

Written and Verbal Comments on the  
Draft EIS/EIR

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# Federal Agencies

U.S. Department of Homeland Security  
FEMA Region IX  
1111 Broadway, Suite 1200  
Oakland, CA. 94607-4052



FEMA

August 18, 2011

Lanika L. Cervantes  
U. S. Army Corps of Engineers, Los Angeles District  
Regulatory Division – Carlsbad Field Office  
Attn: CESPL-RG-S-2010-00142-LLC  
6010 Hidden Valley, Suite 105  
Carlsbad, California 92011

Dear Ms. Cervantes:

This is in response to your request for comments on Public Notice #201000142-LLC, Species Conservation Habitat Project in Imperial County, California.

Please review the current effective Flood Insurance Rate Maps (FIRMs) for the County of Imperial (Community Number 060065), Maps revised September 26, 2008. Please note that the County of Imperial, California is a participant in the National Flood Insurance Program (NFIP). The minimum, basic NFIP floodplain management building requirements are described in Vol. 44 Code of Federal Regulations (44 CFR), Sections 59 through 65.

A summary of these NFIP floodplain management building requirements are as follows:

- All buildings constructed within a riverine floodplain, (i.e., Flood Zones A, AO, AH, AE, and A1 through A30 as delineated on the FIRM), must be elevated so that the lowest floor is at or above the Base Flood Elevation level in accordance with the effective Flood Insurance Rate Map.
- If the area of construction is located within a Regulatory Floodway as delineated on the FIRM, any *development* must not increase base flood elevation levels. **The term *development* means any man-made change to improved or unimproved real estate, including but not limited to buildings, other structures, mining, dredging, filling, grading, paving, excavation or drilling operations, and storage of equipment or materials.** A hydrologic and hydraulic analysis must be performed *prior* to the start of development, and must demonstrate that the development would not cause any rise in base flood levels. No rise is permitted within regulatory floodways.

FEMA-1

- Upon completion of any development that changes existing Special Flood Hazard Areas, the NFIP directs all participating communities to submit the appropriate hydrologic and hydraulic data to FEMA for a FIRM revision. In accordance with 44 CFR, Section 65.3, as soon as practicable, but not later than six months after such data becomes available, a community shall notify FEMA of the changes by submitting technical data for a flood map revision. To obtain copies of FEMA's Flood Map Revision Application Packages, please refer to the FEMA website at <http://www.fema.gov/business/nfip/forms.shtm>.

FEMA-1  
Cont.

**Please Note:**

Many NFIP participating communities have adopted floodplain management building requirements which are more restrictive than the minimum federal standards described in 44 CFR. Please contact the local community's floodplain manager for more information on local floodplain management building requirements. The Imperial County floodplain manager can be reached by calling Brian Donley, Building Official, at (760) 482-4311.

FEMA-2

If you have any questions or concerns, please do not hesitate to call Robert Durrin of the Mitigation staff at (510) 627-7057.

Sincerely,



Gregor Blackburn, CFM, Branch Chief  
Floodplain Management and Insurance Branch

cc:

Brian Donley, Building Official, Imperial County  
Garret Tam Sing/Salomon Miranda, State of California, Department of Water Resources,  
Southern Region Office  
Robert Durrin, Floodplanner, CFM, DHS/FEMA Region IX  
Alessandro Amaglio, Environmental Officer, DHS/FEMA Region IX

## Lorraine Woodman

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**From:** DO NOT REPLY [noreply@cardno.com]  
**Sent:** Monday, September 12, 2011 2:19 PM  
**o:** Lorraine Woodman; Sarah Bumby; Rob Wurgler; Robert M. Wood  
**Subject:** New SCH EIS-EIR comment from Gilbert Anaya

Gilbert Anaya has entered a comment. Contact Information:

E-Mail: [gilbert.anaya@ibwc.gov](mailto:gilbert.anaya@ibwc.gov)

Affiliation: International Boundary and Water Commission Mailing Address:

4171 N. Mesa St.

C-100

El Paso, Texas 79902-1441

Attachments:

Comment:

Thank you for the Notice of Availability for the Draft EIS/EIR, Application for Permit, and Notice of a Public Hearing in reference to the Salton Sea Conservation Habitat Project to be conducted along the New River or Alamo River and adjacent areas of the Salton Sea in Imperial County, California. The United States Section, International Boundary and Water Commission (USIBWC) has reviewed the draft EIS/EIR regarding the restoration of shallow water habitat through creation of shallow ponds using a blend of New or Alamo River water and Salton Sea water and does not have any comments or concerns at this time. The proposed action is not anticipated to have any impacts to projects or resources of the USIBWC.

IBWC-

1

Thank you again for the opportunity to review and comment on the project. Please keep the USIBWC informed of additional projects near the international border.



# United States Department of the Interior

BUREAU OF RECLAMATION  
Lower Colorado Regional Office  
P.O. Box 61470  
Boulder City, NV 89006-1470

OCT 13 2011

IN REPLY REFER TO:  
LC-2620  
ENV-6.00

Ms. Lanika Cervantes  
U.S. Army Corps of Engineers  
Los Angeles District, Regulatory Division,  
San Diego Field Office  
Attn: CESPL-RG-RS-2010-00142-LLC  
6010 Hidden Valley Road, Suite 105  
Carlsbad, CA 92011

RECEIVED

OCT 17 2011

WBS

REGULATORY BRANCH  
CARLSBAD FIELD OFFICE

Subject: Bureau of Reclamation's Comments on the Draft Salton Sea Species Conservation Habitat Project (Project) Environmental Impact Statement/Environmental Impact Report (EIS/EIR) (per Public Notice/Application No.:SPL-2010-00142-LLC)

Dear Ms. Cervantes:

Thank you for the opportunity to review the subject Draft EIS/EIR (comment period August 17, 2011 through October 17, 2011). Reclamation is supportive of the Project and appreciates the opportunity to participate as a cooperating agency in the development of the EIS/EIR.

BOR-1

Section 3.13-11, lines 27-35, discuss potential uses of land that will become exposed at the Salton Sea in the future. Please clarify that uses of Reclamation land would be designated in accordance with the Agency's authorities, regulations, and policies.

BOR-2

If you have questions regarding this comment, please contact Ms. Faye Streier, National Environmental Policy Act Coordinator, at 702-293-8132 or [fstreier@usbr.gov](mailto:fstreier@usbr.gov).

Sincerely,

  
Valerie E. Thomas, Chief  
Resources Management Office



# United States Department of the Interior

OFFICE OF THE SECRETARY  
Office of Environmental Policy and Compliance  
Pacific Southwest Region  
333 Bush Street, Suite 515  
San Francisco, CA 94104

IN REPLY REFER TO:  
ER# 11/791

*Electronically Filed*

17 October 2011

Ms. Lanika Cervantes,  
Corps Project Manager  
U.S. Army Corps of Engineers,  
Los Angeles District, Regulatory Division, San Diego Field Office  
ATTN: CESPL-RG-RS-2010-00142-LLC  
6010 Hidden Valley Road, Suite 105  
Carlsbad, CA 92011

Subject: Draft Environmental Impact Statement/Environmental Impact Report for the  
Proposed Salton Sea Species Conservation Habitat Project at the Salton Sea, Imperial  
County, CA

Dear Ms. Cervantes,

The Department of the Interior has received and reviewed the subject document and has the following comments to offer:

Throughout the document the Programmatic Environmental Impact Report (DWR and DFG 2007) is cited as the source of information for findings, data, or statements of fact. Citing the PEIS rather than the original sources makes it much more difficult for the reader to evaluate the information. We suggest that the final EIS reference the original source of information where possible.

OEPC-1

The document establishes a framework for developing a salinity gradient system of shallow impoundments (Sections 1.3 and 1.6.1) similar to those developed by the U.S. Bureau of Reclamation and U.S. Geological Survey. There are differences; this document describes attempts to develop a system capable of supporting an array fish to provide forage for fish eating birds, but in most respects the systems are similar in form and function.

OEPC-2

The premise set forth in some sections of this document is also articulated in and supported by Miles et al. (2009), which predates Sickman et al. 2011, and establishes the rationale for mixing and blending sources of water, establishes a robust dataset for the ecological risk assessment, and articulates the role of salinity management in reducing selenium risk and vector control. We suggest that the final EIS reference Miles et al. (2009) in section 1.6.1, and describe the theory underlying the project. The theory is documented in Miles et al. (2009) pages 3 & 4.

OEPC-3

### SECTION 3.4

The document states that the principal reason for SCH development is to produce fish to support a bird community that relies on fish as a foraging base; however, the document contains minimal discussion of the maintenance of a self-sustaining population of fish. Data on the effects of selenium (Anderson, 2009) and evidence from the Reclamation/USGS ponds that desert pupfish will prosper at certain ponds and environmental conditions are not addressed. Additional analysis is needed to describe how desert pupfish will coexist with the many non-native fish species anticipated for use in SCH, and of how the primary project fish, tilapia, will deal with the potential reproductive effects of selenium at a higher rate of exposure than in the Salton Sea or the rivers and drains. We suggest that the authors review the data and information presented in the following references for possible inclusion in the final EIS.

OEPC-4

#### References on population-level effects of selenium

- Anderson, TW. 2009. Avian use and selenium risks evaluated at a constructed saline habitat complex at the Salton Sea, California. MS Thesis, San Diego State University.
- Hamilton, SJ. 2004. Review of selenium toxicity in the aquatic food chain. *Sci. Tot. Env.* 326: 1–31.
- Cumbie, PM, SL Van Horn, 1978. Selenium accumulation associated with fish mortality and reproductive failure. *Proceedings of Annual Conference of Southeastern Assoc. Fish Wildlife Agencies*; 32 pp.612 –624.
- Hamilton, SJ, KJ Buhl, FA Bullard, SF McDonald. 1996. Evaluation of toxicity to larval razorback sucker of selenium-laden food organisms from Ouray NWR on the Green River, Utah. National Biological Service, Yankton, SD, Final Report to the Recovery Implementation Program for the Endangered Fishes of the Colorado River Basin, Denver.
- Hamilton, SJ, KJ Buhl, FA Bullard, EE Little. 2000. Chronic toxicity and hazard assessment of an inorganic mixture simulating irrigation drain water to razorback sucker and bony tail. *Environ Toxicol.* 15:48 –64.
- Hamilton, SJ, RT Muth, B Waddell, TW May. 2000. Hazard assessment of selenium and other trace elements in wild larval razorback sucker from the Green River, Utah. *Ecotoxicol. Environ. Safety* 45(2):132-147.
- Harris, T. 1986. The selenium question. *Defenders.* March–April 1986:10 –20.
- Lemly, AD. 1997. A teratogenic deformity index for evaluating impacts of selenium on fish populations. *Ecotoxicol. Environ. Safety* 37:259 –266.
- Lemly, AD, HM Ohlendorf. 2002. Regulatory implications of using constructed wetlands to treat selenium-laden wastewater. *Ecotoxicol. Environ. Safety.* 52:46 –56.
- Saiki, MK, RS Ogle. 1995. Evidence of impaired reproduction by western mosquito fish inhabiting seleniferous agricultural drain water. *Trans. Am. Fish. Soc.* 124:578 –587.

Presentations on Pupfish

Keeney D, Sharon, Walker T, Michael, Thomas E, Valerie, Crayon J, John. Removal of a desert pupfish *Cyprinodon macularius* population from temporary ponds at the Salton Sea Presented to Desert Fish Council. Moab, Utah. November 2010.

Keeney Sharon and John J. Crayon. Removal of a desert pupfish population from temporary ponds at the Salton Sea. Western Section The Wildlife Society. Riverside, CA. Feb 2011.

Saiki, Michael K., Martin, Barbara M., Anderson, Thomas W. Unusual Dominance by Desert Pupfish in a Shallow Experimental Pond System Within the Salton Sea Basin Presented to Desert Fish Council, Moab, Utah. November 2010.

OEPC-4  
Cont.

**Page 3.4-14:**

The document provides a good description of the sequence of actions undertaken by DFG in introducing non-native sport fish to the Salton Sea. However, the document does not mention that the Desert Pupfish Recovery Plan (1993) indicates that the introduction of non-native sport fish precipitated a decline and endangerment of the Desert Pupfish.

OEPC-5

We suggest the final EIS include a discussion of the status of the Desert pupfish (see page 3.4-26) that addresses potential impacts, adverse or beneficial, to the Desert Pupfish related to interaction with other fish species. Evidence collected by the USGS in 2010 indicated that salinity gradient ponds, similar to those proposed by this plan, will benefit the Desert Pupfish. Specifically, an estimated 1 million Desert Pupfish were recovered and relocated prior to closure of the Reclamation/USGS experimental ponds. (See Presentations on Pupfish)

OEPC-6

**Page 3.4-16:**

We suggest the final EIS include the multi-year analysis of waterfowl counts for the Salton Sea region, including some shoreline habitats, provided in Barnum and Johnson (2004). Anderson (2009) also provides a wealth of species count data, nest fate data related to selenium, and site specific habitat use information for a variety of species in the Reclamation/USGS pond system all of which are directly applicable to the SCH project and might be incorporated in the final EIS.

OEPC-7

Barnum, DA, and S Johnson. 2004. The Salton Sea as important waterfowl habitat in the Pacific Flyway. *Studies in Avian Biol.* 27:100-105.

**Page 3.4-50:**

The section on disease does not address the role of selenium in immune system dysfunction and how this may play a role in disease outbreaks. We suggest this section be revised and enhanced in the final EIS. References that might provide additional information are:

OEPC-8

Albers, PH., DE Green, and CJ Sanderson. 1996. Diagnostic criteria for selenium toxicosis in

aquatic birds: dietary exposure, tissue concentrations, and macroscopic effects. J. Wildl. Dis., 32:468-485.

Fairbrother, A, and J Fowles 1990. Subchronic effects of sodium selenite and selenomethionine on several immune functions in mallards. Arch. Environ. Contam. Toxicol. 19:836-844.

Lemly, AD. 1993. Metabolic stress during winter increases the toxicity of selenium to fish. Aquatic Toxicol. 27:133-158.

OEPC-8  
Cont.

Larsen, CT., FW Pierson, and WB Gross. 1977. Effect of dietary selenium on the response of stressed and unstressed chickens to *Escherichia coli* challenge and antigen. Bio1. Trace. Elem. Res. 58: 169- 176.

Wang, C., RT Lovell, and PH Klesius. 1997. Response to *Edwardsiella ictaluri* challenge by channel catfish fed organic and inorganic sources of selenium. J. Aquat. Anim. Health, 9: 172-179.

Whiteley, PL., and TM Yuill. 1989. Immune function and disease resistance of waterfowl using evaporation pond systems in the southern San Joaquin Valley, California, 1986-89. Final Report to the U.S. Fish and Wildlife Service, National Wildlife Health Research Center, Madison, WI. 202 p.

**Page 3.4-50:**

The document includes a discussion of selenium effects, but the discussion is limited to embryo mortality and impaired reproduction. There may be a potential synergistic effect of low levels of selenium and disease outbreak due to immune system dysfunction. We suggest the final EIS include a discussion of the link between selenium burden and compromised immune system functioning. (see References on population-level effects of selenium)

OEPC-9

**APPENDIX I**

**Page I-3, Section I.1:**

The report by Sickman et al. (2011) used Miles et al. (2009) as a principal source of data and employed a selenium model developed by USGS (Presser and Louma, 2010). Although the model doesn't provide good approximations, project decisions were made on the basis of Appendix I. We suggest that the final EIS include appropriate caveats about the reliability of the Sickman model. We suggest that these caveats be documented in the main document so the readers are aware of the importance of this effort in the decision process.

OEPC-10

**Page I-20, Section I.4.1, Lines 36 & 37:**

The document states "The first pond where sediment would settle out is likely to have the highest concentrations of selenium 37 (Miles et al. 2009)". This is an incorrect conclusion attributed to the Miles et al. 2009. The selenium risk has little to do with sediment deposition and is based on the greater rate of primary productivity associated with the lower salinity water typically

OEPC-11

observed in the first of a series of salinity gradient ponds. The increased primary productivity, relative to the downstream ponds, is responsible for the uptake of selenium from the water and sediments whereupon much of the selenium is then deposited back to the sediments or consumed in the food chain. We suggest that the statement be corrected.

OEPC-11  
Cont.

**Pages I-19 to 20, Section I.4.1:**

We applaud the extensive analysis of selenium risk; however, the strategy is limited to the use of salinity gradients. We agree that this is expected to move the system in the right direction, but if the system fails to produce the anticipated results, there is no alternative plan. For example, this document implies that if birds use the initial ponds too much, or breed there, then a system of bird deterrence will be deployed.

OEPC-12

Unfortunately, this strategy has failed to prevent bird use and damages at other selenium contaminated environments in California. We suggest that an adaptive management approach be adopted to allow for some flexibility should the proposed remedies fail to have the desired effects. This approach could consider the utility of approaches under consideration and the decision/determination points at which they will be deployed, the decision making responsibilities, and the criteria upon which those decisions would be made. We also suggest the final EIS include a discussion of the utility of providing mitigation wetlands using uncontaminated sources of water to offset any documented project effects.

**Pages I-11 to 12, Section I.3.1:**

The discussion of selenium and effects on fish species is limited, especially the discussion and analysis of tilapia, the primary fish the document is counting on to supply forage to fish eating birds. We suggest that the discussion of tilapia be expanded.

OEPC-13

**Page I-12, Section I.3.4, line 11:**

The document states “Selenium’s most substantial effects occur in bird embryos, such as reduced hatching success and teratogenesis.” This statement is not necessarily true. Selenium’s effects can be observed throughout the ecosystem. Within the life cycle of a bird, the most obvious and noticeable effect is on the avian embryo. However, there are numerous examples available in the scientific literature in which selenium has caused massive reproductive failure among fish and decimated or completely eliminated fish from selenium-contaminated environments. We suggest the final EIS clarify the statement.

OEPC-14

**Page I-19, Section I.3.4, lines 6 & 10:**

The premise is not based on salinity per se, and the interpretation is that the relationship is to salinity rather than to selenium concentration in the various sources of water. The Salton Sea type of water has overall lower concentrations of selenium than the rivers. Achieving target salinity requires less of the relatively higher source of selenium to blend with the Salton Sea water, thus presenting a lower concentration of selenium. The true relationship for selenium

OEPC-15

concentration in the blended water ponds will be one of relative volume of water from different sources, not salinity directly. We suggest the final EIS include text to clarify this point.

OEPC-15  
Cont.

**Page I-12, Section I.3.4, line 34:**

Anderson (2009) documents other species of birds that breed at the ponds and can be expected to utilize SCH. However, we have no record of Brown pelicans breeding at or near the ponds and records of any recent nesting by this species are more than a decade old and few in numbers. Our understanding of the historical data for breeding birds in the Salton Sea Ecosystem is that there are very limited records of any breeding by California Brown pelicans. We suggest that the document be revised accordingly.

OEPC-16

**Page I-18, Section I.3.3, Lines 11 & 12:**

This section addresses only the selenium risk to migratory birds as a result of egg impairment. We suggest that the final EIS include information on the risk to birds that are now exposed to impounded waters in a habitat type that previously has not existed at the Salton Sea.

OEPC-17

Thank you for the opportunity to review and comment on the DEIS. If you have any questions concerning these comments, please contact Gary LeCain, USGS Coordinator for Environmental Document Reviews, at (303) 236-1475 or at [gdlecaain@usgs.gov](mailto:gdlecaain@usgs.gov)

Sincerely,



Patricia Sanderson Port  
Regional Environmental Officer

cc:  
Director, OEPC  
Loretta B. Sutton, OEPC staff contact  
Director, USGS



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

REGION IX

75 Hawthorne Street  
San Francisco, CA 94105-3901

October 14, 2011

RECEIVED

OCT 20 2011

Lanika Cervantes  
U.S. Army Corps of Engineers  
6010 Hidden Valley Road, Suite 105  
Carlsbad, CA 92011

REGULATORY BRANCH  
CARLSBAD FIELD OFFICE

Subject: Salton Sea Species Conservation Habitat Project Draft Environmental Impact Statement /  
Environmental Impact Report, Imperial County, California, August 2011 (CEQ  
20110263)

Dear Ms. Cervantes:

The U.S. Environmental Protection Agency (EPA) has reviewed the above project pursuant to the National Environmental Policy Act (NEPA), Council on Environmental Quality (CEQ) regulations (40 CFR Parts 1500-1508), our NEPA review authority under Section 309 of the Clean Air Act, and the provisions of the Federal Guidelines (Guidelines) promulgated at 40 CFR 230 under Section 404(b)(1) of the Clean Water Act (CWA).

Since the DEIS does not identify a preferred alternative, we have rated each alternative, pursuant to EPA's *Policy and Procedures for the Review of Federal Actions Impacting the Environment*. Our rating, the same for each alternative, is *Lack of Objections* (please see the enclosed "Summary of EPA Rating Definitions"). EPA supports the project purpose -- developing a range of aquatic habitats to support fish and wildlife species dependent on the Salton Sea. As the Draft Environmental Impact Statement (DEIS) explains, the Salton Sea habitat is being lost to increasing salinity and decreasing Sea elevation. The action alternatives would create 2,080 to 3,370 acres of aquatic habitat ponds intended to serve as a proof of concept for an even larger restoration effort. We recommend that the FEIS include the jurisdictional delineation. We have also enclosed detailed comments on water quality impacts, farmland impacts, and alternatives.

EPA-1

We appreciate the opportunity to review the DEIS and look forward to continued coordination with Army Corps. When the FEIS is published, please send a copy to me at the address above (Mail Code: CED-2). If you have any questions, please contact me at (415) 972-3521 or contact Tom Kelly, the principal reviewer for the project, at (415) 972-3856 or [kelly.thomasp@epa.gov](mailto:kelly.thomasp@epa.gov).

Sincerely,

Kathleen M. Goforth, Manager  
Environmental Review Office  
Communities and Ecosystems Division

Enclosures: Summary of Ratings Definitions  
Detailed Comments

## **SUMMARY OF EPA RATING DEFINITIONS\***

This rating system was developed as a means to summarize the U.S. Environmental Protection Agency's (EPA) level of concern with a proposed action. The ratings are a combination of alphabetical categories for evaluation of the environmental impacts of the proposal and numerical categories for evaluation of the adequacy of the Environmental Impact Statement (EIS).

### **ENVIRONMENTAL IMPACT OF THE ACTION**

#### ***"LO" (Lack of Objections)***

The EPA review has not identified any potential environmental impacts requiring substantive changes to the proposal. The review may have disclosed opportunities for application of mitigation measures that could be accomplished with no more than minor changes to the proposal.

#### ***"EC" (Environmental Concerns)***

The EPA review has identified environmental impacts that should be avoided in order to fully protect the environment. Corrective measures may require changes to the preferred alternative or application of mitigation measures that can reduce the environmental impact. EPA would like to work with the lead agency to reduce these impacts.

#### ***"EO" (Environmental Objections)***

The EPA review has identified significant environmental impacts that should be avoided in order to provide adequate protection for the environment. Corrective measures may require substantial changes to the preferred alternative or consideration of some other project alternative (including the no action alternative or a new alternative). EPA intends to work with the lead agency to reduce these impacts.

#### ***"EU" (Environmentally Unsatisfactory)***

The EPA review has identified adverse environmental impacts that are of sufficient magnitude that they are unsatisfactory from the standpoint of public health or welfare or environmental quality. EPA intends to work with the lead agency to reduce these impacts. If the potentially unsatisfactory impacts are not corrected at the final EIS stage, this proposal will be recommended for referral to the Council on Environmental Quality (CEQ).

### **ADEQUACY OF THE IMPACT STATEMENT**

#### ***"Category 1" (Adequate)***

EPA believes the draft EIS adequately sets forth the environmental impact(s) of the preferred alternative and those of the alternatives reasonably available to the project or action. No further analysis or data collection is necessary, but the reviewer may suggest the addition of clarifying language or information.

#### ***"Category 2" (Insufficient Information)***

The draft EIS does not contain sufficient information for EPA to fully assess environmental impacts that should be avoided in order to fully protect the environment, or the EPA reviewer has identified new reasonably available alternatives that are within the spectrum of alternatives analysed in the draft EIS, which could reduce the environmental impacts of the action. The identified additional information, data, analyses, or discussion should be included in the final EIS.

#### ***"Category 3" (Inadequate)***

EPA does not believe that the draft EIS adequately assesses potentially significant environmental impacts of the action, or the EPA reviewer has identified new, reasonably available alternatives that are outside of the spectrum of alternatives analysed in the draft EIS, which should be analysed in order to reduce the potentially significant environmental impacts. EPA believes that the identified additional information, data, analyses, or discussions are of such a magnitude that they should have full public review at a draft stage. EPA does not believe that the draft EIS is adequate for the purposes of the NEPA and/or Section 309 review, and thus should be formally revised and made available for public comment in a supplemental or revised draft EIS. On the basis of the potential significant impacts involved, this proposal could be a candidate for referral to the CEQ.

\*From EPA Manual 1640, Policy and Procedures for the Review of Federal Actions Impacting the Environment.

**Water Quality**

*Section 404, Clean Water Act Permitting*

The project would restore shallow water habitat lost due to the Salton Sea’s ever-increasing hypersalinity and reduced area, as the Sea recedes. Construction of the proposed project may impact up to 24 acres and temporarily impact up to 1,760 acres of waters of the U.S. (p. 3.4-58); however, the jurisdictional delineation has not been verified by the Army Corps.

EPA-2

*Recommendation:*

The FEIS should include the findings of the Corps-verified jurisdictional delineation.

*Changing Water Management Practices*

The DEIS discusses water quality in Section 3.11. It provides contaminant concentrations and water quality parameters in Table 3.11-5, Comparison of Water Quality Objectives with Current Conditions (2004-2010 Mean Annual). The DEIS also states that “Inflow to the Sea from the Imperial Valley is projected to continue to decline from the current annual average of 1,029,620 afy [*acre-feet per year*] to 723,940 afy (with adjustment for the Quantification Settlement Agreement [QSA]) by 2020 (DWR and DFG 2007).” (p. 3.11-7) This will occur about the same time as the Imperial Irrigation District fallowing program also ends in 2018. The DEIS does not clarify the potential for these changes to alter phosphorus, nitrogen and pesticide concentrations in the New and Alamo Rivers.

EPA-3

*Recommendation:*

The FEIS should discuss expected changes to water quality based on changing water management practices, and the potential for these changes affect the project’s success.

*Contingency Planning*

The proposed project would provide habitat for both fish and invertebrate species, which in turn would provide forage for bird species dependent on the Salton Sea Ecosystem. The project is designed as a “proof-of-concept” project for a period of ten years, in which several project features, characteristics, and operations could be tested under an adaptive management framework. This allows operators to try different combinations of storage, salinity, and residence times to investigate how these factors could be adjusted to provide the best conditions for fish and birds presently and to inform future restoration (p. 2-10). The DEIS acknowledges the funding uncertainty of the project by stating (p. 2-10):

EPA-4

“The proof-of-concept period would last for approximately 10 years after completion of construction (until 2025). By that time, managers would have had time to identify those management practices that best meet the Project goals. After the proof-of-concept period, the Project would be operated until the end of the 75-year period covered by the QSA (2078) or until funding were no longer available.”

*Recommendation:*

The FEIS should include a Contingency Plan, should operation and management funding terminate. This Contingency Plan should provide for project modifications (*e.g.*, breach of berms) to maximize habitat acreage and function if the project site is no longer managed and provided with an adequate water supply to maintain existing habitat.

EPA-4  
Cont.

*Pond Seepage*

Appendix C discusses pond seepage as a concern for berm stability. In the construction of New River Wetlands Demonstration Project, seepage from beneath the ponds exceeded evaporation<sup>1</sup>. Initially, some of the ponds in the proposed project are likely to be in direct contact with groundwater, substantially limiting seepage, but this is not true for ponds further from the shore. Additionally, as the level of the Salton Sea declines to -258 feet below mean sea level in 2077 (p. 2-9), the entire pond complex will be well above the water table. Mitigation measures, such as geosynthetic liners or low permeability soil layers, can readily prevent seepage.

EPA-5

**Recommendation:**

The FEIS should discuss the relative significance of pond seepage and consider mitigation if appropriate.

*Project Maintenance*

The DEIS describes vegetation removal from the sedimentation basin, interception ditch and around the river pump station (p. D-23), but does not describe vegetation removal from the Species Conservation Habitat (SCH) ponds. The lack of any vegetation description for the SCH ponds leads us to assume no vegetation is planned there, however, a variety of invasive species are likely to inhabit the ponds over time.

EPA-6

*Recommendation:*

The FEIS should describe and budget for vegetation removal from the SCH ponds.

**Farmland**

The DEIS considered the loss of 37 acres of farmland, in Impact AG-2 (permanent conversion of a small amount of farmland to nonagricultural use), less than significant for alternatives 1 and 4. Alternatives 1 and 4 convey water from the Alamo and New Rivers by gravity diversion, rather than by pumping and pipes. The next section, Impact AG-3, apparently considered the same impact significant, because the land would permanently convert Williamson Act contract land to nonagricultural use. In clarifying the significant impact, the DEIS offered the following explanation (p. 3.2-10):

EPA-7

The Williamson Act provides financial incentives to encourage the retention of agricultural land. As discussed under Impact AG-2, the conversion of 60 acres of agricultural land [*the measure of significance for AG-2*] would negligible in relation to the amount of land that is currently farmed and fallowed in the Imperial Valley. However, the conversion of land under Williamson Act contracts prior to the nonrenewal termination date would require the payment of cancellation fees (personal communication, A. Havens 2011). This impact

<sup>1</sup> Selenium in the New River and an Evaluation of Human Health Risk Reduction by the Brawley and Imperial Constructed Wetlands Demonstration Project (W-06-3), Richard M. Gersberg, San Diego State University, see: [http://scerpfiler.org/cont\\_mgt/doc\\_files/W\\_06\\_3.pdf](http://scerpfiler.org/cont_mgt/doc_files/W_06_3.pdf)

would be significant when compared to both the existing environmental setting and No Action Alternative.

The basis for the significance rating appears to be the payment of cancellation fees, rather than the project's environmental impacts. We also note that alternatives that include the fee payment may represent an overall project savings, when lower energy costs are also considered.

*Recommendation:*

The FEIS should clarify the entity that would need to make the fee payment, for converting Williamson Act land, and explain why this impact would be significant.

EPA-7  
Cont.

**Alternatives**

The Department of Natural Resources selected Alternative 3 as the California Environmental Policy Act preferred alternative, "because it would provide greater long-term benefits by restoring the greatest amount of habitat, while minimizing environmental impacts to the extent feasible." (p. ES-21) Section 2.2 and Appendix B describe the development of the project alternatives; however, these sections do not clarify the reason for pond sizes associated with each alternative. If maximization of habitat is a primary criterion for selection of the preferred alternative by the Army Corps, which EPA supports, the document should provide an explanation for limiting pond size associated with alternatives at the same river. For example, do specific factors (topography or project costs) prevent construction of ponds similar to alternative 3, using gravity diversion?

*Recommendation:*

The FEIS should discuss constraints on the pond size associated with each alternative.

EPA-8

---

# State Agencies

**NATIVE AMERICAN HERITAGE COMMISSION**

915 CAPITOL MALL, ROOM 364  
SACRAMENTO, CA 95814  
(916) 653-6251  
Fax (916) 657-5390  
Web Site [www.nahc.ca.gov](http://www.nahc.ca.gov)  
ds\_nahc@pacbell.net



August 26, 2011

Mr. David Elms

**California Department of Fish & Game**

78078 Country Club Drive, Suite 109  
Bermuda Dunes, CA 92203

Re: SCH# 2010061062; Joint NEPA/CEQA Notice; draft Environmental Impact Report (DEIR)/draft Environmental Impact Statement for the "Salton Sea Species Conservation Habitat Project;" located at two project areas at the southern end of the Salton Sea; one where the New River empties in the Sea northwest of the City of Brawley and the other where the Alamo River empties into the Sea northwest of the City of Calipatria, California's largest lake and one suffering from decades dumping contaminated agriculture drainage; project will restore up to 3,770-acres of marine, flora and fauna habitat; Imperial County, California.

Dear Mr. Elms:

The Native American Heritage Commission (NAHC), the State of California 'Trustee Agency' for the protection and preservation of Native American cultural resources pursuant to California Public Resources Code §21070 and affirmed by the Third Appellate Court in the case of EPIC v. Johnson (1985: 170 Cal App. 3<sup>rd</sup> 604). The NAHC wishes to comment on the proposed project.

This letter includes state and federal statutes relating to Native American historic properties of religious and cultural significance to American Indian tribes and interested Native American individuals as 'consulting parties' under both state and federal law. State law also addresses the freedom of Native American Religious Expression in Public Resources Code §5097.9.

NAHC-1

The California Environmental Quality Act (CEQA – CA Public Resources Code 21000-21177, amendments effective 3/18/2010) requires that any project that causes a substantial adverse change in the significance of an historical resource, that includes archaeological resources, is a 'significant effect' requiring the preparation of an Environmental Impact Report (EIR) per the CEQA Guidelines defines a significant impact on the environment as 'a substantial, or potentially substantial, adverse change in any of physical conditions within an area affected by the proposed project, including ... objects of historic or aesthetic significance.' In order to comply with this provision, the lead agency is required to assess whether the project will have an adverse impact on these resources within the 'area of potential effect (APE), and if so, to mitigate that effect. The NAHC Sacred Lands File (SLF) search resulted as follows: **Native American cultural resources were identified** within one-half mile of the 'area of potential effect (APE) where the New River empties into the Salton Sea, but not where the Alamo River flows into the sea. Also, the absence of recorded Native American cultural resources does not preclude their existence.

NAHC-2

The NAHC "Sacred Sites," as defined by the Native American Heritage Commission and the California Legislature in California Public Resources Code §§5097.94(a) and 5097.96. Items in the NAHC Sacred Lands Inventory are confidential and exempt from the Public Records Act pursuant to California Government Code §6254 (r).

NAHC-3

Early consultation with Native American tribes in your area is the best way to avoid unanticipated discoveries of cultural resources or burial sites once a project is underway. Culturally affiliated tribes and individuals may have knowledge of the religious and cultural significance of the historic properties in the project area (e.g. APE). We strongly urge that you make contact with the list of Native American Contacts on the attached list of Native American contacts, to see if your proposed project might impact Native American cultural resources and to obtain their recommendations concerning the proposed project. Pursuant to CA Public Resources Code § 5097.95, the NAHC requests that the Native American consulting parties be provided pertinent project information. Consultation with Native American communities is also a matter of environmental justice as defined by California Government Code §65040.12(e). Pursuant to CA Public Resources Code §5097.95, the NAHC requests that pertinent project information be provided consulting tribal parties. The NAHC recommends *avoidance* as defined by CEQA Guidelines §15370(a) to pursuing a project that would damage or destroy Native American cultural resources and Section 2183.2 that requires documentation, data recovery of cultural resources.

NAHC-4

NAHC-5

Furthermore, the NAHC is of the opinion that the current project remains under the jurisdiction of the statutes and regulations of the National Environmental Policy Act (e.g. NEPA; 42 U.S.C. 4321-43351). Consultation with tribes and interested Native American consulting parties, on the NAHC list, should be conducted in compliance with the requirements of federal NEPA and Section 106 and 4(f) of federal NHPA (16 U.S.C. 470 *et seq*), 36 CFR Part 800.3 (f) (2) & .5, the President's Council on Environmental Quality (CSQ, 42 U.S.C 4371 *et seq.* and NAGPRA (25 U.S.C. 3001-3013) as appropriate. The 1992 *Secretary of the Interiors Standards for the Treatment of Historic Properties* were revised so that they could be applied to all historic resource types included in the National Register of Historic Places and including cultural landscapes. Also, federal Executive Orders Nos. 11593 (preservation of cultural environment), 13175 (coordination & consultation) and 13007 (Sacred Sites) are helpful, supportive guides for Section 106 consultation. The aforementioned Secretary of the Interior's *Standards* include recommendations for all 'lead agencies' to consider the historic context of proposed projects and to "research" the cultural landscape that might include the 'area of potential effect.'

NAHC-6

Confidentiality of "historic properties of religious and cultural significance" should also be considered as protected by California Government Code §6254 (r) and may also be protected under Section 304 of the NHPA or at the Secretary of the Interior discretion if not eligible for listing on the National Register of Historic Places. The Secretary may also be advised by the federal Indian Religious Freedom Act (cf. 42 U.S.C., 1996) in issuing a decision on whether or not to disclose items of religious and/or cultural significance identified in or near the APEs and possibility threatened by proposed project activity.

NAHC-7

Furthermore, Public Resources Code Section 5097.98, California Government Code §27491 and Health & Safety Code Section 7050.5 provide for provisions for accidentally discovered archeological resources during construction and mandate the processes to be followed in the event of an accidental discovery of any human remains in a project location other than a 'dedicated cemetery'.

NAHC-8

To be effective, consultation on specific projects must be the result of an ongoing

NAHC-9

relationship between Native American tribes and lead agencies, project proponents and their contractors, in the opinion of the NAHC. Regarding tribal consultation, a relationship built around regular meetings and informal involvement with local tribes will lead to more qualitative consultation tribal input on specific projects.

NAHC-9  
Cont.

If you have any questions about this response to your request, please do not hesitate to contact me at (916) 653-6251.

Sincerely,



Dave Singleton  
Program Analyst

Cc: State Clearinghouse

Attachment: Native American Contact List

## California Native American Contact List

Imperial County  
August 26, 2011

La Posta Band of Mission Indians  
Gwendolyn Parada, Chairperson  
PO Box 1120 Diegueno/Kumeyaay  
Boulevard , CA 91905  
gparada@lapostacasino.  
(619) 478-2113  
619-478-2125

Kwaaymii Laguna Band of Mission Indians  
Carmen Lucas  
P.O. Box 775 Diegueno -  
Pine Valley , CA 91962  
(619) 709-4207

Manzanita Band of Kumeyaay Nation  
Leroy J. Elliott, Chairperson  
PO Box 1302 Kumeyaay  
Boulevard , CA 91905  
ljbirdsinger@aol.com  
(619) 766-4930  
(619) 766-4957 Fax

Torres-Martinez Desert Cahuilla Indians  
Ernest Morreo  
PO Box 1160 Cahuilla  
Thermal , CA 92274  
maxtm@aol.com  
(760) 397-0300  
(760) 397-8146 Fax

Campo Kumeyaay Nation  
Monique LaChappa, Chairperson  
36190 Church Road, Suite 1 Diegueno/Kumeyaay  
Campo , CA 91906  
**(619) 478-9046**  
miachappa@campo-nsn.gov  
(619) 478-5818 Fax

Fort Yuma Quechan Indian Nation  
Keeny Escalanti., President  
PO Box 1899 Quechan  
Yuma , AZ 85366  
qitpres@quechantribe.com  
(760) 572-0213  
(760) 572-2102 FAX

Kumeyaay Cultural Heritage Preservation  
Paul Cuero  
36190 Church Road, Suite 5 Diegueno/ Kumeyaay  
Campo , CA 91906  
(619) 478-9046  
(619) 478-9505  
(619) 478-5818 Fax

Augustine Band of Cahuilla Mission Indians  
Mary Ann Green, Chairperson  
P.O. Box 846 Cahuilla  
Coachella , CA 92236  
hhaines@augustinetribes.  
(760) 398-6180  
760-369-7161 - FAX

This list is current only as of the date of this document.

Distribution of this list does not relieve any person of the statutory responsibility as defined in Section 7050.5 of the Health and Safety Code, Section 5097.94 of the Public Resources Code and Section 5097.98 of the Public Resources Code.

This list is only applicable for contacting local Native Americans with regard to cultural resources for the proposed SCH#2010061062; Joint NEPA/CEQA Notice; draft Environmental Impact Report (DEIR)/draft Environmental Impact Statement (DEIS) for the Salton Sea Species Conservation Habitat Project; located where the New and the Alamo Rivers flow (south to north) into the Salton Sea, California's largest, at the lake's southern end; project will restore up to 3770-acres of habitat for marine, flora and fauna; Imperial County, California.

## California Native American Contact List

Imperial County

August 26, 2011

Torres-Martinez Desert Cahuilla Indians  
Diana L. Chihuahua, Vice Chairperson, Cultural  
P.O. Box 1160 Cahuilla  
Thermal, CA 92274  
**dianac@torresmartinez.**  
(760) 397-0300, Ext. 1209  
(760) 272-9039 - cell (Lisa)  
(760) 397-8146 Fax

Cabazon Band of Mission Indians  
Judy Stapp, Director of Cultural Affairs  
84-245 Indio Springs Cahuilla  
Indio, CA 92203-3499  
**markwardt@cabazonindia**  
  
(760) 342-2593  
(760) 347-7880 Fax

Ewiiapaayp Tribal Office  
Will Micklin, Executive Director  
4054 Willows Road Diegueno/Kumeyaay  
Alpine, CA 91901  
wmicklin@leaningrock.net  
(619) 445-6315 - voice  
(619) 445-9126 - fax

Ewiiapaayp Tribal Office  
Michael Garcia, Vice Chairperson  
4054 Willows Road Diegueno/Kumeyaay  
Alpine, CA 91901  
michaelg@leaningrock.net  
(619) 445-6315 - voice  
(619) 445-9126 - fax

Cocopah Museum/Cultural Resources Dept.  
Jill McCormick, Tribal Archaeologist  
County 15th & Ave. G Cocopah  
Somerton, AZ 85350  
**culturalres@cocopah.com**  
(928) 530-2291 - cell  
(928) 627-2280 - fax

Augustine Band of Cahuilla Mission Indians  
Karen Kupcha  
P.O. Box 846 Cahuilla  
Coachella, CA 92236  
(760) 398-6180  
916-369-7161 - FAX

Quechan Indian Nation  
THPO  
P.O. Box 1899 Quechan  
Yuma, AZ 85366  
**b.nash@quechantribe.com**  
(928) 920-6068 - CELL  
(760) 572-2423

Ah-Mut-Pipa Foundation  
Preston J. Arrow-weed  
P.O. Box 160 Quechan  
Bard, CA 92222 Kumeyaay  
ahmut@earthlink.net  
(928) 388-9456

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**California Native American Contact List**

Imperial County  
August 26, 2011

Kumeyaay Cultural Repatriation Committee  
Bernice Paipa, Vice Spokesperson  
P.O. Box 1120 Diegueno/Kumeyaay  
Boulevard , CA 91905  
(619) 478-2113

This list is current only as of the date of this document.

Distribution of this list does not relieve any person of the statutory responsibility as defined in Section 7050.5 of the Health and Safety Code, Section 5097.94 of the Public Resources Code and Section 5097.98 of the Public Resources Code.

This list is only applicable for contacting local Native Americans with regard to cultural resources for the proposed SCH#2010061062; Joint NEPA/CEQA Notice; draft Environmental Impact Report (DEIR)/draft Environmental Impact Statement (DEIS) for the Salton Sea Species Conservation Habitat Project; located where the New and the Alamo Rivers flow (south to north) into the Salton Sea, California's largest, at the lake's southern end; project will restore up to 3770-acres of habitat for marine, flora and fauna; Imperial County, California.

**Lorraine Woodman**

---

**From:** DO NOT REPLY [noreply@cardno.com]  
**Content:** Wednesday, September 21, 2011 8:32 AM  
**To:** Lorraine Woodman; Sarah Bumby; Rob Wurgler; Robert M. Wood  
**Subject:** New SCH EIS-EIR comment from Benjamin Minx

Benjamin Minx has entered a comment. Contact Information:

E-Mail: [Benjamin.Minx@conservation.ca.gov](mailto:Benjamin.Minx@conservation.ca.gov)

Affiliation: DOGGR

Mailing Address:

605 Wake Avenue

Suite 7

El Centro, CA 92243

Attachments: salton\_sea\_lettersigned.pdf salton\_sea\_wells.pdf

Comment:

On behalf of the Division, I have included a letter that comments on the Project. I have also included a map scan that helps illustrate what we have found. DOGGR-1

In addition, on page 308 - line 39-40, there is a mention that CalEnergy is operating a zinc extraction plant. I believe that they used to have a zinc extraction facility, but do not currently operate one now. DOGG R-2



# DEPARTMENT OF CONSERVATION

*Managing California's Working Lands*

## DIVISION OF OIL, GAS, & GEOTHERMAL RESOURCES

605 Wake Ave • Suite 7 • El Centro, California 92243

PHONE 760 / 353-9900 • FAX 760 / 323-0424 • WEB SITE [conservation.ca.gov](http://conservation.ca.gov)

September 20, 2011

Mr. David Elms  
 Dept. of Fish and Game  
 78-078 Country Club Drive, Suite 109  
 Bermuda Dunes, CA 92203

To Mr. Elms:

SALTON SEA SPECIES CONSERVATION HABITAT PROJECT DRAFT EIS/EIR  
 SCH# 2010061062

The Division of Oil, Gas, and Geothermal Resources (Division) has reviewed the above referenced project. The Division supervises the drilling, maintenance, plugging and abandonment of oil, gas, and geothermal wells in California. The Division offers the following comments for your consideration.

There may be a potential risk of construction near plugged and abandoned wells. According to the Division's database, eleven plugged and abandoned shallow temperature gradient wells are located in or near the area of the proposed project that may require plugging to present standards if the wells are exposed or the present abandonment plugs are altered. The attached map shows the approximate location of these wells.

DOGG  
R-3

In addition, the geothermal well, "Westmorland" 47 (API # 025-90105), was not plugged and abandoned before being submerged. It will require plugging when sea level recedes and the well is exposed.

This office must be contacted to obtain information on the requirements for approval to perform any remedial operations on these wells.

Thank you for the opportunity to comment on this project. If you have any questions, please contact Cliff Parli or myself at 760-353-9900.

