including those conducted for the AES Huntington Beach Generating Station and Duke Energy South Bay Power Plant.
11.	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.	To the extent this comment suggests that an ecosystem-based approach is required, see Response Nos. 5 and 10(b).
12a.	Reference site data needed to prevent shifting baselines. The Report [Minimization Plan] 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.	To the extent that the comment suggests that the IM&E Study was deficient in some regard, see Response No. 10(c). The comment wishes to benchmark the effects of intake and mortality at the EPS by comparison to reference sites without once-through cooling facilities but does not explain why this approach is necessary, given that the 2004-2005 IM&E field program relied upon measures of the actual effects of the EPS intake. The suggested approach constitutes an indirect inferential approach where effects are inferred by observed differences between two systems. The comment does not identify a single appropriate reference site, does not offer any data to facilitate its comparative approach, and does not address any of the practical difficulties inherent in such an approach. There is considerable variability in the plant and animal communities found in lagoons and estuaries in the southern California bight. This variability is due in part to differences in inlet and tidal dynamics, substrate, salinity, temperature, and fresh water input. Because of this high degree of variability, it would be neither appropriate nor practicable to infer impacts to Aqua Hedionda Lagoon associated with operation of the CDP from data

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		collected at other ecosystems.
12b.	Ecological health data for the CDP marine source waters as a reference basis is not acceptable.	The comment does not explain the basis of the apparent objection to the use of Agua Hedionda Lagoon water to characterize entrainment. To the extent the comment is suggesting that water from a different source would provide a better basis, no support for such position is offered. Because there is considerable variability in the plant and animal communities found in lagoons and estuaries in the southern California Bight, it is appropriate for the Discharger to use the source water of Agua Hedionda lagoon as a reference basis. For more discussion, see Response 12(a).
12c.	The ecosystems management must avoid the practice of shifting or sliding baselines.	The comment fails to explain what it meant by "shifting or sliding baselines", and these terms are vague and ambiguous. The comment appears to be pointing out a limitation in the ecosystem-based approach recommended by Commenter, namely, the use of reference sites to provide baselines. Comment noted. To the extent this comment suggests that an ecosystem-based approach is required, see Response Nos. 5 and 10(b). To the extent this comment raises concerns about baselines, see Response No. 12(a).
13.	Comprehensive receiving waters monitoring program is required. The Report lacks a comprehensive receiving waters monitoring program to evaluate the ecological health of the marine ecosystems. The program should include sampling of benthic infauna, phytoplankton, zooplankton, benthic and piscivorous fish.	The NPDES Permit for the CDP, Order R9-2006-0065, contains a Monitoring and Reporting Program which contains a Receiving Water Monitoring component (MRP Section VI). Any challenge to the receiving water monitoring provisions of this 2006 permit is time barred. Commenter had ample opportunity to raise this issue during the permit proceedings. This action does not reopen the receiving water monitoring provisions of the 2006 permit but, rather, exclusively addresses the Discharger's compliance with Section VI.C.e of the 2006 permit, which requires the Minimization Plan.
14.	The proposed mitigation plan is severely flawed. 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.	The comment correctly observes the 100 percent mortality assumption regarding entrained organisms used in the Minimization Plan, which is a resource-protective assumption. See Response No. 8 for more detail on this point. The remainder of the comment is without factual basis. The March 6, 2008 Minimization Plan did, in fact, provide data on the taxa and abundance of organisms subject to entrainment. Specifically, Attachment 5 provided average concentration values of larval fishes and target shellfishes in source water samples collected at Agua Hedionda Lagoon and nearshore stations.

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		The March 27, 2009 Minimization Plan also contains these data (Attachment 6).
15a.	California actions to implement the MLPA. The above comments represent a significant departure from the approach presented in the Flow, Entrainment and Minimization Plan. These comments are based on the MLPA that was enacted in 1999.	To the extent the comment is suggesting that the MLPA is directly applicable to the CDP, it is in error. The MLPA is not applicable and thus does not provide the governing standard. See Response No. 10(b).
15b.	The implementation of the Plan is still underway.	Comment noted. "The south coast study region (Point Conception in Santa Barbara County to the California/Mexico border in San Diego County, including offshore islands) is the third MLPA study region to undergo the regional MPA planning and design process. This regional process started in the summer of 2008 and is scheduled to continue through 2009. There are no MPA proposals for the south coast study region at this time." http://www.dfg.ca.gov/mlpa/southcoast.asp (last visited April 19, 2009).
15c.	The Ocean Protective Council Five Year Strategic Plan Action Status February 2008 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.	Regional Board presumes the comment intended to reference the Ocean Protection Council's Five Year Strategic Plan. This planning document describes a number of goals, including Objectives 3 and 2, cited in the comment. Comment noted.
3. 4/2/2008 letter from Coast Law Group		
16.	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	The comment argues that approval of the Minimization Plan would be "legally inappropriate and logistically imprudent" because Porter-Cologne Act (CWC) Section 13225 requires the Regional Board to coordinate with other state agencies with responsibility for water quality. Pursuant to Resolution R9-2009-0039, such coordination has occurred, rendering this comment moot. Specifically, on May 1, 2008, an interagency meeting was held to determine what mitigation options might be available and feasible for Poseidon. Thirteen state and federal agencies were invited to attend, and staff representatives from each of the following agencies did so: Regional Board, Coastal Commission, California State Lands Commission, California

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	input is required before Poseidon's mitigation plan can be appropriately considered for final approval by any agency.	Department of Fish and Game, California Department of Transportation, City of Carlsbad, City of Vista, and U.S. Fish and Wildlife Service. Since that meeting, the Minimization Plan and the MLMP incorporated therein were revised several times during the following months to reflect both resource agency input and public comment. As a result of the interagency process, the MLMP has been vetted by several participating agencies. On August 6, 2008, the Coastal Commission approved the MLMP as satisfying Condition 8 of the CDP's Coastal Development Permit. In addition, the State Lands Commission has incorporated the MLMP as a condition of the project lease. CWC Section 13225 requires each regional board, including this Regional Board, to "coordinate with…other state agencies with responsibility for water quality, with respect to water quality control matters[.]" The months-long interagency process that followed the Regional Board's April 9, 2008 conditional approval of the Minimization Plan more than satisfies this requirement.
17.	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.	Comment noted. Since April 2, 2008, Regional Board staff has coordinated with staff from all the agencies referenced in the comment. See Response No. 16. As the comment indicates, this coordination enables the Regional Board staff to render an appropriate recommendation on mitigation. The interagency coordination meeting to which the Commenter refers occurred on May 1, 2008, long before the Regional Board decision scheduled for May 13, 2009. The Regional Board's consideration of the Minimization Plan has continued after the Coastal Commission approval of August 6, 2008.
18.	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	The comment is unclear as to how the Regional Board's interpretation of CWC Section 13142.5(b) is in conflict with the Discharger's interpretation as embodied in the Minimization Plan. In accordance with the statute, the Minimization Plan provides for the use of the best available site, design,

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	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: Finally, the Water Boards must also consider the legislative directive in Water Code Section 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."	technology, and mitigation measures feasible to minimize the intake and mortality of marine life, without regard to whether such impacts are adverse. Thus, the observation that CWC Section 13142.5(b) does not qualify "intake and mortality" by the word "adverse" is irrelevant in this case. The Minimization Plan does not claim infeasibility, or any other extenuating circumstance, to leave any intake or mortality *un*minimized. As such, it is unnecessary for the Regional Board to opine as to whether CWC Section 13142.5(b) requires an applicant to minimize intake and mortality that is not adverse. The Regional Board notes, however, that any interpretation of Porter-Cologne Act must be interpreted under a reasonableness standard that balances competing interests, including social, environmental and economic concerns. *See City of Burbank v. State Water Res. Control Bd.*, 35 Cal. 4th 613, 619 (The goal of the Porter-Cologne Act is "to attain the highest water quality which is reasonable, considering all demands being made and to be made on those waters and the total values involved, beneficial and detrimental, economic and social, tangible and intangible.") (internal citations omitted). Moreover, the comment overlooks several important aspects of CWC Section 13142.5(b) and the Porter-Cologne Act. CWC Section 13142.5(b) requires the use of "feasible" and "best available" site, design, technology, and mitigation, which elements must be read as informing when the goal of minimizing has been reached.
19.	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 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.	The comment's overbroad assertion as to the Minimization Plan's legal and scientific framework is vague and ambiguous, and not supported by legal explanation or any evidence. If the comment means to imply that the Discharger is focusing on minimizing only adverse impingement and entrainment, the commenter is mistaken. See Response No. 18. The Regional Board agrees that CWA Section 316(b) does not provide a legally applicable standard for the Project because CWA Section 316(b) applies to power plants that employ cooling water intake systems to cool their plants; it does not apply to desalination plants. The CDP, is a desalination plant and therefore CWA Section 316(b) is inapplicable. The Regional Board also agrees that CWC Section 13142.5(b) applies. This is the standard under which the Regional Board has reviewed the Minimization Plan. To the extent this comment suggests the Scoping Document discussed in Comment 18 is inconsistent with the Minimization Plan, see Response No.

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		18.
20.	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.	Since April 2, 2008, the Discharger revised and resubmitted the Minimization Plan several times, rendering this comment moot. While the Regional Board conditionally approved the March 6, 2008 Minimization Plan, the proposed action scheduled for May 13, 2009 is to supersede Resolution No. R9-2008-0039, through which the conditional approval was effected. The Minimization Plan has been subject to agency and public review since April 2, 2008. To the extent this comment suggests the Scoping Document discussed in Comment 18 is inconsistent with the Minimization Plan or requires the Minimization Plan to be denied, see Response No. 18.
4. 4/2/2008 letter from San Diego Coastkeeper and Surfrider Foundation		
21.	As noted in our March 19, 2008 letter, we believe any action taken by the San Diego Regional Water Quality Control Board on the "Revised Flow, Entrainment and Impingement Minimization Plan" (Revised Plan) at its April 9 meeting would be premature and inconsistent with noticing requirements.	This comment is moot. The Regional Board conditionally approved the March 6, 2008 Minimization Plan at its April 9, 2008 meeting, Resolution No. R9-2008-0039. Since the April 9, 2008 meeting, the Discharger has revised and resubmitted the Minimization Plan several times and engaged in an extensive, months-long interagency process regarding the MLMP incorporated therein. See Response No. 16 for a discussion of the interagency process and the availability of the Minimization Plan and MLMP for public review and comment. The Regional Board's proposed action scheduled for its May 13, 2009 meeting is to supersede Resolution No. R9-2008-0039.
22a.	Timing of Implementation Schedule is Arbitrary and Unnecessarily Aggressive. 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 Implementation Scheduled referenced in this comment was rendered moot by Resolution R9-2008-0039, which provided for a new time schedule and interagency coordination for the Minimization Plan. The revised schedule was not arbitrary but rather was developed to ensure the Discharger engaged in a multi-step, months-long, interagency process to develop the MLMP. This interagency process was successfully completed and the MLMP is now incorporated into the Minimization Plan as Part A of Chapter 6. For more discussion on the interagency process, see Response No. 16.
22b.	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	This comment is mistaken. The February 12, 2007 Minimization Plan was made available for a public review and comment period that ended on April 10, 2007. (See A Public Notice of Availability – Flow, Entrainment and Impingement Minimization Plan Poseidon Resources Corporation Carlsbad

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	Original Plan was posted on the Regional Board website, it was never subject to public comment and review.	Desalination Project was sent to Interested Parties February 21, 2007.). Substantial comment was received on the Minimization Plan up through the Regional Board's April 9, 2008 public meeting.
22c	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.	The Regional Board first received the Minimization Plan in February 2007. In response to comments from the resource agencies and extensive public comment, the Minimization Plan has been revised multiple times. See Response No. 2 for further information on the multiple revisions. During this process, Regional Board staff have posted redlines showing the revisions to facilitate such review. Before taking final action, the Regional Board will have considered the Minimization Plan four times - at its April 9, 2008, February 11, 2009, April 8, 2009, and May 13, 2009 meetings. The Regional Board and the public have had sufficient time to review and consider the Minimization Plan.
23.	Porter-Cologne Act Governs Plan Elements and Has Been Disregarded by Applicant. California Water Code Section 13142.5 (b) establishes the legal standards.	The comment is correct that CWC Section 13142.5(b) establishes the legal standard for the Regional Board's consideration of the Minimization Plan. The Regional Board has reviewed the Minimization Plan under this standard.
24.	Minimizing the "intake and mortality" requires "before the fact" compliance with best available site, design, technology and mitigation measures.	This comment raises a legal issue not relevant to the Regional Board's decision in this matter. The Regional Board has first determined whether there were any feasible and available site, design or technology measures to minimize intake and mortality, before considering any mitigation. To the extent that the comment references *Riverkeeper v. U.S. Environmental Protection Agency*, 475 F.3d 83 (2007) ("*Riverkeeper II*"), in which the Second Circuit precluded the use of compensatory restoration *in lieu of* the best technology available, the reference is inapplicable because the Minimization Plan does not attempt to substitute mitigation for technology. In any event, and though not necessary to resolve as part of the Regional Board's decision in this matter, this comment asserts a requirement for CWC Section 13142.5(b) that is not found in the plain language of the statute or established by case law. For more discussion on the distinction between CWC Section 13142.5(b) and CWA Section 316(b), and the inapplicability of this comment regarding legal interpretation of CWC Section 13142.5(b) to the decision of the Regional Board in this matter, see Response No. 18.
25.	The Revised Plan inaccurately summarizes this explicit language as simply " ...requir[ing] industrial facilities using	This comment is moot. The March 27, 2009 Minimization Plan Executive Summary, page 2, states that the CDP will "use the best available site,

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	seawater for processing to use the best available site, design, technology and mitigation feasible to minimize impacts to marine life." See: Revised Plan, Executive Summary, p. E5-1 (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."	design, technology, and mitigation feasible to minimize intake and mortality attributable to the Project," as required by CWC Section 13142.5(b). The Minimization Plan identifies how each of these elements will be used to minimize intake and mortality of marine life.
26.	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. The operative term "and" ensures that, for example, the "site" of the industrial installation is taken into consideration when it affects best available "design" and "technology" to minimize the intake and mortality of marine life. Likewise, the "design" of the facility should be reviewed in the context of what "technology" is available to minimize the intake and mortality of all marine life.	It is unclear what the comment means in stating that site, design, technology, and mitigation measures "should be considered in their totality, not as distinct and disconnected parts." The Regional Board, however, agrees with the point that CWC Section 13142.5(b) requires that all four elements - site, design, technology, and mitigation - be taken into consideration and that the Regional Board should determine whether the CDP will comply with CWC Section 13142.5(b) by looking at the combination of all four elements in order to minimize the intake and mortality of marine life. Under the terms of the Minimization Plan, the CDP will use the best available site, design and technology measures feasible to minimize the intake and mortality of marine life. See Minimization Plan, Chapters 2, 3, and 4. Chapter 5 of the Minimization Plan projects entrainment and impingement in stand-alone mode, i.e., the CDP is unable to acquire any of the 304 MGD required as source water for its desalination operations from the EPS discharge. The entrainment and impingement estimates in Chapter 5 do not take into account reductions that are expected to occur as a result of design and technology measures described in Chapters 3 and 4. Chapter 6 of the Minimization Plan, which constitutes the MLMP, provides for sufficient mitigation - up to 55.4 acres of estuarine wetlands - to fully offset the projected entrainment and impingement as conservatively estimated in Chapter 5.
27a	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."	The Minimization Plan provides for the best available site, design, technology, and mitigation measures to minimize the intake and mortality of marine life. Commenter omits the term "feasible" in its recitation of the CWC Section 13142.5(b) standard. CWC Section 13142.5(b) requires a seawater intake to utilize a proper balance among four specified approaches to minimize intake and mortality and, as the comments suggests, does not elevate one approach above another. The Regional Board recognizes that mitigation measures are one of the statutorily authorized approaches.

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27b	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."	The comment is incorrect that the plan is "undefined" or constitutes "after the fact" restoration. The proposed mitigation is described in considerable detail in the Minimization Plan, Chapter 6. Eleven potential mitigation sites are described with particularity in Chapter 6, Part B. The MLMP's strict performance criteria provide further definition to the mitigation. The mitigation called for in the Minimization Plan is not "after the fact," as the CDP has not yet been constructed, is not currently operating, and is not currently resulting in any intake or mortality. The mitigation site(s) will be designed and implemented as the CDP is under construction, and will be developed during the early years its operation. There is no history of any loss attributable to the CDP that would render the proposal "after the fact." To the extent Commenter is suggesting that the Minimization Plan relies on mitigation in lieu of available and feasible site, the Commenter is mistaken. The Minimization Plan provides for the best available site, design, and technology measures to minimize the intake and mortality of marine life. In addition, the Minimization Plan provides for the full offset of projected entrainment and impingement.
27c	"Restorative measures" have been found inconsistent with the "technology-forcing" policies and plain reading of Clean Water Act Section 316(b) in Riverkeeper II. Instead, the court found that: "Restoration measures correct for the adverse environmental impacts of impingement and entrainment...but, they do not minimize those impacts in the first place." Porter-Cologne Section 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).	The comment is mistaken that CWC Section 13142.5(b) must be read to preclude mitigation wetlands, referred to by the Commenter as "restorative measures." The comment cites to *Riverkeeper II* for this proposition, which interprets CWA Section 316(b) as not allowing restoration instead of, or in lieu of, applying the "best technology available" to "cooling water intake structures." CWA Section 316(b) contains no reference to "restoration," a point found highly relevant by the Second Circuit. *See id*. at 109-11. In contrast, CWC Section 13142.5(b) expressly provides for the application of mitigation. The comment wishes to draw an analogy between "restoration" and "mitigation," implying that the absence of the former in CWA Section 316(b) somehow negates the presence of the latter in CWC Section 13142.5(b). This argument is unavailing. CWC Section 13142.5(b) expressly authorizes the use of mitigation, and wetlands commonly have been permitted by the State Board and Regional Boards for the purpose of accomplishing mitigation. The comment does not explain how recognizing mitigation as an alternative

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		available under CWC Section 13142.5(b) is an "illogical read of the mandate found in Porter Cologne." It would be improper to read the term "mitigation" out of CWC Section 13142.5(b), as the Commenter proposes to do since mitigation is identified explicitly in CWC 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.*, 129 S. Ct. 1498 (2009). To clarify, 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

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		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).).”
28.	Applicant Misconstrues "Feasible Alternatives". Definition Poseidon has chosen a definition for "feasible" by interpreting that term from the California Environmental	The term “feasible” in CWC Section 13142.5(b) is not defined, and the California Legislature granted the Regional Board discretion to interpret it reasonably. It is reasonable to consider definitions from other statutory

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	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 pubic 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 Section 316(b) by including other industrial processes beyond "cooling water intakes" to the list of regulated activities	schemes that utilize the same term. CEQA defines feasibility as: "capable of being accomplished in a successful manner within a reasonable period of time, taking into account economic, environmental, social, and technological factors." Cal. Pub. Res. Code Section 21061.1. Each factor enumerated in this definition is relevant to whether the approaches in CWC Section 13142.5(b) are feasible. By looking to available definitions, the Regional Board is not suggesting that CEQA is applicable to the CDP. In fact, it is not. The Regional Board recognizes the different purposes served by CEQA and the Porter Cologne Act, and the Regional Board has undertaken its own and independent analysis under CWC Section 13142.5(b). To the extent the comment suggests that the Regional Board is relying improperly on the Environmental Impact Report ("EIR") prepared for the Project by the City of Carlsbad, the Commenter is mistaken. Contrary to the Commenter's assertion, the Porter Cologne Act has not been interpreted to be a "technology-forcing" law for seawater intakes. "Technology forcing" is a term of art applicable to certain provisions of the federal CWA. Those federal provisions do not govern this state-law review of the Project's proposed seawater intake. Commenter is correct that CWC Section 13142.5(b) applies to a broader spectrum of facilities than just power plants. It is precisely for that reason that the Project, which is not a power plant, is subject to review under CWC Section 13142.5(b).
29a.	In short, the Riverkeeper II decision specifically prohibited a "cost-benefit" analysis to justify an exemption from the technology-forcing policy of CWA Section 316(b). The same would hold true for the policies embodied in California's Water Code Section 13142.5(b).	*Riverkeeper II* concerned an interpretation of federal Clean Water Act Section 316(b). Because the CDP is not a power plant governed by that section, such jurisprudence is inapplicable to the CDP. To the extent that the comment is suggesting that CWC Section 13142.5(b) should be interpreted consistent with how the courts have interpreted 316(b), it should be noted that the federal statute and the California statute are different in key respects; e.g., CWC Section 13142.5(b) specifically provides for the use of mitigation and that site, design, and technology measures used to minimize the intake and mortality of marine life must be "feasible." The Regional Board declines to opine as to whether federal 316(b) jurisprudence should inform the interpretation of CWC Section 13142.5(b) but notes that the comment is incorrect in its assertion that 316(b) precludes a cost-benefit analysis. *Riverkeeper II*, which the comment references, has been reversed by the

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		United States Supreme Court in *Entergy v. Riverkeeper*, 129 S. Ct. 1498 (2009) (*Riverkeeper III*), with regard to the "cost-benefit analysis." The Supreme Court specifically authorized the EPA to use a cost-benefit analysis when implementing new intake regulations on power plants under CWA Section 316(b). The Supreme Court explained that "the statute's language is 'plainly not so constricted as to require EPA to require industry petitioners to spend billions to save one more fish or plankton'" and further concluded that there is "no statutory basis for limiting its use to situations where the benefits are *de minimis* rather than significantly disproportionate." *Id.* at 1510. Thus, the comment is incorrect that a cost-benefit analysis is specifically prohibited.
29b	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.	The Minimization Plan provides for the use of the best available site, design, technology, and mitigation measures feasible to minimize the intake and mortality of marine life; intake and mortality of marine life is not "recommended." Although cost is one relevant factor in determining the feasibility and availability of site, design and technology approaches, the Minimization Plan does not justify potential impingement and entrainment on the basis of cost-benefit analysis.
30.	Revised Plan Takes Flawed Approach Toward Site, Design, and Technology Issues	This comment constitutes argument, and is conclusory in nature, and provides no support for the assertion to which Regional Board might respond.
31.	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.	The comment's assertion that there are alternative, feasible sites is without support; the comment does not identify any single site or to explain how such site might be available and feasible, and why it might be environmentally superior. In contrast, the Minimization Plan includes an extensive and detailed review of alternative sites. Commenter does not explain how this review is too narrow; it simply asserts without providing any foundation to which Regional Board might respond that this is the case. Specifically, the Minimization Plan evaluated three alternative sites for the CDP. These were: (1) other locations within the EPS property; (2) a site within the Encina Water Pollution Control Facility (EWPCF) property; and (3) a site adjacent to Maerkle Reservoir, located 10.6 miles from the proposed site. Sites were evaluated based on proximity to seawater intake, outfall, and key distribution points, infrastructure needs and production capacity, capital and operating costs, planning and zoning, environmental impacts of construction and operation, and preservation of Agua Hedionda Lagoon.

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		Chapter 4 of the Minimization Plan addresses alternative intake structures. See Response Nos. 149 and 211 for additional discussion of site alternatives. The property leased by the EPS, using the existing EPS intake structure to obtain source water, is the best site for the proposed CDP; no feasible and less environmentally damaging alternative locations are available that meet fundamental project objectives. *See* Staff Report dated March 27, 2009 for more details. The Report of Waste Discharge submitted by the Discharger identified the EPS site as the final project site. The Regional Board evaluated the project application on the basis of this site when it adopted Order No. R9-2006-0065 on August 16, 2006. That Order was unsuccessfully challenged, and it is too late to bring any further challenge.
32.	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.	The Minimization Plan contains separate chapters on each of the four statutory factors. The Minimization Plan is not segmented analytically, however. The Minimization Plan presents one approach to satisfying CWC Section 13142.5(b), using a combination of site, design, technology, and mitigation measures. Regional Board staff believes that the recommended approach presents an appropriate balance among the four statutory factors. The Minimization Plan first explores available and feasible site, design and technology approaches to minimize intake and mortality. Then, Chapter 6 (the MLMP) identifies mitigation measures to fully offset projected entrainment and impingement.
33a.	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 Discharger is not seeking approval to operate in stand-alone mode; thus, this comment is not relevant to this proceeding. Although the Minimization Plan in some places discusses measures that may minimize intake and mortality in the event of stand-alone operations, the purpose of the Minimization Plan is to focus on minimization efforts applicable to co-location operation for CDP benefit. This is consistent with the description of the Discharger's proposed CDP operation in its Report of Waste Discharge for Order No. R9-2006-0065. As reflected in Tentative Order No. R9-2009-0038 (Tentative Order), additional evaluation of CDP's operations for compliance with CWC Section 13142.5(b) is necessary if the EPS ceases power generation operations and the Discharger proposes, through submittal of a new Report of Waste Discharge, to operate independently of the EPS.

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33b.	The annual estimate of marine life mortality doesn't account for seasonal variations in the survival strategy and spawning periods of the numerous species entrained at the site.	To the extent the Commenter suggests that the I&EM Study was in any way deficient, see Response No. 10(c). An annual estimate by definition would not account for seasonal variation, and annual estimates in the Minimization Plan are not intended to do so. Tenera conducted impingement and entrainment sampling for a one-year period beginning in June 2004, which accounts for seasonal variations in the affected populations of marine organisms.
33c.	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.	The Minimization Plan does not provide flow estimates for EPS; however, EPS's flow has never dropped below 61% of the annual water supply requirement for the CDP, and in 2008, had CDP been operating, would have met 88.6% of its source water needs. This recent information suggests that EPS discharge flows may not continually fall off, as Commenter implies. The comment speculates that EPS discharge flows will diminish. This may be so, but the possibility is accounted for in the analysis. The Regional Board has not been misled into thinking that the EPS will be increasing its flows in the future. The Regional Board required the Discharger to develop the Minimization Plan to address that circumstance in which EPS's flows are insufficient to meet the CDP's source water needs. Because it is not possible to predict with certainty to what extent the EPS will satisfy the CDP's source water needs, the Minimization Plan estimates the CDP's entrainment and impingement as though EPS were providing none of its source water and provides for mitigation sufficient to fully offset these estimates.
33d.	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, increases impingement and entrainment impacts by 39 percent by perpetuating the use of the intakes.	It is not illogical that the EPS should be ascribed the intake and mortality associated with its pumping for cooling purposes, and the CDP should only be ascribed that portion above and beyond EPS's. When CDP receives its feedstock water in the form of an EPS discharge, it is recycling wastewater, not drawing lagoon water directly. That mode of operation does not result in intake or mortality that fairly can be ascribed to the CDP. To the extent the CDP's feedstock water needs are met by the EPS's discharge water, the CDP avoids drawing water directly from the lagoon.

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		The comment provides no factual basis for the implication that the CDP will perpetuate the use of the intakes. CWC Section 13142.5(b) does not require, however, that the use of the intakes be discontinued.
34a.	We agree that reducing intake velocity reduces impingement.	Comment noted.
34b.	However, the more intractable problem is entrainment - which is a function of volume, not velocity.	Comment noted that entrainment is a function of intake volume.
34c.	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 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.	The comment assumes the future retirement of units 1, 2, and 3. The permanent shutdown of Units 1, 2, and 3 has been proposed as part of the Carlsbad Energy Center (California Energy Commission Application for Certification No. 07-AFC-06). The Carlsbad Energy Center, however, has not been certified by the California Energy Commission and it is speculative at this time to determine whether the project will be approved by the California Energy Commission and constructed by the applicant following such an approval. If the Carlsbad Energy Center project were to be built and Units 1, 2 and 3 were to be permanently shut down, EPS Units 4 and 5 would continue to operate and the circulating water system for those units would remain on line. The combined intake capacity of Units 4 and 5 (633 MGD) exceeds the feedstock requirements of the Project (304 MGD). Thus, the CDP could obtain 304 MGD from Units 4 and 5. Moreover, the Regional Board's present evaluation of the proposed project is limited to minimization efforts applicable to only co-location operation for CDP benefit, and Discharger's ability to effect design features of the intake is restricted. However, in Chapter 3 of the Minimization Plan, when or if EPS permanently ceases operations, among other design measures, the Discharger proposes to reduce the inlet screen velocity (to equal to or less than 0.5 fps) and reduce the fine screen velocity. Additional evaluation of CDP's design features would be necessary if EPS permanently ceases power generation operations, and the Discharger proposes, through a new Report of Waste Discharge, to operate EPS's seawater intake and outfall independently for the benefit of the CDP in a "stand-alone" capacity. As described in section 3.5 of the March 27, 2009 Plan, however, and discussed more fully in the response to Comment 36(b), when the EPS is not

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		operating, the CDP's seawater supply will be pumped through an optimum combination of the existing fine screens and condensers serving the power plant to minimize intake velocity and water turbulence. Lowering intake velocity and water turbulence will lessen the physical damage to marine life, resulting in a reduction of impingement mortality.
35.	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.	Comment noted. The pumping capacity of Unit 4 is 307 MGD, which is reflected accurately in the March 27, 2009 Minimization Plan. *See* Table 2-1.
36a.	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.	A prior version of the Minimization Plan did assert a reduction of entrainment mortality by these means. The Coastal Commission, however, was not persuaded by the Discharger's demonstration as to this point. Accordingly, the Minimization Plan was revised to assume 100 percent mortality of entrained organisms. Studies to support a reduction in mortality that is not claimed to occur are not necessary.
36b.	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.	This comment is incorrect. Using one pump from two independent generating units instead of two pumps from one generating unit allows for the same water flow through a two-times larger area, reducing the volume and velocity of the water transported through a particular intake channel, and therefore across the racks and screens for that channel, which reduces impingement. It is on this reasonable basis that the Minimization Plan describes this mode of operation as a design feature that minimizes impingement. When the EPS intake pumps are being used to deliver cooling water for power generation, then both cooling pumps for a particular generating unit must be in operation simultaneously to provide an adequate amount of cooling water for the normal operation of the unit; in such instance, the Discharger will not be able to shut down one of two pumps for that generating unit. However, when doing so will not interfere with the EPS's power generation operations and Cabrillo permits, the Discharger proposes that CDP will use one pump from each unit, which will minimize impingement.

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36c.	As noted above, perpetuating the use of open ocean intakes results in increased impingement and entrainment as compared to a scenario in which the intakes are no longer used or a sub-seafloor intake design is used.	As discussed in the Minimization Plan, by operating as a co-located facility, the CDP does not perpetuate the use of open ocean intakes. Nor does the CDP increase impingement or entrainment beyond *de minimis* levels when the EPS provides sufficient feedstock water. As discussed in Chapter 4 of the Minimization Plan, the Discharger conducted a thorough review of the site-specific applicability of subsurface intake and a comprehensive hydrogeological study of the use of subsurface intakes in the vicinity of the proposed desalination plant site and concluded that subsurface intakes are not feasible. The subsurface intake system would be infeasible due to site-specific geologic conditions at the City of Carlsbad. To collect the seawater from the filter bed and transfer it to the Project, the intake system would require 78 collector pipelines on the ocean floor connected to 78 pump stations that would be installed on Tamarack State Beach, which would limit public access to the beach for a period of 2 to 4 years, result in significant loss of recreational activities for the City of Carlsbad, and result in a permanent loss in public access and visual resources impacts where the collection wells are located. *See Poseidon Resources Corporation, Additional Analysis of Submerged Seabed Intake Gallery*, October 8, 2007. *See* Coastal Commission Findings adopted on August 6, 2008, page 50 of 106. For further responses on the infeasibility of sub-seafloor intake, see Response No. 42(c).
37.	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.	Attachment 5 to the March 27, 2009 Minimization Plan provides significant authority in support of the proposition that flow velocity and impingement are directly related to flow volume. These well-established and scientifically accepted principles underlie the flow-proportioned impingement estimation approaches described in the Minimization Plan.
38.	Much like the claims 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.	In co-location mode for CDP benefit, the Discharger lacks control over the use of heat treatment. Elimination of heat treatment is a measure that will be taken if the CDP operates in stand-alone mode, an operating alternative that is not presently before the Regional Board. Eliminating exposure to heat reduces heat-related entrainment mortality, as discussed in Sections 3.6 and 3.7 and table 3-1 of the Minimization Plan. In addition, it is well established that heat treatment causes mortality because fish get trapped in the intake system during the heat treatment cycling. The expert statement submitted

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		into the record by Steven LePage discusses this relationship. Commenter does not provide any evidence to suggest that such a position is not well founded. The Regional Board agrees that eliminating heat treatment will result in a reduction of mortality, although at this time the reduction is not quantified.
39.	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. 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.	Approval of the Minimization Plan does not authorize the CDP to use this potential cleaning method either now, or in the future. The method was presented as an example of the potential alternatives to heat treatment that could be used to control bio-fouling in the intake when and if the power plant ceases to use the circulating water system. See Response No. 7 for a discussion of the required additional evaluation of CDP's operations, including possible use of scrubbing balls, should the EPS ceases power generation operations. Because the Regional Board is evaluating the Minimization Plan only for purposes of co-located operations, it need not evaluate the issue of scrubbing balls further at this juncture.
40.	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" 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.	Comment noted that the State Lands Commission lease precludes technologies that would interfere with power plant operations. The application pending before the California Energy Commission, however, calls for the continued operation of Units 4 and 5, which have an aggregate capacity of 633 MGD, well in excess of the CDP's feedstock needs. See Response No. 34(c) for further responsive information regarding that California Energy Commission application. The Regional Board's present evaluation is focused on minimization efforts applicable only to CDP's operations when it is operating in conjunction with EPS, consistent with the description of the Discharger's proposed CDP operation in its Report of Waste Discharge for order No. R9-2006-0065. For the foreseeable future, the Discharger has no ability to interfere with EPS's operations, including changing the design, technology, and operations of the intake system. As reflected in Tentative Order No. R9-2009-0038, additional evaluation of CDP's operations for compliance with CWC Section 13142.5(b)

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		would be necessary if EPS ceases power generation operations and the Discharger 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"). The Regional Board declines to speculate on the outcome of pending litigation.
41a.	The State Lands Commission has not finalized the lease terms.	The State Lands Commission approved the lease terms at its August 22, 2008 meeting, and the lease was executed by the Discharger on November 24, 2008, rendering this comment moot.
41b.	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.	In Resolution No R9-2008-0039, the Regional Board directed the Discharger to subject its plans to an interagency process, pursuant to CWC Section 13225, which has occurred. See Response No. 4 for a discussion of this interagency process. The interested public has had ample opportunity to comment during this lengthy planning process.
42a.	The Revised Plan also asserts that the foundation for analyzing best available technology relies on the definition of "feasibility" found in CEQA. We disagree. (See Section II above.)	See Response No. 28.
42b.	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.	Commenter's assertion that "cost-benefit analysis of available technologies" is illegal is incorrect. See Response No. 29(a). Further, CWC Section 13142.5(b) specifically requires the use of measures to minimize intake and mortality that are both available and feasible. Cost is a factor relevant to the availability and feasibility of technology. The Porter-Cologne Act specifically requires the consideration of all demands being made on the waters of the state, including economic. CWC Section 13000. It is therefore appropriate for the Minimization Plan to describe the costs of various technologies, and to use that information to inform a balanced approach to minimizing intake and mortality, consistent with the governing legal standard, as well as general Porter-Cologne principles. The Minimization Plan does not, however, rely on a cost-benefit analysis, but, rather, considers cost in conjunction with other factors, such as technological and engineering feasibility, site constraints and conditions, project objectives, etc. See Response Nos. 29(a) and 29(b).

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		Commenter is mistaken that pre-determined constraints were used to evaluate the CDP. A full and fair evaluation of various alternatives was achieved, without arbitrarily limiting the review by pre-determined constraints. While this evaluation took into account the specific site adjacent to the EPS and the consideration of smaller projects, such evaluation was not so constrained.
42c.	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.	The comment assumes that a sub-seafloor intake is available and feasible. This has been demonstrated not to be the case. The EIR prepared for the CDP included an analysis of the feasibility and environmental impact of several types of alternative intake systems pursuant to the Modified Intake Design Alternative. The EIR concluded that the use of horizontal wells, vertical beach wells, and infiltration galleries in lieu of the project's proposed use of the power plant intake system was either infeasible and/or had greater environmental impacts than the proposed project. Project EIR at Section 6.3, cited by Coastal Commission in Final Adopted Findings – Coastal Development Permit Application E-06-013, Approved August 6, 2008, at 48. The Coastal Commission reached a similar conclusion, finding "that the substantial weight of the evidence is that subsurface intakes are an infeasible alternative" because (1) "the proposed alternatives would result in greater environmental impacts than the proposed project due to destruction of coastal habitat from construction of the 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"; and (2) of "site-specific geologic and/or water quality conditions, which render the water untreatable, and the increased and prohibitive." Final Adopted Findings – Coastal Development Permit Application E-06-013, Approved August 6, 2008, at 51. Chapter 4.2 of the revised Minimization Plan contains a detailed hydrogeologic review evaluating the feasibility of subsurface intakes in the vicinity of the proposed desalination plant. This site-specific review demonstrates that subsurface intakes (e.g., beach wells, slant wells, horizontal wells, and filtration galleries) are not feasible due to (1) limited

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		production capacity of the subsurface geological formation, (2) insufficient sediment depths in the vicinity of the site, and (3) poor water quality of the collected source water. A sub-seafloor intake would require new construction, with associated environmental and economic costs, because such a system does not currently exist at the EPS site. Reuse of the EPS intake avoids new construction and provides for beneficial reuse of EPS's discharge water in when in co-location mode for CDP benefit. While the comment suggests without factual basis that it was feasible to downsize the proposed project, this has been proven not to be the case. In response to Commenter's suggestion that the size of the CDP should be reduced to accommodate alternative intake structures, the EIR evaluated a "reduced project capacity" alternative, which "would consist of a desalination facility with a maximum product water output of 25 MGD, or half that of the proposed project." The EIR determined that "this project would not provide sufficient production capacity to meet planned water supplies for seawater desalination as a component of regional water supplies…." The Regional Board agrees that producing sufficient water to satisfy the City of Carlsbad's demand, the demand of other local agencies, and the Project's planned contribution of desalinated water as a component of regional water supplies are key objectives that could not be met with a scaled down project. The Minimization Plan includes an analysis of the feasibility of the use of alternative subsurface intakes for the CDP, and based on this analysis, the Regional Board has determined that the alternative intakes that were evaluated are incapable of providing sufficient seawater to support the CDP. a. None of the subsurface intake systems considered (vertical wells, slant wells, or horizontal wells) can deliver the 304 MGD of seawater needed for environmentally safe operation of the CDP. The maximum capacity that could be delivered using subsurface intakes is 28,000 gpm (40 MGD), which is substantially below the needed intake flow. b. The quality of the water available from the subsurface intake (salinity twice that of seawater, excessive iron and high suspended solids) would be untreatable. c. The alternative subsurface intake systems were determined not to be the

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		environmentally preferred alternative. Taking into account economic, environmental and technological factors, the alternative subsurface intakes are not capable of being accomplished in a successful manner within a reasonable period of time, and are infeasible. d. The Coastal Commission Findings approving the CDP's coastal development permit concur with this conclusion: "[T]he Commission finds that the substantial weight of the evidence is that subsurface intakes are an infeasible alternative." (See Coastal Commission Recommended Revised Findings Coastal Development Permit for Poseidon Carlsbad Desalination Project, page 62 of 133.) e. The Regional Board finds that each of these subsurface intake alternatives is infeasible based on each of these separate and independent reasons. Vertical beach intake wells are water collection systems drilled vertically to intercept a coastal aquifer. a. To meet the 304 MGD seawater demand of the project, 253 wells of a 1.5 MGD intake capacity each would have to be constructed along 7.2 miles of coastline to collect and transport the water to the proposed desalination facility. Irrespective of the specific location of these vertical wells, the siting, construction and continued operation of 253 wells along 7.2 miles of coastline would result in significantly more environmental impacts, including, but not limited to, negative traffic, noise, and air pollution impacts for a period of two years during construction, and long-term disturbance of, and loss of public access to, the area occupied by the wells. b. The total cost of the implementation of a vertical well intake would be approximately $650 million. (See Minimization Plan, Attachment 2.) 17 c. The Regional Board finds that the installation of vertical beach wells is infeasible, and that such installation would also be infeasible even if the project were located at another site in coastal California. Separately, the site-specific conditions of the Project prevent the use of vertical beach intake wells, as the EPS site does not contain over seven miles of coastline to place the necessary number of wells to meet Project capacity.

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		Horizontal wells are vertical wells that incorporate an additional series of horizontal collection arms extending into the coastal aquifer from a central collection caisson in which the source water is collected. a. Due to the limited diameter of the collection arms of the horizontal wells, the production rate is limited to 1,760 gpm (2.5 MGD) per well. The Dana Point Ocean Desalination Project test well confirmed this limited production rate by documenting a yield of 1,660 gpm (2.4 MGD) from a 12-inch diameter well in that location. b. Even assuming ideal conditions for this type of wells can exist elsewhere (i.e., each well could collect 5 MGD rather than the 2.5 MGD determined based on actual hydrogeological data), horizontal well intake construction would require the siting, installation and continued operation of a total of 76 horizontal wells, impacting a total length of coastal seashore of 4.3 miles and resulting in greater environmental impacts similar to those associated with the installation of vertical beach wells. c. The cost for construction of a horizontal well intake system for collection of 304 MGD of seawater needed for the desalination plant operation is estimated at $438 million. (See Minimization Plan, Attachment 2.) d. The Regional Board finds that the horizontal intake system is infeasible and that such installation would also be infeasible even if the project were located at another site in coastal California. 68. Additionally, specifically within AHL, the limited width of the alluvial channel permits placement of approximately only 14 horizontal wells, for a total production rate of 28,000 gpm (40 MGD), significantly below the Project's required production of 304 MGD. The horizontal intake system would require installation of nine large pump stations located on Tamarack State Beach, disrupting public access to marine and beach resources. A horizontal intake system is infeasible due to site-specific conditions as well. Slant-drilled wells are drilled at an angle from the beach or from further inland, with a perforated well casing that extends below the seafloor to intercept water from below the substrate. a. The use of slant wells is infeasible because pilot testing indicates that the

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		quality of the water available from subsurface intakes would be so low as to be difficult, if not impossible, to treat due to salinity concentrations twice that of seawater, excessive iron, and high levels of suspended solids. b. Studies performed by the Discharger confirm that, at best, one slant well could provide only 5 percent of the water required by the Project. (See Poseidon Resources Corporation Transmittal of Analysis of Alternative Subsurface Seawater Intake Structures, Proposed Desalination Plant, Carlsbad, CA, Wiedlin & Associates (January 30, 2007), sent to California Coastal Commission February 2, 2007; Coastal Commission Findings adopted August 6, 2008, page 49 of 106, and note 71.) c. A recent study conducted by the Municipal Water District of Orange County (MWDOC) showed that slant-drilled wells could be used to draw in 30 MGD of seawater for a proposed desalination facility near Dana Point through the use of nine, 500-foot wells extending under the seafloor, each with buried submersible electric pumps. Relying on the results of this study, the Board finds that approximately ninety, 500-foot wells would be required to be installed along the coastline to supply 304 MGD. Regardless of Project location, many multiple slant wells would be needed to meet Project objectives. d. The Regional Board finds that this option is infeasible at any location in coastal California because it would disrupt public beach access and recreation and create greater environmental impacts and costs. e. The total construction costs for implementation of slant wells would exceed $410 million. This represents a significant 139 percent increase in construction costs for the Project, which not only would defeat the Project objective of providing affordable water supply to the San Diego Region, but would render the Project infeasible. (See Minimization Plan, Attachment 2.) An infiltration gallery consists of a series of perforated pipes that are placed in a trench dug on the seafloor, which is then backfilled with sand. a. To meet the source water intake feed rate of 304 MGD needed for the Project, 146 acres of ocean floor would need to be excavated to build a seabed intake system of adequate size, impacting three linear miles of sensitive nearshore hard bottom kelp forest habitat.

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		b. The excavation of a 146-acre/3-mile-long strip of the ocean floor at depth of 15 feet in the surf zone to install a seabed filter system of adequate size to supply the CDP would result in a very significant impact on the benthic marine organisms in the excavated area. (See Poseidon Resources Corporation, 19 Additional Analysis of Submerged Seabed Intake Gallery, October 8, 2007; Coastal Commission Findings Adopted August 6, 2008, pages 49 and 50 of 106, and note 73.) c. The Board finds that an infiltration gallery is infeasible and that such seawater intake system would also be infeasible even if the project were located at another site in coastal California. d. The cost for construction of subsurface seabed intake system for collection of the 304 MGD of seawater needed for the desalination plant operation is estimated at $647 million, 215 percent higher than the cost of the entire proposed Project. Such an increase in costs would render the Project infeasible. (See Minimization Plan, Attachment 2.) In addition, the subsurface seabed intake system would be infeasible due to site-specific geologic conditions at the City of Carlsbad. a. To collect the seawater from the filter bed and transfer it to the CDP, the intake system would require 76 collector pipelines on the ocean floor connected to pump stations that would be installed on Tamarack State Beach, which would limit public access to the beach for a period of 2 to 4 years, result in significant loss of recreational activities for the City of Carlsbad, and result in a permanent loss in public access and visual resources impacts where the collection wells are located. (See Poseidon Resources Corporation, Additional Analysis of Submerged Seabed Intake Gallery, October 8, 2007; Coastal Commission Findings adopted on August 6, 2008, page 50 of 106.) b. Excavation of a three-mile-long-by-400-feet-wide strip of seafloor will make this area of the ocean unavailable for recreational activities such as fishing and diving and will result in additional NOx and carbon dioxide gas emissions associated with operation of barges and platforms and equipment needed to excavate and remove the ocean shelf material over this vast area. (*Id*.) c. In order to secure consistent operation of the filter bed, this bed would

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		need to be dredged every one to three years to remove the sediment and entrained marine life that would accumulate in the intake filter bed and over time will plug the bed. The dredged material would need to be disposed away from the one-mile strip of the intake filter bed in order prevent the removed solids from returning to the area of the bed. This will not only result in frequent adverse impacts of the marine flora and fauna in the area but will also render the area unavailable for recreational activities during maintenance activities. (*Id*.) The Minimization Plan includes an analysis of whether the construction and operation of a new offshore intake to serve the seawater supply needs of the CDP would be a feasible alternative to the use of the existing EPS intake system. Based upon this evaluation, the Regional Board concludes that the construction and use of an offshore intake system would not reduce the frequency of dredging in AHL, would cause permanent construction-related impacts to the marine environment and would shift entrainment to a more sensitive area of the marine environment, which would affect a greater diversity of species. Use of an offshore intake system is infeasible and not the environmentally preferred alternative. Construction of an offshore intake system would render the Project infeasible due to a significant increase in project costs. (See Poseidon Resources Corporation, Analysis of Offshore Intakes, October 8, 2007 (including attachments); Comparative Analysis of Intake Flow Rate on Sand Influx Rates at Agua Hedionda Lagoon: Low-Flow vs. No-Flow Alternatives, Jenkins and Wysal, September 28, 2007; Coastal Commission Findings adopted August 6, 2008, page 51 of 106.) In addition, the Discharger evaluated a draft EIR commissioned by the State Lands Commission related to an AHL jetty extension project (Jetty EIR). Based on this evaluation, the Regional Board concludes that the Jetty EIR does not analyze the full extent of the biological impacts of installing a large diameter pipe 1000 feet offshore, which, depending on placement, would potentially destroy existing rocky reef outcroppings occurring offshore. (See Issues Related to the Use of the Agua Hedionda Inlet Jetty Extension EIR to Recommend An Alternative Seawater Intake for the Carlsbad Desalination Project, Graham, Le Page and Mayer, October 8, 2007.) In addition, the Jetty EIR did not evaluate the down-coast effects of an intake structure on habitat, sand flow, or sedimentation. (*See id.*) Further, the Jetty EIR did not adequately evaluate entrainment and impingement impacts of an offshore intake. The Regional Board concludes that an offshore intake has the

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		potential to affect a greater diversity of adult and juvenile organisms, as well as both phyto and zooplankton species, than the species currently impacted by the EPS's existing intake. (*Id.*) The biofouling community of organisms that will take up residence in the intake pipe will consume virtually all of the entrained plankton. This has implications for the survival potential of organisms that can survive passage through the EPS. (*Id.*) The Minimization Plan includes an analysis of the implementation of alternatives associated with the modification of the existing the EPS intake and screening facilities, including: (a) modified traveling screens with fish return; (b) replacement of existing traveling screens with fine mesh screens; (c) new fine mesh screening structure; (d) cylindrical wedge-wire screen; (e) fish barrier net; (f) aquatic filter barrier; (g) fine mesh dual flow screens; (h) modular inclined screens; (i) angled screen systems; (j) behavior barriers; and (k) installation of variable frequency drives on existing EPS intake pumps. These alternative modifications to the existing EPS intake system are infeasible for the following reasons: a. Implementation of the alternatives associated with the modification of the existing power plant intake and screening facilities were infeasible because they would interfere with, or interrupt, power plant scheduled operations, in violation of Lease Amendment Public Resources Code Section 8727.1. b. The complex and costly modifications to the existing intake, along with prolonged periods of power plant downtime, are not prudent in light of the limited environmental benefits of these modifications. c. Taking into account economic, environmental and technological factors, the power plant intake screening alternatives are not capable of being accomplished in a successful manner within a reasonable period of time.