Sincerely,

Benjamin Minx  
 Geothermal Engineer



# State of California Department of Conservation

Welcome to DOMS

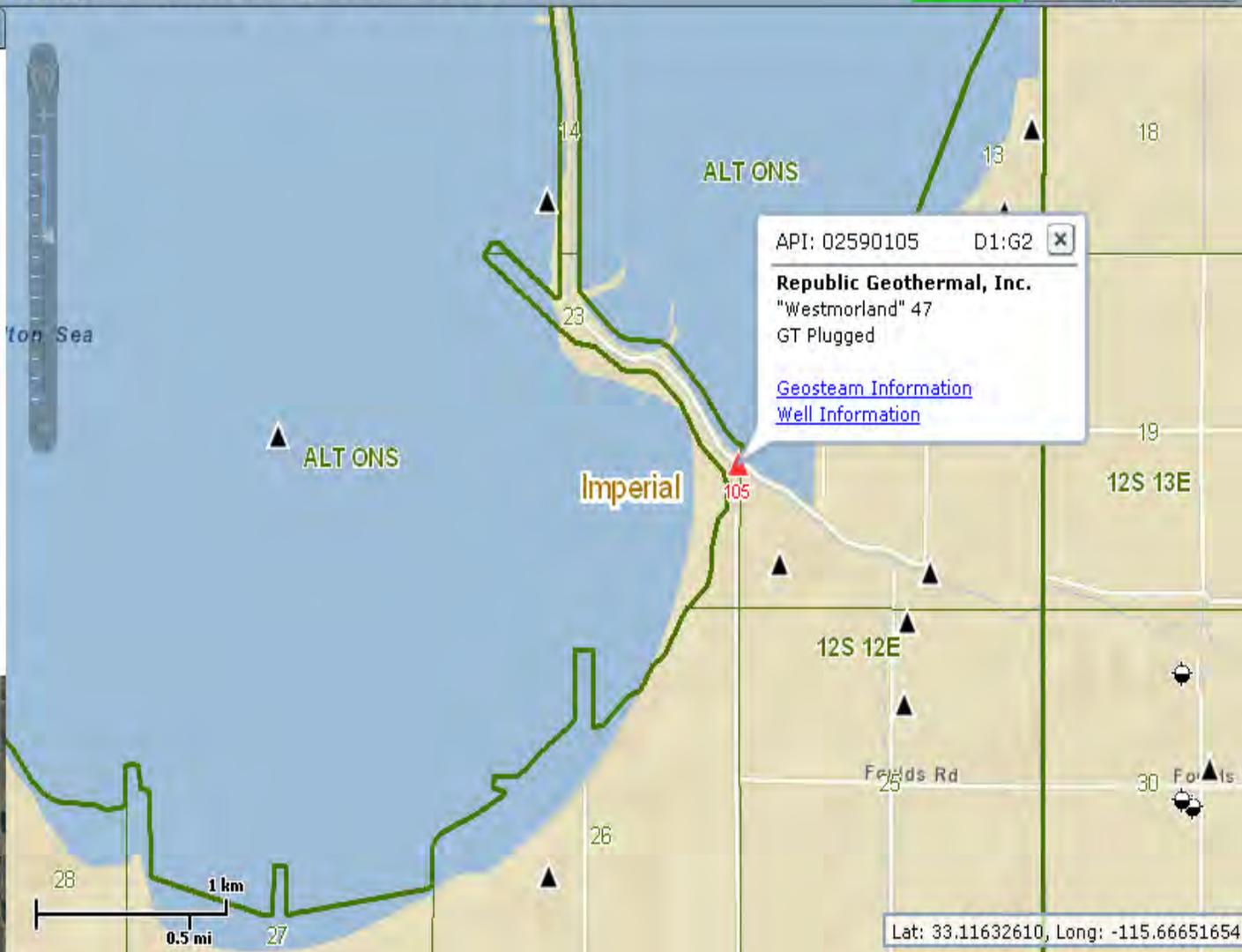
Map Layers ▾ | 
 Well Options | 
 Load Wells

Streets
Topo
Imagery

Main
Find
List
Help

API	Description
02590138	"Westmorland" 26
02590769	P1-20
02590462	81-07
02590743	P4-16
02590767	P1-17
02590741	P4-13
02590105	"Westmorland" 47
02590768	P1-19
02591037	"TP" 22
02590766	P1-14
02590129	"Westmorland" 17

Remove / Select All 11 Wells





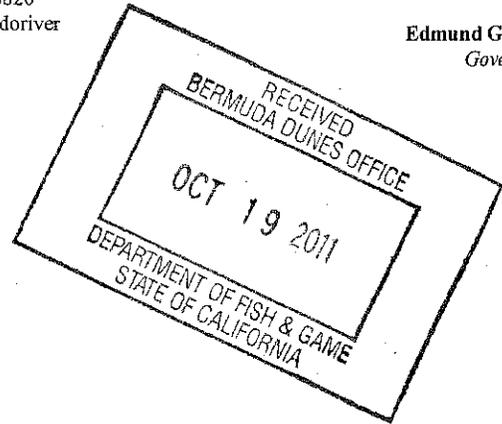
# California Regional Water Quality Control Board Colorado River Basin Region



73-720 Fred Waring Drive, Suite 100, Palm Desert, California 92260  
(760) 346-7491 • FAX (760) 341-6820  
<http://www.waterboards.ca.gov/coloradoriver>

Matthew Rodriguez  
Secretary for  
Environmental Protection

Edmund G. Brown Jr.  
Governor



October 14, 2011

David Elms, CDFG Project Manager  
California Department of Fish and Game  
78078 Country Club Drive, Suite 109  
Bermuda Dunes, CA 92203

Dear Mr. Elms:

This letter is in reference to the Salton Sea Species Conservation Habitat Project Draft EIS/EIR.

I wish to call your attention to an enclosed agenda item from the September 15, 2011 meeting of the State of California CRWQCB, CRBR. The Board enforces water quality standards for the IID El Centro Generating Station in returning cooling water to a canal which flows into the Salton Sea. This cooling water would average 700,000 gallons per day of potential fresh water for the Salton Sea.

However, because it is cheaper IID has chosen to use deep well injection of the cooling water thereby avoiding any cleanup costs and forever losing that water for the Salton Sea.

The Water Quality Board has no jurisdiction over that decision and there were no noted comments from either State or Fish and Game or Fish and Wildlife. EPA limited its comments to technical well drilling issues.

The vital freshwater needs of the Salton Sea appeared to not appear in this process and I suspect this disconnect is not singular in occurrence.

The State of California needs to have an active engaged role to keep fresh water flowing into the Sea!

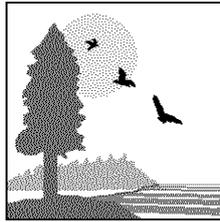
Sincerely,

Buford Crites  
Board Member  
Colorado River Basin  
Regional Water Quality Control Board

WRITTEN AS BOARD MEMBER BUT NOT ON BEHALF OF THE BOARD

RWQCB  
-1

**CALIFORNIA STATE LANDS COMMISSION**  
 100 Howe Avenue, Suite 100-South  
 Sacramento, CA 95825-8202



**CURTIS L. FOSSUM**, Executive Officer  
 (916) 574-1800 FAX (916) 574-1810  
 California Relay Service From TDD Phone 1-800-735-2929  
 from Voice Phone 1-800-735-2922

**Contact Phone: (916) 574-1890**  
**Contact FAX: (916) 574-1885**

October 17, 2011

File Ref: SCH# 2010061062

David Elms  
 California Department of Fish and Game  
 78078 Country Club Drive, Suite 109  
 Bermuda Dunes, CA 92203

**Subject: Draft Environmental Impact Statement (EIS)/Environmental Impact Report (EIR) for the Salton Sea Species Conservation Habitat Project, Imperial County**

Dear Mr. Elms:

Staff of the California State Lands Commission (CSLC) has reviewed the draft EIS/EIR for the proposed Salton Sea Species Conservation Habitat Project (Project), which is being prepared by the Natural Resources Agency (Agency) as the lead agency under the California Environmental Quality Act (CEQA) (Pub. Resources Code, § 21000 et seq.). The CSLC has prepared these comments as a trustee and/or responsible agency because of its trust responsibility for projects that could directly or indirectly affect sovereign or school lands, their accompanying Public Trust resources or uses, and the public easement in navigable waters.

**CSLC Jurisdiction**

The CSLC has jurisdiction and management authority over all ungranted tidelands, submerged lands, and the beds of navigable lakes and waterways. The CSLC also has certain residual and review authority for tidelands and submerged lands legislatively granted in trust to local jurisdictions (Pub. Resources Code, §§ 6301, 6306). All tidelands and submerged lands, granted or ungranted, as well as navigable lakes and waterways, are subject to the protections of the Common Law Public Trust.

As general background, the State of California acquired sovereign ownership of all tidelands and submerged lands and beds of navigable lakes and waterways upon its admission to the United States in 1850. The State holds these lands for the benefit of all people of the State for statewide Public Trust purposes, which include but are not limited to waterborne commerce, navigation, fisheries, water-related recreation, habitat preservation, and open space. On tidal waterways, the State's sovereign fee ownership extends landward to the mean high tide line, except for areas of fill or artificial accretion or where the boundary has been fixed by agreement or a court. On navigable non-tidal

CSLC-1

waterways, including lakes, the State holds fee ownership of the bed of the waterway landward to the ordinary low water mark and a Public Trust easement landward to the ordinary high water mark, except where the boundary has been fixed by agreement or a court. Such boundaries may not be readily apparent from present day site inspections.

Based on CLSC staff's review of the Project and as outlined in the CSLC letter dated August 22, 2011 (enclosed):

- the proposed Project may include lands within which the State has reserved mineral interests,<sup>1</sup> and
- two of the Alamo River alternatives are located within lands acquired by the CSLC from the Imperial Irrigation District (IID) under sovereign land exchange SLL 10: 40 acres described as assessor's parcel number (APN) 020-010-030. The IID has reserved certain rights-of-way and easements.

Should the Project involve dredging on lands within which the State has reserved mineral interests, a lease from CSLC may be required. Should the Project incorporate Alamo River alternatives 4 and 6, including APN 020-010-030, a lease from CSLC would be required.

CSLC-1  
Cont.

### **Project Location and Description**

The Project site is located at the southern end of the Salton Sea in Imperial County. The EIS/EIR also analyzes six alternatives that extend onto lands near the mouth of the Alamo River and the mouth of the New River.

The Project would restore up to 3,770 acres of shallow water habitat lost due to the Sea's ever-increasing hypersalinity and reduced area as the sea recedes. Ponds to support fish and wildlife species dependent on the Salton Sea would be constructed and operated by the California Department of Fish and Game (DFG) and supplied with a combination of brackish and saline water, blended to maintain an appropriate salinity range. The Project's goals are to:

- develop a range of aquatic habitats that will support fish and wildlife species dependent on the Salton Sea; and
- develop and refine information needed to successfully manage the Project habitat through a "proof-of-concept" adaptive management process.

Project construction would be extensive, involving dredging, earthwork, concrete placement, electrical, and structural processes. The Project would be constructed over a two-year period beginning in late 2012. The proof-of-concept period would last approximately 10 years after completion of construction; the ponds would then be

---

<sup>1</sup> Please be advised that the Alamo River Alternatives will be located within lands the State acquired and patented as School Lands, all minerals reserved on the East ½ of the Northeast ¼ of Section 16, Township 11 South, Range 13 East, San Bernardino Meridian. Any movement or removal of a portion of the mineral estate may require a CSLC lease or permit.

operated until the end of the 75-year period covered by the Quantification Settlement Agreement<sup>2</sup> or until funds were no longer available.

## **Environmental Review**

### **Dredging, Excavation, or Placement of Structures**

The draft EIS/EIR states that “Project construction ... would include some actions likely to involve dredging, excavation, or placement of structures in Waters of the United States, including wetlands” (p. 6-2), and “... a hydraulic dredge would be used to provide greater depth to borrow channels or create new channels through areas with soft soils. Soils removed as dredge spoils would be placed either within the Project footprint or outside of the exterior berm in the Sea” (p. 2-15).

CSLC-2

Although the draft EIS/EIR estimates over 1,800 hours of dredging time during the two-year construction schedule, it does not appear to include an estimate of the quantity of dredged spoils that may be generated by the Project, and provides only vague information about where the spoils would be placed.

In order to determine CSLC jurisdiction relative to lands within which the State has reserved mineral interests, CSLC staff requests that the EIS/EIR include more specific information regarding proposed dredging activities (e.g., location of dredging, quantity of spoils generated and where the dredged spoils would be placed). Any construction activity which would occur on sovereign lands under CSLC jurisdiction (i.e., APN 020-010-030) such as dredging, excavation, building of new berms, modifications to existing berms,<sup>3</sup> or bank protection (e.g., placement of riprap or other materials) would require a lease from the CSLC. It should be noted that all decisions on lease issuance and Public Trust consistency of leases and proposed uses of sovereign lands are made only by the three-member panel of Commissioners, not by CSLC staff or other agencies; as such, the statement on page 6-9 of the EIS/EIR that the Project falls “within the definition of uses consistent with the Public Trust Doctrine” should be clarified or removed.

CSLC-3

### **Greenhouse Gas (GHG) Emissions**

The EIS/EIR would benefit from a more clear presentation of a specific measure or metric against which the Project’s impacts are measured to determine significance. As

CSLC-4

<sup>2</sup> During the mid-1990s, many discussions took place throughout the California water community about how best to reduce California’s use of Colorado River water. After intensive negotiations, legislation emerged to implement the Quantification Settlement Agreement and provide for restoration of the Salton Sea. Under the provisions of the legislation, the State is charged with “restoration of the Salton Sea ecosystem and the permanent protection of the wildlife dependent on that ecosystem.”

<sup>3</sup> On February 9, 2006, a five year lease (PRC 8665.9) was issued to the Bureau of Reclamation for the construction of a parking/staging area and creation, use and maintenance of a pond, less than two feet deep, and four islands for the purpose of providing an area for bird nesting in connection with the Salton Sea Shallow Habitat Pilot Project. Upon completion of the project, all equipment was to be removed and the constructed berms and islands were to remain in place as requested by IID. Aerial photos of the vicinity indicate that the prior parking/staging area, pond, berms and islands are still in place on the parcel. This project is also referenced in section 1.6.3 in the EIS/EIR (p. 1-9).

presented, the EIS/EIR only discusses the GHG significance thresholds in very general terms that limit the CSLC's ability to compare the Project's incremental change to the baseline against a readily identified, measureable threshold. As such, it is difficult to draw the logical link, using substantial evidence, between the incremental change to the environment and the ultimate "less than significant impact" and "no mitigation required" conclusions for GHGs. Notwithstanding the statement in the EIS/EIR that Project-related construction emissions are well under the 25,000 metric tons of carbon dioxide equivalents (CO<sub>2</sub>e) that would trigger reporting for "major facilities" (EIS/EIR p. 3.9-12), which is not held out in the EIS/EIR as the document's stated significance threshold, CSLC staff suggests that the potential to generate the equivalent of up to 6,650 metric tons of CO<sub>2</sub>e per year (under Alternative 3) for the duration of Project construction could be considered a significant impact that requires mitigation absent a more clearly articulated threshold. If the EIS/EIR concludes that no feasible mitigation is available, then the EIS/EIR should state that the impact is significant and unavoidable.

CSLC-4  
Cont.

CSLC staff also requests that the EIS/EIR reanalyze the appropriateness of the conclusion that the cumulative impacts to global climate change, from Project construction and operation, are less than significant and that no mitigation is required.

CSLC-5

#### Cultural Resources

Mitigation Measure (MM) CR-1 (p. 3.5-11) requires preparation and implementation of a survey plan and an inadvertent discovery plan. The measure states that resources considered significant would be avoided or subject to a data recovery program. The data recovery program would be designed in consultation with appropriate state (i.e., Office of Historic Preservation) and Federal agencies and include excavation of an archaeological site to recover any buried artifacts or other data.

CSLC-6

Please note that the Agency should also consult with the CSLC in the event that any cultural resources are discovered on sovereign lands under the jurisdiction of the CSLC (i.e., APN 020-010-030). Any archaeological site or historic resource remaining on State lands for more than 50 years is presumed to be significant.

#### Mitigation Monitoring and Reporting Program (MMRP)

Upon adoption of the EIS/EIR, the Agency should provide a MMRP pursuant to State CEQA Guidelines section 15074, subdivision (d). The MMRP should include methods for coordination, timing for implementation of mitigation measures and list all parties and/or state and federal agencies, in addition to the Agency, responsible for ensuring compliance and enforcement through permit conditions, agreements or other measures during construction and management of the Project.

CSLC-7

Thank you for the opportunity to comment on the draft EIS/EIR for the Project. As a responsible and/or trustee agency, the CSLC may need to rely on the final EIS/EIR for the issuance of a lease and, therefore, we request that you consider our comments prior to adoption of the EIS/EIR.

Please send copies of future Project-related documents or refer questions concerning environmental review to Joan Walter, Environmental Scientist, at (916) 574-1310 or via e-mail at [joan.walter@slc.ca.gov](mailto:joan.walter@slc.ca.gov). For questions concerning archaeological or historic resources under CSLC jurisdiction, please contact Senior Staff Counsel Pam Griggs at (916) 574-1854 or via email at [pamela.griggs@slc.ca.gov](mailto:pamela.griggs@slc.ca.gov). For questions concerning CSLC leasing jurisdiction, please contact Drew Simpkin, Public Land Management Specialist, at (916) 574-2275, or via email at [drew.simpkin@slc.ca.gov](mailto:drew.simpkin@slc.ca.gov). For questions concerning CSLC reserved mineral interests, please contact Greg Pelka, Senior Mineral Resources Engineer, at (562) 590-5227, or via email at [greg.pelka@slc.ca.gov](mailto:greg.pelka@slc.ca.gov).

Sincerely,

Cy R. Oggins, Chief  
Division of Environmental Planning  
and Management

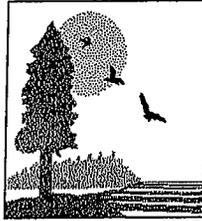
Enclosure:

1. CSLC letter dated August 22, 2011

cc: California Natural Resources Agency  
1416 Ninth Street, suite 1311  
Sacramento, CA 95814

Office of Planning and Research  
D. Simpkin, LMD, CSLC  
J. Walter, DEPM, CSLC  
P. Griggs, LEGAL, CSLC  
G. Pelka, MRMD, CSLC

**CALIFORNIA STATE LANDS COMMISSION**  
100 Howe Avenue, Suite 100-South  
Sacramento, CA 95825-8202



**AUG 22 2011**

**CURTIS L. FOSSUM, Executive Officer**  
(916) 574-1800 FAX (916) 574-1810  
*California Relay Service from TDD Phone 1-800-735-2929  
from Voice Phone 1-800-735-2922*

**Contact Phone: (916) 574-2275**  
**Contact FAX: (916) 574-1835**

File Ref: SD 2011-06-14.6

Sarah Lozano  
Environmental Planning Manager  
DUDEK  
605 Third Street  
Encinitas, CA 92024

**Subject:** California Department of Fish and Game Salton Sea Species  
Conservation Ecosystem Restoration Program, Salton Sea,  
Imperial County

Dear Ms. Lozano:

This letter is in response to your request for a determination by the California State Lands Commission (CSLC) as to whether it asserts a sovereign title interest in the proposed California Department of Fish and Game (DFG) Salton Sea Species Conservation Ecosystem Restoration Program.

The CSLC has jurisdiction and management authority over all ungranted tidelands, submerged lands, and the beds of navigable lakes and waterways. The CSLC also has certain residual and review authority for tidelands and submerged lands legislatively granted in trust to local jurisdictions (PRC §6301 and §6306). All tidelands and submerged lands, granted or ungranted, as well as navigable lakes and waterways, are subject to the protections of the Common Law Public Trust.

As general background, the State of California acquired sovereign ownership of all tidelands and submerged lands and beds of navigable lakes and waterways upon its admission to the United States in 1850. The State holds these lands for the benefit of all people of the State for statewide Public Trust purposes, which include but are not limited to waterborne commerce, navigation, fisheries, water-related recreation, habitat preservation, and open space. On tidal waterways, the State's sovereign fee ownership extends landward to the mean high tide line, except for areas of fill or artificial accretion or where the boundary has been fixed by agreement or a court. On navigable non-tidal waterways, including lakes, the State holds fee ownership of the bed of the waterway landward to the ordinary low water mark and a Public Trust easement landward to the ordinary high water mark, except where the boundary has been fixed by agreement or a court. Such boundaries may not be readily apparent from present day site inspections.

Based on the information you provided on behalf of DFG, it appears the proposed New River Alternative is located within lands the State acquired and patented as lieu lands; and in lands the State did not acquire or patent and are federal lands patented by the U.S. under various patents. It also appears that portions of the proposed project site are within the Salton Sea National Wildlife Refuge.

The proposed Alamo River Alternative is located within lands the State acquired and patented as School Lands; and in lands the State did not acquire or patent and are federal lands patented by the U.S. under various patents. Assessor parcel number 020-010-030, containing 40 acres, was acquired by the State (CSLC) from the Imperial Irrigation District under sovereign land exchange in SLL 10. The Imperial Irrigation District has reserved certain rights-of-ways and easements. Should the proposed Alamo River Alternative include APN 020-010-030, a lease from the CSLC would be required. All other proposed locations would not require a lease at this time.

This determination is without prejudice to any future assertion of State ownership or public rights, should circumstances change, or should additional information come to our attention. In addition, this letter is not intended, nor should it be construed as, a waiver or limitation of any right, title, or interest of the State of California in any lands under its jurisdiction. If you have any questions, please contact Drew Simpkin, Public Land Management Specialist, at 916-574-2275 or via email at [drew.simpkin@slc.ca.gov](mailto:drew.simpkin@slc.ca.gov).

Sincerely,



Brian Bugsch, Chief  
Land Management Division

cc: Drew Simpkin, CSLC ✓



## Department of Toxic Substances Control

*Matthew Rodriguez*  
Secretary for  
Environmental Protection

Deborah O. Raphael, Director  
5796 Corporate Avenue  
Cypress, California 90630

*Edmund G. Brown Jr.*  
Governor

September 30, 2011

RECEIVED

OCT 11 2011

REGULATORY BRANCH  
CARLSBAD FIELD OFFICE

Ms. Lanika Cervantes  
U.S. Army Corps of Engineers  
6010 Hidden Valley Road, Suite 105  
Carlsbad, CA 92011

### NOTICE OF COMPLETION & ENVIRONMENTAL IMPACT REPORT (EIR) FOR SALTON SEA SPECIES CONSERVATION HABITAT PROPOSAL

Dear Ms. Cervantes:

The Department of Toxic Substances Control (DTSC) has received your submitted Notice of Preparation of the Environmental Impact Report for the above-mentioned project. The following project description is stated in your document: "The Salton Sea currently supports a wide variety of bird species and a limited aquatic community. Over many decades, the components of the aquatic-dependent community have shifted in response to receding water levels and increasing salinity. The Salton Sea is currently a hypersaline ecosystem (about 51 ppt). Without restoration, declining inflows in future years will result in the Sea's ecosystem collapse due to increasing salinity (expected to exceed 60 ppt by 2018, which is too saline to support fish) and other water quality stresses, such as temperature extremes, eutrophication, and related anoxia due to algal productivity".

DTSC sent you comment on the Notice of Preparation of the Environmental Impact Report for the above-mentioned project on 2/18/2010. [Based on the review of the submitted document DTSC has no further comments.]

DTSC-1

If you have any questions regarding this letter, please contact me at [ashami@dtsc.ca.gov](mailto:ashami@dtsc.ca.gov), or by phone at (714) 484-5472.

Sincerely,

Al Shami  
Project Manager  
Brownfields and Environmental Restoration Program

Ms. Lanika Cervantes  
September 30, 2011  
Page 2

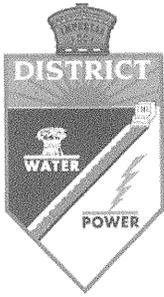
cc: Governor's Office of Planning and Research  
State Clearinghouse  
P.O. Box 3044  
Sacramento, California 95812-3044  
[state.clearinghouse@opr.ca.gov](mailto:state.clearinghouse@opr.ca.gov)

CEQA Tracking Center  
Department of Toxic Substances Control  
Office of Environmental Planning and Analysis  
P.O. Box 806  
Sacramento, California 95812  
[nritter@dtsc.ca.gov](mailto:nritter@dtsc.ca.gov)

CEQA # 3309

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## Regional and Local Agencies



# IID

*A century of service.*

www.iid.com

GS-EREP

October 12, 2011

Ms. Lanika Cervantes, Corps Project Manager  
U.S. Army Corps of Engineers, Los Angeles District  
Regulatory Division, San Diego Field Office  
ATTN: CESPL-RG-RS-2010-00142-LLC  
6010 Hidden Valley Road, Suite 105  
Carlsbad, CA 92011

RECEIVED

OCT 13 2011

REGULATORY BRANCH  
CARLSBAD FIELD OFFICE

SUBJECT: Salton Sea Species Conservation Habitat Project Draft EIS/EIR, Public Hearings and Section 404 Permit Request Notice

Dear Ms. Cervantes:

On August 17, 2011, we received from the U.S. Army Corps of Engineers and the California Natural Resources Agency, the Notice of Availability and Public Hearing of a Draft Environmental Impact Statement/Environmental Impact Report (EIS/EIR), and a Section 404 Permit request notice for the Salton Sea Species Conservation Habitat (SCH) Project. The SCH Project would restore shallow water habitat lost due to the Salton Sea's ever-increasing hypersalinity and reduced area as the Sea recedes. The Natural Resources Agency is requesting a Section 404 permit from the U.S. Army Corps of Engineers for the construction of up to 3,770 acres of shallow ponds and associated infrastructure at the southern end of the Salton Sea in Imperial County, California. This construction would permanently impact up to 24 acres and temporarily impact up to 1,760 acres of Waters of the U.S. Compared to existing conditions, the SCH Project would result in a net increase in the extent of Waters of the U.S. by up to 1,986 acres because the ponds would restore Waters of the U.S. between elevation -228 feet and -231 feet previously lost by the receding Sea. The SCH Project would be located at the southern end of the Salton Sea, in an unincorporated area of Imperial County, California. The California Natural Resources Agency's preferred alternative for the SCH Project would be located near the mouth of the New River, although other alternatives under consideration would be located near the mouth of the Alamo River.

Pursuant to the above, the Imperial Irrigation District (IID) submits the following comments on the Draft EIS/EIR:

**Executive Summary and General Comments**

- 1. IID is supportive of implementing the SCH project and believes this is a reasonable first step in restoration at the Salton Sea. IID-1
- 2. In a number of places, the document mentions applications filed by the Metropolitan District of Southern California (MWD) with the State Water Resources Control Board (SWRCB) to appropriate water from the New and Alamo Rivers for use by MWD. It also notes that no action has been taken on these applications because the required IID-2

environmental analysis has not been done. The document should state that IID has the right to the use of water from agricultural return flows from the IID service area. If MWD were to proceed with its applications, IID and others would have the right to protest the application. The quantity of agricultural drain flow in a given year is directly related to how much water is used in irrigation in the first instance. Water orders vary greatly, depending upon many factors, including the economy, weather conditions, rainfall, types of crops grown, etc., which in turn means that the drain flow varies greatly, so it would not be a particularly reliable source of water for a potable water supplier.

IID-2  
Cont.

### Section 1.0 Introduction

3. Subsection 1-3 CEQA Project Goals and Objectives/NEPA Purpose and Need: Discussion of the Quantification Settlement Agreement (QSA) states IID is required to provide conserved water to the Salton Sea to mitigate the effects of transfer on salinity until 2017. IID requests that this be updated to reflect that IID and San Diego County Water Authority will file a petition with SWRCB requesting that mitigation water to the Salton Sea stop at the end of 2013 and a higher functional value and longer lasting mitigation be substituted for the mitigation water in the form of habitat creation similar to that proposed by California Department of Fish and Game's (CDFG) SCH.

IID-3

Subsection 1.10 Required Permits and Consultations, Page 1-12: Discussion should include IID approval of use of agricultural return flows in Alamo and New Rivers.

IID-4

### Section 2.0 Alternatives

#### General Comments

4. IID believes that the proposed SCH should be built in areas outside of the Salton Sea Known Geothermal Resource Area (KGRA), which is essentially the areas immediately east of the New River, continuing east past the Alamo River and through the Morton Bay area, and/or the County of Imperial Geothermal Overlay. If alternatives are implemented within the KGRA, specific easements or other provisions for geothermal activity should be established prior to implementation of the alternative. IID believes that geothermal development and habitat creation/management are compatible and both need to be considered equally in the implementation of the SCH.
5. The proposed SCH project should be designed and located so as to minimize loss of active or potential agricultural land and to minimize loss of production on agricultural land during the construction and operation of the project.
6. IID suggests that some fresh water cells should be included in the SCH. This would allow for additional research into fresh water selenium pathways and perhaps help to develop better risk assessment criteria for freshwater systems around the Salton Sea.

IID-5

IID-6

IID-7

#### Specific Comments

7. Page 2-4, Subsection 2.2.1 Exclusionary Criteria, 1. Available Water Rights, Lines 13-19: IID has the right to the use of all agricultural return flows from IID's service

IID-8

- area (which is the majority of the flows in the New and Alamo Rivers). Furthermore, the document should state that IID has the right to the use of all water from its agricultural return flows and that the SHC Project must obtain IID's permission to use the return flow. IID-8 Cont.
8. Page 2-10, Subsection 2.3.2.3 Pupfish Connectivity, Lines 3-15: Implementation of any of the alternatives (except no action) will require coordination with IID to identify the most efficient methods for drain connectivity. IID and the state SCH team have coordinated during the design and preparation of the Draft EIS/EIR and IID recommends that the coordination continue during the final design and implementation stages of the project. IID would suggest that an IID representative be included in the final planning, design and construction coordination meetings for the project. IID-9
9. Page 2-13, Subsection 2.4.1.3 Berms, Lines 32-40: In keeping with the idea of the initial ponds being a pilot project to inform later designs and habitat creation, IID suggests incorporating some geotube barriers in the design to evaluate their effectiveness and the logistics of their installation. IID-10
10. Pages 2-15 and 2-16, Subsection 2.4.1.7 Water Supply, Lines 40-44 and 1-5, respectively: Again in keeping with the pilot project concept, IID suggests that the state evaluate various salinity conditions and how that salinity concentration impacts other area wildlife. IID-11
11. Page 2-16, Subsection 2.4.1.10 River Diversion Gravity Diversion Structure, Lines 27-35: As has been discussed in the preliminary design meetings and public workshops, any water control structures in the river channels should be designed to avoid or mitigate for impacts to IID and farmer irrigation infrastructure (including tail and tile water discharges). This appears to be the case, based on the discussion in the Draft EIS/EIR, but IID would request a review of the final design plans to verify. In general, IID supports pipeline delivery systems over open channels because of the reduced footprint required for pipelines (thus reducing the loss of additional agricultural land and production). IID-12
12. Page 2-17, Subsection 2.4.1.15 Power Supply, Lines 31-38: *See item no. 17.* IID-13
13. Page 2-19, Subsection 2.4.1.17 Interception Ditch/Local Drainage, Lines 14-30: The SCH team has coordinated with IID in the planning and preparation of the Draft EIS/EIR regarding drainage issues and IID recommends that coordination should continue to address stormwater and agricultural drainage potentially impacted by the project and the pupfish connectivity issue. *See item no. 8 regarding IID representative on the design/implementation team.* IID-14
14. Page 2-20, Subsection 2.4.19 Bird Habitat Features, Lines 1-25: IID supports the multiple habitat approach to the SCH. We also support the state's plan to use these cells, not only as functional habitat, but as a pilot project to inform future projects and operations regarding selenium and salinity concentration IID-8 fish and avian habitat areas. IID would like to continue the science partnership that the state has developed with various academic organizations, tribal entities, private firms, state and federal wildlife, water and land use agencies and the IID that has proved so successful in the IID-15

development of this plan and the advancement of other restoration, reclamation and mitigation projects around the Salton Sea.

IID-15  
Cont.

15. Page 2-21, Subsection 2.4.1.23 Land Acquisition, Lines 26-28: IID and the state design team have had preliminary discussions regarding property acquisition and the IID Board has passed a resolution in support of the concept of the SCH project, conditioned on the design not precluding or significantly inhibiting other land uses. It is very important to the IID that the SCH project be compatible with geothermal energy resources and continued agricultural production either through selective location or design/permitting criteria. Final disposition of any IID-owned land will require IID Board approval.

IID-16

16. Page 2-22, Subsection 2.4.1.25 Project Compatibility with other Potential Future Land Uses – Geothermal, Lines 10-31: IID appreciates that the SCH team consulted with IID and the geothermal development groups during the project development. There should be additional coordination during the final design and implementation to assure that geothermal development activity is adequately recognized as a compatible land use and that potential future development in the vicinity of the SCH is not significantly curtailed by the project.

IID-17

17. Page 2-25, Subsection 2.4.2.9 Power Line Construction, Lines 7-14: IID Energy will require coordination review and approval of any power line construction that will be incorporated into the IID distribution system.

IID-18

### Section 3.0 – Affected Environment, Impacts and Mitigation Measures

18. Section 3.2 Agricultural Resources: *See item no. 33 on recoverable farmland.*

IID-19

19. Pages 3.3-23 to 3.3-26, Subsection 3.3.4 Air Quality: IID has, or is in the process of, implementing the measures included in the **Quantification Settlement Agreement Implementation** section of the Draft EIS/EIR. Access restrictions have been implemented and IID continues to coordinate with Imperial County and other land owners on gating specific areas. Several years ago the Joint Powers Authority (JPA) and the State of California partnered to implement six air stations around the Salton Sea to gather data for the QSA mitigation requirements and to provide data to the state's Salton Sea Ecosystem Restoration project. The JPA funded the installation and operation of six stations that monitor metrological and particulate matter data around the Salton Sea. As part of that plan the state would add gaseous monitoring equipment to the stations at a later date, subject to available state funding. The stations have been in operation, collecting metrological and particulate matter data for several years.

IID-20

The JPA has also funded several pilot projects at the Salton Sea. These projects include sheet flow flooding of several areas to evaluate potential vegetation enhancement and inundation of the playa as dust emission controls. Additional projects, including the application of surfactant products to the exposed playa are also underway. Several pilot projects to evaluate other land uses for exposed playa, such as solar energy generation, reclaimed agricultural, shallow water habitat are in the planning stages. IID also plans to implement more traditional control measures such as wind barriers.

20. Section 3.4 Biological Resources: The river deltas are recognized in the QSA draft Habitat Conservation Plan (HCP) and related permits as high value habitat for bird species. Any diversions from the river channels should be managed so as to prevent any reduction in habitat value within the reaches of the river delta. IID-21
21. Page 3.4-30, Subsection 3.4.42 Resources Thresholds of Significance, Lines 34–38: While IID’s Habitat Conservation Plan/Natural Community Conservation Plan (HCP/NCCP) is not approved; IID has been operating under the requirements of the draft plan. We believe that the SCH project should be compatible with the requirements that IID has been operating under since the completion of the draft HCP and related authorizations and documents. IID-22
22. Section 3.6.1 Energy Consumption: Based on the projected inflows into the SCH system, energy consumption may be very high. IID requests that the hydrologic and water balance data and models be reviewed by IID and others to verify flow rates. Until this verification is completed it is difficult to comment on proposed energy consumption rates for pumping. IID-23
23. Section 3.11 Hydrology and Water Quality general comment: IID requests access to the hydrologic model and data used in the evaluation of future Salton Sea water elevations and salinity concentrations. This data is necessary to further evaluate the analysis presented and compare it to other existing Salton Sea hydrologic models. IID-24
24. Page 3.11-3, Subsection 3.11.2.1 Water Rights, Lines 3-12: IID has the right to the use of all return agricultural flows in the Alamo and New rivers that come from its service area. See *item no. 7*. IID-25
25. Page 3.11-3, Subsection 3.11.2.2 Salton Sea and Agricultural Drainage, Lines 19-20: The Salton Sea has also been declared a permanent flowage easement for IID and the Coachella Valley Water District in December, 2000 as part of the Torres Martinez Desert Cahuilla Indians Claims Settlement (Pub. L. 106-568, 114 Stat.2906. See 25 U.S.C. && 1778 a (6); 1778e (a), (b)). IID-26
26. Page 3.11-7, Subsection 3.11.2.5 Surface Water Hydrology-Salton Sea, Lines 8-9: Reduction in water orders from farmers during the last 10 years, reduced flows from Mexico and lower precipitation have also contributed to the decline in flows in the New and Alamo Rivers. IID-27
27. Page 3.11-11, Subsection 3.11.2.5 Surface Water Hydrology, Lines 30-32: Please verify accuracy of claim that 10 percent is agricultural drain water. IID-28
28. Pages 3.11-21 to 3.11-30, Subsection 3.11.3.1 Surface Water Hydrology Impact Analysis Methodology: It appears that the flow rates for inflow to the cells is high. IID would like to review the modeling data to further evaluate the flow rates suggested in the document. IID suggests that resident time be evaluated as part of the operation of the SCH cells. A water quality and biological monitoring program could also be implemented to evaluate the habitat parameters under different resident times. If, based on the water quality and habitat evaluations, longer resident times are supported; it could mean a reduction in operation costs and water use. IID-29

- 29. Pages 3.11-30 and 3.11-31, Subsection 3.11.3.2 Thresholds of Significance, Lines 42-44 and 1-3, respectively: Excavation of sediment ponds 15-20 feet below existing ground surface may intercept localized water tables and may experience soil liquefaction making excavation difficult. Even with dewatering this may be difficult.

IID-30
- 30. Page 3.11-35, Subsection 3.11.3.3 No Action Alternative, Lines 22-28: Some of the current projections for inflows from Mexico are much less than those noted in the Draft EIS/EIR. Reuse of New River water in Mexico may significantly reduce inflow volumes in future years.

IID-31
- 31. Page 3.13-9, Subsection 3.13.3.5 Future Land Use in the Study Area - Geothermal Energy Production, Line 27: The well pads could include multiple well heads with directional boring under the surrounding SCH areas.

IID-32
- 32. Page 3.13-16, Subsection 3.13.4.4 Alternative 1 – New River Gravity Diversion – Cascading Ponds, Lines 16-27: The planned SCH should include provisions that establish and preserve access for geothermal activity after suitable habitat is established in the ponds. Given that the ponds are designed to support multiple species, including some that are protected or otherwise recognized under state or federal regulation and guidelines, there should be some acknowledgement that the future or current presence of those species in the SCH areas will not preclude geothermal development activity. Note: this comment applies to all of the alternatives.

IID-33
- 33. Page 3.19-7, Subsection 3.19.3.3 No Action Alternative, Lines 22-30: Some areas along the western shoreline of the Salton Sea (Elmore Ranch area) contain more well drained soils than the river delta areas and may be reclaimed as farmland without the installation of tile lines (thus eliminating or reducing the need for ground surface to be 6-7 feet above water level). Additionally, IID and local farmers are investigating the potential for reclamation of these soils without excessive leeching (with repeated deep tillage of the soil to promote aeration). Most of these areas are well to the west of any of the alternatives presented, but some reclaimed areas may be identified within the river deltas. IID agrees that reclamation of farmland within the area of the proposed alternatives is speculative.

IID-34

## Appendices

### Appendix D Operations

- 34. Pages D-4 and D-5, Section D.2.6 Agricultural Drain Interception Ditch, Lines 39-42 and 1-2, respectively: Activities conducted by IID in the interception ditches would be subject to the requirements of the HCP and related permits and authorizations. As with other IID maintained drains, IID would have the final decisions on the maintenance conducted (subject to the provisions of the HCP and related documents).

IID-35
- 35. Page D-6, Section D.3.2 Salinity of Stored Water: IID agrees with the concept of testing different salinities under various conditions to more closely evaluate selenium concentrations. We also believe the evaluation should include some cells that are irrigated with only drain water (no Salton Sea water mix) to evaluate selenium concentrations, track bioaccumulation and how that might affect individuals and

IID-36

- overall species populations. This field experiment would help inform the selenium Ecological Risk Modeling reported in Appendix I. IID-36 Cont.
36. Page D-9, Section D.3.4 Residence Time: IID supports evaluating residence time in the SCH cells. Longer resident times could maintain habitat functional values, manage salinity and reduce pumping costs for replacement water. This might require a more intensive water quality monitoring program. IID suggests that residence time be tied to water quality or habitat quality instead of a set number of days. See *item no. 28*. IID-37
37. Pages D-14 and D-15, Section D.4 Possible Operational Scenarios: IID would suggest reducing the lower limit on the salinity operational variable to 10 ppt or less in at least one cell to evaluate selenium concentrations and potential bioaccumulation. With a robust monitoring program any potential affects to wildlife could be identified early and the salinity range increased if required. IID-38
- Appendix I Selenium Management Strategies
38. IID suggests that some fresh water (agricultural drain water) cells be incorporated into the SCH habitat to further evaluate the potential risks to wildlife associated with freshwater systems. IID-39
- General Provisions**
39. IID lands with geothermal resources may not be available for this project. IID-40
40. The proponent may not use IID's canal or drain banks to access the project sites. IID-41
41. If any additional crossings or modification to the existing ones are needed, then the applicant will be responsible for the cost of these improvements and IID will design and construct them. IID-42
42. Fences should be installed at the boundary of IID's right-of-way for safety and allow access for IID operation and maintenance activities. IID-43
44. Any construction or operation on IID property or within its existing and proposed right of way or easements will require an encroachment permit, including but not limited to: surface improvements such as proposed new streets, driveways, parking lots, landscape; and all water, sewer, storm water, or any other above ground or underground utilities. A copy of the encroachment permit application is included in the IID's *Developer Project Guide 2008*. The guide can be accessed at the following web site: <http://www.iid.com/Modules/ShowDocument.aspx?documentid=2328>. Also, instructions for the completion of encroachment applications can be found at <http://www.iid.com/Modules/ShowDocument.aspx?documentid=2335>. The IID Real Estate Section should be contacted at (760) 339-9239 for additional information regarding encroachment permits. IID-44
45. Any new, relocated, upgraded or reconstructed IID facilities required for and by the project (which can include but is not limited to electrical utility substations, electrical transmission and distribution lines, etc.) need to be included as part of the project's CEQA and/or NEPA documentation, environmental impact analysis and mitigation. IID-45

Failure to do so will result in postponement of any construction and/or upgrade of IID facilities until such time as the environmental documentation is amended and environmental impacts are fully mitigated. **Any and all mitigation necessary as a result of the construction, relocation and/or upgrade of IID facilities is the responsibility of the project proponent.**

IID-45  
Cont.

Should you have any questions, please do not hesitate to contact me by phone at 760-482-3609 or by e-mail at [dvargas@iid.com](mailto:dvargas@iid.com). Thank you for the opportunity to comment on this matter.

Respectfully,



Donald Vargas  
Environmental Specialist

David Elms. – Project Manager, CDFG Bermuda Dunes Field Office  
Carlos Villalon. – Manager, Water Dept.  
Mike L. King. – Manager, Water Dept.  
Jeff M. Garber. – General Counsel  
Juan Carlos Sandoval. – Asst. Mgr. Energy Dept.  
Joel Ivy. – Asst. Mgr. Energy Dept.  
Carlton L. King. – Asst. Mgr., Energy Dept. Customer Service Operations  
Tina Shields. – Asst. Mgr., Water Dept. Resources Planning & Management  
David L. Barajas. – General Supt., Energy Dept. System Planning & Engineering  
Michael S. Trump. – General Supt., Energy Dept. Customer Operations & Planning  
Ismael Gomez. – Chief Engineer, Water Dept. Engineering Services  
Bruce Wilcox. – Environ. Proj. Mgr., Water Dept. QSA Water Transfer  
James P. Kelley. – Supervisor, Real Estate & Right-of-Way  
Vikki Dee Bradshaw. – Asst. Supv., Environmental Management



# San Diego County Water Authority

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

October 17, 2011

**Ms. Lanika Cervantes, Corps Project Manager**  
**U.S. Army Corps of Engineers, Los Angeles District, San Diego Field Office**  
**ATTN: CESPL-RG-RS-2010-00142-LLC**  
**6010 Hidden Valley Road, Suite 105**  
**Carlsbad, CA 92011**

**MEMBER AGENCIES**

Carlsbad  
Municipal Water District

City of Del Mar

City of Escondido

City of National City

City of Oceanside

City of Poway

City of San Diego

Fallbrook  
Public Utility District

Helix Water District

Lakeside Water District

Olivenhain  
Municipal Water District

Olay Water District

Padre Dam  
Municipal Water District

Camp Pendleton  
Marine Corps Base

Rainbow  
Municipal Water District

Ramona  
Municipal Water District

Rincon del Diablo  
Municipal Water District

San Dieguito Water District

Santa Fe Irrigation District

South Bay Irrigation District

Vallecitos Water District

Valley Center  
Municipal Water District

Vista Irrigation District

Yuima  
Municipal Water District

**OTHER REPRESENTATIVE**

County of San Diego

**Re: Draft Environmental Impact Statement/Environmental Impact Report for the Salton Sea Species Conservation Habitat Project (SCH No. 2010061062)**

**Dear Ms. Cervantes:**

**The San Diego County Water Authority (Water Authority) has reviewed the subject document and supports the general concept of the proposed Species Conservation Habitat (SCH) project. The SCH project is intended to serve as a proof of concept for shallow water habitat restoration at the Salton Sea (Sea). This habitat type currently supports fish and wildlife that are being lost due to increasing salinity and declining Sea elevations. Without some form of restoration, declining water inflows in future years will result in ecosystem collapse due to continued water quality degradation.**

**On June 25, 2007, the California Resources Agency certified a Final Program Environmental Impact Report for the Salton Sea Ecosystem Restoration Program that identified a preferred alternative for restoring the Sea. The Water Authority participated as a member of the Advisory Committee that assisted in the preparation of the PEIR and preferred alternative. Disappointingly, the State has taken no further action to implement restoration despite repeated requests by various public agencies and other concerned organizations. The proposed SCH project is very similar to the Saline Habitat Complexes described in the Ecosystem Restoration Program FPEIR and provides the first meaningful State contribution to Sea restoration.**

**The Water Authority concurs with the two stated project goals: 1) develop a range of aquatic habitat that will support fish and wildlife species dependent on the Sea, and 2) develop and refine information needed to successfully manage the SCH through an adaptive management process. Because the SCH is intended to evaluate various approaches for shallow water habitat restoration, it is important that the project be designed and implemented to test multiple hypotheses related to water quantity/quality and establishing appropriate habitat for target species.**

SDCWA-1

SDCWA-2

The Water Authority does not favor any particular alternative. However, the Water Authority offers the following general comments on whatever alternative is ultimately selected:

1. The selected alternative should be located to avoid areas with high potential for geothermal development. Maximum development of renewable energy sources is important to combating climate change and can be an important economic benefit to the Imperial Valley. Significant geothermal resources exist in and around the Sea. As the Sea recedes, renewable energy development along a newly exposed shoreline could help reduce wind-blown dust, thus lowering projected particulate emissions and preventing further air quality degradation. SDCWA-3
2. The selected alternative should minimize adverse effects on existing agricultural lands, both during construction and long-term operation, to ensure minimal impacts to the local economy. SDCWA-4
3. The design and operation of the selected alternative should include elements that allow testing of various water quality parameters, such as salinity, temperature, dissolved oxygen, as well as chemical constituents such as selenium. An appropriate design would ensure that any potential relationships between physical, chemical and biological criteria could be evaluated. SDCWA-5
4. The selected alternative should include elements to provide for desert pupfish connectivity. The dispersal routes for the various desert pupfish populations found in the New and Alamo Rivers and agricultural drains must be maintained. SDCWA-6
5. Final design of the selected alternative should account for the variability of water flows to the Sea expected in various models. The propose primary source of water for the SCH, agricultural drain flows, are highly variable and dependent on the amount and type of agricultural activity at any given time. SDCWA-7
6. The identified preferred alternative involves pumping rather than gravity flow. Additional detail on cost/benefit should be included in the FEIR to justify this highly engineered and potentially costly solution. Less intensively managed systems (e.g., gravity flow systems) typically more easily approximate natural habitats. Permanent conversion of limited agricultural land for the sedimentation basins may be justified if it results in a substantial lifetime cost savings and provides a greater probability of achieving project goals. SDCWA-8
7. The selected alternative should not adversely affect implementation of mitigation measures for the Quantification Settlement Agreement and Imperial Irrigation District Water Conservation and Transfer Projects. The Imperial Irrigation District, in partnership with the Water Authority and others, is currently implementing various mitigation measures approved as part of these projects. Close coordination with the SDCWA-9

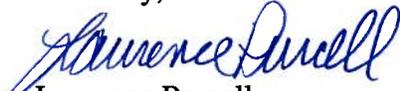
Ms. Lanika Cervantes  
Salton Sea SCH DEIS/EIR Comments  
October 17, 2011  
Page 3 of 3

Imperial Irrigation District may avoid conflict and identify opportunities for synergy between the projects.