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43a.	The intake alternatives that are reviewed are not realistic, and misrepresent the associated technology.	The comment does not explain why it believes the reviewed alternatives are not realistic. Although Chapter 4 of the Minimization Plan related to the assessment of alternative technologies contains an extensive discussion, Commenter does not provide a single specific instance in which the alternatives are not realistic are or misrepresented. The comment is conclusory, and inconsistent with the Regional Board review.
43b.	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, the successful pilot study of sub-seafloor intakes at Doheny Beach demonstrates that the drilling of wells can be done to cause only temporary disruption to both recreational opportunities and beach ecology.	Commenter refers to a pilot study, the details of which have not been fully submitted into the record. Regardless, the technology employed for that study is infeasible for the Project site because it employed subsurface intakes, as discussed in more detail in Response Nos. 36(c) and 42(c). Subsurface intakes are not possible at Carlsbad because there is insufficient sediment depth.
44a.	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.	Pilot testing for the CDP was conducted at Agua Hedionda Lagoon. *See* Wiedlin, M.P. and Huntley, D., *Analysis of Alternative Subsurface Intake Structures, Proposed Desalination Plant, Carlsbad California.* Wiedlin & Associates, Inc. Jan. 27, 2007 (Previously submitted April 2, 2009, Latham & Watkins LLP Comments, Appendix B, Tab 33).
44b.	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).	Commenter refers to Doheny Beach tests that are not on this record. Moreover, the relevance of such a comparison is not apparent. Commenter provides no basis why we would expect the test results from these two distant locations to be consistent. The fact that sub-seafloor water in the vicinity of the EPS may be of lesser quality than sub-seafloor water at Doheny Beach does not change the feasibility analysis for the CDP.
45a.	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.	The revised Minimization Plan conservatively assumes 100 percent mortality for entrained organisms and does not claim any intake and mortality reduction related to micro-screening. See Response No. 8.
45b.	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	The comment addresses potential concerns related to the use of micro-screen technology. This comment has been rendered moot by subsequent activities or actions, as detailed in Response No. 8,.

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	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.	
46.	"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 Section 13142.5(b) that would distinguish other industrial uses of seawater from this holding in Riverkeeper II.	This comment raises several assertions about the timing of mitigation measures that are addressed in Response No. 24.
47a.	Revised Plan Quantification of Unavoidable Impacts to Marine Resources is Unresponsive to Regional Board Concerns.	This comment constitutes argument, and is conclusory in nature, and provides no support for the assertion to which Regional Board might respond.
47b.	The 2004-2005 impingement sampling data was conducted by EPS in accordance with 316(b) Phase II regulations.	Comment noted.
47c.	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.	To the extent the comment suggests the weekday sampling results somehow are compromised because they were not the “focus” of the study, Regional Board is unaware of any evidence of this, and the comment provides none. The weekly sampling events provided important data in projecting potential impingement at the CDP. To the extent that the comment suggests the IM&E study was deficient in some regard, see Response 10(c).
47d.	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.	Commenter misunderstands the nature of the entrainment data, which are not reported as daily biomass. Entrainment is measured in terms of larval numbers and concentrations. *See* e.g., revised Minimization Plan Attachment 6 (presents concentration and numbers of larval fishes and target shellfishes collected in entrainment samples in Agua Hedionda Lagoon). Thus, there is no method for determining daily biomass entrained, as such calculations were not made.
48a.	The Revised Plan entrainment impacts assessment suffers	The Discharger provides no specific example of how the entrainment

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	the same flaws as the impingement assessment-lack of specificity.	assessment suffers from a lack of specificity. The record is to the contrary. The Minimization Plan presented detailed entrainment data in Attachment 6 "Summary of Fish and Target Shellfish Larvae Collected for Entrainment and Source Water Studies in the Vicinity of Agua Hedionda Lagoon from June 2005 through May 2006." Section 5.3 et seq discusses the entrainment analysis methodology, assumptions, data, and results in great detail. The Minimization Plan incorporates additional entrainment analysis conducted by the Coastal Commission and its consultant, Dr. Raimondi. Dr. Raimondi's recommendations with respect to entrainment were incorporated into the MLMP and provide the basis for the Discharger's entrainment mitigation. *See* Recommended Revised Condition Compliance Findings (approved December 10, 2008), at Section 4.2.
48b.	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."	See Response No. 48(a).
49.	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.	The Discharger no longer proposes to adjust the Restoration Plan based on a future survey of Agua Hedionda Lagoon. Such is not a feature of the revised Minimization Plan, rendering the comment moot.
50.	(a) 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." (b) Poseidon's reply is both obtuse and unresponsive. (c) Poseidon merely states that "fish species occurring in low numbers in the Poseidon study entrainment samples are ocean species, and conversely larval fish entrained in the	(a) Commenter cites one of a number of issues identified by Staff in a letter submitted to Discharger on February 19, 2008. Staff raised this and other issues in response to its review of Discharger's June 2007 version of the Minimization Plan. Since receipt of said letter, Discharger submitted a revised March 6, 2008 Minimization Plan. At its April 9, 2008 meeting, the Regional Board adopted Resolution No. R9-2008-0039, and thereby approved the March 2008 Minimization Plan subject to a number of conditions including, *inter alia*, that Discharger submit an "amended Plan [to] address the items outlined in the February 19, 2008 letter to Poseidon." On March 9, 2009, Discharger submitted a revised Minimization Plan to

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	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. (d) In either case, fish with smaller populations are likely to be highly affected by any amount of entrainment.	comply with the conditions set forth in Resolution No. R9-2008-0039 as well as an additional list of outstanding issues identified by the Executive Officer at the Regional Board's February 11, 2009 meeting. The March 9, 2009, which was further revised March 27, 2009 Minimization Plan satisfies all of these conditions, in part by resolving each of the issues identified in the February 19, 2008 letter. (b) Subcomment (b) is argumentative and fails to provide a specific factual basis to which the Regional Board can respond. (c) Commenter's selective quotation from the Discharger's March 7, 2008 response to the Regional Board's February 19, 2008 letter is misleading. In its response to the Regional Board, the Discharger explained that, "*Many of the larval* fish species occurring in low numbers in the Discharger's entrainment samples are ocean species, and conversely larval fish entrained in the highest number were lagoon species." These statements are accurate. Gobies and blennies, for instance, are lagoon species whose larvae constituted more than 90% of the total amount of larvae entrained at the EPS intake; they were by far the most commonly entrained fish species. This supports the conclusion that "larval fish entrained in the highest number were lagoon species." Moreover, by explicitly noting that "many" of the less commonly entrained larval fish were ocean species, Discharger does not thereby suggest that fish species entrained in lower numbers were, therefore, "necessarily ocean species," despite Commenter's assertion to the contrary. The category of ocean fish includes five open ocean species (i.e., white croaker, northern anchovy, California halibut, queenfish, spotfin croaker). Altogether, the three enumerated lagoon species and the five enumerated ocean species constituted approximately 99% of the entrained larvae. (d) Commenter misunderstands the nature of the entrainment analysis. The ETM and APF analyses are based on the species that are relatively most affected by entrainment, regardless of how large or small the populations of those species may be. The source water analysis is used to estimate population size in Agua Hedionda Lagoon for each entrained species. The entrainment data is used in combination with the source water data, to estimate the percent of the population subject to entrainment. It is the species most affected by entrainment, relative to all entrained species, that are used to drive the mitigation acreage calculation, assuring that the outcome is protective of smaller populations that may be more affected by

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		entrainment. The entrainment approach is designed and intended to account for the phenomenon described in the comment.
51.	An Independent Baseline Study of the Agua Hedionda Lagoon Marine Environment is Required. 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.	(1) The comment provides no basis in support of the assertion that an independent baseline study is required. No federal or state law, regulation or policy requires the Discharger to conduct an independent baseline study of Agua Hedionda Lagoon when identifying potential entrainment or impingement, or when developing a wetlands restoration project. To the extent that CWC Section 13142.5(d) addresses baseline studies, it vests the Regional Board with the discretion to decide whether to require such studies. This section employs permissive language, providing that "[i]ndependent baseline studies of the existing marine system *should* be conducted in the area that could be affected by a new or expanded industrial facility using seawater in advance of the carrying out of the development." CWC Section 13142.5(d) (emphasis added). (2) Although Discharger is not legally required to conduct an independent baseline study of Agua Hedionda Lagoon, the Impingement & Entrainment (I&E) report that Tenera Environmental published in 2008 constitutes such a study. 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. This extensive 563-page report (Appendices included) contains detailed descriptions of the physical and biological characteristics of the aquatic environment surrounding the EPS, including Agua Hedionda Lagoon, its seasonal tributaries, and the open coastal waters of Pacific Ocean. See generally Section 2.2. The report cites to the large body of information gathered during a number of previous Agua Hedionda Lagoon studies, including those published in 1954, 1980, 1989, 1997, 1998, 2001. These previous studies "examined the effect of the operation of the cooling system of Encina Power Station on lagoon sedimentation", "described oceanic conditions (waves and tides) at Agua Hedionda Lagoon in detail," estimated "the tidal prisms of the lagoon segments and volumes of water flowing through the Agua Hedionda Lagoon inlet", and generally "determined the hydrodynamics of [Agua Hedionda Lagoon]." See Section 2.2.1.1.

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		The 2008 Tenera report draws upon and adds to this previously obtained information. Tenera examined the environmental setting of the lagoon and the coastal source water through a host of scientific surveys. For instance, Tenera conducted bathymetric surveys of the Outer, Middle, and Inner Lagoons to calculate the surface area, water volume and potential tidal prism at various elevations; it established four temporary data collection centers to estimate the inflow, outflow, and tidal prism (per tidal-cycle and daily) of Agua Hedionda Lagoon; and it designed a mathematical model to compute the residence time of "old" water in the lagoon during a tidal cycle; etc. Tenera also built on the vast biological information collected during previous studies, focusing mainly on finfishes due to their relevance to entrainment and impingement issues. It used four different methods to sample fishes in specific habitats, e.g., divers, quinaldine solution injections, aquaculture mussel floats analyses, hinged sweep nets. Tenera also took collected plankton samples in the intake channel near the EPS intake structures to provide an estimate of the total number and types of target organisms passing through the power plant's intake system. To provide current estimates of the abundance, taxonomic composition, diel periodicity, and seasonality of organisms impinged at EPS, Tenera conducted impingement sampling during a 24-hour period one day each week from June 24, 2004 through June 15, 2005 and calculated intake flow rates at which various species were impinged. The Study required an independent assessment of both the source water for the EPS (lagoon and ocean) and the discharge from the EPS (the desalination plant's feedwater supply). The source water was analyzed to establish population characteristics for species potentially impacted by the desalination plant. The desalination plant feedwater was characterized to determine the baseline conditions for potential impacts associated with the desalination facility. Specifically, the feedwater characterization examined the type and quantity of organisms that survive entrainment through the EPS cooling water intake structure that could subsequently be impacted by the desalination plant operations. *See* EIR, Section 4.3 - Biological Resources, page 4.3-36. The EPS source water was partitioned into lagoon and nearshore ocean areas for modeling purposes. Ten sampling stations were chosen so that all

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		source water community types would be represented, including five lagoon stations and five nearshore stations. Samples were also collected from EPS's discharge (desalination plant feedwater supply) just before the water flows into the power station's discharge pond. Laboratory processing for both the feedwater and source water consisted of sorting, identifying, and enumerating all larval fishes, pre-adult larval stages of *Cancer* spp. crabs, and California spiny lobster larvae from the samples. Identification of larval fishes was done to the lowest taxonomic level practicable. *See* EIR, Section 4.3 - Biological Resources, pages 4.3-36 & 4.3-37. The Study was conducted by Tenera Environmental as an independent third party, and was independently reviewed by the City of Carlsbad and by experts during the EIR process. In sum, the 2008 Tenera report constitutes a highly-detailed, comprehensive and independent baseline study of the Agua Hedionda Lagoon marine environment. The data contained in this report, which were collected pursuant to a Regional Board approved Study Plan (see Response 10(c)), may be used to calculate baseline levels of entrainment and impingement as well as other characteristics of the marine system and surrounding area. To the extent the comment suggests any deficiency with the I&EM Study, see response No. 10(c). (3) Finally, studies such as the one to which Commenter refers are provided for in the Monitoring and Reporting Plan ("MRP") of a NPDES permit. In this instance, the Discharger's MRP was established in 2006, as part of Order No. R9-2006-0065. Commenter could have requested, but did not request, the MRP to include an additional independent baseline study of Agua Hedionda Lagoon. The MRP is not being reopened as part of this action. Commenter has waived its opportunity to raise this comment during this permit cycle and has failed to exhaust its administrative remedies.
52.	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 appropriately consider and apply Porter-Cologne section 13142.5 to the CDP. To no avail, we have repeatedly sought to have the Board and Poseidon consider the requirement to	Regional Board disagrees with the comment that CWC Section 13142.5(b) is not being applied properly. The Minimization Plan's express objective is to minimize intake and mortality of marine life; the focus is not on "impacts." Intake and mortality of marine life is minimized by minimizing impingement and entrainment. The word "impacts" occasionally has been used to refer to entrainment and impingement because, from a functional standpoint,

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	minimize the "intake" of marine life, yet Poseidon has instead succeeded in replacing this correct standard with a requirement to minimize marine life "impacts."	minimizing “intake and mortality” and minimizing “impacts” both result in avoiding and/or compensating for entrainment and impingement. To the extent Commenter asserts a distinction between “impacts” and “intake and mortality,” the Commenter has provided no information to support the distinction, which appears to be argument only.
53.	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.	Comment noted.
54.	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.	On January 29, 2009, the Regional Board determined not to designate parties, require the prior identification of witnesses, or set aside time specifically for the cross-examination of witnesses for the February 11, 2009 hearing. (Letter from Catherine George Hagan, Regional Board Senior Staff Counsel, to Poseidon Resources Corporation, Regarding Procedural Issues Concerning the February 11, 2009 hearing). Subsequent to January 29, 2009, the Discharger did not demand the opportunity for cross-examination or a pre-hearing conference. The Discharger has not been provided any procedural safeguards not provided the Environmental Groups. The Environmental Groups have been provided extended time at all three hearings on the Minimization Plan, as well as ample opportunity to submit written materials.
5. 2/5/09 letter from Sierra Club San Diego Chapter		
55.	Regional Board has not satisfied all of the conditions in Resolution R9-2008-0039 which has rendered the Resolution inoperative by its own terms.	It was Discharger’s, not the Regional Board’s, burden to satisfy the conditions of Resolution R9-2008-0039. This comment is moot, however, as Tentative Order No. R9-2009-0038 is proposed to supersede Resolution R9-2008-0039.
56.	MLMP fails to include data on impingement and a specific mitigation alternative.	Data on impingement is provided in Chapter 5 of the Minimization Plan, as well as in Attachments 5, 8, and 9 of the Minimization Plan. The MLMP presents a specific mitigation alternative in that it prescribes the standards for mitigation site selection, restoration plan development, and establishes

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		performance criteria and enforcement mechanisms.
57.	MLMP fails to apply an ecosystems based approach in assessing and mitigating the impingement and entrainment the impacts of the project.	See Response Nos. 5 and 10(b),.
58.	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. No studies were conducted to determine if the marine life and sediment quality in these waters were impacted compared to a reference site not subject to these stresses. For example, sediment samples in the adjacent coastal waters and in Agua Hedionda Lagoon to evaluate the chemistry and benthic community were not sampled. Hence, the source Poseidon water analysis, in our view, should be questioned. These data are necessary to establish specific criteria for mitigation site selection.	The Regional Board previously determined that the source water analysis relied upon by the Discharger was sufficient to support characterization of entrainment and impingement impacts at the EPS intake structure. See Response No. 10(c) describing the review and approval of the work plan for the Impingement Mortality and Entrainment Characterization Study. The comment does not identify even whether an acceptable reference site exists, nor does Commenter address any of the drawbacks of its proposed approach. To the extent this comment raises concerns about baseline analysis, see Response No. 12(a). The Regional Board believes that the 2004-2005 data provide a sound basis to establish specific criteria for the mitigation site.

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6. 2/9/09 e-mail from Ed Kimura, Sierra Club San Diego Chapter		
59.	The MLMP does not address the significance of connectivity. The MLMP proposes to seek out a site someplace in the SoCal Bight, approximately 450 km from the border to Pt Conception. The MLMP assumes that the local genetic populations of larvae including the benthic invertebrates are the same throughout this coastal region. But the article (Cowan and Sponaugle, Larval Dispersal and Marine Population Connectivity) on page 446 states that this long held concept that the demographics of the larval pool is open over hundreds to thousands of kilometers is not longer valid. Many studies over the past decade have contradicted this notion. In fact there is a continuum of larval dispersal from closed locations to completely open. Therefore, without detailed larval dispersal information of a local reference area (not the coastal and lagoon zone impacted by the impingement and entrainment stresses from the Encina Power Station), how can the proposed MLMP mitigate the impacts?	The MLMP makes no assumption about genetic populations, and does not assume genetic sameness of larvae including invertebrates at Agua Hedionda Lagoon and the eleven specific sites identified in the MLMP. The comment mistakenly assumes that effective mitigation under CWC Section 13142.5(b) requires a demonstration of Commenter's connectivity concept and also of genetic sameness of larvae. These concepts are offered by Commenter without reference to legal requirements and appear to be scientific principles or theories, without specific tie in to compensatory mitigation under legal requirements. Commenter appears to assume that the purpose of mitigation is to create or restore wetlands that will spawn larvae that somehow will find their way back to Agua Hedionda Lagoon. If this is Commenter's understanding, it is mistaken. It is unlikely that larvae of common lagoon species could be spawned at some location away from Agua Hedionda Lagoon and survive the journey back to Agua Hedionda Lagoon. The requirement being imposed is to compensate by returning a like amount that is lost due to entrainment, but not to also ensure that these larvae make their way back to Agua Hedionda Lagoon. Therefore, Regional Board staff disagrees that larvae dispersal information at a reference area is necessary, or even relevant to mitigation. Natural bays and estuaries in California function in the classical sense of serving as spawning and nursery areas for coastal fishes (Michael Horn. 1980. Diversity and Ecological roles of noncommercial fishes in California marine habitats. CalCOFI rep. Vol. XXI, 1980.). These systems support a unique fish assemblage composed of low trophic level species (Horn 1980; Allen 1982). Many of these species are truly estuarine dependent, living their entire life cycles within the estuary. Based on larval surveys, the most abundant bay-estuarine fish are gobies (Horn 1980). Gobies attach their eggs to the walls of the burrows in which they live. Their eggs are not pelagic and are not transported from one wetland to another via ocean currents. The larvae hatch, metamorphose and mature within the estuary. Tidal translocation of goby larvae to the near-shore environment has been postulated as one of the primary sources of mortality for this species (Brothers 1975). Those transported out of the estuary frequently do not survive. Thus, connectivity between disparate wetland systems within the region with regards to eggs or larvae of the dominant estuarine fish taxa is

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		not anticipated. Connectivity between a restored estuarine wetland and an existing wetland is relevant to successful colonization by estuarine dependent species. Such connectivity is assured through the requirement that the Discharger's mitigation site be located at an existing estuarine wetland. The MLMP's rigorous physical and biological performance standards will measure the success of the proposed wetlands in relation to other reference sites, "which shall be relatively undisturbed, natural tidal wetlands in the southern California Bight." In the event that the mitigation site's location does not allow for sufficient larval dispersion or population connectivity, the wetlands would not conform to these other reference sites. This would require the Discharger to conduct remediation in order to bring the wetlands in compliance with the terms of the MLMP.
60.	The article reinforces the need to take an ecosystems-based approach to develop a mitigation plan.	See Response Nos. 5 and 10(b).
7. 2/10/2009 letter from Coast Law Group		
61.	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 CDP will actually take place.	The Discharger, in its MLMP, identifies 11 sites, 5 of which are within the boundaries of the Regional Board and therefore priority sites. These sites have been pre-approved by the Coastal Commission. Final selection of the site(s) is subject to the approval of the Regional Board and the Coastal Commission.
62.	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, or sites, 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.	For various reasons, the Regional Board believes it is premature to require selection of a single site in order for Poseidon to secure approval of the Minimization Plan. Any site(s) selected will have to be approved by the Coastal Commission and Regional Board. CEQA review and appropriate entitlements for the mitigation site(s) will have to be secured. The Regional Board at the February 11, 2009 hearing directed Poseidon and staff to revise the Minimization Plan to give priority attention to sites within the jurisdiction of the Regional Board. To the extent that commenter suggests that there cannot be more than one mitigation site (the MLMP limits it to two), there is no scientific or legal basis

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		for such a prerequisite.
63.	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.	The use of mitigation is not illegal. CWC Section 13142.5(b) specifically requires the use of the best available site, design, technology, *and* mitigation feasible to minimize intake and mortality of marine life. Consistent therewith, Chapter 6 of the Minimization Plan provides for the use of mitigation; this mitigation is in addition to site, design, and technology to be implemented to minimize intake and mortality, not as a substitute for these approaches. Under the terms of the MLMP, the mitigation site(s) must be approved by the Regional Board (and the Coastal Commission). The MLMP identifies 11 sites, 5 of which are within the boundaries of the Regional Board and therefore priority sites.
64.	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.	The analysis under CWC Section 13142.5(b) overlaps substantively with analysis completed by the Coastal Commission under the Coastal Act in that both analyses were primarily concerned with intake and mortality of marine life. In ongoing litigation challenging the Coastal Commission's approval of a coastal development permit for the Project, Commenter has argued that the Coastal Commission and the Regional Board *each* are required to separately evaluate the Project's consistency with CWC Section 13142.5(b). In response, the Coastal Commission and the Discharger have noted that, pursuant to Coastal Act Section 30412(b), the State Board and Regional Water Quality Control Boards have "primary responsibility" to enforce water quality policies, such as CWC Section 13142.5(b). Coastal Act Section 30412(b) further provides that the Coastal Commission "shall not modify, adopt conditions or take any action in conflict with" any water quality determinations of the Water Boards. Cal. Pub. Res. Code Section 30412(b). In adopting the Project's NPDES Permit in 2006, the Regional Board determined that it would conduct any additional review needed under CWC Section 13142.5(b), and that such review would ensure the Project's conformity with all requirements of the CWC. Therefore, the Coastal Commission properly relied on the Regional Board to ensure compliance with CWC Section 13142.5(b), and, through Special Condition 4 of the coastal development permit, conditioned Project construction on final Regional Board approval. As recognized by the Commission and the Discharger, Coastal Act Section 30412 prohibited the Commission from rendering a separate and potentially conflicting determination of the Project's compliance with CWC Section 13142.5(b). Coastal Act sections 30400 and 30401 further provide that it is "the intent of the Legislature to minimize duplication and conflicts

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		among existing state agencies" and that "the commission shall not set standards or adopt regulations that duplicate regulatory controls established by any existing state agency." (Cal. Pub. Res. Code Section 30400, 30401.) These sections make clear that the Legislature did not intend for the Regional Board and the Commission to make separate and potentially conflicting determinations regarding water quality compliance for the same project. The legislative history of the Coastal Act and Water Code Section 13142.5(b) also confirms that the Water Boards have primary jurisdiction to enforce water quality measures, and that inter-agency duplication and conflict are to be avoided.
65.	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).	The Regional Board has conducted a substantive review of the Minimization Plan, supported by an extensive record, and several years of Regional Board staff evaluation and Regional Board proceedings. The Regional Board would be remiss to overlook, however, the significant scientific and factual analysis already conducted by the Coastal Commission during the development, review and approval of the MLMP because this analysis concerns many of the same issues before the Regional Board.
66.	At virtually every stage of CDP review by staff of the Coastal Commission, State Lands Commission, and the Regional Board, significant legal and practical flaws have been identified.	Commenter's position is both inconsistent with the fact that both the Coastal Commission and State Lands Commission have approved the CDP, and issued entitlements and approvals allowing it to proceed. Much is the same at the Regional Board, which issued a NPDES permit for the CDP in 2006, Order No. R9-2006-0065; NPDES No. CA0109223, and conditionally approved the Minimization Plan, Resolution R9-2008-0039, on April 9, 2008. These agency proceedings have resulted in approvals that the respective agencies have defended, indicating that they do not concur with Commenter as to the presence of legal and practical flaws.
67.	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 CDP 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	Regional Board staff are fulfilling their responsibility to ensure that the CDP complies with CWC Section 13142.5(b). The proposed Minimization Plan provides for mitigation sufficient to fully offset production foregone due to entrainment, as previously recognized by the Coastal Commission. It also requires specificity in the selection of mitigation sites and performance criteria.

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	blemish on the record of the Regional Board.	
8. 4/1/2009 letter from Sierra Club, San Diego Chapter		
68.	Impingement Impacts. The impingement impacts in the past and latest March 9 report focuses on minimizing the approach velocity at the traveling 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.	The focus of the Minimization Plan is to minimize intake and mortality through application of all four statutory factors (site, design, technology, and mitigation), rather than in the narrow manner implied by Commenter. Commenter provides no evidence that fish that are not impinged are lost through the other means theorized – during passage back up the intake tunnel. If there were such losses, the logical outcome would be that the dead or damaged fish would be carried back towards the screens and collected in the intake surveys. Commenter provides no credible evidence that the impingement surveys somehow under-represent actual fish losses, or that its escape path theory is real or relevant.
69.	With the Encina Power Station operating with all intake pumps operating the average velocities at left and right tunnels are 10.2 and 2.3 feet/second, respectively. The Poseidon reports cite the average velocities but neglects the fact that the actual velocity profile across the tunnel varies, increasing from the sides to the center. This fact is important as the maximum velocity will be higher than the average depending on several factors such as the configuration and roughness of the channel. Actual flow velocity profiles should be measured.	If and when EPS permanently ceases operations, the Discharger's NPDES permit and the State Lands Commission lease require a comprehensive environmental review of the Discharger's use of the intake, at which time the suggested studies might be considered. As reflected in Tentative Order No. R9-2009-0038, additional evaluation of CDP's operations for compliance with CWC Section 13142.5(b) would be necessary if EPS ceases power generation operations and the Discharger 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").
70.	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.	See Response Nos. 34(c) and 36(b), above.

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71.	a. Estimating Flow Proportioned Impingement. 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. b. Reference 5 treats these at "outliers" and does not provide a plausible reason. c. There is no discussion of the number of fishes in the source water beyond the small number of freshwater fish that were impinged due to immigration.	(a) The comment accurately describes as exceptional the relatively higher impingement recorded during these two sampling events versus the other fifty sampling events. There is no cause and effect, definitive explanation for these two events. It is known, however, that these events were preceded by unusually high rainfall-runoff conditions that are not expected to repeat on an annual basis. See Response No. 93(II)(c). (b) See Response No. 93(I). (c) The comment speculates that the freshwater fish collected during the outlier surveys may have migrated to the intake. The comment offers no scientific basis or any evidence to support its migration theory. If such migration does explain the presence of freshwater fish on the outlier days, that does not make the samples any less outliers. The immigration might co-occur with the record rainfall-runoff events, resulting in rare impingement of freshwater fish.
72.	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.	To the extent that Commenter suggests that the IM&E Study was in any way deficient, see Response No. 10(c). Further, the 1979-1980 study of impingement and entrainment at the EPS intake has been added to the record. Average impingement during that earlier study was 2.46 kg/day. When flow-adjusted to 304 MGD, it is 1.2 kg/day. These earlier data are consistent with the 2004-2005 study results and support the representative and sufficient nature of the 2004-2005 results. The 1979-1980 study found a direct and significant relationship between flow and impingement at the EPS intake, once again supporting the sufficient nature of the 2004-2005 study which consisted of principally flow-related events. Commenter offers no evidence that supports its assertion that the 2004-2005 sampling is insufficient.
73.	Heat treatment replacement. 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	The Regional Board agrees that alternatives to heat treatment, such as the potential use of scrubbing ball technology, are related to an analysis of stand-alone operations, which is not before the Regional Board at this time. See also Response No. 7.

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	remove the bio-fouling in water passageways, it does not seem logical that they would not be fatal to aquatic life as well.	
9. 4/01/2009 e-mail Communication to the RWQCB from Marco Gonzalez		
74.	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 are surely aware, a significant amount of new material has been added since posting of the notice.	Commenter is correct in that the Regional Board issued a notice of public hearing for the CDP, requesting submission of written comments by 5:00 p.m. on April 1, 2009 and that new material was added to the Regional Board's website since the posting of the notice. The notice indicated that the comment period would remain open through April 8, 2009, and substantial public comment was received up until that date.
75.	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.	Comment noted. See Response No. 74.
76.	Given that the matter is in litigation, and the project need not be approved at the April 8th hearing to remain on schedule, there is no credible legal rationale for requiring strict adherence to the artificial deadline of today at 5:00 pm.	The Regional Board is not processing the CDP in order to keep it on schedule. Staff is proceeding as directed by the Regional Board and in accordance with CWC Section 13142.5(b) and the applicable procedural requirements of the NPDES permit program. The pending litigation is irrelevant to this administrative proceeding. Public comment was received and accepted through April 8, 2009.
10. 4/03/2009 letter from Robert Mclean to the RWQCB		
77.	The current permit would allow the intake and mortality of more marine life than is currently being destroyed by the Encina Power Station's once-through cooling (OTC) system.	The comment is mistaken. The Minimization Plan proposes to avoid and/or offset fully the impingement and entrainment from 304 MGD of intake flow. That impingement and entrainment is not being avoided or compensated for today, under existing intake operations. The CDP will minimize intake and mortality relative to its current operations.
78.	The current design capacity of the Poseidon-Carlsbad desalination facility would facilitate the continued intake and mortality of marine life beyond the date when the Encina	The proposed Minimization Plan avoids and/or compensates for intake and mortality of the CDP when operating in co-location mode. Commenter offers no evidence in support of the conclusion that the Discharger would not be

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	Power Station either upgrades its generators and abandons the OTC system, or ceases operation.	able to continue to meet the CWC Section 13142.5(b) standard when and if it operates in stand-alone mode, independent of an EPS. In the event the EPS ceases operations and the CDP operates in stand-alone mode, the Regional Board will conduct additional review pursuant to CWC Section 13142.5(b) to ensure the continued minimization of the intake and mortality of all forms of marine life.
79.	The current permit conditions rely on unproven and, as yet undefined, plans to restore marine life in contradiction of the clear language in California's Porter-Cologne Act to minimize marine life intake and mortality in the first place. Sub-seafloor intake systems are a proven alternative to minimize marine life intake and mortality currently attributable to open seawater intakes.	As explained in Response No. 10a, the Minimization Plan is a specific plan including a mitigation component that explicitly is authorized by CWC Section 13142.5(b). The mitigation component uses proven approaches, incorporating the approach for the successful San Dieguito wetlands restoration project, being undertaken by Southern California Edison ("SCE"). See also Response Nos. 105, 241, and 292. As detailed in the Minimization Plan and discussed in Response No. 42c, sub-seafloor intake systems are not feasible for the CDP.
80.	The Poseidon-Carlsbad intake permit should set the highest standard for enforcement of California's laws to restore and protect marine life mortality. This is just the first of many potential desalination proposals coast-wide.	By undertaking an extensive permitting and approval process, the Regional Board has ensured that the CDP complies with all applicable water quality laws and regulations within its jurisdiction to enforce. In particular, the Regional Board has required the Discharger to develop the Minimization Plan in order to ensure compliance with CWC Section 13142.5(b). Under the terms of the Minimization Plan, the Discharger will use the best available site, design, technology, and mitigation measures feasible to minimize the intake and mortality of marine life. The MLMP provides for full offset of entrainment and impingement for annual daily flows of up to 304 MGD drawn directly from Agua Hedionda Lagoon, even though the Discharger is expected to receive source water from EPS's cooling water discharge. The performance standards of the MLMP are stringent and rigorous, requiring that the restored wetlands support multiple and varied biological populations, including vascular plants and algae, fish, macrobenthic invertebrates, birds, and food chain support that are 95 percent similar to the same populations at up to four reference wetlands. The performance standards require the habitat areas in the restored wetlands not to vary by more than 10% from the areas indicated in the Restoration Plan. This approach was approved by the Coastal Commission.

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		The Regional Board and the Coastal Commission are authorized to determine project success or failure, based on the MLMP's rigorous performance standards, and to require any necessary measures to ensure continued compliance with CWC Section 13142.5(b). Moreover, the Regional Board has added an additional condition requiring that the mitigation site produce at least 1715.5 kg of available fish biomass per year as defined in Order No. R9-2009-0038.
81.	The State Water Resources Control Board and San Diego Regional Board should send a clear message to future project proponents that ocean desalination facilities should be designed to accommodate technology that minimizes the intake and mortality of marine life.	The Regional Board agrees that all facilities subject to CWC Section 13142.5(b), including desalination facilities, must use the best available site, design, technology, and mitigation measures feasible to minimize the intake and mortality of all forms of marine life, as required by CWC Section 13142.5(b). Insofar as Commenter is addressing the CDP's technology measures, please see Response No. 154.
82.	Designing massive ocean desalination facilities and then "shoehorning" in sub-standard intake systems is not sound public policy.	Commenter does not specify why the EPS intake structure is sub-standard for the CDP. Use of the intake enables the beneficial reuse of the EPS's discharge water. Had a new open-water intake been proposed for the CDP, the design would have specified a lower intake system capacity. There is an environmental benefit to operating an intake structure at flows substantially below design capacity, as the CDP proposes to do (304 MGD compared with an average intake capacity of 632.6 MGD). This results in relatively lower velocities than if an intake that matched the CDP's feedstock needs had been constructed. Lower velocities result in relatively lower impingement, all other factors being equal. Taking advantage of existing infrastructure also has environmental benefits, including avoidance of construction and post-construction impacts, such as those known to be associated with several of the intrusive intake alternatives. The Regional Board does not agree that the EPS intake is sub-standard for purposes of the CDP. The Tentative Order proposes to find that co-location at the EPS site is the best available site for the CDP. See Response Nos. 36(c) and 42(c) for a discussion of alternative intake systems.
83.	We are not opposed to ocean desalination. However, we oppose the current permit language as it does not meet the clear standards of California's law to protect our precious marine life.	Commenter does not identify any specific permit language with which he takes issue, any specific California law not satisfied, or how the permit language fails to meet any standard in such law. To the extent Commenter is referring to CWC Section 13142.5(b), Commenter is incorrect that the legal

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		standard has not been met. The Regional Board has specifically evaluated the Minimization Plan to ensure the CDP's compliance with CWC Section 13142.5(b). The Minimization Plan provides for the use of the best available site, design, technology, and mitigation measures feasible to minimize the intake and mortality of marine life.
84.	We strongly urge you to either: 1) Deny the current proposal and insist on a facility capacity design, location and intake technology that minimizes marine life mortality in the first place (e.g., sub-seafloor intakes); OR 2) Limit the interim operation of the CDP to only the water being withdrawn by the Encina Power Station, AND - Insert a provision to automatically re-open the permit when the current cooling water intake is abandoned or consistently falls below the required 304 mgd - with specific language to guarantee the construction and use of sub-seafloor intakes.	The comment is mistaken. The Minimization Plan demonstrates that sub-seafloor intakes are not feasible, as discussed in Response Nos. 36c and 42c. It would not be appropriate to require the Discharger to guarantee the construction and use of infeasible, sub-seafloor intakes. The Minimization Plan proposes site, design and intake approaches that minimize marine life mortality to the extent such approaches are available and feasible. Other than sub-seafloor intakes, which are not feasible (see above), the comment identifies no specific design, location and intake technology that is available and feasible that is not already in the Minimization Plan. The Minimization Plan and related materials demonstrate that intake and mortality will be minimized even when the EPS is not withdrawing water for power plant use. Thus, there is no basis in law or fact to limit operation of the CDP to only water being withdrawn by EPS for power plant use. Such an approach likely would subject the end users of the CDP water to an intermittent and unpredictable supply of water, which may be less than the supplies under contract. Such an imposition would frustrate project objectives without any corresponding water quality benefit. The Discharger is required to submit a Report of Waste Discharge if/when the EPS permanently ceases operations. See Response No. 7. It is not necessary or legally required to add a provision to re-open the permit when cooling water intake consistently falls below 304 MGD. The Minimization Plan minimizes intake and mortality even where the cooling water flow is zero MGD. The Coastal Commission did not impose such any such condition. The rational basis for re-reviewing the CDP is triggered by the discontinuation of the use of the intakes as part of power generation. Under that scenario, the Discharger may have access to the intake structures which it does not presently possess. If it secures such access, other

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		technologies to minimize intake and mortality may become feasible and available. Such access is not possible until the use of the intakes for power generation purposes ceases. The Tentative Order addresses this potential scenario. Furthermore, the NPDES permit, Order No. R9-2006-0065, addresses this scenario and already contains extensive, non-standard re-opener provisions.
11. 4/03/2009 letter from Stop the Unnecessary Destruction of Marine Life		
85.	This letter is the same as the letter submitted by Robert Mclean, above. For Responses to the comments in this letter, please see responses to comments 77-84.	
12. 4/03/2009 E-mail Communication to the RWQCB from Marco Gonzalez		
86.	The Staff Report mentions a data discrepancy with regard to flows reported from EPS during the sampling period. (Staff Report , 15 fn. 31). EPS monitoring reports also show flows consistently lower for the data set compared to the Tenera flow data. (Personal communication with staff).	The comment incorrectly states that the March 27, 2009 mentions a "data discrepancy." At p. 15, staff noted that the "2004-05 flow data indicates that the January 12 survey may have been associated with a unique operational circumstance, i.e., the survey was preceded by four days for which intake pump records are not available, the only such week during the year." The sentence cites to a footnote, which reads: "The 2004-05 intake flow data (submitted March 5, 2009) indicate that, in the week prior to the January 12, 2005 survey, there are four days recorded as zero intake (1/7/05 through 1/10/05), and two days of low intake flow (1/6/05 and 1/11/05). EPS monitoring reports show discharges of between 580 MGD to 660 MGD on those days so presumably there was intake. On March 25, 2009, staff requested clarification and was informed that days assigned values of 0 MGD intake are days for which flow data from the plant were not available." Thus, the comment incorrectly equates an absence of data with a "data discrepancy." It should be noted that the two sets of data produced here – the 2004-05 intake flow data and the EPS discharge reports – were produced pursuant to different regulatory requirements, which may account for differences, if any. The comment provides no factual basis from which to presume that the discharges as reported in the EPS monitoring reports were actually less than the intake flows recorded in the 2004-05 flow data, or that any such differences were meaningful.
87.	Both data sets should be made publicly available, and re-evaluated. If impingement rates are calculated as mass/volume, the data set will be skewed in Poseidon's favor	EPS's 2004-2005 daily intake flow was submitted by Discharger on March 5, 2009 and is publicly available on the Regional Board's website at http://www.swrcb.ca.gov/rwqcb9/press_room/announcements/carlsbad_desal

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	when flow rates are over-estimated.	ination/updates_4_06_09/EPS%202004-2005%20Flow%20Data.pdf. EPS's discharge monitoring reports may be requested through a Public Records Act Request. They are not relevant to assessing the CDP's projected impingement. The comment's speculation that flow rates are over-estimated is without a factual basis.
88.	Poseidon's assertion that .5 feet/second (fps) velocity at inlet screens will reduce impingement to insignificant levels is unsupported.	See Response No. 9 for support for the determination that reducing intake flow velocities can reduce impingement.
89.	We concur with Staff's determination that most impingement intake and mortality occurs at the bar rack rather than on the rotating screens. (Staff Report 8).	The comment is mistaken that Regional Board staff determined that most impingement intake and mortality occurs at the bar rack rather than on the rotating screens. In fact, most impingement occurs at the rotating screens – not the bar rack. See Staff Report at 8 (March 27, 2009).
90.	Further, installation of VFDs on CDP intake pumps to reduce total intake flow for the desalination facility will only reduce intake flow for up to 104 MGD, as 200 MGD (dilution seawater) never flows to the desalination plant. Any reduction of impingement through use of VFDs (which is unvalidated) is therefore only attributable to that portion of flows going directly to the CDP. (Staff Report , 10). As Poseidon does not currently "take credit" for VFDs, or propose to use any design or technology measures to reduce impingement, we offer this position to rebut any future attempts to "take credit" for such measures.	The comment correctly acknowledges that the CDP only requires direct intake flows to the CDP of up to 104 MGD. To the extent the Commenter may be contesting that the use of VFDs on the CDP intake pumps will result in a reduction in impingement, the Regional Board disagrees.
91.	Further, because Poseidon fails to quantify the reduction in impingement resulting from any such technological "improvements," characterization as such is unwarranted.	It was not feasible to quantify any such reduction. The absence of quantification, however, does not diminish the force of the qualitative assessment, or the reasonable expectation of a reduction from this practice. The Discharger is not claiming credit for any such reduction, and has not proposed to reduce the mitigation obligation on this basis.
92.	(a) Poseidon's individual sampling impingement rates are calculated as follows: average impingement weight, divided	(a) Commenter accurately describes one of the impingement estimation

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	by the associated flow volume for the sampling day, multiplied by 304 MGD. These resulting "weights" are then averaged. (b) Two sampling events had higher associated impingement rates. (c) Poseidon argues for their exclusion, while Dr. Raimondi and staff believe they should remain in the data set.	approaches set forth in the Minimization Plan (Minimization Plan Section 5.2.2 and Attachment 5), but the comment incorrectly characterizes this approach as "Poseidon's." At the February 11, 2009 public hearing, Regional Board staff requested the Discharger to prepare these flow-proportioned calculations of impingement. The Discharger maintains that the projected impingement will be 1.56 kg/day based on a regression analysis approach. See Response Nos. 114 and 167 regarding the calculated daily and annual weighted average impingement rate. (b) The comment appears to be referring to the sampling events of January 12 and February 23, 2005, when impingement was relatively higher than during the other fifty events of the 2004-2005 field program. (c) To the extent the comment refers to the status of the January 12 and February 23, 2005 impingement values as outliers, see Response No. 93(I).
93. a-e	(I) We concur with Dr. Raimondi and staff: the two data points with high associated impingement rates should not be considered outliers. (II) As staff correctly points out, Poseidon's proposed rainfall "flushing" theory is based on several flawed assumptions. (a) High impingement rate is not always associated with heavy rainfall. (Staff Report , 14). (b) Nor does high impingement rate correlate with any rainfall. (Staff Report , 15). (c) The mechanism by which heavy rainfall might cause high impingement is unclear. (Staff Report , 15). (d) Poseidon's proposed theory is unsubstantiated. (e) Moreover, the data itself belies the proposed "flushing" theory, as the percentage of freshwater fish impinged is small. (Staff Report, 15).	(I) The Regional Board notes Commenter's assertion that the January 12 and February 23, 2005 data points should not be considered outliers. The Regional Board finds it unnecessary to make this determination. To establish the Discharger's mitigation obligation, the Regional Board relies upon the impingement estimate of 4.7 kg/day, which includes the outlier data and assumes the 100% recurrence of such events, in order to set the 1715.5 kg/year performance standard for the mitigation wetlands, as provided in Tentative Order R9-2009-0038. The Regional Board notes, however, that the Discharger has offered evidence and expert analysis to support the conclusion that the January 12 and February 23, 2005 data points are outliers, including: • The EPA's definition of outlier, which defines the term to mean measurements that are extremely large or small relative to the rest of the data set and that are suspected of misinterpreting the population from which they were collected. See EPA (2006) Qa/G-9S Report Data Quality Assessment: Statistical Methods for Practitioners. • Expert evidence submitted by Dr. David Mayer on April 30, 2008 and January 26, 2009 to the effect that the two days in question corresponded to a different statistical subpopulation

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		than the other fifty impingement sampling events, which two days properly are excluded from a regression analysis; • Expert evidence introduced by Drs. Chang and Jenkins describing extremely unusual levels of rainfall, which indicate that the relatively higher levels of impingement observed on those two days are not indicative of normal plant operations and may have been due to factors unrelated to seawater intake; • The fact that freshwater fish were collected infrequently during the impingement surveys, and only during the wet season, with a substantial majority of freshwater fish biomass collected on the two days in question; • The fact that impingement on 335 of 336 days during the 1979/1980 EPS study also was much lower than on the two days in question. (II) The Discharger has not characterized its assessment of the two events in question as a "theory," or called it the "rainfall flushing theory." The Discharger has evaluated two data points it considers statistical outliers to explore whether those events might be associated with something other than the typical operating conditions anticipated at the proposed CDP. (a) To the extent that the comment suggests that the two outlier events were not associated with heavy rainfall, the comment is mistaken. The January 12 and February 23 impingement samples were both preceded by extreme five-day storms, among the highest on record. See March 27 Minimization Plan Attachment 9. Moreover, impingement on January 12 and February 23 was materially higher than on any other single day during the 2004-2005 study. It is so materially distinguishable from impingement on the other days that those two days mark a subpopulation of data that can be distinguished from the other fifty days. See Response No. 92(b). To the extent that the comment suggests that there were other days of high impingement that were not preceded by extreme storms, the

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		Board notes that the impingement values recorded on these other days were significantly less than those recorded on the two outlier days. For instance, the third highest impingement value was 12.4 kg (July 14, 2004)—an amount that is 2.7 times more than the average of the fifty flow-related impingement events. In contrast, the January 12 and February 23 impingement samples respectively were 23.5 and 6.3 times greater than the average of the fifty flow-related impingement events. The July 14 sample is more characteristic of the flow-related events. (b) The comment misapprehends the association presented by the Discharger. The Discharger reported an association between rainfall-runoff, on the one hand, and relatively higher impingement, on the other. The Discharger does not report that there will be higher impingement associated with any and all rainfall, as the comment implies. The rainfall with which the association occurred was not only very high compared with most rainfall events, it produced extraordinary runoff into Agua Hedionda Lagoon, because of antecedent conditions, as well as the rainfall itself. See, also, Response 93(II)(a) above. (c) To the extent that the association between unusual rainfall-runoff events and impingement has not resulted in a definitive, cause-and-effect relationship explaining the relatively higher impingement, comment noted. The absence of definitive causality does not render an outlier any less of an outlier. See Response 93(I) for a discussion of why the January 12 and February 23, 2005 impingement values are outliers. See Response No. 71(a). (d) The comment does not articulate in what specific manner the Discharger's explanation is "unsubstantiated." It is backed up by relevant and credible expert opinion and analysis, directly responsive to Regional Board staff's request for more information about the outliers. The comment is conclusory and consists of argument. (e) To the extent that the comment implies that the percentage of freshwater fish impinged on the outlier days is small in comparison to the percentage impinged on non-outlier days, the comment is mistaken. The occurrence of impinged freshwater fish on the outlier

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		days is another indicator that those events were unusual. Freshwater fish were collected infrequently during the impingement surveys, and only during the wet season, with a substantial majority of freshwater fish biomass collected on the two days in question. More than 75 percent of the freshwater fish biomass collected over the course of the entire impingement survey (52 events) was collected in the February 23, 2005 sampling event. The February 23 sampling event was preceded by extreme streamflows, with a recurrence interval of about 35 years. The weight of freshwater fish collected during this one sampling event was more than five times greater than on any other single sampling event during the 2004-2005 program. See Response 93(II) for a discussion of the mischaracterization of this analysis as a "flushing theory."
94.	Further, Poseidon's proposed theory, as supported by Jenkins and Chang, is flawed and unsupported by the existing data. Indeed, Dr. Chang's analysis is flawed in and of itself. As Dr. Chang admits, the sampling period (2004-2005) was an abnormally wet period, as total rainfall was 26 inches as opposed to a typical average of 13 inches.	See Response No. 93. With respect to the comment that the sampling period was unusually wet, Dr. Jenkins notes that, "[t]he timing of this [the 2004-2005] study was ideal (even fortuitous) because it spanned the full range of natural hydrologic variability, and yet average, long-term water quality properties in the lagoon remained normal during the June 2004-May 2005 study period." See "Statement Addressing Regional Board Staff Concerns regarding the Biological Data Used to Support Poseidon's Impingement and Entrainment Assessment," Dr. Scott Jenkins, Ph.D. at 2. This is largely because, setting aside the two extreme storms (7.25 inches of rainfall in the aggregate), the annual rainfall totals are much closer to normal. Thus, the majority of impingement data from 2004-2005 is representative of typical lagoon conditions that would be expected to occur in any given year. The comment does not explain why this data set, which fortuitously captures both representative and extreme events, or the analysis in which it is used are in any way flawed, or produce flawed results. It is also useful to note that impingement during and after the other rainfall days in 2004-2005 forms a subpopulation with the fifty sampling events and is distinguishable from impingement during the two outlier events. This suggests that relatively higher impingement does not have an association with the rainfall-runoff events that are likely to re-occur on an annual basis,

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		creating further confidence that the two events in question are outliers.
95. a&b	(a) However, Dr. Chang's overly narrow focus on the two data points undermines the credibility of his entire analysis. (b) Without providing the rainfall data or statistical analysis of the probability of occurrence for the entire data set, Poseidon cannot credibly argue that the two "suspect" data points are outliers.	(a) The comment is mistaken in stating that Dr. Chang took an overly narrow focus and in implying that Dr. Chang analyzed these two events narrowly, as if he looked at them in isolation from the other events. Dr. Chang analyzed all fifty-two of the sampling events from 2004-2005. On the basis of that assessment, he identified that two events seemed to be separate and distinct from the others. He noticed that fifty of the 52 events reflected a relationship between EPS intake flow rate and the amount of impingement. The other two events, however, did not seem to be correlated to EPS intake flow. Dr. Chang then explored whether those two events had an association with something other than EPS intake flow. The analysis was a comparative exercise, leading him to see that the data set consisted of two separate subpopulations. (b) The comment mistakenly assumes that the rainfall data and the statistical analysis of the probability of occurrence have not been provided. In his expert statement, Dr. Chang provided rainfall totals for the entire data set. See attachment entitled, “2005 Rainfall Data From San Diego County.” Dr. Chang also submitted the HEC data and files that supported his hydrology study. In order to determine the occurrence frequency of these two storm events, Dr. Chang compared their peak discharges with the FEMA-adopted peak discharges for Agua Hedionda Creek taken from the FEMA publication, “Flood Insurance Study”, 1999.” See “Frequencies for Storm Events of January and February 2005,” Dr. Howard Chang, Ph.D , at 4. Using the FEMA data as a reference basis, Dr. Chang was able to conclude that the two data points are outliers. See Response Nos. 93(I) and 96 for further discussion of the two data points as outliers.
96. a-b	(a) Dr. Jenkins' data is equally unpersuasive. (b) He first concludes that the rainfall data does not alter the validity of the sampling data, because lagoon salinity was not depressed on a persistent basis. (Jenkins, 2). He then concludes the above-average rainfall during the sampling period was "fortuitous" because it spanned the full range of "natural hydrologic variability" and "captured a range of conditions, including some that are not likely to re-occur in	(a) This comment is conclusory, constitutes argument, and does not provide a single specific problem with Dr. Jenkins’s data. The Regional Board is unaware of any. (b) Contrary to the comment, Dr. Jenkins’ analysis does indicate that the two statistically anomalous extreme storm event days should be excluded from the data set. Because the period of record included an extreme event that is not expected to re-occur for 25 years or more, that event should not be treated as if it occurs annually, or routinely. Nor does it follow that, if the

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	most years." It does not follow then, that the two "statistically anomalous" extreme storm event days should be excluded from the data set. (Jenkins, 4). If the entire data set includes a range of "natural hydrologic variability" the entire data set must be used. The fortuitous event of capturing these two high storm events, using Jenkins' logic, favors being inclusive rather than exclusive.	entire data set includes a range of natural hydrologic variability, the entire data set must be used. It depends on what use is to be made of the data. Here, the goal is to characterize anticipated, potential impingement during typical conditions that will prevail over the project lifetime. It is reasonable to exclude conditions that may not re-occur for 25 years or more in light of that objective. There is nothing inconsistent in Jenkins' logic, as the comment suggests. Regional Board staff previously had expressed concern that record rainfall during 2004-2005 rendered the impingement data non-representative. Dr. Jenkins's salinity analysis demonstrated that, in general, Agua Hedionda Lagoon rebounded quickly from freshwater inputs during 2004-2005, so that lower salinity did not persist in 2004-2005 over long periods of time (i.e., weeks, or even months). Thus, the vast majority of impingement data from 2004-2005 is representative of typical lagoon conditions that would be expected to occur in any given year. It was fortuitous, however, that 2004-2005 also included some events that are not likely to re-occur in most years. This enabled an assessment as to whether such events would dominate lagoon dynamics, and potentially impingement, over long periods of time (i.e., weeks or even months). The 2004-2005 data show that the influence of even such unusual events is transient, as only two of 52 sampling events reflected an influence from these truly rare events. See Response No. 94. Commenter is mistaken that the outliers should not be treated separately from the remaining fifty sampling events. The fifty sampling events and two outlier sampling events correspond to two different statistical subpopulations, which warrant separate treatment. See Response No. 93(I) for further discussion of the two data points as outliers. For example, it would be reasonable to adjust impingement observed on the outlier days in accordance with their recurrence interval of the storm events with which they are associated, or to disregard them altogether as not consistent with events expected to repeat on a routine or even intermittent basis during CDP operations. It would not be reasonable to make any such adjustment for, or set aside, data that represent typical events, expected to occur annually. In setting 4.7 kg/day (1715.5 kg/year) as a performance standard, the Regional Board has taken the conservative approach of treating the events considered outliers differently – by not discounting them in proportion to the CDP's

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		reduced flows.
97.	Thus, Poseidon has not met its burden of conclusively proving the two days should be considered anomalies.	Contrary to the comment's mistaken suggestion that the Discharger must prove conclusively that the two days are anomalies, it is enough that the weight of scientific evidence indicates that this likely is the case. See Response Nos. 93(I) and 96 for further discussion. The information and analysis provided by the Discharger's experts creates confidence in such characterization. The comment misstates the applicable legal standard, and burden of proof. Commenter had ample opportunity to conduct its own expert analysis of these impingement data, which have been publicly available since at least March 2008 (see March 2008 Minimization Plan, Attachment 2). See, e.g., April 9, 2008 Regional Board hearing transcript, testimony of Gabriel Solmer, Esq., to effect that the San Diego Coastkeeper had retained an outside expert from Colorado to review the Minimization Plan. Regional Board Transcript, April 9, 2009, at 95-96. Ms. Solmer testified it would take "weeks to months" to complete the expert review. Id at 96; 12-13.
98.	The impingement impact calculation also seems to reflect only "normal operations" and not heat treatments.	Under the current mode of operations, EPS completes heat treatment of the intake facilities every 6 to 8 weeks for 6 to 8 hours per event. Since seawater is re-circulated during the heat treatment event (i.e. no new seawater is collected or discharged), there is 100% mortality of the marine organisms residing in the intake canals unless they are physically removed prior to exposure to elevated temperature. The frequency and duration of the EPS heat treatments will not be affected by the CDP's operations. Therefore the impingement impact calculation appropriately reflects the periodic EPS heat treatments, as these are part of "normal operations" of the power plant. See, also, Response No. 101.
99.	Poseidon's Flow Plan calculations (and Dr. Raimondi's calculations based on approach 3-B) result in a weighted average impingement rate of 4.7 kg/day. This results in an annual impingement of 1715kg (to a 50 percent confidence level).	See Response No. 113.
100.	However, as pointed out in the Staff Report, heat treatments will continue during co-located operations.	See Response No. 98.

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101.	The organisms already in the intake channel are killed when the intake channel is closed off, and the heated discharge water is circulated for hours. (Staff Report, 12 fn.23.) These organisms end up impinged when the pumps return to normal operation. 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. Thus, a larger number of organisms will be impinged at the time of heat treatments.	See Response No. 98. Commenter proposes to ascribe a proportion of impingement during heat treatment to the CDP. Impingement during heat treatment cannot fairly be ascribed to the Discharger. Heat treatments have been a longstanding practice at the EPS, which occurs on a periodic basis. It is not expected that the operator of the EPS will change this frequency because of CDP operations. The build-up of biomass and other factors that heat treatment is used to address are not related to flow through the intake. Rather, it is the mere presence of water that principally creates the conditions conducive to growth on the side walls. Flow actually can reduce these conditions to the extent flow removes biofilm or other growth.
102.	The proportion of impingement due to CDP operations as opposed to EPS operations can be calculated real-time by determining the percentage of flow attributable to CDP operations, and multiplied by the total impingement due to heat treatments.	See Response Nos. 98 and 101.
103.	We agree with Dr. Raimondi's assessment that the approach used by Poseidon (and Nordby) is flawed for the following reasons: (a) Entrainment compensation cannot also be used for impingement compensation. (Raimondi, 1-2) (b) Nordby's approach relies on a 27-year old study by Larry Allen that is inapplicable here. (c) Nordby's estimation of fish production is based on mudflat wetlands, which only comprise 40 percent of Poseidon's proposed entrainment mitigation (as adopted by the CCC). (d) The estimation of fish production also assumes no current production - which is only true if wetlands are created, not restored. (e) Nordby's calculations are based on a 50 percent confidence level - inappropriate for mitigation calculations. A	(a) The same mitigation wetlands can be used to compensate for both entrainment and impingement to the extent that the mitigation wetlands produce fish other than those specifically reserved for entrainment mitigation. See Response Nos. 309 and 314. (b) Dr. Raimondi did not find a flaw in the Discharger's approach due to its reliance on a "27-year old study by Larry Allen." Nor did Dr. Raimondi conclude that Mr. Allen's seminal study of Newport Bay productivity was "inapplicable here." The comment provides no argument or evidence of its own as to why it agrees with the comment's mischaracterization of Dr. Raimondi's statement. Without any explanation as to the rationale for the comment's agreement with its mischaracterization, the comment is without foundation. In his evaluation of Mr. Nordby's analysis, Dr. Raimondi did not reject the premise that Upper Newport Bay can serve as a basis for estimating the productivity of the mitigation wetlands (to the extent that the mitigation wetlands consist of intertidal habitat). (c) The MLMP does not prescribe a particular percentage mix of wetlands

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	typical and more appropriate confidence level is 95 percent. (Raimondi, 3) (f) Nordby's calculations rely on fish production calculations (productivity of newly created wetlands) based on species that are entrained - resulting in double-counting. (g) The calculations incorrectly assume entrainment calculations equate to actual impact of entrainment. (h) Entrained species are also impinged - thus the impacts are additive, and cannot be mitigated through creation of wetlands that mitigate for entrainment	habitat types. The particular composition of the mitigation wetlands will be determined during the Restoration Plan development phase. See Response No. 316(b). The comment is mistaken that mudflat wetlands comprise 40 percent of the proposed wetlands. (d) See Response No. 317. (e) The comment provides no factual basis for the assertion that a 95 percent confidence level is appropriate for impingement calculation. The Regional Board need not consider this issue, however, as confidence levels are a statistical tool rendered moot by the Board's requirement that the Discharger demonstrate empirically full offset of actual impingement. (f) Nordby appropriately excluded from the estimate of productivity available for impingement mitigation, the biomass required to be counted for entrainment mitigation. There was no double-counting in Mr. Nordby's species-specific analysis of productivity. For instance, while the productivity illustration includes substantial topsmelt biomass, the APF calculations were not based on entrainment of this taxa. See Response Nos. 309 and 314. (g) See Response No. 314(b). (h) See Response No. 314(a).
104.	(a) In light of recent studies reflecting the poor performance of compensatory wetlands creation, a very conservative approach should be taken in assigning productivity to wetland mitigation. (An Evaluation of Compensatory Mitigation Projects Permitted Under Clean Water Act Section 401 by the California State Water Resources Control Board, 1991-2002, (2007) Ambrose, et al). Two findings of the cited report are particularly relevant here: (b) - Given the low ecological condition of most mitigation wetlands, it seems likely that many mitigation projects did not replace the functions lost when wetlands were impacted. - A lack of explicit consideration of the full suite of	(a) The productivity of the mitigation site(s) will be assured by the agency's enforced performance standards. The MLMP's performance standards reflect a "conservative approach" in assigning productivity to wetland mitigation by, for example, requiring that the restored wetlands support multiple and varied biological populations, including vascular plants and algae, fish, macrobenthic invertebrates, birds, and food chain support that are 95 percent similar to the same populations at up to four reference wetlands. Additionally, the performance standards require the habitat areas in the restored wetlands not to vary by more than 10% from the areas indicated in the Restoration Plan. This approach was approved by the Coastal Commission. The Regional Board and the Coastal Commission are authorized to determine project success or failure, based on the MLMP's rigorous performance standards, and to require any necessary measures to ensure continued compliance with CWC Section 13142.5(b). Moreover, the

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	functions, values, and services that will be lost through proposed impacts and might be gained through proposed mitigation sites and activities is at least partly due to regulatory agencies approving mitigation projects with conditions or criteria that are too heavily focused on the vegetation component of wetland function, with inadequate emphasis on hydrological and biogeochemical conditions and their associated functions and services.	Regional Board has added an additional condition requiring that the mitigation site produce at least 1715.5 kg of available fish biomass per year as defined in Order No. R9-2009-0038. (b) In this case, the complete ecological value of the Agua Hedionda Lagoon is not being eliminated. The proposed plant will not destroy an area of the environment, as suggested by commenter. When using EPS discharge water, the plant will have a negligible effect on receiving waters. When drawing water directly from Agua Hedionda Lagoon without it first being used at the EPS, there is the potential for impingement and entrainment from the plant. These are very particularized effects that do not destroy the environment of the affected area. As a result, an appropriate mitigation project would seek to offset the specific alterations from the potential effects. It should be noted, however, that the MLMP accounts for the a suite of wetland functions, values, and services. For example, Sections 3.1 and 3.2 of the MLMP, incorporated in Chapter 6, provide minimum standards and objectives for the mitigation site(s), which among other things, provide that a site shall include habitat similar to the affected habitats in Agua Hedionda Lagoon and should provide maximum overall ecosystem benefits, e.g. maximum upland buffer and transition areas, enhancement of downstream fish values, provides regionally scarce habitat, potential for local ecosystem diversity, provides substantial fish habitat, provides rare or endangered species habitat, and provides for reproductively isolated populations of native California species. The MLMP also provides that the Restoration Plan for the mitigation site(s) must address hydrological and biogeochemical conditions. For example, the Restoration Plan must include, among other things, a detailed analysis of existing physical, biological and hydrological conditions, as well as an schematic restoration design that includes water control structures and control measures for stormwater. (MLMP Section 4.1)
105.	The basic premise for compensatory mitigation is that the newly created or restored wetlands actually compensate for the loss associated with the project. Thus, the mitigation required for CDP impingement must take into account the validity of the impact calculations and the validity of mitigation calculations.	Comment noted. Regional Board staff has reviewed the impact and mitigation calculations for their validity and have found those calculations to be valid.

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106.	Second, the mitigation wetland productivity calculations should be conservative, as underscored by the lack of success in actual wetland mitigation.	See Response No. 104(a).
107.	Thus, because wetland productivity assumptions are based on completely newly created wetlands, Poseidon must be required to actually create wetlands, as opposed to restoring them.	The monitoring program will adjust for existing productivity if wetlands are restored rather than created. See Response No. 317).
108.	Another assumption associated with wetland productivity relates to the type of wetland created. Poseidon's MLMP presents a mix of wetlands, comprised of 40 percent intertidal mudflats or subtidal. Dr. Raimondi's calculations associated with this mix should be used to provide a wetland mitigation acreage. (Raimondi, 6)	Commenter is mistaken in concluding that the MLMP prescribes a particular percentage mix of wetlands for the mitigation site(s). The particular composition of the mitigation wetlands will be determined during the Restoration Plan development phase. See Response No. 316(b). The Tentative Order amends the Minimization Plan to require the Discharger to sample the mitigation wetlands to demonstrate that 1,715 kg/yr of fish biomass (not reserved for entrainment compensation) is being produced. Discharger must satisfy this productivity requirement, notwithstanding the particular composition of the mitigation wetlands.
109.	The mitigation assessment study cited above also found "[t]he success of compensatory mitigation depends fundamentally on the mitigation requirements specified by the regulatory agencies." (Id. at v.) Thus, certain requirements regarding the success of compensatory mitigation must be imposed.	The MLMP presents the culmination of a comprehensive, interagency planning process involving extensive scientific study and public involvement aimed to ensure that potential entrainment and impingement ("E&I") impacts to marine resources from the proposed CDP will be mitigated. As proposed, the MLMP will: (1) Avoid or mitigate potential E&I from the Project's water intake; (2) Create or restore up to 55.4 acres of high-quality estuarine wetland habitat based on the best science available to mitigate Project-related E&I and likely result in a net biological benefit to the Southern California Bight; (3) Establish monitoring protocols and empower the Regional Board and the Coastal Commission with enforcement mechanisms to ensure potential E&I is accurately measured over time and that mitigation success targets consistently are achieved; (4) 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); (5) 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

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		the Regional Board approves the MLMP (as the MLMP would then be equally enforceable by the Regional Board); and, (6) Authorize enforcing agencies to order remediation in the event the rigorous performance criteria are not met. Requirements regarding the success of the proposed mitigation include: (a) the Discharger's commitment to full mitigation of potential intake and mortality from the Project operations; (b) the MLMP's incorporation of strict, measurable performance standards; (c) specific timelines for submittal of proposed site(s) and a Preliminary Restoration Plan for Coastal Commission review and approval (MLMP Section 2.0); (d) identification of 11 pre-approved candidate mitigation sites (MLMP Section 2.0); (e) minimum standards and objectives for the mitigation site selection (MLMP Sections 3.1 and 3.2); (f) detailed Restoration Plan requirements (MLMP Section 4.1); (g) specific monitoring, maintenance and remediation standards to be conducted over the "full operating life" of the Project including, but not limited to, long-term physical standards, biological performance standards and suggested sampling locations (MLMP Section 5.0); and (h) a comprehensive administrative and procedural structure. Further, these strict standards establish specific criteria for effectively measuring the success of the mitigation project, e.g., within five years of the start of construction, the constructed wetlands must match habitat values within a 95% confidence level for four undisturbed wetlands identified in the MLMP. Still further, the Minimization Plan requires that mitigation will be based on a fish biomass productivity requirement. If the wetlands produce less biomass than what is impinged by the desalination project, the Regional Board will have discretion at the next permit cycle to require greater mitigation that matches up to actual losses. However, if the wetlands produce more biomass than what is actually impinged, the Discharger would be given a credit that could be used against future mitigation requirements, for instance, if the desalination project were to be expanded, or if a change in circumstances led to greater future impingement.
110.	Staff correctly points out that the success of MLMP entrainment mitigation is assessed through a 95 percent confidence interval of correlation in physical and biological	Comment noted.

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	criteria compared to (yet-unspecified) reference stations, for a period of three consecutive years. (Staff Report, 19).	
111.	This iterative assessment may result in a period of time where the restored wetlands are not meeting these criteria. For those years when the criteria are not met, the goal of compensatory mitigation-namely offsetting CDP impacts through productivity at the restored wetlands-is not being met. Thus, the whole basis for calculating the wetland mitigation is undermined.	On the basis of speculation that the mitigation wetlands will not meet the criteria for some period of time, the comment asserts that the "whole basis for calculating the wetland mitigation is undermined." The comment is mistaken and makes an overbroad conclusion on the basis of an unsupported premise. The Minimization Plan authorizes the Regional Board to take remedial action regarding any noncompliance with the performance criteria for the proposed wetlands. Thus, if the circumstance described by the comment constituted non-compliance (which is not clear given the vague and ambiguous nature of the comment), the Regional Board has the authority necessary to address such a situation. It is elementary, however, that the planned wetlands will take a period of time after construction to establish to a point where comparison with the criteria is warranted. This phase-in and establishment period does not undermine the "whole basis," as asserted. The CDP is not yet constructed, is not causing impacts, and will cause no impacts unless and until EPS's discharge is insufficient to meet its source water needs. The Minimization Plan provides for mitigation sufficient to fully offset entrainment and impingement amounts associated with stand-alone operations, without claiming any credit for minimization from design and technology measures. This is the case even though the CDP is before the Regional Board to operate in co-location mode, when it will be using discharge water from the EPS when available to meet the CDP's feedstock needs. The proposal is fully protective, even including the phase-in period. To the extent the comment suggests a deficiency in the MLMP, see Response No. 109.
112.	In order to account for this, a penalty for not meeting the performance criteria within a specified timeframe must be included in the permit. For example, if within 5 years of wetland restoration the 3-year benchmark is not attained, an additional 5 years of unmitigated impingement impacts must be taken into account. This would result in a total increased wetland restoration acreage. As the benchmark performance standards continue to be unmet, the penalty increases.	See Response Nos. 109 and 240, which describe the MLMP's incorporation of strict, measurable performance standards. If the wetland mitigation does not meet these performance criteria, the Regional Board's Executive Officer has the authority to impose remedial measures pursuant to the MLMP. Section 5.4 of the MLMP states: "Upon completion of construction of the wetland(s), monitoring shall be conducted to measure the success of the wetland(s) in achieving stated

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		restoration goals (as specified in the Restoration Plan(s)) and in achieving performance standards, specified below. The permittee shall be fully responsible for any failure to meet these goals and standards during the facility's full operational years. Upon determining that the goals or standards are not achieved, the Executive Director shall prescribe remedial measures, after consultation with the permittee, which shall be immediately implemented by the permittee with Commission staff direction. If the permittee does not agree that remediation is necessary, the matter may be set for hearing and disposition by the Commission." The mitigation site(s) will be under construction during the early phases of construction of the CDP. This is appropriate timing for the construction of mitigation. At this time in the permitting process, the CDP has not yet been constructed, is not operating, and is not yet causing any intake or mortality of marine life such that mitigation would be warranted.
113.	To summarize, at a minimum, the impingement compensatory mitigation should meet the following criteria[i]: 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. 2) Impingement impacts should be calculated at a rate of 304 MGD attributable to CDP impacts, or calculated real-time. 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. 4) Wetlands must be created, not restored. 5) Penalties should be assessed when performance criteria are not met for a given period of time.	(1) The issue of confidence interval was raised by Dr. Raimondi in his April 1, 2009 statement. Confidence intervals rely on inferential statistics, according to Dr. Raimondi. Dr. Jenkins raised significant questions about the confidence intervals proposed by Dr. Raimondi. (Scott A. Jenkins, A Note on Confident Limits in Raimondi's April 1, 2009 RWQCB Report (April 8, 2009).) At the April 8, 2009 hearing, the Discharger agreed to undertake field programs to provide an empirical basis to ascertain whether 4.7 kg/day is the appropriate value by which to drive the Discharger's impingement mitigation obligation. It also agreed to conduct a field program at the mitigation site to demonstrate that the impingement mitigation obligation is being met. On balance, the Regional Board prefers the empirical approach discussed at the April 8 hearing. It is concerned that the approach using inferential statistics may be adding one level of conservatism on top of another, potentially resulting in a punitive mitigation condition. In contrast, the empirical approach relies on actual data from the field to true up the mitigation obligation, and adjust it, if necessary, on the basis of actual data, rather than statistical calculation. Taking an empirical approach also is warranted given the genesis of the 4.7 kg/day value that is driving the impingement obligation in the Tentative Order.

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		This value is much higher than average impingement over 336 days in 1979-1980, and much higher than average impingement over fifty days in 2004-2005. While there was impingement much higher than 4.7 kg/day on two days in 2005, it is reasonable to believe that those values are not representative of long-term impingement over the life of the Project. The Discharger has presented credible and substantial evidence that impingement at the CDP is likely to be on the order of 1.6 kg/day. Finally, the impingement obligation is based on the assumption that the CDP is getting no flow in the form of cooling water discharge from the EPS. While this condition may occur from time to time, it adds another conservative layer to the analysis and to the obligation. In other words, potential impingement is estimated "at a rate of 304 MGD attributable to CDP impacts," as the comment recommends. (2) Comment noted. Impingement impacts are being calculated on the basis of a 304 MGD flow rate. (3) See Response Nos. 261(d), 315(b), 315(c). (4) The comment provides no legal support for its assertion that wetlands must not be restored. The MLMP provides for the creation or restoration of mitigation wetlands. (5) the comment provides no legal support for its assertion that penalty rules should be specified. The Regional Board retains authority to require the Discharger to take remedial measures in the event of non-compliance.
114.	Using the above criteria, the required compensatory mitigation for impingement only, assuming 100 percent of CDP intake is attributable to CDP operations, a total of 54 additional acres of newly created wetlands (40 percent intertidal or subtidal) is required.	The comment simply summarizes Dr. Raimondi's April 1 statement, which is addressed in Response Nos. 314(a), 314(c), 315(c).
13. 4/06/2009 Letter from Tom Luster, staff, with the California Coastal Commission		
115.	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	With respect to Dr. Raimondi's April 1, 2009 statement, see Response Nos. 99 and 113. The Regional Board has not accepted at face value the so-called problems and doubts referred to by the Commenter. At the same time, the Tentative Order requires impingement monitoring at the intake, and

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	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.	productivity monitoring at the mitigation site(s). These field verifications are being imposed to help resolve any uncertainty with respect to the amount of mitigation needed.
116.	The Commission determination of *de minimis* impingement impacts relied in part on descriptions from Poseidon and the CEQA lead agency that the Project would operate with intake water flows of 0.5 feet per second (fps) or less.	Comment noted. When operating in stand-alone mode, the CDP's intake water velocities at the bar racks are expected to be 0.5 fps, as known by the Coastal Commission in determining that sea turtles and marine mammals were not at risk from the intakes. In its findings, the Coastal Commission noted that the City of Carlsbad had made a *de minimis* determination, based in part on anticipated velocities in stand alone mode. Additionally, the Coastal Commission relied on the Discharger's intent to apply for an "incidental take permit" from NMFS and to install variable frequency drives to further decrease intake water velocities, thereby, reducing "the already *de minimis* impingement impacts that Poseidon's Project may cause." *Id.* at p. 56 of 133.
117.	To provide 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 impingement and adult fish productivity.	As described in Response No. 116, the Discharger consistently has maintained in its CEQA and Coastal Commission proceedings for the CDP that its intake water flows would be at or below 0.5 fps at the CDP's intake bar racks. There is no support for the contention in the Coastal Commission letter that the CDP's intake water flows should be limited to 0.5 fps or less at the CDP's intake rotating screens. At the April 8, 2009 hearing, staff requested that the Regional Board require that the Minimization Plan be amended to require the discharger to monitor impingement at the intake and available fish biomass productivity at the mitigation site(s). Tentative Order R9-2009-0038 provides for this amendment.
118.	We note that Poseidon has suggested deleting several references in the proposed Plan related to this flow velocity and to the Commission's *de minimis* impingement findings, and suggests instead that the Board rely on Poseidon's recent wetland productivity analyses. This would be problematic because both the CEQA review and the Coastal Commission relied on the 0.5 foot-per- second maximum velocity as a key Project component for reducing impingement impacts. Poseidon's proposed removal of this	The Discharger maintains that the 0.5 fps maximum velocity applies to the CDP's intake bar racks. This is consistent with the Coastal Commission's finding that the 0.5 fps limitation in the "intake bays" would prevent the impingement of sea turtles, consistent with U.S. EPA's "best available technology" guidance. (Coastal Commission Recommended Revised Findings Coastal Development Permit for Carlsbad Desalination CDP, August 8, 2008, p. 48 of 133 (previously submitted January 26, 2009, Latham & Watkins Comments, Appendix A), available at: http://documents.coastal.ca.gov/reports/2008/8/W4a-8-2008.pdf.)

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	velocity limit may require Poseidon to submit a request to the Commission for an amendment to its coastal development permit.	The revisions to the Minimization Plan proposed by the Discharger do not affect the intake water velocities at the intake bar racks, and therefore the revised language remains consistent with the Coastal Commission's CDP findings. (Coastal Commission Recommended Revised Findings Coastal Development Permit for Carlsbad Desalination CDP, August 8, 2008, p. 48 of 133 (previously submitted January 26, 2009, Latham & Watkins Comments, Appendix A), available at: http://documents.coastal.ca.gov/reports/2008/8/W4a-8-2008.pdf)
119.	To ensure Poseidon can meet the maximum 0.5 fps rate presented to the Commission, the Board may also wish to consider requiring Poseidon to construct a bypass channel between the power plant intake and discharge so that the Project can use water that does not need to go through the power plant before reaching Poseidon's pumps.	Because the Discharger's intake velocity limitations have not changed from those approved by the Coastal Commission, there is no basis for the Regional Board to require the construction of a bypass channel.
120.	The Plan in several places states that Project characteristics may reduce the expected mortality rate of entrained marine organisms below the assumed 100% mortality caused by the power plant. For example, descriptions in Sections 3.1, 3.6, 3.7, and 4.4 of the Plan state that entrainment associated with Project operations would be significantly lower than those caused by EPS operations at the same flow, due to differences in the two operations. For several reasons, the Coastal Commission found that this would not be the case, and we recommend the Board find that the Project is likely to result in 100% entrainment mortality.	The Regional Board has assumed that the mortality rate associated with CDP-related entrainment is 100%. See Response No. 36(a). While the Minimization Plan notes that Project characteristics may reduce the expected entrainment mortality rate below 100%, because it is not feasible to quantify these beneficial effects, the Discharger is not claiming any credit from such effects, and the Regional Board has not recognized any such credits.
121.	Section 2.4 of the Plan refers to Poseidon's eventual stewardship of Agua Hedionda Lagoon and states that Poseidon's efforts would be focused on ensuring a long-term water supply. 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, as shown below:	Pursuant to Special Condition 12 of the Project's CDP, the Discharger may not undertake stewardship of the Agua Hedionda Lagoon, including maintenance dredging, until the Discharger obtains a separate CDP for those activities. Specifically, page 2 of the August 6, 2008 approved findings for the Permit states: "Regarding dredging, the Commission's imposition of Special Condition 12 requiring the Discharger to submit separate coastal development permit applications for any future dredging projects it may propose will ensure that the Commission will determine at that time whether specific dredging proposals conform to applicable Coastal Act provisions." Accordingly, since dredging of the Agua Hedionda Lagoon is not permitted

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	From pages 2-8 & 2-9 *of the Plan:* "Upon retirement of the BPS, Poseidon has committed to assuming responsibility for stewardship of Agua Hedionda Lagoon and the surrounding watershed, including maintenance dredging of the entrance to the lagoon to prevent its closure and deposit the sand dredged from the lagoon on adjacent beaches. Poseidon's lagoon preservation efforts will be aimed at maintaining and enhancing the Lagoon's beneficial uses, including marine and wildlife habitat, recreation, public access, and others, while ensuring the long-term health and vitality of the future water supply of 300,000 San Diego County residents. Agua Hedionda Lagoon and its associated beneficial uses will be the long-term beneficiaries of this preservation strategy."	under the Discharger's existing CDP, the Regional Board does not believe the Commenter's proposed revision is necessary.
122.	Please note that although Poseidon's entrainment will affect a large number of species, the Commission's assessment of entrainment impacts and its mitigation requirement are based primarily on the Project's effects on three estuarine species and one open ocean species.	Commenter correctly notes that the Commission's assessment of entrainment impacts and its mitigation requirement are based primarily on the Project's effects on certain enumerated species. The ETM is a species-specific model designed to establish mitigation requirements, the implementation of which will offset effects on enumerated species. See, e.g., Response Nos. 260(a), 260(b), 260(d), and 314. The comment misstates the number of ocean species upon which the entrainment mitigation is based; the correct number is five. The comment asserts, without support, that entrainment will affect a large number of species. The comment does not identify a single specific species that will be affected by entrainment, and offers no expert analysis or evidentiary support for this claim.
123.	While the expected restoration will benefit a variety of species, the compensatory mitigation approach used in the Plan should not be characterized as "fully offsetting" or "zeroing out" the facility's entrainment. We recommend the Board not adopt these characterizations and that the Board instead describe expected mitigation results in a manner consistent with the Commission's findings. We provide an example of suggested edits below from pages 6-7 of the Plan: "The Coastal Commission adopted a more conservative	The confidence intervals imposed by the Coastal Commission resulted in a high level of confidence and certainty as to the protective nature of the compensatory mitigation. The comment overlooks the Coastal Commission's ultimate finding which states in full: "The Commission further finds that implementation of the Plan 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 in conformity to Coastal Acts Sections 30230 and 30231." *See* Recommended Revised Condition Compliance Findings (approved December 10, 2008), p. 19 of 19. The comment also overlooks other aspects of the Minimization Plan. The

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	approach, based on the ETM but using more conservative assumptions and higher confidence levels, to determine the amount of ~~mitigation~~ wetland restoration needed to ~~zero out~~ mitigate the CDP's estimated entrainment. The Coastal Commission concluded that by providing ~~up to~~ 55.4 acres of estuarine wetland restoration under the conditions and performance standards prescribed by the MLMP, it would have 80% confidence that the CDP's entrainment impacts ~~will be~~ would be fully mitigated and marine resources will be maintained, enhanced and restored in conformity with the Coastal Act's marine life protection policies."	Discharger must meet performance criteria that are very strict and that are based on the successful San Dieguito Lagoon compensatory mitigation project. The Discharger must prove to 95 percent confidence that the mitigation wetlands are performing like reference wetlands. On impingement, the Discharger must prove up through field testing that it is satisfying the conservative impingement obligation imposed. The characterization of the Minimization Plan as fully offsetting is warranted and accurate. Finally, the comment does not quote the Coastal Commission's final language, which states that "Poseidon is to create or restore *up to* 55.4 acres of coastal estuarine wetland habitat within the Southern California Bight." Id. at p. 2 of 19 (emphasis added).
124.	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.	We disagree with the recommendation. The Minimization Plan provides for the use of the best available site, design, technology, and mitigation measures to minimize intake and mortality of marine life. The Regional Board's evaluation has considered the implementation of the Minimization Plan during co-located operations, which include times when the EPS is discharging less than 304 MGD, and determined that the Minimization Plan provides for compliance with CWC Section 13142.5. Moreover, the Minimization Plan provides for sufficient mitigation to fully offset projected impingement and entrainment for annual average flows of 304 MGD when none of that flow is acquirable from EPS. Thus, the mitigation provided for will be sufficient even if EPS is providing none of CDP's source water. Commenter's suggested requirement would be inconsistent with the Coastal Commission's action.
125.	To accurately reflect the existing mitigation timing requirements and to clarify the Commission's review and permitting process, we recommend the Plan to be consistent with the Commission's requirements. We have provided an example below: *From Section* 6.3, *page* 6-18: "The MLMP describes the completion of specified tasks on a timeframe based upon the	The specific requirements for the Discharger's coastal development permit applications for Phases I and II are specifically cited and referenced in the Minimization Plan. The Minimization Plan states: "Specific requirements for coastal development permit applications for Phases I and II are detailed in Section 4.0 of the MLMP." Thus, the Regional Board does not believe the Commenter's proposed revision is necessary.

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	Coastal Commission's issuance of a coastal development permit for the CDP - an event that is expected to occur in the second quarter of 2009. Within ~~9~~ 10 months of receiving the coastal development permit for the CDP, Poseidon shall submit to the Coastal Commission for its review and approval a proposed mitigation site or sites, and a preliminary restoration plan for 37 acres of wetlands for its review and approval. Under this Minimization Plan, Poseidon shall make the same submission to the Regional Board for its review and approval. Poseidon may elect to complete all 55.4 acres of wetlands during this Phase I period, but must complete at least 37 acres. ~~Within 6 months of the Commission's approval of the site and restoration plan, subject to Poseidon's having obtained the necessary permits, Poseidon must begin construction of the wetlands.~~ Within two years of receiving the coastal development permit for the CDP, Poseidon must submit a complete ~~An~~ application for a coastal development permit for Phase I site or sites ~~must be submitted~~ to the Coastal Commission ~~within two years of receiving the coastal development permit for the CDP itself.~~ Within 6 months of the Commission's approval of this application, Poseidon must begin construction of the restoration sites. Within five years of issuance of the Phase I coastal development permit, Poseidon must submit a complete application for its proposed Phase II restoration. With a showing of good cause, Poseidon may request the Executive Director extend these deadlines. Specific requirements for the coastal development permit applications for Phases I and II are detailed in Section 4.0 of the MLMP."	
126.	We understand that the Board had expressed a preference that Poseidon conduct its mitigation within the San Diego Region. Commission staff believes that this would be consistent with the Commission's findings.	Comment noted.
127.	Also, while not a requirement, it is generally preferred that mitigation sites be larger rather than smaller, and that they be part of a coordinated or comprehensive mitigation effort.	The Discharger's extensive analysis has not identified many sites within the Southern California Bight with sufficient acreage to satisfy the Discharger's mitigation requirements under the MLMP at a single site. The MLMP and the

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	We are aware of at least two opportunities in the San Diego area for such coordination - with Southern California Edison at its San Dieguito restoration site, and with CalTrans at several locations it is considering as mitigation for its 1-5 widening project. 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.	Minimization Plan as drafted provide the Discharger with the flexibility necessary to allow it to select a mitigation site or sites to satisfy its mitigation obligations. As detailed in Section 6.6 of the Minimization Plan, the Discharger will consider the five mitigation sites within the San Diego region as priority sites for selection.
128.	Section 4.2 of the Plan describes a type of subsurface infiltration gallery as infeasible due in part to its size and maintenance requirements; however, recent studies and information suggest that a similar gallery at Carlsbad could be less than half the size and need far less maintenance than described in the Plan.	See Response No. 42(c) regarding the infeasibility of subsurface intake alternatives. Commenter provides the Regional Board no factual or scientific basis upon which to evaluate its assertion that "recent studies and information suggest that a similar gallery at Carlsbad could be less than half the size and need far less maintenance than described in the Plan." To the extent that Commenter is suggesting that the CDP's production capacity should be limited to accommodate a subsurface infiltration gallery, see Response No. 42(c).
14. 4/06/2009 Letter from Coast Law Group RE: Carlsbad Desalination Project		
129.	The procedural irregularities of the CDP approval process must be raised at every instance, especially as the disjointed review by agency staff and the public continues. While we certainly appreciate the direness of drought conditions in California and the San Diego region, the immediate need for a new source of water does not justify the reckless manner in which CDP consideration has progressed. 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. Without question, Poseidon chartered a course very early on with respect to EPS co-location, and now seeks to rationalize post-hoc virtually every piece of the regulatory puzzle. Many, if not all, of these considerations should have been resolved as a component of project design at its outset.	The comment identifies no specific procedural irregularity; the actual process has been procedurally sound, complying with all federal and state procedural requirements. The claim of "disjointed review" does not identify a procedural irregularity, nor is it factually accurate. The process has taken place over several years with a number of opportunities for public comment. The comment does not allege that the Commenter has been prejudiced in any way by the process, and the substantial opportunity for public participation indicates that there has been no prejudice. The characterization of the process as "reckless" by the Commenter seems intemperate and is wholly unsupported. The proceedings have been deliberative, with hours of public hearing, in addition to ample public comment periods. Very little new information has unfolded during the 2009 proceedings. The data upon which the Minimization Plan was based is scientifically sound; it was collected in 2004-2005 pursuant to a Regional Board-approved CWA Section 316(b) study, and is the subject of a January 2008, publicly available report. January 26, 2009 Comments Submitted by Latham & Watkins LLP, Vol. 3, Tab. 1. These data were developed for the express purpose of providing a sound foundation of data for assessment of entrainment and

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		impingement at the EPS intakes. In 2009, there have been additional analyses performed on this information base, in light of Regional Board staff requests, and public comment. The comment does not explain what is meant by "applicant misrepresentation and scientifically unsound data and statistical analyses." In April 2008, the Regional Board staff identified an error in an impingement estimate. The Discharger provided a revised impingement estimate later that month, making adjustments to correct the error. To the extent the comment refers to different approaches to impingement calculation, which are discussed in detail in Attachment 5 to the Minimization Plan, these are not misrepresentations. There are several alternative approaches to estimating potential impingement, and Regional Board staff desired that various approaches be explored. The Regional Board has conducted an extensive, years-long review of the CDP's potential for impingement and entrainment, and is requiring full offset through mitigation. In addition to mitigation, the Minimization Plan provides for the use of the best available site, design, and technology feasible to minimize the intake and mortality of marine life. With regard to co-location, the Minimization Plan provides a thorough analysis of siting considerations. In addition, project siting was reviewed by the Regional Board when it issued the project's NPDES/WDR permit in 2006, as well as by the City of Carlsbad when it conducted its EIR, the State Lands Commission, and the Coastal Commission. This issue has been thoroughly examined.
130.	In this regard, the City of Carlsbad's EIR, well beyond the time for challenge, reflects an entirely different approach to impacts assessment than now before the Board.	The Carlsbad EIR evaluated the Project's marine life impacts under CEQA and determined that the Project would not have significant impacts to marine life from entrainment or impingement, whether operating as a co-located or stand-alone facility. Adoption of the NPDES Permit was exempt from further CEQA review pursuant to CWC Section 13389, and the NPDES Permit incorporated the EIR's conclusion that the Project would not have significant marine life impacts. The commenter is correct that the EIR is no longer subject to challenge, and it is now conclusively established that the Project will not have significant marine life impacts pursuant to CEQA, operating with or without the EPS.

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		The Regional Board's review of the Minimization Plan is pursuant to CWC Section 13142.5(b), not CEQA. CWC Section 13142.5(b) provides a different standard of review than CEQA, requiring the best feasible and available measures to minimize intake and marine life mortality regardless of whether there are significant impacts under CEQA.
131.	That entrainment impacts are to be significant is no longer reasonably in debate, yet Poseidon continues to assert based on the EIR that any mitigation it provides is more charitable than scientifically required to offset impacts.	The Regional Board does not understand the Discharger to be claiming that its mitigation is in the nature of charity. Estimations of the CDP's potential entrainment are premised on conservative assumptions that ensure that the Discharger will offset fully any entrainment from its stand-alone operations. See Response No. 123.
132.	Based upon third-party independent review, the EIR conclusions regarding *di minimus* impingement impacts are also no longer valid. The EIR should hardly be referenced, let alone relied upon for PC compliance.	The Regional Board has conducted its own independent review of the Minimization Plan for compliance with CWC Section 13142.5(b) and has not relied upon the EIR as a substitute for such review, though many of the facts and analyses contained within the EIR are necessarily informative to the Regional Board's review. The Regional Board does not opine as to whether the impingement associated with the project is *de minimis*, as impingement is required to be fully offset in the mitigation wetlands. The Regional Board notes, however, that its proceedings do not reopen the City of Carlsbad's EIR, and the statute of limitations to challenge that EIR and its conclusions has long since lapsed. Pub. Res. Code Section 21167(c). Therefore, the EIR is "conclusively presumed to comply" with the provisions of CEQA. Pub. Res. Code Section 21167.2. "This presumption acts to preclude reopening the CEQA process even if the initial EIR is discovered to have been fundamentally inaccurate or misleading in the description of a significant effect or the severity of its consequences. After certification, the interests of finality are favored over the policy of encouraging public comment." *Laurel Heights Improvement Ass'n v. Regents of Univ. of Cal.*, 6 Cal. 4th 1112, 1130 (1993). The EIR is no longer subject to challenge, and it is now conclusively established that the Project will not have significant marine life impacts pursuant to CEQA, operating with or without the EPS. See also Response No. 130. To the extent that the comment refers to Dr. Raimondi's April 1, 2009 statement, that statement has no legal effect on the EIR, and was not prepared as part of a CEQA proceeding.