SDCWA-9  
Cont.

Thank you for the opportunity to comment of the proposed SCH project. The Water Authority would appreciate receiving the Final EIS/EIR when is completed. Please contact me at (858) 522-6752 if you have any questions regarding these comments.

Sincerely,



Laurence Purcell  
Water Resources Manager

Cc: Mr. David Elms, CDFG



October 17, 2011

Mr. David Elms  
California Department of Fish and Game  
78078 Country Club Drive, Suite 109  
Bermuda Dunes, CA 92203

SUBJECT: Public Notice/Application No.: SPL-2010-00142-LLC; State Clearinghouse No.  
2010061062

Dear Mr. Elms:

The Imperial County Air Pollution Control District (Air District) has finalized its review of the Draft Environmental Impact Statement/Environmental Impact Report (EIS/EIR) for the Salton Sea Species Conservation Habitat (SCH) Project. The Air District and County hereby submits the following air quality review comments on the Draft SCH EIS/EIR. The U.S. Army Corps of Engineers (Corps) is the NEPA lead agency, and the California Natural Resources Agency (NRA) is the CEQA lead agency. The NRA (applicant) is requesting a Section 404 permit from the U.S. Army Corps of Engineers (Corps) for the construction of up to 3,770 acres of shallow ponds and associated infrastructure at the southern end of the Salton Sea in Imperial County, California. The permit is required RWQCB : activities would discharge fill material on the riverbed or banks within the Corps jurisdiction -1 thin the New River or the Alamo River and the Salton Sea. The proposed ponds will be constructed and used as aquatic habitats that will support fish and wildlife species dependent on the Salton Sea. The construction of the ponds will also assist in refining information needed to successfully manage the SCH Project habitat through an adaptive management process. The project is scheduled to be constructed within two years beginning in 2013.

Six project alternatives were studied in the Draft EIS/EIR. Alternative 3 was selected by the Natural Resources Agency as their preferred Alternative. Alternative 3 consists on the development of 3,770 acres of ponds constructed on either side of the New River (East New, West New, and Far West New), pumped diversion of river water, and independent ponds extended to include Far West New and cascading pond units.

#### **OVERALL PROJECT-RELATED EIR/EIS COMMENTS**

1. The Draft EIR/EIS states that the project is intended to be funded under a legislative appropriation made pursuant to Fish and Game Code section 2932, subdivision (b). This law established the Salton Sea Restoration Fund for implementing the preferred alternative for restoring the Salton Sea. The Draft EIS/EIR needs to provide a full explanation of how this project affects and implements the Salton Sea restoration preferred alternatives identified by the Federal government, the State, and the Salton Sea Authority. Further, the Draft EIR/EIS misquotes Section 2932, subdivision b, which states: "Implementation of conservation measures necessary to protect the fish and wildlife species dependent on the Salton Sea, including

ICAPCD-1

adaptive management measurements pursuant to Section 2081.7". The omitted reference to Section 2081.7 is important because subdivision b is for the implementation of conservation measures for the invalidated Quantification Settlement Agreement (QSA). The Draft EIR/EIS fails to disclose how this project relates to the invalidated QSA and its relationship to the promised, but never completed, Salton Sea Habitat Conservation Strategy that was to mitigate impacts to 96 species.

ICAPCD-1  
Cont.

2. Section 2081.7 also refers to the sale of the 800,000 acre feet of water, initially intended for delivery to the Salton Sea to mitigate impacts of the QSA, instead to Metropolitan Water District (MWD), and sale of yet an additional 800,000 acre feet (for a total of 1.6 million acre feet of water in addition to the other QSA water transfers from the Imperial Valley). DWR is responsible for any environmental impacts related to use or transfer of that water. On September 13, 2011, Imperial Irrigation District (IID) adopted a resolution stating its intent to seek a modification to the SWRCB Order WRO 2002-0013 to cease delivering the Salton Sea's mitigation water, presumably to sell the water to MWD instead of delivering it to the Salton Sea as provided by Section 2081.7. According to its May 10, 2011 report, MWD expects to have a surplus of 1.07 maf of water this year and its water storage to be at an "all-time high" of 2.6 maf by the end of this year. If this project will facilitate in any way the transfer of the Salton Sea's mitigation water and/or the other 800,000 acre feet of water, then the project description is incorrect, and the impacts of the reductions in water inflow to the Salton Sea as a result of Section 2081.7 must be analyzed and further mitigation needs to be identified. There has never been a CEQA or NEPA analysis performed for the selling of this 1.6 million acre feet of water to MWD. These changes would be significant and require re-circulation of the draft document.

ICAPCD-2

3. The "no action" alternative improperly assumes the landowners are entirely responsible for mitigating emissions from the exposed Salton Sea's shoreline between the pre-QSA baseline of -228 to -235 feet msl. A -7 foot msl difference results in approximately 16,000-acres of exposed area playa. This assumption ignores the contributions of the QSA to the declining Salton Sea elevation level. There is no explanation of the mitigation measures the project proponents expect the landowners to implement, how the measures will be funded, or how the project proponents intend to ensure the three landowners implement the measures. Since one of the project proponents is also one of the landowners (federal government), the Army Corps of Engineers should commit to implement the necessary air quality mitigation on federally-owned land.

ICAPCD-3

4. The "no action" alternative wrongly assumes that the QSA and associated mitigation the parties agreed to as part of the QSA will be implemented, including that the QSA parties will mitigate air quality impacts between -235 and -248 feet msl. These assumptions are incorrect because the Sacramento Superior Court has invalidated 12 of the QSA contracts, and legal challenges to the IID-SDCWA water transfer EIR/EIS and QSA PEIR are pending in state court. The invalidation of the QSA Joint Powers Authority (QSA-JPA) contract also means that the QSA-related mitigation is unfunded and there is no assurance it will be implemented. Therefore, the reliance on the QAS and the QSA environmental documents results in this project's impacts being underestimated and insufficient mitigation required.

ICAPCD-4

5. The Draft EIR/EIS assumes that air quality impacts will be mitigated by the four-step air quality mitigation that is in the IID-SDCWA water transfer EIR/EIS and to which the Air District has previously expressed to the State and QSA parties is inadequate, and which remains under legal

ICAPCD-5

challenge. The 4-Step Plan is an ill defined “wish list” focused on studying the problem instead of committing to actual mitigation that will reduce air quality impacts. The mitigation also relies on the Air District’s adoption of an air pollution credit trading program to generate PM10 ERCs that it has not agreed to do and without any assessment of the feasibility of such a program, impacts to the economy, or whether there are sufficient sources that could reduce emissions in lieu of reducing emissions at the Salton Sea.

ICAPCD-5  
Cont.

6. The Draft EIR/EIS adopts the flawed baseline approach from the QSA EIR/EIS and PEIR EIS assuming that the Sea will decline to -258.2 feet msl and its salinity will be 272 ppt. The baseline is the actual conditions at the time the notice of preparation is issued, which is reported in the Draft EIR/EIS to be -231 feet msl and 51 ppt salinity for the Salton Sea. The impacts are improperly measured from the -258.2 feet msl instead of -231 feet msl and from 272 ppt instead of 51 ppt. The California Supreme Court in *Cmtys. for a Better Env’t v. S. Coast Air Quality Mgmt. Dist.*, (2010) 48 Cal.4th 310 has rejected the baseline approach used in this document because it misleads the public as to the reality of the impacts and subverts full consideration of the actual environmental impacts.

ICAPCD-6

7. The Draft EIR/EIS states that the project will be operated until the end of the 75-year period covered by the QSA or until funding is no longer available. The project duration is uncertain because the QSA has been invalidated and without a valid QSA-JPA there is no funding for the mitigation assumed in this document.

ICAPCD-7

#### **TECHNICAL COMMENTS**

1. **(Executive Summary) ES1.9, line 3, pg ES-7**

This sentence states, “Additionally, the Imperial County Air Pollution Control District would require preparation of a Fugitive Dust Control Plan under Regulation VIII, Fugitive Dust Rules (800-806)”. The Air District would like to mention that a Dust Control Plan (DCP) must be developed for the construction phase. In addition, a second DCP must be developed for the operational phase.

ICAPCD-8

2. **(Introduction) Section - 1.10 Required Permits and Consultations, line 23, pg 1-12**

Same recommended changes as comment number 1.

ICAPCD-9

3. **(Alternatives) Section - 2.4.2 Construction, line 1, pg 2-23**

This section describes the construction process that would be necessary to construct the ponds as well as the equipment that will be required. It is important to note that equipment such as power generators, emergency generators, sandblasters, or other type of machinery with 50 horse-powers or greater requires an Air District permit, or must have a statewide PERP registration operated within PERP guidelines. Please contact the Air District Engineering Department for further assistance.

ICAPCD-10

4. **(Alternatives) Section 2.4.7 – Best Management Practices, line 24, pg 2-27**

This sentence states “Additionally, the Project would comply with the Imperial County Air Pollution Control District’s Regulation VIII rules for dust control (general requirements, construction and earthmoving activities, bulk materials, open areas, and conservation management practices), which is required for all projects”. It is important to note that the

ICAPCD-11

- project will also be subject to the requirements of Rule 803 – Carry-Out and Track-Out as well as Rule 805 – Paved and Unpaved Roads. These Rules are an integral part of Regulation VIII. ICAPCD-11 Cont.
5. **(Air Quality) Section 3.3.1 - Introduction, line 14, pg 3.3-1**  
 This sentence states, "ICAPCD oversees Calexico, Imperial County, and the Imperial Valley in the southeastern Basin, which is where the Project would be located". The Air District would like to point out that the agency oversees the entire geographical area within Imperial County and not just specifically Calexico, therefore it is requested that this change is made to this section. ICAPCD -12
  6. **(Air Quality) Section 3.3.2.2 – Federal Regulations, lines 17 thru 20, pg 3.3-5**  
 This sentence states, "As discussed in Section 3.3.4.5, Attainment Status Designations, Imperial County is designated moderate nonattainment for the Federal 8-hour O<sub>3</sub> NAAQS, while the Imperial Valley (which is the Salton Sea Air Basin's Imperial County portion) is designated as serious nonattainment area for 24-hour Federal PM<sub>10</sub> and PM<sub>2.5</sub>". While it is true that Imperial County is a serious non-attainment for PM<sub>10</sub> it is not for PM<sub>2.5</sub>. ICAPCD -13
  7. **(Air Quality) Section 3.3.2.4 – Portable Equipment Registration Program, line 32, pg 3.3-7**  
 This sentence states, "Once registered in PERP, engines and equipment units may operate throughout the state of California without the need to obtain individual permits from local air districts". The Air District would like to point out that although this statement is correct, the engine is not considered portable if it resides in the same location for more than 12 months. This also means that any engine such as a back-up or stand-by engine, that replaces engine(s) at a location, and is intended to perform the same or similar function as the engine(s) being replaced, will be included in calculating the consecutive time period. Therefore, if the construction phase does take over a year and the equipment is expected to be at the site for over a year, the equipment must be permitted by the Air District. ICAPCD -14
  8. **(Air Quality) Section 3.3.3.5 – Attainment Status Designations, line 7 thru 10, pg 3.3-17**  
 This sentence states, "As part of USEPA's final ruling, a Reasonably Available Control Technology (RACT) demonstration was also required. RACT's are emission control technologies that are economically and technically feasible. In compliance with the requirements, ICAPCD released the 2009 Reasonable Available Control Technology (RACT) State Implementation Plan" The Air District must clarify that the RACT SIP was developed as part of the Ozone Attainment demonstration and has nothing to do with US.EPA's PM<sub>10</sub> Serious Non-Attainment Designation therefore this section has to be either revised or deleted. ICAPCD -15
  9. **(Air Quality) Section 3.3.3.5 – Attainment Status Designations, line 28 thru 30, pg, 3.3-17**  
 This section states, "In August 2009, ICAPCD released the 2009 Imperial County State Implementation Plan for Particulate Matter Less than 10 Microns in Aerodynamic Diameter (ICAPCD 2009). This document presents the SIP for PM<sub>10</sub> on ICAPCD's behalf". It is important to note that the PM<sub>10</sub> SIP has yet to be approved by the California Air Resources Board (CARB) or US.EPA. ICAPCD -16
  10. **(Air Quality) Section 3.3.4.1 – Impact Analysis Methodology, line 12 thru 14, pg, 3.3-20**  
 This sentence states, "Extending the schedule longer than 2 years would not affect the air quality analysis because it is based on maximum daily emissions (pounds per day) and total emissions (tons), which would remain relatively unchanged". The Air District believes this statement needs further clarification for the following reasons. If construction is delayed for an ICAPCD -17

unknown reason and construction equipment usage and activities stop completely, then there are no emissions being created. However, once construction resumes, construction equipment usage and activities must not go over the daily proposed equipment usage scheduled or activity scheduled that is used in this analysis to calculate daily emissions, otherwise this would increase the daily emissions. Furthermore, if an unforeseen problem with soil movement or any other construction activity was to occur prompting an increase in the construction fleet mix or related construction activities for any day, it would also increase the daily emission production. The construction manager should ensure that this does not occur by off-setting the usage of other construction equipment or activities on those days. This comment must be addressed in this section as well as any other section(s) in the EIS/EIR.

ICAPCD  
-17 Cont.

**11. (Air Quality) Section 3.3.4.5 – Alternative 1 – New River, Gravity Diversion + Cascading Ponds, line 28 thru 30.**

This sentence states “Peak daily NOx and fugitive PM<sub>10</sub> emissions from on and off-site sources during construction would exceed ICAPCD’s thresholds, which would be a significant impact when compared to both the existing environmental setting and the No Action Alternative”. Although this statement is referring to Alternative 1, the Air District noticed that the Preferred Alternative (Alternative 3) also exceeds the NOx and PM<sub>10</sub> Air District thresholds. Therefore in order to help reduce or eliminate construction impacts, the project is required to implement standard, discretionary and enhanced mitigation measures for construction equipment and fugitive PM<sub>10</sub>. These measures are found in Section 7.1 of the Air District’s CEQA Air Quality Handbook. Furthermore, the project will also be subject to the Air District’s Policy 5 which requires the mitigation of NOx and PM10 emissions exceeding the CEQA threshold. Attached is a copy of the Air District’s Policy 5 for your review.

ICAPCD  
-18

**12. (Air Quality) Section 3.3.4.5 – Alternative 1 – New River, Gravity Diversion + Cascading Ponds, line 8, pg 33-34**

This sentences states, Water exposed soil with adequate frequency for continued moist soil (at least twice daily and indicated by soil and air conditions). The Air District would like to clarify that Rule 801-Construction and Earthmoving Activities, requires the application of water or chemical stabilization at the sites to limit Visible Dust Emissions (VDE) to 20% opacity at all times, therefore watering more than twice a day may be necessary to not exceed the opacity limit.

ICAPCD  
-19

**13. (Air Quality) Section 3.3.5 – General Conformity, line 35 thru 37, pg, 3.3-39**

This sentence states, “Imperial County is designated nonattainment for the Federal 8-hour ozone NAAQS, while the Imperial Valley (which is the Salton Sea Air Basin’s Imperial County portion) is designated as nonattainment area for 24-hour Federal PM<sub>10</sub> and PM<sub>2.5</sub>”. The Air District would like to clarify that the Imperial County is currently classified as a “moderate” non-attainment area of the 1997 8-hour Ozone NAAQS. The Imperial County is designated as “serious” non-attainment area for PM10 and non-attainment for PM<sub>2.5</sub>.

ICAPCD  
-20

**14. (Air Quality) Section 3.3.5 – General Conformity, line 20, pg, 3.3-40**

The word “revision” should be changed to “revising”.

ICAPCD  
-21

**15. (Air Quality) Section 3.3.5 – General Conformity, line 4 thru 6, pg, 3.3-43**

This paragraph states, “Ozone is tentatively in attainment pending certification of 2008 monitoring data, until any future USEPA determination to the contrary”. The Air District would

ICAPCD  
-22

like to clarify that all Ozone data up to 2010 has been validated and US.EPA had determined that the Imperial County has and continues to attain the 1997 8-hour NAAQS for Ozone.

ICAPCD  
-22 Cont.

**16. (Air Quality/Greenhouse Gases Documentation) Appendix G-2, Table G-3**

Please explain why the proposed equipment list only accounts for 1 (one) water truck for the construction phase of this project. If the project is intended to take place in over 3,770 acres and as per the analysis, watering will take place at a minimum of twice per day, it is difficult to suppose one water truck will be able to accomplish such task. In addition, please explain why the manager trip/day is only .50 and the foreman, equipment operator and laborers at .33 per/day.

ICAPCD  
-23

**17. (Air Quality/Greenhouse Gases Documentation) Appendix G-2, Table G-10 and Table G-12**

The Air District noticed that a 95% emission reduction control is being applied to the Off-road Dust Emissions as well as Maintenance Off-road Dust. Please explain where the emission reduction factor derived from. The analysis indicates that water will be applied at a minimum of twice per day in the construction area however this does not constitute a 95% reduction. As per AP42, Section 13.2.2 Unpaved Roads, application of water emissions reductions thru watering requires the evaluation of several factors (e.g. vehicle weight, temperature, ground moisture content) and therefore such an evaluation must be completed before applying such emission reduction.

ICAPCD  
-24

In Summary, all standard mitigation measures and discretionary mitigation measures for fugitive PM10 and NOx control should be applied for the construction phase of the project to mitigate NOx and PM10 emissions. Both standard mitigation and enhanced measures for construction combustion equipment should be applied as well. The project will also be subject to Policy #5 to mitigate the NOx and PM10 emissions above the Air District's CEQA threshold.

ICAPCD  
-25

In Closing, please provide the revised or additional analysis based on the comments above for the APCD to review.

ICAPCD  
-26

Should you have any questions regarding this letter, please do not hesitate to call our office at (760) 482-4606.

Sincerely,



Brad Poiriez  
Imperial County Air Pollution Control Officer

CC: Imperial County Air Pollution Control District Board of Directors  
Ralph Cordova, Imperial County Executive Officer  
Armando Villa, Director, Imperial County Planning/Development Department  
Reyes Romero, Assistant APCO  
Monica Soucier, APC Planning Manager



POLICY: OFF-SITE MITIGATION / IN-LIEU FEE

DATE: March 30, 2007 POLICY NUMBER: 5

REFERENCE: ICAPCD CEQA Air Quality Handbook Thresholds of Significance (Policy 36)

The Imperial County Air Pollution Control District has an approved CEQA Air Quality Handbook that is a guidance document for project developers. This document establishes the thresholds of significance for non-attainment pollutants and their precursors.

As such, if a project exceeds the established thresholds, the proponent can propose and administer further emission reduction mitigation measures, as approved by the APCD, to reduce emission levels to below significance. Another option available to the proponent is payment of an in-lieu mitigation fee.

If the in-lieu mitigation fee option is selected by the proponent, the following is how the fee is determined and administered by the APCD:

- 1: The fee is derived by utilizing the current year CARL MOYER grant program average cost effectiveness for Imperial County multiplied by amount of tons needed to be offset (ex. 2007 Carl Moyer average = \$12,336. If 40 tons of Nox needs to be offset, the calculation would be:  $\$12,336 \times 40 = \$493,440$ ).
- 2: In-lieu fees collected shall be placed into an ICAPCD specified development project account(s), for appropriate tracking.
- 3: The ICAPCD may utilize no more than 10% of received funds to offset costs of administering the off-site mitigation/ in-lieu fee program.
- 4: All excess funds shall be allocated by the Imperial County Air Pollution Control Board of Directors through a Request for Proposal (RFP) process. Proposed mitigation projects will be evaluated based on cost analysis and emission reductions provided that they meet the following minimum criteria:
  - 4.a Emission reductions produced by the in-lieu fee mitigation projects must not be required by any federal, state, or local regulation, memorandum of

agreement/understanding with a regulatory agency, settlement agreement, mitigation requirement, or other legal mandate.

- 4.b Mitigation projects must adhere to a minimum cost-effectiveness of current monetary figure established by the Carl Moyer Program to offset one weighted ton of Nox or PM10.
- 4.c No emission reductions obtained by the in-lieu fee mitigation projects shall be utilized as marketable emission reduction credits, or to offset any emission reduction obligation of any individual or entity.
- 4.d Mitigation projects are obligated to have a minimum project life of ten years. Proposed projects possessing shorter life spans may be approved on a case-by-case basis with recommendation by the APCO to the APCD Board of Directors. In addition, projects with shorter lives may be subject to additional funding restrictions, such as lower cost-effectiveness limit and/or a project cost cap.
- 4.e Potential mitigation projects that do not meet designated criteria may be considered on a case-by-case basis if evidence supplied to the APCO demonstrates potential surplus, real, quantifiable, and enforceable emission reduction benefits.



Stephen L. Birdsall  
Air Pollution Control Officer

**Salton Sea Authority Comments on the  
Species Conservation Habitat EIR  
10/18/11**

**General Comments**

The Salton Sea Authority appreciates the opportunity to review the Draft EIR for the Species Conservation Habitat (SCH). We applaud the State for moving forward with this project and we support the overall goals of the program. The EIR presents a careful analysis of the issues and a reasonable set of alternatives.

SSA-1

**Specific Comments**

Specific comments are provided below:

1. **Non-Interference with Agricultural Drainage.** Final designs should be coordinated with IID to avoid interference with agricultural drainage.

SSA-2

2. **Ownership and Easements.** Likewise, land ownership and easement issues need to be coordinated with IID.

SSA-3

3. **Known Geothermal Resource Area (KGRA).** The Authority is concerned that some of the alternatives may cause interference with access to geothermal resources. Based on our understanding of the location of the KGRA, we believe the alternative areas west of the mouth New River would be acceptable and would not interfere with potential future geothermal energy production. In areas where the footprints of the alternatives overlay the KGRA, access for geothermal energy production should be considered and may be needed as a mitigation for potential loss of an energy resource if access is not allowed.

SSA-4

4. **Selenium and Freshwater Habitats.** Selenium data presented in Appendix I suggests that there is only a slight difference between the selenium levels in the south end of the Sea and those in the New River. In fact, the Amrhein and Smith (2011) data from 2010 shows a mean selenium level in the New River of 1.8 µg/L compared the mean level in the Salton Sea near shore area of 2.46 µg/L. The Salton Sea Authority recommends that the State consider having at least some freshwater cells in the SCH design. This would provide an excellent opportunity for further research on freshwater habitats in the area. Considering the potential expenditure on this project, it would be a great loss of opportunity not to include some freshwater habitat.

SSA-5

SSA-6

5. **Flow Rates and Residence Times.** The flow rates for various residence times presented on page 3.11-22 and on Table 3.11-7 on pages 3.11-23 and 3.11-24 are very high. An example is discussed in the text on page 3.11-22 for Alternative 3 (the State's preferred alternative) with a target salinity of 20 ppt and a residence time of two weeks. To achieve these conditions, a flow rate from the New River of 313 cfs (202 MGD or 227,000 AFY) would be required and 163 cfs

SSA-7

(105 MGD or 118,000 AFY) of salt water would need to be pumped from the Sea. What will happen if the flows in the river cannot support these large withdrawals? How will the flow in the river be affected by such large diversions?

SSA-7  
Cont.

In 2005, the Salton Sea Authority developed cost estimates for low head pumping stations using Bureau of Reclamation costs factors. Based on these factors in 2005 dollars, a 200 MGD pumping plant could cost about \$8 million and have annual operating, maintenance, energy and repair (OMER) costs of \$440,000. A 100 MGD pumping station could cost about \$5 million and have annual OMER of \$370,000. Therefore, in 2005 dollars, the combined cost for pumping is estimated at \$13 million in capital cost and \$810,000 in annual OMER. Even with the longest residence times, the Authority believes the two pumping stations could have a combined cost of \$5 million and annual OMER costs of over \$500,000.

SSA-8

The Salton Sea Authority suggests that the gravity flow system would be better to avoid large capital and OMER costs. In addition it may be possible to have salt water mix in the lower cells by gravity using a gates that could be opened and closed as needed or by using porous dikes. If the system requires large annual OMER outlays, how will they be funded? Will a fund be established to continue OMER funding in perpetuity?

SSA-9

SSA-10

6. **Budget.** Please provide the latest budget estimate for the project.

SSA-11

While the Salton Sea Authority appreciates that the State is moving forward with the SCH Project, we remain concerned that there seems to be little progress toward a larger solution for the Sea. In addition, we are frustrated by the slow pace that the State is taking in the Financial Assistance Program which has been presented at several stakeholder meetings and continues to run behind each schedule that has been presented.

SSA-12

SSA-13

DISTRICT 1  
JOHN R. RENISON

DISTRICT 2  
JACK TERRAZAS

DISTRICT 3  
MICHAEL W. KELLEY

DISTRICT 4  
GARY WYATT

DISTRICT 5  
RAY CASTILLO

COUNTY ADMINISTRATION CENTER

940 MAIN STREET, SUITE 209  
EL CENTRO, CA 92243-2871  
TELEPHONE: (760) 482-4220  
FAX: (760) 482-4215

# Board of Supervisors

## County of Imperial



October 11, 2011

Mr. David Elms, DFG Project Manager  
California Department of Fish and Game  
78078 Country Club Drive, Suite 109  
Bermuda Dunes, CA 92203

Re: Salton Sea Species Conservation Habitat Project

Dear Mr. Elms:

The purpose of this letter is to provide comments of the Imperial County Board of Supervisors on the Draft Environmental Impact Statement/Report (DEIS/R) for the Salton Sea Species Conservation Habitat (SCH) Project. We understand that the goal of this project is to restore shallow water habitat being lost due to the Sea's increasing salinity and reduced surface area, and we support those objectives. However, there are some other aspects of the proposed project that we have concerns about, and we want to take this opportunity to formally express those.

As you may be aware, Imperial County is the second-largest geothermal energy producing county in the nation. This industry sector is a vitally important part of our economy and provides hundreds of well-paying jobs and other economic benefits to our county and its residents. Furthermore, it is generally recognized that our county and the Salton Sea area in particular, is the location of the largest known undeveloped geothermal resource in the nation. As California moves forward aggressively to meet its renewable energy targets in the coming years, we anticipate that additional geothermal production facilities will be constructed, providing even more jobs and benefits to our area and the state. We therefore view with some anxiety, any proposal that might threaten the ability of geothermal industry to fully access the vital resources located within in this area.

ICBOS-1

As can be readily discerned from the attached map, the project boundaries for all six alternatives identified in the DEIS/R lie either entirely or partially within the Salton Sea Known Geothermal Resource Area (KGRA) as established by the State of California Department of Conservation Division of Oil, Gas and Geothermal Resources (DOGGR). In fact, Alternatives 4, 5 & 6 overlie a part of the KGRA that is suspected of being one of the most promising locations for future development. We therefore strongly oppose any future consideration of Alternatives 4, 5 or 6 as the location for the SCH project.

ICBOS-2

ICBOS-3

The other sites (Alternatives 1, 2 & 3) though less problematic, still contain significant potential for conflict with geothermal activity, especially in the area north and east of the mouth of the New River. We understand that the construction of the SCH is proposed to be completed in phases over a several year period. We therefore recommend that any construction phasing of Alternatives 1, 2, or 3 be accomplished in a manner to avoid that area east of the river until such time in the future when further exploration and analysis of the potential for geothermal development in that area can be more fully assessed. Additionally, specific provisions and/or easements to accommodate geothermal activity should be developed prior to the implementation of any of the alternatives being considered. The County believes that geothermal development and habitat creation can be compatible if both are considered equally in the development of the SCH project.

The Imperial County Board of Supervisors appreciates this opportunity to provide comments on the Salton Sea Species Conservation Habitat Project. We look forward to working with you and the other state and federal agencies involved toward the successful completion of what we hope will be an important first step in the development of a full restoration plan for the Salton Sea.

Sincerely,



Jesus J. Terrazas, Chairman  
Imperial County Board of Supervisors



Established in 1918 as a public agency

# Coachella Valley Water District

**Directors:**

Peter Nelson, President - Div. 4  
John P. Powell, Jr., Vice President - Div. 3  
Patricia A. Larson - Div. 2  
Debi Livesay - Div. 5  
Franz W. De Klotz - Div. 1

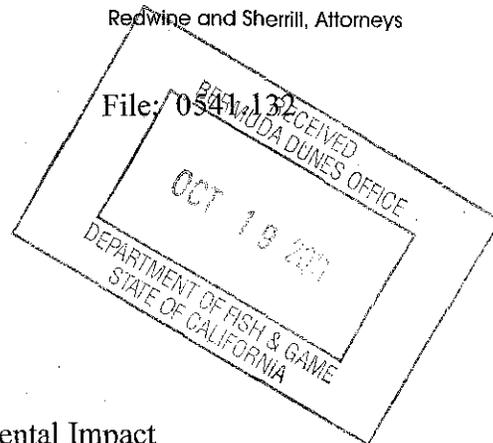
**Officers:**

Steven B. Robbins, General Manager-Chief Engineer  
Julia Fernandez, Board Secretary

Redwine and Sherrill, Attorneys

October 12, 2011

David Elms  
California Department of Fish and Game  
78078 Country Club Drive, Suite 109  
Bermuda Dunes, CA 92203



Dear Mr. Elms:

**Subject: Draft Environmental Impact Statement/Environmental Impact Report for the Proposed Salton Sea Species Conservation Habitat Project**

Thank you for affording the Coachella Valley Water District (CVWD) the opportunity to review the Draft Environmental Impact Statement/Draft Environmental Impact Report (DEIS/DEIR) for the proposed Salton Sea Species Conservation Habitat (SCH) Project located along the south end of the Salton Sea in Imperial County. CVWD provides domestic water, wastewater, recycled water, irrigation/drainage, regional stormwater protection and groundwater management services to a population of 265,000 throughout the Coachella Valley in Southern California.

At this time, CVWD submits the following comments for your consideration:

1. There are at least two competing alternatives for the overall restoration of the Salton Sea. There were separate plans that were developed by the State of California and the Salton Sea Authority. The Legislature of the State of California has not acted to select a preferred alternative. CVWD supports the Salton Sea Authority's plan. The proposed SCH Project is characterized in the DEIS/DEIR as a stand-alone project with two stated goals: 1) develop a range of aquatic habitats that will support fish and wildlife species dependent on the Salton Sea; and 2) develop and refine information needed to successfully manage the SCH Project habitat through an adaptive management process. However, on the State of California, Department of Water Resources website it states:

*"The release of this study is an important step in a phased approach to ecosystem restoration in the Salton Sea," said Secretary for Natural Resources, John Laird. "This early start habitat will help maintain necessary habitat for the wildlife in the Salton Sea and will complement future restoration efforts."*

That statement seems to indicate that Secretary Laird sees this project as the Early Start Habitat project described in the State Plan.

CVWD-1



It appears that the State may be circumventing the Legislature by beginning implementation of the State Plan for the restoration of the Salton Sea without proper public discourse; the DEIS/DEIR is presenting a portion of a larger project in a piecemeal fashion that appears to conflict with environmental law.

CVWD-1  
Cont.

2. On September 13, 2011, the Imperial Irrigation District (IID) Board resolved to ask the California State Water Resources Control Board (SWRCB) to allow it to stop putting Quantification Settlement Agreement (QSA) mitigation water into the Salton Sea, thereby setting the stage to sell nearly 400,000 or 500,000 acre-feet of additional water to coastal communities. How would that action affect the proposed SCH project, either positively or negatively, as Secretary Laird described this project, not as species conservation habitat, but as Early Start habitat? How would that action affect any future projects, positively or negatively?

CVWD-2

3. The DEIS/DEIR describes a project that will have operation and maintenance requirements after completion of construction, as well as, adaptive management requirements. Although not stated in the DEIS/DEIR, it has been stated in public meetings and on the State of California, Department of Water Resources website that construction of this project is to use Proposition 84 (Chapter 5) funding, and the ongoing maintenance and adaptive management would be funded using the Salton Sea Mitigation Fund consisting of funds paid by the water agencies pursuant to the requirements of the QSA.

CVWD-3

This appears to indicate that the State is planning to use a finite revenue stream (the QSA-based Salton Sea Mitigation Fund) to fund infinite, ongoing operations, maintenance and adaptive management. Once these funds are expended, this appears to place obligations on the State similar to the obligations the State assumed under the QSA, causing the QSA to be deemed unconstitutional.

4. Section 3.4: DEIS/DEIR states that SCH Project is designed to support fish species that provide a forage base for piscivorous birds and that the fish proposed for introduction to the SCH are currently, or have in the recent past, been introduced to the Salton Sea. It is well known that the desert pupfish (*Cyprinodon macularius*), a southwestern species whose original range in portions of Arizona, California, and northern Mexico, has been greatly curtailed by proliferation of non-native fish species. CVWD is concerned that the fish species known to impair desert pupfish survival is being considered as the forage base in the SCH Project. Several researchers (e.g., Schoenherr, 1981x; Steinhart, 1990; Moyle, 2002) have suggested predation on eggs, juveniles, and adults, and competition for food and space as possible ways that the hybrid Mozambique tilapia (*Oreochromis mossambica* by *O. uroleriis*), redbelly tilapia (*Tilapia zillii*), sailfin molly (*Poecilia latipinna*), and other non-native species can adversely affect populations of desert pupfish.

CVWD-4

The project should consider the use of Striped Mullet (*Mugil cephalus linnaeus*). This species has been associated with the Salton Sea on and off since the formation of the sea. They were also stocked in the Salton Sea in the late 1940's and 1950's. This species is not known for predated on desert pupfish, its eggs or the fry; however, it is a detritus eater and may compete with the pupfish on that scale. These mullet are tolerant of high salinity water and freshwater alike, form large schools in shallow water and were typically found at the mouths of the Alamo and New Rivers. They are a prime forage fish for piscivorous birds and may be a more appropriate species to consider for the SCH Project.

CVWD-5

5. Section 3.11.2.1: This paragraph describes water rights held by IID and Metropolitan Water District of Southern California for diversions from Salton Sea tributaries, but fails to identify similar diversion water rights held by CVWD. CVWD maintains water rights for diversions from Salton Sea tributaries which include appropriative rights described in SWRCB Permit Nos. 536 and 3011. In addition, CVWD maintains appropriative water rights for Colorado River water covered by SWRCB Permit No. 7650 and used to irrigate lands within CVWD's irrigation service area and has submitted a water right application to divert agricultural return flows from the Coachella Valley Stormwater Channel and agricultural drains tributary to the Salton Sea.

CVWD-6

6. Tables 3.11-8 and 3.11-9. These tables provide values representing the percentage of the New River and Alamo River flows needed to supply the SCH to meet several alternative salinity targets and pond residence times. While not stated in the DEIS/DEIR, it appears these percentages are based on historical flows measured at USGS gages for the periods 1944-2010 and 1960-2010 for the New River and Alamo River, respectively. CVWD is concerned that these historical flow measurements may not provide an accurate representation of future flows in the New River and Alamo River and may underestimate the impact of diversions needed for the proposed SCH.

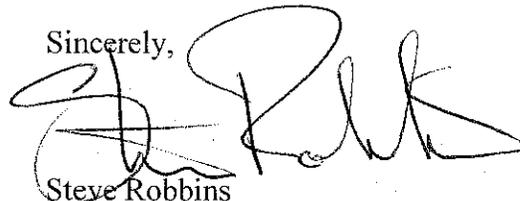
CVWD-7

7. SCH project costs. CVWD is unable to locate a summary of the projected SCH costs in the DEIS/DEIR. Estimates for both the total capital costs and annualized operations and maintenance costs per acre would be useful for evaluating the impact of the proposed SCH project.

CVWD-8

If you have any questions, please contact Dan Farris, Director of Operations, at 760-398-2651 extension 3500.

Sincerely,



Steve Robbins

General Manager-Chief Engineer

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# Organizations and Corporations

## Nancy Dorfman

---

**From:** Lorraine Woodman  
**Sent:** Tuesday, November 29, 2011 1:51 PM  
**To:** Nancy Dorfman  
**Subject:** FW: New SCH EIS-EIR comment from Richard McKay

Lorraine Woodman, Ph.D.  
Senior Consultant / Environmental Planning Cardno ENTRIX  
201 North Calle Cesar Chavez, Suite 203, Santa Barbara, CA 93103  
Phone: 805 962 7679 Direct: 805 963 0468 Mobile: 805 284 1878 Fax: 805 963 0412

-----Original Message-----

From: DO NOT REPLY [<mailto:noreply@cardno.com>]  
Sent: Sunday, August 21, 2011 8:04 PM  
To: Lorraine Woodman; Sarah Bumby; Rob Wurgler; Robert M. Wood  
Subject: New SCH EIS-EIR comment from Richard McKay

Richard McKay has entered a comment. Contact Information:  
E-Mail: [richard@solarpowerandwater.com](mailto:richard@solarpowerandwater.com)  
Affiliation: Solar Power&Water Inc.  
Mailing Address:  
5242 Rosehill Ct

Reno, NV 89502

Attachments: salton\_sea\_becomes\_imperial.pdf  
Comment:

My comment applies to The Salton Sea Conservation Habitat (SCH) Project in its entirety. We, Solar Power&Water Inc. submitted a plan to the Secretary of the Interior, the Commissioner of Reclamation, the Chairman of California Water Resources, and the California Financial Office.  
<http://www.solarpowerandwater.com/assets/Salton%20Sea%20plan2%20and%20opinions.pdf>  
f If you are not thoroughly versed in our plan, shame on you.

Our plan would maintain the Salton Sea full size at 228 feet below sea level. In so doing, the proposed SCH ponds would all be flooded. Our plan might also lead to the elimination of the QSA. The SCH is dependent on funding; ours produces income, and is better in all respects. Study it and learn why.

SP&W-  
1-1

## Nancy Dorfman

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**From:** Lorraine Woodman  
**Sent:** Tuesday, November 29, 2011 1:54 PM  
**To:** Nancy Dorfman  
**Subject:** FW: New SCH EIS-EIR comment from Richard McKay

Lorraine Woodman, Ph.D.  
Senior Consultant / Environmental Planning Cardno ENTRIX  
201 North Calle Cesar Chavez, Suite 203, Santa Barbara, CA 93103  
Phone: 805 962 7679 Direct: 805 963 0468 Mobile: 805 284 1878 Fax: 805 963 0412

-----Original Message-----

From: DO NOT REPLY [<mailto:noreply@cardno.com>]  
Sent: Saturday, October 01, 2011 2:24 PM  
To: Lorraine Woodman; Sarah Bumby; Rob Wurgler; Robert M. Wood  
Subject: New SCH EIS-EIR comment from Richard McKay

Richard McKay has entered a comment.Contact Information:

E-Mail: [richard@solarpowerandwater.com](mailto:richard@solarpowerandwater.com)  
Affiliation: Solar Power&Water Inc.  
Mailing Address:  
5242 Rosehill Ct

Reno, NV 89502

Attachments:

Comment:

Far superior than any of your six alternatives is the plan by Solar Power&Water Inc. to remediate the entire Sea. See <http://www.solarpowerandwater.com/assets/Salton%20Sea%20plan2%20and%20opinions.pdf>

SP&W-  
1-2



RECEIVED

OCT 17 2011  
MBS

REGULATORY BRANCH  
CARLSBAD FIELD OFFICE

October 13, 2011

Attention Ms. Cervantes:

We originally sent our comments by email October 7, 2011 but did not receive a response of receipt for the comments as requested. Since then we have discovered additional information and have added to our comments of October 7, 2011. We are therefore submitting a revised set of comments which supersedes the comments submitted October 7, 2011.

Thanks

Al Kalin  
ICFB Environmental Committee Chairman



October 13, 2011

RECEIVED

OCT 17 2011

MBS

REGULATORY BRANCH  
CARLSBAD FIELD OFFICE

U.S. Army Corps of Engineer  
Lanika Cervantes  
6010 Hidden Valley Road, Suite 105  
Carlsbad, CA 92011

Re: Salton Sea Species Conservation Habitat Project

Dear Ms. Cervantes:

The Imperial County Farm Bureau (ICFB) is a private, non-profit advocacy organization that serves approximately 800 members primarily farmers, ranchers, landowners and farm service providers in the Imperial County. As reported in the 2010 Imperial County Agricultural Commissioner's Crop & Livestock Report, the gross value for agricultural products produced in our county was \$1.6 billion from our 450,000 acres of irrigated farmland.

Please find enclosed written comments regarding the Salton Sea Species Conservation Habitat Project. Feel free to contact me with any questions or concerns of our comments that you may have at (760) 352-3831.

Thank you in advance for your consideration.

A handwritten signature in black ink that reads 'Al Kalin'.

Al Kalin  
Chairman  
ICFB Environmental Committee

**Updated Written Comments by the Imperial County Farm Bureau  
Submitted 10/13/2011  
By Al Kalin, Chairman  
Imperial County Farm Bureau Environmental Committee**

**Salton Sea Species Conservation Habitat Project Draft Environmental  
Impact Statement / Environmental Impact Report**

A great deal of what is reported in this Draft EIS/EIR suggests that a lot more is known than is being reported in this document. It therefore becomes very difficult to make logical and intelligent comments.

A lack of O&M costs being reported or costs to construct the various projects are a major concern to the Imperial County Farm Bureau. ICFB-1

Are the fish grown in the acreage of ponds sufficient to feed all the fish eating birds, in particular, the cormorants? Have you studied yield in pounds per acre of fish and possible pounds of fish that could be consumed by the bird population? ICFB-2

High concentrations of birds in the ponds may lead to the higher bird populations in the vicinity of nearby Willey Reservoir, using that reservoir for loafing and fresh water. Their feces could very well increase the E. coli counts in the irrigation water to the point where leafy green vegetables could not be used for irrigation. A very high proportion of the acres around the New River produce leafy green vegetables as well as broccoli, cauliflower, celery, melons, and sweet corn because of the warm micro-climate created by the Salton Sea. 15% to as high as 35% of the water used to grow these crops is pumped from the Willey Reservoir and mixed with water of Vail Main canal. The threat of E. coli counts in the irrigation water as a result of this project directly affects agriculture and must be mitigated. ICFB-3

**2.2.1**

**1. Available Water Rights**

Does the State have a water right or the right to take the water from the New or Alamo Rivers for this project? MWD has filed for the rights to use the water. Will this all end up being a MWD project with MWD getting mitigation credits and trading the New and Alamo River water for Colorado River water? Will the state have to buy this water from MWD? ICFB-4

**2. Available Land**

Have there been any discussions with IID regarding the use of their land for this project? Will the land be leased on a long term basis or purchased? How will IID be indemnified from damage, loss, or injury as a result of this project? Who will be liable for any damages caused by the project, particularly if the project is a long term lease from IID? These are important issues that need further clarification.

ICFB-5

### 3. Adequate Water Supply

There appears to be an adequate water supply for the near future, however in 25 years flows from the Alamo and New Rivers will be diminished considerably and the amount of brackish water needed for projects of this size many not be available. Recent discussions by participants of the Imperial Integrated Regional Water Management Plan have suggested IID drain water might be used for cooling purposes for future geothermal plants. This could affect the quantity of water ultimately flowing to the Salton Sea in the New and Alamo Rivers.

ICFB-6

#### 2.3.1 Actions that Could Affect Inflows to the Salton Sea

Metropolitan Water District's attempt at appropriating the New and Alamo River waters may certainly affect this project including the consequences it would have on the project and IID should they decide to continue with their appropriation claims.

ICFB-7

Page 2-9 Line 12 states that: **"the average inflow to the Salton Sea will average 900,000 acre feet until 2078"**. The Imperial County Farm Bureau believes this assumption is flawed. This assumption assumes past history can be used to predict future inflows and does not take into consideration the changes in farming methods that will conserve water in the future including the change in cropping patterns and methods of irrigation.

ICFB-8

Inflows have already shown a rapid decline since the 2002 when the QSA was signed. According to information furnished by IID, the average four year inflow to the Salton Sea from 2002-2005 was 1,148,957 acre feet per year. The average four year inflow from 2007-2010 was 1,077,172 acre feet per year which is an average of 71,785 acre feet less per year. This includes an average of 38,062 acre feet of mitigation water being delivered to the Salton Sea per year between 2007 and 2010.

During the next 25 years farmers will be tasked with finding new ways to conserve water while still providing the crops with their necessary water demand. Farm practices are already changing with more acres being irrigated every year using drip and sprinkler irrigation which generate little or no surface run-off. By 2035 the Imperial County Farm Bureau estimates that that there will be very little surface run-off, if any, from the fields. The IID drains will only carry subsurface run-off. If this should become fact the estimated flow to the Salton Sea by 2035 will be closer to 500,000 acre feet a year, not 900,000 acre feet as modeled. This

could mean neither river would be able to furnish the required water for this project.

ICFB-8  
Cont.

#### 2.4.1.4 Boat Ramps

A flat-bottom aluminum boat equipped with a long-shaft marsh outdrive is capable of running in extremely shallow water and even mud. The motors are also known as mud motors or backwater motors. At only 40 horsepower, at most, these boat/motor combinations are much cheaper and more cost effective to operate than an airboat and would be perfect for the SCH ponds.

ICFB-9

#### 2.4.1.7 Water Supply

Does the State have a water right or the right to take the water from the New or Alamo Rivers for this project? MWD has filed for the rights to use the water. Will this all end up being a MWD project with MWD getting mitigation credits and trading the New and Alamo River water for Colorado River water? Will state have to buy this water from MWD?

ICFB-10

#### Section 2.0 Page 2-14 (Figure 2-4) also 2.4.1.8. Inflow/Outflow Structures

Figure 2-4 shows a drawing of the precast concrete structure that will be used as a control and outlet structure for the water to move from pond to pond. These structures can only handle a small amount of water. Even the widest precast form available (48" Wide), will only allow 4.7 cubic feet per second (CFS) of water to flow through the structure with six inches going over the grade boards. In June, when evaporation is the highest, the water demand would be 253 CFS for Alternate 3. These small precast structures are fine for little duck ponds of 15 acres. They have no place in ponds exceeding hundreds of acres each. It would be better to install standard IID canal structures that allow for both an overpour and undershot. When demand is high more water could be moved through a bank of 72 inch wide control structures with jack-gates to allow for and set the appropriate undershot and overpour from the same structure.

ICFB-11

#### 2.4.1.10 River Diversion Gravity Diversion Structure

Will the gravity flow river diversion pipe lines run on both sides of the river? This will take up even more valuable farmland. Or will there be a cross-over from one side of the river to the other? If so, how will that be accomplished?