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		The Regional Board also notes that its present review is limited to approval of co-location operations for CDP benefit, but the Carlsbad EIR analyzed stand-alone operations in reaching the *de minimis* conclusion. In addition, the CEQA standard applied in the EIR is different than the standard being applied in this proceeding. See also Response Nos. 130 and 133.
133.	Should the Environmental Groups succeed in requiring preparation of a Supplemental EIR by the State Lands Commission, reliance upon the faulty EIR here by the Board could render its approvals null and void.	The SLC approved the lease for the CDP on August 22, 2008. The Regional Board is not aware that the SLC is planning to conduct a Supplemental EIR. The comment's claim is speculative, without foundation, and not directly relevant. While the comment describes the EIR as "faulty," the EIR is conclusively presumed valid under CEQA and is no longer subject to challenge. See Response No. 132. Regardless, the Regional Board is conducting an independent evaluation of the Minimization Plan pursuant to CWC Section 13142.5(b).
134.	And yet, the Board will certainly hear Poseidon repeat its mantra that because every agency that has looked at the project thus far has approved it, the Board should not add mitigation obligations or other project conditions beyond those already required. This is particularly true with respect to impingement impacts, discussed further below. Poseidon's attempts to "have its cake and eat it too" should be rebuffed by the Board, with focus on strict PC compliance maintained.	Under the terms of the Minimization Plan, the CDP will comply with CWC Section 13142.5(b) in that it will use the best available site, design, technology, and mitigation measures feasible to minimize the intake and mortality of marine life. As an additional condition, the Regional Board will impose impingement monitoring at the intake and fish biomass productivity monitoring at the mitigation site(s) to assure that impingement is offset fully by the mitigation site(s).
135.	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 Section 13292).	Under CWC Section 13292, the State Board is required to provide guidance to the regional boards in matters of procedure, policy and regulation. To ensure that the Regional Boards are providing fair, timely, and equal access to all participants in Regional Board proceedings, the State Board must undertake a review of the Regional Boards' public participation procedures, and report to the legislature regarding its findings and recommendations. In addition, the State Board is required to provide annual training to Regional Board members to improve public participation and adjudication procedures. The Regional Board has complied with all federal and state laws and regulations relating to public participation. The Regional Board has provided ample opportunity for public participation. Specifically, the Regional Board has provided public comment periods lasting at least one month preceding public hearings in June of 2006, August of 2006, April of 2008, February of

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		2009 and April of 2009. The Regional Board has received numerous public comments, has considered all public comments carefully during its deliberations and has responded to all significant public comments. The Regional Board has conducted an extensive, years-long review of the CDP's potential for impingement and entrainment, and is requiring full offset through mitigation. The process has been fair. See also Response 129.
136.	Poseidon faced significant and well reasoned staff opposition at the Coastal Commission, yet politics prevailed and much expert analysis (including independent third-party review) was ignored or given short shrift. Poseidon faced staff opposition at the State Lands Commission, and again prevailed on political lobbying coupled with drought policy arguments over science.	If the comment refers to the third-party review by Dr. Raimondi, the comment misstates the record. Dr. Raimondi's analysis resulted in the mitigation acreage increasing from 37 to 55.4 acres. His results were incorporated by the Coastal Commission. If the comment is referring to the interagency process directed by the Regional Board in April 2008, the comment once again misstates the record. See Response No. 4 for a discussion of this process. Expert agency input in that process was incorporated and is reflected in the MLMP, as approved by the Coastal Commission. The comment provides no specific facts to support its premise.
137.	In light of comments by Regional Board members at the February 11, 2009 hearing, we have every reason to believe a majority of the Board has already made up its mind to approve the CDP regardless of the impacts and mitigation obligations warranted by evidence in the record.	The comment is mistaken. The Regional Board has conducted an extensive, years-long review of the CDP's potential for impingement and entrainment, and is requiring full offset through mitigation. Further, the Minimization Plan provides for the use of the best available site, design, and technology measures feasible to minimize the intake and mortality of marine life. See Response No. 129. The comment provides no specific facts to support its premise.
138.	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-alone operations is necessary.	Comment noted. Stand-alone impingement and entrainment were projected and assessed for the purpose of determining mitigation. The Regional Board, however, will conduct a re-review if the CDP converts to stand-alone mode.
139.	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.	Comment noted.
140.	The Tentative Order recommends additional PC 13142.5 review only when the "EPS permanently ceases operations	The comment reflects a misunderstanding of the rationale for the permanent cessation trigger. It is based on the Discharger's lack of access to the intake

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	and the Discharger proposes to independently operate the existing EPS seawater intake and outfall for the benefit of the CDP..." This all-or-nothing standard has many problems. Foremost, it incentivizes continued operation of the EPS and the environmentally undesirable OTC infrastructure. The owners of the EPS are seeking to construct a new, more efficient power plant adjacent to the EPS. In fact, the EPS would be entirely retired in relatively short order but for the fact that the California Independent System Operator has determined a portion of the EPS is necessary for electricity grid reliability (pending construction of additional energy generating or transmitting facilities). As such, the EPS is expected to run at very low operational capacities, with attendant reductions in intake flows.	system while the intakes continue to be used, at any level, as part of power plant operations. See Response No. 84. Even assuming that the EPS were to run at low operational capacities, these access constraints would remain. In light of the possibility that EPS flows would be less than 304 MGD for part of the time and may even be zero from time to time, the Regional Board required the Discharger to offset potential entrainment and impingement as if the EPS were not operating at all. This very conservative approach renders the permanent cessation approach fully protective. It is hard to understand how the permanent cessation standard incentivizes OTC infrastructure. The new power plant to which the comment refers is not an OTC proposal. If approved, the proposed project, called the Carlsbad Energy Center, would be a 558 MW gross combined-cycle generating facility configured using two units with one natural-gas-fired combustion turbine and one steam turbine. The Carlsbad Energy Center would be air-cooled and would not employ once-through ocean water cooling. If the comment were right, then one would expect the proposal for the Carlsbad Energy Center to call for continued OTC operations. In addition, it is not the Regional Board's role to incentivize OTC, or not. Rather, the Regional Board's role is to regulate OTC used by power plants under both state and federal law. Regional Board review of EPS's OTC infrastructure and operation is scheduled to begin on April 14, 2011, when a Report of Waste Discharge for the power plant is due. It is speculation whether the EPS would be retired in short order absent certain Cal-ISO determinations, referred to in the comment.
141.	Second, the all-or-nothing standard for reopening the CDP permit would prolong such consideration in circumstances where only a relatively small portion of the CDP intake is required for EPS maintenance.	See Response Nos. 124 and 140.
142.	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. Such a condition would accurately reflect the	The recommendation to reopen the CDP permit when the EPS intake flows are less than 50%, represented at 152 million gallons per day, is neither necessary nor warranted. See Response Nos. 124 and 140.

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	CDP's position in driving total intake flows, and appropriately justify reconsideration of the project at this location.	
143.	There should be no question that site analysis will be part of the stand-alone reassessment under PC 13142.5. Should the Board refuse to make this point clear, then the existing site analysis is clearly insufficient and the Project cannot be approved based upon the current record. (See further discussion of site alternatives analysis, below)	The Regional Board's present evaluation of the CDP and the Minimization Plan is limited to minimization efforts related to operation of the CDP as co-located with the EPS for CDP benefit. This is consistent with the description of the Discharger's proposed CDP operation in its Report of Waste Discharge and in Order No. R9-2006-0065. Additional evaluation of the CDP's operations pursuant to CWC Section 13142.5(b) would be necessary if EPS permanently ceases power generation operations and the Discharger submits a new Report of Waste Discharge to operate EPS's seawater intake and outfall independently for the benefit of the CDP in a "stand-alone" capacity. In the event the CDP seeks to become a stand-alone facility, the Regional Board will consider all relevant factors under CWC Section 13142.5(b). Accordingly, the existing site analysis of a co-located CDP is not insufficient. See also Response No. 31 regarding the expiration of the statute of limitations for challenging the Regional Board's adoption of Order No. R9-2006-0065 identifying the CDP site as co-located with the EPS.
144.	But, given (a) the overwhelming evidence indicating relatively near term cessation of OTC throughout the country due to legal constraints and ongoing advances in power generation technology, and (b) the site-specific circumstance of EPS replacement and OTC phase-out, allowing the CDP to be built in a location without alternative intake capabilities is much like allowing construction of a house directly within the path of a planned future highway.	This comment appears to argue that co-location adjacent to the EPS does not satisfy CWC Section 13142.5(b). The Regional Board disagrees that the speculative phase-out of OTC, and the potential for the Carlsbad Energy Center to replace the EPS, makes the site analysis infirm. The Regional Board is unaware of any near-term cessation of OTC, and the comment provides no specific information on how or why OTC cessation will be mandated legally or result from power generation technology. For example, the Regional Board is aware of no plans to cease OTC at the San Onofre Nuclear Generating Station. The Regional Board also notes that in its recent decision, *Entergy Corp. v. Riverkeeper*, 129 S. Ct. 1498, 1504 (2009) (*Riverkeeper III*) the United States Supreme Court pointed out that the EPA considered but declined to mandate the elimination of OTC because, while closed-cycle cooling could reduce impingement and entrainment mortality, the cost of rendering existing facilities would be nine times the cost of compliance with OTC performance standards, which produce ranges of impingement and entrainment that are similar to closed-cycle systems with

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		fewer implementation problems. Even if OTC were phased out across the country, it does not run that co-location with the EPS is problematic. Under the Carlsbad Energy Center proposal, Units 4 and 5 of the EPS intake would continue to operate, which have the capacity to meet fully the CDP's feedstock needs, even though this would not be after OTC. See Response No. 140, describing the Carlsbad Energy Center.
145.	While the Environmental Groups appreciate that staff and Poseidon are finally reciting the appropriate legal standard of review under PC Section 13142.5, we continue to disagree that the statute is being properly applied.	The Regional Board properly has applied, and continues to apply properly, CWC Section 13142.5(b), the applicable legal standard, to the CDP. The Minimization Plan is explicitly designed to ensure full compliance with the statute by analyzing and requiring the application of "the best available site, design, technology, and mitigation measures feasible in order to minimize the intake and mortality of all forms of marine life." Specifically, the Minimization Plan details how all four elements under CWC Section 13142.5(b) – site, design, technology, and mitigation – will be used to minimize intake and mortality.
146.	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… But, it does not follow that agency consideration of alternatives can be limited by an artificially constrained description of project purpose.	CWC Section 13142.5(b) does not require an analysis associated with the project scope or project objective. Rather, CWC Section 13142.5(b) requires the Discharger to "use the best available site, design, technology, and mitigation measures feasible … to minimize the intake and mortality of all forms of marine life." In any event, the Regional Board does not agree with the comment that the purpose of the project is too narrowly defined. The objectives of the CDP are to provide a local and reliable source of potable water to supplement imported water supplies available to the City of Carlsbad and the San Diego region, reduce local dependence on imported water, provide water locally at or below the cost of imported water supplies, and help meet the CDP's planned contribution of desalinated water to regional water supply goals. The CDP will supply Carlsbad with 100% of its drinking water needs, approximately 21,000 AFY of potable water created at the desalination plant (out of a total output of 56,000 AFY). The CDP's location is critical for serving Carlsbad and the surrounding water districts in a feasible manner because of its close proximity to the existing intake and outfall structure and key delivery points of the distribution system of Carlsbad, the largest water user.

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		An additional objective of the CDP is to locate and design a desalination plant in a manner that maximizes efficiency for construction and operation of the Project at the same time it minimizes the environmental effects. Siting the CDP at the EPS allows the CDP to optimize the cost of delivery of desalinated water produced at the facility and the environmental impacts associated with the construction and operation of the Project. It also avoids the construction of new intake and discharge facilities, providing significant environmental and cost benefits.
147.	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: -The CDP is intended to service water districts beyond the boundary of the City of Carlsbad. In addition to the Carlsbad Municipal Water District, Poseidon has service contracts with Vallecitos Water District, Sweetwater Authority, Valley Center Municipal Water District, Santa Fe Irrigation District, Olivenhein Municipal Water District, Rincon Del Diablo Municipal Water District; Rainbow Municipal Water District, and possibly others. While the City of Carlsbad may be able to connect directly to the CDP, the others certainly will not. Hence, siting the project in Carlsbad is not critical to service of the other water agencies. -The non-Carlsbad Agencies will receive water through the County Water Authority's network of conveyance and storage. Of the 50mgd expected to be produced by the CDP, approximately half is allocated to water agencies outside of Carlsbad. All of these agencies are members of the County Water Authority, and purchase varying amounts of imported water via the Authority's conveyance and storage system. Exhibit 1, attached hereto, taken from the County Water Authority's Draft Regional Facilities Master Plan (2002) (CWA Master Plan) reflects the interconnectedness of the agencies and County Water Authority infrastructure. -Desalinated water produced virtually anywhere within the	The Regional Board does not agree that the site alternative analysis has been restricted improperly or that desalinated water could be produced virtually anywhere within the Metropolitan Water District's service area while still meeting project objectives. See Response No. 148. See also Response No. 31 regarding the expiration of the statute of limitations for challenging the Regional Board's adoption of Order No. R9-2006-0065 identifying the CDP site as co-located with the EPS.

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	areas serviced by the Metropolitan Water District can be allocated to end users and achieve Poseidon's stated project objective. The focus on "local" reliability simply means an alternative to reliance on Colorado River and State Water Project imported water.	
148.	A desalination plant constructed outside of the County Water Authority's boundary could be financed by the Authority or its member agencies, and result in a paper-transfer of water rights between the jurisdiction that would receive the actual desalinated water and the financing entity, with implementation through MWD. Just as Poseidon is proposing to build the CDP in Carlsbad and service water districts in South San Diego County, so could it build the plant anywhere along the San Diego County coastline and sell water back to Carlsbad and the full suite of agencies with which it has contracted. Exhibit 2, attached hereto, also from the CWA Master Plan shows the regional conveyance infrastructure, including MWD input connections. A good example of the feasibility of such water transfers is evident in the Imperial Irrigation District (IID) agreement with the County Water Authority. The so-called IID Water Transfer Agreement is a contract whereby the County Water Authority will purchase up to 20,000 acre feet per year of Colorado River Water previously allocated to agricultural uses in the Imperial Valley. Because these flows are truly "owned" by the IID (due to historical usage), and not likely to be significantly reduced as Colorado River use restrictions are implemented, the agreement to transfer the water to the County Water Authority is considered 100% reliable. (See p. 2-6 of the CWA Master Plan, "Throughout the 30-year study period, IID transfer water is considered to be 100 percent reliable.") In light of the physical connectivity between the MWD, the County Water Authority, and all of the contracting water agencies, constraining the PC 13142.5 "best site" analysis to the City of Carlsbad is inappropriate.	To the extent that the comment suggests that an alternative site in San Diego County, in or outside of Carlsbad, would be feasible, the Regional Board disagrees. There are no other site locations in San Diego County available or feasible within the meaning of CWC Section 13142.5(b) to locate the CDP. The Minimization Plan and other documents provided by the Discharger explain why alternative site locations are not feasible and do not meet project objectives. Commenter has not specifically suggested a feasible available alternative location that has access to seawater. Locations remote from the ocean would be infeasible due to the lack of access to seawater and the infeasibility of pumping seawater and brine to and from the desalination facility remote from the ocean. In addition, locating the CDP at any other location in San Diego County would require the construction of a new seawater intake system. This has been found infeasible due to the costs of constructing a completely new intake system and the conflict with a fundamental project objective of locating and designing a desalination plant that maximizes efficiency for construction and operation of the CDP at the same time it minimizes the environmental effects. The EPS site is the best available site feasible to locate the CDP, as this site minimizes the intake and mortality of marine life because it provides for the beneficial re-use of EPS's discharge water as source water for the CDP. The CDP will draw source water from Agua Hedionda Lagoon only to the extent that EPS's discharge flows are insufficient. The location at the EPS allows the CDP to minimize the cost of delivery of desalinated water produced at the facility and the environmental impacts associated with the construction and operation of the CDP. Co-locating the CDP with the EPS also avoids the construction of new intake and discharge facilities, providing significant environmental and cost benefits. To locate the CDP outside the City of Carlsbad would conflict with another fundamental project objective: to provide a local and reliable source of

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		potable water to supplement imported water supplies available to the City of Carlsbad and the San Diego region in order to reduce local dependence on imported water and provide water at or below the cost of imported water supplies. A facility located outside the City would not provide a reliable source of potable water under the control of the City of Carlsbad. The co-location arrangement provides a site in Carlsbad to serve Carlsbad's water needs, a secure local water supply that is not subject to variations of drought or other political or legal constraints on traditional sources of water. The CDP will supply Carlsbad with 100% of its drinking water needs, approximately 21,000 AFY of potable water created at the desalination plant (out of a total output of 56,000 AFY). The CDP's location is critical for serving Carlsbad and the surrounding water districts in a feasible manner because of its close proximity to the existing intake and outfall structure and key delivery points of the distribution system of Carlsbad, the largest water user. To locate the CDP in any location outside the City of Carlsbad or its vicinity would conflict with another project objective because it would be an imported source of water requiring the import of water into northern San Diego County through pipelines that would be subject to disruption. Paper water transfers would not protect Carlsbad from insufficient water supplies if imported water supplies are disrupted by earthquakes or other natural disasters. On a more policy level, reliance on paper-water transfers over significant distances has proven to disappoint many end users of water in recent years. Even State Water Project ("SWP") contracts have not protected end users, as courts have observed that entitlements to water from the SWP "represent nothing more than hopes, expectations, water futures or . . . 'paper water'." *See, e.g., Planning & Conservation League v. Dep't of Water Res.,* 83 Cal. App. 4th 892, 908 n.5 and 914 n.7 (2000) ("Paper water always was an illusion. 'Entitlements' is a misnomer, for contractors surely cannot be entitled to water nature refuses to provide or the body politic refuses to harvest, store, and deliver. Paper water represents the unfulfilled dreams of those who, steeped in the water culture of the 1960's, created the expectation that 4.23 [million acre-feet per year] of water could be delivered by a SWP built to capacity."); *see also Cal. Oak Foundation v. City of Santa Clarita,* 133 Cal. App. 4th 1219, 1228 (2005) (quoting *Planning & Conservation League v. Dep't of Water Res.,* 83 Cal. App. 4th at 908 n.5 and

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		914 n.7, for the foregoing proposition). See also Response No. 31 regarding the expiration of the statute of limitations for challenging the Regional Board's adoption of Order No. R9-2006-0065 identifying the CDP site as co-located with the EPS. 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. These sites are the only parcels in the entire City of Carlsbad with compatible land use designations and sufficient space available to accommodate the desalination facility. 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. The facts set forth in this Section 52, standing alone, constitute a separate and independent basis for 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). 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

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		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 Regional Board incorporates these findings by the Coastal Commission in full, by reference. 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 facts set forth in this Section 53, standing alone, constitute a separate and independent basis for 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). 54. 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). The Discharger has spent substantial time and money in reliance on the Board's 2006 determination, which was not subsequently challenged and is no longer subject to superior court review, and the Board believes such determination should not be disturbed. Such 2006 determination constitutes a separate and independent basis for a determination that the CDP has complied with 13142.5(b). 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 the findings above in Sections 43-53, that the EPS site is the

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		best available site feasible to minimize the intake and mortality of all forms of marine life pursuant to Section 13142.5(b). 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 following separate and independent reasons: a. First, no alternative location with access to seawater was described by the commenter. 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. b. Additionally, 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 is fully addressed in Section 45, and was found to be infeasible due to the costs of constructing a completely new intake system and the conflict with the third fundamental project objective. c. Any location outside the City of Carlsbad would conflict with the first fundamental project objective as described in Section 6 because it would not provide a reliable source of potable water under the control of the City of Carlsbad. d. Any location outside the City of Carlsbad or its vicinity would conflict with the second project objective as described in Section 6 because it would be an imported source of water requiring the import of water into Northern San Diego County through pipelines that would be subject to disruption. Paper water transfers would not protect Carlsbad from insufficient water supplies if imported water supplies were to be disrupted by earthquakes or other natural disasters.

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149.	PC section 13142.5 analysis of project design to minimize marine life mortality suffers from similar failings as the site alternatives assessment. In the Flow Plan, Poseidon presupposes that any design of the project that does not achieve the stated 50 mgd goal of desalinated water production renders such technology infeasible.	The Regional Board disagrees that the Discharger presupposes that technology is infeasible if it does not produce 50 MGD of desalinated water. The Discharger, after an analysis of the necessary amount of desalinated water that must be created in order for the CDP to be economically viable, concluded that about 50 MGD of desalinated water is necessary for an economically viable enterprise. Other alternatives were analyzed. For example, a reduced output alternative (25 MGD) was analyzed in the EIR for the CDP and was found to be insufficient to meet project objectives with no environmental benefits. The EIR also considered an alternative site at which only 10 MGD of desalinated water could be produced due to outfall constraints. This amount was inadequate to satisfy even Carlsbad's demand. The Coastal Commission also found, and the Regional Board agrees, that replacing the CDP with multiple smaller desalination facilities would result in far greater environmental impacts and costs, would not address the water needs of Carlsbad and the San Diego area, and would not conform to Coastal Act policies. The Discharger's analysis revealed that a facility with a capacity of 50 MGD desalinated water is necessary to produce sufficient water 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. These key objectives could not be met with a scaled-down project that produces less than 50 MGD desalinated water.
150.	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. Here, the cart is leading the proverbial horse.	The Minimization Plan considers all required factors set forth in CWC Section 13142.5(b). Each factor – site, design, technology, and mitigation measures – is essential to informing the Regional Board's overall assessment of compliance with the statutory standard. The commenter seems to suggest that of these four factors, technology is of elevated importance. CWC Section 13142.5(b) does not, however, elevate any one factor to a level of importance greater than the others. Accordingly, all four factors are analyzed in the Minimization Plan in order to minimize the intake and mortality of marine life. The Minimization Plan incorporates the best available and feasible

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		technologies, notwithstanding the comment's suggestion to the contrary. The comment does not identify any specific technology which commenter believes is missing from the Minimization Plan, or how that technology might not only be available, but also feasible.
151.	First, it is a legal fallacy and mere regulatory construct that the CDP design options must be limited to those that will produce 50 mgd of potable water. The number could just as easily been 25 mgd, or 100 mgd. No rational basis exists in the record to support the 50 mgd volume as the only reasonable size for the CDP, yet other sized design options have been summarily discarded.	The Regional Board does not agree with Commenter's suggestion that there is no rational basis to support the finding that a facility with a capacity of 50 MGD desalinated water is appropriate. See Response No. 149 for a discussion of Discharger's analysis of the need for a 50 MGD facility.
152.	Indeed, PC 13142.5 contemplates that the size of the plant (i.e. the design) will be driven by minimization of marine life mortality, not a strict adherence to an artificially identified volume goal.	Commenter does not provide any support for this interpretation of CWC Section 13142.5(b), and the Regional Board does not agree with this interpretation The Regional Board disagrees that CWC Section 13142.5(b) places limitations on the size of the CDP. See also Response No. 149 for a discussion of Discharger's analysis of the need for a facility of a certain capacity (50 MGD).
153.	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, from alternative intakes to impingement reduction screens are discarded because they are not feasible in conjunction with a co-located CDP and EPS.	The Regional Board's present evaluation of the proposed project is limited to minimization applicable to co-location operation for CDP benefit – not a stand-alone facility. Evaluation of additional or different technologies at the intake would be necessary if the EPS permanently ceases power generation operations, and the Discharger proposes, through a new Report of Waste Discharge, to operate the EPS's seawater intake and outfall independently for the benefit of the CDP in a "stand-alone" capacity. Under CWC Section 13142.5(b), the Discharger is obligated to use the best available technology feasible. In addition to considering limitations attributable to the EPS's operations, Discharger's feasibility analysis considered several factors, including project timing, economic concerns, environmental costs, and technological limitations. The comment is mistaken to the extent it suggests that a single factor was used in the technology evaluation. For example, the Discharger conducted a thorough review of design and technology features, including alternative intakes, alternative screening

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		technologies, and desalination technologies, to minimize marine life mortality under co-located operating conditions. With regard to alternative intakes, the CDP's hydrogeologic studies confirm that none of the alternative intakes evaluated are capable of delivering the 304 MGD of seawater needed for environmentally safe operation of the CDP. Furthermore, the quality of the water available from the subsurface intake would be untreatable due to an extremely high salinity level, excessive iron, and high suspended solids. The Coastal Commission found, and the Regional Board agrees, that alternative intakes that might avoid or minimize environmental impacts are infeasible or would cause greater environmental impacts. See Coastal Commission Recommended Revised Findings, Coastal Development Permit for the Discharger Carlsbad Desalination Project, page 80 of 133 (Previously submitted January 26, 2009, Latham & Watkins LLP Comments, Appendix A.). See Response No. 42(c) for further analysis of alternative intakes.
154.	The April 1, 2009 Staff Report identifies a data discrepancy with regard to flows reported from the EPS during the relevant sampling period. (April 1, 2009 Staff Report at 15 fn. 31.) EPS monitoring reports also show flows consistently lower for the data set compared to that contained in CDP/EPS consultant Tenera's flow data. (Personal communication with staff). Both data sets should be made publicly available, and re-evaluated.	See Response Nos. 86 and 87.
155.	If impingement rates are calculated as mass/volume, the data set will be skewed in Poseidon's favor when flow rates are over-estimated.	See Response Nos. 86 and 87.
156.	Poseidon's assertion that .5 feet/second (fps) velocity at inlet screens will reduce impingement to insignificant levels is unsupported.	See Response No. 88.
157.	We concur with Staff's determination that most impingement intake and mortality occurs at the rotating screens rather than on the bar racks. (April 1, 2009 Staff Report at 8).	See Response No. 89.
158.	Further, installation of VFDs on CDP intake pumps to reduce total intake flow for the desalination facility will only reduce	See Response 90.

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	intake flow for up to 104 MGD, as 200 MGD (dilution seawater) never flows to the desalination plant. Any reduction of impingement through use of VFDs (which is unvalidated and unquantified) is therefore only attributable to that portion of flows going directly to the CDP. (April 1, 2009 Staff Report at 10). As Poseidon does not currently "take credit" for VFDs, or propose to use any design or technology measures to reduce impingement, we offer this position to rebut any future attempts to "take credit" for such measures.	
159.	Further, because Poseidon fails to quantify the reduction in impingement resulting from any such technological "improvements," characterization as such is unwarranted and does not serve to meet PC section 13142.5 requirements.	See Response 91.
160.	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.	See Response No. 92(a).
161.	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. As staff correctly points out, Poseidon's proposed rainfall "flushing" theory is based on several flawed assumptions. • High impingement rate is not always associated with heavy rainfall. (April 1, 2009 Staff Report at 14). • High impingement rate does not correlate with any rainfall. (April 1, 2009 Staff Report at 15). • The mechanism by which heavy rainfall might cause high impingement is unclear. (April 1, 2009 Staff Report at 15).	See Response Nos. 92 and 93.

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	• Poseidon's proposed theory is unsubstantiated. Moreover, the data itself belies the proposed "flushing" theory, as the percentage of freshwater fish impinged is small. (April 1, 2009 Staff Report at 15).	
162.	Further, Poseidon's proposed theory, as supported by Jenkins and Chang, is flawed and unsupported by the existing data. Indeed, Dr. Chang's analysis is flawed in and of itself. As Dr. Chang admits, the sampling period (2004-2005) was an abnormally wet period, as total rainfall was 26 inches as opposed to a typical average of 13 inches. However, Dr. Chang's overly narrow focus on the two data points undermines the credibility of his entire analysis. Without providing the rainfall data or statistical analysis of the probability of occurrence for the entire data set, Poseidon cannot credibly argue that the two "suspect" data points are outliers.	See Response Nos. 94, 95(a), and 96(b).
163.	Dr. Jenkins' data is equally unpersuasive. He first concludes that the rainfall data does not alter the validity of the sampling data, because lagoon salinity was not depressed on a persistent basis. (Jenkins, 2). He then concludes the above-average rainfall during the sampling period was "fortuitous" because it spanned the full range of "natural hydrologic variability" and "captured a range of conditions, including some that are not likely to re-occur in most years."	See Response No. 96.
164.	(a) Similar to Dr. Chang's analysis, Dr. Jenkins' assertions as to the two contested data points is flawed as well due to his overly narrow focus on those two data points. (b) In failing to compare those two days to the entire sampling period, he also fails to prove why they should be excluded.	(a) The comment is conclusory, constitutes argument, and is without foundation. Like the focus of Dr. Chang's analysis, discussed in Response No. 95(a), the focus of Dr. Jenkins' analysis similarly was not "overly narrow" or narrow at all. Dr. Jenkins worked with all the available data, including hydrologic, water quality, and biological, and did not singularly focus on "two contested data points," as the comment suggests. See "Statement Addressing Regional Board Staff Concerns regarding the Biological Data Used to Support Poseidon's Impingement and Entrainment Assessment," Dr. Scott Jenkins, Ph.D., Note on Regional Board Staff Concerns Regarding Rainfall Effects on Impingement Sample Outliers per RWQCB Staff Report 27 March 09, Dr. Scott Jenkins, Ph.D.

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		(b) The comment is mistaken that Dr. Jenkins failed to compare the two suspect sampling events to the entire sampling period. Dr. Jenkins submitted the relevant hydrological data to the administrative record along with his study. These data support the conclusion that, on a comparative basis, the impingement recorded on January 12 and February 23 should be treated as outliers. See Response Nos. 93(l) and 96 for further discussion of the two data points as outliers. Dr. Jenkins did compare the rainfall preceding the two outliers with other rainfall events. See Figures 2, 3(a) and 4 in, "Statement Addressing Regional Board Staff Concerns regarding the Biological Data Used to Support Poseidon's Impingement and Entrainment Assessment," Dr. Scott Jenkins, Ph.D.
165.	The impingement impact calculation also seems to reflect only "normal operations" and not heat treatments.	See Response Nos. 98 and 101.
166.	Poseidon's Flow Plan calculations (and Dr. Raimondi's calculations based on approach 3-B) result in a weighted average impingement rate of 4.7 kg/day. This results in an annual impingement of 1715kg (to a 50 percent confidence level).	The comment mischaracterizes the flow-proportioned value of 4.7 kg/day as "Poseidon's." At the February 11, 2009 public hearing, Regional Board staff requested the Discharger to perform flow-proportioned calculations of impingement. The Discharger acquiesced in this request. The flow-proportioned calculations are more fairly ascribed to Regional Board staff. See also Response No. 113.
167.	However, as pointed out in the April 1, 2009 Staff Report, heat treatments will continue during co-located operations. The organisms already in the intake channel are killed when the intake channel is closed off, and the heated discharge water is circulated for hours. (April 1, 2009 Staff Report at 12 fn. 23). These organisms end up impinged when the pumps return to normal operation.	See Response Nos. 98 and 101.
168.	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. Thus, a larger number of	The CDP's operations will not affect heat treatment schedules at the EPS. In stand-alone mode, the CDP will not use heat treatment. Therefore, no mortality associated with heat treatment is attributable to the CDP. See Response Nos. 98 and 101. To the extent that the comment is suggesting that on those days in which the

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	organisms will be impinged at the time of heat treatments.	EPS provides insufficient discharge to meet the CDP's source water days the CDP's additional flows will result in more heat treatment-related mortality, the comment is incorrect. Although impingement at the screens is related to flow volumes, there is no relationship between flow volumes and heat treatment-related mortality. Heat treatment causes mortality when the intake system is closed down and the water trapped in the intake system is heated and repeatedly circulated; the amount of water circulated during heat treatment is not related to the amount of water taken in throughout the day.
169.	The proportion of impingement due to CDP operations as opposed to EPS operations can be calculated real-time by determining the percentage of flow attributable to CDP operations, and multiplied by the total impingement due to heat treatments.	See Response No. 101.
170.	We agree with Dr. Raimondi's assessment that the approach used by Poseidon (and Nordby) is flawed for the following reasons: (a) Entrainment compensation cannot also be used for impingement compensation. (Raimondi, 1-2) (b) Nordby's approach relies on a 27-year old study by Larry Allen that is inapplicable here. (c) Nordby's estimation of fish production is based on mudflat wetlands, which only comprise 40 percent of Poseidon's proposed entrainment mitigation (as adopted by the CCC). (d) The estimation of fish production also assumes no current production - which is only true if wetlands are created, not restored. The MLMP contemplates significant restoration, but because the site or sites have not been identified, quantification of restoration and creation acreages is not possible. (e) Nordby's calculations are based on a 50 percent confidence level. The accepted scientific standard is 95%,	See Response No. 103.

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	and the Coastal Commission precedent is 80% for the MLMP mitigation calculations. (Raimondi, 3). (f) Nordby's calculations rely on fish production calculations (productivity of newly created wetlands) based on species that are entrained, which results in "double-counting". (g) The calculations incorrectly assume entrainment calculations equate to actual impact of entrainment. (h) Entrained species are also impinged - thus the impacts are additive, and cannot be mitigated through creation or restoration of wetlands that mitigate for entrainment.	
171.	Two findings of the Mitigation Success Study are particularly relevant here: • Given the low ecological condition of most mitigation wetlands, it seems likely that many mitigation projects did not replace the functions lost when wetlands were impacted. • A lack of explicit consideration of the full suite of functions, values, and services that will be lost through proposed impacts and might be gained through proposed mitigation sites and activities is at least partly due to regulatory agencies approving mitigation projects with conditions or criteria that are too heavily focused on the vegetation component of wetland function, with inadequate emphasis on hydrological and biogeochemical conditions and their associated functions and services.	See Response No. 104(b).
172.	The basic premise for compensatory mitigation is that the newly created or restored wetlands actually compensate for the loss associated with the project. Thus, the mitigation required for CDP impingement must take into account the validity of the impact calculations and the validity of mitigation calculations. Put another way, we cannot be certain that the impingement calculations truly reflect actual impingement impacts. They serve as a proxy for actual	See Response No. 105. It is precisely because there cannot be certainty that "the impingement calculations truly reflect actual impingement impacts" that the Regional Board is requiring the Discharger to prove up the calculations through a field program and empirical study. The Regional Board chooses the certainty of the empirical approach over the "statistical certainty" referred to in the comment.

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	impingement assessment. Thus, the highest level of statistical certainty must be applied to impingement impact calculations. This equates to a 95 percent confidence interval in Raimondi's study. (Raimondi, 4).	
173.	Second, the mitigation wetland productivity calculations should be conservative, as underscored by the lack of success in actual wetland mitigation. Thus, because wetland productivity assumptions are based on completely newly created wetlands, Poseidon must be required to actually create wetlands, as opposed to restoring them.	See Response Nos. 103(d) and 104(a).
174.	Another assumption associated with wetland productivity relates to the type of wetland created. Poseidon's MLMP presents a mix of wetlands, comprised of 40 percent intertidal mudflats or subtidal. Dr. Raimondi's calculations associated with this mix should be used to provide wetland mitigation acreage. (Raimondi, 6).	See Response No. 108.
175.	Staff correctly points out that the success of MLMP entrainment mitigation is assessed through a 95 percent confidence interval of correlation in physical and biological criteria compared to (yet-unspecified) reference stations, for a period of three consecutive years. (Staff Report, 19).	See Response No. 110.
176.	This iterative assessment may result in a period of time where the restored wetlands are not meeting these criteria. For those years when the criteria are not met, the goal of compensatory mitigation-namely offsetting CDP impacts through productivity at the restored wetlands-is not being met. Thus, the whole basis for calculating the wetland mitigation is undermined. In order to account for this, a penalty for not meeting the performance criteria within a specified timeframe must be included in the permit. For example, if within 5 years of wetland restoration the 3-year benchmark is not attained, an additional 5 years of unmitigated impingement impacts must be taken into account. This would result in a total increased wetland	See Response Nos. 111 and 112.

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	restoration acreage. As the benchmark performance standards continue to be unmet, the penalty increases.	
177.	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. 2) Impingement impacts should be calculated at a rate of 304 MGD attributable to CDP impacts, or calculated real-time. 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. 4) Wetlands must be created, not restored. 5) Penalties should be assessed when performance criteria are not met for a given period of time. 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.	See Response No. 113.
178.	Approval of the MLMP as currently proposed violates the PC 13142.5 requirement that best available mitigation be implemented, as the Board cannot make such assessment without baseline information about the site or sites where wetlands will be created or restored.	CWC Section 13142.5(b) does not require that any plan adopted pursuant to CWC Section 13142.5(b) identify a particular mitigation site. The Minimization Plan and MLMP have, however, identified 11 pre-approved sites, with the five located within the boundaries of the Regional Board's jurisdiction identified as priority sites. Both the Regional Board and the Coastal Commission must approve the Discharger's selected mitigation

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		site(s) and corresponding Restoration Plan. See Response No. 240 for a discussion of the Restoration Plan. The MLMP provides strict performance criteria, which are enforced by the Regional Board and the Coastal Commission. See Response Nos. 109 and 240.
179.	Given the disagreements among experts regarding the so-called outlier impingement events, additional data collection and analysis is warranted.	See Response No. 113.
180.	The fact that the Regional Board staff must rely upon a 1979 document does not necessarily speak to the unreliability of that document, but rather, the appropriateness of confirming its findings with additional data now.	Comment noted that the 1979 document is not necessarily unreliable. Many older documents are reliable. The comment offers no reason why the 1979 study cannot be used as one of several bases to characterize the potential impingement at the CDP. "Additional data" have been gathered since the 1979 study. Under a Regional Board approved work plan, Tenera conducted impingement and entrainment sampling for a one-year period from June 2004 to June 2005 pursuant to the IM&E Study. (Tenera 2005). For further discussion on this field program, see Response Nos. 6 and 72. The Tentative Order requires the collection of more "additional data," including impingement monitoring at the intake and productivity monitoring at the mitigation site(s).
181.	That Board staff, an independent third-party reviewer, and the Coastal Commission staff all agree (with Environmental Groups) that impingement impacts will be greater than previously disclosed by Poseidon, that they will be significant, and that they require mitigation in addition to that provided for entrainment impacts, provides more than enough reason to discount Poseidon's veiled attempts to argue such concerns were somehow waived by past actions.	The Regional Board does not understand the Discharger to be asserting any such waiver. The Regional Board has undertaken a full and independent review of the impingement issue, and is not deferring to any past action on this issue. It is within the purview of the Regional Board to ascertain whether the potential impingement is significant, or not. Regional Board staff informed the Regional Board at the April 8, 2009 hearing that science does not provide a line in the sand over which impingement necessarily must be considered "significant." The Porter-Cologne Act requires the Regional Board to balance a variety of factors to reach a reasonable outcome, and ensure that intake and mortality are minimized. The Regional Board finds that it does not need to determine whether impingement is *de minimis*, as the Discharger is being required to monitor actual impingement and offset it with fish productivity at the mitigation wetlands, as detailed in Tentative Order R9-2000-0038, regardless of whether it is *de minimis.*

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182.	Poseidon, in its rebuttal of Dr. Raimondi's impingement impacts assessment repeatedly sets up straw man arguments that are incorrect reflections of Dr. Raimondi's position. The Board should further consider this evidence of Poseidon's misrepresentation of facts throughout the regulatory process. (See, for instance, Poseidon's Comments, April 2, 2009, at p.3, claiming that Dr. Raimondi "has opined that juvenile and adult fish that will be present in the proposed wetlands cannot be used to compensate for fish lost at the CDP," and claiming that such assertion is "nonsensical." What is nonsensical is Poseidon's attorneys reading Dr. Raimondi's report in this way. Dr. Raimondi's position, consistent with that of Board staff, CCC staff, and Environmental Groups, is that without data regarding the quality of wetlands to be restored or created, it would be impossible to prescribe some quantity of the marine life enhancements as accounting for anything but the entrainment impacts upon which the MLMP is based.)	The comment's interpretation of Dr. Raimondi's report is unnecessary, as Dr. Raimondi's report is included in the record. In his April 1, 2009 statement, Dr. Raimondi concluded that the wetland acreage determined necessary to compensate for entrainment cannot also be used to compensate for impingement. (Statement of Dr. Peter Raimondi, April 1, 2009.) The entrainment modeling (ETM), however, is a species-specific model based on the understanding that entrainment is a particularized effect on an ecosystem and does not wholly eliminate its value. The Regional Board concurs with the Coastal Commission and the Scientific Advisory Panel's (SAP) conclusion that the "APF is used to determine impacts to only those species affected by an entrainment, and the mitigation resulting from the APF is meant to account only for those effects." (Conditional Compliance Findings for Special Condition 8, Marine Life Mitigation Plan, Nov. 21, 2008 (approved Dec. 10, 2008), p. 12 of 18). Thus, the mitigation acreage is also available to offset impingement impacts. The comment also states that "without data regarding the quality of wetlands to be restored or created, it would be impossible to prescribe some quantity of the marine life enhancements as accounting for anything but the entrainment impacts upon which the MLMP is based." The Tentative Order requires such data, requiring impingement and productivity monitoring to show that the fish in the wetlands are present in sufficient quantity to account for impingement, as well as entrainment.
183.	Arguments that the Agua Hedionda Lagoon will revert to mudflats if the desalination plant is not approved are laughable at this point. There is no evidence to suggest decommission of the EPS will result in abandonment of management measures to support marine life viability in the lagoon.	The comment fails to address by what mechanism periodic dredging would be maintained in the absence of the EPS operations or the MLMP. EPS performs maintenance dredging of Agua Hedionda Lagoon for plant operations. Due to continual sedimentation, the Lagoon was completely re-dredged in 1998/1999 to an average depth of 8 to 11 feet, illustrating the need for on-going maintenance dredging. Under the terms of the MLMP, Discharger may become responsible for conducting maintenance dredging of the Lagoon. The Agua Hedionda Lagoon Foundation has noted that the lagoon environment would suffer without the dredging. Before the presence of an industrial installation at Agua Hedionda Lagoon, the Lagoon was characterized by mudflats. As noted in the City of Carlsbad's Agua Hedionda Land Use Plan, "originally, the lagoon was an

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		increasingly restricted salt water marsh, the result of accumulated sedimentation, and the absence of tidal flushing. Between 1952 and 1954, the San Diego Gas & Electric Company removed approximately 310,000 cubic yards of sediment from the lagoon, restoring the lagoon to an average 10 foot depth, and opening the lagoon mouth to permanent tidal flushing."
184.	Poseidon and its experts persist in their attempts to characterize impingement and entrainment impacts solely in terms of biomass lost.	The Minimization Plan and MLMP characterize entrainment in terms of numbers of entrained larvae, proportional mortality to larval populations, and foregone areas of production (per the Empirical Transport Model); they do not measure entrainment in terms of lost biomass. Impingement is measured in terms of both numbers and biomass of impinged organisms.
185.	Poseidon's claims of best design based upon assertions to the Coastal Commission that have now been removed from consideration should be disregarded. See CCC letter, and compare to Poseidon's assertions on page 4 of its April 2, 2009 Comment.	The comment refers to an April 6, 2009 letter to the Regional Board from Coastal Commission staffer Tom Luster, which notes that the Discharger removed the following language from page 5-3 of the Minimization Plan: > For the purpose of this analysis, the impingement effect is assumed proportional to the intake flow at velocities above 0.5 fps. If the intake through-screen velocity is below or equal to 0.5 fps, the impingement effect of the intake screens is considered to be negligible. Mr. Luster asserts that "the Coastal Commission relied on the 0.5 foot-per-second maximum velocity as a key Project component for reducing impingement impacts." In its findings on the Project, the Coastal Commission noted that the City of Carlsbad EIR determined that in stand-alone mode, the project would have an intake flow velocity that would not exceed 0.5 feet per second. See Coastal Commission Findings adopted on August 6, 2008, page 39 of 106. The City of Carlsbad and the Coastal Commission examined the Project as a stand-alone operation, and the design velocities discussed by them are relevant to that mode of operation, rather than the co-located operation for CDP benefit mode that is presently before the Regional Board. In the event the EPS permanently ceases operations and the CDP operates in stand-alone mode, additional evaluation of the CDP by the Regional Board will be necessary. With regard to the operational mode presently before the Board, co-location for CDP benefit, the Regional Board has evaluated the Minimization Plan and

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		determined that it provides for the use of the best available design feasible pursuant to CWC Section 13142.5(b). As detailed in Order No. R9-2009-0039, this determination was based on several findings, including primarily the co-location design feature, which allows the CDP to avoid drawing from Agua Hedionda Lagoon any source water it is able to acquire from the EPS's discharge of cooling water. The findings indicate that additional design features may be feasible in the event EPS permanently ceases to operate, at which time additional review of the CDP pursuant to CWC Section 13142.5(b) will be necessary, including reduction in inlet screen velocity, fine screen velocity, ambient temperature processing, and elimination of heat treatment.
186.	The recently decided US Supreme Court *Riverkeeper* decision regarding the application of cost-benefit analysis under Clean Water Act 316(b) does not invalidate the lower court's ruling regarding lack of availability of compensatory mitigation in lieu of implementation of best available technology.	The comment notes that the recent United States Supreme Court decision in *Riverkeeper III* found that cost-benefit analysis was permissible under CWA Section 316(b). See Response No. 29a. Regarding the comment's argument running from the Second Circuit's ruling on restoration in *Riverkeeper II*, see Response Nos. 27c and 198. In addition, the comment equates "restoration" at issue with respect to CWA Section 316(b) in *Riverkeeper II* with "mitigation," which is authorized expressly under CWC Section 13142.5(b), without explaining this alleged equivalency.
PUBLIC TESTIMONY RECEIVED APRIL 9, 2008		
1. Testimony of Gabriel Solmer on behalf of San Diego Surfrider Foundation and San Diego Coastkeeper		
187.	Making decision two weeks before agency coordination meeting is inappropriate in light of mandate in Porter-Cologne Section 13225. You need to coordinate not just because of the mandate of Porter-Cologne but to get the, take advantage of the agency resources and expertise on this issue.	This comment has been superseded by intervening activity and is moot. The Discharger's mitigation proposal was not approved at the April 9, 2008 hearing. Instead, consistent with the Regional Board's directive, the Discharger engaged in a months-long interagency process to develop the mitigation proposal, the MLMP now incorporated in the Minimization Plan as Part A of Chapter 6. The MLMP was approved by the Coastal Commission on August 6, 2008. See Response No. 4 for a discussion of the interagency process. The CDP has benefited from significant additional resource agency input. The Minimization Plan has gone through several revisions, for which there is extensive supporting documentation in the record. See Response No. 2.
188.	You don't have a valid plan that has been adequately or legally noticed before you to vote on.	See Response Nos. 1, 129, and 187.

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189.	The flow impingement and entrainment minimization plan has not been available to you for a year. It's been available to you for just about a month in its revised form. And the technical report that is on the agenda today that is before you, it was only written on Friday, five days ago, and wasn't available to the public until after the public comment period had closed. You should not consider an issue where not only do we not have responses from the staff to our comments; we weren't even able to comment on what's before you today.	See Response Nos. 2, 4, 129, 135, and 187.
190.	The revised plan is still incomplete. Even in Poseidon's own words it's not right for final approval. They want you to approve this intermediary process. Which proponents have called a plan, but it's not the same as this plan called for in your permit.	This comment is moot. Subsequent to this comment, the Discharger submitted revisions to the Minimization Plan, the most recent draft having been submitted on March 27, 2009, which can be found on the Regional Board website. See Response No. 187.
191.	You heard a lot of people say this project has been approved by a number of different agencies. Any time that you've heard the words that the Coastal Commission has found anything. That's not accurate. The Coastal Commission is voting on revised findings next month. So until they do that, unless anyone can see the future, it's not correct to say that the Coastal Commission has made those findings.	This comment is moot. The Coastal Commission approved the MLMP on August 6, 2008 and adopted final findings on December 10, 2008. (Coastal Commission. Recommended Revised Condition Compliance Findings, MLMP for Coastal Development Permit E-06-013, Poseidon Resources Carlsbad Desalination Project, November 21, 2008, at 13. See http://documents.coastal.ca.gov/reports/2008/12/W16a-12-2008.pdf.)
2. Testimony of Joe Geever Representing San Diego Surfrider Foundation		
192.	The plan as it regards a compensatory restoration project is still a draft proposal not ready for approval.	See Response Nos. 187 and 190.
193.	The plan seems final in its conclusions about technologies to reduce the intake and mortality of marine life. However, the technologies discussed in the plan have not been subject to review and are unproven.	The Regional Board is making a final decision about technologies for purposes of CDP operation in co-location mode. The Regional Board and its staff have conducted independent and extensive review of the project, the Minimization Plan, and the MLMP and have carefully evaluated compliance with CWC Section 13142.5(b) to ensure that the best available site, design, technology, and mitigation measures feasible will be used to minimize the intake and mortality of marine life.