ICFB-12

#### 2.4.1.11 Brackish Water Pipeline

The brackish water pipeline will disrupt farming while being installed and may very well disrupt the farm area of the individual fields it travels across to the point where the land cannot be farmed.

Tile drainage lines below the surface of the farm fields may have to be rerouted, which may prove to be impossible because of slope requirements.

Deep groundwork may not be possible because the equipment may hit the buried pipeline. Lack of subsurface tile drainage in the area of the brackish water

ICFB-13

pipeline will lead to salt buildup and deterioration of the soil making it unfit to grow winter vegetables.

ICFB-13  
Cont.

The last sentence states: **“It is estimated that three 5-foot-diameter pipes would be needed to minimize the velocity in the brackish water pipeline (thereby minimizing head loss).”** By reducing velocity in the pipelines you will also be allowing the sediment to fall out and eventually plug the pipelines.

ICFB-14

#### **2.4.1.12 River Diversion Pump Stations**

These pump stations must not block access to the Salton Sea River deltas through the river channel. The New and Alamo Rivers are the main artery to the Salton Sea for waterfowl hunters and catfishermen, both who use boats launched in the area of current gauge stations to access the sea and/or the river for fishing, hunting, and sightseeing.

ICFB-15

#### **2.4.1.13. Saline Water Supply Pump Station**

Has anyone studied the saltwater delivery system? Will barnacles plug up the pipeline? Where boats have been left floating in the Salton Sea at marinas they usually sink within two years because of the weight of the barnacles that rapidly grow on their hulls.

ICFB-16

Depending where the saltwater pump station is located, it may not be pumping salt water. The water exiting the New and Alamo River Deltas floats on top of the saltwater and moves counterclockwise with the current for some distance depending on the wind and current velocity before mixing with the saltwater. It is possible the saline pumps would then be pumping brackish water.

ICFB-17

The north and northwest winds on the Salton Sea disturb and stir up the mud and sediment out to the 12 foot depth with every high wind over 15 mph. This is also where the majority of the killing hydrogen sulfide is released and red tides form during wind events. The saltwater intake will be in this area and could very well carry saline water to the SCH ponds that would kill the fish in the pond. Are there operational plans to stop saline water from entering tile drainage lines or farm fields when these events occur? That will affect the water balance of the project.

ICFB-18

Are there provisions to run the salt water through a settling pond before dumping into the SCH ponds? Sea water can contain high silt loads after a wind and the silt will most definitely cause accelerated erosion to the pumps and add to the silt load entering the SCH ponds.

ICFB-19

There is no provision noted how the saline pumps will be accessed for their required constant maintenance and replacement. A similar pumping system currently exists in the Willey Reservoir. The three pumps deliver 48 CFS to the Vail 3 heading over 3.5 miles away through a pressurized pipeline. These pumps must be pulled and transported to a repair facility on a frequent basis. They also require an automated trash rack that collects trash and aquatic weeds in the

ICFB-20

water and deposits it in a dumpster that is serviced sometimes twice a day when aquatic vegetation is heavy. In the Salton Sea currents carry floating trash dumped in the sea by the rivers, especially after large rain events or other events that increase the flow of the rivers such as mitigation water being added to the Salton Sea. There is no mention of silt or trash being a problem with the saline pumps. Access to the pumps for maintenance and hauling off the collected trash will be problematic.

ICFB-20  
Cont.

#### 2.4.1.15 Power Supply

Who will be responsible for payment of power? Has anyone even figured out how much power will be needed? If alternative 3 is chosen and water for the ponds will be kept at 20 PPT with a 28 day residence time you would have to supply the power necessary to lift 172 cfs of brackish water out of the New River and pump 80 cfs of saline water from the Salton Sea. This will require a tremendous amount of horsepower. Has anyone calculated how much power this will require or if the infrastructure will even handle that much power?

ICFB-21

**There is no mention of estimated costs for the operation and maintenance of this project, including power. This is important stuff! Why is it missing?**

ICFB-22

#### 2.4.1.16 Sedimentation Basin

The planned one day retention time is only sufficient to remove the sand and heavy fraction of the silt particles. The majority of the silt particles and all of the clay particles will remain suspended and travel to the SCH ponds. The planned sedimentation basins will have very little effect on the turbidity of the river water.

ICFB-23

The planned 2:1 slope of the banks of the sedimentation basin will be prone to sloughing and erosion from wind driven wave action. A buildup of muskrat populations and their holes and burrows along the shoreline, will create massive erosion and sloughing. Wave action forcing water into their burrows and dens will create a hydraulic battering ram which will quickly erode the banks. Nothing in this report shows this type of problem has been considered. The Willey Reservoir, situated on the south side of the New River near the planned New River sedimentation basin, has experienced waves that built to two feet high during strong west winds. A series of serpentine structures in the basin would reduce wind erosion.

ICFB-24

The slopes of the bank should be vegetated with native saltgrass, (*Distichlis spicata*), prior to the initial filling of the sedimentation pond, to reduce erosion, sloughing and the establishment of noxious weeds. Saltgrass is capable of living in very harsh climates, and thrives in saline soils, and grows vigorously with brackish to saline water. The plant is also capable of transferring oxygen to its root system if the root system is submerged below the water for extended periods of time. All of these factors make native saltgrass an excellent ground cover to armor the banks of the sedimentation basin.

ICFB-25

The IID's Vegetation Management Plan promotes the growth of saltgrass to armor their canals and drain banks to reduce sloughing, reduce weed populations, and reduce silt sedimentation in its 3,000 miles of drainage ditches and canals.

ICFB-25  
Cont

**2.4.1.17 Interception Ditch/Local Drainage (Applies to all alternatives)**

Sloughing in the interceptor drain could cause the drainwater to back up into the adjacent field's tile drainage lines. Who would be responsible for maintenance of these drains specifically maintaining the slope and shape of the drain banks as well as controlling unwanted vegetation? Who would pay for this maintenance?

ICFB-26

The Imperial County Farm Bureau requests the interceptor drain be planted with native saltgrass, (*Distichlis spicata*), to reduce erosion in the drain as well as reduce noxious weed from becoming established.

ICFB-27

Since this drain will also be collecting salty seepage water from the SCH ponds it will increase the salinity of the water in the drains. This may affect the natural flora and fauna that reside in the IID drain system. Should the drain plug due to trash, mechanical failure, sloughing or earthquake liquefaction, the adjacent farm fields will be at risk from saltwater backing up into the field tile drainage system and causing damage to the soil and existing crops. Mitigation will be necessary and a planned and funded response program is needed should this happen.

ICFB-28

**2.4.1.18 Aeration Drop Structures**

Unless properly designed the aeration drop structures may cause erosion of the berm where water drops 2-5 feet into the adjacent pond.

ICFB-29

**2.4.1.19 Bird Habitat Features**

The roosting islands planned with steep sides will be subject to erosion on their north and west sides.

ICFB-30

How will salt cedars and other halophytes be controlled on these and other islands planned?

ICFB-31

**2.4.1.20 Fish Habitat Features (Swales or Channels)**

High winds from the west, northwest, and north will stir up large amounts of silt and clay in the ponds which will rapidly fill the swales or channels planned for the project. In addition clay, silt, dead plankton and other detritus will eventually mix with the clay and silt and add to the mix that fills the swales or channels. The swales or channels SCH ponds will quickly become repositories for easily stirred up sediment to foul the ponds every time a wind event greater than 15 miles per hour occurs. The newly built IID Managed Marsh has similar swales next to the berms and they are already half full of silt after only two years of operation.

ICFB-32

**2.4.1.21 Operational Facilities**

Storing boats and other equipment at the Wister Headquarters is both impractical and a waste of fuel and time for ponds built in the New River Delta Area which is 27 miles away from Wister. It would be more practical to store the needed equipment in one or more lockable portable containers on site.

ICFB-33

**2.4.1.22 Fish Rearing**

Rapid plankton growth in the ponds, fueled by high nutrient loads from the water sources, both brackish and saline, may lead to anaerobic conditions at times. The breakdown of dead plankton will reduce oxygen and cause a buildup of hydrogen sulfide that will act as a poison in the ponds as well as lower the pH and create an imbalance in the water chemistry.

ICFB-34

Should a massive fish die-off occur a plan needs to be included for the fast and efficient cleanup and disposal of the dead fish.

ICFB-35

**2.4.1.24 Public Access**

The Salton Sea Delta areas have been favorite waterfowl hunting spots for over a hundred years which is evidenced by the hundreds of blinds that can be seen around the delta of all three rivers that feed the Salton Sea. The SCH pond locations will cover many of these hunting areas. These areas must remain open to waterfowl hunting as they have in the past, including access to the Salton Sea through the New and Alamo River channels. A lease clause in the IID lease with the State must specify that the area will remain open to public access for recreational purposes using gasoline powered boats in the river channels and furthermore that boats have access to the SCH ponds using electric motors. In addition, the current trails along either side of both rivers, which provide access to the delta areas, must remain open to foot, ATV, or off-road traffic.

ICFB-36

**2.4.2.2 Land-Based Equipment**

Tractor pulled or self-propelled scrapers or any other equipment with rubber tires will prove impractical in the areas around the New and Alamo Deltas. The ground is too saturated to support their weight once the top one-half to one foot of soil is removed. Long-reach excavators, working from atop the berm they are constructing may be the only practical way to construct the berms near the Sea. Any dozers or excavators used should be equipped with wide low-pressure tracks.

ICFB-37

**2.4.2.3 Floating Equipment**

There is no information discussing how the barge-mounted excavator or clamshell dredge would be launched in the sea or what precautions taken to protect it during high wind events and rough seas.

ICFB-38

**2.4.2.6 Pumping Plants**

Pumping water directly from the New or Alamo River without first running it through a settling basin will lead to premature erosion of the pump casing and impeller and failure of the pumps as evidenced at the recent pilot project at the

ICFB-39

corner of Davis and McDonald Roads where water was pumped directly from the Alamo River at the end of Garst Road and conveyed through a pipeline to the Pilot SCH ponds.

ICFB-39  
Cont.

#### 2.4.2.10 Interaction with Existing Facilities

It is unfortunate that the authors of this EIS/EIR are unfamiliar with agriculture in the Imperial Valley. It is also unfortunate that they did not accept help and input from locals familiar with agriculture even though assistance was offered.

ICFB-40

An example of interaction with existing facilities is given that states: "If the gravity brackish water pipeline were to intersect an agricultural drain, the drain would be rerouted to bypass the work area until the brackish water pipeline was placed and the backfilled. The drain would then be restored to the pre-Project condition." This statement shows a total lack of knowledge of the IID's drain infrastructure and fails to understand that it is not a simple matter to reroute an IID drain by simply moving it. Tile drainage lines enter the IID drains at a guaranteed elevation and location in the IID drain so that brackish drainwater will not back up into the farmer's field, thus pushing the salt in the water to the surface. The only way the subsurface drain water could be rerouted would be to pump it and maintain the existing unsubmerged tile outlet elevation.

It can be assumed that a brackish water pipeline eventually would have to rise above the level of the tile drainage lines and then the farm fields it is traversing to reach the SCH ponds at the correct elevation. That means these pipelines would end up cutting any farm fields as well as the subsurface drainage lines in half and making it near impossible to farm the field while maintaining the required slope of the land as well as the slope and guaranteed outlet elevation of the tile drainage system.

#### 2.4.2.11 Vehicle Routes

Like the previous section, this section contains faulty information and shows the person that wrote this section has never followed the routes listed.

The route described to reach the New River site follows Bruchard Road, which is a very soft and sandy single lane road in places once it crosses Walker Road. Trucks seldom use this road because they easily become stuck in the sand. Bruchard Road ends at Foulds Road, which is .75 miles south of the project site. The single lane 14 foot wide road that continues north is a ditch bank easement road for IID and farmers which is not suited for truck traffic without major reconstruction. Trifolium Lateral 12 canal/drain runs along the west side of the road and a IID power line and farmer's field, three to four feet lower than the road, runs along the east side of the easement road.

ICFB-41

This road dead-ends at the south side of the New River which is flowing west at this point. This easement road would only access the SCH ponds to the south

and west of the New River. There is no way to get to the other half of the project on the north side of the New River.

ICFB-41  
Cont.

For truck traffic to use this road it would have to be widened. This would require moving the existing power line, taking agricultural land out of production to widen the road, rerouting the field drains along the east side of the road, rerouting the tile drainage lines, as well as moving the two deep tile cisterns and pumps.

Directions to the Alamo site are correct until you reach West Sinclair Road. The directions fail to mention that from there the trucks would travel east on Sinclair Road one mile to Garst Road and then travel 1.65 miles north to the project site.

### 2.4.3 Operations

Plans need to be crafted to address what to do if funding should disappear during construction or after the project is operating. Building this tremendous infrastructure and then walking away from it without a discussion of what would happen to the adjacent agriculture is not advisable.

ICFB-42

### 2.4.5 Mosquito Control

West Nile virus thrives in the Delta areas of the Alamo and New River. From the shoreline of the Salton Sea back 50 to 300 yards, (depending on the slope of the ground), the clay that was deposited as the Salton Sea receded cracks and shrinks as it dries out leaving a web of cracks one inch wide and up to eight inches deep. These cracks then partially fill with seepage water that creates the perfect habitat for mosquitoes to breed. Treatment during construction will be expensive but necessary and may require aerial application of the proper pesticide or larvicide to gain control.

ICFB-43

## 2.5 Alternative 1 – New River, Gravity Diversion + Cascading Ponds

### River Water Source

From looking at the rough map/photograph it appears the brackish water would be diverted into a sedimentation basin just west of Lack Road on the south side of the New River and east of the IID Willey Reservoir and bordered on the south by Foulds Road. This property, currently owned by Jack Brothers, is intensively farmed to winter vegetables, primarily broccoli and cauliflower. By removing this field from agricultural production you would be reducing some of the prime farmland in the Imperial Valley that feeds the nation during the winter months. The rest of the year wheat or export hay is produced.

ICFB-44

The buried gravity pipe lines would have to cross a deep channel (Trifolium Lateral 9 Drain), pass by Willey Reservoir on its south side because there is not enough room between the New River and the Willey Reservoir on the north side. In passing on the south side of Willey Reservoir it would be traversing three fields famed by Del Sol Farms. These three fields also contain prime agriculture ground and are intensively farmed to cauliflower, carrots, tomatoes, cut flowers, potatoes,

ICFB-45

lettuce, broccoli, and sweet onions to feed the nation during the winter months. The rest of the year wheat or export hay is produced. At times they are farmed to alfalfa.

ICFB-45  
Cont.

**Saline Water Source (applies to all Alternatives)**

As the New River brackish water exits the New River Delta into the Salton Sea it floats up on top of the saltwater. Strong counter-clockwise currents immediately carry it in an easterly direction where it follows the shoreline all the way to the Alamo Delta and beyond. The floating freshwater is often found two miles or more out to sea. In other words it does not immediately mix with the saltwater.

The water exiting the New River will float on top of the salt water and not mix for some time depending on wind conditions. During this period Salton Sea Currents will carry the brackish New River water to the area of the saline pump station.

ICFB-46

Where the freshwater and saltwater mix it creates what is known to locals as a scum line. Trash from the New River is concentrated at this scum line. When the scum line is viewed on sonar it shows trash stacked up from the bottom of the sea floor to the surface, trapped there by two different waters with differing specific gravities. The scum line is constantly moving, carrying the trash with it and is often in the area near the proposed saline pump intake. A system of trash racks would have to be built and maintained on a constant basis. There are no plans showing how this trash will be removed from the pump station, one out in the Salton Sea.

Hydrogen sulfide is a poison, generated by rotting algae and plankton that settles on the bottom. The hydrogen sulfide is often trapped by a thermocline and then released during wind events. Red Tides are also generated in this area. Both the hydrogen sulfide and water from the poisonous red tide will be picked up by the saline pump and transported to the pond site where it will poison the fish and invertebrates.

ICFB-47

In addition, the floating freshwater carries heavy silt loads. Depending where the saltwater pump station and intake is located brackish water, heavily laden with silt will be pumped to the SCH ponds instead of saline water.

ICFB-48

To further complicate matters, north and northwest winds on the Salton Sea disturb and stir up the mud and sediment on the bottom of the Salton Sea out to a depth of 12 feet with every high wind over 15 MPH. The saltwater intake will be in this area. Are there provisions to run the salt water through a settling pond before dumping into the SCH ponds? Sea water can contain high silt loads after a wind and most definitely will cause accelerated erosion to the pumps and siltation at the SCH ponds.

ICFB-49

**Sedimentation Basin**

The Draft EIS/EIR states the diverted brackish water would be retained in the sedimentation basin for one day to allow the silt to settle out. This is not sufficient time. Only the sand and heaviest fraction of silt will settle out in one day leaving the majority of the silt and clay particles in suspension.

ICFB-50

The Draft EIS/EIR also states that a 60 acre sedimentation basin would be constructed and excavated below the ground surface to 20 feet. It is impossible to excavate much more than five feet below the surface because the weight and vibration of the equipment will create hydraulic pumping leading to liquifaction of the soil.

ICFB-51

A 60 acre area excavated to 20 feet below the surface will generate 1,936,000 cubic yards of soil. The plan does not address where this amount of soil would be deposited. To put this amount of soil in proper perspective, if a dike were constructed using this large amount of spoil, and its dimensions were 100 feet wide at the base, 20 feet wide at the top, and 15 feet high, there would be enough soil to build a dike of this size over 11 miles long. Furthermore if you loaded all the truck and trailers necessary to haul this much dirt and parked them end to end they would reach from the Salton Sea to the Mississippi River near Memphis.

ICFB-52

### Conceptual Layout of Alternative 1

As currently drawn, the exterior berm in the far northeast corner of East New pond and interception drain, cuts through 15 acres of private land owned by Sea View Conservancy. The legal description of this property is: The east ½ of the southeast ¼ of section 23, township 12 south, range 12 east, San Bernardino baseline meridian. This property is part of a long term Audubon California Landowner Stewardship Project and any disturbance is forbidden.

ICFB-53

## 2.6 Alternative 2 – New River, Pumped Diversion

### River Water Source

The metal bridge which crosses the New River and is used to support the diversion pipes that carry the pumped water to sediment basins on either side of the New River must remain high enough to allow boat traffic to pass underneath the structure.

ICFB-54

### Saline Water Source

Please refer to comments made for Alternative 1.

ICFB-55

### Sedimentation Basins (applies to Alternative 3 also)

No information is given on how the sedimentation basin is constructed, how deep it will excavated or where the spoil will be put. Hopefully it is not similar to the sedimentation basin described for Alternate 1.

ICFB-56

### Conceptual Layout of Alternative 2

As currently drawn, the exterior berm in the far northeast corner of East New pond and interception drain, cuts through 15 acres of private land owned by Sea View Conservancy. The legal description of this property is: The east ½ of the southeast ¼ of section 23, township 12 south, range 12 east, San Bernardino baseline meridian. This property is part of a long term Audubon California Landowner Stewardship Project and any disturbance is forbidden.

ICFB-57

The map/photo shows no connection to the interception drain for the Trifolium Lateral 12 drain. In addition there is no information regarding the size of the interception drain, how deep it will be, or which direction the two drains flow. Has any surveying been done to determine if the interception drain can successfully intercept the IID lateral drains at the correct elevation and then be able to transport the IID drain water around the project and into the Salton Sea?

ICFB-58

### 2.7 Alternative 3 – New River, Pumped Diversion + Cascading Ponds

#### River Water Source

The metal bridge which crosses the New River and is used to support the diversion pipes that carry the pumped water to sediment basins on either side of the New River must remain high enough to allow boat traffic to pass underneath the structure.

ICFB-59

#### Saline Water Source

Please refer to comments made for Alternative 1.

ICFB-60

#### Sedimentation Basins

No information is given on how the sedimentation basins are constructed. Hopefully it is not similar to the sedimentation basin planned for Alternate 1.

ICFB-61

#### Water Demand

The Imperial County Farm Bureau developed a water demand model to better understand the amount of daily evaporation in the SCH ponds and therefore the amount of saline and brackish water need daily throughout the year to keep the ponds at a static level. This model is useful in determining the amount of saline and brackish water that is needed for various alternatives, various salinity of the rivers and Salton Sea, and various residence times. It shows that when salinity of the SCH ponds exceeds 28 PPT the amount of saline water required almost equals the amount of river water required.

ICFB-62

There is no mention of the amount or cost of power necessary to pump the tremendous amounts of water required or the cost of maintenance of the pumps and pump intake stations.

ICFB-63

#### Pond Connectivity

Without knowing the acres of each individual pond or the size of the control structures it is impossible to judge whether the control structures planned for

ICFB-64

each individual pond is of sufficient size. It would be best if the control structures were wider and used jack gates like those used on the IID canal system so that the gates can be set with an undershot which will handle much more water than a control structure that uses a overpour control structure. The jack gates used by the IID can easily be set for an undershot and also be able to handle an overpour at the same time should a summer flash flood occur in the area, where dumping three inches of rain in a half hour period is not uncommon.

ICFB-64  
Cont.

### **Conceptual Layout of Alternative 3**

As currently drawn, the exterior berm in the far northeast corner of East New pond and interception drain, cuts through 15 acres of private land owned by Sea View Conservancy. The legal description of this property is: The east ½ of the southeast ¼ of section 23, township 12 south, range 12 east, San Bernardino baseline meridian. This property is part of a long term Audubon California Landowner Stewardship Project and any disturbance is forbidden.

ICFB-65

The map/photo shows no connection to the interception drain for the Trifolium Lateral 12 drain. In addition there is no information regarding the size of the interception drain, how deep it will be, or which direction the two drains flow. Has any surveying been done to determine if the interception drain can successfully intercept the IID lateral drains at the correct elevation and then be able to transport the IID drain water around the project and into the Salton Sea?

ICFB-66

### **Aerial Backgrounds of all the Alternatives**

It is unfortunate that the aerial backgrounds shown for all alternatives are not current photographs. Current photographs were easily available and one local aerial photography company even offered their services to the consultant for the project but were told their services were not needed. It is very difficult to comment on the Draft EIS/EIR when the Salton Sea has evaporated numerous feet and the shoreline has receded ¼ to ½ mile than shown on the photos being used.

ICFB-67

## **2.8 Alternative 4 – Alamo River, Gravity Diversion + Cascading Pond**

### **Saline Water Source (Comments apply to Alternatives 4 & 5)**

This plan is lacking detail but it appears the saline water will be conveyed through the old original Red Hill Marina access channel build in the 1950's. It is unclear where the pumps will be located. The plan says the pump will be located in the Sea west of Red Hill but the map/photo show it on land near Red Hill. The original channel was armored with rock and appears to still be usable if the actual channel were cleaned with a long-reach excavator and extended out into the sea to deeper water. Like the current channel, a dog-leg at the western tip of the channel would have to be included in the plan to keep silt from building up at its entrance. The channel could also be extended around Red Hill, all the way to the south side of the Garst Road Bridge on the Alamo River negating the need for a

ICFB-68

pump in the sea. There is no discussion how the saline water will be conveyed across the Alamo River to the north side to the ponds.

ICFB-68  
Cont.

As discussed earlier in this report this plan will have to address the following issues:

- River water, laden with trash, floating on top of the salt water at the inlet point of the channel and only brackish water entering the pumps
- High silt loads during wind events
- Hydrogen sulfide being released during high wind events and being transported to the SCH ponds
- Red tides forming near the channel inlet and being transported to the SCH ponds
- Sediment buildup in the actual channel

ICFB-69

### **Sedimentation Basin**

The location of the sedimentation basin is not well described but appears to be prime farm land owned by Brant Family Farms and currently irrigated from Vail Lateral 1. If it is built similar to the sedimentation basin described for Alternative 1 the same comments made for that project will apply here as well.

ICFB-70

It also appears that the water will be conveyed west through the three massive pipelines from the planned sedimentation basin. The lines would have to cross the Vail 2 drain, Kalin Road (Paved), Vail 2 Canal, Vail 2A drain, Hatfield Road, Vail 2A Canal, Vail 3 drain, then turn north, following Garst Road to the south side of the Alamo River, cross the Alamo River, and finally arrive at the SCH pond location on the north side of the Alamo River. It is unclear how these pipe lines would cross the Alamo River to reach the pond site.

ICFB-71

The described area where the sedimentation pond and pipe line to the SCH pond site is planned is also an area that has shown tremendous subsidence in the past 25 years. IID engineers have recorded 15 inches of subsidence in the area. As a result it has become difficult to deliver the amount of water in the IID canals that they were originally designed to handle. The farmer who farms most of this area has had to re-level his property, abandon and re-install tile drainage lines, and replace his concrete lined supply ditch because of subsidence.

ICFB-72

### **Pond Layout (Comments apply to all Alamo Projects)**

The location of the ponds for Alternative 4 is situated in the middle of the most active area of CO<sup>2</sup> vents and mud pots at the Salton Sea. If all of this CO<sup>2</sup> is trapped by the ponds it will lead to massive algae blooms, the reduction of dissolved oxygen, the lowering of the water's pH, and production of hydrogen sulfide, all of which will kill any fish and invertebrates trying to be grown. In the past, natural currents carried the high concentrations of CO<sup>2</sup> out of the area and diluted it with the Salton Sea water.

ICFB-73

### **Agricultural Drainage and Natural Runoff**

According to the map/photo on page 2-43 there is no provision for the IID N, O, and P Lateral Drains to exit to the Salton Sea. According to the plan, they are blocked by the project's berm and have no access to the interceptor drain.

ICFB-74

IID's N,O, P, Q, R, and S Lateral drains currently empty directly into the Salton Sea. In the mid 90's when the Salton Sea reached it's highest elevation and started to recede, it deposited a barnacle shoal along the shoreline east of Mullet Island. The barnacle shoal was high enough to block the drain water from the various alphabet drains that drained directly into the sea but it was very porous and drain water flowed through the barnacle shoal and into the sea. In the process though, it flushed the saltwater from the shoal and soil underneath. Eventually silt was trapped and salt cedar seeds germinated and the salt cedars rooted down, anchoring the barnacle shoal. As time went by the shoal blocked more silt and eventually the water from the alphabet drains began to pond up behind the natural berm and aquatic plants began to grow. First alkali bulrush and later cat-tails as the salt was leached out of the soil and a beautiful marsh, close to 1,000 acres in size, was formed.

ICFB-75

The interceptor drain should not disturb this marvel of nature and should be constructed to the west of the natural barnacle shoal berm.

## 2.9 Alternative 5 – Alamo River, Pumped Diversion

### Pond Location

The photo/map on page 2-47 shows that the north end of the north pond at Wister Beach is on private property owned by Al & Carson Kalin. The legal description of this property is: The west ½ of section 34, township 10 south, range 13 east, San Bernardino baseline meridian. The southeast corner of this property is one mile west of the intersection of Davis and Spoony Road.

ICFB-76

### Agricultural Drainage and Natural Runoff

According to the map/photo on page 2-47 there is no provision for an interceptor drain to pick up the drain water for IID Q, R, S, T, and U Lateral Drains. According to the plan, they are blocked by the project's berm. The natural freshwater wetland fed by these drains have no way to exit to the Salton Sea.

ICFB-77

### Berm Configuration

The photo/map on page 2-47 shows a river berm between McDonald and Hazard Road. There is no river at that location.

ICFB-78

## 2.10 Alternative 6 – Alamo River, Pumped Diversion + Cascading Ponds

### Saline Water Source

The water exiting the Alamo River will float on top of the salt water and not mix for some time depending on wind conditions. Salton Sea Currents will carry the

ICFB-79

brackish Alamo River water to the area of the pump station. Where the freshwater and saltwater mix, it creates what is known to locals as a scum line. Trash from the Alamo River is concentrated at this scum line. If the scum line is viewed on sonar it will show trash stacked up from the bottom of the sea floor to the surface. The scum line is constantly moving and it is often in the area near the saline pump intake. A system of trash racks would have to be built and maintained on a constant basis.

ICFB-79  
Cont.

This plan will have to address the following issues:

- Brackish Alamo river water floating on top of the salt water at the pumping platform
- High silt loads being picked up during wind events
- Hydrogen sulfide being released during high wind events and picked up by the saline pump
- Red tides forming near the pump inlet and being transported to the SCH ponds
- Maintenance of the trash racks to keep trash from entering the pump

ICFB-80

#### **Pond Location**

The photo/map on page 2-51 shows that the north end of the north pond at Wister Beach covers over 100 acres of private property owned by Al & Carson Kalin. The legal description of this property is: The west ½ section 34, township 10 south, range 13 east, San Bernardino baseline meridian. The southeast corner of this property is one mile west of the intersection of Davis and Spoony Road.

ICFB-81

#### **Agricultural Drainage and Natural Runoff**

According to the map/photo on page 2-51 there is no provision for an interceptor drain to pick up the drain water for IID Q, R, S, T, and U Lateral Drains or drainage from the Wister Ponds. According to the plan, they are blocked by the project's berm. The natural freshwater wetlands fed by these drains or Wister Ponds have no way to exit to the Salton Sea.

ICFB-82

#### **3.11.2.5 Surface Water Hydrology**

##### **Salton Sea**

**Page 3.11-7, Lines 8-10 state: "These return flows have decreased in recent time, largely because of water transfers from Imperial Valley and resulting water conservation measures."** This statement is incorrect. Water conservation measures resulting from the transfers out of the Imperial Valley will not begin until 2017, therefore water conservation measures have nothing to do with the decrease of return flows.

ICFB-83

In the meantime as water is transferred out of the valley freshwater from the Colorado River is being added to the Salton Sea at the rate of 1 acre foot for every 2 acre feet transferred out of the Imperial Valley for the express purpose of stopping the Salton Sea from receding because of the water transfers. The

ICFB-84

addition of this mitigation water will end 2017 and on-farm conservation measures will supposedly take up the slack.

ICFB-84  
Cont.

Less water is being delivered to the Salton Sea because of a long term drought, because crops are changing in the valley which require less water, and because irrigation methods of some crops are changing, resulting in no surface water and in some cases less subsurface water leaving the fields.

ICFB-85

### **Alamo River**

The first sentence is incorrect. The Alamo River may have originated in the Mexicali Valley at one time, but since the All-American Canal was built in the 40's the Alamo River now originates at the south side of the All-American Canal on the eastern boundary of Calexico where a concrete control structure blocks its flow from Mexico. Any flow originating at this point is seepage from the All-American Canal. Tile drainage lines and field run-off dump into a pool at the base of the control structure and start their way towards the Salton Sea.

ICFB-86

### **3.11.2.6 Surface Water Quality**

#### **Sediment**

**Page 3.11-13, last sentence.** The flows listed for the New and Alamo Rivers are incorrect but the annual sediment loading is correct.

ICFB-87

### **3.11-18**

#### **Phosphorus**

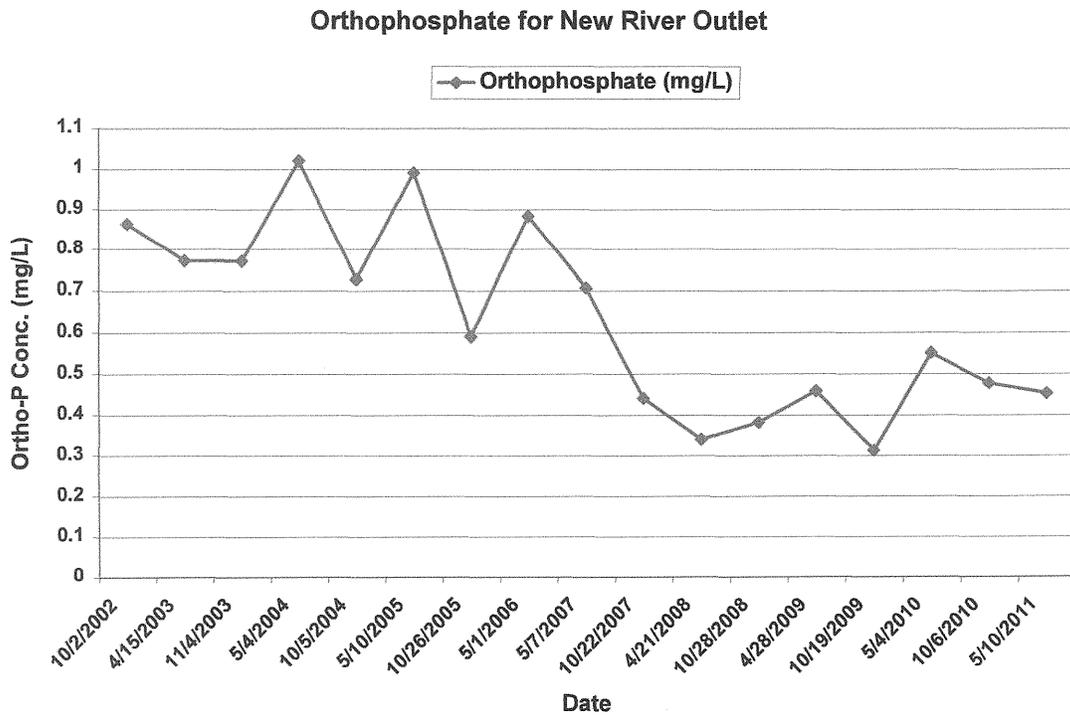
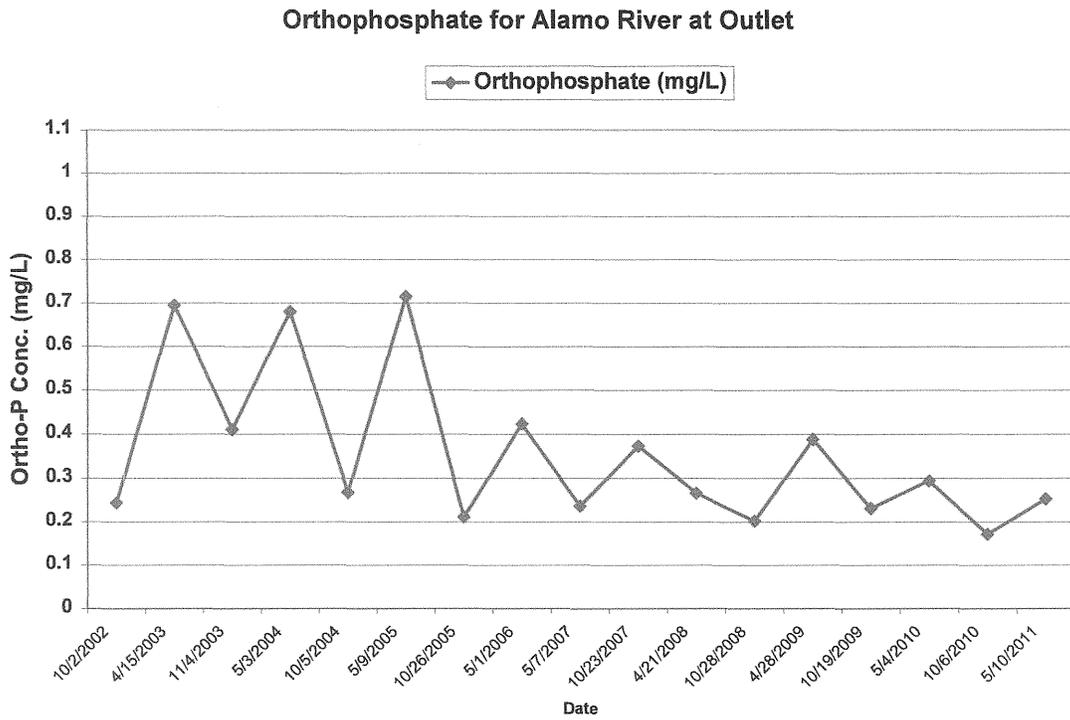
#### **Line 35 (Regarding phosphate levels in the New and Alamo Rivers)**

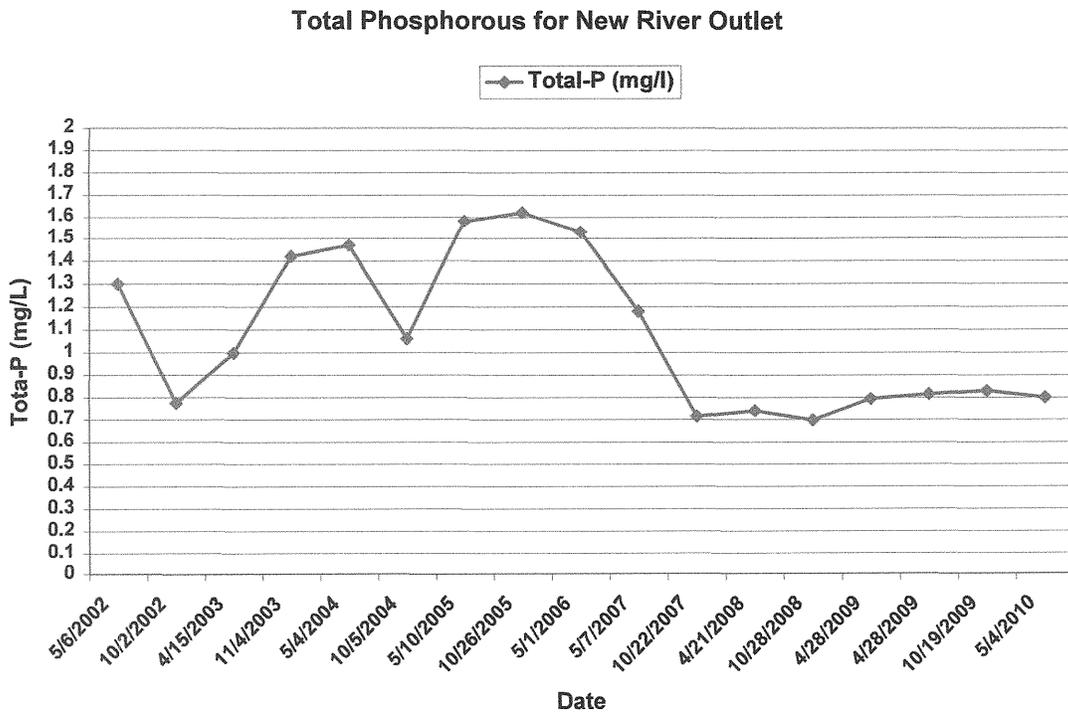
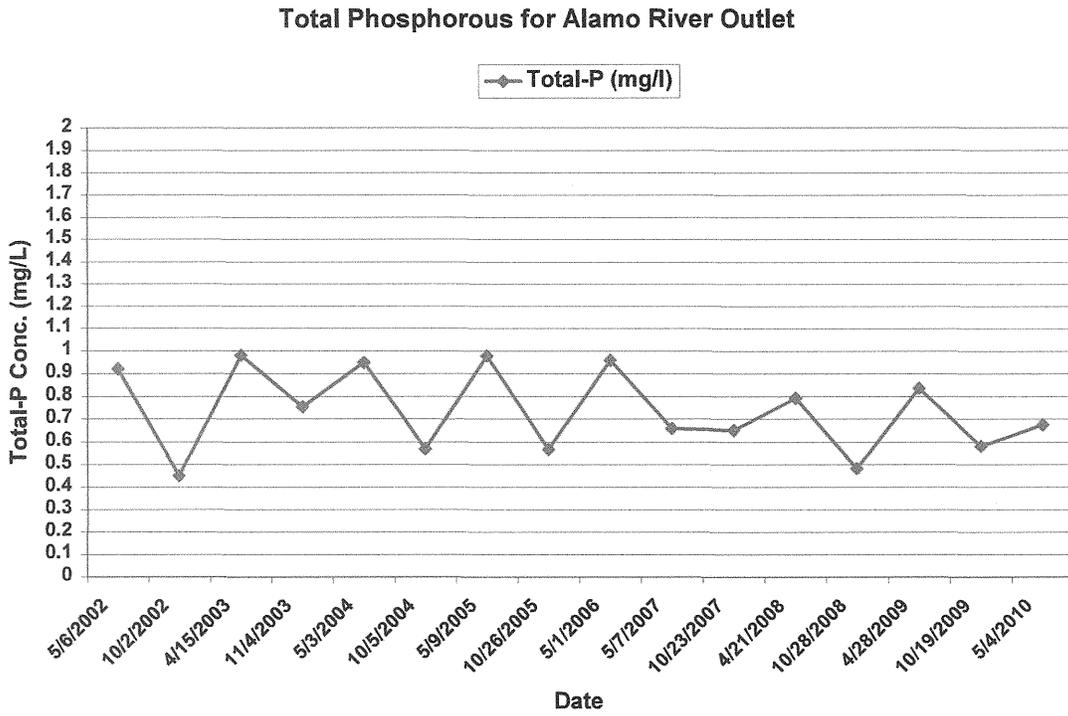
Line 35 states: "Nutrient concentrations have not decreased recently, despite TMDLs for total suspended solids and phosphorus or changes in agricultural practices (personal communication, C. Holdren Reclamation, 2010)." This statement by Chris Holdren, Reclamation, seems to contradict the monitoring done on the New and Alamo Rivers by Region 7 Regional Quality Control Board staff. SWAMP findings show tremendous reductions of phosphate loading in the New and Alamo Rivers.

ICFB-88

Shown below, are the graphs furnished by:  
Nadim Shukry-Zeywar, Senior Environmental Scientist  
TMDL Unit Chief  
CA Regional Water Quality Control Board  
Colorado River Basin Region  
73-720 Fred Waring Drive, Suite 100  
Palm Desert, CA 92260

SWAMP Phosphorous Data for the Alamo River and the New River





### 3.2 AGRICULTURAL RESOURCES

#### Impacts on Agricultural Resources

Of the six alternatives at the New and Alamo River Deltas, Alternatives 1 and 4 create the most negative impacts for Agriculture.

ICFB-89

First, the sedimentation ponds remove prime agriculture land from production in perpetuity. This is not the same as fallowing where agricultural land can easily be put back into production. In other words, the land is lost forever for producing food to feed our nation. Not only is there a loss of income to the farmer, there is also lost water sales to the IID and all the service providers that service the farmer with goods and services as well as the labor required to farm the field.

ICFB-90

Secondly, the conveyance pipe lines will directly impact the farmability of agricultural land that they cross, perhaps making it impossible to farm those fields depending on their elevation.

ICFB-91

All agricultural fields are leveled to allow surface irrigation water to flow across them ultimately ending up at the lowest point of the field. The conveyance lines may interrupt the flow of this water keeping the field from receiving water if the lines are above ground.

ICFB-92

The majority of fields in the Imperial Valley have tile drainage lines, installed four to seven feet below the surface, to collect and remove the leached salts from the irrigation water. These underground lines are all tied together and installed at the correct slope, just like the levels of the fields, to allow the surface drain water and subsurface tile water to exit the field and into the IID drain ditch at the lowest point of the field. The conveyance lines crossing an agricultural field very well could disrupt the entire tile drainage system and make it impossible to leach salts from a portion of the field.

ICFB-93

The third point is that Imperial Valley fields are worked up to 45 inches deep with massive rippers every year to help leach the salts down to the tile drainage lines. Any underground conveyance pipes crossing a farm field may keep the farmer from tilling his field as deep as he needs to.

ICFB-94

As mentioned earlier in this report, the tremendous amount of soil removed from the planned sedimentation ponds would be the largest excavation of soil in agricultural history in the Imperial Valley. Absolutely no mention is made of what will be done with the excavated soil, almost two million cubic yards worth, or even how it is possible to dig below the five foot level without the heavy equipment becoming bogged down as liquefaction creates an unworkable excavation site. This is a major undertaking yet it is glossed over in this Draft EIS/EIR. In the description of the sedimentation basin for Alternative 4 there is

ICFB-95

even less information about the project than in the description for Alternative 1 which leaves one guessing about construction, location of the sedimentation pond or the route the pipe lines will take. Obviously there is a planned location for the two sedimentation ponds as well as a planned route for the pipe lines yet the amount of information included in the report is minimal to the point it leads one to believe it was done on purpose.

ICFB-95  
Cont.

Adding to these three problems is the fact that the location of both sedimentation ponds for Alternatives 1 and 4 are on land currently enrolled in the Williamson Act.

ICFB-96

Looking at all the major concerns listed above, the Imperial County Farm Bureau believes Alternatives 1 and 4 create significant and unavoidable impacts which may not be easily mitigated.

ICFB-97

#### 3.2.4.4 Alternative 1 – New River, Gravity Diversion + Cascading Ponds

**Impact AG-1: Construction of the diversion and conveyance facilities and brackish water pipeline maintenance would temporarily disrupt agricultural production but would not permanently convert Farmland to nonagricultural use (less-than-significant impact).**

The construction and resulting conveyance pipelines would cause significant and unavoidable impact where the 220-foot right-of-way crossed producing agricultural land. The natural slope of the tile drainage systems would be disrupted. The conveyance lines would make it impossible to reroute the tile system while maintaining the correct slopes. IID drain ditches would also be affected and again the slopes and guaranteed outlet elevations for the tile system of adjoining field would be disrupted. If the buried conveyance lines crossed producing agricultural land the farmer would not be able to do the deep groundwork normally done to help leach salts downward and allow plant roots to grow unimpeded. Diverting a IID drain or tile system temporarily or permanently would be problematic. For these reasons the Imperial County Farm Bureau believes there would be a significant and unavoidable impact to agriculture.

ICFB-98

**Impact AG-2: Construction of the sedimentation basin would result in the permanent conversion of a small amount of Farmland to nonagricultural use (less-than-significant impact).**

60 acres would be permanently lost with the construction of the sedimentation pond. This Draft EIS/EIR argues that 60 acres is minimal compared to the 5,000,000 acres in production in the Imperial Valley. There are only 473,000 acres in production in Imperial Valley, not five million acres as stated. The Draft EIS/EIR goes on to argue that the 60 acres removed from agriculture is minimal compared to the 40-50 thousand acres of farmland that is fallowed yearly in Imperial Valley. Fallowing has nothing to do with trying to justify removing 60 acres in perpetuity from farming. Fallowed ground is ground that has been brought into production, leveled, tilled, ditches installed, and farmed at one time

ICFB-99

but is no longer being farmed. Fallowed ground can easily be farmed again just by tilling the soil, planting and irrigating. The same is not true of land removed from agricultural production in perpetuity. The Imperial County Farm Bureau believes there would be a significant and unavoidable impact to agriculture.

ICFB-99  
Cont.

### 3.2.4.7 Alternative 4 – Alamo River, Gravity Diversion + Cascading Ponds

**Impact AG-1: Construction of the diversion and conveyance facilities and brackish water pipeline maintenance would temporarily disrupt agricultural production but would not permanently convert Farmland to nonagricultural use (less-than-significant impact).**

The construction and resulting conveyance pipelines would cause significant and unavoidable impact where the 220-foot right-of-way crossed producing agricultural land. The natural slope of the tile drainage systems would be disrupted. The conveyance lines would make it impossible to reroute the tile system while maintaining the correct slopes. IID irrigation and drain ditches would also be affected and again the slopes and guaranteed outlet elevations for the tile system of adjoining field would be disrupted. If the buried conveyance lines crossed producing agricultural land the farmer would not be able to do the deep groundwork normally done to help leach salts downward and allow plant roots to grow unimpeded. Diverting an IID drain or tile system temporarily or permanently would be problematic. For these reasons the Imperial County Farm Bureau believes there would be a significant and unavoidable impact to agriculture.

ICFB-100

**Impact AG-2: Construction of the sedimentation basin would result in the permanent conversion of a small amount of Farmland to nonagricultural use (less-than-significant impact).**

37 acres would be permanently lost with the construction of the sedimentation pond. This Draft EIS/EIR argues that 37 acres is minimal compared to the 5,000,000 acres in production in the Imperial Valley. There are only 473,000 acres in production in Imperial Valley, not five million acres as stated. The Draft EIS/EIR goes on to argue that the 37 acres removed from agriculture is minimal compared to the 40-50 thousand acres of farmland that is fallowed yearly in Imperial Valley. Fallowing has nothing to do with trying to justify removing 37 acres in perpetuity from farming. Fallowed ground is ground that has been brought into production, leveled, tilled, ditches installed, and farmed at one time but is no longer being farmed. Fallowed ground can easily be farmed again just by tilling the soil, planting and irrigating. The same is not true of land removed from agricultural production in perpetuity. The Imperial County Farm Bureau believes there would be a significant and unavoidable impact to agriculture.

ICFB-101

### 3.4.3.3 Wildlife Page 3.4-17 Lines 3-5

At the top of the page it states that the eared grebe population is the greatest in January with a peak of over 5,000 individuals. This statement is correct but the peak actually amounts to over 1 million individuals in some years and represents

ICFB-102

over 95% of the continental population according to the U.S. Fish and Wildlife Service.

ICFB-102  
Cont.

**3.4.3.3 Wildlife Page 3.4-18 Lines 15-19**

The black tern is most prevalent in July, August, and September and predominately feed on insects flying above farm fields being summer flooded to leach the salts down to the tile lines. (Al Kalin – Audubon California Imperial Valley Landowner Stewardship Program Coordinator 2009)

ICFB-103

**Table 3.4.4 Special-Status Species Potentially affected by the SCH Project**

The potential to be present for the American peregrine falcon is high, not moderate as reported. The American peregrine falcon is a very common visitor to the New and Alamo River Delta year around. It is often found perched on the shady side of a power pole on the metal brace that braces the cross arm. Is also found perched on snags in the small bay east of the New River Delta where it feeds on waterfowl in the winter and nesting black-necked stilts in the spring and summer. Cattle egrets feeding on insects in irrigated bermudagrass fields are also a common prey for the American peregrine falcon. In the Alamo River area they are commonly seen around Obsidian Butte, Lookout Hill, Red Hill and perched on the power lines in the area, particularly along Davis Road. Again, the potential to be present is high. (Al Kalin – Audubon California Imperial Valley Landowner Stewardship Program Coordinator 2009)

ICFB-104

The burrowing owl is a common resident of the New River Delta where it prefers to build its burrows and nest in the holes created by the large rock rip-rap used to armor the dike that separated the farmland from the Salton Sea between the New River and Alamo Deltas. In some areas of the dike there are as many as three nesting pair per half mile. These owls must be inventoried and mitigated for during any construction. (Al Kalin – Audubon California Imperial Valley Landowner Stewardship Program Coordinator 2009)

ICFB-105

**3.11-30 Line 18 Reduce the flow in a river to the detriment of downstream water users**

Reducing the flow of the rivers at the pumping stations or sedimentation basins will have a substantial impact on the velocity of the river downstream and create problems with silt/sedimentation fallout thus plugging the river and backing the water up. This action will back water into agricultural drains in Alternatives 1 and 4 and possibly submerge subsurface tile outlets with guaranteed elevations. The reduction of river flow will also lead to noxious vegetation taking over the channel if it is not kept dredged out.

ICFB-106

**3.11-30 Line 42**

It is not clear what is meant by the sedimentation basin storing 6 feet of water.

ICFB-107

**3.11-31 Line 2**

ICFB-108

The last sentence states: **“Because of these design elements, this criterion is not a Project impact and is not considered further.”** It should be considered further! Building a sedimentation basin 15-20 below adjacent field levels right next to the rivers is an impossibility given the funding and scope of this project. The surrounding water tables will not allow for it. As stated previously, the enormous size of the excavations, the dewatering necessary, the disposition of the spoil from the project, **all make the project ludicrous and certainly calls attention to the credibility of those that produced this draft document.**

ICFB-108  
Cont.

### **3.19.1.2 Commodity Specific Food Safety Guidelines for the Production and Harvest of Lettuce and Leafy Greens**

High concentrations of birds in the ponds may lead to the higher bird populations in the vicinity of nearby Willey Reservoir, using that reservoir for loafing and fresh water. Their feces could very well increase the E. Coli counts in the irrigation water to the point where this irrigation water could cause leafy green vegetables to be rejected by the marketing order. A very high proportion of the acres around the New River produce leafy green vegetables as well as broccoli, cauliflower, celery, melons, and sweet corn because of the warm micro-climate created by the Salton Sea. 15% to as high as 35% of the water used to grow these crops is pumped from the Willey Reservoir and mixed with water of the Vail Main canal. A very large portion of the fields irrigated by Vail Laterals 1 through 7 off the Vail Main produce leafy green vegetables. The threat of high E. Coli counts in the irrigation water as a result of this project directly affects agriculture and must be mitigated.

ICFB-109

## **Affected Environment, Impacts, and Mitigation Measures**

### **3.19.3.4 Alternative 1 – New River, Gravity Diversion + Cascading Ponds**

#### **Impact SOC-1: Project construction and operations would cause an increase in local employment (beneficial impact)**

It is doubtful that this project would generate many jobs for local workers. Although Table 3.19-2 shows a pool of 4,700 available construction workers it is doubtful very many are qualified to operate heavy machinery which is where the majority of help is needed. Currently the work on the third phase of the Brawley By-Pass has required hundreds of trucks to haul fill dirt for the road and overpass. The majority of these trucks being used have out of county names on their doors. One can only assume the same will be true during construction of this project and very few from Imperial Valley will be employed.

ICFB-110

#### **Impact SOC-5: The SCH Project would result in the temporary loss of agriculture revenue due to construction and maintenance activities in the water pipeline right-of-way (less-than-significant impact).**

The loss to agriculture, with the construction of the sedimentation pond and pipe line would not be temporary.

ICFB-111

**Impact SOC-6: Pipeline construction would require the temporary disruption of Agricultural drains and canals (less-than-significant impact).**  
As stated earlier, it can be assumed that the brackish water pipelines eventually would have to rise above the level of the tile drainage lines and eventually the farm fields they are crossing to reach the SCH ponds at the correct elevation. That means these pipelines would end up cutting any farm fields as well as the subsurface drainage lines in half and making it near impossible to farm the field while maintaining the required slope of the land as well as the slope and guaranteed outlet elevation of the tile drainage system.

ICFB-112

The loss of farmland in perpetuity means the loss of tax revenue to the county, loss of revenue to farmers, as well as agricultural service providers such as seed companies, fertilizer companies, pesticide companies, tractor companies, hardware stores, custom harvesters including hay and grain, and just as importantly the loss of income from the sale of water and loss to laborers. Water sales help pay for the maintenance of canals and drains that service the area near the proposed sedimentation pond and brackish water pipeline.

There appears to be no impact noted for the loss of farm land and how that affects the local economy in an area that prides itself in feeding the nation.

### **3.19.3.7 Alternative 4 – Alamo River, Gravity Diversion + Cascading Ponds**

**Impact SOC-1: Project construction and operations would cause an increase in local employment (beneficial impact)**

It is doubtful that this project would generate many jobs for local workers. Although Table 3.19-2 shows a pool of 4,700 available construction workers it is doubtful very many are qualified to operate heavy machinery which is where the majority of help is needed. Currently the work on the third phase of the Brawley By-Pass has required hundreds of trucks to haul fill dirt for the road and overpass. The majority of these trucks being used have out of county names on their doors. One can only assume the same will be true during construction of this project and very few from Imperial Valley will be employed.

ICFB-113

**Impact SOC-5: The SCH Project would result in the temporary loss of agriculture revenue due to construction and maintenance activities in the water pipeline right-of-way (less-than-significant impact).**

The loss to agriculture, with the construction of the sedimentation pond and pipe line would not be temporary.

ICFB-114

As stated earlier, it can be assumed that the brackish water pipelines eventually would have to rise above the level of the tile drainage lines and eventually the farm fields they are crossing to reach the SCH ponds at the correct elevation. That means these pipelines would end up cutting any farm fields as well as the subsurface drainage lines in half and making it near impossible to farm the field

ICFB-115

while maintaining the required slope of the land as well as the slope and guaranteed outlet elevation of the tile drainage system.

ICFB-115  
Cont.

**Impact SOC-6: Pipeline construction would require the temporary disruption of Agricultural drains and canals (less-than-significant impact).** As stated earlier, it can be assumed that the brackish water pipelines eventually would have to rise above the level of the tile drainage lines and eventually the farm fields they are crossing to reach the SCH ponds at the correct elevation. That means these pipelines would end up cutting any farm fields as well as the subsurface drainage lines in half and making it near impossible to farm the field while maintaining the required slope of the land as well as the slope and guaranteed outlet elevation of the tile drainage system.

ICFB-116

As noted for Alternative 1 there appears to be no impact noted for the loss of farm land and how that affects the local economy in an area that prides itself in feeding the nation.

ICFB-117

The loss of farmland in perpetuity means the loss of tax revenue to the county, loss of revenue to farmers, as well as agricultural service providers such as seed companies, fertilizer companies, pesticide companies, tractor companies, hardware stores, custom harvesters including hay and grain, and just as importantly the loss of income from the sale of water. Water sales help pay for the maintenance of canals and drains that service the area near the proposed sedimentation pond and brackish water pipeline.

ICFB-118

### **Figure 3.20-3 Road Network around the New River**

At 2.4.2.11 it was pointed out that the access route to Alternatives 1, 2, and 3 were incorrect. Figure 3.20-3 shows a map with an entirely different route to access Alternative 1, 2, and 3 and it too is incorrect. The map shows the route leaving Highway 78/86 at McNearny Road. This is impossible since McNearny Road does not connect to Highway 78/86.

ICFB-119

### **3.20.3.4 Alternate 1 – New River, Gravity Diversion + Cascading Ponds**

See comments at 2.4.2.11

In addition, there is no mention of traffic impact to the proposed construction site for the sedimentation basin or the mitigation measures needed.

ICFB-120

### **3.20.3.7 Alternate 4 – Alamo River, Gravity Diversion + Cascading Ponds**

The construction of the sedimentation basin and multiple pipe lines are not even mentioned or considered. There is nothing discussed regarding the movement of hundreds of thousands of cubic yards of soil and where the spoil would be put. In addition there will be miles of pipe lines that will pose serious impacts during construction as well as after construction since the pipe lines would be crossing

ICFB-121

ag land, ag tile drainage systems, private canals and drains, IID canals and drains, county roads and geothermal pipe lines.

ICFB-121  
Cont.

#### 4.3.6 Energy Consumption

**Line 42** – How does this project produce electrical energy as stated?

ICFB-122

**Line 44** – States diesel powered pumps will be used to deliver saline water to the projects. Everywhere else in the Draft EIS/EIR it talks about electrical pumps being used. The efficiency of the saline pump will be low if the three pumps used on the Willey Reservoir are any indication and would create a significant impact in the operational and management costs of the project. Diesel pumps also generate great quantities of air pollution.

ICFB-123

Stakeholder Comments

## Salton Sea Species Conservation Habitat Project

Submitted by	Company	Date Submitted
Alexander Schriener Jr Director of Geothermal Resources (760) 348-4044 <a href="mailto:alexander.schriener@calenergy.com">alexander.schriener@calenergy.com</a>  and  Randy Keller Director of Development (760) 348-4005 <a href="mailto:randy.keller@calenergy.com">randy.keller@calenergy.com</a>	CalEnergy Operating Corp. 7030 Gentry Road Calipatria, CA 92233	October 14, 2011

CalEnergy comments to the Draft Environmental Impact Study/Environmental Impact Report (EIS/EIR) sponsored by the California Natural Resources Agency, U.S. Army Corps of Engineers, Department of Fish and Game, and Department of Water Resources (collectively, the Agencies) and presented at public meetings held in Brawly and Palm Desert, CA on September 14 and 15, 2011, respectively.

CalEnergy owns and operates ten existing geothermal electricity generating plants within the Salton Sea Known Geothermal Resource Area (SSKGRA) located in the vicinity of the southern shore of the Salton Sea. These facilities provide 342 megawatts (MWs) of reliable low-cost base-load renewable power. CalEnergy's current development plan of an additional 470 MWs of generating facilities at the Salton Sea will help California meet its Renewable Portfolio Standards (RPS) goals of 33% by 2020.

CalEnergy generally supports the Agencies' initiative to develop the Species Conservation Habitat (SCH) projects to restore shallow water habitat lost due to the ongoing increasing salinity and receding shoreline of the Salton Sea. While these projects will be a significant first step to provide habitat for both fish and bird species dependent on the fragile Salton Sea ecosystem; these projects overlap in part with the valuable known geothermal resource that also occupies the southern shore of the Salton Sea. If built as proposed, these ponds would restrict and possibly deny access to the geothermal reservoir and thus deeply hamper and even in some cases eliminate future development of renewable geothermal energy.

CE-1

CE-2

A review of the draft EIS/EIR document identifies and acknowledges the existence of the SSKGRA; however, the EIS/EIR contains no detailed discussion or supporting documentation of limits of the SSKGRA. Nor does the draft EIS/EIR discuss the published limits of the Salton Sea geothermal reservoir. Both these outlines should have been overlay on the proposed Alternatives. To that end we offer Figures 1, 2 and 3. Figure 1 shows the limits of the SSKGRA, as defined by the United States Geological Survey, and the two proposed EIR/EIS SCH project sites associated with the New and Alamo Rivers. Figures 2 and show the proposed limits of the Salton Sea geothermal reservoir overlaid on the EIR/EIS SCH project sites.

CE-3

Figure 1 displays the limits of the SSKGRA, which is approximately 136 square miles in size and covers most of the southern area of the Salton Sea, both on and off shore. The limits of the SSKGRA overlap on about one-half of the proposed New River SCH sites (Alternatives 1-3) and all of the proposed Alamo River SCH sites (Alternatives 4-6). Figure 1 further shows the proposed limits of the Salton Sea geothermal reservoir, as estimated by shallow thermal gradients (modified from figure 6 in Hulen, Kaspereit, Norton, Osborn, and Pulka, 2002, Refined Conceptual Modeling and a New Resource Estimate for the Salton Sea Geothermal Field, Imperial Valley, California, Geothermal Resources Council Transactions, Vol 26, p. 29-36). A copy of the reference paper is provided as attached to these comments. The proposed limits of the geothermal reservoir is about 34 square miles and is currently the best estimate of where the existing and potential limit of the Salton Sea geothermal reservoir.

CE-4

Figures 2 and 3 are a more detailed display of the limits of the Salton Sea geothermal reservoir overlain on the two proposed EIR/EIS SCH project sites. Specifically note how all but a small part of the most eastern-portion of the New River SCH Alternatives 1-3 area is within this boundary, whereas virtually all of the Alamo River SCH alternatives are within the geothermal resource estimate. CalEnergy believes that this type of analysis should have been included in the EIR/EIS to give the stakeholders a clear view of how the proposed alternatives will impact development of renewable geothermal energy.

CE-5

CalEnergy notes that the draft EIS/EIR lacks any of the supporting documentation which detailed the discussions and input from the geothermal industry operators in and around the Salton Sea geothermal field. In addition, there is no discussion of how the alternatives, placed in the middle of the projected geothermal field and on land under lease for geothermal development, were designed to accommodate expected impacts typically associated with development, construction, and operation of a geothermal power plant that would now be adjacent to a SCH. The deficiency is improper and should be rectified.

Specifically, CalEnergy will not support and will object to any habitat designed, proposed or permitted associated with the Alamo River area. Of the six alternative habitats presented; Alternatives 4, 5, and 6 are associated with the Alamo River. These proposed Alternatives are located predominately on Imperial Irrigation District (IID) mineral and surface interest lands where CalEnergy has a current and active geothermal mineral lease. CalEnergy is working with the IID to develop these lands for renewable geothermal energy, as outlined in the lease. The SCH Alternatives 4-6 would greatly hamper or even halt our ability to develop renewable

CE-6

energy from these lands. Even if SCH projects were proposed and permitted but never constructed in the Alamo River area, the very existence of permits could, in the eyes of regulatory and financial agencies, throw into doubt that any overlapping geothermal development could exist in the same area.

CE-6  
Cont.

Due to these likely adverse impacts on the development of renewable energy in the Alamo River area, CalEnergy proposes insertion to the EIS/EIR report that there is to be a moratorium of thirty years, from 2011 to 2041, before any habitat project is built within the limits of the Salton Sea geothermal field (as defined by Hulen and others, 2002) and specifically in the Alamo River area.

CE-7

The eastern-most portions of Alternatives 1, 2, and 3 also may impact CalEnergy's and the IID's ability to utilize the renewable resource. The eastern-most portion encroaches on the boundary of CalEnergy's existing field operations and our offshore expansion. CalEnergy would support a modified version of Alternatives 1, 2, and 3 if the habitats were scaled back to only occupy the shoreline west of the New River. It is CalEnergy's understanding that the Natural Resources Agency's preferred Alternative 3 is proposed to be phased construction and that the initial pond would satisfy this "west of the New River" concept. In addition, it was discussed at the Palm Desert meeting on September 15, 2011, that current funding in place would cover the construction costs of this initial pond and that any further phases would seek significant additional funding.

CE-8

While CalEnergy will support a modified preferred Alternative 3 habitat, we are concerned that implementation of the permitting process of all the alternative sites will create unnecessary regulatory/permitting barriers associated with the future development of the SSKGRA. Therefore, as previously discussed, CalEnergy requests that any permitting effort should only include the preferred Alternative 3, modified to exclude SCH east of the New River.

CE-9

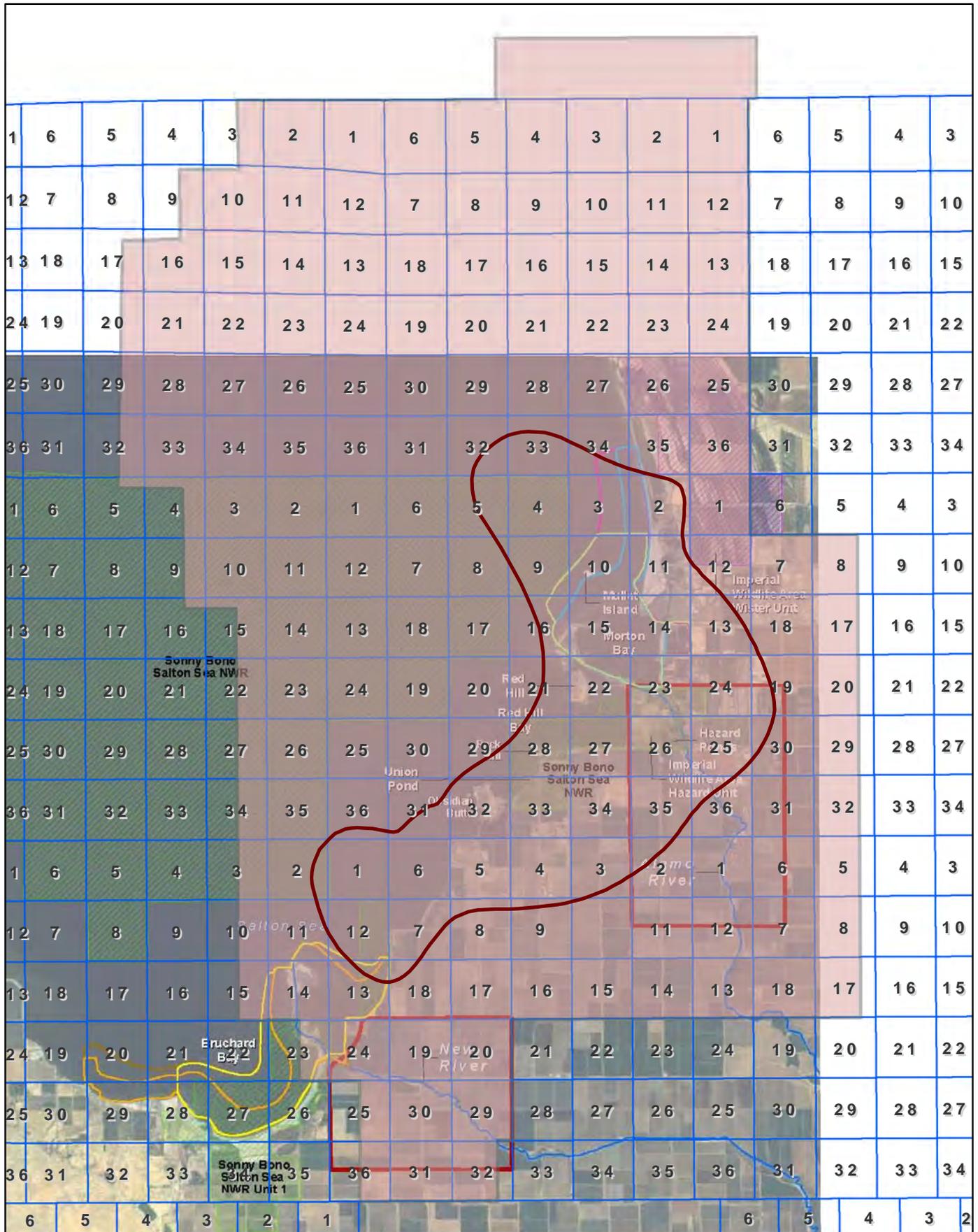
Finally, an opportunity for project sponsors to participate in the continued phased development of Alternative 3 to provide impact mitigation has been overlooked. Presently, in the draft EIS/EIR there is no administrative mechanism available for project sponsors to take advantage of this type of "in lieu" of mitigation. Nor is there an administrative mechanism for mitigation "banking". Any permitting of the preferred Alternative 3 should require a clearly defined administrative mechanism for both "in lieu" mitigation and "banking".

CE-10

CalEnergy commends the California Natural Resources Agency, U.S. Army Corps of Engineers, Department of Fish and Game, and Department of Water Resources staffs in their efforts to take this initial step and stands ready to support this process by participating in stakeholder initiatives as necessary.

CE-11

**Figure 1 - Salton Sea Shallow Thermal Anomaly, Known Geothermal Resource Area (approximate location) & Species Conservation Projects**

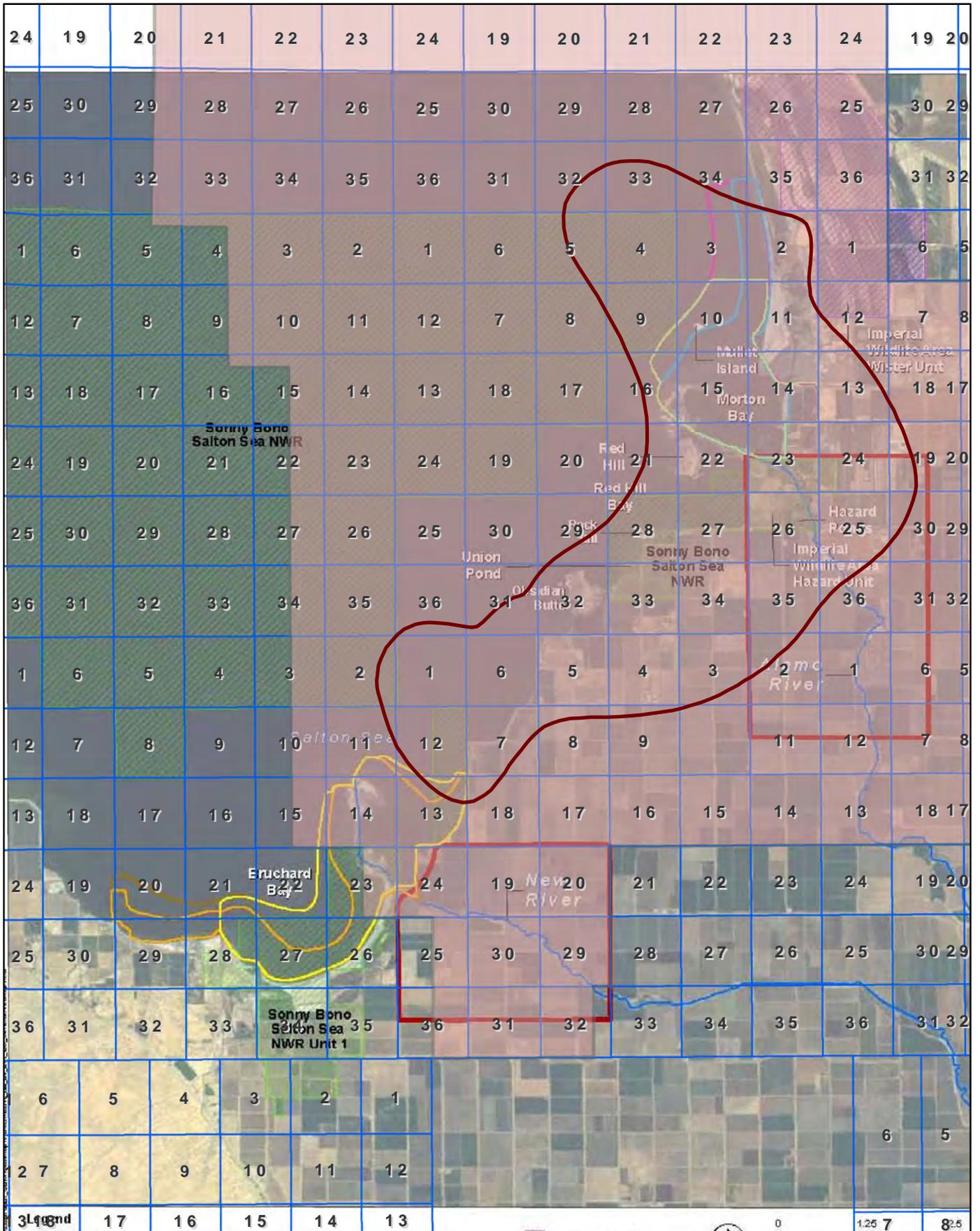


Scale 1:140,000  
CA State Plane, VI - NAD83 FT

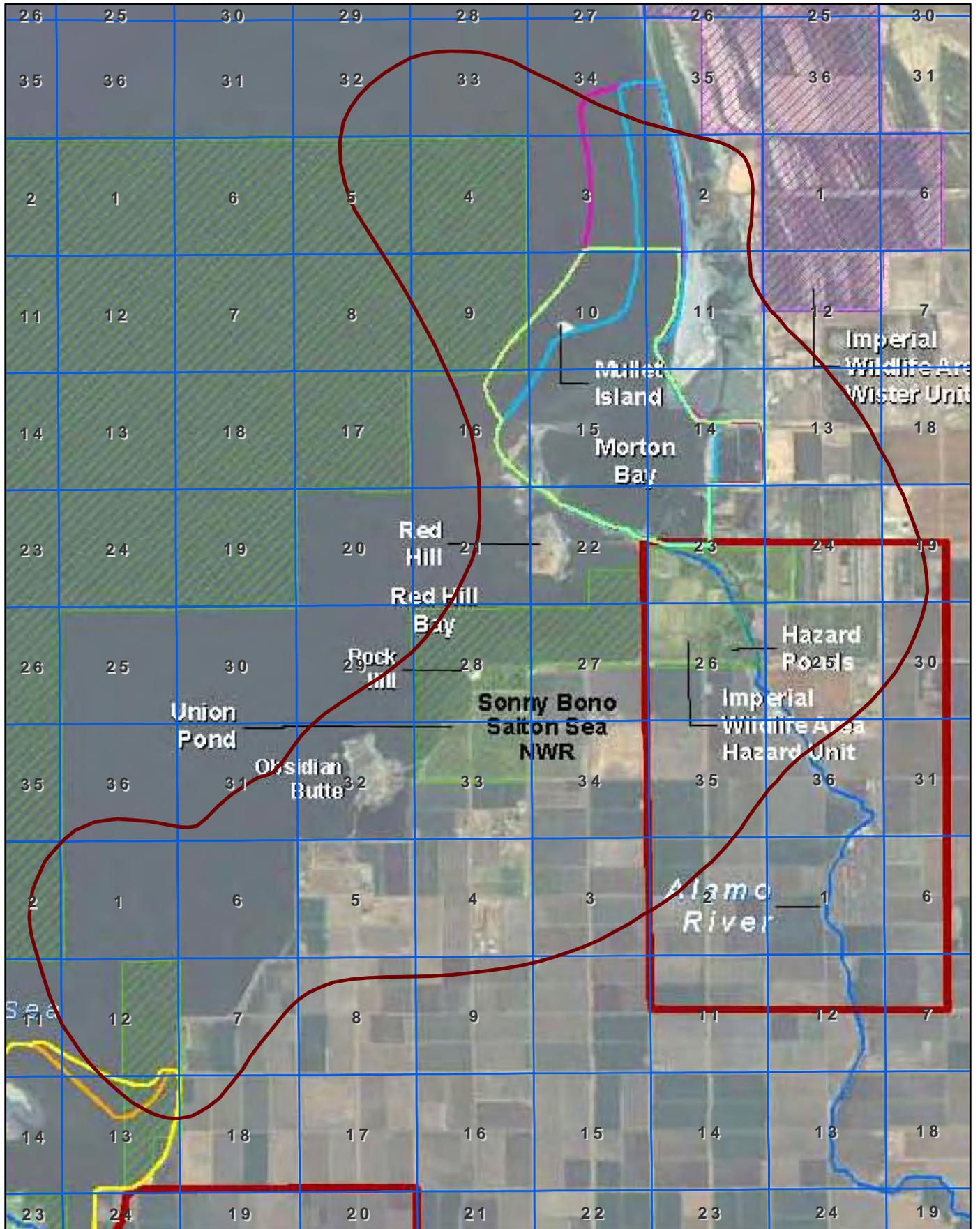


October 6, 2011  
J. Trujillo

**Figure 2 - Salton Sea Shallow Thermal Anomaly, Known Geothermal Resource Area (approximate location) & Species Conservation Projects**



**Figure 3 - Salton Sea Shallow Thermal Anomaly & Species Conservation Projects**



## Refined Conceptual Modeling and a New Resource Estimate For the Salton Sea Geothermal Field, Imperial Valley, California

<sup>1</sup>Jeffrey Hulen, <sup>2</sup>Dennis Kaspereit, <sup>3</sup>Denis L. Norton,  
<sup>2</sup>William Osborn and <sup>2</sup>Fred S. Pulka

<sup>1</sup>Energy & Geoscience Institute, University of Utah, 423 Wakara Way, Salt Lake City, UT 84108

<sup>2</sup>CalEnergy Operating Corporation, 7030 Gentry Road, Calipatria, CA 92233

<sup>3</sup>Geologist/Geochemist, Stanley, ID 83278

### ABSTRACT

Interim results of a new conceptual modeling effort for the Salton Sea geothermal field (SSGF), in the Salton Trough of southernmost California, show that this resource: (1) is hotter at depth (up to at least 389°C at 2 km) than initially thought; (2) is probably driven by a still-cooling felsic intrusion rather than (or in addition to) the primitive mafic magmas previously invoked for this role; (3) may be just the most recent phase of hydrothermal activity initiated at this site as soon as the Trough began to form ~4 m.y. ago; (4) is thermally prograding; and (5) in spite of 30 years' production has yet to experience significant pressure declines.

Thick (up to 400 m) intervals of buried extrusive rhyolite are now known to be common in the central SSGF, where temperatures at depth are also the hottest. The considerable thicknesses of these concealed felsic volcanics and the lack of corresponding intermediate-composition igneous rocks imply coeval granitic magmas that probably originated by crustal melting rather than gabbroic magmatic differentiation. In the brine-saturated, Salton Trough sedimentary sequence, granitic plutons inevitably would engender convective hydrothermal systems. Results of preliminary numerical modeling of a system broadly similar to the one now active in the SSGF suggest that a still-cooling felsic igneous intrusion could underlie deep wells in the central part of the field by no more than a kilometer. The model results also indicate that static temperature profiles for selected Salton Sea wells could have taken 150,000 to 200,000 years to develop, far longer than the 20,000 years cited by previous investigators as the probable age of the field. The two viewpoints conceivably could be reconciled if the likely long hydrothermal history here were punctuated rather than prolonged. Configurations of the temperature profiles indicate that portions of the current Salton Sea hydrothermal system are still undergoing thermal expansion.

A newly consolidated, field-wide reservoir database for the SSGF has enabled us to re-assess the field's ultimate resource potential with an unprecedented level of detail and confidence. The new value, 2330 MW<sub>e</sub> (30+ year lifetime assured) closely

matches an earlier estimate of 2500 MW<sub>e</sub> (Elders, 1989). If this potential were fully developed, the SSGF might one day satisfy the household electrical-energy needs of a fourth the present population of the State of California.

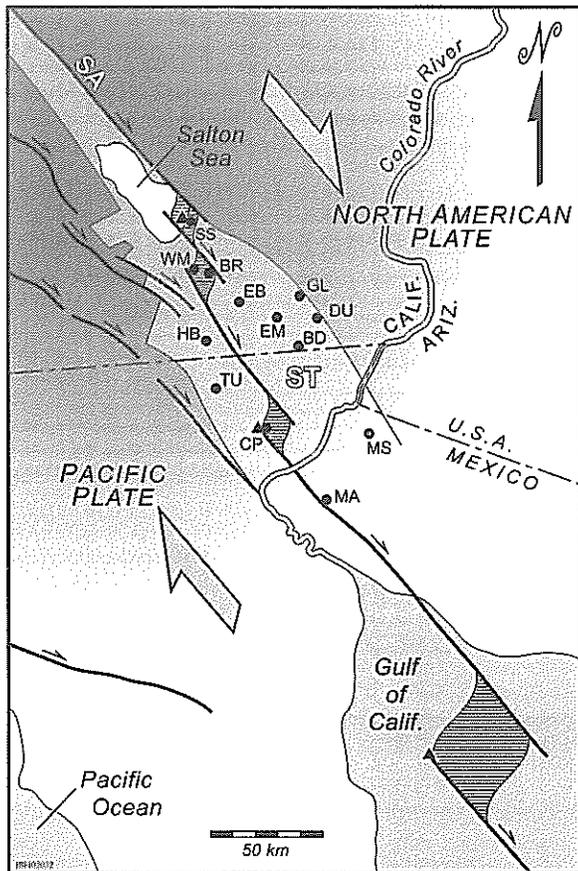
### Introduction

Because of their distinctive geologic setting and plate-tectonic significance, the Salton Trough and the SSGF (Figure 1) have anchored a number of landmark scientific investigations (e.g., White *et al.*, 1963; Helgeson, 1968; Elders *et al.*, 1972; Elders, 1984; Lachenbruch *et al.*, 1985; Elders and Sass, 1988; Williams and McKibben, 1989). For years, however, scientific studies of the field were hampered by the reasonable proprietary concerns of neighboring geothermal companies exploring and developing the field. The field is now operated by a single company, CalEnergy Operating Corporation (CEOC). As a result, researchers are now permitted judicious access to previously confidential reservoir data and borehole samples.

The Energy & Geoscience Institute, University of Utah, is collaborating with CEOC to develop a refined conceptual model for the entire SSGF. The new model will advance basic understanding of the dynamics of incipient continental breakup, while providing new insight into the mechanisms by which high-temperature hydrothermal systems here and elsewhere in the region have arisen and evolved above asthenospheric-mantle-rooted, sediment-smothered spreading centers. The model will also help enable CEOC to develop, expand, and sustain the field with optimum efficiency, profitability, and environmental responsibility.

### Geologic Setting and Prior Investigations

The Salton Trough, a major transtensional basin in southernmost California and northern Mexico (Figure 1, overleaf), is the structural and physiographic northern extension of the Gulf of California (Elders *et al.*, 1972; Elders, 1979; Lonsdale, 1989). The Gulf and the Trough straddle a continental rift separating



- Extent of "normal"<sup>1</sup> crystalline continental crust according to Fuis and Kohler (1984)
  - Pull-apart zone at extensional overstep
  - Geothermal fields
  - Quaternary volcanoes
  - 4-5 m.y.-old incipient continental rift zone
  - High-angle faults; arrows show displacement
- <sup>1</sup>Quotation marks are the writers'

**Figure 1.** Location and tectonic map of the Salton trough (ST) and its high-temperature geothermal systems relative to the southeastern terminus of the San Andreas transform fault zone (SA) and the tip of the Gulf of California. Geothermal fields (not all currently producing abbreviated as follows: BD – Border; BR – Brawley; EB – East Brawley; EM – East Mesa; GL – Glamis; HB – Heber; MA – Mesa de Andrade; MS – Mesa de San Luis; SS – Salton Sea; TU – Tulecheck; WM – Westmoreland; Large arrows show modern relative motion of tectonic plates. Note location of SS and CP fields within two prominent pull-apart zones, which also host the Trough's only exposed Quaternary volcanoes. Synthesized and redrawn from Elders *et. al.*, (1982); Lachenbruch *et. al.*, (1985); and Elders and Sass (1988).

the Pacific plate, to the west, from the North American Plate, on the east. Subsiding pull-apart basins above ocean-type spreading centers scattered along the length of the rift host vigorously active magma-hydrothermal systems. Two of these systems in the Trough, at Cerro Prieto and the SSGF, are among the world's largest and hottest.

The Trough began its existence in Oligocene to Miocene time as a coaxial but broader and shallower proto-rift, developed as a Basin-Range-style back-arc basin in response to subduction of the Farallon plate beneath the North American plate (Karig and Jensky, 1972; Herzig and Jacobs, 1994). Oligocene to Miocene basalts along the margins of the modern Trough attest to the lithospheric thinning, heating, and characteristic mafic-alkaline magmatism that accompanied the older rifting episode.

The modern Trough started to form at about 4 Ma (Elders *et. al.*, 1972; Crowell, 1974; Lonsdale, 1989), as the proto-rift was further extended and ultimately ruptured to the asthenosphere to create a new and more landward margin between the Pacific and North American plates. The margin has evolved as a series of right-stepping, right-lateral transforms, linked at the oversteps by pull-apart basins (Elders *et. al.*, 1972).

The Trough was filled as it subsided by sediments from the Colorado River, which constructed a transverse alluvial dam ("the delta") across the basin, impeding further marine incursions. Thereafter, frequent diversion of the River northward into the Trough rather than the Gulf supplied enormous volumes of water and sediment to the developing rift. As a result, the Trough is now filled by up to 6 km of fluid-saturated sandstone, siltstone, and mudstone (Merriam and Bandy, 1965; Muffler and Doe, 1968; Van de Kamp, 1973; Fuis and Kohler, 1984; Herzig *et. al.*, 1988).

The nature of the basement in the Trough remains conjectural. Gravity and seismic data suggest that low-density sediments rest upon an intermediate-density basement extending to about 12 km depth. The intermediate basement, in turn, overlies a higher density layer extending to the base of the crust at about 23.5 km (Moore, 1973; Fuis and Kohler, 1984; Elders, 1984; Lachenbruch *et. al.*, 1985; Elders *et. al.*, 1997). This deep layer is inferred to be gabbro, added to the crust to compensate isostatically for the low-density sediments supplied from above. The intermediate crust permissibly could be: (1) hydrothermally metamorphosed Trough-fill sediments (Muffler and White, 1969); (2) pre-Trough continental crust, thinned and sparsely intruded by gabbro; or (3) some combination of these end-member alternatives.

Heat sources for the high-temperature geothermal systems of the Salton Trough have traditionally been envisioned as gabbroic (e.g., Elders, 1984; Elders *et. al.*, 1997). We will show later in this paper that in the upper crust of the SSGF, granitic heat sources not only cannot be ruled out, they are probably the most likely candidates.

Production fluids for the SSGF are brines (up to at least 30% total dissolved solids/TDS; e.g., Helgeson, 1968). The brines are believed to have originated largely through dissolution, during intermittent flooding of the Trough by the Colorado River, of saline residues left in the wake of evaporating lakes much like the modern Salton Sea and its immediate predecessor, Lake Cahuilla (Sykes, 1937; Elders, 1979; Rex, 1983; Osborn, 1989; McKibben and Hardie, 1997).

Williams and McKibben (1989) determined that the SSGF brines have a crude vertical salinity (and therefore density) zonation. Deeper brines, generally below depths of about 1000

m, are exclusively hypersaline (20-30 wt.% TDS). Shallower brines range in TDS down to a few per cent. The deeper and hotter fluids are also metalliferous (McKibben and Hardie, 1997), having precipitated sparse but widespread base-metal veinlets in the past (e.g., McKibben and Elders, 1985). At present, high-purity electrolytic zinc is being extracted from the brines by CEOC; the eventual annual yield of the metal is anticipated to reach 30,000 tons.

### Extent and Configuration Of the SSGF Heat Anomaly

As one phase of our modeling effort, we have revised a map of the shallow thermal-gradient anomaly encompassing the SSGF. Figure 2 documents the extensive borehole control on which the revision is based; the new map is shown as Figure 3. The general “boomerang” or “porkchop” shape of the anomaly has changed little from Newmark *et. al.*, (1988), but the newer drilling results show the feature to be more areally extensive (72.4 km<sup>2</sup>). The revised map also reveals a more complex configuration of shallow “hot spots” within the anomaly.

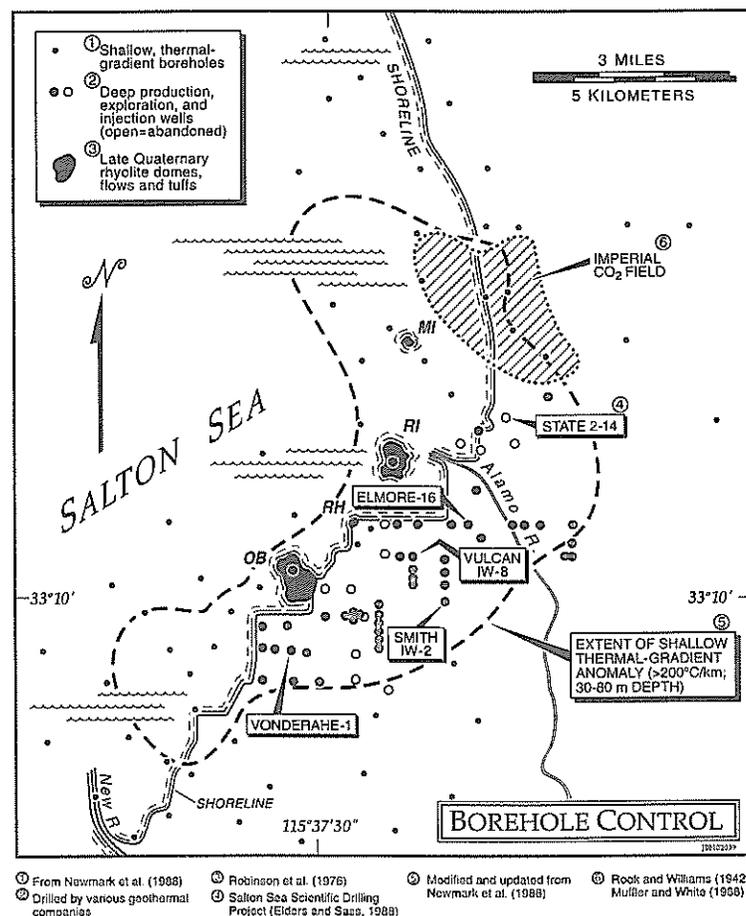


Figure 2. Borehole control for an updated shallow thermal-gradient map of the Salton Sea geothermal field and vicinity (Figure 3).

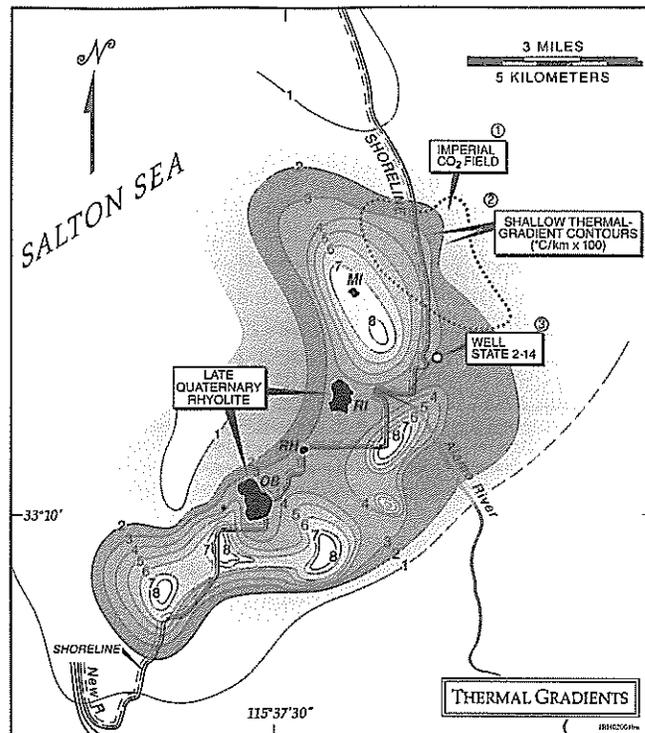


Figure 3. The Salton Sea shallow thermal-gradient anomaly, based on data available through June 2002. Revised and updated from Newmark *et. al.*, (1988). MI – Mullet Island; OB – Obsidian Butte; RH – Rock Hill; RI – Red Island.

### Felsic Volcanism and the Nature of the Heat Source

We have alluded to the idea that granitic rather than gabbroic plutons could well be the immediate principal heat sources for the SSGF. The major reason for this contention is the unexpectedly large volume of buried extrusive rhyolite penetrated in central SSGF wells since 1997. Hulen and Pulka (2000) documented such rhyolites and associated phreatomagmatic tuffs up to several hundred meters thick and concealed beneath 1.6 km of Trough-fill sedimentary rocks in injection wells Smith IW-2 and Vulcan IW-8 (Figure 2). Since then, a new high-temperature production well, Elmore-16 (Figure 2) has penetrated, below a depth of 1.5 km, three separate rhyolite intervals with an aggregate thickness of 400 m.

The felsic melts that erupted to form the exposed rhyolite domes of the SSGF have been cited as the products of either crustal melting (Robinson *et. al.*, 1976) or (on the basis of additional isotopic evidence) magmatic differentiation (Herzig and Jacobs, 1994). The latter interpretation is presently preferred, but the Salton domes are thin (30-150 m) and volumetrically modest features; all four volcanic centers probably aggregate less than 0.5 km<sup>3</sup>. By contrast, the implied volume of the newly discovered buried rhyolites is much larger. These felsic volcanics are up to several

hundred meters thick. Rhyolites of this thickness elsewhere commonly occur in flow-dome fields (e.g., at Coso, California; Duffield *et. al.*, 1979) that may be up to several cubic kilometers in volume.