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194.	The draft plan concludes that after the fact restoration is both legally sufficient and the only feasible alternative. We disagree. The draft plan identified alternative intake systems that eliminate the intake and mortality of marine life, Poseidon refuses to pay for them.	The comment is mistaken in stating that the Minimization Plan calls for after the fact restoration. See Comment No. 27(b). To the extent Commenter is suggesting that the Minimization Plan provides for mitigation as the only means of minimizing the intake and mortality of marine life, Commenter is incorrect. The Minimization Plan provides for the best available site, design, and technology measures to minimize the intake and mortality of marine life. In addition, the Minimization Plan provides for sufficient mitigation to fully offset projected entrainment and impingement. See Response No. 42(c) regarding the infeasibility of alternative intake systems.
195.	A final decision that after the fact restoration is legal would be patently incongruent with Porter-Cologne.	See Response Nos. 24 and 27(b).
196.	We implore you to delay any decision on the revised plan until the several agencies have coordinated their actions.	See Response Nos. 4 and 187 for a discussion of the interagency process.
197.	There is no mitigation plan in front of the RWQCB.	See, e.g., Response Nos. 4, 5, 27(b), 56, 187, and 190 for a discussion of the MLMP, the mitigation plan that the Regional Board is considering for approval.
198.	We agree with Poseidon that Riverkeeper applies only to cooling water intakes. And that's because the federal law only deals with cooling water intakes. But the state law deals with cooling, heating, any industrial use of ocean water. But it does include cooling. So the decision in the Riverkeeper case the rule that EPA had promulgated included exclusions from what they call their performance standards, which was to reduce entrainment by 90 percent, these standards that they were using for minimizing entrainment and impingement. A lot of that rule remanded back to USEPA to rewrite it. But a couple of the provisions in there were strictly prohibited from the remand. So using a cost benefit analysis was thrown out. And they can't put that back in the rule according to Riverkeeper II. Using after the fact restoration was also thrown out. This plan kind of relies	The comment attempts to argue that CWA Section 316(b), a federal law applicable only to power plants, binds the Regional Board's consideration of a desalination plant to which this federal law does not apply. The Regional Board does not agree that its decision in this instance is constrained as argued in the comment. See Response Nos. 19, 29(a), and 221 regarding the comment's mistaken arguments that CWA Section 316(b) applies in this instance. The comment implies a mistaken belief that CWA Section 316(b) applies to a non-power plant use of water withdrawn from a structure, the original purpose of which was to provide cooling water for a power plant. No court ever has applied CWA Section 316(b) as the comment argues, and the State Board specifically rejected such an application in its March 28 Scoping Document. See Scoping Document at 34 ("This subject [desalination plants co-located with power plants] is outside of the scope of the Clean Water Act Section 316(b) issues and would be more appropriately addressed under existing water quality control plans and policies.").

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	on is using after the fact restoration and then using a cost benefit analysis to show that any of the other alternative intakes are infeasible or whatever. Porter-Cologne doesn't distinguish between cooling, heating, or any other industrial process. So if you take the ruling from Riverkeeper II, apply it to cooling water in Porter-Cologne or anything else, there's no distinction between cooling, heating, and industrial processes in Porter-Cologne. So arguably that ruling in Riverkeeper II applies to Porter-Cologne as well. Which would prohibit them from using cost benefit analysis or after-the-fact restoration.	The comment assumes that the Minimization Plan proposes to mitigate even when feasible technology is available but is dismissed on the basis of cost-benefit analysis. Here, the Minimization Plan does not use cost-benefit analysis to disregard technology, and mitigation is provided in addition to technology obligations. See, e.g., Response Nos. 10(a), 24, 26, 27(b), 27(c), 29(a), 29(b), 32, and 42(b). Thus, the comment's cost-benefit and after-the-fact restoration arguments are factually irrelevant. The Regional Board agrees that CWC Section 13142.5(b) applies to new or expanded coastal power plants or other industrial installations that use seawater for cooling, heating, or industrial processing, including desalination projects such as the CDP.
3. Testimony of Livia Borak on behalf of San Diego Coastkeeper		
199.	It's not clear if this impingement and entrainment flow minimization plan is an assessment of impact or what it's assessing or what's being approved today.	This comment is moot. The Regional Board conditionally approved the Minimization Plan on April 9, 2008, Resolution R9-2008-0039; however, the Tentative Order proposes to supersede that action. With regard to the assessment of impacts, Chapter 5 of the Minimization Plan estimates impingement and entrainment. Chapters 2, 3, 4, and 6 provide site, design, technology, and mitigation measures to minimize the intake and mortality of marine life, consistent with CWC Section 13142.5(b).
200.	The NPDES permit for the CDP requires--to assess the feasibility of site specific plans, procedures, practices to be implemented or mitigation measures to minimize impacts to marine organisms. Now, this is different from Porter-Cologne. Porter-Cologne requires minimization of entrainment and impingement. This is different. We need to be clear about the difference between mitigation and minimization. Porter-Cologne requires minimization and mitigation as well as best technology, best design, and best site are all ways to minimize impacts.	The Minimization Plan provides for the use of the best available site, design, technology, and mitigation measures feasible to minimize the intake and mortality of marine life, as required by CWC Section 13142.5(b). It respects the distinction between "minimize" and "mitigate."
201.	The State Water Board has acknowledged the difference between 316B and Porter-Cologne. And we acknowledge that they are different. Porter-Cologne applies to this project.	The Regional Board agrees that CWA Section 316(b) does not apply to the CDP and that the appropriate legal standard for the CDP is CWC Section 13142.5(b). See Response No. 19. This is the standard under which

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	And this has to be assessed. The state board -- this board has the duty to assess whether or not Poseidon has minimized intake mortality, not minimized impacts, not mitigation. It's not clear that this plan has even addressed Porter-Cologne and addressed minimization. And it's clear from Poseidon's response that they feel they don't need to do that. That they've addressed best available site, design, technology to minimize project related impacts. That's not the dictate -- that's not what's dictated by Porter-Cologne. And just to reiterate, mitigation is not the same as minimization. One is a before the fact measure and one is after the fact. Minimization happens before. Mitigation is supposed to be something that takes care of all the impact after the fact, after all minimization has been done that is feasible. There is no analysis like this contained in this plan. And as far as what, what analysis is required, it's not supposed to be fragmented and sequential as it is in Poseidon's letter, it states that they've sequentially analyzed the steps that have been taken by Poseidon to address the provisions they feel they need to address. They've fragmented the whole process. Porter-Cologne requires a holistic approach to minimizing impacts. The plan basically says this is our site. We need to produce this much water we require 304 MGD, so this is what we can afford and this is what we're going to mitigate, not the mandates of Porter-Cologne. And that basically takes the mandates of Porter-Cologne and turns it on its head allowing a project proponent to choose what exactly they what to mitigate and say for us this is not the best, that's not what best available means. A legally defensible plan will not only meet the requirement that you've imposed on Poseidon in the NPDES permit for this plan, but also meet the mandates for Porter-Cologne, which has not been done. As the Regional Board, you require this information, because you need to the impacts of the project. You need to analyze what is possible for a project to minimize impacts before you can decide what	the Regional Board has reviewed the Minimization Plan. To the extent Commenter is arguing that the occasional use of the word "impacts" undermines the analysis, see Response No. 52. With regard to minimization, see Response No. 18. With regard to the argument that the Minimization Plan provides for "after the fact" mitigation, see Response No. 27(b).

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	mitigation actually is.	
202.	Riverkeeper II though it does apply to Clean Water Act 316B. The Clean Water Act is a technology forcing statue, 316B is, and it requires best available technology. And in the decision the court basically said that EPA was to find a beacon, as you will, of what the technology is. And in doing that cost benefit analysis was not appropriate. And in finding that whatever the best technology is, that is cost effectiveness can be utilized after that in finding out what kind of ranges for technology the EPA can have as a substitute for this best technology. That the best performing technology is it. So best available technology is what is the best technology that can be reasonably borne by the industry. And that would lend courts Porter-Cologne kind of a analysis to go by.	See Response Nos. 18, 29(a), and 198. The comment is incorrect that the federal CWA is a technology-forcing statute for all purposes. While the CWA does contain some technology-forcing provisions, technology-forcing has not been held to apply to CWA Section 316(b). In *Riverkeeper III*, the United States Supreme Court rejected such arguments, and held that CWA Section 316(b) contains the "modest goal" of minimizing adverse environmental impacts. Thus, the commenter's argument that federal technology forcing must be extended to state law is based on an incorrect premise.
4. Testimony of Ed Kimura Representing Sierra Club San Diego Chapter		
203.	The State of California Marine Life Management Act now requires an approach to evaluate the impacts on the marine life. And in order to ensure the protection of the health of the marine resources. The eco systems approach evaluates the many interaction among the various marine organisms when subjected to stresses human or natural. This holistic approach is a departure from the past, which is directed to the evaluation of stress on individual species. This time it's taken the whole group of impacts.	To the extent this comment suggests that an ecosystem-based approach is required, see Response Nos. 5 and 10(b).
204.	The plan fails to follow this eco system approach. The impingement and entrainment plan narrowly focuses primarily on fish and fish larvae, it fails to integrate the interactions among all the marine organisms from the bottom of the food chain all the way up to the top. And when they are subjected to losses from impingement and entrainment. The plan concludes that the impingement losses are, quote, de minimus in deciding that this amounts to 2.1 pounds of fish per day. However, it fails to point out that in the yearly basis there are over 19,000 fishes and over 96 species that were killed by impingement. The plan provides very little	To the extent this comment suggests that an ecosystem-based approach is required, see Response Nos. 5 and 10(b).

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	information on other important marine organisms besides fish larvae that are entrained.	
205.	The plan fails to provide a comprehensive monitoring program that evaluates the current health of the marine eco systems within the impacted area, as well as a reference area not impacted by the seawater intakes.	The law does not require the Minimization Plan to contain a comprehensive monitoring program that evaluates the current health of the marine ecosystem within the impacted area. On the basis of comprehensive monitoring of Agua Hedionda Lagoon and the EPS intakes, the Minimization Plan is based on intake and mortality under existing conditions, and requires the Discharger to monitor for impingement to verify impingement levels or otherwise adjust compensation obligations. This approach reflects the particularized effects that a seawater intake can have on an ecosystem. The law does not require monitoring of areas not impacted by the intake system. See also Response Nos. 5 and 10(b). The Minimization Plan is based on a highly-detailed, comprehensive and independent baseline study of the Agua Hedionda Lagoon marine environment, which was properly used to calculate baseline levels of entrainment and impingement as well as other characteristics of the marine environment and the surrounding area. See also Response Nos. 10(c) and 51.
206.	The plan proposes a micro screen to minimize entrainment losses, but it has no plan on how they're going to evaluate this or when they're going to implement it.	This comment has been rendered moot by subsequent activities or actions, as detailed in Response No. 8.
207.	The proposed mitigation plan narrowly focuses on fish but fails to offset the losses of the rest of the marine organisms. The power plant diverts seawater from Agua Hedionda which contains both resident species of marine organisms as well as non resident which come in from the coastal areas. The plan provides no information on these marine organisms such as the species and abundance. Without this information, we doubt whether any mitigation plan will succeed.	The MLMP is not narrowly focused, and includes mitigation for five non-resident, ocean species. Pursuant to the Biological Performance Standards set forth in section 5.4(b) of the MLMP, the success of the MLMP shall be measured against similar habitats with respect to a number of enumerated criteria. Among these, the MLMP specifically requires that "the total densities and number of species of fish, macroinvertebrates and birds…shall be similar to the densities and number of species in similar habitats in the reference wetlands." MLMP Section 5.4(b)(1). As discussed in section 3.2 of the MLMP, the principle objective of the MLMP is to provide maximum overall ecosystem benefits, e.g. maximum upland buffer, enhancement of downstream fish values, provide regionally scarce habitat, and potential for local ecosystem diversity.

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		To the extent that the comment questions whether the mitigation wetlands will succeed, see Response No. 109.
PUBLIC TESTIMONY RECEIVED FEBRUARY 11, 2009		
1. Testimony of Marco Gonzalez on behalf of San Diego Surfrider Foundation and San Diego Coastkeeper		
208.	Porter-Cologne Section 13142.5 is the cornerstone of where you begin your, and really, end your consideration. It says that the desalination plant shall use the best available site to minimize the intake and mortality of marine life.	The Regional Board agrees that the appropriate legal standard is CWC Section 13142.5(b), but Commenter's paraphrasing of CWC Section 13142.5(b) is incomplete. CWC Section 13142.5(b) provides: "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." (Emphasis added.) Commenter omits the word "feasible," which is an important qualifier in determining whether a project has satisfied the statutory standard for "site."
209.	[This] means you have to put the desal plant in a place where you can minimize the intake and mortality of marine life. That doesn't mean you consider where you put the physical plant, you consider where you put the intake. All of the alternatives analysis that's been given to you talks about where you locate the actual physical plant.	To the extent the Commenter suggests that CWC Section 13142.5(b) does not require consideration of the physical location of the plant, the Regional Board disagrees. CWC Section 13142.5(b) specifically states that: "For each new power plant or industrial installation …, the best available site … feasible shall be used to minimize the intake and mortality of all forms of marine life." The CDP site is the best available and feasible to minimize intake and mortality of marine life. By co-locating with the EPS, the CDP will be able to use the EPS's pre-existing intake and discharge system and convert the seawater discharged by the EPS after use for cooling operations into potable water. Only when the EPS does not produce enough cooling water discharge will seawater be withdrawn solely to meet the requirements of the CDP. In addition to reducing the unnecessary intake of seawater by providing for the reuse of water discharged by the EPS for desalination, co-locating with the EPS allows the CDP to avoid environmental and economic costs that would be associated with the construction of a new intake system. See also Response No. 31 regarding the expiration of the statute of limitations for challenging the Regional Board's adoption of Order No. R9-

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		2006-0065 identifying the CDP site as co-located with the EPS. To the extent the Commenter suggests that the Discharger did not consider alternative intakes, the Regional Board disagrees. The Discharger evaluated numerous alternative intake systems, such as subsurface intake and an offshore intake, all of which were determined to be infeasible and/or more environmentally damaging than use of the existing EPS intake. See Response Nos. 42(c), 43(a), and 43(b).
210.	[W]e've only, since day one, talked about one intake. And that's the intake at the Encina Power Station. Now, there may have been an alternative study done for subsurface intakes at the Encina Power Station, but we've seen no alternative location anywhere around the coast.	The comment appears to suggest that the Discharger did not consider any alternative locations for the CDP. As explained in Chapter 2 of the Discharger's Minimization Plan, the Discharger considered three possible alternative sites within the City of Carlsbad: (1) other locations within the EPS property; (2) the Encina Water Pollution Control Facility; and (3) the Maerkle Reservoir. Alternative sites within the EPS property were infeasible because the power plant owner has reserved the remaining portion of the site to accommodate future power plant modifications, upgrades, or construction of new power plant facilities. The Encina Water Pollution Control Facility was rejected because it would be able to accommodate only a desalination plant with a capacity of 10 MGD desalinated water, which is cost-ineffective and insufficient to meet user demands. See Response No. 149. Because of its lack of proximity to the intake system, this site also would require the construction of a 2-mile long water transport pipe, increasing environmental impacts and project costs. These factors, among others, made that site infeasible. The third site option, Maerkle Reservoir, located 10.6 miles east of the proposed site, was rejected because the necessary construction changes would increase construction costs, and therefore water costs, to such a degree as to make the CDP infeasible without any measurable environmental benefit. Insufficient space exists in the public rights-of-way between the Maerkle Reservoir site and the ocean to accommodate the needed pipelines, and it would be extremely disruptive to construct pipelines outside existing rights-of-way. After considering these alternative locations, the Regional Board agrees that the co-located site satisfies CWC Section 13142.5(b).

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		The Discharger also analyzed an alternative desalination project proposed for Dana Point, which would use slant well technology. This technology was found infeasible for the CDP because, among other things, pilot testing indicated that the water quality would be difficult if not impossible to treat, and the many multiple slant wells would be required on the beach, disrupting public access and recreation. The Coastal Commission found, and the Regional Board agrees, that the multiple smaller slant wells required would result in far greater environmental impacts than the CDP, and would be insufficient to address water needs. Locating the CDP at the EPS site helps to assure that the Agua Hedionda Lagoon will have continued stewardship for the life of the CDP. The ecosystem productivity of the Lagoon historically has been tied to the presence of the EPS or another industrial steward to maintain it. If left to its natural state, the Lagoon likely would return to mudflats, rather than the important estuarine environment there presently. See also Response No. 31 regarding the expiration of the statute of limitations for challenging the Regional Board's adoption of Order No. R9-2006-0065 identifying the CDP site as co-located with the EPS.
211.	And you will hear Poseidon at some point say, "But wait a second, this is a Carlsbad-specific project. We define our project so narrowly that it has to be in Carlsbad." No, it doesn't. Look at all the water agencies that are purchasing water. They're not getting it directly piped. It's paper transfers, as anybody who deals with water knows.	To the extent that the comment criticizes the reasons for the CDP's location in Carlsbad, the argument is unavailing. See Response No. 148 and 210 for an explanation of why the EPS site is the best available site feasible to locate the CDP and for a discussion of why alternative site locations are not feasible and do not meet project objectives. On a policy level, reliance on paper-water transfers over significant distances has proven to disappoint many end users of water in recent years. Even State Water Project ("SWP") contracts have not protected end users, as courts have observed that entitlements to water from the SWP "represent nothing more than hopes, expectations, water futures or . . . 'paper water'." *See, e.g.*, *Planning & Conservation League v. Dep't of Water Res.,* 83 Cal. App. 4th 892, 908 n.5 and 914 n.7 (2000) ("Paper water always was an illusion. 'Entitlements' is a misnomer, for contractors surely cannot be entitled to water nature refuses to provide or the body politic refuses to harvest, store, and deliver. Paper water represents the unfulfilled dreams of those who, steeped in the water culture of the 1960's, created the

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		expectation that 4.23 [million acre-feet per year] of water could be delivered by a SWP built to capacity."); *see also Cal. Oak Foundation v. City of Santa Clarita,* 133 Cal. App. 4th 1219, 1228 (2005) (quoting *Planning & Conservation League v. Dep't of Water Res.,* 83 Cal. App. 4th at 908 n.5 and 914 n.7, for the foregoing proposition).
212.	[I]n their presentation, they say this is a regional problem. The drought is a statewide problem. Locating a desalination plant that's purportedly going to meet the County Water Authorities fabricated need for 56,000 acre feet is not a Carlsbad local issue.	Commenter's argument is flawed to the extent it attempts to minimize the urgent need for water in the Carlsbad region. That drought is a statewide issue does not undermine the fact that Carlsbad residents, as well as residents in the surrounding areas, have a pressing need for water. The comment offers no support for the assertion that the County Water Authority has fabricated a need for 56,000 acre-feet of water. The Discharger is contracted to meet 100% of Carlsbad's potable water requirements.
213.	Your standard of review under Porter-Cologne says you have to choose the best available site to minimize intake and mortality of marine life. We don't even have that analysis. We don't even know where the best available site is because they've only looked at one site.	Commenter inaccurately paraphrases CWC Section 13142.5(b) by omitting the term "feasible." The statute requires the CDP to use "the best available site … *feasible* … to minimize the intake and mortality of all forms of marine life," in addition to the best available design, technology, and mitigation measures feasible. (Emphasis added.) See Response Nos. 148 and 210 for a discussion of site alternatives considered by the Discharger. See also Response No. 31 regarding the expiration of the statute of limitations for challenging the Regional Board's adoption of Order No. R9-2006-0065 identifying the CDP site as co-located with the EPS.
214.	The best available design to minimize intake mortality, we've only looked at a 50 MGD site --- or design. We haven't looked at a 30 or a 20.	CWC Section 13142.5(b) requires the Project to use "the best available site, design, technology, and mitigation measures *feasible* … to minimize the intake and mortality of all forms of marine life." (Emphasis added.) Contrary to the contention in the comment, although not legally required, the Discharger conducted an analysis, in which it determined that 50 MGD of fresh water will be an economically viable enterprise and that smaller alternatives (25 MGD and 10 MGD) were infeasible and did not meet project objectives. See Response No. 149. The Department of Water Resources 2006 Water Plan Update indicates the Project will produce about 10% of the desalinated water needed in California

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		by 2030, and the Metropolitan Water District of Southern California identified a need for 150,000 AFY of desalinated water to ensure regional reliability, including 56,000 AFY from the Project.
215.	We've invalidated all of the alternative intakes that could be done here in Carlsbad, because they don't meet the criteria for producing 50 MGD.	See Response Nos. 42(c) and 149 regarding the infeasibility of intake alternatives and project production capacity.
216.	The best available technology and the best available mitigation measures, remember to minimize intake, because this is important when you consider the standard that Poseidon thinks applies to it. And I'm taking this straight from the letter that they submitted back in – on March 2nd, 2008, before that last approval, conditional approval. And it's important because this was threaded through everything that they did. Look at what they talk about. They think 13142.5 says that you have to choose site design technology and mitigation to minimize the impacts to marine life.	As explained in Response No. 52, the Minimization Plan's clear objective is to minimize intake and mortality of marine life by minimizing impingement and entrainment; the focus is not on "impacts." The Plan satisfies CWC Section 13142.5(b) by specifically providing for the minimization of entrainment and impingement. The word "impacts" has occasionally been used to refer to entrainment and impingement. To the extent Commenter believes something beside entrainment and impingement is relevant, he has not provided any such information as to what that would be.
217.	And you see they went into great detail to – to specify that their Marine Life Mitigation Plan at that point dealt with the best site to minimize impacts to marine life, the best design to minimize impacts. And so we have to ask ourselves, what's the difference between minimize intake and minimize impact? It's really a plain reading. It's common sense. One, it's the wrong standard. You've got to go by with what the statute actually says.	See Response No. 52 regarding the Minimization Plan's clear objective to minimize intake and mortality of marine life by minimizing impingement and entrainment; the focus is not on "impacts."
218.	316(b) says on its face that you have to minimize adverse environmental impacts with respect to the location design, construction, and capacity of cooling water.	CWA Section 316(b) does not apply to the Project. The appropriate legal standard for the CDP is CWC Section 13142.5(b). See Response No. 19. The comment inaccurately paraphrases CWA Section 316(b), which provides: "Any standard established pursuant to section 1311 of this title or section 1316 of this title and applicable to a point source shall require that the location, design, construction, and capacity of cooling water intake structures reflect the *best available* for minimizing adverse environmental impacts." (Emphasis added.) The comment omits the important qualifying phrase "best available."

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219.	316(b) does not apply.	The Regional Board agrees that CWA Section 316(b) does not apply to the CDP. The appropriate legal standard for the CDP is CWC Section 13142.5(b). See Response No. 19.
220.	So the question we ask ourselves, why is Poseidon applying 316(b) standard, or language regarding impacts instead of intake when we all know that 13142.5 is the applicable standard.	Neither the Regional Board nor the Minimization Plan is applying a CWA Section 316(b) standard to the CDP, and the Regional Board agrees that CWC Section 13142.5 is the applicable standard. See Response No. 52 regarding the Minimization Plan's clear objective to minimize intake and mortality of marine life by minimizing impingement and entrainment; the focus is not on "impacts." To the extent Commenter asserts a distinction between "impacts" and "intake and mortality," the Commenter has provided no information to support the distinction, which appears to be argument only.
221.	[T]he problem is that liberal construction of 316(b) no longer exists. The idea that a technology forcing statute in the Clean Water Act could be read to allow you to have the impact and then go mitigate elsewhere, it's been turned on its head by the *Riverkeeper* case	The comment discusses an "idea" that has no relevance under CWC Section 13142.5(b), which, in contrast to CWA Section 316(b), specifically identifies mitigation as an approach to minimize intake and mortality. The comment arises from CWA Section 316(b), which does not apply to the CDP. See Response No. 19. The comment's apparent reference to *Riverkeeper II* misses the mark, as that case interpreted CWA Section 316(b), which does not apply in this instance. For further discussion of *Riverkeeper II*, see Response Nos. 24, 27(c), and 29(a). To the extent that Commenter is criticizing the inclusion of mitigation measures in the Minimization Plan or MLMP, that criticism is unfounded because CWC Section 13142.5(b) specifically requires the use of the best available and feasible mitigation measures (as well as the best available feasible site, design, and technology). As a factual matter, unlike the restoration at issue in the *Riverkeeper* cases, the Minimization Plan does not call for the use of mitigation in lieu of, or as a, technology. Rather, the Minimization Plan provides for the use of the best available mitigation feasible *in addition to* best available, site, design and technology measures.
222.	Now, we will agree, 316(b) doesn't apply.	The Regional Board agrees that CWA Section 316(b) does not apply to the CDP. The appropriate legal standard for the CDP is CWC Section 13142.5(b). See Response No. 19. See Response No. 219 above.

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223.	But the important thing to realize is even using the liberal standard as Poseidon interprets it, the courts have said that doesn't fly.	See Response No. 19 for an explanation of the non-applicability of CWA Section 316(b) to the CDP. CWA Section 316(b) has not been applied in this situation. The comment does not explain what it means by "liberal standard," and this comment is vague and ambiguous. The Minimization Plan reflects the appropriate standard of CWC Section 13142.5(b).
224.	And your own State Water Resources Control Board, in a document last year, or maybe a year and a half ago, the scoping document on once-through cooling addresses there is a very concrete distinction between minimizing intake and minimizing impacts. You have to cross that threshold. You have to do the analysis.	To the extent Commenter is referring to the scoping document released by the State Board in March 2008 entitled, "Water Quality Control Policy on the Use of Coastal and Estuarine Waters for Power Plant Cooling," it is worth noting that such document dealt with the proposed development of a state policy for water quality control to establish requirements for implementing CWA Section 316(b) for existing coastal and estuarine power plants. CWA Section 316(b) does not provide the legally applicable standard for the CDP, as discussed in Response No. 19. It also should be noted that a scoping document is not a policy but a working document that does not necessarily result in a mandate. To the extent the Commenter is suggesting that the wrong standard has been or is being applied, see Response No. 52, which explains that the Minimization Plan's clear objective is to minimize intake and mortality of marine life by minimizing impingement and entrainment; the focus is not on "impacts."
225.	Now, we're seeing in our legal briefing, where the Coastal Commission is kind of juggling and trying to say, "Well, we impliedly kind of did this already." But I ask you, look in your packets, and tell me where you see the minimization of intake spotlighted with respect to site design, technology and mitigation measures.	The Coastal Commission did a comprehensive analysis of Project-related entrainment before approving the MLMP. This is among the tasks the Regional Board is being asked to do under CWC Section 13142.5(b) when evaluating whether the Minimization Plan provides for the minimization of intake and mortality of marine life. As explained in Response No. 150, the Minimization Plan comprehensively details how all four elements required by CWC Section 13142.5(b) to be considered – site, design, technology, and mitigation – will be used to minimize intake and mortality. See also Response No. 52.
226.	The fact of the matter is it's a more restrictive standard, and it applies before the impact takes place. It just hasn't been	This comment is vague and ambiguous. To the extent the comment refers to "before the fact" mitigation, see Response Nos. 24 and 27(b). To the extent

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	addressed. It hasn't been appropriately considered. And until it gets done, it's a fatal flaw that frankly, it is fatal.	the Commenter is suggesting that the wrong standard has been or is being applied, see Response No. 52, which explains that the Minimization Plan's clear objective is to minimize intake and mortality of marine life by minimizing impingement and entrainment; the focus is not on "impacts."
227.	Remember, all of these power plants, they're doing their mitigation. Look at the Southern California Edison mitigation upon which the Applicant is relying. It's a big off-site mitigation. It's 30 years after they started operating. Are we going to wait that long to see a successful mitigation? And we don't even know if that's successful, because frankly, it's not fully constructed yet or operational.	The success of SCE's mitigation for the San Onofre Nuclear Generating Station to which Commenter refers is well-documented. The MLMP's strict performance standards and success criteria were developed during the interagency process at the direction of the Coastal Commission using this successful mitigation project as a model. The determination to adopt such standards as part of the MLMP was strongly supported by Coastal Commission staff through the MLMP approval process. The success of the Project's mitigation is assured because Discharger must comply with these standards, which will be enforced by the Coastal Commission and the Regional Board. See Response Nos. 109 and 240 for a discussion of the MLMP's strict performance criteria, which are enforceable by the Regional Board and the Coastal Commission. See Response No. 112. To the extent Commenter is suggesting that the proposed wetlands could be unsuccessful, see Response No. 112 for a discussion of the Regional Board's Executive Officer's authority to impose remedial measures if the wetland mitigation does not meet performance criteria. To the extent Commenter is suggesting that the CDP will be operating for 30 years before the mitigation site is constructed, that is incorrect. The CDP has not yet been constructed, is not currently operating, and is not currently resulting in any intake or mortality of marine life. The MLMP requires the Discharger to submit a coastal development permit application for Phase I of the proposed wetlands within two years of issuance of the Project's coastal development permit. To the extent Phase II is necessary, the MLMP requires the Discharger to submit a complete coastal development permit within five years of the issuance of the Phase I permit. These requirements ensure that the proposed wetlands will be designed and implemented as the CDP is under construction and will be developed in the early years of CDP operation. Further, the mitigation required is sufficient to fully offset impingement and entrainment associated with stand-alone operations, even though it is unknown if/when the Project will operate in such a mode.
2. Testimony of Conner Everts Representing Desal Response Group		

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228.	Water conservation and reclamation are better strategies to address drought, and will force the state to deal with a response to how we use and waste water.	Comment does not prompt a specific response. To the extent Commenter makes arguments concerning broad planning goals or policies, such comments are generally beyond the scope of the Regional Board's review of the Minimization Plan. The CDP has, however, undergone extensive environmental review by several resource agencies in addition to the Regional Board, including the City of Carlsbad, the Coastal Commission, and the State Lands Commission. The City of Carlsbad in its EIR and review of the project specifically examined alternatives to the project involving greater levels of conservation, reuse of sewage by reclamation and other water reclamation, and concluded that those alternatives were not feasible. The City's analysis and conclusions on this issue are incorporated by reference into this response.
229.	(a) If you put a shovel in the ground today, which isn't going to happen, on the desal plant, it won't be a reaction to the immediate situation, regulatory, and hydrological conditions we face. But that will force us all across the state to deal, as we have in the past, with a response to how we use and waste water. My background includes being Chair of the California Urban Water Conservation Council and Drought Coordinator for the City of Pasadena, where we saved percent. Since then, the technologies have improved, and we've moved to the outdoor landscape. There's a lot more to do, recycling, especially regionally is still a big issue on the table here. But obviously, there's a lot more to do statewide as we continue to discharge treated waste water. I was on the State Water Resource Control Board Stakeholder Process. We've just established, finally, guidelines on recycled water. So there's a lot of opportunity there. But today we're not talking about those issues. And it is, again, very emotional for people to say they need water, and that they may be cut back. You know, we just went though a period where we had a lot of rain. We could have captured more if we had those programs in place and dealt with less pollution going to the ocean. So given all that, I support the staff report to go back, at least until April, and to take a deeper look at this.	(a) Comment does not prompt a specific response. See Response No. 228 regarding broad planning goals or policies that are generally beyond the scope of the Regional Board's review of the Minimization Plan. . (b) Comment does not prompt a specific response.

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	(b) My background includes working on this issue for the late '80s. My original boss, many years ago, went on to be a City Manager, got his Ph.D. in Florida. He ended up being the General Manager of the Tampa Bay Water Authority, Gerry Maxwell. He was going to retire when that job was done. He didn't get to retire for a long, long time. As you've heard, they've had problems with it. You cannot assume that this will be -- not a project since it's the first on the Pacific Coast in colder water, and the largest in the western hemisphere, it might take a while to iron out. So the idea that this is immediate response is wrong.	
3. Testimony of Ed Kimura Representing Sierra Club San Diego Chapter		
230.	The Marine Life Mitigation Plan fails to comply with the conditions of the resolution.	While the Regional Board's May 13, 2009 action would supersede the resolution, the comment is mistaken. The MLMP fully complies with the conditions within Resolution R9-2008-0039 (the April Resolution), as well as with Order No. R9-2006-0065 (2006 Permit) and CWC Section 13142.5(b). The MLMP includes a specific proposal for mitigation of impingement and entrainment as required by Section VI.C.2(e) of Order No. R9-2006-0065. Under the terms of the MLMP, the Discharger shall create or restore up to 55.4 acres of estuarine wetlands at up to two restoration sites. Consistent with the April Resolution, the Discharger submitted eleven specific mitigation sites determined during the interagency process and submitted a specific proposal for mitigation at these identified sites. The final restoration site(s) will be selected according to strict minimum standards and objectives specifically identified in Sections 3.1 and 3.2 of the MLMP, respectively, and final selection will be subject to review and approval by the Regional Board and Coastal Commission. The success of the selected restoration site(s) will be evaluated according to specifically enumerated performance standards and criteria, as described in Response Nos. 109, 240, and 243.
231.	I also believe that the design of the MLMP is flawed because it fails to apply an ecosystem-based approach.	See Response Nos. 5 and 10(b) regarding an ecosystem-based approach.

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232.	Now, a marine ecosystem is a dynamic complex of plants, animals, microbes, and physical environmental features that interact with each other. I have seen no overt evidence that these complex interactions have been addressed in the MLMP.	Comment noted as to the dynamic and complex nature of an ecosystem. The comment overlooks the fact that the proposed mitigation wetlands will contain dynamic and complex ecosystems themselves. The MLMP provides for the restoration or creation of up to 55.4 acres of wetlands habitat, containing ecosystem services with complex interactions. These complex interactions are ensured as the Discharger is required to demonstrate the performance of the restored or created wetlands by comparison with healthy reference wetlands, which also contain complex interactions.
233.	Let me cite two examples where this mitigation plan -- excuse me, fails to apply the ecosystems-based approach. One example is a vital role of the benthic community in the Marine ecosystem. No sediment quality data or benthic monitoring data for initial or within the Agua Hedionda Lagoon have been presented, or from local sites that are not impacted by the once-through cooling plant. These data are essential in selecting a restoration site.	See Response Nos. 5 and 10(b) regarding an ecosystem-based approach. The comment does not address how the EPS intakes are impacting, or the proposed CDP will impact, sediment quality or the benthic community in Agua Hedionda Lagoon. CWC Section 13142.5(b) requires the Discharger to minimize intake and mortality of all forms of marine life. The comment does not address how the CDP will result in the intake or mortality of the benthic community, or affect sediment quality, and the allegation that the CDP will cause such effects is speculative and without foundation. Any impacts of the CDP discharge on sediment quality and the benthic community should have been raised in 2006 when the CDP 's NPDES permit was issued and the potential impacts of the discharge on the marine environment were considered. Comments regarding such issues are not relevant to this proceeding, and have been waived. Commenter has failed to exhaust its administrative remedies with respect to such points. With regard to the mitigation sites, sediment quality data and benthic monitoring data are addressed implicitly by the MLMP. Rigorous biological performance standards and monitoring provisions contained in the MLMP ensure that the mitigation wetlands must satisfy a number of biodiversity benchmarks. As the mitigation wetlands are to function according to these benchmarks, they necessarily will contain non-toxic sediment with contaminant concentrations that is capable of sustaining a sufficient richness of benthic macro-invertebrate and vegetative species. If the quality of the sediment were to fall below appropriate levels, the sediment would no longer support vegetation and animal communities to the degree required by the biological performance standards. Any such deterioration would be observed

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		by the monitoring program and remediation would be implemented to ensure compliance with the terms of the MLMP.
234.	And another important factor is the connectivity that exists between and among the ecosystems provided by currents transporting larvae from one part of the ecosystem to another. Understanding this is a very complex connection is particularly important to select a restoration site that's productive and successfully offsets the entrainment losses caused by the desalinization project.	The MLMP makes no assumption about genetic populations, and does not assume genetic sameness of larvae including invertebrates at Agua Hedionda Lagoon and the eleven specific sites identified in the MLMP. The comment mistakenly assumes that effective mitigation under CWC Section 13142.5(b) requires a demonstration of Commenter's connectivity concept and also of genetic sameness of larvae. These concepts are offered by Commenter without reference to legal requirements and appear to be scientific principles or theories, without specific tie in to compensatory mitigation under legal requirements. Commenter appears to assume that the purpose of mitigation is to create or restore wetlands that will spawn larvae that somehow will find their way back to Agua Hedionda Lagoon. If this is Commenter's understanding, it is mistaken. It is not likely that larvae of common lagoon species could be spawned at some location away from Agua Hedionda Lagoon and survive the journey back to Agua Hedionda Lagoon. The requirement being imposed is to compensate by returning a like amount that is lost due to entrainment, but not to also ensure that these larvae make their way back to Agua Hedionda Lagoon. Therefore, Regional Board disagrees that larvae dispersal information at a reference area is necessary, or even relevant to mitigation. Natural bays and estuaries in California function in the classical sense of serving as spawning and nursery areas for coastal fishes (Michael Horn. 1980. Diversity and Ecological roles of noncommercial fishes in California marine habitats. CalCOFI rep. Vol. XXI, 1980.). These systems support a unique fish assemblage composed of low trophic level species (Horn 1980; Allen 1982). Many of these species are truly estuarine dependent, living their entire life cycles within the estuary. Based on larval surveys, the most abundant bay-estuarine fish are gobies (Horn 1980). Gobies attach their eggs to the walls of the burrows in which they live. Their eggs are not pelagic and are not transported from one wetland to another via ocean currents. The larvae hatch, metamorphose and mature within the estuary. Tidal translocation of goby larvae to the near-shore environment has been postulated as one of the primary sources of mortality for this species (Brothers 1975). Those transported out of the estuary frequently do not

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		survive. Thus, connectivity between disparate wetland systems within the region with regards to eggs or larvae of the dominant estuarine fish taxa is not anticipated. Connectivity between a restored estuarine wetland and an existing wetland is important for successful colonization by estuarine dependent species. Such connectivity is assured through the requirement that the Discharger's mitigation site be located at an existing estuarine wetland. The MLMP's rigorous physical and biological performance standards will measure the success of the proposed wetlands in relation to other reference sites, "which shall be relatively undisturbed, natural tidal wetlands in the southern California Bight." In the event that the mitigation site's location does not allow for sufficient larval dispersion or population connectivity, the wetlands would not conform with these other reference sites. This would require the Discharger to conduct remediation in order to bring the wetlands in compliance with the terms of the MLMP.
235.	The MLMP proposes to select a restoration site located somewhere within the Southern California Bight. This is a coastal region covering over 450 kilometers from the Mexican border to Point Conception. It apparently assumes an essential requirement for the site, that the members of the larval pool from the Carlsbad site have been dispersed over time throughout this region.	The MLMP's rigorous physical and biological performance standards will measure the success of the proposed wetlands in relation to other reference sites, "which shall be relatively undisturbed, natural tidal wetlands in the southern California Bight." In the event that the mitigation site's location does not allow for sufficient larval dispersion or population connectivity, the wetlands would not conform with these other reference sites. This would require the Discharger to conduct remediation in order to bring the wetlands in compliance with the terms of the MLMP. The MLMP establishes a rigorous process to ensure the mitigation wetlands are sited in the best possible feasible location in proximity to the Agua Hedionda Lagoon. Section 3.2 of the MLMP provides that, to the extent feasible, the Discharger must select "site(s) in proximity to the Carlsbad desalination facility." The revised Minimization Plan provides that "[s]ites located within the boundaries of the Regional Water Quality Control Board, San Diego Region, shall be considered priority sites. If the Discharger 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

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		satisfied." See Minimization Plan, Section 6.6 (see chart), March 9, 2009. The selection of the restoration site(s) will be reviewed and approved by an interagency team of scientists. The fact that the selected site(s) may not be located directly in Agua Hedionda Lagoon does not undermine the ecological value of the mitigation site(s).
236.	Now, this assumption is highly questionable, based on a very scientific important paper that just came out in January of this -- this year, of the Annual Review of Marine Science, authored by University of Miami scientists, Cowen and Sponaugle, entitled, "Larval Dispersion and Marine Population Connectivity." The paper provides a current overview -- an overview of the current scientific knowledge of this subject. The authors state that a full understanding of the population connectivity has important applications for management and conservation.	See Response Nos. 59, 234 and 235. In addition, Commenter has not introduced the referenced paper into the administrative record, denying the Regional Board the opportunity to consider the relevancy and validity of the paper.
237.	One important piece of information in the paper is that it dispels the notion that local larval marine populations can be formed from all potential sources and mixed together into a single pool over hundreds to thousands of kilometers.	See Response Nos. 59 and 234-36. Mitigation under CWC Section 13142.5(b) does not require specification of conditions with respect to larval pools, larval pool formation, and the distances over which larval pools may or may not be formed. No such conditions have been incorporated into the Tentative Order or the Minimization Plan. The comment does not offer any such conditions, or explain how any such conditions might be relevant to a legally compliant mitigation plan under CWC Section 13142.5(b). The comment seems to be more of an expression of the Commenter's scientific interests than a comment that is relevant to this regulatory proceeding.
238.	The authors note that there is now ample evidence that the dispersion distances can vary from just tens to hundreds of kilometers.	See Response Nos. 59, 234-37. The comment does not take issue with any specific dispersion distances assumed or used in the Minimization Plan or its underlying studies. The Empirical Transport Model includes an input variable for the dispersion distance of entrained larvae, which can be up to tens of kilometers depending on the speed of ocean currents. In this context, the transport of entrained Agua Hedionda Lagoon fish larvae is discussed thoroughly in the final EPS

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		Impingement Mortality and Entrainment Characterization Study for each of the commonly entrained lagoon species (i.e., gobies, blennies, garibaldi).
239.	So it's really clear to me that the MLMP does not apply to integrated ecosystems-based approach in assessing and mitigating the impacts of the desalinization project, and therefore it's fundamentally flawed.	See Response No. 10(b).
4. Testimony of Jim Peugh Representing San Diego Audubon Society		
240.	Without a detailed mitigation plan you have absolutely no way of knowing whether the resulting mitigation project can or will satisfy these performance standards, and actually offset the project's significant environmental impacts.	Commenter is incorrect to the extent that Commenter implies that it will not be possible to ascertain whether the mitigation project will satisfy performance standards. The Discharger is required to prepare a detailed Restoration Plan prior to construction of the planned wetlands. The MLMP provides for a multi-phase process that begins with an initial approval of the project and then proceeds to the development and consideration of a highly detailed Restoration Plan. This multi-phase process is modeled after SCE's successful San Dieguito Restoration Project. Before restoring the wetlands in Del Mar's San Dieguito Lagoon, SCE developed a highly-detailed, Final Restoration Plan that included the elements specified in SCE's coastal development permit. Within two years of receipt of its own coastal development permit, the Discharger will submit a similar type of document for review and approval by the Regional Board and Coastal Commission, as required by Condition A of the MLMP. The performance standards of the MLMP are stringent and rigorous, requiring that the restored wetlands support biological populations, including vascular plants and algae, fish, macrobenthic invertebrates, birds, and food chain support that are 95% similar to the same populations at up to four reference wetlands. The performance standards require the distribution of habitats in the restored wetlands and their relative elevation do not vary substantially. See Response No. 109. This approach was approved by the Coastal Commission. The Regional Board and the Coastal Commission are authorized to determine project success or failure, based on the MLMP's rigorous performance standards, and have the authority to order remediation in the event the rigorous performance criteria are not met. See Response No. 112. Commenter implies that the mitigation plans include some uncertainties. This is not unusual and is well accounted for in the MLMP. Nonetheless, wetlands

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		restoration, including restoration as mitigation and restoration for the sake of restoration, is a high priority among resource managers and local, state, and regional governments. The key to addressing this uncertainty rests in establishing rigorous performance standards that must be satisfied. By imposing such standards, the Coastal Commission has determined there is a high degree of scientific confidence that the required restoration will succeed. The MLMP's strict performance standards and success criteria were developed during the interagency process at the direction of the Coastal Commission using the successful SCE mitigation project for the San Onofre Nuclear Generating Station as a model. See Response No. 227. The success of the Project's mitigation is assured because Discharger must comply with these standards, which will be enforced by the Coastal Commission and the Regional Board. See Response No. 112.
241.	You need the specifics. You need the time to analyze it. You need the resources to analyze it, which is a tough time right now with cutbacks.	The Regional Board has spent considerable time and resources reviewing and analyzing the Minimization Plan and the MLMP. Consistent with the Regional Board's directive, the Discharger engaged in a months-long interagency process to develop the mitigation proposal, the MLMP, now incorporated in the Minimization Plan as Part A of Chapter 6. A stakeholder meeting was held on May 1, 2008, which included, among others, staff and experts from the Coastal Commission, the Regional Board, State Lands Commission, California Department of Fish & Game, and the National Marine Fisheries Service. After this interagency coordination and receipt of substantial public comment, the MLMP was approved by the Coastal Commission on August 6, 2008. Following the Coastal Commission's action, on February 11, 2009 and April 8, 2009, the Regional Board considered the MLMP and the Minimization Plan. The Regional Board will again consider the Minimization Plan on May 13, 2009. See Response Nos. 2 and 4.
242.	Richard Ambrose, Professor Richard Ambrose of UCLA has done research and discovered a large percentage of the wetland mitigation projects in our region have not satisfied their performance requirements. Our region's wildlife continues to suffer from their underperformance. It would be nice if wetland restoration was as straightforward as building with Legos, but it's not.	The Regional Board has noted the comment, which is general in nature rather than specific to the CDP and thus does not require a specific response.

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243.	To be really effective, a wetland project must soon become self-sufficient and self-sustaining. That takes a -- has a lot of things that -- a lot of things have to happen to make that -- that work out.	The performance standards adopted by the Coastal Commission include a requirement that the biological communities of the restored site be 95% similar to up to four reference sites for at least 3 consecutive years. See Response No. 240. Only a self-sustaining site could meet this stringent standard. Dr. John Teal, scientist emeritus at the Woods Hole Oceanographic Institution, summarized the steps necessary for successful wetlands Restoration Plan. (Wetland Restoration Success, Appendix G Attachment G-2, Public Service Electric and Gas Company Renewal Application, Salem Generation Station, Permit No. NJ0005622, March 4, 1999.) Restoration of degraded estuarine marshes has the greatest probability of success when the right lands are selected, the right design is implemented, and the right follow-up is pursued. The selected lands should be former salt marshes with elevations, groundwater and tide relationships appropriate for restoration. Plant propagules and animals should be present in neighboring marshes in order to populate the restored marsh. Sediments with the appropriate organic content should be confirmed. The restoration design should be based on ecological engineering which is an integrated approach to environmental management that assures that restoration takes the most natural path, the path most likely to be stable into the future. The restoration should incorporate adaptive management that provides a framework for identifying and implementing actions necessary to keep the restoration on track. All of these steps will be taken. The Coastal Commission has determined that restoration or creation must take place at one of 11 existing wetlands, thereby providing a high degree of certainty that the area was a former marsh, that the appropriate soils are present, that tidal and groundwater relationships are favorable, and that plant and animal propagules are present. Adaptive management is an important aspect of any restoration or creation and will be incorporated into the Restoration Plan.
244.	The natural wetlands have had hundreds of thousands of years for these things to work out. But when you're restoring one, it doesn't -- you have to make sure the hydrology is totally appropriate, and that in a time where our climate is changing and our sea level is rising. So there's a lot of uncertainties to shoot for.	The MLMP builds on well-established, scientific methods for developing viable wetlands mitigation. As discussed in Response Nos. 109 and 240, the MLMP requires a wide range of performance standards that must be met to ensure the effectiveness and longevity of the mitigation area. The potential for climate change and sea level rise will be addressed in the

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		Restoration Plan. Coastal Commission scientists are actively involved in analyzing potential sea level rise scenarios. The hydrology is addressed by the performance standards described in Response No. 240.
245.	The inputs and outputs of sediments must be totally appropriate in terms of amplitude, particle size, and seasonal variation.	While the sediment of the restored wetland must be appropriate to support the plants and animals that inhabit these habitats, there is no scientific method for determining a priori the degree of detail that the Commenter describes. Many scientists examine sediment characteristics in support of wetland restoration projects. Hydrologists model sediment movement through a wetland system and geologists examine grain size and possible contaminants. Similar analyses will be conducted in support of the site selected by the Discharger. However, the variation of amplitude and particle size can be modeled only in relation to predicted tides and selected flood events and not predicted to the degree stated. To a large degree, sediment suitability must be measured indirectly through the development of the marsh and algal canopies and benthic invertebrate populations. The MLMP includes performance standards for these components of the restored marsh, as discussed in Response Nos. 109 and 240.
246.	Nutrient flows into, within, and out of the project must be totally appropriate or it won't work."	Implicit in the Restoration Planning approach is the obligation to produce a healthy functioning wetlands from a nutrient and sediment perspective. Proper nutrient levels can be inferred through plant canopy development and animal populations. The performance standards referenced in Response No. 240 are a proxy for a healthy, functioning wetlands, which necessarily require appropriate nutrient flows.
247.	The project must be so healthy that it will eventually inherently resist invasion of species. There are a lot of other effects.	The assertion that the restored site must "inherently resist" invasion of such species puts forth a standard that is not feasible, and it ignores the adaptive management needed to deal with such species. Natural systems have not been shown to have sufficient inherent resistance to prevent the spread of such species; holding the Discharger to such a quixotic standard is therefore unrealistic. As discussed in Response No. 243, the performance standards ensure the

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		mitigation area will be a self-sustaining system, which will facilitate its ability to resist invasive species. However, there are virtually no wetlands in southern California that are not subject to invasive species to some extent. This includes successful, healthy wetlands that may be used as reference sites, such as Tijuana Estuary. It is acknowledged by resource managers that active control of exotic species is required. The MLMP states that exotics shall not impair important functions of the restored site. To the extent that exotic species occur at the restoration site, the appropriate control method will be determined by the Regional Board and the Coastal Commission.
248.	It has -- it has -- as Ed mentioned, it has to have access to larvae and seeds from other sites, so if something happens on this site, that it can be recovered over time.	The Regional Board agrees that restored site must have access to larvae and seeds. The restoration must occur at one of 11 existing southern California coastal wetlands. The final site will be a part of a larger, functioning wetland and will be connected hydraulically to both the existing wetland and the ocean, by which reproductive propagules, including ichthyplankton and plant seed, will be dispersed. The proposed wetland is being built to compensate for larvae entrained and fish impinged at Agua Hedionda Lagoon. Larvae production is measured indirectly, consistent with the ETM model, through the establishment of the plants and animals required under the MLMP, as described in the performance standards described in Response Nos. 109 and 240.
249.	As people love to say, the devil is in the details. It will take a lot of review and analysis of specifics to assess whether this -- whether their specified project has a chance to satisfy its goals. But you won't even see the project until after you make these improvements. You have no way, and your staff has no way of making these assessments to figure out whether the mitigation is feasible.	See Response No. 240 for a discussion of the Restoration Plan that will be prepared after approval of the MLMP to ensure that the mitigation project meets the performance standards. See Response No. 241 for an explanation of the Regional Board's review and analysis of the Minimization Plan and the MLMP.
PUBLIC TESTIMONY RECEIVED APRIL 8, 2009		
1. Testimony of Marco Gonzalez Representing San Diego Coastkeeper and Surfrider		
250.	The Marine Life Mitigation Plan Feasibility Analysis regarding the five sites that you asked them to come back with has not been done.	On February 11, 2009, the Regional Board identified a list of outstanding items concerning the March 6, 2008 Minimization Plan, including:

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		(1) 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; (2) Poseidon to provide a consolidated set of all requirements imposed to date by the various agencies. As show in this item 2, the Regional Board required only that the Discharger reduce the number of potential mitigation sites to five; it did not order the Discharger to conduct a "feasibility analysis" regarding the five sites, as Commenter asserts. In Chapter 6 of the revised March 27, 2009 Minimization Plan, the Discharger, in consultation with the Regional Board, identified 11 sites, considering the five sites within the boundaries of the Regional Board as priority sites. See Response No. 127. The Discharger complied with the Regional Board's request.
251.	We think that there are specific performance criteria that need to be discussed for these sites that might make up the mitigation plan eventually. We think without them that we can't be assured that the wetlands restoration or creation is actually feasible.	The MLMP provides strict performance criteria, which are enforceable by the Regional Board and the Coastal Commission. See Response Nos. 109 and 240.
252.	We think that additional data collection assessment is probably necessary and supported by the record.	Commenter does not identify which data are lacking. Sufficient data in the record has been submitted by the Discharger, the Regional Board staff, and Commenters so as to allow the Regional Board to appropriately assess the CDP's compliance with CWC Section 13142.5(b). To the extent the Commenter suggests that the Impingement and Entrainment Mortality Characterization Study was in any way deficient, see Response No. 10c.
253.	We think that the Water Code Section 13142.5 Site Alternative Feasibility Analysis for a stand-alone project has not been done and therefore you cannot approve this as a stand-alone project.	See Response No. 143 for a discussion of the Regional Board's approval of the CDP as a co-located project versus as a stand-alone project. See also Response No. 31 regarding the expiration of the statute of limitations for challenging the Regional Board's adoption of Order No. R9-

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		2006-0065 identifying the CDP site as co-located with the EPS.
254.	While we know that it is specifically put forth by staff as a co-located project, we also know that Poseidon wants it essentially to be approved as a stand-alone project. We'd like to just draw some attention to, not to be pejorative, but the idiocy of approving the project as a co-located project without looking at the stand-alone implications of it to taxpayers and the ecology.	See Response No. 143 for a discussion of the Regional Board's approval of the CDP as a co-located project versus as a stand-alone project.
255.	We implore you to believe your staff. There is no nefarious plan afoot for them to undermine science and good policy with respect to water supply — they are just doing their job. Believe Dr. Raimondi. He was referred to by Poseidon as a consultant of the Board. While they referred to their own paid Dr. Jenkins as an independent reviewer. This is just isn't true. Dr. Raimondi is an independent third party reviewer just like he was at the Coastal Commission. He was paid for by Poseidon, not by the state and you should listen to his conclusions.	Comment noted that the commenter is urging the Regional Board to adopt Dr. Raimondi's assessment of impingement, reflected in his April 1, 2009 statement. See Response Nos. 309-320 regarding the Raimondi April 1 statement. Regional Board staff reached out to Dr. Raimondi to conduct this assessment – not the Discharger. The Regional Board has no reason to doubt Dr. Jenkins' independence.
256.	Just acknowledge how dysfunctional this process was. This is a precedent setting project which hopefully does not result in a precedent setting process because this is just horrible in terms of the Water Code's desire that the public have an opportunity to be involved in a meaningful way. And I think we see that based on the fact that we are having such in-depth scientific discussion and at what should be one of the final hearings.	See Response No. 129. The characterization of the process as "dysfunctional" and "horrible" seems intemperate and is wholly off base. The proceedings have been deliberative, with hours of public hearing, in addition to ample public comment periods. The Regional Board granted significant procedural safeguards to the public, including the environmental groups and other interested persons, by providing ample opportunity to submit written comments and present oral testimony at the hearings. In-depth scientific discussion is a sign of a vigorous and open public process. The Regional Board appreciates Commenter's participation, and has taken all input received into account.
257.	One of the things to remember is that you only get to compensatory mitigation after you have minimized marine life mortality. We keep putting this out there and we're glad that finally the staff and Poseidon are talking about meeting the correct standard. Before they said it's all about what is	To the extent the Commenter suggests that CWC Section 13142.5(b) requires minimizing intake and mortality prior to mitigation, he is incorrect. CWC Section 13142.5(b) requires the use of the best available mitigation measures feasible in order to minimize the intake and mortality of all forms of marine life. The best available mitigation feasible is part of a comprehensive

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	the impacts of marine life mortality. That's very different than minimizing marine life mortality up front. It is important to know that the viability of this MLMP is really a secondary question to whether all of the site, design and technology issues have been addressed with respect to minimizing marine life mortality.	effort, together with the best available site, design, and technology feasible, to minimize intake and mortality. The statute, therefore, does not require minimization first followed by mitigation. To the extent that Commenter is suggesting Discharger is applying "after the fact" mitigation, see Response No. 27b.
258.	Back in February, Poseidon was told … limit your sites to five. Give us more information such that we can come back and assess what are the likely five sites instead of just eleven. What did you get in response to that? We'll try our best to do the five that are in San Diego. I don't think that's what was contemplated. I don't think that what was directed. It certainly doesn't make much sense for them to go back and simply insert a sentence that says we'll give priority to the San Diego sites. The idea was we needed to ratchet down from the 11 sites proposed in the MLMP and focus in on five that would provide the most likely opportunities to meet the mitigation standards that we need in order to address the impacts that this project will cause. I'm frankly blown away that they didn't give us more information about the highest five likely candidate sites.	The Minimization Plan describes the 11 pre-approved sites identified in the MLMP in detail and provides that the five sites within the boundaries of the Regional Board are priority sites. This amendment to the Minimization Plan complies with the directive set at the February 11, 2009 hearing. See Regional Board Staff Report: Review of Poseidon's Flow Entrainment and Impingement Minimization Plan Dated March 9, 2009, p. 5. March 27, 2009. See also Response Nos. 148 and 210 for a discussion of the Discharger's analysis of alternative sites.
259.	a. One of the things that has been important in terms of our perspective on the feasibility of the marine life mitigation plan is that the data all say that you can't know, first of all, that what was creation or restoration will work. We could have tons of evidence in the record to show that every study that has even done to go and look at overall how successful litigations events have been have shown that we don't achieve the structure and function that we think we're going to or that we actually need to mitigate the loss impacts or the impacts that were impacting. Specifically salt marsh in San Diego, we have evidence in the records that says it's very difficult to achieve the perfect wetland that frankly is being paraded in front of you. All of these promises that the Marine Life Mitigation Plan will result in this somehow pristine wetland and upon completion. It's frankly now borne out by	a. See Response No. 240 for a discussion of the Restoration Plan that will be prepared after approval of the MLMP to ensure that the mitigation project meets the performance standards. See Response No. 109 and 240, which describe the MLMP's incorporation of strict, measurable performance standards that are enforceable by the Regional Board and the Coastal Commission. b. Commenter provides no factual basis upon which to support the allegation that the San Dieguito restoration project is very far from having been proven as a successful mitigation site. The administrative record indicates otherwise. Public commentators remarking on the San Dieguito Wetland Restoration Project have called the plan "a fabulous project" which has been "very carefully designed." James Steinberg, Forward, Marsh, San Diego Union-Tribune, March 19, 2006 (quoting Craig Adams, executive director of the San Dieguito Valley Conservancy). SCE and local media have both documented

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	any of the signs so frankly Mr. Nordby worked on some of those projects in the past. b. We know that it is very, very difficult and even the San Dieguito restoration project is very far from having been proven as a successful mitigation site. c. We take the position that without site specific criteria with respect to what you are going to achieve at this mitigation sites it's impossible for you to say that, that Marine Life Marine Plan Mitigation Plan actually accomplishes the goals and the requirements of club. d. One of the things that's important for Poseidon to realize and that you should emphasize in your consideration is that by having the true up that Mr. Garrett and Mr. Singarella talked about where they would go back and essentially ensure that a failing wetland would not mark the end of their mitigation obligation but rather that they would have to come back and do whatever extra it might take for them to achieve the prescribed performance that's being laid out today. Number of drew up discussion. Well, first of all, that's a blank check and they need to know that and that their investors need to know that. Given that there isn't any evidence in the record to suggest that you can successfully create a wetland the way that they are claiming they can, they have to know that the 20 to 30 million dollars they may be spending up front might be a very small piece of the pie. And most importantly, one of the things that really bother me about Chris Garrett's final comment, he got up here and after Mr. Singarella spent a lot of time say, "You don't have to worry about any of these because at the end of the day if we don't produce our 1715 kg magic number of impingement loss, we're going to have to do it in similar capacity that your executive officer might tell us and then Mr. Jericho up here said, "Oh, by the way, don't even think about hassling this to do more than that. So on the one hand, he say, we are going to threw up our actual ability to meet your predicted amount of impingement." But don't try to tie what we have to	that the San Dieguito Wetland Restoration Project has completed several key milestones in the overall completion of the 150-acre restoration project. See Southern California Edison, San Dieguito Lagoon Restoration (available at http://www.sce.com/PowerandEnvironment/PowerGeneration/MarineMitigation/SanDieguitoLagoonRestoration.htm) (stating that SCE submitted a Preliminary Restoration Plan in September 1997, certified a Final Environmental Impact Report for the project in September 2000, submitted a Final Restoration Plan in November 2005, and began construction in Fall 2006); Matthew Rodriguez, Tidal Basin Opens to Ocean, San Diego Union-Tribune, January 24, 2008 (stating that a 40-acre tidal basin opened to the public in January 2008). c. See Response No. 240 for a discussion of the Restoration Plan that will be prepared after approval of the MLMP to ensure that the mitigation project meets the performance standards. See Response No. 109 and 240, which describe the MLMP's incorporation of strict, measurable performance standards that are enforceable by the Regional Board and the Coastal Commission. d. This comment largely characterizes other testimony in the record. That other testimony speaks for itself. The comment confuses the impingement obligation with the double-counting issue. The Discharger is required to prove up the impingement obligation. Mr. Nordby has opined that it may require about 11 acres of coastal wetlands of the appropriate kind to produce 1,715 kg/yr of fish biomass. Thus, the Regional Board has reasonable confidence that the impingement compensation will be provided under the proposed two-phase program, likely during Phase I (37 acres). To the extent the comment suggests a deficiency in the MLMP, see Response No. 109. To the extent the comment constitutes argument, unsupported by introduced evidence, it does not warrant response.

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	ultimately do to what ultimately get impinged. You should be offended by that. The hubris of a sign to get appearance say that we promise, we will do what you might think we're going to impact based on all these speculative models and all of these assumptions that experts can't agree on. Set us a ceiling as to the most amount of impingement mitigation we can ever have to do. Why should they be entitled to that, frankly? The fact is it should be the floor. If Poseidon is going to go back and throw up that cell after the impacts have already happen, frankly they should have to chew up to the impingement that's attributable to their project whenever that can comes at the very least. It's just frankly offensive that they will get up and say that you can do this after the fact calculation as to the maximum amount of mitigation they would have to do but then they set this ceiling up what are predictive possibility as today. Very frustrating from the public perspective.	
260.	(a) With respect to impingement issues, there is an underlying problem that we have with the arguments being put forward by the experts that are hired by Poseidon to do Poseidon's bidding. And that has to do with the very technical issue of what is APF? An area of production foregone. And what is it really intended to do? (b) They stood up here before you and they said, APF is intended to account for those species that are lost for entrainment and it has nothing to do with the species that are lost for impingement. Scientifically, that's not true. (c) You saw a couple of buckets that Mr. Singarella put up. And in the left, he said, these are the entrainment bucket fish and then on the other side, these are fish that are going to be impinged and we're not counting those because they are not related to the entrainment calculation of APF. (d) Here is the problem, APF is derived to try to account for not the lost fish from entrainment standing alone, but for the	(a) See Response No. 322(a). The ETM is a species-specific model that is based on the principle that the entrainment impact is limited to the "main species" that are "most affected by entrainment." Recommended Revised Condition Compliance Findings (approved December 10, 2008), p. 12 of 19. See Response No. 314. The Regional Board concurs with the Scientific Advisory Panel's (SAP) conclusion that "the APF is used to determine impacts to only those species affected by entrainment and the mitigation resulting from the APF is meant to account only for those effects." Recommended Revised Condition Compliance Findings (approved December 10, 2008), p. 12 of 19. See Response No. 314. The SAP is a team of seven independent scientists (including Dr. Raimondi) that provides guidance and oversight to the Coastal Commission on ecological issues associated with the San Dieguito Restoration Project and which, under the terms of the MLMP, will review Discharger's Restoration Plan. (b) The comment is mistaken. The APF does not assume compensatory mortality. Therefore, for the species modeled, it addresses all life stages, including those subject to impingement. The Discharger presented the APF

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	function of those lost fish in the ecosystem at the various stages of their life that they might have otherwise lived if they hadn't been entrained. (e) So imagine this, you take a slew of gobies and blennies and Garibaldis and you killed them in their infant stage. You're precluding them from reaching a life stage where they would become food for a top smelts or food for some other fish that might also be an impinged fish. So the methodology that goes into calculating APF provides a little bit of a conservative layer because what you are trying to do is recreate the ecosystem impact that you lose as a result of killing a bunch of larval stage fish. (f) Of whatever your indicator fishes, remember the blennies, the Garibaldi and the gobies are the high level indicators. But that's not everything that are entrained. (g) So Dr. Raimondi when he comes in, he says, hey it's a double counting. He is not saying that there aren't impinged fishes that are going to also be created by this wetland as proposed. What he is saying is the APF calculations specific to entrainment is an ecosystem based function. This entire mitigation function as applied to entrainment is intended to repair the ecosystem at the level that you can speculatively, scientifically, based on this model come up with today. (h) But the way that they have approached it they have come in and say look, you put entrainment in little box, you put impingement in a little box and you look at them as essentially two different pieces of the restored wetland. The fact of the matter is it isn't the facts. It isn't the way that Raimondi assessed it, it isn't the way that staff assessed it, and frankly its disingenuous science.	in this manner, explaining to what extent species modeled in the ETM could not be counted toward the impingement obligation. See Response No. 260(a) and 314(a). (c) The comment is mistaken. The right-hand buckets illustrated the species of fish that would be available to count toward the impingement obligation. They were not "fish that are going to be impinged." In addition, fish on the right-hand side are available to be counted towards the impingement obligation, contrary to the comment's suggestion. (d) To the extent that the comment describes ecosystem functions that would not be subject to intake and mortality by the proposed CDP, the comment is describing possible effects that are not part of the minimization obligation under CWC Section 13142.5(b). These possible effects are speculative and asserted only generically and generally by the comment, without scientific support or evidence. In addition, the comment does not support the proposition that the APF is derived to account for the function of those lost fish in the ecosystem. As described below, the available scientific evidence is to the contrary. The ETM is a species-specific model that is based on the principle that the entrainment impact is to the main species subject to entrainment. See Response Nos. 260(a), 260(b) and 314(a). To the extent that Commenter suggests that the APF represents some broader impact that extends beyond the most commonly entrained species and/or to other organisms that exist within the ecosystem, Commenter is mistaken. In July 2008, the SAP—of which Dr. Raimondi is one of seven members (see Response No. 260(a))—directly addressed Commenter's argument that the ETM is designed to mitigate for broader, ecosystem-based impacts. In response to a question regarding whether the ETM assumes that entrainment "will render all affected acreage (i.e., the APF) non-functional, even though that acreage would only be partially affected and would continue to allow numerous other species to function," the SAP "reiterated that these entrainment studies do not assume the complete loss of ecosystem function within an area of APF; instead they identify only the area that would be

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		needed to replace the numbers and types of species identified in the study as subject to entrainment." Recommended Revised Condition Compliance Findings (approved December 10, 2008), p. 12 of 19. The SAP explained further that "[t]he APF is used to determine impacts to only those species most affected by entrainment, and the mitigation resulting from the APF is meant to account only for those effects." Id. An ecosystem approach suggested by the comment may be more appropriate in a situation where the project destroys an ecosystem. In the context of a Clean Water Act Section 404 permit with Section 401 certification, mitigation for fill that destroys an ecosystem may require mitigation that offsets the loss of complexity and diversity in the ecosystem. Here, specific components of the lagoon environment may be altered due to impingement and entrainment – leaving intact other important portions of the marine ecosystem. As a result, an appropriate mitigation project would seek to offset the specific alterations from the particularized effects of entrainment and impingement. (e) Commenter provides no scientific evidence in support of the hypothetical, including the suggestion that topsmelt feed on goby, blenny and/or garibaldi larvae. Evidence in the administrative record indicates that topsmelt feed almost exclusively on planktonic crustaceans and do not feed on goby, blenny, and/or garibaldi larvae. See San Diego Gas & Electric, Encina Power Plant Cooling Water Intake System Demonstration (1980), at pp. 6-52, 6-53. The suggestion that fish larvae may be analogized to, or referred to as, infants is not credible. Fish produce millions of larvae, very few of which survive to the juvenile or adult stage. Commenter provides no evidence in support of the proposition that the ETM is designed to recreate ecosystem impact that "you lose as a result of killing a bunch of larval stage fish." The SAP's findings contradict this assertion. See Response No. 260(d). (f) Commenter is correct in concluding that the EPS intake entrains fish larvae other than blennies, garibaldi and gobies. The 2004/2005 entrainment study reveals that these three (3) species (i.e., gobies, blennies, and garibaldi) accounted for approximately 95% of the total number of larvae entrained, while five (5) ocean species accounted for more than 4% of the

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		total entrainment (i.e., white croaker, northern anchovy, California halibut, queenfish, spotfin croaker). The larvae of the other fish species that live in and around Agua Hedionda Lagoon made up less than 1% of the larvae entrained at the EPS intake during the sampling period. See Impingement Mortality and Entrainment Characterization Study, Effects on the Biological Resources of Agua Hedionda Lagoon and the Nearshore Environment at Table S-1 (Tenera Env't. 2008). The entrainment mitigation requirements set forth in the Minimization Plan are designed to compensate for the entrainment of "the main species", i.e., those that are "most affected by entrainment." See Response Nos. 260(a) and 314. Given that these eight taxa account for more than 99% of the entrained larvae, they are the "main species" for purposes of entrainment mitigation. They are not "indicator" fish, as the comment asserts, without citation. (g) With regard to Dr. Raimondi's double-counting argument, see Response Nos. 309(c), 312, 313, 314. In his statement of April 1, 2009, Dr. Raimondi never said "the APF calculations specific to entrainment is an ecosystem based function," nor did Dr. Raimondi even discuss ecosystem-based effects. Commenter's assertion to the contrary mischaracterizes Dr. Raimondi's comments. In response to Commenter's unsubstantiated claim that the entrainment mitigation "is intended to repair the ecosystem," see Response No. 260(d), noting that the APF does not account for ecosystem-based effects that extend beyond the specific effect on the modeled species. (h) The rich and diverse benefits of coastal wetlands are well established. See Response No. 59. The fact that entrainment and impingement constitute particularized effects that can leave an ecosystem largely intact is well established. Tracking these particularized effects into a mitigation wetlands, and ensuring that the benefits there are not counted twice towards different effects is not disingenuous science. Nor is it placing entrainment and impingement in little boxes. The recommended approach is based on sophisticated analysis of complex systems. The comment's characterization is incorrect.

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261.	(a) The other thing that quite frankly bothered me about the impingement discussion is you heard this repeated "109 acres, oh my God somebody is recommending that they do an extra 50 acres." (b) From what I heard out of staff they put three options on the table. (c) The one is, of course, the Poseidon preferred option - lets do nothing in addition. Its frankly scientifically unjustifiable for them to double-count the entrainment and impingement impact. But lets put that down on the table because the staff is being honest, that's what Poseidon is going to argue, an option. (d) The next they say is lets do what Dr. Raimondi says is your back stop position. Lets do what is rational based on the precedent set at Coastal Commission, lets apply an 80% confidence interval to the assessment of impingement impacts and let's come up with somewhere between 18 and 21 additional acres to be included in the MLMP. That's what the Commission did based on Raimondi, that's the so called precedent if there is one based on the Coastal Commission action. (e) Science precedent says you use a 95% interval and that's what the 95% confidence limit and that's what actually gets you up into the much higher acreages of 21 to 54 and, of course, Poseidon they want to come out and do all the calculations about how bad its gonna be when we use a 109 level, but frankly there's no one who believes you're going to go above and beyond the Coastal Commission 80% confidence limit. (f) Again, they are just trying to spin this in a way to make their position more sympathetic. I guess that's what the lawyers get paid to do. But we need some honesty in the process here.	(a) No one other than the commenter made the statement in quotes, and no one made it on a repeated basis. For an accurate record of the April 8, 2009 hearing, please see the official transcript. (b) Staff's presentation of alternative approaches at the April 8, 2009 hearing speaks for itself. (c) None of the options discussed at the April 8, 2009 hearing are do-nothing alternatives. The double-counting allegation is covered elsewhere. See Response Nos. 314(a), 314(c), 315(c). (d) For reasons stated elsewhere, the Tentative Order adopts an empirical approach to impingement mitigation, relying on field measurement rather than inferential statistics. See Response Nos. 99, 113(1), 172. The Coastal Commission decision on entrainment is not a precedent for impingement analysis. The Coastal Commission did not declare it to be, and the Regional Board has plenary jurisdiction over intake and mortality under CWC Section 13142.5. See, also, PRC 30412 ("The commission shall not, except as provided in subdivision (c), modify, adopt conditions, or take any action in conflict with any determination by the State Water Resources Control Board or any California regional water quality control board in matters relating to water quality or the administration of water rights."). (e) The comment points to no "precedent' in which impingement mitigation was based on 95% confidence limits, and offers no evidence or underlying principle to support its assertion that this is what science requires. On the policy decision to employ empirical measure over inferential statistics, see Response Nos. 99, 113(1), 172. On double-counting and the "higher acreages" that commenter advocates, see Response Nos. 309(c), 312, 313, 314. (f) The comment does not provide any specific instance of an absence of honesty, nor any evidence that the integrity of the proceedings has been compromised.

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262.	(a) The statistical outliers that were the subject of so much conversation earlier, it's incredibly frustrating for us to hear the experts for Poseidon get up and explain things away because frankly, Dr. Raimondi is not here. (b) We don't have the benefit of today's explanations and a comment period to respond to them, we get to respond on the fly as attorneys, not as experts. (c) But let me just make this point with respect the outliers that Dr. Jenkins essentially discounted as relevant to the ultimate consideration of impingement impacts. Let's say I were to come to you and I were to say we've got a statistical anomaly that amounts to 10% of the total impact. And I would say to you, and say similarly you're going to have to mitigate. You remember one of the graphs as put up by Dr. Jenkins. On the X axis he had a calculation of flow and on the Y axis he had a calculation of the impingement. And you have those two outerliers [sic] that were very high above, and you have a bunch of dots down below that were kind of the more often impinged numbers. I would ask you to look at that in these terms analogous to let's say car accident. Lets see along the bottom you had the number of car accidents and along the Y axis, you have the bodily harm. And all the little ones that are down on the bottom, those are fender benders. They don't have a whole lot of bodily harm. But those outerliers [sic] are a dead kid or a dead parent or a significant harm. (d) The problem with their analysis is it says in those circumstances where you have significant harm you get to ignore it. It doesn't mean that it didn't happen, it doesn't mean that it is all that much less likely to happen, but it still happened. (e) And so they try to apply this statistical analyses to a circumstance where as staff had pointed out and Mr. Thompson disagreed, it's purely inappropriate because we	For the comment about outliers, see Response Nos. 93(a-d) and 96. (a) See Response Nos. 93(I) and 96 for further discussion of the two data points as outliers. Regional Board staff invited Dr. Raimondi to participate in the April 8, 2009 hearing, but he chose to not do so, and took the risk that the public hearing would close before any oral testimony on his part. His April 1, 2009 statement was posted on the Regional Board's web site, and was available for review by commenter and its experts. The Minimization Plan proceedings have been ongoing since the Discharger first submitted its draft Minimization Plan on February 13, 2007. The commenter has had ample time to retain its own expert and provide expert comment on the impingement data, which were reported in the March 2008 and March 2009 Minimization Plans, and also are contained in the February 2008 Section 316(b) study, entitled, "Impingement Mortality and Entrainment Characterization Study, Effects on the Biological Resources of Agua Hedionda Lagoon and the Nearshore Environment at 3-28 (Tenera Env't. 2008)." (b) The April 8, 2009 hearing was properly noticed and gave commenter clear notice as to its subject matter. It has been clear since the Discharger first submitted a draft Minimization Plan on February 13, 2007 that the subject matter of these proceedings is technical and scientific in nature. Numerous experts have testified at each of the two hearings preceding the April 8, 2009 hearing. Commenter had every opportunity to retain an expert and have that expert present at the April 8, 2009 hearing. The topics discussed at the April 8, 2009 hearing were topics about which commenter and the public in general had prior notice, and do not warrant extension of the comment period. (c) The suggestion that the Regional Board is making a decision that is tantamount to ignoring dead children and parents is not appropriate. The impingement obligation specified in the Tentative Order accounts for the impingement observed during the outlier events in a manner that almost certainly overestimates their importance. See Response No. 262(e). So, the very premise of the comment's analogy is missing. The reality is that the outlier events appear to be rare events not principally related to flow at the intakes. The Regional Board is charged with ascertaining the intake and mortality that fairly may be ascribed to a future facility. It has historical information on the basis of which it needs to make reasonable judgments

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	know that at the end of the day there were a certain amount of species that were impinged and the Water Code says that they have to account for that. (f) So you don't -- where you have significant harm that occurs in an outerlying [sic] event, if you can't explain that away, you have to account for it. (g) And then we come to the issue of can you explain it away. Today was the first time that I saw Dr. Mayer draw a circle around Canon Lake, the detention basin and say that that's the reason why you have these outerliers [sic]. Frankly, that wasn't in the record. (h) Canon Lake was not the source of overflows into the EPS. (i) And Dr. Jenkins when he did his analysis, he was looking at the Agua Hedionda creek flows, that's on the other side of the freaking lagoon. (j) It makes no sense in any context of this record to say that we know why those statistical outliers occurred. But we do know that they occurred. (k) And we do know that the EPS killed a number of fish.	about the future conditions that will prevail at a new facility. That new facility does not yet exist and has not caused any harm to date. The Tentative Order requires the Discharger to compensate fully for all intake and mortality that may be anticipated from the future operations, and makes numerous conservative assumptions, ensuring that it is protective. (d) Outliers are included for purposes of Discharger's mitigation obligation, which is based on an impingement estimate of 4.7 kg/day—a value that assumes that there is a 100% probability that the outliers will occur every year. (e) The comment misapprehends the Tentative Order and the Minimization Plan. The Discharger has acquiesced in the Regional Board's directive to mitigate for all impingement observed, including on outlier days. The value of 4.7 kg/day, which drives the impingement obligation, makes no adjustment to the outlier events, and actually assumes that impingement on those days is representative of impingement on each of 14 days every year. The ongoing dialogue about outliers is relevant to an appreciation of the conservative and protective nature of the mitigation approach, and underscores the importance of the impingement monitoring required under the Tentative Order. (f) Outliers are included for purposes of Discharger's mitigation obligation, which is based on an impingement estimate of 4.7 kg/day—a value that assumes that there is a 100% probability that the the outliers will occur every year and with the same frequency. See Response Nos. 93(I) and 96 for further discussion of outliers. (g) The testimony at a public hearing is part of the record, contrary to the comment's implication. Dr. Mayer and the Discharger previously had identified the freshwater fish issue. See March 27, 2009 Minimization Plan, Attachment 5. Dr. Mayer's testimony at the April 8, 2009 hearing was an elaboration on a topic already raised in the record including in the March 27 Staff Report and the April 8 Supplemental Staff Report for this hearing. See, also, Response Nos. 93(II)(d). (h) Because it is not clear what the comment means by "overflows into the EPS," this comment is vague and ambiguous. The comment does not define this vague term, and does not offer any alternative explanation or support such an alternative explanation with any data or information. This comment

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		is conclusory and constitutes unsupported argument. (i) Agua Hedionda Creek is upstream of and tributary to Agua Hedionda Lagoon, and a major source of runoff to Agua Hedionda Lagoon during extreme rainfall events. Although Agua Hedionda Lagoon is primarily a marine lagoon, it can be influenced by freshwater inflows, especially from December through April. See Impingement Mortality and Entrainment Characterization Study, Effects on the Biological Resources of Agua Hedionda Lagoon and the Nearshore Environment (Tenera Env't. 2008), at 2-28. The creek's location and relationship to Agua Hedionda Lagoon render it relevant. The comment that the creek is "on the other side of the freaking lagoon" provides no rational basis to dismiss or discount the analysis by Dr. Jenkins. See also Response 93(II)(d). (j) The commenter is not persuaded that there is evidence, supported by credible and substantial expert evidence, as to why the "statistical outliers occurred." The Regional Board believes that the record before it reflects a reasonable basis to help inform the nature of the outlier events, and to place them in a proper context. These events appear to be outliers; therefore including them in the 4.7 kg/day impingement obligation is conservative and protective; and therefore the impingement monitoring in the Tentative Order is very important for purposes of continuing to assess this issue as part of Minimization Plan implementation. See Response Nos. 267(d) and 267(e) regarding the conservative nature of this approach. (k) Vague and ambiguous as to time, quantities, etc. Impingement can result in mortality of fish. Large numbers of freshwater fish probably died before reaching the intake. Therefore, EPS did not cause mortality.
263.	The request that we have is that you apply at the very minimum the 80% confidence level that you require somewhere between 18 and 45 additional acres. We think that if they commit to 100% intertidal mudflats for the impingement impacts we could use an 80% number and require 18 acres of additional mitigation.	See Response Nos. 108, 261(d), 315(b), 315(c).
264.	There's some questions that you should be asking yourself with respect to whether they have complied with the site	The site analysis in the Minimization Plan satisfies CWC Section 13142.5(b). The comment provides no specific reason why it does not.

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	analysis requirements of the Water Code. You need to be absolutely certain what you are approving today. Are you approving the co-located facility or a stand-alone facility. Poseidon's investors are taking a risk. I likened it in my comment letter to the risks one might take building a house in the middle of a planned highway. We the taxpayers unfortunately might be saddled with this plant at some point. Much like they were in Tampa, if Poseidon doesn't perform after a period of time the City of Carlsbad takes it back. More likely the county water authority takes it by eminent domain or perhaps purchases it from Poseidon at some point in the future. But the point is the value of that project as a stand alone facility and the ability to meet the stand alone analysis will affect the value and will affect what taxpayers are ultimately saddled with. So today, where you ought to be clear is that under Porter-Cologne we are not doing stand alone analysis. We don't have the ability to do the stand alone analysis based on the record that's before us. And if we were, we would have to focus on Poseidon's evidence that alternative intakes are not feasible here and therefore we can never meet the stand alone requirements under Porter-Cologne 13142.5. Remember, 13142.5 says we need to minimize the intake and mortality of marine life. That means that you have to design your plant using technology and a location that will minimize the marine life that comes in. If we today didn't have an EPS, would this be the right place for it. I don't think that we can answer in the affirmative.	The present approval is for operations in co-located mode. This is consistent with the description of the Discharger's proposed CDP operation in its Report of Waste Discharge for Order No. R9-2006-0065. As reflected in Tentative Order No. R92009-0038, additional evaluation of CDP's operations for compliance with CWC Section 13142.5(b) would be necessary if EPS ceases power generation operations and the Discharger proposes, through a new Report of Waste Discharge, to operate EPS's seawater intake and outfall independently for the benefit of the CDP ("stand-alone operation"). The value of the CDP in stand-alone mode is not a subject that is within the Regional Board's purview, and which is irrelevant to the present proceeding. The comment suggests that intake alternatives, location, and technology should be evaluated in a future proceeding on stand-alone mode. In the eventuality of such a proceeding, the focus would be on the intake technologies not feasible today because of access limitations to the EPS intakes. The substantial evaluations of these topics already undertaken pursuant to these Minimization Plan proceedings would be relevant in any stand-alone proceeding. Future performance by the Discharger to meet its contractual obligations to its retail water customers is beyond the scope of the Regional Board's present action. It should be noted that the retail water users uniformly have urged the Regional Board to approve the Minimization Plan. Some future proceeding in which the City of Carlsbad or the San Diego Water Authority take over the CDP, whether via eminent domain or some other means, is speculative and beyond the scope of the present action. Neither entity has offered any comment on such a subject.
265.	The other thing that is difficult in the staff in the approval of the tentative order is what triggers the stand alone analysis. As you've said or has been recommended by the board, by board staff, that the trigger of the stand alone analysis is the complete cessation of EPS infrastructure use. Well, that just incentivizes the continuation of that once through cooling technology. The reality is the benefits of co-location that are being used to drive your alternative analysis for a co-located plant, go away as soon as the driver of the flows becomes	The Tentative Order proposes to specify further what triggers the stand-alone analysis, requiring the ROWD for stand-alone authorization within 180 days from when the operator of the EPS gives notice to the CEC of intent to cease operations. See Response No. 34(b), for a discussion on what constitutes a complete cessation of operations by EPS. Regarding incentivizing OTC, see Response No. 140. Regarding the timing of the stand-alone analysis, the recommendation is

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	the desalination facility. Therefore, it would be appropriate for the tentative order to require the stand alone analysis to occur at that point where for any given quarter 3 months of flow the total flows being driven through the system are the, more the result of the desal facility than Encina Power Station. So if you take half of the flows, half of the 304, and you say okay, as soon as they hit half of that amount for three months, then its really the benefits of co-location evaporate and it should be the desal facility having to come back and do its Porter-Cologne analysis which as I have just said they can't meet the Porter-Cologne standard as a stand alone facility so why should they even be building it now in the first place.	without legal or factual basis. See response Nos. 124 and 140. It is speculation for the comment to assert that, under some future scenario, not yet in front of the Regional Board, the CDP would not be able to meet the Porter-Cologne standard. The Regional Board reserves that issue for when it is ripe.
266.	I just wanted to hit one final issue because it has become important in the context of litigation, it should be realized here when you talk about alternatives analysis, one of the things that Poseidon has consistently said is look we have to meet our project purpose and our project purpose is to provide water for Carlsbad and the San Diego region and then when you look at the analysis in the flow minimization plan, the only alternatives they look at are the City of Carlsbad. And then in our cases, specially the Coastal Commission case we have to locate this in Carlsbad because that is the purpose of the project. That ignores reality. When we look at way the county water authority works, when we look at the very water contracts, that they have with the various districts, we know that not everybody is connecting up to the City of Carlsbad directly. Specifically, they are connecting up to the desalination facility. We know that whether its Oceanside, or the Sweetwater District, Olivenhain they are all connected to one common thread and that is the County Water Authority conveyance and storage system. Given the complexity of that system and the fact that the County Water authority distributes to everybody, what we have here are paper transfers much like the Imperial Irrigation system transfer much like the way water works in California. You by and sell the rights to water, you	To the extent that the comment criticizes the reasons for the CDP's location in Carlsbad, his argument is unavailing. See Response Nos. 148 and 210 for an explanation of why the EPS site is the best available site feasible to locate the CDP and for a discussion of why alternative site locations are not feasible and do not meet project objectives. To the extent Commenter asserts that alternative intakes were viable, see Response Nos. 42c, 43a, 43b, and 209 for a discussion of the infeasibility of alternative intakes . To the extent Commenter is suggesting that the Minimization Plan is insufficient, see Response Nos. 10a and 18 for a discussion of the Minimization Plan's compliance with CWC Section 13142.5(b)'s requirement to use the best available and feasible mitigation measures to minimize intake and mortality of marine life. See Response No. 143 for a discussion of the Regional Board's approval of the CDP as a co-located project versus as a stand-alone project. See also Response No. 31 regarding the expiration of the statute of limitations for challenging the Regional Board's adoption of Order No. R9-2006-0065 identifying the CDP site as co-located with the EPS.

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	don't buy and sell that physical water itself in most circumstances. So the extent to which the Poseidon or the city come forward and say it has to be located in the city is simply doesn't. Frankly, it can located anywhere in the Metropolitan Water District service area and as long as it can make it to any one of these pipes, you can do the paper transfers. That is the constraint on the scope of the alternatives analysis and it makes no sense to constrain it simply to the location that we have looked at in Carlsbad. As I asked earlier, would this be the best available site if the EPS shut down, I think we can say probably not and frankly we don't have evidence in the record to ensure ourselves of that. There's a lot of other technical issues. I will just close by saying that the future is alternative intakes. They are proposing alternative intakes for a plant up in Dana Point. We don't put this out there to say that the Dana Point plant should take the place of the Carlsbad Desalination Project. But we do show it to say that this is feasible in the region and if you look somewhere outside of Carlsbad where you might have the soils and you might have the conditions where you can do it, alternative intake will be viable. What you approved today is a co-located plant assuming that you move to approve it. The very best you can do if you approve it is to require appropriate mitigation for impingement and entrainment which means adding on to what they've already been required by the Coastal Commission to do. And frankly, you should reconsider the broader picture of whether as a stand alone facility which we know it will eventually come forward to try to get permits for. Whether it can be permitted then and whether you should force them to give you more information about alternative locations before you take this highly precedential step. Thank you for your consideration.	
2. Testimony of Ed Kimura Representing Sierra Club San Diego Chapter		
267.	The Flow, Entrainment and Impingement Minimization Plan is highly flawed and we're urging you, urge you reject it.	The comment makes an argument and recommendation that does not prompt a specific response.

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268.	As stated in the comment letter, my opinion, that Poseidon reasoning to disregard the outliers in the impingement data is flawed. And there are a number of reasons that our comments are slightly different from those who have previously argued that they are not to be discarded. First of all, it's really important to understand the nature of the fish and how they behave in the neighborhood of entrainment. There was an interesting report that was published in 1985 by Mark Helbing of Delos, on the behavior factors of fish entrainment in offshore cooling waters in Southern California. And I found that information very informative and enlightening in terms of how the fish behave. When they come into the lagoon, for example, why are they being impinged? There are a number of factors. And in fact if you go back and look at the early impingement data from 1979, 1980, there is a clear information that shows impingement occurs much higher at nighttime than at daytime. And the reason is, is that while fish can actually navigate and sense flow, they can't sense the flow when it's dark. And so, if they're moving around in the lagoon at night, there's no way that they can avoid the intake if they're schooling and getting, moving into it and getting trapped by the intake. And what I've done is I've analyzed a lot of that data, looking at the fish behavior, and I've done it for the top 20 impinged fishes and plotted, in behavior over time, how they get impinged, what time they occur. And it's really informative, because when we look at the total picture. Then you begin to understand there are natural occurrences taking place that actually influence when fish get impinged. And in the Figure 1 that I showed, the attempt that I did there	See Response Nos. 93(a-d) and 96 regarding outliers. The Regional Board appreciates the specific information on fish behavior provided by the comment. The Regional Board does not believe, however, that a species-by-species behavioral assessment is warranted, as the comment argues, before a sampling event can be considered an outlier. An outlier is largely a statistical concept. Biological information can be useful in exploring plausible explanations for an outlier. This is precisely why the presence of freshwater fish in the impingement surveys for January 12 and February 23, 2005 is relevant. The comment states that impingement may occur disproportionately at night. The impingement surveys were conducted over 24-hour periods and would have captured diurnal variation in impingement. Any disproportionate impingement at night would be reflected in the mitigation obligations. The 1985 report referred to in the comment was not provided to the Regional Board, and the Regional Board therefore was not provided an opportunity to evaluate this report for its relevancy to the present action.

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	was to provide two different species – the shiner surf perch and the top smelt. There are two different behaviors. The top smelt likes to run in tight schools, the surfer perch really does not find schooling type behavior. It also turns out that the event occurred just prior to when the top smelt goes into, and starts spawning. So you would assume that they tend to gather before that time. And if they're schooling in a tight formation, they can get gobbled up by the intake. On the other hand, the surfer perch does not school as often, and it does not have a specific time for spawning. And if you looked at the data, you do not really show any evidence at that time when that spike came out to be influenced by those high impingement. And so if you look at the totality of all of the different species, they all differ, they all vary differently in terms of the behavior, and that you have to into consideration when you say "Should this be an outlier?"	
3. Testimony of Dan McLellan, private citizen		
269.	We must address the cost, high energy use and environmental impacts [of desalination] through discharge of brine, chemicals and carbon dioxide, as well as impingement and entrainment.	The CDP has been extensively reviewed by several of the State's resource agencies, including the Coastal Commission, the State Lands Commission, and the Regional Board. Recognizing that the CDP will not be a direct emitter of GHG emissions, the Coastal Commission required the Discharger to submit, and has since approved, a Greenhouse Gas Plan which will result in the full offset of the Project's net indirect GHG emissions. Regional Board Order No. R9-2006-0065 prescribes the CDP's waste discharge requirements, addressing the potential water quality effects of the brine and chemicals. Under the terms of the Minimization Plan, the CDP's impingement and entrainment will be offset fully by mitigation.
270.	Desalination is still the most expensive source of water due to its energy costs.	Comment provides no factual basis in support of this conclusion.
271.	The cost will increase if the plant operates below capacity exemplified by Tampa Bay water desalination plant that was developed by Poseidon Resources, then outsourced to multinational water agencies Axiona and EWH. The 25 million gallon a day plant came online late, over budget, and has rarely operated at full capacity. Every day that they operate under capacity, the public sector loses and the	Commenter makes assertions unsupported by facts in the administrative record. Thus, the relevance and/or validity of the comments are therefore not subject to verification or evaluation. To the extent that Commenter projects below-capacity operation or a consumer cost increase, it is unsupported speculation. The economic issues associated with the level of operation of the Tampa Bay project are not relevant to the CDP. In addition, the claim that decreased operations of the CDP "under capacity" will have effects on

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	private sector gains.	the public and private sectors is not relevant to this proceeding.
272.	We must consider alternatives that provide sustained benefits with lower cost, such as reclamation and conservation.	See Response No. 228.
273.	The plan to mitigate damage done to the marine ecosystem by a desalination plant in Carlsbad is to plant trees, aiming 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. The management of Poseidon Resources believes they can destroy one area of the environment and create an ecosystem nearby to make up for it. One of the aspects of mitigation even involves stewardship of the water area immediately adjacent to the power plant. This is the very same water they are most likely to pollute discharge that may very well get back, drawn back, into the intake pipes due to the ocean's currents. Are we to expect that the polluters are in the best position to also be stewards of our local resources?	The scope of the Regional Board's review is limited to whether the Minimization Plan will result in the CDP's compliance with CWC Section 13142.5(b), which requires the use of the best available site, design, technology, and mitigation measures feasible to minimize the intake and mortality of marine life. The Minimization Plan does not provide for the planting of trees as a means to minimize intake and mortality of marine life. The Coastal Commission, however, required the Discharger to develop a Greenhouse Gas Reduction Plan (GHG Plan), in order to address emissions. The GHG Plan, approved by the Coastal Commission on August 6, 2008, requires the Discharger to account for and reduce to zero the CDP's net indirect GHG emissions resulting from electricity purchased to run the desalination plant (the CDP will not directly emit GHGs). This will be achieved through the acquisition of carbon offsets and renewable energy credits. The GHG Plan also requires implementation of state-of-the-art on-site energy minimization measures. The Coastal Commission determined that the GHG Plan will result in net carbon neutrality and fully mitigate any effects of the Project's indirect GHG emissions on coastal resources. As part of the GHG Plan, Poseidon has also agreed to contribute $1 million towards reforestation of areas in San Diego impacted by the 2007 wildfires. Separately, to address marine life issues, the MLMP requires the Discharger to create or restore up 55.4 and no less than 37 acres of estuarine wetlands in one or two mitigation sites in two Phases. The Minimization Plan provides for sufficient mitigation to fully offset estimated entrainment or impingement at the CDP for flows up to 304 MGD. The MLMP identifies 11 mitigation pre-approved mitigation sites, 5 of which are within the boundaries of the Regional Board and therefore priority sites. Agua Hedionda Lagoon is among the sites listed. Final selection of the mitigation site(s) is subject to the approval of the Regional Board and the Coastal Commission. As part of Phase II, the Discharger may propose in its Coastal Development Application

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		to reduce or eliminate the Phase II mitigation (18.4 acres) by implementing new entrainment technology or conducting dredging of Agua Hedionda Lagoon. Mitigation measures pursuant to the MLMP are taken in addition to site, design, and technology measures to minimize the intake and mortality of marine life. The proposed plant will not destroy an area of the environment, as stated by commenter. When using EPS discharge water, the plant will have a negligible effect on receiving waters. When drawing water directly from Agua Hedionda Lagoon without it first being used at the EPS, there is the potential for impingement and entrainment from the plant. These are very particularized effects that do not destroy the environment of the affected area. See Response No. 260(d). The comment incorrectly suggests that the CDP's discharge will "pollute" adjacent water. Pursuant to the Project's NPDES Permit, Order No. R9-2006-0065, the desalination plant is conditioned to comply with all Clean Water Act and Ocean Plan requirements. The Regional Board determined that an average daily effluent limitation of 40 parts per thousand for salinity would protect beneficial uses of the ocean, and Poseidon is required to comply with that limitation pursuant to its NPDES Permit. Any challenge to the discharge requirements should have been raised during the 2006 permit proceedings and is waived at this time.
274.	With regard to impingement and entrainment, the studies from the Encina power station indicate 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. This is especially detrimental to the future growth of the fish population. Poseidon has often stated that two pounds of fish per day are impacted while the number from the report showed up to 40 pounds, for as you saw today, much greater than that, of small fish and eggs per day.	Under the terms of the MLMP, Discharger must create or restore up to 55.4 acres of estuarine wetlands. This mitigation project will provide sufficient habitat to produce and sustain larvae from the eight most commonly entrained species in sufficient quantities to fully offset potential entrainment associated with the CDP's stand-alone operations. The mitigation wetlands will also produce fish biomass that has not already been reserved for entrainment mitigation. This biomass is available to compensate fully for potential CDP-related impingement. The comment offers no evidence to support its assertion that the CDP will be detrimental to the fish population. There is no evidence of population-level impact in the record.