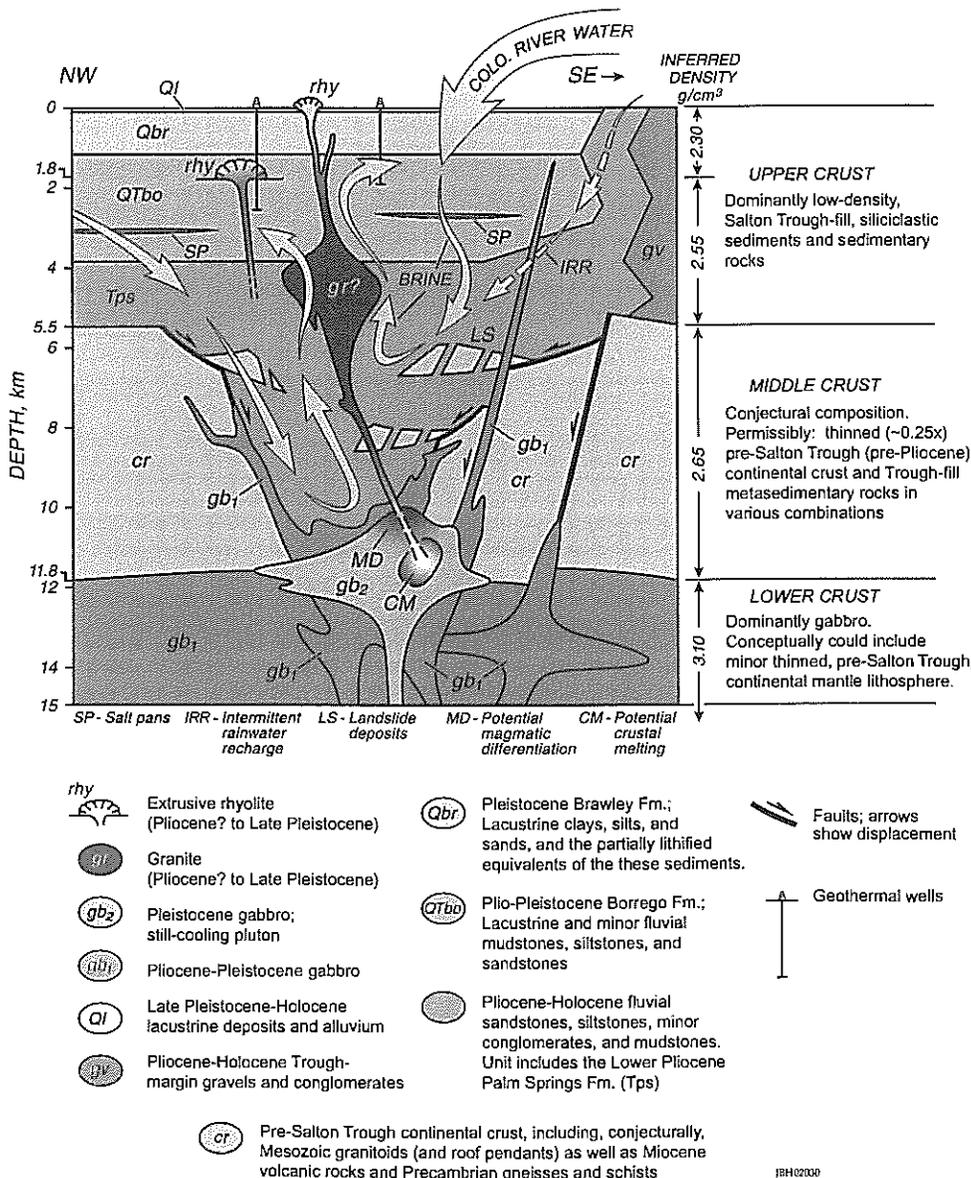
Even without pending isotopic confirmation, we feel confident in asserting that the newly discovered buried rhyolite bodies and the dome field(s) they imply in the central SSGF cannot have originated simply by differentiation from a mafic magmatic parent. If these felsic igneous rocks (and those yet undrilled) are as voluminous as indicated, then their origin as differentiates would seem to mandate a much larger volume of intermediate-composition magma and its crystallization products, for example andesite or granodiorite. No such rocks have

been reported for the SSGF; only mafic and felsic varieties. In view of this distinctly bimodal igneous-rock suite, we suggest that crustal melting is a much more likely means of producing all or most of the rhyolite encountered at depth in the SSGF.

Smith and Shaw (1975) argue that young rhyolites can be excellent indicators of sizable, high-temperature geothermal systems. The reason is that the rhyolites are typically associated with large, initially viscous, slowly cooling granitic magma bodies, the optimum geothermal heat sources in continental geologic settings. We believe it very likely that such plutons have been and continue to be primary heat sources for the SSGF. A graphic portrayal of this scenario is offered as Figure 4.

An intriguing possibility for the central SSGF is that a large,

hot, granitic intrusion might underlie the drilled portion of the field by no more than a kilometer, and perhaps much less than that value. One well here has a static temperature of 389°C at a depth of only 2 km. Norton and Knight (1977), Norton (1982), and Norton and Taylor (1979) have shown through numerical modeling and geologic analysis that regardless of the composition, depth, or size of an igneous heat source, the 400°C isotherm in an overlying convective hydrothermal system rarely extends more than a few hundred meters above the top of the pluton. For example, in the numerical hydrothermal system above the ~320 km<sup>3</sup> Skaergaard gabbro in Greenland, the 400°C isotherm extends only about 0.8 km above the pluton at the system's thermal maximum (Norton and Taylor, 1979). Even above a hypothetical cooling felsic batholith, the 400°C isotherm (with the exception of small salients) extends a maximum of about 1 km above the igneous body (Norton and Knight, 1977). A hypothetical granitic intrusion beneath the Salton Sea geothermal field would likely be orders of magnitude smaller than the above examples, perhaps more like the intrusions associated with porphyry copper deposits. Norton (1982) has shown that in porphyry systems, the 400°C isotherm barely ascends above the pluton during the lifetime of the associated magmatic-hydrothermal system. From these analyses and the foregoing evidence, we predict that a 1-10 km<sup>3</sup>, still-cooling felsic igneous heat source will be found just below presently drilled depths in the central part of the geothermal field.



**Figure 4.** Conceptual lithostratigraphic and hydrologic section through the eastern Salton trough and the Salton Sea pull-apart zone. Synthesized and modified from Moore (1973); Fuis and Kohler, 1984; Elders *et. al.*, (1984); Lachenbruch *et. al.*, (1985); and Elders and Sass (1988), with configuration of the young deep gabbro pluton (gb<sub>2</sub>) adapted from Norton *et. al.* (1984).

## Age and Duration of the Hydrothermal System

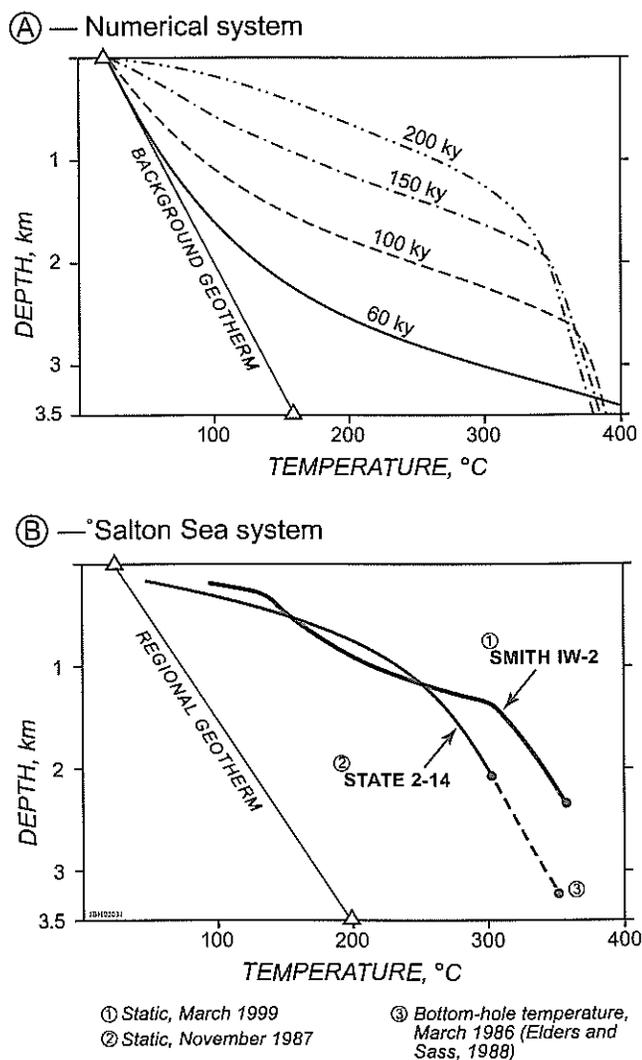
Previously published estimates of the age of the Salton Sea geothermal system range from a few thousand years (Heizler and Harrison, 1991) to at least 100,000 years (Williams and McKibben, 1989). McKibben and Hardie (1997) suggest that this broad range of age estimates likely reflects a combination of (1) different viewpoints about the behavior (e.g., diffusion rates) of radiogenic elements in the dated minerals; and (2) a complex evolution with multiple thermal pulses. Results of our investigation to date support the latter interpretation, but sug-

gest that even the most recent pulse may be more long-lived than previously imagined.

We now know that there are voluminous buried extrusive rhyolites as old as 700,000 years at drilled depths in the SSGF (Hulen and Pulka, 2000). These rhyolites imply coeval granitic intrusions, which, as we have argued, probably crystallized from crustal melts produced around or within deep, mantle-derived, gabbroic magma chambers (Figure 4). On the basis of 3.7 m.y.-old basalt xenoliths in the Salton rhyolite domes (Herzig and Jacobs, 1994), these primitive gabbroic magmas (and derivative felsic crustal melts) have likely always been characteristic of the Salton Sea spreading center. The viscous felsic melts, intruded into the brine-saturated Salton Trough sediments, inevitably would have engendered high-temperature hydrothermal systems (Norton, 1984), indistinguishable from the one circulating in the SSGF today. From these arguments, it seems likely that high-temperature hydrothermal activity has been characteristic of this site since inception of the Salton Trough ~4 m.y. ago.

As a preliminary test of the long-duration hydrothermal hypothesis, one of us (Norton) has completed a simplified, 2-D, numerical hydrothermal-history model of a system broadly similar to the one now active in the SSGF. It is assumed for the model that a 4 X 4-km felsic pluton is emplaced beneath a 4 X 4-km mass of fluid-saturated siliciclastic sedimentary rock with porosity and permeability approximating that measured and geophysically inferred for the reservoir itself. For details of the methods, procedures, and assumptions employed for the modeling, the reader is referred to Norton (e.g., 1982, 1984) and Norton and Taylor (1979). A sequence of modeled temperature vs. depth curves (Figure 5A) above the numerical cooling pluton suggest that static thermal profiles measured in selected production and injection wells (Figure 5B) could take 150,000 to 200,000 years to develop.

On the basis of this preliminary modeling, and on the likely intrusion of gabbroic and derivative granitic plutons at this site for the last 4 m.y., we suggest that Kasameyer *et. al.*'s (1988) numerically modeled age of 20,000 years for the system substantially underestimates the true age and full duration of hydrothermal activity. Our differing viewpoints conceivably could be resolved if, as suggested by Williams and McKibben (1989), the long-lived hydrothermal activity has been intermittent rather than continuous. Still, the available evidence suggests that even the still-active thermal "pulse" would likely have been initiated more than 100,000 years ago.



**Figure 5.** Comparison of computed temperature-depth (T-z) profiles for a highly simplified, generic numerical magma-hydrothermal system (A) with measured, static T-z profiles for Salton Sea geothermal wells Smith IW-2 and State 2-14 (B). The 2-D numerical system is generated by a 4 X 4 km felsic pluton, instantaneously emplaced at a temperature of 900°C beneath a 4 X 4 km lithocap (the rock volume above the pluton) with a permeability of 0.25 millidarcies from pluton top to ground surface. Note that in the numerical system, concave-up thermal profiles, similar to the one measured for Smith IW-2, occur only when the system is thermally prograding. Preliminary modeling completed by D.L. Norton utilizing FLOW 6 software.

## The Ultimate Resource Potential of the SSGF

Previously published estimates of the long-term (30 yr) electric-power production potential of the SSGF span an order of magnitude (Table 1, overleaf) and range from 2,500 MW<sub>e</sub> (Elders, 1989) to 30,000 MW<sub>e</sub> (Meidav and Howard, 1979). The estimates are based on the investigators' assessments of reservoir area, thickness, volume, temperature, porosity, permeability, fluid mass and replacement capacity, stored heat, heat recoverability, and heat-to-electricity conversion efficiency. There has been little consensus about these parameters, apart from their pointing to a very large geothermal resource.

**Table 1.** Published estimates of the ultimate electric-power-production potential of the Salton Sea geothermal field.

MW <sub>e</sub> for at least 30 years	Reference
17,500	<i>Biehler and Lee, 1997</i>
1,300 to 8,700	<i>Yunker and Kasameyer, 1978</i>
3,400	<i>Brook et al., 1979</i>
30,000	<i>Meidav and Howard, 1979</i>
2,500	<i>Elders, 1989</i>
2,330	<i>This paper</i>

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The most recent of the SSGF resource-potential estimates – the 2500 MW<sub>e</sub> of Elders (1989) – could well be the most realistic. Utilizing a wealth of new drilling and reservoir data acquired since that paper was published, we have re-appraised the resource from a different perspective and arrived at a similar value (Table 1; Figure 6). Our approach, hitherto precluded by the proprietary concerns of multiple operators, is solidly based on 30 years' production history in all sectors of the field. We have simply extrapolated the well-established characteristics of this known resource to the rest of the Salton Sea heat anomaly.

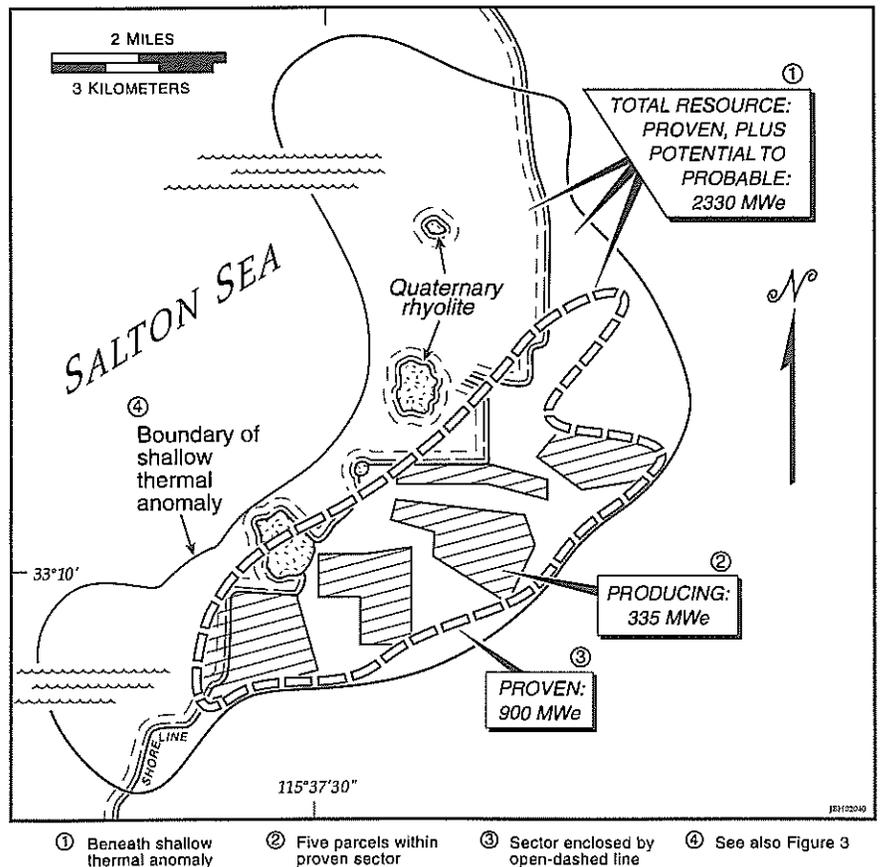
We hasten to add that lending institutions may impose more rigorous requirements for resource appraisal than those that have guided our efforts in this regard. Nonetheless, it seems inescapable to us that this field, fully developed, has great potential to one day be the largest, hottest, and most productive in the world.

As we have shown, the SSGF occurs within a 72.4 km<sup>2</sup> thermal-gradient anomaly, constrained by more than 100 shallow boreholes and deep geothermal wells, within which gradients in the depth range 30-80 m exceed 200°C/km. More than 90% of the deep wells completed to date within this anomaly have been actual or potential commercial producers (one or more side-tracks have sometimes been required to find the right combination of productive fractures and intergranular permeability; many wells proven productive have actually been utilized for in-

jection). Some of these producers have immense thermal-fluid outputs; for example, Vonderahe-1, in the southwestern part of the field (Figure 2), supports 45 MW<sub>e</sub> of installed capacity by itself. Moreover, in the 30 years since inception of the field, the SSGF has yet to experience significant pressure declines. This fact implies not only copious natural recharge but also a successful re-injection strategy; it also means that the field can likely be sustained for decades (if not longer) to come.

Deep wells in the SSGF have been drilled to date almost entirely within the onshore portion of the shallow thermal-gradient anomaly (Figure 3). The larger offshore, to the west and beneath the Salton Sea, is highly prospective but essentially untested by deep drilling. However, wells at the western edge of the onshore portion of the anomaly are as hot and prolific as those drilled anywhere else in the field. In fact, the hottest well (T<sub>max</sub> = 389°C) drilled to date is also one of the westernmost. In light of these facts, we can think of no good reason why the productive geothermal reservoir should terminate to the west simply because the rest of the heat anomaly in that direction is sublacustrine.

Only 14.4% of the areal extent of the shallow thermal anomaly has been extensively development drilled (the area supporting the field's current 335 MW<sub>e</sub> capacity; Figure 6). Another 24.2% has been sufficiently tested by strategically placed, deep and commercially producible geothermal wells to



**Figure 6.** Map showing estimated ultimate conventional resource potential for the Salton Sea geothermal field as of July 2002.

be considered proven resource. Assuming that this 24.2% of the anomaly will be as productive as the 14.4% already developed, it will be capable of supporting another 565 MW<sub>e</sub> of installed capacity. This brings the total onshore resource – producing plus proven but undeveloped – to 900 MW<sub>e</sub>.

The much larger offshore portion of the thermal anomaly is otherwise unlikely to differ much from its onshore counterpart. Given the stratigraphic monotony of this part of the Salton Trough, it is doubtful that the geologic framework beneath the Salton Sea is substantially different than that beneath the onshore SSGF. In other words, there is good reason to assume that the offshore part of the thermal anomaly will be underlain by a geothermal resource similar to and as productive as the SSGF on land.

The offshore part of the thermal anomaly constitutes 61.4% of its full areal extent. If the 38.6% of the thermal anomaly onshore is underlain by a 900 MW<sub>e</sub> resource, then the offshore sector, in proportion, should support an additional 1430 MW<sub>e</sub>, for a grand total of 2330 MW<sub>e</sub> (Figure 6).

It is conventionally stated that 1 MW<sub>e</sub> is sufficient to supply the electrical-energy needs of 1000 standard households, or about 4000 people. By this measure, the SSGF, if developed to its full 2330 MW<sub>e</sub> potential, could supply electricity for 9,300,000 individuals, or about a fourth of California's present population.

## Acknowledgements

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## References

- Biehler, S., and Lee, T.C., 1977, Final report on a resource assessment of the Imperial Valley: *University of California, Riverside, Dry Lands Institute Rept. DLRI-10.*
- Brook, C.A., Mariner, R.H., Mabey, D.R., Swanson, J.R., Guffanti, M., and Muffler, L.J.P., 1979, Hydrothermal convection systems with reservoir temperatures  $\geq 90^{\circ}\text{C}$  in Assessment of geothermal resources of the United States, 1978 (L.J.P. Muffler, ed.): *U.S. Geological Survey, Circular 790*, p. 18-85.
- Crowell, J.C., 1974, Origin of Late Cenozoic basins in southern California in *Tectonics and sedimentation* (Dickinson, W.R., ed.): *Society of Economic Paleontologists and Mineralogists, Publication 22*, p. 190-204.
- Duffield, W.A., Bacon, C.R., and Dalrymple, G.B., 1979, Late Cenozoic volcanism, geochronology, and structure of the Coso Range, Inyo County, California: *Journal of Geophysical Research*, v. 85, p. 2381-2404.
- Elders, W.A., 1979, The geological background of the geothermal fields of the Salton trough in *Geology and geothermics of the Salton Trough* (W.A. Elders, ed.): *University of California, Riverside, Campus Museum Contributions*, no. 5, p. 1-19.
- Elders, W.A., 1984, Hydrothermal flow regime and magmatic heat source of the Cerro Prieto geothermal system, Baja California, Mexico: *Geothermics*, v. 13, p. 27-47.
- Elders, W.A., 1989, Geothermal resource assessment of the Salton Sea geothermal field, California: *University of California, Riverside, Rept. UCR/IGPP/89-32*, 4 p.
- Elders, W.A., and Sass, J.H., 1988, The Salton Sea scientific drilling project: *Journal of Geophysical Research*, v. 93, p. 12,953-12,968.
- Elders, W.A., Rex, R.W., Meidav, T., Robinson, P.T., and Biehler, S., 1972, Crustal spreading in southern California – The Imperial Valley and the Gulf of California formed by rifting apart of a continental plate: *Science*, v. 178, p. 15-24.
- Elders, W.A., Williams, A.E., and Biehler, S., 1997, What lies beneath the Cerro Prieto geothermal field?: *Geothermal Resources Council, Transactions*, v. 21, p. 171-179.
- Fuis, G.S., and Kohler, W.H., 1984, Crustal structure and tectonics of the Imperial Valley region, California in *The Imperial basin – Tectonics, sedimentation, and thermal aspects* (C.A. Rigsby, ed.): *Society of Economic Paleontologists and Mineralogists, Pacific Section*, p. 1-13.
- Heizler, M.T., and Harrison, T.M., 1991, The heating duration and provenance age of rocks in the Salton Sea geothermal field, southern California: *Journal of Volcanology and Geothermal Research*, v. 46, p. 73-97.
- Helgeson, H.C., 1968, Geologic and thermodynamic characteristics of the Salton Sea geothermal system: *American Journal of Science*, v. 266, p. 129-166.
- Herzig, C.T., and Jacobs, D.C., 1994, Cenozoic volcanism and two-stage extension in the Salton Trough, southern California and northern Baja California: *Geology*, v. 22, p. 991-994.
- Herzig, C.T., Mehegan, J.M., and Stelling, C.E., 1988, Lithostratigraphy of the State 2-14 borehole, Salton Sea scientific drilling project: *Journal of Geophysical Research*, v. 93, p. 12,969-12,980.
- Hulen, J.B., and Pulka, F.S., 2001, Newly-discovered, ancient extrusive rhyolite in the Salton Sea geothermal field, Imperial Valley, California – Implications for reservoir characterization and duration of volcanism in the Salton trough: *Stanford University, 26<sup>th</sup> Workshop on Geothermal Reservoir Engineering, Proceedings*, 10 p.
- Karig, D.E., and Jensky, W., 1972, The proto-Gulf of California: *Earth and Planetary Science Letters*, v. 17, p. 169-174.
- Kasameyer, P.W., Younker, L.W., and Hanson, J.M., 1984, Development and application of a hydrothermal model for the Salton Sea geothermal field, California: *Geological Society of America Bulletin*, v. 95, p. 1242-1252.
- Lachenbruch, A.H., Sass, J.H., and Galanis, S.P., 1985, Heat flow in southernmost California and the origin of the Salton Trough: *Journal of Geophysical Research*, v. 90, p. 6709-6736.
- Lonsdale, P., 1989, Geology and tectonic history of the Gulf of California in *The eastern Pacific Ocean and Hawaii* (E.L. Winterer, D.M. Hussong, and R.W. Decker, eds): *Geological Society of America, The Geology of North America*, v. N, p. 499-521.
- McKibben, M.A., and Elders, W.A., 1985, Fe-Zn-Cu-Pb mineralization in the Salton Sea geothermal system: *Economic Geology*, v. 80, p. 511-523.
- McKibben, M.A., and Hardie, L.A., 1997, Ore-forming brines in active continental rifts in *Geochemistry of hydrothermal ore solutions*, 3<sup>rd</sup> edition (H.L. Barnes, ed.): *New York, John Wiley*, p. 877-935.

- Meidav, T., and Howard, J., 1979, An update of tectonics and geothermal resource magnitude of the Salton Sea geothermal resource: *Geothermal Resources Council, Transactions*, v. 3, p. 445-448.
- Merriam, R., and Bandy, O.L., 1965, Source of upper Cenozoic sediments in the Colorado River delta region: *Journal of Sedimentary Petrology*, v. 35, p. 911-916.
- Moore, D.G., 1973, Plate-edge deformation and crustal growth, Gulf of California structural province: *Geological Society of America Bulletin*, v. 84, p. 1883-1906.
- Muffler, L.J.P., and Doe, B.R., 1968, Composition and mean age of detritus of the Colorado River delta in the Salton Trough, southeastern California: *Journal of Sedimentary Petrology*, v. 38, p. 384-399.
- Muffler, L.J.P., and White, D.E., 1969, Active metamorphism of upper Cenozoic sediments in the Salton Sea geothermal field and the Salton trough, southeastern California: *Geological Society of America Bulletin*, v. 80, p. 157-182.
- Newmark, R.L., Kasameyer, P.W., Younker, L.W., and Lysne, P., 1988, Shallow drilling in the Salton Sea region – The thermal anomaly: *Journal of Geophysical Research*, v. 93, p. 13,005-13,024.
- Norton, D.L., 1982, Fluid and heat transport phenomena typical of copper-bearing pluton environments in *Advances in geology of the porphyry copper deposits, southwestern North America* (S.R. Titley, ed.): Tucson, *University of Arizona Press*, p. 59-72.
- Norton, D.L., 1984, The theory of hydrothermal systems: *Annual Review of Earth and Planetary Sciences*, v. 12, p. 155-177.
- Norton, D.L., and Knight, J., 1977, Transport phenomena in hydrothermal systems – cooling plutons: *American Journal of Science*, v. 277, p. 937-981.
- Norton, D., and Taylor, H.P., 1979, Quantitative simulation of the hydrothermal systems of crystallizing magmas on the basis of transport theory and oxygen-isotope data – An analysis of the Skaergaard intrusion: *Journal of Petrology*, v. 20, p. 421-486.
- Norton, D.L., Taylor, H.P., Jr., and Bird, D.K., 1984, The geometry and high-temperature brittle deformation of the Skaergaard intrusion: *Journal of Geophysical Research*, v. 89, p. 10,178-10,192.
- Osborn, W.L., 1989, Formation, diagenesis, and metamorphism of sulfate minerals in the Salton Sea geothermal system, California: *University of California, Riverside*, M.Sc. Thesis.
- Rex, R.W., 1983, The origin of brines of the Imperial Valley, California: *Geothermal Resources Council, Transactions*, v. 7, p. 321-324.
- Robinson, P.T., Elders, W.A., and Muffler, L.J.P., 1976, Quaternary volcanism in the Salton Sea geothermal field, Imperial Valley, California: *Geological Society of America Bulletin*, v. 87, p. 347-360.
- Rook, S.H., and Williams, G.C., 1942, Imperial carbon dioxide field: *California Division of Oil and Gas, Summary of Operations, Oil Fields*, July-Dec. 1942, v. 28, p. 12-33.
- Smith, R.L., and Shaw, H.R., 1975, Igneous-related geothermal systems in Assessment of geothermal resources in the United States, 1975 (D.E. White and D.L. Williams, eds.): *U.S. Geological Survey, Circular 726*, p. 58-83.
- Sykes, G., 1937, The Colorado delta: *American Geographical Society, Special Publication 19*, p. 108-132.
- Van de Kamp, P.C., 1973, Holocene continental sedimentation in the Salton basin, California – A reconnaissance: *Geological Society of America Bulletin*, v. 84, p. 827-848.
- White, D.E., Anderson, E.T., and Grubbs, D.K., 1963, Geothermal brine well – mile-deep drill hole may tap ore-bearing magmatic water and rocks undergoing metamorphism: *Science*, v. 139, p. 919-922.
- Williams, A.E., and McKibben, M.A., 1989, A brine interface in the Salton Sea geothermal system, California – Fluid geochemical and isotopic characteristics: *Geochimica et Cosmochimica Acta*, v. 53, p. 1905-1920.
- Younker, L., and Kasameyer, P., 1978, A revised estimate of recoverable thermal energy in the Salton Sea geothermal resource area: *Lawrence Livermore Laboratory, Rept. UCRL-52450*.

## Nancy Dorfman

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**From:** Lorraine Woodman  
**Sent:** Tuesday, November 29, 2011 1:49 PM  
**To:** Nancy Dorfman  
**Subject:** FW: New SCH EIS-EIR comment from Michael Cohen

Lorraine Woodman, Ph.D.  
Senior Consultant / Environmental Planning Cardno ENTRIX  
201 North Calle Cesar Chavez, Suite 203, Santa Barbara, CA 93103  
Phone: 805 962 7679 Direct: 805 963 0468 Mobile: 805 284 1878 Fax: 805 963 0412

-----Original Message-----

From: DO NOT REPLY [mailto:noreply@cardno.com]  
Sent: Friday, October 14, 2011 10:29 AM  
To: Lorraine Woodman; Sarah Bumby; Rob Wurgler; Robert M. Wood  
Subject: New SCH EIS-EIR comment from Michael Cohen

Michael Cohen has entered a comment.Contact Information:

E-Mail: mcohen@pacinst.org  
Affiliation: Pacific Institute  
Mailing Address:  
2260 Baseline Rd Suite 205

Boulder, CO 80302

Attachments:

Comment:  
Pacific Institute Comments on the  
Salton Sea Species Conservation Habitat Project Draft EIS/EIR submitted  
10/14/2011

General Comments

The Pacific Institute was a member of the California Resources Agency s Salton Sea Advisory Committee and provided extensive comments and recommendations on the development of the agency s Salton Sea Ecosystem Restoration Program Programmatic Environmental Impact Report ( PEIR ). We endorsed the Period I activities identified by the PEIR, especially the development and construction of shallow pond habitat complexes known in the document as early start habitat.

The proposed SCH project is the most recent incarnation of the PEIR s Period 1 early start habitat. We strongly support the construction of such shallow pond habitat. This current project DEIR comes more than four years after the completion of the PEIR; it is long overdue.

PI-1

In the interests of maximizing the value of limited Salton Sea funds and accelerating the implementation of much-needed constructed habitat at the Salton Sea, we offer a few general comments, followed by specific line-item comments on the Salton Sea Species Conservation Habitat Project Draft EIS/EIR ( DEIR ).

1. We strongly support the construction of shallow pond habitat around the Salton Sea. Unfortunately, the DEIR provides insufficient information for us to

PI-2

determine whether the proposed project will work as intended. Aside from uncertainty as to whether legal rights to divert water from the New or Alamo river can be secured for the project, the DEIR does not assure us that the proposed project will produce fish in sufficient numbers to provide an adequate forage base for piscivorous birds the project s stated purpose. Neither the description of the alternatives, nor the subsequent environmental analyses, nor any of the appendices include information on projected fish production rates or harvest rates. Section 3.4 states that fish and invertebrates may suffer from seasonal or even daily mortality, due to low concentrations of dissolved oxygen (DO) and low temperatures, but does not offer any estimates of the magnitude of these mortality events or describe how this periodic mortality will affect the overall ability of the project to meet its goals. Section 2.0 describes the alternatives structure but not their operation or ability to achieve their stated function. Although the Reclamation/USGS pilot ponds unintentionally produced very high numbers of desert pupfish, they were small shallow ponds that may not have been representative of conditions at the deeper, larger SCH project. In any case, the comparison between the pilot ponds and the proposed project should have been made explicitly in the DEIR. The function of the ponds, including steps that might need to be taken to improve DO concentrations and avoid lowering winter water temperatures below the tolerance of tilapia (threats noted on p. 3.4-48), should be clearly described in the alternatives section. Simply deferring such decisions to future adaptive management is insufficient assurance that these potential fatal flaws can be overcome and limited Salton Sea funds spent on a project that might not achieve its stated goals.

PI-2  
Cont.

2. The DEIR neglects to provide any information on costs. How much would it cost to construct each alternative? What are the projected annual operations & maintenance costs of each alternative? How much money is currently available? What additional funds might be obtained? Can the alternatives be scaled back, if full funding is not available? How will this affect the adverse and beneficial impacts analyses?

PI-3

PI-4

3. The selection of Alternative 3 as the preferred alternative appears to be pre-decisional, both because of the criteria used to justify the decision (e.g., because it is the largest alternative) and especially because the agencies apparently are already in the 75% design phase for this alternative, even before the comment period has closed and well before the agencies have had the opportunity to review public comments.

PI-5

4. The preferred alternative could divert more than 50% of the total historic flow of the New River during June, the peak evaporation month. Aside from the fact that future New River flows will be significantly lower in the future, due to water transfers and water conservation efforts in the Imperial Valley and further reductions in flows from Mexico, diverting more than half of the river s flow raises many questions. In addition to the immediate environmental impacts (to the river and riparian corridor downstream and to the estuary formed at the river s mouth), this diversion suggests that a maximum of 7,000 acres of shallow habitat could be constructed near the New River, and perhaps 10,000 acres near the Alamo River, given the volume of water available during June. If this is accurate, what does it say about long-term mitigation strategies for the Salton Sea? Would it be permissible to divert the entire flow of the New River to deliver water to constructed habitat? Or does the preferred alternative represent, in effect, the maximum amount of constructed habitat feasible near the New River?

PI-6

We strongly support the construction of shallow habitat pond complexes at the Salton Sea. However, the DEIR does not provide sufficient information to determine whether the preferred project would be an effective use of limited Salton Sea funds. More and better information is needed.

PI-7

Following are specific comments on the DEIR. Page and line numbers are indicated for each as page number: line number(s).

ES-1: 6-7 The SCH Project is intended to serve as a proof of concept for the restoration of shallow water habitat that currently supports fish and wildlife dependent upon the Salton Sea (the Sea)

The DEIR should review a broad range of construction techniques, management strategies, habitat types, salinities, and target species. It would be a waste of time and money to test one limited concept, when it is clear that the Sea will require a portfolio of restoration strategies and techniques.

PI-8

The DEIR should clearly and explicitly define what is meant by restoration for this project, given the absence of a stable baseline or historic condition.

PI-9

ES-1: 28 The Salton Sea is currently a hypersaline ecosystem (about 51 ppt)

Slide 5 of the Public Comment Meeting Presentation posted on the Salton Sea program webpage at [http://www.water.ca.gov/saltonsea/docs/081711DEIS\\_EIRcomment\\_meeting.pptx](http://www.water.ca.gov/saltonsea/docs/081711DEIS_EIRcomment_meeting.pptx) states that the salinity is 53 ppt. Note that both of these values are wrong: at brackish and higher salinities, g/L TDS (as reported by C. Holdren) are not interchangeable with ppt TDS. The reported salinity of the Sea, at 51.8 g/L, converts to roughly 49.3 ppt, not >50 ppt.

PI-10

ES-1: 29-31 Without restoration, declining inflows in future years will result in the Sea s ecosystem collapse due to increasing salinity (expected to exceed 60 ppt by 2018, which is too saline to support fish)

This statement contains the following errors: 1) the premise that there is any possibility of restoration of the Salton Sea as a whole is demonstrably false (and has yet to be defined in this document); 2) the Court s invalidation of the Quantification Settlement Agreement (QSA) and the current appeal of that decision mean that the water transfer and future mitigation water deliveries remain uncertain; and 3) categorical determinations of the salinity tolerance of the fish in the Sea have been wrong for more than 40 years and should not be made here. Desert pupfish have demonstrated salinity tolerance well in excess of 60 ppt. Table 3.4-3 notes that the most prevalent species of tilapia in the Sea has a salinity tolerance of 65 ppt.

PI-11

ES-1: 35-39 Piscivorous birds, on the other hand, are at risk of decline. To address this immediate need, the California Legislature appropriated funds for the purpose of implementing conservation measures necessary to protect the fish and wildlife species dependent on the Salton Sea, including adaptive management measurements (California Fish and Game Code section 2932(b))

PI-12

The agencies exclusive reliance on legislation passed in 2003, and their continued refusal to acknowledge SB 187, enacted in 2008, creating California Fish and Game Code section 2932.3, baffles us. For reasons unclear, the agencies ignore California Fish and Game Code section 2932.3 and California Fish and Game

PI-12

Code sections 2940 et seq. This failure to recognize existing state law must be corrected.

PI-12  
Cont.

The agencies selective interpretation of legislative intent, while refusing to follow the clear legislative direction made explicit in California Fish and Game Code section 2932.3 and California Fish and Game Code sections 2940 et seq., suggests pre-decisional actions and a clear lack of administrative and legislative oversight.

In SB 187 (enacted 2008), the Legislature finds The Salton Sea is considered a globally important bird area because of its astounding diversity of bird species, with more than 400 species, the second highest count in the nation, and the very large populations of some species that rely on it for habitat. The legislature did not direct the agencies to focus exclusively on piscivorous birds; instead, it highlights the importance of the Sea to the full range of bird species that use it. As the Sea continues to decline and if water transfers continue, it will rapidly transition through salinities tolerable to invertebrates to concentrations too high for any macro invertebrates. To meet the clear intent of the Legislature, the agencies may soon need to plan projects that produce the large numbers of invertebrates needed to sustain the astounding diversity of bird species found at the Sea. Narrowly assuming as the Agencies do that fish habitat can supply the full range of invertebrates found at the Sea will preclude higher salinity habitats that generate extremely high invertebrate numbers, as was demonstrated at the Reclamation/USGS pilot ponds. This proposed Project offers the opportunity to do a true proof of concept, with cascading ponds managed to a broad range of salinities, offering guidance for the much larger habitat projects that will be needed in the future. The very narrow focus on piscivorous birds ignores the broader intent of the Legislature and limits the value of the proposed Project to inform future efforts. This project should be expanded to encompass a broader range of salinities and target species, consistent with the explicit legislative findings in SB 187.

PI-13

ES-2: 4-5 Goal 1: Develop a range of aquatic habitats that will support fish and wildlife species dependent on the Salton Sea.

The goal should be rewritten to be consistent with the explicit project purpose, or the proposed project should be expanded to satisfy the goal. Currently, the proposed project fails to meet this goal.

PI-14

A more appropriate goal, consistent with the alternatives described in the draft, would be: Goal 1: Develop aquatic habitats that will support fish and piscivorous birds dependent on the Salton Sea. The project does not develop a range of aquatic habitats and is clearly not intended to support the full range of wildlife species dependent on the Salton Sea (despite the legislative language to that effect): it is explicitly focused on fish and piscivorous birds, as shown by the various objectives that follow this goal.

ES-22: 18-21 The Corps has yet to identify its preferred alternative. The draft section 404(b)(1) alternatives analysis will be completed and included in the Final EIS/EIR. Based on this analysis, the Corps will choose the least environmentally damaging practicable alternative as the Corps preferred alternative, which will be subject to public comment.

PI-15

We look forward to the opportunity to comment on the practicable alternative, defined on p. ES-7: 27-28 as The factors that influence whether an alternative is practicable include cost, logistics, technology, and the ability of the

alternative to achieve the overall project purpose. Unfortunately, the current DEIR does not include any information on cost, and does not offer a credible assessment of the ability of any of the listed alternatives to achieve the overall project purpose.

PI-15  
Cont.

ES-8: 23 Alternative 3 is the Natural Resources Agency s preferred alternative.

For reasons described in the following, we find the Agency s preferred alternative to be flawed and unacceptable, primarily because of conflicts with existing and planned constructed habitat efforts. Instead, a modified version of Alternative 4 should be the preferred alternative. Further, the selection of Alternative 3 as the preferred alternative appears to be pre-decisional, both because of the criteria used to justify the decision (e.g., because it is the largest alternative) and especially because the agencies apparently are already in the 75% design phase for this alternative, even before the comment period has closed and well before the agencies have had the opportunity to review public comments.

PI-16

ES-13 Impact EN-1: Pumping would require power for the duration of the Project.

This Table should distinguish between baseline power needs of all project alternatives, versus additional energy needed by those alternatives that would also pump river water for delivery to the ponds.

PI-17

ES-16 Impact LU-3: The Project would be designed to minimize conflicts with future planned land uses.

The preferred alternative directly conflicts with the stated interest of farmers near the west side of the New River delta to reclaim and farm exposed lakebed, as noted in Impact SOC-4: Pond creation would preclude the reclamation of exposed playa for agricultural use.

PI-18

ES-19: 10-13 In general, those alternatives with greater acreage would have greater benefits to resources such as biological resources, aesthetics, recreation, and socioeconomics, but also would result in greater impacts on air emissions, energy demand, transportation impacts, and demand for public services.

PI-19

This statement assumes that the alternatives will be fully funded and constructed to the full acreage described. This neglects funding limitations. An appropriate comparison would describe acreage that could be constructed with unencumbered funds currently existing in the Salton Sea Restoration Fund. Otherwise, any of the six alternatives could be expanded on paper to show greater benefit, even if there are not sufficient funds to construct it as designed.

ES-21: 13-31 The suggestion that Alternative 3 is superior because it is the largest is disingenuous, given that insufficient funds exist to build it as described, and given that any of the other alternatives could have as easily been expanded to be the largest such project, at least on paper. Unless the agencies mean to suggest that the proposed project is the only habitat they intend to construct at the Salton Sea, the reasoning in this referenced paragraph suggests that the agencies will only construct habitat near the New River, since the Alamo River sites have higher selenium loadings and are less geologically stable. As proof of concept, the Project should be constructed at the more challenging site, rather than attempting to test methods and practices at the least challenging site available. A modified version of Alternative 4, which offers the best test

PI-20

of future conditions and parameters for habitat construction at the Sea, should be the preferred alternative.

PI-20  
Cont.

ES-21: 39-41 The Natural Resources Agency has identified Alternative 3 as the preferred alternative because it would provide greater long-term benefits by restoring the greatest amount of habitat, while minimizing environmental impacts to the extent feasible.

As noted above, this is a misleading basis for determining the preferred alternative, since insufficient funds exist to build the alternative to its designed extent, as acknowledged by the agencies themselves. Would limited funding reduce the size of each of the alternatives by the same percentage? The DEIR does not provide sufficient information to make this determination, since it does not provide general or itemized cost estimates. That is, given the Agency's own stated criterion, it is quite possible that one of the other alternatives would result in more habitat and greater long-term benefits when constructed with available funds. The DEIR should offer specific cost estimates and describe the relative benefits that may be realized with available funds, to offer a more realistic comparison between the alternatives.

PI-21

1-3: 22-23 The Quantification Settlement Agreement (QSA) is one of the factors contributing to declining inflows to the Salton Sea.

This statement appears to be inconsistent with the State's own filings in the referenced QSA litigation, which generally states that the delivery of mitigation water offsets the impacts of the water transfer, so that the QSA is not one of the factors contributing to declining inflows to the Salton Sea.

PI-22

1-3 fn. 1 One of those agreements, the QSA/Joint Powers Authority Creation and Funding Agreement, was invalidated on January 10, 2009 in Sacramento County Superior Court on constitutional grounds.

This is wrong. On December 10, 2009, the Superior Court invalidated 12 of the 13 agreements. Note also that the QSA refers to more than just this one agreement, as noted on line 28 on this same page.

PI-23

2-4: 25-28. Adequate Water Supply (this water is lost to evaporation and does not include water that is circulated in the ponds to maintain salt balance or discharged to the Sea to flush ponds)

As noted in the parenthesis above, the stated adequate water supply is in fact not an adequate water supply, which must include the volume of water flowing through the ponds. Each alternative should have a clear water budget that includes peak daily water supply requirements, showing evaporation, surface outflow, and projected inflow requirements for each pond. These water requirements must be identified to correctly size diversion and pumping infrastructure, as well as the size of release gates.

PI-24

2-6: 17-20 the portion of the alternatives that included Red Hill Bay was eliminated because the United States Fish and Wildlife Service (USFWS) has plans to develop shallow water habitat in this area as part of the Sonny Bono Salton Sea National Wildlife Refuge (NWR).

PI-25

Thank you for not siting alternatives at Red Hill Bay, avoiding duplication of USFWS planned habitat in that area.

2-6: 20-21 The USFWS also has a planned restoration project at the New River, and DWR and DFG are working in close coordination with NWR staff to avoid any conflicts between the two projects.

PI-26

This section ignores the joint, on-going IID/USFWS effort that has re-opened a culvert linking the New River to exposed playa to the immediate east of the New River delta. This effort has re-wet exposed playa, providing hundreds of acres of valuable shorebird habitat, with the additional and notable benefit of covering playa that had contributed large amounts of dust to the area. This joint effort, and its benefits, should be clearly described in the draft document. The preferred alternative would eliminate the habitat created by the on-going IID/USFWS effort, reducing the net habitat benefit of the proposed action. The possibility that the scaled-down version of Alternative 3, due to funding limitations, may only replace the existing and planned shallow habitat east of the New River means that agencies might well spend more than \$20 million to replace habitat that already exists. This would be a colossal waste of public funds.

2-11: 2.4.1.3 Berms It does not appear that geotubes are being considered for the berms, only as barriers on the outboard side of the berms. Why not?

PI-27

2-17: 2.4.1.13 Saline Water Supply Pump Station Salton Sea water typically is very turbid will there be some kind of filtration or treatment associated with pumping such water into the ponds? If the pumps draw water from near the sediments, they run the risk of extracting anoxic water, possibly with high concentrations of hydrogen sulfide, posing a risk to life in the SCH ponds. In the near term, the pumps will be fouled by barnacles and other marine life. As the Sea s salinity increases, corrosion will a constant concern, requiring frequent maintenance and replacement. Have these costs been considered?

PI-28

2-22: 2.4.1.25 Project Compatibility with other Potential Future Land Uses The DEIR appropriately describes compatibility with potential geothermal development, but ignores the existing and potential habitat created atop exposed playa east of the New River delta.

PI-29

This section also fails to acknowledge potential reclamation of agricultural land to the west of the New River, noted elsewhere as Impact SOC-4: Pond creation would preclude the reclamation of exposed playa for agricultural use.

PI-30

2-25: 42 Several permanent employees would be required to manage the ponds.

PI-31

Since jobs are the catchword of the moment and a key to increasing support for the project, it would be useful to clarify the exact number of permanent employees associated with each alternative.

2-28: 36-27 The basin would be 60 acres and be excavated below ground surface to approximately 20 feet.

PI-32

Is it possible to excavate 20 feet below the land surface immediately adjacent to the Salton Sea, such as shown in Figure 2-7? Why would a sedimentation basin of this size be necessary? What is the maximum daily river water requirement for the SCH ponds? There appear to be some significant errors in calculation here, leading to a staggering amount of excavation. Simply converting 60 acres at 20 feet deep yields more than 1.9 million cubic yards of material. This is clearly infeasible: strip-mining equipment, which operates at a comparable scale, would quickly sink into the soft soils near the Salton Sea. This scale of excavation is

simply not feasible near the Salton Sea. Building such a deep basin near the river would also create a drain for the river itself, as well as surrounding land. Nor is it clear that there is sufficient head between such a deep hole and the nearby ponds, unless the basin were filled, which would raise the water table and interfere with adjacent farming operations. Or is the intent to line the sediment basin? If that is the case, why does it need to be so deep?