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275.	And in the report, they made the assumption that this was due to toxic runoff from our streets, killing fish, and then subsequently sucking these fish and toxic runoff into the plant. Perhaps that toxic runoff should be mitigated as well. If we are concerned with water supply, let's look at the reclamation from our storm drains, as well as to help protect the ocean and wildlife.	It is beyond the scope of this action to consider mitigation of any toxic runoff from upstream in the watershed. The Regional Board administers a program for dealing with urban runoff; but that program is not part of this CWC Section 13142.5(b) proceeding. To the extent Commenter makes arguments concerning broad planning goals or policies regarding water reclamation, see Response No. 228. With respect to reclamation of water from storm drains, the comment does not provide any assessment as to whether such might offer a reasonable alternative to the CDP. The Regional Board does not believe that harvesting storm drain runoff is a legitimate alternative to producing 50 MGD of potable water on a daily basis to meet the needs of the City of Carlsbad and the other water retailers under contract with the Discharger. The Regional Board is promoting the harvesting of rainfall under the regional storm drain permit for the region including the City of Carlsbad, but harvesting is not expected to provide a major source of potable water, as the proposed CDP would do. See Order No. R9-2007-0001, the San Diego County Municipal Storm Water Permit.
276.	Furthermore, private sector control of water supply is a dangerous precedent to set. It allows supply and allocation decisions, on a resource vital to the survival of humans, to be made by an entity that is responsible only to its shareholders, not clientele or consumers or the people of Southern California. This approach is funded by a multinational investment corporation disguised as a local utility with a vested interest in preserving our local resources or environment. These multinationals are the last people I would contract to restore ecosystems and steward our natural resources.	This comment makes several arguments that are not based on evidence in the record and do not warrant a specific response. The comment overlooks the fact that the Discharger is a water wholesaler, and is providing water to public-sector water retailers such as cities and water districts, each of which exert significant control over water supply and allocation decisions, including with respect to the water supplied by the Discharger. It also overlooks the fact that the potential effects of the project on local resources and the environment are regulated not only by the Regional Board and the Coastal Commission, but have been the subject of an Environmental Impact Report with the City of Carlsbad as the lead agency. To the extent this comment makes arguments concerning broad policy goals, see Response No. 277(b).
4. Testimony of Jared Cariscuolo Representing San Diego Surfrider Foundation		
277.	(a) Surfrider is not expressly opposed to desalination. (b) We are, however, opposed to this particular project	(a) Comment noted. (b) Comment does not prompt a specific response. To the extent

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	because we don't believe it makes the best use of available water extraction resources. (c) We think as Mr. Gonzalez pointed out that subsurface intakes are a much superior alternative. (d) We would prefer to see waste water recycling and some of the other methods of reclaiming the water utilized before we take as drastic a step as using an open ocean intake pipe.	Commenter makes arguments concerning broad planning goals or policies, such comments are generally beyond the scope of the Regional Board's review of the Minimization Plan. The CDP has, however, undergone extensive environmental review by several resource agencies in addition to the Regional Board, including the City of Carlsbad, the Coastal Commission, and the State Lands Commission. (c) See Response No. 42(c) regarding subsurface intake alternatives. (d) See Response 277(b).
278.	So the three points that I wanted to bring up are: that this proposed plan ultimately will result in more marine life mortality than in the current system.	The comment provides no factual basis for the assertion that that Minimization Plan will result in more marine life mortality than in the current system. To the contrary, the Minimization Plan provides for the minimization of intake and mortality via site, design, and technology measures, and provides for full offset of such impacts by mitigation.
279.	Second point, it will facilitate the continued intake within the Encina area through once-through cooling after the system is taken offline.	The comment is speculation and without factual basis to which the Regional Board can respond.
280.	And the third issue that we have especially regards to the mitigation project is that there is not a clearly defined location.	Under the terms of the Minimization Plan and MLMP, a specific mitigation site or sites will be selected and must be approved by the Regional Board and the Coastal Commission. See Response Nos. 127 and 250.
281.	We respect that the sites(?) made the effort to set aside a plan but the bigger issue we have is that that mitigation plan, that 55 acres could be done anywhere throughout the state and we believe that it should be local.	The Minimization Plan provides that of the 11 sites identified in the MLMP, sites within the boundaries of the Regional Board are priority sites. See Response No. 178. See section 6.5 of the Minimization Plan for a list of the 11 sites.
5. Testimony of Scott Andrews, private citizen		
282.	Mitigation is an extremely inexact science. It's unpredictable whether marine reserves will work.	Comment noted that mitigation is an inexact science and that there is some unpredictability involved in wetland restoration. This is not unusual and is well accounted for in the MLMP. Nonetheless, wetlands restoration, including restoration as mitigation and restoration for the sake of restoration, is a high priority among resource managers and local, state, and regional governments. The key to addressing unpredictability rests in establishing rigorous performance standards that must be satisfied, as has occurred here. By imposing such standards, the Coastal Commission and Regional Board

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		have determined there is a high degree of scientific confidence that the required restoration will succeed. The MLMP's strict performance standards and success criteria were developed during the interagency process at the direction of the Coastal Commission using the successful SCE mitigation project for the San Onofre Nuclear Generating Station as a model. See Response No. 227. These strict performance criteria and enforcement mechanisms will ensure success of the mitigation sites(s). See Response Nos. 80 and 112. The legal standard applicable to the Project, CWC Section 13142.5(b), specifically provides for the use of mitigation as a means to minimize intake and mortality of marine life. The Regional Board believes that the science of mitigation is sufficiently well established to provide a rational basis and solid foundation for the Minimization Plan.
283.	The result of the loss of wetlands is gross declines in fish stocks.	No wetlands will be lost as a result of the CDP. The CDP will result in impingement and entrainment, which losses are offset by the project's mitigation.
284.	Mission Bay is polluted by sewage and waste, so it is not a good alternative spawning ground for the two North County lagoons.	Mission Bay is not one of the sites listed in the MLMP, and is not being considered as an alternative for two North County lagoons. See March 27 Minimization Plan, Chapter 6, which provides a list of 11 sites where mitigation may be accomplished. These include the Tijuana Estuary, San Dieguito River Valley, San Elijo Lagoon, Agua Heidionda Lagoon, Buena Vista Lagoon, Anaheim Bay, Santa Ana River, Huntington Beach Wetlands, Ballona Wetlands, Los Cerritos Wetlands, and Ormond Beach.
285.	Orange County is drinking sewage water filtered, totally filtered, UV-zapped. It's very safe. Very safe for human consumption. You're telling me that these guys who want to build these plants up and down the coast, have already done so in Spain and Europe to a large extent, can't develop the science to filter out larvae, when we can filter and clean up all the toxics in sewage?	Commenter provides no factual support for his comments and is speculating. The Minimization Plan provides for 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. Under the terms of the Minimization Plan, projected impingement and entrainment will be fully offset by mitigation. Moreover, in the event the EPS permanently ceases operations, the Regional Board will re-evaluate the CDP's compliance with CWC Section 13142.5(b), including technology measures as appropriate. Additional entrainment-reducing technology is one basis upon which the Discharger may apply for a reduction or elimination of Phase II mitigation. See also Response No. 228.
6. Coast Law Group, Comment Letter, April 7, 2009		

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286.	On a very general level, the document spends much time describing the relative benefits of a healthy southern California estuarine ecosystem, inferring that the wetlands to be created or restored by the MLMP will provide similar, if not identical, ecological benefits. (See, e.g. page 12, reflecting studies of fish productivity in coastal southern California wetlands.) Missing though, is any description of the inherent difficulties in achieving the level of ecosystem function upon which many of their themes rely. (See Supplemental Comment Letter Appendix submitted by the Environmental Groups to the Regional Board April 7, 2009; specifically, Exhibit F discussion of failed Salt Marsh restoration efforts in San Diego County). Further, without identification of site-specific baselines from which post-mitigation achievement of performance criteria will be gauged, it is impossible to ascribe any particular benefit to be derived form the as of yet speculative mitigation plans.	(a) The wetlands to be created or restored under the MLMP will provide the benefits of a healthy Southern California estuarine ecosystem. The level of ecosystem function anticipated at the mitigation site(s) will be enforced by the MLMP's strict performance standards and success criteria. See Response No. 109 for a discussion of the MLMP's performance standards and success criteria. (b) The MLMP incorporates specific, detailed performance standards to ensure its objectives are met. See Response No. 109. Specifically, the constructed wetlands must match habitat values within a 95% confidence level for four undisturbed wetlands identified in the MLMP. To the extent the comment suggests additional "baseline" data is needed, see Response Nos. 12(a) and 51. The remainder of this comment is argumentative in nature and does not require a specific response.
287.	(a) Document, p.2. The presence of juvenile and adult stages of other fish should not be credited toward impingement because entrainment calculations in AHPF (sic) have to take into account the impacts of entrainment with respect to ecosystem function, not simply biomass (ie. the fact that the entrained organisms don't just grow into adult fish, they also serve as prey for larger stages of other fish). (b) By impacting the earliest developmental stages, entrainment results in a cascade of effects. Creating new wetlands is an attempt to mitigate for all such impacts on an ecosystem level, not just the entrained individuals themselves. Also, just because entrainment calculations are based on the three most entrained organisms doesn't mean other organisms aren't being entrained. Poseidon can't assume all species except those three are left unharmed. c. The assumptions inherent at all levels of the sampling and analysis stages are considered when AHPF is calculated. Regarding impingement credit in the 6.4 acres, the authors	(a) To the extent that the comment describes ecosystem functions that would not be subject to intake and mortality by the proposed CDP, the comment is describing possible effects that are not part of the minimization obligation under CWC Section 13142.5(b). These possible effects are speculative and asserted only generically and generally by the comment, without scientific support or evidence. See Response Nos. 260(a), 260(d), 260(e), 314. (b) To the extent that the comment describes ecosystem functions that would not be subject to intake and mortality by the proposed CDP, the comment is describing possible effects that are not part of the minimization obligation under CWC Section 13142.5(b). These possible effects are speculative and asserted only generically and generally by the comment, without scientific support or evidence. See Response Nos. 260(a), 260(d), 260(e), 314. (c) Vague and ambiguous. The comment provides no comprehensible basis upon which to respond. (d) See Response No. 314(c).

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	seek to justify impingement credit for "blennies, gobies and garibaldi since these 6.4 acres are not earmarked to provide entrainment mitigation for them," yet elsewhere in the document it clearly indicates "Fortuitously, these three taxa rarely are impinged." (See p.1) d. Regarding adequacy of impingement mitigation, the 1715.5kg/year biomass production calculated by Nordby, based on Allen's figures is still flawed for the same reason stated by Raimondi (Raimondi at 2) – the estimate of productivity is based on species that are entrained and completely excludes species that have no larval phase. "Hence there is no basis to estimate increased productivity (if any) of the created or restored wetland areas for species not entrained." (Raimondi at 2). e. Further, the calculations, to the extent they are based upon the 49 acre figure of Phase I & II combined improperly assume that Phase II construction is a certainty. f. The figures should reflect a maximum of 37 acres unless Poseidon is committing to construct both Phases at this time.	(e) Productivity calculations are not, in fact, based on species expressly reserved for entrainment mitigation. Therefore, to count other fish biomass not reserved for entrainment mitigation towards impingement mitigation credit does not result in double-counting. (f) See Response No. 260. Discharger has committed to producing up to 1,715 kg/year of available fish biomass in the mitigation wetlands—an amount that will more than completely offset any potential impingement. By committing to "true up" this productivity value, the Discharger has addressed the Commenter's concerns regarding the composition of the mitigation habitat. In the event that the Discharger creates or restores 37 acres of mitigation wetlands, the Discharger will still be required to satisfy the productivity standard of 1,715 kg/year fish biomass.
288.	Document, p.3. Regarding the assertion that no compensatory mortality is assumed, even assuming the proportional loss calculations were accurate and able to account for loss across all life stages, this would only be true for the three species upon which those calculations were based. In other words, it would not be true for all entrained species.	See Response No. 260(f). The entrainment calculations are based on the eight most commonly entrained species -- three lagoon species (gobies, blennies, garibaldi) and five ocean species (white croaker, northern anchovy, California halibut, queenfish, spotfin croaker). Altogether, these eight species constitute more than 99% of the entrained larvae. The Empirical Transport Model (ETM) is based on the concept of proportional loss (i.e., the number of entrained larvae divided by the number of entrainable larvae). As such, the model implicitly and fundamentally rejects the concept of compensatory mortality. See Response No. 311. Since the Minimization Plan applies the ETM to the eight enumerated species which together constitute more than 99% of the entrained larvae, it assumes proportional loss-- i.e., not compensatory mortality-- for virtually all entrained species.

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289.	(a) Document, p.4. The document states that not all species detected have commercial or recreational value but mitigation compensates for all species anyway. First of all, this isn't true if they're mitigating for entrainment impacts to only 3 species and for impingement for other species. (b) Second, 13142.5 doesn't say anything about minimizing intake and mortality to commercial or recreational value fish only. (See also, Boesh and Turner quote, p. 8)	(a) The Minimization Plan does not distinguish between fish based upon their commercial or recreational value. See Response No. 289(b). The mitigation wetlands will compensate for the entrainment of 8 species (3 lagoon species and 5 ocean species), thereby mitigating for more than 99% of the entrained larvae. These wetlands will also compensate for potential impingement by producing available fish biomass. See Response No. 309(c). (b) Comment noted. The Minimization Plan does not distinguish among fish based upon their commercial or recreational value.
290.	a. Document, p.10. The document's discussion of in-kind mitigation is misleading. While a mitigation effort may very well replace the same biomass of the species lost from the project, it does not follow that production of that biomass in a far-away, hydrologically distinct watershed replaces the ecosystem function impacts of the entrained individuals. This is in part why high levels of statistical confidence (typically 95%) are required when determining mitigation obligations. b. Studies confirm that restored and created wetlands often do not succeed as contemplated at the permitting stage, and therefore the developer must over-compensate to truly achieve a "no net loss" of wetland function.	a. 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…." Recommended Revised Condition Compliance Findings (approved December 10, 2008), p. 19 of 19. To the extent that the comment suggests the mitigation site(s) must be in proximity to Agua Hedionda Lagoon, see Response No. 59. In addition, Chapter 6 of the Minimization Plan prioritizes those sites within the boundaries of the Regional Board. Comment provides no basis for the conclusion that 95% confidence levels are required. To the contrary, 50% confidence levels are generally employed. January 26, 2009 Mayer Declaration. b. As an initial matter, the comment mistakenly assumes a "no-net-loss" standard applies. The no-net-loss standard applies to the federal CWA 404 program, in which permittees must compensate for the complete loss of wetlands which occurs when a wetlands is filled in with dirt or other material. The Discharger is not proposing to fill Agua Hedionda Lagoon, so CWA 404 is not applicable to this proceeding. Commenter suggests that the Minimization Plan must be designed to "over-compensate" actual impacts because "[s]tudies confirm that restored and created wetlands often do not succeed as contemplated." Commenter does not provide specific studies to support this assertion. Nevertheless, the Minimization Plan incorporates conservative measures to ensure it succeeds

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		as planned. First, the Minimization Plan incorporates a number of strict performance standards that must be achieved. See Response No. 109. If the performance standards are not met, additional actions will be required to assure compliance. See Response No. 240. In addition, Discharger will conduct periodic monitoring and sampling to "true up" estimates of projected impingement and productivity. See Response No. 103(e). Lastly, the Minimization Plan includes a number of conservative assumptions that may result in an "over compensation" of mitigation. See Response No. 131. In addition, the mitigation provided for in the MLMP assumes impacts associated with stand-alone conditions, even though the CDP will operate in co-located mode with EPS.
291.	Document, p.12. Footnote 31 reflects that certain "specific biological attributes (e.g. species densities, vegetation cover, etc.)" will result from the MLMP compliance with stated general performance standards. The MLMP is insufficiently specific with respect to proposed mitigation sites to conclude any assemblage of taxa will result, and as such, the entire discussion of likely impingement mitigation success is undermined.	See Response Nos. 109 and 240 for a description of the MLMP's incorporation of strict, measurable performance standards that are enforceable by the Regional Board and the Coastal Commission. See Response No. 240 for a discussion of the detailed Restoration Plan required to be submitted prior to construction of the planned wetlands, as part of multi-phase process modeled after SCE's successful San Dieguito Restoration Project.
292.	a. Document, pp. 13-16. Continued reliance upon Allen's 30 year old report reflects the need for updated baseline data specific to the sites where mitigation will occur, as well as conditions of approval that will ensure achievement of successful wetlands function. b. Poseidon's mitigation obligation is a "blank check," and the approval should reflect as much. c. The document totally fails to explain how Allen's assessment of the littoral zone of Upper Newport Bay provides a reasonable proxy for speculative portions of mitigation wetlands that may or may not achieve similar functionality. d. See, for example, the statement "It is reasonable to assume that the proposed wetlands will include intertidal	a. The comment does not claim that Allen's productivity information is incorrect, or not suited to characterize the potential productivity of the proposed mitigation wetlands. See Response No. 103(b). Baseline data will be updated as the Tentative Order requires the Discharger to measure productivity in a field program in the proposed mitigation wetlands. The Tentative Order also requires impingement sampling at the EPS intakes, so that conditions of approval – namely the 1,715.5 kg/yr mitigation obligation – can be checked against new data. See Response Nos. 260 and 287(f). b. The Discharger will be required to follow stringent performance standards and will meet monitoring goals. See Response Nos. 109 and 240. c. Upper Newport Bay is analogous to the proposed mitigation site(s). (March 27, 2009 Minimization Plan, Attachment 7) While there are obviously site-specific differences, all southern California estuarine wetlands share

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	mudflats and subtidal habitats capable of productivity values and species diversity comparable to Upper Newport Bay," at p.16. Simply put, no it isn't. Without significantly more specificity regarding the location of mitigation sites, meaning the location of specific mitigation site boundaries, within the greater estuarine landscape options in the MLMP, such assertions are scientifically unsupportable.	certain physical and biological similarities allowing for predictions regarding fish productivity. For example, all are located within a Mediterranean climate characterized by warm, dry summers and cool, moist winters. These climatic conditions, particularly variations in temperature and salinity, influence the marked seasonality of fish populations of these wetlands (Allen et al., 2006). These systems are also similar biologically. The same dozen or so halophytic (salt tolerant) plant species occur within a narrow elevation gradient in the salt marshes of all of these wetlands, depending upon the degree of local disturbance (Zedler 1982). The same assemblage of fish species occur in these estuarine bays and estuaries, also within some degree of variability. Allen et al. (2006) developed a model for classifying California semi-enclosed estuaries and bays based on salt tolerance and life history patterns of the fishes that inhabit those systems. Their analysis showed Newport Bay to be most similar to Mission Bay and San Diego Bay in terms of fish usage. Thus, it is reasonable to assume that restoration of a fully tidal estuarine wetland within the San Diego area will support a fish assemblage similar to that found in Newport Bay, including similar fish biomass and production over time. d. The MLMP requires that the mitigation site(s) be located within the Southern California Bight, include extensive intertidal and subtidal areas and create or restore a habitat similar to the affected habitats in Agua Hedionda Lagoon. (MLMP Section 3.1). To the extent that the comment suggests that Upper Newport Bay does not constitute a reasonable basis for comparison, see Response No. 291(d). See also Response No. 108 and 291(c).
7. 4/5/09 Email from Dick & Nancy Weaver		
293.	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. "Massive" action of desalination does not have to cause Massive death to innumerable species of Life.	Comment noted regarding the importance of appropriate planning and process to protect coastal areas and marine life. See e.g., Response Nos. 2, 4, 128, 255. The CDP is scaled to meet project objectives and provide a local, reliable water supply to meet demonstrable need. Characterization of it as "massive" is not in accord with the fact that the CDP's scale is consistent with the project objectives. The comment provides no factual basis to conclude that the proposed CDP is "massive," as it asserts. Similarly, the characterization of "impact" is unsupported. As described in numerous responses (see, e.g., Response No. 52), the potential intake and mortality from the CDP will be

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		minimized, with implementation of the Minimization Plan.
294.	"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.	The Minimization Plan sets forth strategies to minimize the intake and mortality of marine life, as required by CWC Section 13142.5(b). To the extent that Commenter is suggesting that CWC Section 13142.5(b) requires avoidance in all instances, and that mitigation is not avoidance, Commenter misreads CWC Section 13142.5(b), which plainly requires best available feasible mitigation. For further explanation about Poseidon's minimization obligations under the statute, see Response No. 10a. The Regional Board disagrees that any damage from the proposed CDP will be massive. When using cooling water from the EPS, the potential effects of the CDP are negligible. Potential entrainment effects when using seawater not first used by the EPS are fully offset by the proposed mitigation and are not even known to result in actual effects to the local ecosystem. While the analysis in the Minimization Plan conservatively assumes that the local ecosystem has no ability to recover naturally from larval loss, ecologists believe that ecosystems do compensate naturally for such losses, at least up to a point. The comment does not consider what would happen to the local ecosystem in the absence of continued industrial use of lagoon water, which provides a private-sector incentive to dredge the lagoon and keep it in a desirable, open-water condition.
295.	The Sub-Seafloor Intakes will allow far greater beneficial results for generations to come, not only for people but for all the variety of species affected.	See Response No. 42(c) regarding subsurface intake alternatives.
296.	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.	Comment noted as to the importance of the planning phase, which the Discharger has been in with the Regional Board since it applied for its NPDES/WDR permit in 2005. The actual construction of the plant will not begin until the Minimization Plan is approved. It is not clear what commenter means about "being conscious." Certainly the comment does not mean to imply that the Regional Board is not conscious.
8. 4/7/09 Email from Guy McClellan		
297.	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	See Response No. 269.

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	impacts through discharge of brine, chemicals, and carbon dioxide.	
298.	Desalination is still the most expensive source of water due to its high energy costs. These costs will be passed on to the consumer, and the costs will increase if the plant operates below capacity as exemplified by the Tampa Bay Water Desalination plant that was developed by Poseidon Resources, then outsourced to multinational water agencies Acciona and EWH. That 25 million-gallon/day plant came online late, over budget, and has rarely operated at full capacity. Every day that they operate under capacity, the public sector loses and the private sector gains. We must consider alternatives that provide the same benefits at lower cost, such as, reclamation and conservation.	See Response No. 270 and 271.
299.	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. The management at Poseidon Resources believes that they can destroy one area of the environment and then create an ecosystem nearby to make up for it.	See Response No. 273.
300.	One of the aspects of mitigation even involves stewardship of the water area immediately adjacent the power plant. This is the very same water they are most likely to pollute through discharge that may very well get drawn back into the intake pipe due to ocean's currents. Are we to expect that the polluters are in the best position to also be stewards of our local resources?	See Response No. 273.
301.	With regards to impingement and entrainment, the studies from the Encina 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. This is especially	See Response No. 274.

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	detrimental to the future growth of our fish population. Poseidon has often stated that "2 lbs" of fish per day are impacted, while the numbers from the report show up to 40 lbs of small fish and eggs per day.	
302.	In their report, they made the assumption that this was due to toxic run-off from our streets killing fish and then subsequently sucking these fish and toxic run-off into the plant. Perhaps that toxic run-off should be mitigated as well, if we are concerned with water supply, let's look into reclamation from our storm drains as well to help protect the ocean and wildlife. As an alternative, upgrades at current water reclamation facilities could achieve a similar end more economically and efficiently, with no impact on our ocean.	See Response No. 275.
303.	Furthermore, private sector control of water supply is a dangerous precedent to set. It allows supply and allocation decisions on a resource vital to the survival of humans to be made by an entity that is responsible only to its shareholders, not its clientele. This approach is funded by multinational investment corporations disguised as local utilities with little vested interest in preserving our local resources or environment. These multinationals are the last people I would contract to restore ecosystems and steward our natural resources. According to Fortune Magazine, "Water is one of the world's greatest business opportunities. It promises to be to the 21st century what oil was to the 20th." The demand for clean water is triggering the fastest growing commodity boom in history. T. Boone Pickens is buying up all the water in Texas. Nestle is doing its best to bottle the Great Lakes. And here in California, nearly 20 different desalination plants have been proposed from San Diego to Marin and the race to privatization of our natural resources is at full throttle. Faced with the suddenly well-documented freshwater crisis,	To the extent the Commenter makes arguments concerning broad water policy goals, see Response No. 277(b). The comment overlooks the fact that the Discharger proposes to make a second use of water already used for cooling water purposes, and that this second use is a form of water recycling and conservation.

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	governments and international institutions are advocating a Washington Consensus solution: the privatization and commoditization of water. Price water, they say in chorus; put it up for sale and let the market determine its future. For them, the debate is closed. Water, say the World Bank and the United Nations, is a "human need," not a "human right." These are not semantics; the difference in interpretation is crucial. A human need can be supplied many ways, especially for those with money. No one can sell a human right. I recently watched a documentary called, "The American Southwest: Are We Running Dry?" that was sponsored by grants from the Metropolitan Water District of Southern California, California Water Association, and others. While many great points were made regarding the shortage of water in the Southwest, the solution was 'more water' not 'more responsible use' of water. After hearing many of our elected officials say, "We can't conserve our way out of this problem." I was compelled to disagree. We can conserve our way out of this problem, but they can make more money if they put in a power hungry desalination plant. I'd like to note on the record that many of our elected officials are fully behind the privatization of our precious water supplies by multinational corporations.	
9. 4/7/09 Latter from Coast law Group (Response to Scott Jenkins' Note on Regional Board Staff Concerns Regarding Rainfall Effects on Impingement per RWQCB Staff Report of March 27, 2009)		
304.	(a) In the March 27 Staff Report, staff presented three reasons why Poseidon's rainfall flushing theory did not appear to be the cause of the elevated impingement rates on two sampling days (January 12th and February 23rd in 2005). (March 27th Staff Report at 14-15). A summary of those reasons is also provided in the Supplemental Staff Report. (April 3rd Staff Report at 5). Staff further provided a "plausible alternative" explanation that impingement rates were associated with unique operational circumstances and minus tides. (March 27th Staff Report at 15). The Supplemental Staff Report posits another, highly plausible,	(a) See Response Nos. 92(a) and 93(II) regarding the mischaracterization of the assessment as “Poseidon’s rainfall flushing theory”. (b) This comment is conclusory and constitutes argument. (c) See Response No. 93(II) regarding the mischaracterization of the assessment as “Poseidon’s rainfall flushing theory.” Furthermore, the comment does not articulate in what specific manner the Discharger’s explanation is “unsupported.” The comment is conclusory and consists of argument. (d) To the extent the comment suggests that there is insufficient data to

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	alternative related to dredging activities. (April 3rd Staff Report at 5). The following comments address Scott Jenkins' latest submission on April 3, 2009, which is an attempt to discount staff concerns and alternative theory from the March 27th Staff Report. ("Jenkins' Response"). (b) Jenkins' Response fails both to discredit staff comments and to bolster the rainfall flushing theory. (c) It should also be mentioned, even if Dr. Jenkins was able to conclusively disprove staff's alternate theory for the two higher impingement rates, this would in no way validate Poseidon's theory. As mentioned in our previous comment letter (Coast Law Group Supplemental Comments, April 6, 2009), the rainfall flushing theory is unsupported. (d) Staff reiterates, though there may be enough data to prove abnormal rainfall on a given sampling day, the same is not true for impingement rates, or for correlation between rainfall and impingement. (April 3rd Staff Report at 5).	determine whether the January 12 and February 23 impingement values were outliers, see Response Nos. 93(I) and 96. To the extent the comment suggests that there is no correlation between rainfall and impingement, see Response Nos. 93(II)(a) and 93(II)(b).
305.	Staff Concern #1 (a) Staff points out that heavy rainfall is not always related to higher impingement rates, as seen during the October 2004 rains. (March 27th Staff Report at 14). (b) Dr. Jenkins presents a new theory to explain why the heavy October rains did not cause higher impingement: the October rains were the first rains to end the dry season and therefore the soil was able to absorb this rainfall. Thus, there was no discharge into Agua Hedionda Creek, and subsequently Agua Hedionda Lagoon (Jenkins Response at 1). (c) Dr. Jenkins states, "corresponding flow volumes in Agua	(a) See Response Nos. 93(II)(a) and 93(II)(b) for a discussion of the correlation between rainfall and impingement. (b) To the extent that the comment suggests that Dr. Jenkins concluded that there was no discharge into Agua Hedionda Creek, the comment is mistaken. Dr. Jenkins explained the flow volumes produced by the October rains "were not nearly as large as those recorded during the two five-day rain events that preceded impingement sampling on the outlier days" (i.e., January 12, and February 05, 2005). Note on Regional Board Staff Concerns Regarding Rainfall Effects on Impingement Sample Outliers per RWQCB Staff Report 27 March 09, Dr. Scott Jenkins, Ph.D, at 1. This is not to say that there were no discharges into the lagoon. In his statement, Dr. Jenkins' provided further analysis in response to questions and/or comments. This analysis does not constitute a new theory.

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	Hedionda Creek were not nearly as large as those recorded during the two five-day rain events that preceded impingement on [January 12 and February 5, 2005]." (Jenkins Response at 1-2). The only reference given for this assertion is Dr. Jenkins' previous submission on March 19th, 2009. (d) The March 19th submission ("Original Jenkins") is illuminating, but not for the reason presented by Dr. Jenkins. The prior submission contains a diagram (Figure 3(b)) created by Dr. Jenkins to show the relationship between precipitation and creek flows. (Original Jenkins at 8). This graph was prepared using rainfall data from NOAA and discharge data from Tetratech (Original Jenkins at 8). The graph is explained: "Note each rainfall event produces a corresponding peak discharge event in the creek, except during a portion of the winter of 2006 when no flow data was collected." (emphasis added)(Original Jenkins at 8). Thus, Figure 3(b) shows flow rate in the Agua Hedionda Creek versus rainfall, with no qualification concerning first rains of the season or soil moisture. (e) The next graph, Figure 4, shows daily discharge flows from Agua Hedionda Creek during the impingement study. (Original Jenkins at 9). This diagram (created by Dr. Jenkins) clearly shows high flow rates from Agua Hedionda Creek in October. Id. In fact, the October rains produced the highest Agua Hedionda Creek flow rates. Id. (f) Moreover, the San Diego MS4 Permit co-permittee sampling data from 2004 and 2005 shows Agua Hedionda Creek actually had more flows in October than in February. (See Appendix A: Hydrographs, submitted herewith). (g) Dr. Jenkins' other point, that the October rainfall was short in duration, lasting only one day, seems incorrect. (Jenkins Response at 1-2). His reference to Figure 1 is not helpful, as the x-axis data points are given in 2-month intervals, making it difficult to decipher exact data sets.	(c) See Response No. 305(b), which explains how this evidence suggests that there were discharges into the lagoon. (d) The regression presented in Figure 3(b) was designed to model the amount of storm water discharge that enters the Agua Hedionda Lagoon for the limited purpose of evaluating rainfall effects on lagoon salinity levels. Dr. Jenkins notes that "the creek discharge calculated from the hydrographic rating curve (red) tends to over estimate measured creek discharge rates (black), and consequently errs on the side of caution with respect to not underestimating storm water impacts on the lagoon water quality." Statement Addressing Regional Board Staff Concerns regarding the Biological Data Used to Support Poseidon's Impingement and Entrainment Assessment, Dr. Scott Jenkins, Ph.D, at 3. In other words, in order to ensure that the lagoon salinity analysis accounts for all salinity-related impacts to marine organisms, the model conservatively overestimates actual daily discharge rates. The discharge model conservatively estimates daily discharge rates, in part, by not accounting for antecedent moisture conditions. The model assumes that rainfall generally runs off into the Agua Hedionda Creek and that antecedent conditions have little effect on the extent to which the soil absorbs and retains precipitation. (e) To the extent that the comment suggests that Figure 4 represents actual estimates of daily discharge flows from Agua Hedionda Creek, the comment is mistaken. Figure 4 presents calculated estimates of daily discharge flows for the purpose of estimating lagoon salinity levels. These estimates are conservative to the extent that they do not fully account for antecedent conditions. See Response No. 305(d). For estimations of peak discharges for Agua Hedionda Creek relevant to the outlier issue, see Chang ("Frequencies for Storm Events of January and February 2005," Dr. Howard Chang, Ph.D). Dr. Chang's hydrologic simulation accounts for a range of characteristics, including basin and subbasin areas, precipitation zone number (PZN), antecedent moisture condition (AMC), precipitation amounts for the 24-hour storms, SCS curve number (CN), lag time, etc. See Chang at 4. As compared with Figure 4, which was designed to conservatively analyze salinity levels and does not account for antecedent conditions, Dr. Chang's simulation was designed to

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	(Jenkins Response at 5). Further, Dr. Jenkins labeled only certain days on the graph, not including the October rainfall event. Id. (h) Notwithstanding these difficulties, the data seems to show the October rain event did comprise of more than one day of rainfall and resulted in a high volume of precipitation. Id. (i) Thus, Dr. Jenkins has cherry-picked the data he would like to explain (i.e. higher impingement rates on January 12th and February 5th), and designed a theory to reach the desired result (ie. Poseidon's desired result). His own hydrographic rating curve and daily discharge diagram belie "dry ground" theory. (j) Either his original data set is flawed, undermining the credibility of that dataset and his new theory; or, his new theory is flawed, undermining the "dry ground" explanation as well. Either way, Jenkins' theories don't match up.	estimate Agua Hedionda Creek discharges and thus fully accounts for antecedent conditions. (f) The referenced hydrographs do not, in fact, show that Agua Hedionda Creek had more flows in October than in February. Rather, the figures indicate only that flows from Agua Hedionda Creek on one particular day (i.e., October 17, 2004) exceeded those on two other days (i.e., February 11 and February 18). Given that the five-day storm that preceded the February 23 impingement sample would have begun after the February samples were taken, the figures cannot possibly reflect the large storm water discharges that were generated by that storm. (g) The peak rainfall event during the impingement study occurred on 27 October 2004 when 1.58 inches of rain was measured at the Carlsbad Airport and is identified by the red bar in Figure 2. See “Carlsbad Airport Precipitation Data, June 1, 2004 – June 1, 2005 (Excel)” in “Appendix C-Documents Supporting Latham & Watkins Comment Letter Index.” These data indicate that only a trace amount of rainfall (0.02 in.) fell the following day (i.e., 10/28/04) and during the preceding week (i.e., 0.11 inches from 10/21/04 – 10/26/04), so this principally was a one-day rainfall event. (h) The rainfall that occurred on October 27, 2004 was principally a one-day rainfall event. See 313(g). The comment’s conclusion that “the data seems to show the October rain event did comprise of more than one day of rainfall” is speculative and contrary to the factual record. See 313(g). (i) Dr. Jenkins did not cherry pick the data, as alleged by the comment. The comment tries to design a theory to try to create an apparent inconsistency which does not exist in fact. The daily discharge diagram is valid for purposes of characterizing the potential for salinity depression. See Response No. 305(j). Dr. Jenkins’ comment on antecedent moisture conditions, which properly were discounted in his salinity assessment, is relevant to considering why higher impingement did not follow the October 27, 2004 rainfall. This comment is argumentative. To the extent that the comment suggests that Figure 4 represents actual estimates of daily discharge flows from Agua Hedionda Creek, the comment is mistaken. See Response No. 305(a).

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		(j) The comment is wrong that the situation presents an either/or choice. Dr. Jenkins analyzed freshwater matters during 2004-2005, to explore whether the relatively high rainfall during this period depressed salinities in the Agua Hedionda Lagoon, rendering 2004-2005 non-representative. In so doing, he used a simplified approach that tended to produce large estimates of freshwater flows. While this approach is understood to overestimate runoff in many cases, it provided an appropriate and conservative basis to evaluate staff's concern regarding the potential for salinity depression. In responding to a comment that high impingement did not follow the October 27 rainfall event, Dr. Jenkins pointed out that very little runoff occurred during/after that event. He knows this based on an actual field measurement of runoff. Actual field measurement, unlike the approach Dr. Jenkins used in his salinity assessment, reflects antecedent moisture conditions which can result in very little runoff even for large storms. Both Jenkins salinity analysis and his analysis of the October 27, 2004 event are valid. The comment is wrong that one, or the other, must be flawed. The comment tries to make a logic game from circumstances that do not support the game's premise. (j) The comment presents a false dichotomy that does not account for the fact that the Figure 3B model is designed to analyze lagoon salinity levels; it is not designed to estimate storm water discharges. See Response No. 305(d). The model's conservative approach with respect to antecedent conditions has no bearing on the validity of the underlying data or the conclusion that dry soil conditions in October would have limited stormwater runoff.
306.	Staff Concern #2 (a) Staff correctly points out that after the January 12th and February 5th sampling points, the next three highest impingement rates correspond to dry days (i.e. no rainfall). (b) In addressing this criticism of the rainfall flushing theory, Dr. Jenkins cannot seem to make up his mind. He first states	(a) The data are not rates of impingement. The impingement data correspond to aggregate impingement mass and numbers over the sampling period. The next three highest impingement values form a subpopulation with the fifty sampling events – not the two outlier events. (b) Impingement on January 12 and February 23 was materially higher than

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	a comparison of the next three highest impingement days (dry days) is inappropriate because "the amount of biomass impinged at the intake on the next three highest days was minor in relation to the amount observed on the outlier days." (Jenkins Response at 2). (c) However, Jenkins then finds it entirely reasonable to take the next five highest impingement days (which did correspond to rainfall) into account (even though they would be even less appropriate to consider since they would be even more minor compared to the outliers). He concludes, "[i]n fact, rainfall occurred during or immediately before 7 of the 10 highest impingement samples." (Jenkins at 2). Here, Dr. Jenkins has conveniently decided to focus on the top 10 data points (days with highest impingement rates) to "dilute" the data. One could just as easily narrow the focus to the top 5 highest impingement rates, resulting in an entirely different conclusion: 3 of the 5 days highest impingement days correspond to dry weather! (d) Dr. Jenkins fails to discount staff's criticism, much less prove Poseidon's theory.	on any other single day during the 2004-2005 study. It is so materially distinguishable from impingement on the other days that those two days mark a subpopulation of data that can be distinguished from the other fifty days. See Response No. 93(II)(a). Dr. Jenkins is correct to conclude that "the amount of biomass impinged at the intake on the next three highest days was minor in relation to the amount observed on the outlier days." (c) An analysis of the ten highest impingement samples allows for a useful comparison of dry vs. wet weather conditions. The impingement mass decreases to roughly the mean of the entire sample population by the 11th highest sample. The selection of these data is reasonable, not arbitrary. (d) See Response 304, regarding staff's theories. See Response Nos. 93(I) and 97 for further discussion of outliers. To the extent that Commenter suggests that Discharger has advanced a theory, see Response Nos. 93(II) and 97.
307.	Staff Concern #3 (a) Dr. Jenkins here says staff "speculates" that tides cause higher impingement. (Jenkins at 3). (b) Staff is not nearly as cavalier as Jenkins in using minimal data to draw sweeping conclusions as to the origins of impingement. (c) In the March 27 Staff Report, staff merely pointed out the flaws in Jenkins theory, as other trends also lead to another "plausible alternative explanation." (March 27 Staff Report at 15). (d) In discounting staff's theory, Jenkins fails to account for tides and flows preceding impingement sampling days, as	(a) Comment noted. (b) Dr. Jenkins did not reply on "minimal data." See Response No. 164. Nor does he make "sweeping conclusions." Dr. Jenkins offered insights into the nature of the impingement on January 12 and February 23. He did not provide a "sweeping conclusion" as to the "origins of impingement." He concluded that impingement on those days co-occurred with very rare rainfall-runoff events that are materially different than other such events over the course of the field program. This modest conclusion cannot fairly be ascribed as "cavalier." This comment constitutes argument, and is pejorative. (c) The comment is a characterization of the March 27 Staff Report, which speaks for itself. The final Staff Report is the one prepared for the May 13

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	impingement samples were taken about once a week. Thus, fish or invertebrates impinged on day 1 would not be counted until day 7. Simply looking at the tides on the sampling day is therefore uninformative. (Jenkins Response at 3, 6-7). (e) Here again, Dr. Jenkins asserts "a clear relationship is shown to the extreme rain events." (Jenkins Response at 3). As explained above, there is nothing clear about the relationship, and even if the theory "held water" it still would not prove the rainfall was the cause of the impingement. (f) Moreover, Jenkins assumes the two theories are mutually exclusive and if staff's tidal theory is incorrect, the rainfall flushing theory must be correct. (Jenkins Response at 3). (g) This frighteningly narrow assessment discounts all other possible theories, and misses the most obvious one- EPS intake caused the impingement. Whatever the surrounding circumstances, ultimately those organisms were impinged by the EPS intake. (h) Lastly, Jenkins can't seem to explain away the correlation between higher impingement rates and large tidal ranges, so he merely states "[to the extent this [advection of additional species into the lagoon] is true, the relatively high impingement observed on those days may have more to do with local fish abundance than with EPS intake operations." (Jenkins Response at 4). No further explanation is given. Apparently Dr. Jenkins places the blame for impingement on the fish for daring to frequent the lagoon more than usual. The fish should have known the EPS was operating intake pumps that day.	hearing. (d) Commenter misunderstands the method by which the impingement sampling was conducted. Impingement sampling at EPS was conducted during a 24-hr period, one day each week from June 24, 2004 through June 15, 2005. Each sampling period was divided into six approximately 4-hr cycles. See Impingement Mortality and Entrainment Characterization Study, Effects on the Biological Resources of Agua Hedionda Lagoon and the Nearshore Environment (Tenera Env't. 2008), at 4-4. Since impinged organisms remained on the traveling screens for less than 4 hours, analysis of tidal data may be informative. (e) To the extent the comment suggests that there is no clear relationship between rainfall and impingement, see Response Nos. 93(II)(a) and 93(II)(b). See Response Nos. 93(II) and 97. (f) The comment provides no evidence in support of this characterization. The comment points to no instance in which Dr. Jenkins suggested that any one factor was the exclusive cause of the outlier impingement. In fact, it is reasonable to infer from Dr. Jenkins' statements that a combination of unique factors may have contributed to the relatively high impingement observed on these days. The presence of multiple, unique or unusual factors of the relatively high impingement would only support the decision to exclude the outliers. See Response Nos. 73(a), 93(II)(c), 93(I). (g) Commenter provides no scientific evidence in support of the conclusion that the EPS intake caused the relatively higher impingement. In fact, the presence of freshwater fish in the outlier impingement samples suggests otherwise. (h) The comment provides no evidence to support the conclusion that there is a correlation between higher impingement rates and large tidal ranges. In fact, the 1979-80 analysis on this point found "that tidal conditions, as considered in this evaluation, had no evident effects on the total number or weight of fishes impinged." See San Diego Gas & Electric, Encina Power Plant Cooling Water Intake System Demonstration (1980), at p. 7-73. Moreover, the comment does not support the implication that Dr. Jenkins

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		rejects the notion that a combination of unique factors may have contributed to the relatively high impingement observed on the outlier days (see Response No. 307(f)). Dr. Jenkins has noted that there are problems with the minus tide hypothesis, however. See Note on Regional Board Staff Concerns Regarding Rainfall Effects on Impingement Sample Outliers per RWQCB Staff Report 27 March 09, Dr. Scott Jenkins, Ph.D. First, Dr. Jenkins explained that although the January 12 outlier did occur during an extreme minus tide while EPS was consuming 560 MGD, operation of the intake during minus tides did not frequently result in relatively high impingement levels. For instance, on December 15, 2004 the EPS pumped 710 MGD during a nearly comparable minus tide, but the observed impingement on that day was only 2.57 kg—more than 40 times less than the impingement value recorded on January 12, 2005. Second, while intake velocities may increase during extreme low water levels, velocities subsequently decline during the extreme high water portion of the diurnal tide cycle. Therefore, whatever effect extreme spring tides may have on intake velocities, the net effect may balance over the course of a complete tidal day.
308.	As Dr. Jenkins has provided no additional insight into the rainfall flushing theory posited by Poseidon and has failed to counter any of staff's criticisms, both staff and Dr. Raimondi's concerns remain relevant. Poseidon's unsupported theory does not provide a basis for discounting the January 12th and February 23rd, 2005 impingement data.	See Response Nos. 93(II) and 97. Outliers are included for purposes of Discharger's mitigation obligation, which is based on an impingement estimate of 4.7 kg/day—a value that assumes that there is a 100% probability that the average of the outliers will occur every year. See Response Nos. 93(I) and 96 for further discussion of outliers.
10. Dr. Pete Raimondi, Review of Impingement study and mitigation assessment - Carlsbad Seawater Desalinization Project, April 1, 2009		
309.	Poseidon concluded that impingement losses are fully offset by the mitigation already required to compensate for entrainment impacts. I disagree with this conclusion for the following reasons (see comments 310 – 314). (a) Poseidon discusses the merits of their impingement reduction technologies but nowhere quantifies the effect. This lack of quantification was also noted in Nordby appendix 7.	(a) See Response No. 36(a). It is not possible to quantify the benefits associated with the impingement reduction technologies referenced in the comment. Conservatively, Discharger is not discounting its mitigation obligation from any such benefits because they cannot be quantified. (b) Commenter is mistaken that impingement is negligible because of the benefit conferred by the wetland mitigation for entrainment. Impingement is negligible in an absolute sense. In addition, although impingement is negligible, it is quantifiable. The Minimization Plan proposes to offset fully this potential for impingement by wetland mitigation for impingement impacts.

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	(b) This is important because the argument that impingement attributable to COP is negligible…rests on the assessment of benefit conferred by the wetland mitigation for entrainment impacts. (c) This is important because the argument that impingement attributable to CDP is… already compensated rests on the assessment of benefit conferred by the wetland mitigation for entrainment impacts.	(c) The impingement potential of the CDP is not "already compensated." To the extent Commenter implies that the same benefit is being counted for the separate entrainment and impingement obligations, the Commenter is mistaken. The mitigation wetlands will confer a host of environmental benefits, only some of which are reserved for entrainment mitigation. The entrainment benefits from the wetlands are not counted towards impingement compensation to avoid double counting. To the extent that Commenter suggests that the mitigation wetlands confer only one type of benefit, and that all of said benefit is reserved for entrainment mitigation, Commenter fails to distinguish properly between and among the many benefits conferred by the wetlands. CDP's potential for impingement will be minimized by available fish biomass produced in the mitigation wetlands – a benefit that is not "conferred by the wetland mitigation for entrainment." Specifically, the Minimization Plan requires the production of 1715 kg/year of available fish biomass in the mitigation wetlands which offsets CDP's impingement. This "benefit" of the mitigation wetlands is separate from, and in addition to, any benefit related to offsetting CDP's entrainment. The mitigation wetlands are expected to produce fish biomass in excess of that which is reserved for entrainment mitigation. To the extent that the mitigation wetlands produce: (i) the three (3) most commonly entrained lagoon species (i.e., gobies, blennies, garibaldi), 12% of their biomass is available as impingement mitigation credit; (ii) the five (5) most commonly entrained ocean species (i.e., white croaker, northern anchovy, California halibut, queenfish, spotfin croaker), 88% of their biomass is available as impingement mitigation credit; (iii) all other fish, 100% of their biomass is available as impingement mitigation credit. 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, Discharger has agreed to exclude this biomass from the impingement mitigation accounting. For present purposes, therefore, the biomass of the most commonly entrained lagoon species is never available as impingement mitigation credit.

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310.	Generally I think this approach is a very interesting and potentially an appropriate method for comparison of impingement losses (or any sort of loss) to gains in production provided by the creation or restoration of wetland habitats. However, I have questions with respect to the appropriateness of the approach for this particular assessment.	Comment noted. Questions that are raised by Commenter are addressed fully in the responses to those specific questions.
311.	This conclusion rests on the assumption of compensation. Compensation is another name for density dependent mortality. As applied here it means that reduction in larval numbers due to entrainment has no effect on adult numbers.	Commenter is mistaken. The Minimization Plan conservatively assumes proportional mortality – not compensatory mortality. Proportional mortality assumes that loss of a particular larval species results in proportional loss of the later life stages, i.e., juvenile and adult, of that species. In contrast, compensatory mortality assumes that populations compensate through natural population dynamics such that a loss of larvae (up to a certain extent) does not propagate to losses in the higher life stages. The explicit assumption in the Minimization Plan is proportional mortality, which is the very opposite of compensatory mortality. See Minimization Plan Section 5.3.2, explaining "If a population is stable and stationary, then PM [proportional mortality] estimates the effects on the fully-recruited adult age classes when uncompensated natural mortality from larva to adult is assumed." The Empirical Transport Model, which was used to establish the entrainment mitigation requirements, assumes that a reduction in larval numbers from entrainment has a proportional effect on all life stages, including juvenile and adult fish. Thus, the impingement analysis avoids counting the fish of the entrained species that were the subject of the entrainment analysis, which avoids introducing compensating mortality into the analysis. In other words, the fish of the entrained species that were the subject of the entrainment analysis are not counted towards impingement compensations.
312.	(b) An example will be useful. Assume that a 100 acre wetland can naturally support 10,000 kg of (non-larval) fish. Now assume that a power plant is built and that the modeling of entrainment yields an estimate of the loss of 20% of the larval pool in the wetland.	Commenter presents a hypothetical example that is not directly applicable because it uses an overly simplified system. The hypothetical does not withstand scrutiny when applied to a real-world complex ecosystem where actual site-specific data are used to evaluate the effects of entrainment and impingement. In this case, actual data on the larval pool at Agua Hedionda Lagoon were

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	If fully compensatory mortality is assumed then there will be no change to the 10,000 kg of non-larval fish. Now let's assume that no such compensation occurs (note that the use of compensatory mortality has not been allowed in any recent entrainment assessments (316B or equivalent)) - here the 10,000 kg will decrease to 8,000 kg (assuming only a change in numbers of fish and no change in size structure). If there is impingement of say 1000 kg of fish per year, the overall biomass will decrease to 7000 kg. Assume an assessment is made of entrainment and mitigation is required that will produce the same number of larvae as that lost to entrainment. Further assume this is in the form of ~20 new wetland acres. Again we make the mandated assumption of no compensatory mortality and we conclude that the nonlarval biomass for the wetland will go up 2000 kg yielding 9000 kg (7000+2000). What about the missing 1000 kg? That amount is still missing due to impingement. Based on the logic and math above another 10 acres of new wetland would be needed to produce the biomass lost to impingement.	used to make species-specific calculations for entrainment compensation. The results demonstrated that 49 acres would compensate for the entrainment effects on gobies, blennies, and garibaldi, and 6.4 acres would compensate for the entrainment effects on white croaker, northern anchovy, California halibut, queenfish, spotfin croaker. As the mitigation wetlands are expected to produce fish biomass other than the specific species commitments made in the entrainment modeling, there will be biomass available to compensate for impingement, and there is no missing component. Commenter offers no instance in which regulatory authorities have not allowed the use of compensatory mortality in a CWA Section 316(b) or equivalent entrainment assessment. Whether such has occurred is irrelevant, however, as compensatory mortality was not assumed in this instance.
313.	The bottom line is that wetland acreage created or restored based on entrainment impacts cannot be also used to mitigate for impingement impacts unless one invokes compensatory mortality, which is specifically not done in I&E determinations.	Commenter reaches this “bottom line” on the basis of an inapplicable hypothetical of an oversimplified wetlands system, as discussed in Response No. 312. The comment’s conclusion is not based on any specific analysis of the Agua Hedionda Lagoon or the 2004-2005 field data upon which entrainment and impingement are characterized; nor did Commenter consider the extensive and detailed analysis prepared by Nordby for the CDP or by Allen on fish productivity in Upper Newport Bay. All of these factors that Commenter ignored were essential to the Minimization Plan’s compensation approach. Based on a balanced review of data in the record, including in-depth analysis and data submitted by the Discharger, the Regional Board is not persuaded that the comment’s hypothetical can be used to reach the categorical conclusion offered.

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		See, also, Response No. 312, which shows how wetland acreage created or restored based on entrainment impacts also may be used to mitigate for impingement impacts without invoking compensatory mortality.
314.	(I) The arguments made by Poseidon do not address the "double counting" problem. After receiving an the initial review, Poseidon responded that because Goby and Blennies make up 95% of entrainment there is little overlap between entrained and impinged species. They further argued that this lack of overlap meant that the acreage created or restored to compensate for entrainment effects would also compensate for impingement effects because there would be no double counting (see point 1 above). I think this argument is flawed because: (a) While gobies and blennies are the most commonly entrained species, virtually all species that can be entrained (those that produce larvae) including anchovies and Atherinops are both entrained and impinged. (b) The argument made by Poseidon assumes, incorrectly, that the number of larvae entrained, represents the impact of entrainment. It does not. The impact from entrainment on adult populations (assuming no compensation) will depend on a number of (mainly) life history factors such as lifetime reproduction, age at entrainment (i.e. older individuals are more valuable than younger ones, and adult stock). (c) Poseidon suggests that "this 1715.5 kg per year of predicted fish biomass productivity shall be calculated in a manner which excludes the predicted biomass for entrained lagoon fish species". Presumably this means those species that have no larval phase (sharks, rays, surfperch). *The problem here is that the estimate of productivity that is the basis of the Poseidon productivity calculation is based on species that are entrained by the Encina Power Station (EPS) and completely excludes species that have no larval*	(I) Commenter asserts that there is a double counting "problem" based on its oversimplified hypothetical and its assertion that the Discharger is assuming compensatory mortality. Each of these points is addressed previously. See Response Nos. 311, 312, 313. (a) Commenter overlooks the fact that, as applied in the entrainment context, the Empirical Transport Model (ETM) is a species-specific model that calculates the amount of mitigation required (i.e., Area of Production Foregone or "APF") to fully offset the mortality of the most commonly entrained species. To calculate an APF, scientists multiply the proportional mortality values "for each of the main species subject to entrainment," and then multiply those values by the size of the source water body (APF = P_M x SWB). Recommended Revised Condition Compliance Findings (approved December 10, 2008), p. 10 of 19. The APF is thus a species-specific calculation; it represents the amount of habitat "that would be needed to replace the numbers and types of species identified in the study as subject to entrainment." Recommended Revised Condition Compliance Findings (approved December 10, 2008), p. 12 of 19. See Response No. 260(a). In light of the species-specific analysis used to achieve full compensation for entrainment, the fact that all species that <u>can</u> <u>be</u> entrained are both entrained and impinged misses the point. The entrainment and impingement analysis in this matter is not based on a potential for entrainment; it is based on actual entrainment, measured at the EPS intake in 2004-2005. Even if, all that <u>can</u> <u>be</u> entrained are both entrained and impinged, the relevance of such a fact to this site-specific assessment is unclear. In addition, it is made without reference to the actual data in this matter. Of the nearly twenty-thousand (19,442) fish impinged during normal pump operations, "no adult or juvenile garibaldi were impinged." (Final EPS Report, 5-27, Minimization Plan Attachment 8.) To the extent that Commenter suggests otherwise, Commenter is mistaken. Commenter's conclusion is misleading as it ignores the fact that gobies and blennies, which together constituted approximately 95% of the entrained larvae, accounted for only 16

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	phase (see Allen 1982). Hence there is no basis to estimate increased productivity (if any) of the created or restored wetland areas for species not entrained.	of the 19,442 fish impinged (0.08%) representing 0.04% of the total biomass (only 2 gobies were impinged and only 14 blennies). The eight most commonly entrained species, which constituted more than 99% of the entrained larvae, accounted for less than 7% of the impinged biomass. Commenter's remarks do not reflect the significant lack of overlap between impinged and entrained species. (b) The impact of larval entrainment on adult fish populations depends on the natural mortality rate of the entrained species, which as Commenter correctly concludes, will depend on a number of factors (including those identified by Commenter). The entire impact of entrainment for a given species, therefore, extends to the number of adult fish foregone. As described in Response 311, however, the ETM accounts for this impact on adult fish. Proportional mortality is its operating premise; the ETM assumes that a reduction in larval numbers due to entrainment has a proportional effect on all life stages, including juvenile and adult fish. Discharger does not assume that the number of larvae entrained represents the entrainment impact. Certainly that is one factor. But, the analysis in the Minimization Plan uses proportional mortality, not just absolute numbers, to estimate the Area of Production Foregone ("APF"). The APF from that calculation for that species is intended to account for the effects on adult populations of these specifically-modeled species, and the various factors affecting life histories, with no assumption of recovery or natural compensation from the entrainment loss. See also Response No. 311. (c) Commenter does not include the entire text of the Minimization Plan which refers to "gobies, blennies, and garibaldi" as the "entrained lagoon species," a reference to the modeling based on these three species. The comment concludes that there is "no basis" to estimate increased productivity in the mitigation wetland. The comment assumes that only fish without a larval phase provide a basis upon which to estimate impingement productivity. Regional Board staff agree that fish without a larval phase provide a basis to compensate for impingement. The Regional Board does not agree, however, that all other fish in the mitigation wetlands are reserved for entrainment compensation, as the comment implies.

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		The entrainment analysis was species-specific, as explained in Response 260(a), 260(b), 312 and 314(a). Fish species not included in the entrainment modeling are available to be counted towards the impingement obligation, whether or not they have a larval phase. To the extent that the mitigation wetlands produces available fish biomass (as described in Response No. 309(c), this biomass can be used to offset potential CDP impingement. While the broad category of "available" fish species does include those species that have no larval phase—e.g., sharks, rays, surfperch—the category is not limited thereto. Estimates of the available biomass productivity of the mitigation wetlands exclude those species that are reserved for entrainment mitigation (i.e., gobies, blennies, garibaldi). See Response No. 103(f).
315.	(a) The estimates used by Nordby to calculate impingement losses rely entirely on averages. (b) There is nothing wrong with the use of averages as one estimate of effect, however the use of averages as the only estimate of effect relies on the idea that estimates are made without error, which should not be done and is counter to ordinary statistical methodology. (c) I think that a better approach is one based on degree of confidence (or certainty). Here estimates are expressed as the confidence that one has the real average is no higher that some value X. As an example if the average impingement is 4.7 kg per day, then the equivalent statement using confidence limits is that we are 50% confident that the true average is no greater than 4.7 kg per day. In typical inferential statistics, confidence limits of 95% are generally used (see graphs below). In mitigation evaluations, higher confidence levels are used to provide greater certainty that there is full compensation for impacts.	(a) The comment is mistaken that the estimates used by Mr. Nordby rely entirely on averages. These estimates include relatively higher impingement, which appears to be associated with rare events that may happen only once every 25 years or more. Yet, the estimates assumed that the relatively higher impingement in the January 12 and February 23, 2005 surveys will re-occur annually. If their average incidence of occurrence had been used, the impingement value would have been close to 2 kg/day, not the 4.7 kg/day used by Mr. Nordby. (b) Comment noted that averages promote one estimate of effect. The Minimization Plan does not rely on the idea, however, that 4.7 kg/day is without error. The Tentative Order requires that the Minimization Plan be amended to conduct a year-long survey of impingement at the EPS intakes, as a means to validate or adjust the 4.7 kg/day value. The Tentative Order also requires the Minimization Plan be amended to require the Discharger to sample the mitigation wetlands to demonstrate that 1,715.5 kg/yr of fish biomass (not reserved for entrainment compensation) is being produced. These field surveys provide a reasonable alternative to inferential statistics and confidence intervals to address the potential for error and to provide greater certainty and confidence. (c) The graphs referred to in the comment were the subject of review by Dr. Jenkins, who opined that they contained errors. The Regional Board does not believe it is necessary to resolve whether the graphs contain errors since

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		the Tentative Order does not propose to rely upon them. See also Response Nos. 113(1) and 103(e).
316.	(a) The estimates of fish production used by Nordby are based on the assumption that the mitigation wetland will be made up entirely of intertidal mudflats. The estimate of fish production (151.36 kg per acre per year) is based on Larry Allen's work, which specifically is restricted to mudflats and not to vegetated marsh or even subtidal areas. (b) The most recent wetland design (presented to the CCC by Poseidon) includes 60% vegetated marsh. (c) Note also that Poseidon specifically did not include vegetated marsh in its estimate of area impacted by intake operations (Flow, entrainment and impingement minimization plan - March 9, 2009 page 6.3).	(a) Comment noted. By committing to "true up" wetland productivity estimates, however, the Discharger has rendered moot Commenter's concerns regarding the precise composition of the mitigation habitat. See Response Nos. 103(c) and 315. (b) The MLMP does not prescribe a particular percentage mix of wetlands for the mitigation site(s). The particular composition of the mitigation wetlands will be determined during the Restoration Plan development phase. Although Discharger may or may not have presented a wetland design to the Coastal Commission including 60% vegetated marsh, no such Plan is currently under consideration by the Regional Board. The biological performance standards set forth in MLMP Section 5.2 are limiting with respect to the vegetative composition of the wetlands only to the extent that they provide that "[t]he proportion of total vegetation cover and open space in the marsh shall be similar to those proportions found in the reference sites" and that the "percent cover of algae shall be similar to the percent found in the reference sites." (c) Comment is correct that the APF calculations did not include vegetated marsh in Agua Hedionda Lagoon.
317.	The estimates of fish production used by Nordby are based on the assumption that there is no current level of fish production in acres to be restored or created. This would be true for created acres and not true for acres to be restored. Without a detailed description of the restoration or wetland creation plan, there is no way to assess current level of productivity, or an calculate the net gain in productivity - if any.	Comment noted that created wetlands have no preexisting level of fish production, while restored wetlands may. While Mr. Nordby assumed no current level of fish production in the wetlands to be restored or created, he did so for purposes of explaining his analysis and approach. The Discharger will be allowed to count towards impingement compensation only the incremental biomass in a restored wetlands that fairly can be ascribed to its mitigation efforts. Discharger will conduct periodic productivity monitoring to evaluate the extent to which the wetlands produce available fish biomass. See Response No. 103(e). In the event that Discharger restores existing wetland acreage, preexisting fish biomass will not be deemed available for impingement mitigation credit.

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		At the same time that a draft Restoration Plan is submitted for Regional Board comment and review, Discharger also will submit to the Regional Board for review and approval a detailed monitoring plan describing the methodologies and procedures to be employed in measuring and monitoring available fish biomass. This plan will identify appropriate method(s) for excluding preexisting fish biomass from the productivity accounting for any wetlands acres to be restored.
318.	It is important to note the following [regarding Raimondi's calculations]: 1) In all calculations shown here I used the value for estimated annual production of fish that was used by Nordby and Poseidon (based on a paper by Larry Allen (1982), extrapolated to an estimate of 151.36 kg (wet weight - WW-per acre)). 2) In all calculations used to produce the graphs, I assumed the wetland acreage was new and not restored. 3) In all calculations shown here I used the value for average annual impingement of 1715 kg, which was also used by Poseidon and Nordby for their comparison of impingement losses to productivity gains. This value is based on what Poseidon calls the Proportional (3-B) model, specifically using the 4.7 kg value. (a) Poseidon argues that a more conservative value (2.24 kg/day) is warranted based on the idea that two observations were outliers that should be weighed by some probability of occurrence (Poseidon proposes 5%). I think this argument is flawed. (b) First, Poseidon is confusing outliers with respect to storm events with outliers with respect to impingement. This is a logical error (false converse). (c) Let's assume that there was higher impingement than typical in the storm events and the storm events were	(a) Disagreement noted. (b) The comment assumes that higher impingement occurs during storm events that are outliers. Any such assumption logically implies that lower impingement occurs during non-storm events and storm events that are not outliers; there needs to be a relative basis in order to assign a characterization such as "higher." This is the case at hand; atypical impingement occurred at the tail end of two major storm events. Nothing similar occurred during the other fifty sampling events. (c) The Discharger is not arguing that higher impingement can occur only in association with the outlier storms; it is arguing that, in this instance, as an observable fact, it occurred only in association with such events. (d) As the comment notes, higher impingement might occur at other times, and might be caused by other events. But, based on the information at hand, there is no reasonable expectation that higher impingement will occur independent of such outlier storms. As staff pointed out at the April 8 hearing, a sewage spill could result in a fish kill that would lead to higher impingement. The comment offers no such scenario. The staff's scenario serves to illustrate that assuming higher impingement on a routine basis is speculative, and based on unforeseen events for which the Discharger would not be responsible. During prevailing conditions in Agua Hedionda Lagoon, impingement is much lower than during the two outlier events. There is no logical error (false converse) made. The comment that higher impingement may be typical each year is speculation. (e) The comment asserts an inadequacy in the data set but does not explain

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	outliers. This does not allow the conclusion that higher than typical impingement only occurs associated with storm events, which is the basis of the argument by Poseidon. (d) There may be all sorts of other causes of higher than typical impingement. Indeed a few such high impingement events may be typical each year. (d) The problem is that unlike the historical record for storm or flow events we have no such record for impingement that would allow assessment as to how common or rare such high impingement events are. Simply put - inadequate sampling is no reason to discount data. (e) Hence the only reasonable approach is to use the flow proportioned average without adjustment, that is, model 3-B with no discounting.	why inferring a co-occurrence between outlier storms and higher impingement is unsupportable in the current record. Commenter does not provide a basis for why the sampling data should be considered "inadequate." The comment does not apply an objective standard or method to support this assertion, which appears to be a subjective argument. (e) The comment's conclusion that model 3-B with no discounting is the "only reasonable approach" does not follow from the body of the comment. The Regional Board does not agree that there is only one reasonable approach. Yet, to ensure a conservative starting point that does not exclude outliers, Regional Board staff asked Discharger to use the value from that model (4.7 kg/yr) as the basis for the productivity monitoring obligation. Despite reservations that the value overstates the potential for impingement at the CDP, the Discharger accepted this value as a performance standard.
319.	Based on the information provided by Poseidon and my review, it is my conclusion that if wetland acres are going to be used to mitigate impingement impacts they need to be new acres not those already required by the entrainment mitigation.	As explained in Response No. 309, 31, 312, 313, 314 there is a substantial record and ample basis to use the proposed wetlands (55.4 acres in two phases of 37 and 18.4 acres each) as compensation for impingement, as well as entrainment. After consideration of all of the available information, the Regional Board does not believe that additional mitigation acreage is warranted.
320.	(a) The approach taken here is based entirely on the approach proposed by Poseidon. There may be other ways to estimate impingement and impacts due to impingement that do not rely on conversion to wetland acreage. (b) As one example, there is almost certainly a non-linear relationship between flow per second (intake velocity) and impingement probability. If intake velocity is reduced, as stated, after the power plant stops operating there may be a substantial reduction in impingement. I think this could be quantified or at least modeled. If such an approach was used there would have to be language in the COP operating permit limiting intake velocity.	(a) Comment noted. (b) The approach in the comment might be considered when and if the power plant stops operating and the Discharger submits a Report of Waste Discharge to operate in stand-alone mode. For this action, however, Regional Board staff believe that the approach taken is reasonable, and supported by the record. The evidence to quantify or model the approach described in the comment is not presently available; and this approach does not provide a feasible alternative at this time or to the tentative order. See Response No. 9. Discharger anticipates reducing impingement mortality to less than significant levels by reducing velocity levels when in stand-alone mode. Yet Discharger is not claiming any credits for the beneficial effects due to the infeasibility of quantifying the effects. It is

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		Discharger's position that some level of qualitative benefits will occur but no credit can be quantified. See Response No. 36(a), 309(a). (c) This comment is argumentative in nature because it summarizes the Commenter's earlier assertions. To that extent, it is noted. For more discussion about how the Minimization Plan fully offsets impingement impacts, see Response Nos. 309 and 314.
11. Adequacy of the MLMP		
321.	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: • Avoid or mitigate to less-than-significant levels all impacts to marine resources associated with potential E&I from the Project's water intake; • 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; • Establish monitoring protocols and empower the Regional Board and the California Coastal Commission with enforcement mechanisms to ensure potential E&I impacts are accurately measured over time and that mitigation success targets consistently are achieved; • 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); • 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);	The MLMP fully complies with the conditions within Resolution R9-2008-0039 (the April Resolution), Order No. R9-2006-0065 (2006 Permit), and Water Code Section 13142.5(b). The following highlights the key aspects of the MLMP's compliance: The MLMP includes a specific proposal for mitigation impingement and entrainment as required by Section VI.C.2(e) of Order No. R9-2006-0065. Under the terms of the MLMP, the Discharger shall create or restore up to 55.4 acres of estuarine wetlands at up to two restoration sites. Consistent with the April Resolution, the Discharger submitted eleven specific mitigation sites determined during the interagency process and submitted a specific proposal for mitigation at these identified sites. The final restoration site(s) will be selected according to strict minimum standards and objectives specifically identified in Sections 3.1 and 3.2 of the MLMP, respectively, and final selection will be subject to review by the Regional Board and Coastal Commission. Moreover, the success of the selected restoration site(s) will be evaluated according to specifically enumerated performance standards and criteria, as described in Response Nos. 240 and 243. See also Responses Nos. 109, 187, 227, 234, 235, 274.

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	and, • Authorize enforcing agencies to order remediation in the event the rigorous performance criteria are not met. (Comments from Latham & Watkins LLP January 26, 2009 Comment Letter, pgs. 3, 12-20 and Latham & Watkins LLP April 2, 2009 Comment Letter, pgs. 18-20)	
12. Timeliness of MLMP Submittal		
322.	Poseidon's submittal of the MLMP was not untimely. (Comments from Latham & Watkins LLP January 26, 2009 Comment Letter, pgs. 37-38)	The Regional Board acknowledges that Poseidon's submittal of the MLMP was timely under the terms of Resolution R9-2008-0039. Staff received the draft MLMP on July 8, 2008 and September 17, 2008, prior to the October 8, 2009 deadline provided by the April Resolution. The submission of the final language for the MLMP on November 14, 2008 was timely in light of the flexibility required to accomplish the Regional Board's directive that Poseidon participate in an interagency process to develop the MLMP. The Regional Board also recognizes that Poseidon apprised the Regional Board of the delay in the Regional Board's receipt of the final MLMP language caused by the interagency process.
13. Adequacy of the 2004-2005 Impingement and Entrainment Study and Data		
323.	The Minimization Plan properly relies upon data collected during the 2004-2005 Impingement Mortality and Entrainment Characterization Study conducted by Tenera Consultants to assess the entrainment and impingement impacts associated with Encina's intake. (Comments from Latham & Watkins LLP January 26, 2009 Comment Letter, pgs. 20-23)	The Discharger relied upon data that were collected pursuant to the Encina Power Station's ("EPS") Regional Board-approved 316(b) Impingement Mortality and Entrainment Characterization Study ("IM&E Study"). Before conducting the IM&E Study, EPS produced and submitted to the Regional Board a Study Plan for its review and approval pursuant to the terms of EPS's NPDES permit. Regional Board staff reviewed the plan with the assistance of Tetra Tech, its third-party consultant. Under the direction of a Technical Advisory Group comprised of staff from the Regional Board, state and federal resources agencies, EPS and Tenera Environmental ("Tenera") revised the Study Plan and submitted its final report to the Regional Board in January 2008. The IM&E Study incorporated scientifically acceptable sampling methodologies and analysis techniques that have been applied in other recent impingement and entrainment studies, including those conducted for the AES Huntington Beach Generating Station and Duke Energy South Bay Power Plant. Regional Board staff believes that the 2004-2005 data provide a sound basis

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		to establish specific criteria for the mitigation site. See also Responses Nos. 33b, 47c, 48a, 51, 58.
14. Impingement Effects Estimation		
324.	On April 30, 2008, Poseidon submitted a calculation indicating that the Project's standalone impingement would be approximately 1.56 kg per day, a de minimis value. When operating in co-located mode, any impingement associated with the Project would naturally be even less. 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 1.56 to 7.16 kg per day. 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. (Comments from Latham & Watkins LLP January 26, 2009 Comment Letter, pgs. 23-24; Latham & Watkins LLP April 2, 2009 Comment Letter, pgs. 10-12; Minimization Plan, Attachments 5, 7 and 9)	The Minimization Plan provides various approaches to estimating the impingement associated with the CDP's stand-alone operations, presuming that the CDP will draw all 304 MGD of its source water requirements from Agua Hedionda Lagoon and satisfy none with the EPS's discharge water. No reductions for design or technology measures expected to minimize entrainment and impingement are taken. Using these conservative assumptions, the Minimization Plan, Chp. 5 and Attachment 5, provides reasonable projections of impingement between 1.56 to 4.7 kg/day, depending on whether a regression analysis or flow-proportioned methodology is employed and whether two sampling days considered outliers are excluded from the calculation. The 4.7 kg/day value represents the high end of the range, using a flow-proportioned approach for 50 of the 52 impingement sampling days and making no adjustment for the 2 impingement sampling days considered outliers. The 1.56 value is calculated using a regression analysis that excludes the outlier data. A 2.11 value is calculated using a flow-proportioned approach excluding the outlier data. In addition to requiring the use of the best available site, design, and technology measures feasible to minimize intake and mortality of marine life, the Regional Board is requiring the Discharger to demonstrate that the Discharger's mitigation wetlands fully offset projected impingement under the terms of impingement and fish biomass productivity monitoring plans. Employing the most resource-protective approach, the Regional Board is requiring full offset based on the most conservative reasonable impingement projection, 4.7 kg/day, or 1715.5 kg/year. See also Responses Nos. 88, 113, 166.
15. Impingement - Outliers		
325.	The CDP's projected impingement when operating in stand-	The Regional Board finds it unnecessary to make the determination of

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	alone mode ranges from 1.56 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. 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. (Comments from Latham & Watkins LLP January 26, 2009 Comment Letter, pg. 23, fn. 45; Latham & Watkins LLP April 2, 2009 Comment Letter, pgs. 10-11, Appendix B, Tab 3; Minimization Plan, Attachments 5 and 9)	whether the January 12 and February 23, 2005 data points are outliers and thus should be excluded. To establish the Discharger's mitigation obligation, the Regional Board relies upon the impingement estimate of 4.7 kg/day, which includes the outlier data and assumes the 100% recurrence of such events, in order to set the 1715.5 kg/year performance standard for the mitigation wetlands, as provided in Tentative Order R9-2009-0038. The Regional Board notes, however, that the Discharger has offered evidence and expert analysis to support the conclusion that the January 12 and February 23, 2005 data points are outliers, including: • The EPA's definition of outlier, which defines the term to mean measurements that are extremely large or small relative to the rest of the data set and that are suspected of misinterpreting the population from which they were collected. See EPA (2006) Qa/G-9S Report Data Quality Assessment: Statistical Methods for Practitioners. • Expert evidence submitted by Dr. David Mayer on April 30, 2008 and January 26, 2009 to the effect that the two days in question corresponded to a different statistical subpopulation than the other fifty impingement sampling events, which two days properly are excluded from a regression analysis; • Expert evidence introduced by Drs. Chang and Jenkins describing extremely unusual levels of rainfall, which indicate that the relatively higher levels of impingement observed on those two days are not indicative of normal plant operations and may have been due to factors unrelated to seawater intake; • The fact that freshwater fish were collected infrequently during the impingement surveys, and only during the wet season, with a substantial majority of freshwater fish biomass collected on the two days in question; • The fact that impingement on 335 of 336 days during the 1979/1980 EPS study also was much lower than on the two days in question. See also Responses Nos. 89, 93, 94, 95, 96, 97.

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16. Impingement - Project Intake Flow		
326.	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. (Comments from Latham & Watkins LLP January 26, 2009 Comment Letter, pgs. 24-26)	See Response No. 9 for support of the determination that reducing intake flow velocities can reduce impingement. Impingement losses associated with the collection of seawater at the power plant intake would be reduced when the through-screen velocity at the inlet intake screens (bar racks) is equal to or less than 0.5 fps because this velocity would be low enough to allow some of the marine organisms to swim away from the intake and to avoid potential harm from impingement. See also Responses Nos. 88, 117, 118.
15. Entrainment Effects Estimation		
327.	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 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: (1) Assumes 100% mortality of all marine organisms entering the intake; (2) Assumes 100% survival of all fish larvae in their natural environment; (3) Assumes species are evenly distributed throughout the entire depth and volume of the water body; and (4) Assumes the entire habitat from which the entrained fish larvae may have originated is destroyed. The entrainment model also did not account for the	The Minimization Plan presented detailed entrainment data in Attachment 6 "Summary of Fish and Target Shellfish Larvae Collected for Entrainment and Source Water Studies in the Vicinity of Agua Hedionda Lagoon from June 2005 through May 2006." Section 5.3 et seq discusses the entrainment analysis methodology, assumptions, data, and results in great detail. The Minimization Plan incorporates additional entrainment analysis conducted by the Coastal Commission and its consultant, Dr. Raimondi. Dr. Raimondi's recommendations with respect to entrainment were incorporated into the MLMP and provide the basis for the Discharger's entrainment mitigation. *See* Recommended Revised Condition Compliance Findings (approved December 10, 2008), at Section 4.2. In the context of entrainment analysis, the ETM is a species-specific model that is used to calculate the amount of habitat that is necessary to support or sustain the populations of those larvae that are entrained at an intake

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	significant environmental benefits that extend well beyond compensating for the entrainment impacts. 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, 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 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. 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. (Comments from Latham & Watkins LLP January 26, 2009 Comment Letter, pgs. 27-31)	system. The model calculates this area (APF) by multiplying two variables: proportional mortality (Pm) and source water body (SWB). The Pm is calculated by dividing the number of larvae actually entrained in the intake system by the number of potentially entrainable larvae (i.e., the number of larvae extant in the source water body that are subject to entrainment). The SWB is determined by measuring the size of the water body where the entrained species reproduce. In calculating the APF to identify the mitigation acreage necessary to offset CDP-related entrainment, the California Coastal Commission calculated the average proportional mortality value for the three most commonly entrained lagoon and ocean species. Of all the entrained larvae collected during the 2004/2005 entrainment survey, the larvae of three lagoon species (i.e., goby, blenny and garibaldi) constituted approximately 95%, while the larvae of 5 ocean species (i.e., white croaker, northern anchovy, California halibut, queenfish, spotfin croaker) constituted approximately 4%. This means that the larvae of other fish species made up less than 1% of all the larvae entrained at the EPS intake during the sampling period. In calling for the creation or restoration of up to 55.4 acres of estuarine wetlands, the Coastal Commission expected the mitigation wetlands to provide mitigation for the three (3) most commonly entrained lagoon species and the five (5) most commonly entrained ocean species. 88% (or 49/55.4) of the acres are designed to provide entrainment mitigation for the three (3) most commonly entrained lagoon species. 12% (or 6.4 acres are designed to entrainment mitigation for the five (5) most commonly entrained ocean species. The mitigation wetlands are not intended to produce the larvae of other fish whose larvae are entrained in insignificant quantities. To the extent that the mitigation wetlands produce fish biomass from the most commonly entrained lagoon species, 12% of this biomass is available as impingement mitigation credit. To the extent that the mitigation wetlands produce fish biomass from the most commonly entrained ocean species, 88% of this biomass is available as impingement mitigation credit. To the extent that the mitigation wetlands produce fish biomass from all other species, 100% of this biomass is available as impingement mitigation credit.

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		Thus, estimations of the CDP's projected entrainment are premised on conservative assumptions that ensure that the Discharger will fully offset any entrainment related to its stand-alone operations. See also Responses Nos. 36a, 120, 288, 314.
16. Staff Concerns from February 19, 2008 Letter		
328.	On February 19, 2008, Regional Board staff sent Poseidon a letter identifying concerns with the June 29, 2007 version of the Minimization Plan. (Comments from Latham & Watkins LLP January 26, 2009 Comment Letter, pgs. 31-34)	Regional Board staff identified a number of issues in a letter submitted to Discharger on February 19, 2008 in response to its review of Discharger's June 2007 version of the Minimization Plan. Since receipt of said letter, Discharger submitted a revised Minimization Plan in March 2008. On April 9, 2008, in a public meeting, the Regional Board adopted Resolution No. R9-2008-0039, and thereby approved the March 2008 Minimization Plan subject to a number of conditions including, inter alia, that Discharger submit an "amended Plan [to] address the items outlined in the February 19, 2008 letter to Poseidon." In March 2009, Discharger submitted a revised Minimization Plan to comply with the conditions set forth in Resolution No. R9-2008-0039 as well as an additional list of outstanding issues identified by the Executive Officer. The March 2009 Minimization Plan satisfies all of these conditions, in part by resolving each of the issues identified in the February 11, 2008 letter. Regional Board agrees that all outstanding issues identified in the February 19, 2008 letter have been fully addressed.
17. Interagency Input and Approval of MLMP		
328a.	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	Comment noted. Regional Board considers this request fully satisfied.

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	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 and approval of the MLMP, and finalization of MLMP language by Coastal Commission staff (Comments from Latham & Watkins LLP January 26, 2009 Comment Letter, pgs. 31-34)	
18. Adequacy of Underlying Data and Modeling		
328b.	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&I effects during both co-located and stand-alone operations. (Comments from Latham & Watkins LLP January 26, 2009 Comment Letter, pgs. 31-34)	The Discharger relied upon data that were collected pursuant to the Encina Power Station's ("EPS") Regional Board-approved 316(b) Impingement Mortality and Entrainment Characterization Study ("IM&E Study"). Before conducting the IM&E Study, EPS produced and submitted to the Regional Board a Study Plan for its review and approval pursuant to the terms of EPS's NPDES permit. Regional Board staff reviewed the plan with the assistance of Tetra Tech, its third-party consultant. Under the direction of a Technical Advisory Group comprised of staff from the Regional Board, state and federal resources agencies, EPS and Tenera Environmental ("Tenera") revised the Study Plan and submitted its final report to the Regional Board in January 2008. The IM&E Study incorporated scientifically acceptable sampling methodologies and analysis techniques that have been applied in other recent impingement and entrainment studies, including those conducted for the AES Huntington Beach Generating Station and Duke Energy South Bay Power Plant. Regional Board staff believes that the 2004-2005 data provide a sound basis to establish specific criteria for the mitigation site. See also Responses Nos. 33b, 47c, 48a, 51, 58.
19. Mitigation Will Fully Offset Impacts		
328c.	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.	The Regional Board agrees that the Minimization Plan provides for mitigation sufficient to fully offset the CDP's projected impingement and entrainment as calculated for stand-alone operations.

No.	Comment	Responses
	(Comments from Latham & Watkins LLP January 26, 2009 Comment Letter, pgs. 31-34)	
20. Site Selection		
328d.	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. (Comments from Latham & Watkins LLP January 26, 2009 Comment Letter, pgs. 33-34)	Comment noted.
21. Single Site Selection Was Not Required		
328e.	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. 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	For various reasons, Regional Board staff believe it is premature to require selection of a single site in order for Poseidon to secure approval of the Minimization Plan. Any site(s) selected will have to be approved by the Coastal Commission and Regional Board. CEQA review and appropriate entitlements for the mitigation site(s) will have to be secured. The Regional Board at the February 11, 2009 hearing directed Poseidon and staff to revise the Minimization Plan to give priority attention to sites within the jurisdiction of the Regional Board. The MLMP accomplishes this directive by identifying 11 sites, 5 of which are within the boundaries of the Regional Board and therefore priority sites. These sites have been pre-approved by the Coastal Commission; final selection of the site(s) is subject to the approval of the Coastal Commission and the Regional Board. See also Responses Nos. 127 and 178.

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	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. (Comments from Latham & Watkins LLP January 26, 2009 Comment Letter, pgs. 33-34)	
22. Resolution R9-2008-0039 Additional Concerns		
329.	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: a) identification of impacts from impingement and entrainment; b) adequate monitoring data to determine the impacts from impingement and entrainment; c) coordination among participating agencies for the amendment of the Plan as required by Section 13225 of the California Water Code; d) adequacy of mitigation; and e) commitment to fully implement the amendment to the Plan. (Comments from Latham & Watkins LLP January 26, 2009 Comment Letter, pgs. 34-35)	Comment noted. Regional Board agrees that all outstanding issues identified in Resolution No. R9-2008-0039 have been fully addressed.
23. Double Counting		
330.	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	In addition to mitigating for entrainment, the mitigation wetlands can mitigate for impingement by producing fish species other than those most commonly entrained. Productivity calculations are not, in fact, based on species expressly reserved for entrainment mitigation. For instance, while the

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	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. 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 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. 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.	productivity value is composed, in large part, of topsmelt biomass, no topsmelt larvae were collected or observed during the yearlong entrainment sampling program. Therefore, to count topsmelt and other fish biomass not reserved for entrainment mitigation towards impingement mitigation credit does not result in double-counting. Nordby appropriately excluded from the estimate of productivity available for impingement mitigation, the biomass required to be counted for entrainment mitigation. There was no double-counting in Mr. Nordby's species-specific analysis of productivity. See also Response Nos. 309, 311, 312 and 314.

No.	Comment	Responses
	(Comments from Latham & Watkins LLP April 2, 2009 Comment Letter, pgs. 3, 18-19, Appendix B, Tab 2)	
24. Four Outstanding Staff Issues Identified at 2.11.09 Regional Board Hearing		
331.	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: (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 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. (Comments from Latham & Watkins LLP April 2, 2009 Comment Letter, pgs. 8-12, Appendix A)	Comment noted. Regional Board agrees that all four issues have been fully addressed.
25. Placing Regional Board on Equal Footing with Coastal Commission		
331a.	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	Comment noted. Regional Board considers this request complete.

No.	Comment	Responses
	approve the final mitigation site(s) and restoration plan for the site(s), and enforce compliance with the MLMP's strict performance criteria. (Comments from Latham & Watkins LLP April 2, 2009 Comment Letter, pgs. 8-9)	
26. Prioritization of Sites Within Regional Board Jurisdiction		
331b.	In response to staff's request to reduce the number of proposed mitigation site(s) from 11 to 5, Poseidon amended the Minimization Plan to provide as follows: "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." 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." (Comments from Latham & Watkins LLP April 2, 2009 Comment Letter, pgs. 9)	Comment noted. Regional Board considers this request complete.
27. Submittal of All Imposed Agency Requirements		
331c.	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: 1. City of Carlsbad Development Agreement (DA 05-01)	Comment noted. Regional Board considers this request complete.

No.	Comment	Responses
	2. City of Carlsbad Redevelopment Permit (RP 05-12) 3. City of Carlsbad EIR Exhibit B, Mitigation Monitoring and Reporting Program 4. City of Carlsbad Precise Development Plan (PDP 00-02) 5. State Lands Commission Lease Agreement (PRC 9727.1) 6. California Coastal Commission Condition Compliance for CDP No. E-06- 013 — Special Condition 8. 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. (Comments from Latham & Watkins LLP April 2, 2009 Comment Letter, pgs. 9-10)	
28. Submittal of Flow-Proportioned Impingement Calculations		
331d.	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. (Comments from Latham & Watkins LLP April 2, 2009 Comment Letter, pgs. 10-12, Appendix A and Minimization Plan, Attachments 5 and 9)	Comment noted. Regional Board considers this request complete. See also Responses Nos. 10f, 37, 56, 113, 115, 166.

No.	Comment	Responses
29. Water Code Section 13142.5(b) – Site		
332.	Co-location of the Project at the existing EPS site represents the best site feasible to minimize the intake and mortality of marine life. (Comments from Latham & Watkins LLP April 2, 2009 Comment Letter, pgs. 13-14)	The Minimization Plan includes an extensive and detailed review of alternative sites. Specifically, the March 9, 2009 Minimization Plan evaluated three alternative sites for the CDP. These were: (1) other locations within the EPS property; (2) a site within the Encina Water Pollution Control Facility (EWPCF) property; and (3) a site adjacent to Maerkle Reservoir, located 10.6 miles from the proposed site. Sites were evaluated based on proximity to seawater intake, outfall, and key distribution points, infrastructure needs and production capacity, capital and operating costs, planning and zoning, environmental impacts of construction and operation, and preservation of Agua Hedionda Lagoon. *See* Chapter Four of the Discharger's Minimization Plan, addressing alternative intake structures. Based on available information for the three sites evaluated within the City of Carlsbad, the Regional Board staff concur with the Discharger that the location within the property leased by the EPS, using the existing EPS intake structure to obtain source water, is the best site feasible to minimize the intake and mortality of marine life. It is the best site for the project because there are no feasible and less environmentally damaging alternative locations. *See* Staff Report dated March 27, 2009 for more details. The Report of Waste Discharge submitted by the Discharger identified the EPS site as the final project site. The Regional Board evaluated the application on the basis of this location when it adopted Order No. R9-2006-0065, NPDES No. CA0109223 on August 16, 2006, and, thus, previously determined that the site is appropriate. See also Responses Nos. 143, 148, 209, 210, 266.
30. Water Code Section 13142.5(b) – Design		
333.	The Project implements the best design features feasible that ensure the minimization of the intake and mortality of all forms of marine life. (Comments from Latham & Watkins LLP April 2, 2009 Comment Letter, pgs. 14-15)	Under the terms of the Minimization Plan, the CDP will use the best available design features feasible to minimize intake and mortality of marine life, in compliance with CWC § 13142.5(b). The primary design feature of the CDP is the direct connection of the desalination plant to the EPS intake and discharge facilities. This design feature allows CDP to use the power plant cooling water as both source water for the seawater desalination plant and as a blending water to reduce the salinity of the desalination plant concentrate prior to the discharge to the

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		ocean. In 2008, the EPS flow would have met 88.5% of he CDP water supply needs Additional design features that will be incorporated in the desalination plant design to reduce impingement, entrainment, and flow collection when EPS is temporarily shut down include: (1) operation of a modified EPS pump configuration to reduce both inlet (bar racks) and fine-screen velocity, (2) ambient temperature processing, and (3) elimination of CDP-related heat treatments. The implementation of these design features as provided in the Minimization Plan will minimize the intake and mortality of marine life by using the best available design feasible. See also Response Nos. 36b, 82, 149, 153, 185, 214.
31. Water Code Section 13142.5(b) – Technology		
334.	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. (Comments from Latham & Watkins LLP April 2, 2009 Comment Letter, pgs. 15-18)	Under the terms of the Minimization Plan, the CDP will use the best available technology features feasible to minimize intake and mortality of marine life, in compliance with CWC § 13142.5(b). As discussed in Chapter 4 of the Minimization Plan, the Discharger conducted a thorough review of technology features, including alternative intakes, alternative screening technologies and desalination technologies, to minimize marine life mortality under standalone operating conditions. Technologies features which were not incorporated into the CDP were determined to be infeasible based a variety of economic, environmental and technological factors, and determined not to be capable of being accomplished in a successful manner in a reasonable period of time. These measures were not determined to be infeasible simply because they were not feasible in conjunction with a co-located CDP. With regards to alternative intakes, the Project's hydro-geologic studies confirm that none of the alternative intakes evaluated are capable of delivering the 304 MGD of seawater needed for environmentally safe operation of the Project. Furthermore, the quality of the water available from the subsurface intake would be untreatable due to an extremely high salinity level, excessive iron and high suspended solids. Finally, the Coastal Commission found, and the Regional Board agrees, that alternative intakes that might avoid or minimize environmental impacts are infeasible or would cause greater environmental impacts. *See* Coastal Commission

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		Recommended Revised Findings, Coastal Development Permit for the Discharger Carlsbad Desalination Project, page 80 of 133; (Previously submitted January 26, 2009, Latham & Watkins LLP Comments, Appendix A.). Furthermore, In a letter dated October 16, 2007 to State Lands Commission Executive Director, counsel for Surfrider and Coastkeeper expressed a similar view: "Admittedly, sub-surface intakes are likely infeasible for a facility to produce 50 million gallons per day of output." With regards to impingement reduction screens and other major physical or structural modifications to the existing EPS intake and screening facilities, these measures were found to be infeasible because they would interfere with, or interrupt power plant operations and would result in very limited impingement and entrainment benefits. In sum, through the installation of VFDs on desalination plant intake pumps to reduce total intake flow for CDP, the Minimization Plan incorporates all feasible technology measures to minimize marine life mortality under standalone operating conditions. See also Response Nos. 7, 8, 40, 45b, 82, 90, 149, 153, 214.
32. Water Code Section 13142.5(b) – Mitigation		
335.	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. (Comments from Latham & Watkins LLP April 2, 2009 Comment Letter, pgs. 18-20)	Under the terms of the Minimization Plan, the MLMP represents the best mitigation feasible to minimize intake and mortality of marine life, in compliance with CWC § 13142.5(b). The MLMP requires the Discharger to restore up 55.4 and no less than 37 acres of estuarine wetlands and will more than fully mitigate any entrainment or impingement impacts resulting from the Project's intake. The MLMP includes a specific proposal for mitigation impingement and entrainment as required by Section VI.C.2(e) of Order No. R9-2006-0065. Under the terms of the MLMP, the Discharger shall create or restore up to 55.4 acres of estuarine wetlands at up to two restoration sites. Consistent with the April Resolution, the Discharger submitted eleven specific mitigation sites determined during the interagency process and submitted a specific proposal for mitigation at these identified sites. The final restoration site(s) will be selected according to strict minimum standards and objectives specifically identified in Sections 3.1 and 3.2 of the MLMP, respectively, and final selection will be subject to review by the Regional Board and Coastal

No.	Comment	Responses
		Commission. Moreover, the success of the selected restoration site(s) will be evaluated according to specifically enumerated performance standards and criteria, as described in Response Nos. 240 and 243. See also Response Nos. 109, 187, 227, 234, 235, 274.