PI-32  
Cont.

2-41: 8 River Water Source We suggest that Alternative 4 be modified to locate a river pump station immediately adjacent to the project site, as shown for Alternatives 5 & 6. This would eliminate the need for an upstream sedimentation basin and 3.5 miles of pipeline, and could be managed conjunctively with the river water source for the USFWS project at Red Hill Bay. This would also avoid the Williamson Act challenges associated with the current configuration. This modified version of Alternative 4 would be similar to Alternatives 5 & 6, but with a cascading pond and less habitat along Wister Beach.

PI-33

3.2-4: 35 (and 3.2-9: 22 and other locations) With over 5,000,000 acres of harvested commodities should be With over 500,000 acres

PI-34

3.3 Air Quality Do the temporary negative impacts of SCH construction outweigh the long-term beneficial impacts of reducing fugitive dust emissions? How are these countervailing impacts measured and balanced under NEPA/CEQA?

PI-35

3.4-48: 22-27 The lower thermal and DO tolerances for fish may be exceeded under certain environmental conditions, but not necessarily at the same time, resulting in fish kills that reduce the population size in the ponds where this phenomenon occurs. The lower DO tolerance for some benthic invertebrate species that provide food for fish may also be exceeded at times in some locations, primarily in the deeper portions of some ponds. The duration of such events is expected to be short with rapid recovery of the fish and invertebrate populations.

PI-36

The above paragraph provides insufficient information on the threat posed by poor water quality in the SCH. The survival of fish in the ponds, in sufficient numbers to provide a forage base for piscivorous birds, is the explicit goal of the project. It is fundamental to the success of the proposed project. The DEIR provides insufficient information to assess whether the project will achieve this goal. The DEIR should clearly state: 1) under what environmental conditions would lower thermal and DO tolerances for fish be exceeded, and how often this would occur; 2) under what conditions would DO tolerances for benthic invertebrates be exceeded, and how often this would occur; 3) the basis for the assertion that fish and invertebrate populations would recover rapidly.

Is this a fatal flaw in the pond design? Will periodic fluxes in DO, as well as seasonal decreases in temperature, exterminate the forage species the ponds are designed to support? If so, the project will fail to achieve its objectives and must be redesigned. The DEIR fails to provide sufficient information to answer these questions. Has water quality in the ponds been modeled as part of the pond design? It is not sufficient simply to state that The Project is designed to test various pond designs with monitoring to determine what works best to meet the Project goals and objectives (3.4-48: 31-32) if there is a reasonable suspicion that none of the pond designs will protect water quality sufficiently to maintain invertebrate and fish populations. P. 3.11-43 of the DEIR states that periods of anoxia both daily (near dawn due to respiration of all organisms present) and seasonally (especially in spring and fall) will impair the ponds, suggesting that model has in fact been constructed and run, and that more information exists than is presented on p. 3.4-48.

Although Appendix J describes a Fish Tolerance study, this study was very poorly designed and not very relevant to the proposed project. According to the description, the cold temperature tested by the Fish Tolerance study was 52-61 F (J-9: 13). However, Appendix D notes that water temperatures at the SCH are expected to fall below 50 F (D-5: 18-20). A relevant Fish Tolerance study would examine fish tolerance at a range of temperatures below 50 F. Despite this study, we still do not know the expected mortality of fish in the ponds.

PI-36  
Cont.

The Fish Tolerance study suggests lowering the salinity of the ponds during the coldest months, to reduce stress for the fish and improve their survival rates. However, these coldest months are also the period when New and Alamo river flows are at their lowest levels. The DEIR does not appear to evaluate the availability of river flow during these months.

3.6-1: 6-9 The equipment and vehicles used during construction and maintenance would be the minimum needed to perform the required work, and fuel would not be used in a wasteful manner. Therefore, fuel consumption and electrical demand during construction is not addressed in this section.

PI-37

While it is comforting to know that fuel would not be used in a wasteful manner, this is not sufficient information for the reader to determine the total energy consumption associated with construction of the proposed project. Given the very large amount of excavation and dredging associated with the described alternatives (including more than 1.9 million cubic yards of excavation just for the sediment basins), presumably a very large amount of fuel will be required, even if it is used efficiently. This section should be re-written to describe and assess the actual amounts of energy consumed for construction. In fact, Table G-1 notes that the preferred alternative would require an estimated 644,000 gallons of diesel fuel, just for on-road activities (off-road activities, such as excavation and dredging, would require additional fuel). It would be useful to include relevant information from the appendices in the analyses sections.

3.6-6: 13-15 The seawater pump would lose efficiency over time because of the hypersaline water being pumped, but would be maintained as appropriate to reduce fouling and would be replaced when needed.

PI-38

Please provide estimates on how frequently the seawater pumps would need to be replaced, and the associated costs of maintenance and replacement.

Table 3.9-3 and Table 3.9-5 These two tables indicate that the construction of the preferred alternative would generate roughly twice the amount of greenhouse gas emissions of alternatives 4 or 5 (6,650 metric tons of CO<sub>2</sub>e versus 3,400 and 3,057 metric tons of CO<sub>2</sub>e, respectively), and that operation of the pumps for the preferred alternative would generate at least double the greenhouse gas emissions of alternatives 4 or 5, every year. That is, over a 60-year lifespan, the preferred alternative would generate at least 99,000 metric tons of CO<sub>2</sub>e more than either alternative 4 or 5.

PI-39

3.11-15: 8-10 and Table 3.11-5 This table and text includes a conversion error. At brackish and higher salinities, g/L TDS are not interchangeable with ppt TDS. The reported salinity of the Sea, at 51.8 g/L, converts to roughly 49.3 ppt, not 52 ppt. Note also that 35 g/L is not the same as 35 ppt.

PI-40

3.11-25: 23-25 For the peak evaporation month (June), the reduction downstream of the diversion would range from 7 percent to 56 percent for the New River and 4 percent to 28 percent of the Alamo River flow.

PI-41

Diverting more than 50% of the flow of the New River would be a significant impact, with measurable adverse effects on the riparian corridor and delta.

3.11-30: 28-30 The reduction in river flow due to the SCH Project would not adversely affect downstream water users, and this issue is not addressed further in this section. Impacts on biological resources from the reduction in flow are addressed in Section 3.4, Biological Resources.

PI-42

Presumably, a >50% reduction in river flow would adversely affect downstream biological resources, both within the riparian corridor itself and in the estuary. Note that these impacts are not, in fact, addressed in Section 3.4, which instead focuses on impacts from construction and maintenance, but ignores the potentially significant adverse effects associated with a >50% reduction in river flow.

Appendix D. The spacing of the text suggests an error occurred when converting the document to a pdf, making it difficult to read. Please proofread the document before public release.

PI-43

Table G-7. Note that the values listed under the CO2 column did not convert properly in the pdf many of these are not legible.

PI-44

October 16, 2011

Lanika Cervantes  
U.S. Army Corps of Engineers, Los Angeles District  
Regulatory Division – San Diego Field Office  
ATTN: CESPL-RG-S-2010-00142-LLC  
6010 Hidden Valley Road, Suite 105  
Carlsbad, CA 92011

**SUBJECT: Comments on Draft EIS/EIR, Application for Permit, Salton Sea Species Conservation Habitat (SCH) Project**

Dear Ms. Cervantes,

San Diego Chapter of the Audubon Society sincerely appreciates this opportunity to review the Draft Environmental Impact Statement/Environmental Impact Report (DEIS/DEIR), Application for Permit, Salton Sea Species Conservation Habitat (SCH) Project. We believe that the U.S. Army Corps of Engineers (ACOE) and California Natural Resources Agency (NRA) have done a fine job of preparing a conservation plan that goes to great lengths to provide for the preservation of habitat for piscivorous sea birds, so that they will continue to forage and reproduce in the area, long after the Salton Sea is no longer able to support fish, due primarily to projected increases in salinity. The impacts of the proposed project to piscivorous fish are well supported in the DEIS/DEIR; however, we believe that it falls far short in addressing impacts to shorebirds, including the Western Snow Plover (*Charadrius alexandrinus nivosus*), which was listed by the U.S. Fish and Wildlife Service as threatened in 1993 (USFWS 2011). The Western Snowy Plover and other shorebird species are directly dependent on shoreline habitats of the Salton Sea that are used as breeding habitat and also support macroinvertebrates, which presumably could also be affected by the anticipated increase in salinity and receding shoreline that would occur in any of the proposed alternatives in the DEIS/DEIR. This important wildlife resource of the Salton Sea is given very superficial treatment in the DEID/DEIR, seemingly because the six action alternatives in the SCH are all very similar in form and function and are primarily oriented toward conserving piscivorous seabird habitat. The result is that the DEIS/DEIR demonstrates positive direct, indirect, and cumulative impacts for piscivorous seabirds, while any such impacts to shorebirds are minor and were arrived at incidentally. Potentially adverse indirect impacts to shorebirds in the form of eventual lost foraging and nesting habitat and food resources appear to have been overlooked as well.

SDAS-1

The Salton Sea is widely recognized as an important shorebird breeding and overwintering site. According to Avifauna of Salton Sea: Abundance, Distribution, and Annual Phenology (Shuford, et al. 2000):

SDAS-2

*Shorebird totals at the Salton Sea in some years have exceeded 100,000 individuals in both spring and fall (PRBO and R. McKernan unpubl. data). Regional comparisons indicate the Salton Sea is one of only eight sites in the interior of western North America that holds over 10,000 shorebirds in fall and*

*one of five such sites in spring (PRBO unpubl. data). In terms of overall shorebird numbers, the Salton Sea is the most important area in the Intermountain and Desert region of the West in spring and the second most important, after Great Salt Lake, in fall. Shorebird populations at the Salton Sea from 1989 to 1995 averaged 24,000 in December, 90,000 in April, and about 85,000 individuals in August. Shorebird surveys in 1999 provided additional documentation for these patterns and added a total of about 70,000 shorebirds in November, a month for which prior thorough surveys were lacking. Surveys in 1999 confirmed that the Salton Sea supports the largest population of wintering Snowy Plovers in the interior of western North America (Shuford et al. 1995) and is one of a handful of key breeding areas in the interior of California (Page et al. 1991). Surveys in 1999 indicate the Imperial Valley is even more important than previously recognized for the Mountain Plover, as it held about 30% to 38% of the species' entire population of 8000 to 10,000 birds (Anonymous 1999).*

SDAS-2  
Cont.

The six action alternatives call for the construction of impoundments that would be supplied with brackish water from either the Alamo or New River with hypersaline water added from the Salton Sea in order to maintain an optimal range of salinity. The impoundments would be stocked with fish in order to provide forage for piscivorous birds. Islands would be constructed as colonial nesting areas for terns, and smaller islands would be constructed to serve as roosting areas for other piscivorous species such as cormorants and pelicans. These impoundments would feature deep and shallow water habitats to serve the foraging activities of a range of piscivorous bird species. No features of the impoundments were considered to provide nesting or foraging habitats for shorebirds, including the Western Snowy Plover. Although some shorebirds would undoubtedly use these habitats for roosting areas and possibly some limited foraging, the presence of large predatory birds including gulls and ravens and the lack of critical nesting attributes will not provide suitable nesting habitat for shorebirds and in particular the Western Snowy Plover, whose nesting habitat requirements are well documented. The DEIS/DEIR states in section 3.4 in Table 3.4.4 that the western snowy plover:

SDAS-3

*Nests primarily in flat open areas, with sandy or saline substrates; less commonly in salt pans, dredged spoil disposal sites, dry salt ponds, and levees. Occurs year-round at the Salton Sea (Shuford and Gardali 2008). The Programmatic Environmental Impact Report (DWR and DFG 2007) noted this species uses the Salton Sea for breeding and wintering. Surveys estimated 221 breeding adults at the Sea in 1999 (Shuford and Gardali 2008).*

Likewise, foraging habitats and food resources for Western Snowy Plovers and other shorebirds in the form of macroinvertebrates were not adequately addressed. According to the *Recovery Plan for the Pacific Coast Population of the Western Snowy Plover (Charadrius alexandrinus nivosus) Volume 1 Recovery Plan (USFWS 2007) pp17:*

*Western Snowy Plovers forage on invertebrates in the wet sand and amongst surf-cast kelp within the intertidal zone, in dry sand areas above the high tide, on salt pans, on spoil sites, and along the edges of salt marshes, salt ponds, and lagoons. They sometimes probe for prey in the sand and pick insects from low-growing plants...Opportunities for foraging are directly dependent on salinity levels. Specifically, salt ponds of medium salinity seem to provide the best quality foraging habitat.*

Regarding construction of the proposed impoundments, the DEIS/DEIR states in Section 3.4 pp37 “Pond construction (primarily the berm on the landward side of the ponds) would cause a small loss of foraging habitat for the western snowy plover, but other foraging habitat would remain outside the Project footprint.” While this is true for the period during and immediately following project implementation, it does not consider the eventual fate of the Salton Sea, which is expected to retreat seaward, all the while increasing in salinity. The DEIS/DEIR uses the retreating shoreline as a rationale for calling project impacts to potential foraging habitats of the Western Snowy Plover temporary, but does not address any impacts to the Western Snowy Plover once the salinity levels increase to the point that they no longer support the present assemblages of invertebrates and the inevitable loss of the lake and therefore, most of, or all shoreline habitat.

SDAS-4

The DEIS/DEIR clearly states the projected acreages of agricultural lands covered under Williamson Act contracts that would be affected, but does not to any meaningful extent provide any estimated impacts of agricultural land conversions to any wildlife, including birds. Agricultural lands are relied upon for foraging and/or nesting by many birds species. Bird use of agricultural lands is of course dependent on the ecology of bird species as well as the crops that are grown and other management practices. Many shorebirds benefit from agricultural lands that are periodically flooded and provide macroinvertebrates. Waterfowl, especially geese benefit from tall grasses that provide nest concealment and from waste grain after harvesting. Western Meadowlarks (*Sturnella neglecta*) often nest in grass fields and Savannah Sparrows (*Passerculus sandwichensis*) commonly use these habitats during winter, particularly where there are windrows or other forms of cover.

SDAS-5

### **Recommendations**

The final EIS/EIR (FEIS/FEIR) should include an analysis of potential changes to nesting habitats for shorebirds at the Salton Sea. The analysis should include species that are known to nest at the Salton Sea in large numbers such as the Black-bellied Plover (*Pluvialis squatarola*), Black-necked Stilt (*Himantopus mexicanus*), and American Avocet (*Recurvirostra americana*) as well as special status species, which would include the Western Snowy Plover.

SDAS-6

An analysis of potential changes to wintering habitats and macroinvertebrate prey should also be included in the FEIS/FEIR. It is possible that populations of wintering shorebirds could be maintained in the future by increased reliance on adjacent farmlands (which the DEIS/DEIR states will likely increase under any proposed action alternative) and duck clubs for foraging; however, that is not discussed and should be included in the FEIS/FEIR. Impacts to other bird species that would result from the No Action Alternative as well as the alternatives that would affect the acreages and composition of farmlands should be analyzed and discussed in greater detail as well.

SDAS-7

New alternatives should be developed if none of the existing alternatives are determined to provide either “no impact” or beneficial impacts to the nesting and foraging activities of resident and overwintering shorebirds.

SDAS-8

As a suggestion, if the SCH needs to be amended, the creation of a mix of shorebird habitats, including mudflats, permanent sandy shore, shallow water, and saltpans supporting healthy populations of invertebrate prey species would be highly beneficial for the wide range of shorebird species that depend on the Salton Sea for nesting and foraging. Care should be taken to ensure that any created shorebird nesting habitats are not near perches or roosting areas for

SDAS-9

predatory birds such as gulls, crows, ravens, and raptors and that if at all possible, they are either protected from, or offer concealment from terrestrial predators such as coyotes, foxes, skunks, and raccoons.

SDAS-9  
Cont.

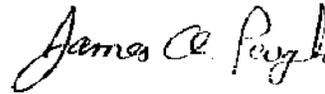
We would like to reemphasize San Diego Audubon's deep appreciation for your efforts to conserve the habitats of the Salton Sea and our willingness to provide assistance in that effort.

SDAS-10

Sincerely,

Joe Thompson

James A. Peugh



Conservation Committee Member

Conservation Chair



October 17, 2011

Mr. David Elms, DFG Project manager  
California Department of Fish and Game  
78078 Country Club Drive, Suite 109  
Bermuda Dunes, CA 92203

Re: Salton Sea Species Conservation Habitat Project

Dear Mr. Elms:

The purpose of this letter is to comment on the Draft Environmental Impact Statement/Report (DEIS/R) for the Salton Sea Conservation Habitat (SCH) Project.

Having been involved with many projects at the Salton Sea over the last 35+ years there is one truism I find to be absolute and that is; anytime a map(s) is made such as in the case of shallow habitat at the Alamo River-Morton Bay, it will be adopted by those opposed to any energy development (solar or geothermal) in the area. The writers of this DEIS/R document will point to the various sections that this site is the premier, undeveloped geothermal resource in California and geothermal development can be compatible with SCH. Not one map or exhibit shows the 4000 to 5000 acres of potential geothermal resource development. The Resources Agency recognized the geothermal potential by reserving out this area from the development of habitat.

ES-1

We suggest that all early start habitat projects be conducted in the area of the New River, giving the area of the Alamo River a chance for geothermal development without the conflict of moving the proposed habitat. This would help to meet the State's goal of 30% renewable energy.

ES-2

Sincerely,

Larry L Grogan  
Senior Vice President, Resource and Development

## Nancy Dorfman

---

**From:** Lorraine Woodman  
**Sent:** Tuesday, November 29, 2011 1:54 PM  
**To:** Nancy Dorfman  
**Subject:** FW: New SCH EIS-EIR comment from Kim Delfino

Lorraine Woodman, Ph.D.  
Senior Consultant / Environmental Planning Cardno ENTRIX  
201 North Calle Cesar Chavez, Suite 203, Santa Barbara, CA 93103  
Phone: 805 962 7679 Direct: 805 963 0468 Mobile: 805 284 1878 Fax: 805 963  
0412

-----Original Message-----

From: DO NOT REPLY [mailto:noreply@cardno.com]  
Sent: Monday, October 17, 2011 9:53 PM  
To: Lorraine Woodman; Sarah Bumby; Rob Wurgler; Robert M. Wood  
Subject: New SCH EIS-EIR comment from Kim Delfino

Kim Delfino has entered a comment. Contact Information:  
E-Mail: kdelfino@defenders.org  
Affiliation: Defenders of Wildlife  
Mailing Address:  
1303 J Street, Suite 270

Sacramento, CA 95814

Attachments:  
Comment:

October 17, 2011

Via Electronic Mail (Hard Copy in the Mail)

Lanika Cervantes  
U.S. Army Corps of Engineers, Los Angeles District Regulatory Division San  
Diego Field Office  
ATTN: CESPL-RG-S-2010-00142-LLC  
6010 Hidden Valley Road, Suite 105  
Carlsbad, CA 92011

David Elms  
California Department of Fish and Game  
78078 Country Club Drive, Suite 109  
Bermuda Dunes, CA 92203

Re: Salton Sea Species Conservation Habitat Project Draft EIS/EIR  
Public Notice CESPL-RG-S-2010-00142-LLC  
State Clearinghouse No. 2010061062

Dear Ms. Cervantes and Mr. Elms:

On behalf of Defenders of Wildlife and our more than 140,000 members and supporters in California, I am writing to provide comments on the propose Salton Sea Species Conservation Habitat Project Draft Environmental Impact Statement (EIS)/Environmental Impact Report (EIR) (hereinafter referred to as Salton Sea SCHP ). In addition to these comments, Defenders joins in the more detailed and comprehensive comments submitted by the Pacific Institute on October 14, 2011. DOW-1

Defenders has been engaged in Salton Sea efforts for more than 8 years and served as a member of the California Resources Agency s Salton Sea Advisory Committee and has provided extensive comments and recommendation on the California Natural Resources Agency s Salton Sea Ecosystem Restoration Program Programmatic EIR. As part of that document, we endorsed Period 1 activities, including the development and construction of shallow pond habitat complexes known in the document as early start habitat. DOW -2

The current proposed Salton Sea SCHP is the most recent version of this early start habitat and is long overdue given current conditions at the Salton Sea. DOW -3

1. The DEIR provides insufficient information about the project.

As mentioned above, Defenders strongly supports the construction of shallow pond habitat around the Salton Sea. Unfortunately, the DEIR provides insufficient information for us to determine whether the proposed project will work as intended. First, there is no information or certainty that the state has the legal right to divert any amount of water from the New or Alamo Rivers for this project. Second, the DEIR provides little information to show that the proposed project will produce fish in sufficient numbers to provide an adequate forage base for piscivorous birds the project s stated purpose. For example, there is nothing in the description of the alternatives, the subsequent environmental analyses, or any of the appendices that provides information on projected fish production rates or harvest rates. Section 3.4 states that fish and invertebrates may suffer from seasonal or even daily mortality, due to low concentrations of dissolved oxygen (DO) and low temperatures, but does not offer any estimates of the magnitude of these mortality events or describe how this periodic mortality will affect the overall ability of the project to meet its goals. DOW -3  
DOW -4

Third, the DEIR neglects to provide any information on costs. How much would it cost to construct each alternative? What are the projected annual operations & maintenance costs of each alternative? How much money is currently available? What additional funds might be obtained? Can the alternatives be scaled back, if full funding is not available? How will this affect the adverse and beneficial impacts analyses? Given the fact that the state agencies have used up more than half of the bond funds for Salton Sea Restoration and the state has no funding plan in place for how to deal with its current mitigation obligations at the Sea, the issue of how any project is going to be funded is critical. Any final project should be designed to be built and operated on existing funds with the ability to be expanded if new funding is secured. Currently, that does not appear to be one of the criteria for this project. DOW -5  
DOW -6

2. The Preferred Alternative is flawed.

As noted above, given that no water has been secured to operate this habitat project, determining the correct amount of water necessary to run this project is critical. According to the DEIR, the preferred alternative could divert more than 50% of the total historic flow of the New River during June, the peak DOW -7

evaporation month. Aside from the fact that future New River flows will be significantly lower in the future, due to water transfers and water conservation efforts in the Imperial Valley and further reductions in flows from Mexico, diverting more than half of the river s flow raises many questions. In addition to the immediate environmental impacts (to the river and riparian corridor downstream and to the estuary formed at the river s mouth), this diversion suggests that a maximum of 7,000 acres of shallow habitat could be constructed near the New River, and perhaps 10,000 acres near the Alamo River, given the volume of water available during June. If this is accurate, what does it say about long-term mitigation strategies for the Salton Sea? Would it be permissible to divert the entire flow of the New River to deliver water to constructed habitat? Or does the preferred alternative represent, in effect, the maximum amount of constructed habitat feasible near the New River?

DOW  
-7  
Cont.

Furthermore, the selection of Alternative 3 as the preferred alternative appears to be pre-decisional, both because of the criteria used to justify the decision (e.g., because it is the largest alternative) and especially because the agencies apparently are already in the 75% design phase for this alternative as opposed to the other alternatives, even before the comment period has closed and well before the agencies have had the opportunity to review public comments.

DOW  
-8

For the reasons described above and more fully in the comment letter submitted by the Pacific Institute, the preferred alternative is flawed. Instead, a modified version of Alternative 4 should be considered as the preferred alternative as it offers the best opportunity to test future conditions and parameters for habitat construction at the Salton Sea.

DOW  
-9

Thank you for the opportunity to provide comments to you on this important project. If you have any further questions, please do not hesitate to contact me at (916) 313-5800 ex. 109.

Sincerely,

Kim Delfino  
California Program Director



***VIA ELECTRONIC SUBMISSION***

October 17, 2011

Lanika Cervantes  
U.S. Army Corps of Engineers, Los Angeles District  
Regulatory Division – San Diego Field Office  
ATTN: CESPL-RG-S-2010-00142-LLC  
6010 Hidden Valley Road, Suite 105  
Carlsbad, CA 92011

David Elms  
California Department of Fish and Game  
78078 Country Club Drive, Suite 109  
Bermuda Dunes, CA 92203

Submitted electronically at <http://saltonsea.entrix.com/>

Re: Salton Sea Species Conservation Habitat Project Draft EIS/EIR, Public Notice  
CESPL-RG-S-2010-00142-LLC, State Clearinghouse No. 2010061062

Dear Ms. Cervantes and Mr. Elms:

These comments on the Salton Sea Species Conservation Habitat Project Draft EIS/EIR, Public Notice CESPL-RG-S-2010-00142-LLC, State Clearinghouse No. 2010061062 are submitted on behalf of the Center for Biological Diversity (the “Center”).

The Center is a non-profit environmental organization dedicated to the protection of native species and their habitats through science, policy, and environmental law. These comments are submitted on behalf of the Center’s 320,000 staff, members and online activists throughout California and the western United States many of whom live in southern California and who are concerned with the conservation of the many imperiled, rare, and special status species that depend on the Salton Sea habitat for survival.

The Center joins with and incorporates by reference herein the comments provided by Defenders of Wildlife and the Pacific Institute regarding the proposed project.

CBD-1

The Center supports the overall goals of the proposal to begin the process of habitat restoration in the Salton Sea and specifically to provide early start shallow pond habitat in key areas. However, we are concerned that the DEIS/EIR fails to fully explore the impacts of the proposed project on existing habitat and species and fails to examine how the overall goals of the proposal can best be accomplished through a robust alternatives analysis.

CBD-2

For example, the environmental review documents fail to explain how critical water resources will be obtained and the status of funding for the proposed project to ensure it will be completed and have the best chance to provide the needed conservation. Because the proposal is envisioned as part of a series of likely future restoration projects in the Salton Sea, it is critical to ensure that the design reflects that fact and that sufficient monitoring and data collection regarding the effect of the project is also funded so that information can be used to inform future proposals.

CBD-3

While the focus of the proposed project on restoring habitat for some species may be reasonable, that does not however excuse the DEIS/EIR from failing to fully explain the potential impacts of the proposed project on other species and habitats particularly from the proposed changes in water diversions. The environmental documents also fail to clearly define the goals for the proposed project in the context of an unstable baseline and historic condition as well as the likely future conditions at the Salton Sea. Given the complexity of the problem, the Center supports the development of innovative proposals to meet the short-term and long-term goals for conservation and restoration of habitat in the Salton Sea and the Center also recognizes that implementation of well designed conservation and restoration projects for the Salton Sea habitats are essential for the many species that depend on the sea for their survival.

CBD-4

CBD-5

CBD-6

Thank you for the opportunity to provide comments on the DEIS/EIR for the proposed species conservation habitat project. The Center looks forward to reviewing revised environmental documents for this proposal.

Sincerely,



Lisa T. Belenky, Senior Attorney  
Center for Biological Diversity  
351 California St., Suite 600  
San Francisco, CA 94104  
(415) 436-9682 x307  
lbelenky@biologicaldiversity.org

---

Individuals

## Nancy Dorfman

---

**From:** Lorraine Woodman  
**Sent:** Tuesday, November 29, 2011 1:50 PM  
**To:** Nancy Dorfman  
**Subject:** FW: New SCH EIS-EIR comment from Paul Wertlake MD

Lorraine Woodman, Ph.D.  
Senior Consultant / Environmental Planning Cardno ENTRIX  
201 North Calle Cesar Chavez, Suite 203, Santa Barbara, CA 93103  
Phone: 805 962 7679 Direct: 805 963 0468 Mobile: 805 284 1878 Fax: 805 963 0412

-----Original Message-----

From: DO NOT REPLY [<mailto:noreply@cardno.com>]  
Sent: Thursday, September 01, 2011 9:34 AM  
To: Lorraine Woodman; Sarah Bumby; Rob Wurgler; Robert M. Wood  
Subject: New SCH EIS-EIR comment from Paul Wertlake MD

Paul Wertlake MD has entered a comment.Contact Information:

E-Mail: [pwertlake@verizon.net](mailto:pwertlake@verizon.net)  
Affiliation: Vistas By Paul  
Mailing Address:  
79-190 Liga St

La Quinta, CA 92253

Attachments:

Comment:

Page 1, Line 1

Wertlake-1

This is a simple statement by an interested and concerned person living in the Coachella Valley. An agreed plan, ONE, must be adopted. I believe it must be made a mandatory bench mark although exceedingly difficult to reach due to the diverse factors and views. The many differing views that have been proposed publicly lead to a division of effort, focus, interest and intent. Absent a single cohesive message and plan I fear failure.

**Lorraine Woodman**

---

**From:** Nelson, Kent [knelson@water.ca.gov]  
**Sent:** Thursday, October 20, 2011 10:37 AM  
**To:** Lorraine Woodman  
**Subject:** FW: Salton Sea

A comment on the SCH DEIS/R

Kent Nelson  
Program Manager  
Salton Sea Restoration Program  
CA Department of Water Resources  
916.653.9190  
[knelson@water.ca.gov](mailto:knelson@water.ca.gov)

-----Original Message-----

**From:** Stephen Boland [<mailto:sboland2@san.rr.com>]  
**Sent:** Monday, September 05, 2011 9:53 PM  
**To:** Salton Sea  
**Subject:** Salton Sea

Boland-1

Maybe you could make a canal from the Colorado river into and out of the Salton Sea to bring in fresh water and control the level of the water for wildlife habitat. It would be a more long term solution.

Sincerely  
Steve Boland

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P.O. Box 1092,  
Joshua Tree, CA 92252  
760-366-9124

[www.deserthideaway.com](http://www.deserthideaway.com)



Ryan-1

How disheartening to read the  
report sent to us re: the  
Kallton sea vs the Army  
Corps of Engineers; i.e. page  
3 - "The Corps will evaluate  
impacts on the environment"  
- for in their hen house here!  
This group creates environ-  
mental disasters; dimmed  
lately come to mind - Idaho Teton  
dam, Miss. levees in N.O., LA.  
Spare us this group! M. Ryan

David Elms  
78078 Country  
Club Dr.  
Suite 109  
Bermuda Dunes  
Ca. 92203

James H. Eric Freedner  
11157 Leadwell Street  
Sun Valley, CA 91352  
(818) 982-2174 or (310) 553-8533  
JHFreedner@yahoo.com

September 8, 2011

RECEIVED

SEP 13 2011

REGULATORY BRANCH  
CARLSBAD FIELD OFFICE

Lanika Cervantes  
U. S. Army Corps of Engineers – Los Angeles District  
Regulatory Division – Carlsbad Field Office  
Attn.: CESPL-RG-S-2010-00142-LLC  
6010 Hidden Valley Road, #105  
Carlsbad, CA 92011

Re: Application No.: SPL-2010-00142-LLC  
My Parcel No.: 020-040-077-000

Dear Sirs:

I own the above-referenced real property located approximately one half mile due west of the spillway of Canal S, vicinity of Niland, per the old shore line of 1964. My property is within the proposed Alamo River alternative portion of this project.

To the extent that any waters would be added to or diverted into the Salton Sea from natural rivers or artificially-created ponds onto or over my property, I oppose the proposal and its draft environmental impact report. It appears from the plan that a greater volume of water may permanently be diverted onto my property. The EIR has not addressed the subject of impacted private land ownership in the Alamo River project. The change to my property would not be merely an "economic" one ("changing land values"), but would be a "taking" of my land without reasonable compensation therefore, in violation of the State and Federal Constitutions.

Freedner-1

As a separate concern with this project, creating fresh-water lakes and stocking them with fish would not resolve the problem of migratory birds coming into contact with saline and polluted waters of the Salton Sea itself, as they would not necessarily remain in the fresh-water ponds but would roam over the Sea. The fresh-water ponds would quickly be fouled with feathers and excrement and become themselves polluted. A similar attempt to provide refuge for birds was put into place near Malibu Surfrider Beach here in Los Angeles County. As a result, the bacteria content of the public beach increased to the point where Surfrider Beach received an "F" grade on numerous occasions as to water safety. Here, while there is apparently no swimming taking place in the Salton Sea, the added bacterial content and conveyance of foul waters would diminish from the quality and value of the Sea.

Freedner-2

It would better serve the area to let the Sea dry up in the due course of nature. You are requested to enter this protest and comments into the official record on the Draft EIS/EIR, and you may copy and disseminate it as you see fit. Should you wish to contact me, I may be reached at the above address.

Freedner-3

Very truly yours,

  
James Eric Freedner



## Nancy Dorfman

---

**From:** Lorraine Woodman  
**Sent:** Tuesday, November 29, 2011 1:50 PM  
**To:** Nancy Dorfman  
**Subject:** FW: New SCH EIS-EIR comment from Chris Cockcroft

Lorraine Woodman, Ph.D.  
Senior Consultant / Environmental Planning Cardno ENTRIX  
201 North Calle Cesar Chavez, Suite 203, Santa Barbara, CA 93103  
Phone: 805 962 7679 Direct: 805 963 0468 Mobile: 805 284 1878 Fax: 805 963 0412

-----Original Message-----

From: DO NOT REPLY [<mailto:noreply@cardno.com>]  
Sent: Saturday, September 17, 2011 9:44 AM  
To: Lorraine Woodman; Sarah Bumby; Rob Wurgler; Robert M. Wood  
Subject: New SCH EIS-EIR comment from Chris Cockcroft

Chris Cockcroft has entered a comment.Contact Information:

E-Mail: [chris@cockcroft.org](mailto:chris@cockcroft.org)

Affiliation:

Mailing Address:

1020 Palm Ave. South Pasadena, California  
22925 Rudderow Lane  
Sky Valley, California 91030

Attachments:

Comment:

The Dept held one meeting several years ago on the plan to restore the Salt  
Sea. It flopped and no money was appropriated by the Legislature.

Last year (june 2010) after the QSA was voided by Judge Roland Candee two very  
junior reps came to Palm Desert and gave an extremely vague presentation with no  
stenographer, (no comments were recorded) and no period for comment by the  
audience.

This time, we--the residents of the valley in which the Sea exits--were handed  
this project as a "proof of concept" for restoration of the Sea.

The California Legislature intended to restore the Sea, fix it, as it were. It  
envisioned an 8 billion dollar project.

The idea went nowhere because it was deeply flawed.

Now you are calling this a proof of concept, as though it will lead to many other  
similar projects.

This project does nothing for brown pelican, Yuma clapper rail, desert pupfish,  
peregrine falcon, and bald eagle--all endangered and protected species that must  
be protected.

Change the name of your project. Don't call it a proof of concept because it  
isn't.

Cockcroft-1

It establishes a few ponds to mitigate the problem.

Cockcroft-1  
Cont.

September 20, 2011

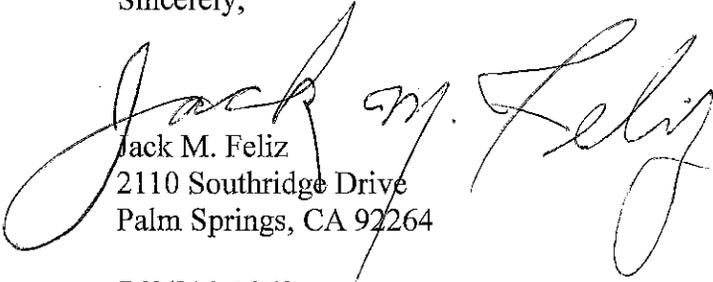
Mr. Kent Nelson  
Program Manager,  
Salton Sea Ecosystem Restoration Program  
California Department of Water Resources  
PO Box 942836  
Sacramento, CA 94283

Dear Mr. Nelson:

You are a person of vision and I hope that you will approve of my attached plan for saving the Salton Sea.

Perhaps you may present this plan to the appropriate authorities and encourage its accomplishment.

Sincerely,



Jack M. Feliz  
2110 Southridge Drive  
Palm Springs, CA 92264

760/328-3860

Feliz-1

(1)

One of the principal merits of this plan to save a dying Salton Sea and restore the Sea to its original level can be accomplished at NO COST to the general public or government entities.

First, you must get permission from the Mexican government to lay a pipeline from the Sea of Cortez through their country and then terminating at the Salton Sea.

Second, you should request an opinion from the US Army Corps of Engineers regarding the largest wattage output from a turbo electric generator that can be produced from the 228 foot seawater column. And also what is the recommended diameter of the proposed pipeline that will supply water from the Sea of Cortez. And further, what would be the estimated dollars per year output from the above selected turbine electric generator? (Please recommend a reliable manufacturer of the selected turbine electric generator and its approximate cost.)

Third, you should get at least three pipeline companies to bid on the cost to build the pipeline and the time to complete the project.

Fourth, you would need to obtain financing with a 30-year payback period. The funds to pay back the loan would come from the sale of electricity generated from the turbo electric generator attached to the discharge end of the pipeline.

Fifth, after concluding a contract with the Southern California Edison Company, the electricity generated will pass through an electric meter thence into the Southern California Edison electric grid. A meter reader will read the meter each month and Southern California Edison Company will send a check for the electricity received each month to the loan company to pay down the loan.

It is imperative that the loan be paid off before the Salton Sea reaches its maximum desired level.

The following are some of the features that should be considered in developing the pipeline. The pipeline will be approximately 178 miles long. The pipe should be made of steel. The interior of the pipe should be coated with a cement slurry or a petroleum base as rust inhibitors. Each joint should be electric welded. After each joint is welded one of the above rust inhibitors should be applied to the interior of each joint. When the maximum Salton Sea level is reached, the pipeline flow may be stopped by closing the discharge valve on the end of the pipeline. The system can be started periodically to replenish the Salton Sea due to water loss from evaporation and seeping into the surrounding soil. Where the pipeline crosses a road or a stock trail, the pipeline should be buried below the surface of the road or trail.

(2)

A suitable pier should be installed at each end of the pipeline. A steel flange shall be welded at each end of the pipeline. The flange shall be provided with bolt holes to match the holes in the bronze gate valve to be installed at each end of the pipeline. An air vent valve shall be bolted to a pipe riser which is welded over a hole cut in the inlet pipe near the inlet valve. This air vent valve permits the air to escape as the pipeline is filled with water. A combination vacuum and pressure gauge is connected to the air vent riser.

Three double sets of screens shall be installed in front of the inlet bronze gate valve and to each side of the inlet gate valve; to filter out seashells, barnacles, kelp, dead fish and birds, and to prevent a careless human from being sucked into the pipeline. The double screens permit the removal of the outer screen for periodic cleaning. A couple of Nationals should be hired to do the cleaning. Provide them with wire brushes and a shaded shelter where they can remove the debris. The second screen provides security to prevent any unwanted articles from entering the pipeline while the front screens are being cleaned.

The bottom of the screened cube hereinafter called the cube shall have a brass sheet secured to the bottom of the cube to prevent rocks and sand from being sucked into the pipeline. The top of the cube shall have several crossbars secured thereon to support a quarter inch brass plate and the weight of a man as he changes the screens. The cube shall have a bracket welded on each side with two bolt holes to match the holes in the inlet valve for bolting the cube to the inlet valve.

A steel faceplate shall be provided with bolt holes to match the inlet valve holes and bolted to the inlet valve. The faceplate shall have two angle irons welded thereon to support the electric pump motor to keep the motor above high tide. The bolts and nuts shall be made of brass.

Rent an electric motor driven pump which will be bolted to the faceplate. Cut a hole in the faceplate large enough to permit water to pass from the pump into the pipeline. Rent a diesel driven engine connected to an electric generator mounted on a trailer or mounted on a flatbed truck. The generator should be stationed near the inlet valve with electrical wires connected to the motor driven pump. At the discharge end of the pipeline at the Salton Sea a bronze gate valve is bolted to the flange on the outlet end of the pipeline. A turbine driven electric generator is bolted to the discharge side of the bronze gate valve.

In order to compensate for the expansion and contraction of the pipeline, at least one expansion joint and possibly more should be installed in the pipeline. A pressure gauge shall be installed on the last section of the pipeline near the discharge valve.

The Salton Sea is 228 feet below the Sea of Cortez. By opening the discharge valve located on the Salton Sea end of the pipeline, the escaping water will create a vacuum in the pipeline. In addition, the atmospheric pressure on the Sea adjacent to the inlet valve will help to cause a siphon effect in the pipeline and will suck in the water from the Sea of Cortez and will flow indefinitely without any further assistance.

(3)

In view of the high tidal fluctuations at the Sea of Cortez it may be prudent to dredge a channel up to the inlet valve to insure an adequate supply of water at all times. If you lose suction due to low water, you would have to refill the pipeline again using the same method of filling the pipeline as the first filling. It is recommended that a scuba diver be hired to install and remove the bolts from the faceplate which will be under the surface of the water.

The subject water column will provide a very strong force to drive the turbo electric generator at the same time the discharged water will raise the level of the Salton Sea, which is the primary reason for installing this system. There are a few preliminary tasks to accomplish before you can start up this system.

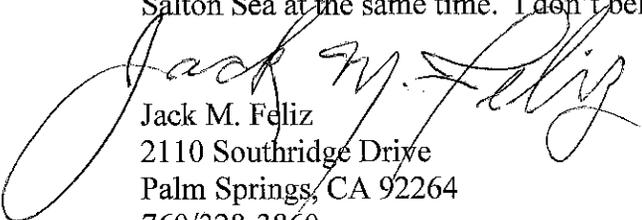
First, the cubed screen shall be bolted to the inlet valve.

Second, the discharge valve at the Salton Sea must be closed and the inlet valve must be open. Next the diesel driven generator is started up and the water pump is also started, pumping water into the pipeline. The air vent valve should be opened to allow the air to escape as the water displaces the air in the pipeline. It will take several days to fill the pipeline. When the pipeline is filled, close the inlet valve and air vent valves.

Remove the faceplate with assistance from a scuba diver. The rental equipment can be returned to the rental agency. The faceplate and bolts are sent to a storage shed near the discharge valve for possible future use.

In order to start the system operating, communicate with the valve operator of the discharge valve at the Salton Sea. Tell him to open his discharge valve. Shortly thereafter a vacuum should show on the vacuum gauge, and then you should start opening the inlet valve until it is fully opened.

PRESTO! You start producing electricity for sale to pay off the loan and filling up the Salton Sea at the same time. I don't believe that it will likely get much better than that.



Jack M. Feliz  
2110 Southridge Drive  
Palm Springs, CA 92264  
760/328-3860

October 7, 2011

**Ms. Lanika Cervantes, Corps Project Manager  
U.S. Army Corps of Engineers, Los Angeles District**

And

**Mr. David Elms, CDFG Project Manager  
California Department of Fish and Game**

**REF: PUBLIC COMMENTS BY JEFF GERACI ON THE SALTON SEA SPECIES  
HABITAT CONSERVATION PROJECT (SHCP), DRAFT EIR**

My name is Jeff Geraci, I am a resident of Cathedral City, California, and I am also an environmental scientist. I have reviewed the proposed environmental impact report (EIR) for the Salton Sea Species Habitat Conservation Project Draft EIR, and I have some concerns pertaining to the local barnacle population, *Balanus Amphitrite Saltonensis*, which is a sub-species of *B. Amphitrite Amphitrite*. These comments are in addition to those comments I made in person at the public meeting held on September 15, 2011 at the UC Riverside campus in Palm Desert, California.

*B. Amphitrite Saltonensis* was first described a sub-species in 1949 by F.L. Rogers and later retained as valid by Henry & McLaughlin in 1975. In 1992, P.T. Raimondi reaffirmed this statement after detecting differences in larval morphology and development. This unique sub-species of *B. Amphitrite Saltonensis* exists nowhere else in the world but at the Salton Sea, which leaves me baffled as to why there is no mention of preserving, protecting, or otherwise assessing the potential impacts on this isolated and unique sub-species of barnacle.

Geraci-1

Barnacles are filter feeders, and in high densities they can have a positive impact on water quality and water clarity, as well as the Salton Sea's food web. Barnacle colonies provide critical habitat for a variety of other benthic organisms that comprise the base of the Salton Sea's food web. As I stated, in reviewing the EIR for this project, I found that there is no mention of *B. Amphitrite Saltonensis* in the CEQA section of potential impacts; the only mention of this barnacle that I found in the EIR is in the context of shoreline composition (i.e. dead barnacle shells) and salinity. This concerns me very much, because the survival of this barnacle population will be significantly threatened by the current design of this project, as will other vital organisms found in and around the Salton Sea, yet *B. Amphitrite Saltonensis* has apparently been overlooked. I have attached my comments to this letter, for a total of 3 pages including this page. Thank you.

Geraci-2

Jeff B. Geraci  
69444 Shawnee Ct  
Cathedral City, CA 92234  
jeffgeraci@aol.com

Specifically, my concerns are:

**I. Chemical composition and hydrodynamics (SHCP appendix J)**

This concern applies to all aquatic organisms found within the Salton Sea, not just the barnacle population. As noted, this project is to be implemented in phases, and the initial phase of the project will create a relatively small waterbody as habitat, in comparison to the size of the current sea. This could present significant problems for the biota, since the response of small waterbodies to environmental stressors (e.g. pollution, temperature distribution, nutrient loading, oxygen depletion) is much faster and more severe than with larger waterbodies. With larger waterbodies, the changes are more gradual, there is more potential for dilution and dispersal, and in some cases organisms can flee to a more suitable area within the waterbody- that is not possible within a smaller waterbody such as with the proposed project design.

Geraci-3

In addition, the change in hydrodynamics will be perhaps one of the most significant impacts of the project as a whole. The hydrodynamics of water movement within the proposed initial phase will result in enormous impacts based on the morphometry of the basin, its stratification structure, and the reduced amount of surface area exposed to the wind.

Geraci-4

Finally, suspended silts and sediments are often deadly to barnacle populations, interfering with propagation, respiration, settlement of cyprids and filter feeding. Construction and maintenance of the berms, as proposed, will have a very significant short and long term impact on barnacle colonies in terms of excessive suspended silt and sediment, and these impacts must be mitigated.

Geraci-5

The initial phase of the project, as proposed, is insufficient in size. There must be substantial acreage added to the initial phase, as well as additional acreage designated for deep water habitat that will allow fauna to escape hostile conditions and will facilitate dilution, flow, and distribution of temperature. Deep water habitat is also crucial for maintaining much needed diversity in such a small ecosystem. There must be a substantial increase in the total volume of water of the initial phase, and the barnacle populations must be protected from the highly turbid water that would result from berm construction and maintenance.

Geraci-6

**II. A lack of suitable substrate**

Barnacles require suitable substrate for settlement, which includes hard or otherwise rigid materials, preferably in close proximity to the waters surface where there is plentiful oxygen exchange and water movement. Note also that once a barnacle is settled, that settlement is permanent and it is impossible for the organism to detach and migrate should environmental conditions become unsuitable. Having said that, there is nothing noted in the EIR that suggests there will be suitable substrate for the barnacle population to even exist, let alone thrive. It is not a valid argument to assume that the barnacles will simply “find a way” to survive, given that they are sometimes considered a “nuisance” or “bio-fouling” organism; that is not good science and it is not an acceptable form of mitigation under CEQA.

Geraci-7

Mitigation measures must be implemented to ensure the survival and continuation of the sub-species *B. Amphitrite Saltonensis*.

Geraci-8

Mitigation measures must be proposed for creating suitable artificial substrate within the project, beginning with the initial phase. This substrate should be strategically located at specific depths to ensure both optimal oxygen levels and flow rates for feeding and settling. Substrate could take the form of quarried rocks situated on the proposed berms as rip-rap, or as partially submerged rock formations on the shoreline, provided the threat of high suspended solids is mitigated as well.

### III. Consequential impact on other species

Impacts to the Salton Sea's barnacle population could have serious detrimental repercussions on other sea life, and therefore, those impacts must be adequately mitigated under CEQA. Barnacle colonies within the Salton Sea can be considered an "umbrella" species that provides habitat not just for itself but for other benthic fauna as well. For example, the native pileworm (*Neanthes Succinea*) is a vital food staple for fish, and for both the native bird population and seasonal birds who migrate along the pacific flyway (some of which are listed in the ESA). Barnacle colonies provide ideal habitat for many benthic organisms including pileworms, amphipods, ostracods, etc., offering both shelter and a renewable food source. Salton sea barnacle colonies host a diverse community of benthic organisms whose symbiotic relationship with other Salton Sea organisms must be protected and preserved.

Geraci-9

There is the need to incorporate mitigation measures into the SHCP project to preserve and protect the *B. Amphitrite Saltonensis* population, including but not limited to, incorporating suitable artificial substrate and re-designing the water basins to optimize the hydrodynamics of the proposed basins.

Geraci-10

### IV. Unique Sub-species requires preservation

As I mentioned above, this sub-species of barnacle (*B. Amphitrite Saltonensis*) was first described a sub-species in 1949 by F.L. Rogers and later retained as valid by Henry & McLaughlin in 1975. In 1992, P.T. Raimondi reaffirmed this statement after detecting differences in larval morphology and development when comparing to *B. Amphitrite Amphitrite*. This unique sub-species of *B. Amphitrite Saltonensis* exists nowhere else in the world but at the Salton Sea, and without adequate mitigation, the public could lose this unique and valuable resource.

Geraci-11

SALTON SEA SPECIES CONSERVATION HABITAT/PROJECT  
DRAFT ENVIRONMENTAL IMPACT STATEMENT/REPORT



Your Comments Please

Name: DOW HEDGEPEETH  
Address: 71757 MAGNESIA FALLS DR. RANCHO MIRAGE CA 92270  
Date: 10/9/11 Email: RED63AVANTI@VERIZON.NET

Comments: I THINK ALTERNATIVE 3 IS THE BEST OF THE FOUR ALTERNATIVES  
SIX

Hedgepeth  
-1

THANK YOU FOR HOLDING THE MEETING IN PALM DESERT ON SEPT 15, 2011

This form may be used to submit comments at today's meeting or by mailing to:

Ms. Lanika Cervantes, Corps Project Manager  
U.S. Army Corps of Engineers  
Los Angeles District, Regulatory Division  
6010 Hidden Valley Road, Suite 105  
Carlsbad, CA 92011

OR  
Mr. David Elms, DFG Project Manager  
California Department of Fish and Game  
78078 Country Club Drive, Suite 109  
Bermuda Dunes, CA 92203

To submit written comments after today's meeting, please use the electronic comment form found on the Department of Water Resources' Salton Sea website:  
<http://www.water.ca.gov/saltonsea/> Click on 'DEIS/EIR Comment Form'

Comments Need to be Received by October 17, 2011

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# Public Hearing Transcripts

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Transcript of Proceedings  
Salton Sea Species Conservation Habitat Project  
Draft Environmental Impact Study/  
Environmental Impact Report

Wednesday, September 14, 2011  
1:00 p.m.

Calipatria Inn and Suites  
700 North Sorenson Avenue  
Calipatria, California

Reported By:  
Terri L. Emery  
CSR No. 11598

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A P P E A R A N C E S

MODERATOR:

Ri ck Davi s, The Davi s Group

SPEAKER PANEL:

Kent Nel son, Department of Water Resources

Lorrai ne Woodman, Entri x

Lani ka Cervantes, U. S. Army Corps of Engi neers

Davi d El ms, Cali forni a Department of Fi sh and Game

Vi nce Thompson, Ducks Unl i mi ted

1 MR. MORGAN: Mike Morgan. I'm an adjacent  
2 farmer to the preferred project being part of the  
3 State's PEIR previous process on the Salton Sea. One  
4 question I would have, have you and this project  
5 affirmed and created a right of water for the use in  
6 this project? As you know, the New River is claimed by  
7 Metropolitan Water District and possibly the IID.

C-1

8 MR. DAVIS: We'll get to the -- we can do Q  
9 and A. For now if you want to make that as a comment  
10 that you're concerned about whether there's a water  
11 right.

12 MR. NELSON: So for instance --

13 MR. MORGAN: So how do you comment if you  
14 can't get a question answered?

15 MR. NELSON: So your comment would be it's  
16 important that the State consider either obtaining or  
17 addressing a water right in order to secure the  
18 long-term operation of the pond.

19 MR. MORGAN: I think part of an EIR you have  
20 to have a -- if you're planning to use water in a  
21 project, you have to have it -- you have to obtain --  
22 you have to own it. You have to be able to secure it.  
23 You can't just take it. And so I just didn't know if  
24 that was addressed yet in this project.

C-2

25 MR. NELSON: It is. It's in the document. I

1 don't know, Lorraine, if you want to speak to where we  
2 talked about that.

3 MS. WOODMAN: It's discussed in the project  
4 description and perhaps in the hydrology section too.

5 MR. THOMPSON: Hydrology and water quality  
6 section. There's a detailed discussion in the  
7 hydrology and water quality section of the document  
8 that talks about the water rights, Metropolitan's water  
9 right, application and what the -- and the use of water  
10 that's proposed by this project.

11 MS. WOODMAN: It's also the cumulative  
12 impacts.

13 MR. MORGAN: Would the project be using  
14 Metropolitan's claimed water right than affirming their  
15 water right by putting it to beneficial use or would it  
16 be using someone else's right?

C-3

17 MR. NELSON: Again, I know everybody has a  
18 strong urge to want to get questions answered about the  
19 project, but what Rick has said first, what we need to  
20 do is go through the formal process of taking comments  
21 and then once the formal comment period is closed, we  
22 can have an informal discussion after, but we can't --  
23 we're actually required by law to go through a formal  
24 process where we accept comments, close the comments  
25 section of the meeting, the stenographer stops taking

1 notes, that's the end of the record for the meeting,  
2 and then afterwards if you want to talk about other  
3 specifics, we can do that.

4 MS. WOODMAN: And we will respond to the  
5 comments that you make now in the final EIS/EIR too and  
6 one of the reasons, not to just -- you know, we can  
7 answer this question, but a lot of these comments  
8 require a lot of thought and analysis and input from  
9 experts and we don't want to give out answers without  
10 really having time to thoroughly consider them and run  
11 them through the appropriate people.

12 MR. DAVIS: Before we leave, I'm sure  
13 Lorraine can give you the exact sections that address  
14 this in the document.

15 MS. WOODMAN: I can show you in the document.

16 MR. DAVIS: As Kent said, we can kick that  
17 around a little more after we're done with this  
18 portion. I know I saw another hand pop up for Mike.  
19 Someone else? Scare you away already?

20 MR. VAN CLEEF: Mine was more contextual,  
21 which is is this the same project as Quick Start?

22 MR. DAVIS: Early Start?

23 MR. VAN CLEEF: Early Start.

24 MR. DAVIS: Yes. It's completely --

25 MR. NELSON: Well, what I can say about that,

C-4

1 it's consistent with the principles that are outlined  
2 as Early Start Habitat in the PEIR, but this is not a  
3 piece of the PEIR. All of this is authorized under a  
4 separate piece of Fish and Game Code that allows Fish  
5 and Game to do this type of early habitat restoration  
6 work at the Salton Sea. So this is not an  
7 implementation step of the PEIR, but the actions are  
8 consistent with the principles of Early Start  
9 Habitat.

10 MS. WOODMAN: Be sure to give your name so we  
11 can have it for the record.

12 MR. DAVIS: Could you add your name?

13 MR. VAN CLEEF: Dave Van Cleef.

14 MR. DAVIS: Dave Van Cleef. Thank you.

15 Other comments we want to make about the draft EIS/EIR?

16 MR. WILCOX: Bruce Wilcox. This is just a  
17 general comment. The IID board has already affirmed  
18 its support of this project with the board memo and we  
19 appreciate the level of coordination that we've seen  
20 from the State and from the consultant team in  
21 developing this, and we're really pleased with the  
22 progress you've made in the last year.

C-5

23 MR. DAVIS: That was a wonderful comment.

24 MR. WILCOX: I've been practicing.

25 MR. DAVIS: Other comments? I think

1 everybody wants to do Q and A, Kent.

2 MR. NELSON: Does anybody have any written  
3 comments they want to submit or have they submitted  
4 them in the comment box? Because that's an opportunity  
5 as well.

6 MR. DAVIS: The forms, like I said, are right  
7 here if you grab one, and there's a little box there  
8 and additionally the address is there if you can't  
9 finish it before your --

10 MR. SCHONEMAN: I can turn my question into a  
11 comment.

12 MR. DAVIS: Great.

13 MR. SCHONEMAN: For the record, Chris  
14 Schoneman, Salton Sea National Wildlife Refuge. It  
15 would be, I think, convenient if the project was built  
16 kind of in a modular fashion so that in the future,  
17 assuming everything works out very well here and water  
18 levels continue to decline, maybe it even states this  
19 in the document, that the pumping capacity can be  
20 increased so that it can be built out further down the  
21 stream and extend the benefits of the habitat that's  
22 already out there.

23 MR. DAVIS: Good. Thank you. Anyone else,  
24 other formal comments? Okay. Great. We can end that  
25 portion of the meeting then, Kent and everyone, and

C-6

1 like I said, there are forms if you have things that  
2 come to mind afterwards, you can send them in or go  
3 online.

4 (Proceedings concluded at 1:41 p.m.)

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REPORTER'S CERTIFICATION

I, Terri L. Emery, Certified Shorthand Reporter,  
in and for the State of California, do hereby certify:

That the foregoing proceedings were taken before  
me at the time and place herein set forth; that the  
proceedings were reported stenographically by me and  
later transcribed into typewriting under my direction;  
that the foregoing is a true record of the proceedings  
taken at that time.

IN WITNESS WHEREOF, I have subscribed my name this  
26th day of September, 2011.

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Terri L. Emery, CSR No. 11598

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Transcript of Proceedings  
Salton Sea Species Conservation Habitat Project  
Draft Environmental Impact Study/  
Environmental Impact Report

Wednesday, September 14, 2011  
6:00 p.m.

Brawley Elks Lodge #1420  
161 South Plaza  
Brawley, California

Reported By:  
Terri L. Emery  
CSR No. 11598

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A P P E A R A N C E S

MODERATOR:

Ri ck Davi s, The Davi s Group

SPEAKER PANEL:

Kent Nel son, Department of Water Resources

Lorrai ne Woodman, Entri x

Lani ka Cervantes, U. S. Army Corps of Engi neers

Davi d El ms, Cali forni a Department of Fi sh and Game

Vi nce Thompson, Ducks Unl i mi ted

1 MR. DAVIS: If anybody has comments they  
2 would like to make, Terri will just get them down with  
3 those fast little fingers. So are there comments out  
4 there based on the presentation or based on the EIR  
5 that you've seen that you'd like to make? Okay. No  
6 comments. Just kidding. Do you want to start, sir?

7 MR. BAILEY: I'm Frank Bailey. I'm with the  
8 Imperial County Fish and Game Commission and I've been  
9 following some of the developments that have gone on  
10 around the sea, and during the last -- you know, some  
11 of the projects that were suggested to save the sea and  
12 I just, you know, I am kind of -- I think it's  
13 wonderful. I think you've come up with some great  
14 ideas, but how likely are we going to find the funding  
15 to be able to complete one of these projects? I would  
16 love to see some of these wetlands habitat go in. I've  
17 been asking for something, we've been -- when they were  
18 first developing some of the projects around the sea, I  
19 was asking them why don't we do something and try to  
20 save some of this habitat.

21 The sea is declining at a rate of about six  
22 inches per year, and so this has gone on for probably  
23 eight years that I know of. I worked for Imperial  
24 Irrigation District. I've seen the reports that show  
25 how the sea is declining. So that's my first question.

B-1

1           The second question, you know, being with  
2 funding, why was the number three alternative the  
3 preferred alternative and what are we looking at? In  
4 these projects do we have the funding to do any of  
5 this?

B-2

6           MR. DAVIS: Well, we really appreciate the  
7 comments. Thank you. And we can, I'm sure, get to  
8 some of the heart of those issues after the comment  
9 period. I think you had a comment back here, sir.

10           MR. SANTI AN: My name is Daniel Santian. I  
11 live in Cal exico, but I'm originally here from Brawley.  
12 My interest in this are jobs. I passed out this  
13 with -- I met several years ago an engineer from  
14 Holland at a company that has 500 years' experience in  
15 dredging and working in -- and the Imperial Group.  
16 Later we met him in Imperial County and the original  
17 Plan A was a cascade plan and they talked that they  
18 were going to hire approximately a thousand workers and  
19 after the project was done that a hundred workers would  
20 remain to maintain it and the other 900 workers that  
21 were willing to relocate and to travel, they could stay  
22 with the company. And he also said that they would  
23 fill as many positions as possible with residents of  
24 Imperial Valley and that it would reflect the  
25 demographics, and that was my main concern.

1           And so he asked me if I thought that if the  
2 Mexican community in Imperial County would be up for a  
3 task like that, so I told him how long did you say your  
4 company has been around? And he said 500. And I told  
5 him that a thousand years ago the, Aztecas dredged the  
6 lake in Mexico -- because it's now -- Mexico City was  
7 built over that lake. So this is my only interest to  
8 make sure that Imperial Valley residents will be  
9 considered first for jobs.

B-3

10           Other than that, you know, when you start  
11 talking as Mohammed Ali said about millions and  
12 millions of dollars, my mind can only hang calculate up  
13 to \$50,000. After that once you start talking about  
14 millions and billions, I don't know what you're talking  
15 about. Thank you for your time.

16           MR. DAVIS: Thank you for the comments. Your  
17 comments are submitted in writing. Other comments from  
18 the group here? Andy, do you have one?

19           MR. HORN: I have a comment. My name is Andy  
20 Horn from the County of Imperial. I hate to sound like  
21 the proverbial broken record, but I've been to a number  
22 of these meetings and I'm just going to say the same  
23 things I said before, and I know Kent was up there a  
24 minute ago and said that you're -- through the  
25 work you've done, you've confirmed that this project is

1 compatible with geothermal development out there. I'm  
2 sitting back here between two geothermal developers and  
3 I'm not sure that I see a great look of comfort or  
4 haven't heard those comments, and I've talked to a  
5 number of people who still have some concerns about  
6 this project and the potential of that to interfere or  
7 prevent some maximization of geothermal energy  
8 production in that area.

9 I know you guys are aware of it, you've got  
10 it up on the board, but I think we need to do some more  
11 assuring of the geothermal people and people that rely  
12 on income from those sources and so it's going to see  
13 that you have taken it into consideration, but I just  
14 recall back from the first meeting I went to and they  
15 said don't worry, we're going to construct causeways  
16 out there that will support heavy vehicles and they can  
17 get out there and access for drilling and maintenance  
18 and so forth of geothermal facilities, and the second  
19 time and third time we went to the meeting and they  
20 said, oh, no, we've abandoned that, it's too expensive,  
21 and the commentary was that they're going to use native  
22 soils and those soils would not support heavy  
23 equipment. And I don't know what the design criteria  
24 are today, but I think we need to add a little more  
25 dialogue.

B-4

1           These are just some off-the-cuff comments.  
2           The County will submit comments as part of the process.

3           MR. DAVIS: Thank you, Andy. Yes.

4           MR. GROGAN: I'm Larry Grogan. I'm with  
5           Energy Source. I've been around the Salton Sea and  
6           geothermal for probably about 35 years.

7           One of the things that bothers me when we see  
8           these plans that come in after we've done the huge  
9           Salton Sea Authority Plan with the State as part of the  
10          OSA, I think in three volumes, is there's not one  
11          mention of that in this document. And certainly when  
12          the final preferred design was made, 4200 acres was  
13          carved out of that as an overlay or whatever it is for  
14          geothermal development because they do recognize it.

B-5

15          For those who have traveled down here and  
16          looked at the Salton Sea probably for the first time,  
17          the area that you are in -- the Salton Sea area there  
18          north of the Alamo River just around Red Hill would  
19          give you an idea of what that resource is like. The  
20          hottest well ever drilled in the valley had a bottom  
21          temperature of over 700 degrees. So you've got some  
22          real high temperatures all through Red Hill, north  
23          of -- east to obviously Davis Road, up to past the  
24          wildlife area. You've got a tremendous potential for  
25          undeveloped geothermal.

1           Somewhere in all these exhibits there should  
2 be at least some recognition of what the resource area  
3 is so that we have something five years from now when  
4 we come back and everybody in the world is saying yeah,  
5 but this is what we approved because it was preferred  
6 Alternative Number 2A and there's nothing in there  
7 about geothermal. It's in the dialogue, but this is  
8 our plan, we plan to put these dikes out there, we plan  
9 to put this well, this pond here, we're going to put  
10 this fishing pond over here. Some of those fishing  
11 ponds that you show on the area there basically right  
12 now have a surface manifestation of boiling water at  
13 the surface. This is just south of Mullet Island and  
14 you have that entire fault zone through there that I  
15 would hate to have to put any type of wildlife habitat  
16 and depend on it staying necessarily with CO2 coming up  
17 and certainly with the possibility of hot springs  
18 coming up through that area.

B-6

19           But other than that, can they be compatible,  
20 the answer is yes, but when you start putting plans  
21 with dikes, with causeways or whatever it is right now  
22 without having really a dialogue with the industry how  
23 we could develop it, then we've set ourselves up for  
24 problems in the future.

B-7

25           As far as mitigation, let's face it. The

B-8

1 State has almost no money to develop this thing, so  
2 you're going to be looking for someone to contribute to  
3 actually do some type of offsets. We don't mind that,  
4 but we'd like to be a part of the thing more up front  
5 before you put these lines on the map. Thank you.

B-8  
Continued

6 MR. DAVIS: Thank you, Larry. Other  
7 comments?

8 MR. MARTIN: I'm Ted Martin, just general  
9 person standing around. My question is why are we  
10 taking virgin land which we can make into geothermal?  
11 The wildlife preserve and state and the federal  
12 wildlife preserve, why can't we use those ponds that we  
13 already have and use that with the same thing? They're  
14 right along the Alamo River. Some of these guys know  
15 what I do for the district, but I'm not representing  
16 the district. I'm representing myself. Why can't we  
17 use the resources we already have? The ponds are  
18 there. I know these ponds need to be improved upon  
19 anyway. What is the problem with the land we already  
20 have instead of taking new land and taking this land  
21 out of production for geothermal and put it in that  
22 way?

B-9

23 MR. DAVIS: Well, we appreciate the comment  
24 and we can address a little bit about why that is when  
25 we get through the comment period.

1 MS. LANE: Thank you. My name is Terra Lane.  
2 I work for the Desert Protective Council, the Imperial  
3 County conservation projects leader, and I have to  
4 admit I was not here in August, I was on the east  
5 coast, out of town, and I hadn't waded into the  
6 document at all except for the overview. So I think  
7 for a lot of us here who might not have read the entire  
8 document, it would be helpful if you would answer  
9 questions rather than save it for individual  
10 conversations after the meeting. I think we would all  
11 benefit from hearing the answers instead of having to  
12 listen in on somebody else's.

13 MR. DAVIS: We'll answer questions.

14 MS. LANE: I had a question. When -- how  
15 long are you accepting written public comments on the  
16 website?

17 MR. DAVIS: The comment period is through  
18 October 17th, so you have some time.

19 MS. LANE: Okay. All right. Thank you.

20 MR. DAVIS: You're welcome. Like I said  
21 earlier, we will entertain some dialogue from up here.  
22 It won't be just one-on-one. We can do one-on-ones  
23 too. Do we have other comments? I know I joked at the  
24 beginning we didn't have any. Maybe now we don't, but  
25 we got a lot. That's helpful. Anyone else want to put

1 something on the record? We'll close the record if we  
2 have no more comments and then we'll have some Q and A  
3 time. Okay. No more comments then.

4 Thank you very much, and like I said, I think  
5 there's a couple of questions that I think are  
6 existing, but if anyone wants to reiterate those or ask  
7 questions now, the team here will do their best to  
8 answer it. If we don't have the answer or if it's kind  
9 of outside the realm of where we're at right now, we'll  
10 certainly tell you that and try and formulate an answer  
11 and get it back to you.

12 (Proceedings concluded at 6:53 p.m.)

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REPORTER'S CERTIFICATION

I, Terri L. Emery, Certified Shorthand Reporter,  
in and for the State of California, do hereby certify:

That the foregoing proceedings were taken before  
me at the time and place herein set forth; that the  
proceedings were reported stenographically by me and  
later transcribed into typewriting under my direction;  
that the foregoing is a true record of the proceedings  
taken at that time.

IN WITNESS WHEREOF, I have subscribed my name this  
26th day of September, 2011.

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Terri L. Emery, CSR No. 11598

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Transcript of Proceedings  
Salton Sea Species Conservation Habitat Project  
Draft Environmental Impact Study/  
Environmental Impact Report

Thursday, September 15, 2011  
1:00 p.m.

University of California Riverside  
75-080 Frank Sinatra Drive, Room B200  
Palm Desert, California

Reported By:  
Terri L. Emery  
CSR No. 11598

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A P P E A R A N C E S

MODERATOR:

Ri ck Davi s, The Davi s Group

SPEAKER PANEL:

Kent Nel son, Department of Water Resources

Lorrai ne Woodman, Entri x

Lani ka Cervantes, U. S. Army Corps of Engi neers

Davi d El ms, Cali forni a Department of Fi sh and Game

Vi nce Thompson, Ducks Unl i mi ted

1 MR. GRAJGER: It's hard to limit what you have to say,  
2 but my name is Dov Grajger. I'm a Ph.D. in fisheries  
3 as well as a master's from the University of British  
4 Columbia, from the University of Washington in  
5 Washington in Seattle. All my life growing fish, work  
6 for our government and other places. I have had fish  
7 farming in this valley for 37 years and I remarked in  
8 all the meetings on some of the meetings and I am  
9 surprised first about the choice of the fish which is  
10 not local, Tilapia, it's not of the American continent,  
11 it's not North American, not South American. And why we  
12 choose a fish that doesn't belong here, we should try to  
13 get them out of here. Why do we choose that fish as our  
14 model in our experimentation.

PD-1

15 I want to also correct something. I know  
16 that you get your money not only from the federal and  
17 the state but you get a lot of money, \$25 million from  
18 my water district, and that's my money, that's our  
19 money, local money, and our ratepayer has a lot to say  
20 and a lot to lose on it. You get also \$25 million from  
21 IID and \$25 million from San Diego. So the money is  
22 not entirely government, a lot of it is ratepayer  
23 money. Okay.

PD-2

24 You choose Tilapia because it happens to be  
25 around and despite the Fish and Game trying to keep

PD-3

1 them out of here. The Fish and Game then was told the  
2 Tilapia will take over any other species in the Salton  
3 Sea because they can go to higher salinity and lower  
4 salinity. You chose Tilapia because it can take the  
5 temperature, the high temperature, not the low, but you  
6 don't have enough people who knows fisheries. There is  
7 good schools in this country like Auburn and Alabama,  
8 Texas A and M in Texas, the Marine Institute in  
9 Maryland, and you didn't ask for any experts. Your  
10 experts are usually people from fish -- from game, not  
11 from fish and they know very little about fish.

12 Now, we have a local fish who is a native to  
13 the Salton Sea, can take higher salinity, much higher,  
14 to 8.5, they can take the temperature a lot better than  
15 the Tilapia, and with the help of all the institutions  
16 that we have around here, we manage to eliminate  
17 forcibly out of the Salton Sea by mistake because we  
18 didn't know or people didn't know the fish travels up  
19 river then down river and is native to the Salton Sea,  
20 and we had the commercial fishery here in '42 of that  
21 abundant fish, not only that the fish is specialized in  
22 eating detritus, in other words it cleans the water.

23 MR. DAVIS: Sir, maybe you could get to the  
24 specific point of the comment. It would be very  
25 helpful. Thank you.

PD-3  
Continued

1 MR. GRAJNER: Okay. We are building ponds  
2 which are not -- if the Corps of Engineering is looking  
3 over it, engineering would be fine, but what are you  
4 going to do with it? Because I expect to have the same  
5 problem that we had always in the Salton Sea of having  
6 algae bloom. With Tilapia you have algae bloom.  
7 Without Tilapia we will have algae bloom. The only  
8 thing that might stop it is Mullet. You have algae  
9 bloom, you'll have fish kills, the same as you have  
10 now, you'll have smells and you'll be sued for it,  
11 you'll have H<sub>2</sub>S, which is dangerous to people living on  
12 fish, and if you don't take care of it, those beautiful  
13 ponds that you're building are beautiful and I know the  
14 Corps of Engineer will do a beautiful job for us, but  
15 we'll have nothing but trouble. We'll have to aerate  
16 it and you don't have any provisions for it. Of  
17 course -- it back and be expensive because now you have  
18 to bring it back. You'll have to have hatcheries to  
19 grow monitor, fishery to start them, put them in the  
20 Salton Sea and you can save the whole Salton Sea, not  
21 only the button. Mullet can take 8.5 percent salt.  
22 You can look it up in the literature. I don't have to  
23 do it for you.

24 MR. DAVIS: Sir, thank you for the comment.  
25 It would be helpful if we could get some others, and

PD-1

1 then if you want to make another comment after, that  
2 would be great. Thank you. In the back.

3 MR. BOGART: Hi. About two years ago --

4 MR. DAVIS: Could we get your name, please?

5 MR. BOGART: Chris Bogart. I live in Sky  
6 Valley. I live at the sea every day. I'm secretary of  
7 the Friends of the Desert here. I would just like to  
8 say I've been trying to come to the meetings over the  
9 past two years on this process. The last meeting was  
10 very vague and it was really very not very informative  
11 and poorly handled. The one before that was just a  
12 general introduction. Intervening time between the  
13 second meeting and today there has been very little  
14 sent to us informationally in the process.

15 I got a Corps of Engineers thing. I read the  
16 website occasionally. I would like to protest the fact  
17 that the people and the public in this community are  
18 really not being included in this to the extent that  
19 they should.

20 MR. DAVIS: All right. Maybe you can just  
21 stay with the mic. Other comments? Up here in the  
22 front we have one.

23 MR. KARIOTIS: John Kariotis, Salton City,  
24 West Shores Salton Sea Growth Association. One of the  
25 comments, I think I can answer some of the people's

PD-5

PD-6

1 questions, especially Dale's. This is for fish and  
2 birds and does not affect anything in the way of what  
3 the Salton Sea Authority's plans would have done in the  
4 way of people and economic development for the Salton  
5 Sea.

PD-6  
Cont.

6 MR. DAVIS: Thank you.

7 MR. BERMAN: Carrie Berman. Just curious.  
8 Are there any considerations for different species of  
9 fish outside of the Tilapia?

PD-7

10 MR. DAVIS: You know what, we'll come back to  
11 that. I've got a note about species up there, so we'll  
12 make sure we cover that at the end. Thank you.

13 MR. BORUNDA: I wanted to talk because I've  
14 been wanting to go come to these meetings and I should  
15 have been already.

16 MR. DAVIS: Use the microphone so Terri can  
17 hear, and then your name, and if you want to tell us  
18 where you're from, that kind of thing.

19 THE WITNESS: My name is Leo Borunda,  
20 B-o-r-u-n-d-a. Leo Borunda. I have Rancho La Playa.  
21 Rancho La Playa is a very big ranch, 152 acres and  
22 about one mile water front. You can hear me. I don't  
23 have. Go ahead. I'll do the mic for you. So I've got  
24 one mile of water front. The water front is going  
25 down. Don't let that happen. Let's save the Salton

PD-8

1 Sea. Never mind all these other plans and put ponds  
2 here and ponds there and ponds over there. We don't  
3 need that. We need to save the Salton Sea. It's a  
4 beautiful body of water.

5 I've been at the Salton Sea a little over 15  
6 years and made over \$10 million at the Salton Sea and  
7 I've got ten properties and I've got the big ranch, 152  
8 acres of land. So the thing is that the Salton Sea is  
9 ready to help us all and do things for us, but we've  
10 got to do things for the Salton Sea, not on the basis  
11 of putting a pond here and there and pond there.  
12 That's not necessary. If we did something and gave the  
13 water rights to San Diego a long, long time ago, this  
14 is a long time, it should be argued now that that was a  
15 mistake and it should not be done, and if we can't get  
16 that, let's get water from someplace, but let's not let  
17 the Salton Sea die, please. Let's not let it die.  
18 It's a beautiful beautiful body of water and it should  
19 not be destroyed.

20 MR. DAVIS: Thank you. We appreciate that.

21 MR. BORUNDA: Wait. I have my ranch open to  
22 anybody that wants to use it some way, 152 acres on the  
23 beautiful water front, six boats there. If somebody  
24 wants to use the boats, they can use them. So the  
25 thing is that let's enjoy the Salton Sea and not let

1 all these plans that cut it this way and cut it the  
2 other way, that's not the -- save the Salton Sea.  
3 That's the most important. Please, please, everybody  
4 save the Salton Sea for your benefit and everybody  
5 else's benefit and for the future. Thank you.

6 MR. DAVIS: Thank you for the comment.

7 MR. WASIF: Hello. My name is Mohammed  
8 Wasi f.

9 MR. DAVIS: Could you spell it for us,  
10 please?

11 MR. WASIF: I'm a small landowner up there in  
12 Salton City, but I'm so glad that I've attended so many  
13 meetings of all progress of things like. Are we going  
14 to do something with the whole sea, the Salton City,  
15 and I think what we are doing actually right now with  
16 3700 acres, one of the best things that can ever  
17 happen, at least let's start with something, not to try  
18 and drag this and take this miles and miles across and  
19 say we are going to do this. This is not nothing manic  
20 that we can turn around. It requires millions and  
21 millions of dollars. And the salinity, desalination  
22 is not an easy thing because you can't do it straight  
23 away. No, two years, I think it's one of the greatest  
24 things that has ever happened. I'm so glad and the  
25 engineer and gentleman who explained everything is

PD-9

PD-10

1 absolutely -- you know, I'm really proud of the fact at  
2 least something is happening instead of just going on,  
3 you know, and I don't know how non-profit organization  
4 complaint, but I personally feel that we must have some  
5 sort of a lottery, Salton City lottery so that the  
6 people can put some money in and raise funds, maybe  
7 five years, ten years, whatever it takes, and then use  
8 that money and then we can have, you know, exit from  
9 Salton City into the sea by having, you know, exit by  
10 huge sort of pipes, maybe five, ten pipes or something  
11 like that to the shortest distance and that would be  
12 really remarkable, but they take time.

13 But you know, I think I personally feel that  
14 what you people are doing right now with this meeting,  
15 it's wonderful. I'm so proud of you. Thank you.

16 MR. DAVIS: Sir, before you pass the Mike  
17 could you spell your name for the our Terri here for  
18 the record.

19 MR. DAVIS: Thank you.

20 MR. WASIF: I can do that. W-a-s-i-f,  
21 M-o-h-a-m-m-e-d.

22 MR. DAVIS: Thank you.

23 MR. NORMAN: Paul Norman. I'm here in the  
24 valley, kind of watching it for the last four or five  
25 years attending the meeting the. There's another water

PD-10  
Cont.

PD-11

PD-12

PD-13

1 source and that's the Artesian wells going to the lake.  
2 Is there anybody doing that or thinking about  
3 establishing any parameters around those for water?  
4 That's fresh water.

PD-13  
Cont.

5 MR. DAVIS: We'll put that on our question  
6 list. Other comments out there?

7 MS. BEAL: My name is Linda Beal and I  
8 volunteer right now with the Salton Sea Visitors'  
9 Center. I was volunteering at the Salton Sea History  
10 Museum and the beautiful North Shore Beach and Yacht  
11 Club before that was closed. I just had a couple  
12 thoughts too along some of the same line. Is there a  
13 different kind of fish that could do better in the sea.  
14 Also could we -- if we get so many Tilapia, they're  
15 just breeding like crazy, is there a way we could  
16 harvest Tilapia at different times that could help the  
17 sea in some way. I don't know. They could be  
18 harvested in a big way so we wouldn't have so many  
19 die-offs and things like that.

PD-14

PD-15

20 Also, what will this project do for the rest  
21 of the sea, how will it impact the rest of the sea? I  
22 know this is going to be good for the birds to eat  
23 different fish or whatever you may have in these other  
24 little ponds and things and is there any other kind of  
25 thing besides fish that you might be raising in these

PD-16

1 ponds for the wildlife.

PD-16  
Cont.

2 MR. GRAJCER: Those ponds are to give them  
3 license to hide the Salton Sea. Don't you understand  
4 it?

5 MS. BEAL: That's all I have to say. Thank  
6 you.

7 MS. CRONEMEIER: Hi. Name is Kathy  
8 Cronemeier. I'm a retired teacher in the area, and for  
9 the past ten years I have been helping educational  
10 programs for children on how valuable the Salton Sea is  
11 to our survival in the Coachella Valley, that without  
12 it we won't have good air to breathe and we won't have  
13 safety for animals. So I, going along with what Linda  
14 was just saying, I want to know what the impact of your  
15 project on the Salton Sea will be, if it will be taking  
16 down the water level and creating more air pollution  
17 because as it dries up, we know that the air pollution  
18 is going to be horrendous for the Coachella Valley.

PD-17

19 And I'd also like to take a moment to push I  
20 just won a Pepsi challenge to offer classes for  
21 children on how to save the Salton Sea and we're going  
22 to do it through plays and other kinds of visits, so I  
23 have papers if anybody wants to get them at the end. I  
24 need votes.

25 MS. CHIRACO RESHAY: Margit Chiraco Reshay,

1 Chiraco Summit, California. Long time northern  
2 neighbor of the Salton Sea and long time visitor of the  
3 Salton Sea, especially as a child, great memories. I  
4 agree with Mr. Borunda. I think we ought to emphasize  
5 save the Salton Sea and not have all these little bitty  
6 things going on around it unless you can really prove  
7 to us that it's going to be a part of saving the Salton  
8 Sea. So I just really believe that we need to save  
9 that beautiful body of water. We go down there, we go  
10 around it, we enjoy looking at it, and it is indeed a  
11 visual treat for those of us in the desert and I would  
12 hate to see it go away. Thank you.

PD-18

13 MR. DAVIS: Thank you for the comment. One  
14 up here in the front, Vince, and then we'll get you  
15 next. In the second to the back row.

16 MR. KARIOTIS: My name is Imari Kariotis.  
17 I'm with the West Shore Salton Sea Growth Association.  
18 I want to echo what the Friends of the Desert secretary  
19 said. Mr. Davis I had a talk to you on the phone and  
20 so did my husband about holding a meeting on the west  
21 shores. Most of the state meetings have been on the  
22 west shores. There are several buildings you guys  
23 could have held a meeting in. Most of the people in  
24 our membership felt slighted that there wasn't one.

PD-19

25 There hasn't been very much communication between the

PD-20

1 State and the people. Now, IID, CCWD, yes, DWR, but  
2 you haven't come to the small people and we want you  
3 guys to do that because we have ideas and you really  
4 can't do it in an hour and a half.

PD-20  
Cont.

5 MR. DAVIS: Okay. Thank you.

6 MS. WEBER: Candace Weber. I teach at  
7 College of the Desert. I teach natural resources and  
8 teach about the Salton Sea. It's a big passion of mine  
9 for habitat, wildlife, all these things. So I think  
10 the ponds are a great start. I think -- I don't know  
11 if this has been stated or not, but a big, big issue is  
12 I see with my students who to me represent the public  
13 in general to a certain degree is a lot of lack of  
14 information, misinformation, the belief of the myths  
15 about the Salton Sea that it's toxic, it's a wasteland,  
16 it does have a smell to it, they don't understand why,  
17 all these things that we already know about, and I  
18 don't -- I think my purpose -- my point of this is is  
19 there some way that we or the agencies, Fish and  
20 Wildlife can partner with the local news agencies, the  
21 Desert Sun, the Nightly News, and get the correct  
22 information out there.

PD-21

23 The water transfers are a big issue for the  
24 Salton Sea, so that's why the ponds are a great way to  
25 start to figure out how to save habitat to save the

PD-22

1 whole Salton Sea. I honestly hadn't heard it's  
2 possible to save the whole sea because of the QSA and  
3 the public doesn't understand the issue of water out  
4 here in the west. The CVWD, all how there's an  
5 over-demand for the Colorado River. We just don't  
6 know. People just don't know. If you want people to  
7 get behind the Salton Sea and help push for state  
8 funding to get these plans and these ponds set, you  
9 need a public who is educated, not just the few in the  
10 room here. You know what I'm saying. So there's some  
11 way we have to partner with the public news agencies  
12 and get correct information out there and get the  
13 reporters to care about it. That's all I have to say.  
14 Thank you.

15 MR. DAVIS: Very good. Thank you. We'll get  
16 back to you. We have one over here from Mr. Nelson.

17 MR. NELSON: My name is Peter Nelson. I  
18 reside at -- my mailing address so you can send an  
19 answer, P.O. Box 109, Thermal, California, 92274. I'm  
20 a resident of La Quinta. My question -- and this is  
21 kind of a dynamic thing going on, but my question  
22 relates to a recent development. Tuesday the IID board  
23 resolved to ask the State Water Board to allow it to  
24 stop putting QSA mitigation water into the sea thereby  
25 setting the stage to sell nearly 400 or 5,000 acre feet

PD-22  
Cont.

PD-23

1 of additional water to coastal communities.

2 How would that action affect this project,  
3 either positively or negatively, and as Secretary John  
4 Lehr described this project not as species conservation  
5 habitat but as Early Start habitat, how would that  
6 action affect any future projects positively or  
7 negatively. Thank you.

8 MR. DAVIS: Thank you. We'll try and turn on  
9 that when we get to question and answer. That's a  
10 pretty big question. We'll get back to the gentleman  
11 one more time. I promised you one more.

12 MR. GRAJGER: This one is very short because  
13 people ask the question a number of times. Everybody  
14 knows or should that the Salton Sea at the moment  
15 evaporates nearly two million acre foot of water a  
16 year. That affects the climate of the whole valley.  
17 Without it, we're being exempted because we have the  
18 same conditions as Death Valley. Without it would be  
19 130 degrees in the summer, not 120, and I don't know  
20 about -- education just to be sure, but remember that  
21 it's 2 million acre feet evaporates and that affects  
22 the temperature very heavily, both in the summer and in  
23 the winter.

24 MR. DAVIS: Are there other comments still?

25 MR. WASIF: I would like to make one more

PD-23  
Cont.

PD-24

1 comment.

2 MR. DAVIS: We have your name, so it's  
3 okay.

4 MR. WASIF: I've got to point out the federal  
5 government has got to take interest in this. We have  
6 money funds to go Iraq and all the places in the world.  
7 We don't have money to spend in our own home. This  
8 body of water is one of the best things that can ever  
9 happen in California. So close to San Diego, so close  
10 to so many places. It could be absolutely a central  
11 beautiful area with, you know, thousands and thousands  
12 of people coming, only the water would be used. So I  
13 think somebody has got to bring the President over here  
14 and say this is a body of water we have and you know,  
15 the only thing is it's dead water. Then he would say  
16 what can we do about it. So we've got to find some way  
17 of raising funds for this area. That is the only thing  
18 I would wish the people -- and I'm very proud of the  
19 fact, but we should progress more and do it more. And  
20 right now I know China is taking interest in everything  
21 in the world. You go to Saudi Arabia, they're doing  
22 thousands of acres of land, they're doing railway,  
23 doing hundreds and thousands of things. Go to Kuwait,  
24 you go everywhere, China. Give us a bid on it to  
25 desalinate this area. Tell us about it. Then we go to

PD-25

1 the federal government. Thank you.

PD-25  
Cont.

2 MR. DAVIS: Thank you. Do we have any more  
3 comments that would be for the public record? As I  
4 noted, we can take some time to answer some other  
5 questions.

6 MR. BERMAN: Here's the question. Are we  
7 just going to address these questions here?

8 MR. DAVIS: As well as others if you'd like.

9 MR. BERMAN: And then can we go ahead and  
10 comment or question?

11 MR. DAVIS: Yes. It would be like a  
12 question-and-answer, but it would be off the formal  
13 record. You want to make a formal comment then?

14 MR. BERMAN: Kerry Berman, Desert Tours,  
15 K-e-r-r-y, B-e-r-m-a-n. Since the we have 4.4 billion  
16 acre feet of water coming from the Colorado River and  
17 there is an agreement with the Metropolitan Water  
18 District and the Coachella Valley Water District up  
19 until about 2035, but right now we're overdrafting the  
20 aquifer by 16 to 30 percent a year as a consequence. I  
21 would like to know what affect that's going to have on  
22 the pumping stations in creating these new water  
23 environments.

PD-26

24 MR. DAVIS: We can get to that. So  
25 overdrafting. Other comments before we close out the

1 public record one more time? Okay.

2 MR. BORUNDA: I just wanted to tell you about  
3 the fish, lots and lots of Tilapia, beautiful,  
4 delicious tasting Tilapia. My men, my workers will go  
5 in there and bring 60, 70 fish and cook them out there.  
6 It's fantastic. So the Salton Sea is very much alive,  
7 very beautiful, and it needs help to bring it back up  
8 again. We have destroyed it and we've allowed that the  
9 water -- so if you've got to take and do everything to  
10 preserve the Salton Sea and the wonderful fish. Very  
11 tasty, very delicious. Like I say, my men go out there  
12 and get 50, 60 fish and prepare them on the patio, wow,  
13 tremendous. Now we've got the water way down about  
14 half a mile from my land now. I'm still into the water  
15 because I go one mile into the water, but at the same  
16 time the water is -- beach is farther out, so the fish  
17 don't come as close, but the thing is anything we can  
18 do to preserve the Salton Sea is the most important  
19 thing.

PD-27

20 And building ponds and all sorts of things, I  
21 don't know if you know, but the Salton Sea at one time  
22 was part of the San Francisco Bay and it was a part of  
23 Baja, California, southern California. So it's  
24 something that has been there for a long, long time and  
25 then it dried up for a while and then in 1904 up again

PD-28

1 into a beautiful body of water. Let's preserve it.

PD-28  
Cont.

2 Thank you very much. If I can help in any way, my  
3 ranch, 152 acres, Highway 86 frontage, about four city  
4 blocks, stop by any time. We'll talk about it and  
5 write letters or pay for it or whatever.

6 MR. DAVIS: Thank you. Yes.

7 MR. WILCOX: Hi. My name is Bruce Wilcox  
8 from IID. First I want to say we support the species  
9 conservation habitat and have from the beginning. We  
10 think it's a great start for restoration of the Salton  
11 Sea. I would be happy to try to answer some of the  
12 questions about the mitigation water if you would  
13 promise to move that question to the first question  
14 because I have to go pretty soon.

PD-29

15 MR. DAVIS: Thank you. One more behind you,  
16 Vince.

17 UNIDENTIFIED SPEAKER: This is just a  
18 procedural thing. I think it would be good if you  
19 would allow people to ask questions, not completely  
20 close the comment period in case the questions bring up  
21 some kinds of comments that might be incorporated in  
22 the record and broaden it.

23 MR. DAVIS: You know, we have some legal  
24 parameters that we have to deal with here, so I'll tell  
25 you we can -- there's many ways for you to add comments

1 after this comment period is over. As I noted before,  
2 there's the written comment form, there's the website.  
3 So the comment period isn't over. It lasts until  
4 October 17th, but it --

5 UNIDENTIFIED SPEAKER: What is the legal  
6 justification for that? Can you explain that?

7 MR. DAVIS: Legally we're supposed to take  
8 comments and it's not supposed -- it's not supposed to  
9 be a discussion. It's to receive comments. But we  
10 don't want to leave here without answering questions.  
11 So the point is we -- you know, we end the public  
12 record portion, we'll stay and have discussion, and  
13 then if that spurs further comments, as I said, there's  
14 the website and also the comment forms, et cetera.  
15 Okay. Terrific. Thank you. Yes. Is that a comment  
16 here? Hang on one second.

17 MR. GERACI: My name is Jeff Geraci. I'm  
18 with the Water Quality Control Board in Palm Desert.  
19 We are in approval of the project, of course.

20 I had a question about barnacles. I know  
21 that barnacles in high density can actually improve  
22 water quality, if not water clarity, allowing sunlight  
23 to penetrate and dry the ecosystem. I was wondering  
24 are there any mitigation efforts to preserve or protect  
25 the barnacle population which is actually a subspecies

| PD-30

| PD-31

1 of B. amphitrite amphitrite, which is found on the  
2 California coast because this is a unique subspecies of  
3 the barn that exists only in the Salton Sea. So I was  
4 wondering are you going to have any kind of tide pools  
5 or any kind of mitigation to preserve those barnacles  
6 or are we just going to let them go. That's all.

PD-31

7 MR. DAVIS: I think when we wrap this up and  
8 take care of the mitigation question, our biologists  
9 there in the back are going to be itching to answer  
10 that one; aren't you, Jack?

11 MR. CRAYON: Karen handles barnacles.

12 MR. DAVIS: Karen is the barnacle expert. We  
13 will get to it. Thank you. Other comments?

14 MS. ROBSON: My name is Lucinda Robson. I  
15 don't know if this is a comment, probably more of a  
16 question. Actually, two questions. Are all the cities  
17 in the Coachella Valley aware of the situation with the  
18 environment if something happens to the Salton Sea and  
19 are they on board with helping save their own town and  
20 their own tourism and their own environment? And is  
21 the State aware or is the State taking care of the  
22 population in the Coachella Valley from this potential  
23 hazardous environment that could result if the Salton  
24 Sea is not saved?

PD-32

25 MR. DAVIS: Okay. We'll put that on the

1 comments and we can try to address that. Any other  
2 questions? Or rather comments. I'm sorry. I know  
3 we've got a bunch of questions. Okay. We're going to  
4 end the formal public comment section of this and then  
5 I've made some notes up here about some questions that  
6 arose. They're probably are going to need a little  
7 more clarification. Bruce did indicate he was willing  
8 to talk about the first question that Mr. Nelson  
9 brought up which was down here, impacts of the  
10 mitigation water.

11 (Proceedings concluded at 2:14 p.m.)

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1 REPORTER' S CERTI FI CATI ON

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3 I, Terri L. Emery, Certi fied Shorthand Reporter,  
4 in and for the State of Cali forni a, do hereby certi fy:

5

6 That the foregoing proceedings were taken before  
7 me at the time and place herein set forth; that the  
8 proceedings were reported stenographi cally by me and  
9 later transcribed into typewriting under my directi on;  
10 that the foregoing is a true record of the proceedings  
11 taken at that time.

12

13 IN WITNESS WHEREOF, I have subscribed my name thi s  
14 26th day of September, 2011.

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Terri L. Emery, CSR No. 11598

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