



**California Sportfishing  
Protection Alliance**

*"An Advocate for Fisheries, Habitat and Water Quality"*



March 27, 2008

Michael Hoover  
Acting Assistant Field Supervisor  
U.S. Fish and Wildlife Service  
Sacramento Fish and Wildlife Office  
2800 Cottage Way, Room W-2606  
Sacramento, CA 95825-1846

Re: Comments on Proposed San Luis Unit Drainage Settlement 9D Contract and  
Conceptual Monitoring, Compliance and Adaptive Management Plan

Dear Mr. Hoover:

Thank you for providing the opportunity to comment on the Conceptual Monitoring, Compliance, and Adaptive Management Plan for the San Luis Unit Drainage Management Plan 2nd DRAFT 2/29/2008. The California Sportfishing Protection Alliance (CSPA) and the California Water Impact Network (CWIN) are providing comments to express our concerns and apprehension related to the implementation, monitoring, risk assessment and risk management plans as proposed. We are not implying in any way agreement with the implementation plan as proposed by providing input to the draft conceptual monitoring plan. In fact, as is evidenced by the general weakness of the monitoring document, development of a sound and reliable risk management plan that effectively incorporates the stage of monitoring requires an implementation plan which is coherent and based on sound scientific and economic principals. We have yet to see such an implementation plan.

While we find deficiencies with the existing proposed meager land retirement actions and can not provide our support for them, we continue to be in agreement with the “*In-Valley/Drainage –Impaired Land Retirement Alternative*” as outlined in the Bureau of Reclamation’s San Luis Drainage Feature Re-evaluation Final EIS. We support the alternative proposing the retirement of 308,000 acres including all of the drainage-impaired lands in Westlands (approximately 298,000 acres) and 10,000 acres in Broadview Water District. That alternative negates the requirement for drainage collection, reuse, treatment, and disposal facilities and reduces the water diversion quantities producing environmental and financial benefits to all stakeholders. **That alternative also provides an economic benefit of \$3.643 million/year, as opposed to loss of \$15.603 million/year under the alternative now being pushed by Reclamation and the San Luis Contractors in the settlement process, and an annual loss of \$10.149 million under the Preferred Alternative, the In-Valley Water Needs Land Retirement Alternative.**

The public was provided an opportunity to comment on the Bureau of Reclamation’s implementation plan in an effort to “*foster dialogue and generate input from interested parties*” but unfortunately the comments and concerns were ignored by the Bureau of Reclamation. To the contrary, in what we believe to be an effort to force this non-compliant plan absent of appropriate stakeholder involvement through a legitimate review process, the BOR assigned the task of developing a monitoring plan it classified as “*conceptual*” upon the Fish and Wildlife Service. This tactic resulted in a non-compliant plan to be monitored in an intangible manner with incomplete and non-productive stakeholder participation. This nonsensical scenario creates a conundrum for all stakeholders. It becomes a question whether continuing to provide the BOR with input through participation and written comments is worth the time and effort required. We wonder whether this is the ultimate goal of the BOR, which is to exhaust the stakeholders’ resources allowing for an uncontested implementation? We will continue to be involved providing our concerns to the materials presented as solutions and suggesting new and innovative ways to get a complete and total analysis in front of the

public for a quick and final decision based on sound science, economics and best management practices.

The drainage part of the proposal remains unimproved with numerous problems related to a Solar Evaporators scheme not adequately tested on the scale proposed, and with a mitigation plan that remains doubtful based on assumptive reasoning particularly related to water ponding risks. We concur with the FWS conclusion presented in the APPENDIX M1 Fish & Wildlife Coordination Act Report for the San Luis Drainage Feature Re-Evaluation:

*“The Service is extremely uncomfortable permitting evaporation basins as a drainage-service option given the history of Kesterson Reservoir. We therefore believe that the only real, sustainable solution to the drainage problem in the San Joaquin Valley is to remove the fundamental underlying source of the problem.”*

Consequently, water quantity needs for mitigation exceed contractual amounts available to WWD are not adequately accounted for in the BOR proposal and again we concur with the FWS statement:

*“Considering the high degree of uncertainty relating to the attendant risk assessments, in a worst case scenario, the Service is concerned that the amount of clean freshwater finally required for adequate mitigation not be available, and therefore adequate compensation would be infeasible.”*

Similarly, the proposed biotreatment techniques are unproven on the scale proposed and may actually increase the levels and bioavailability of toxic organic Se and the whole premise of this plan is based on successful biotreatment technology. Once again we agree with the FWS position:

*“In the interagency meeting held December 6, 2005, Reclamation indicated that the project is predicated on the successful compliance with the 10 ug/L*

*waterborne selenium concentration following pre-treatment. Further, it was agreed that the effluent would be treated to oxidize the selenium to selenate. These thresholds form the basis for the underlying risk assessments, and this agreement is therefore a critical project element. The Service's understanding of this agreement is that failure to meet this objective will necessitate future FWCA, National Environmental Policy Act, and ESA consultation."*

We are incredulous to why the amount of acreage to be retired is less than 1/2 of the amount identified as optimal in the Bureau's own Final EIS and ROD, and that the proposed contractual agreement is clearly inadequate to address all the potential problems raised by a 9(d) repayment contract that Westlands et al would get in perpetuity. The 9(d) repayment contract jeopardizes availability of water for environmental uses and protection of ecosystems and species already listed as stressed and endangered further corrupting the CVPIA's mandate to restore fishery populations to certain levels.

The Westlands' contract and its linkage with the drainage proposals and the rest of the Westlands' "package" remain a serious concern. The amount of contaminated drainage water, as well as economic costs/losses will be much larger than envisaged in the Bureau's Final EIS because of the lower amount of land retirement, requiring more treatment and disposal actions than were addressed in the Bureau's preferred alternative. Ironically the decision making process for lowering the amount of land retirement is not delineated despite the Conceptual Monitoring Plan's text book description of the decision making process on a "conceptual" level only, not related to specifics being considered in the plan. Likewise we fail to understand exactly how the proponents have analyzed the FEIS risk assessment and utilized the information to make the decisions as being proposed in this plan. There are inconsistencies between the proposed solutions and the risk assessment results and discussion, and we are apprehensive as to why the plan documents are at such a conceptual level considering the toxicity and risk levels inherent with Se and TDS problems in the project area. We have identified our relevant concerns to specific topics in our specific comments.

Additionally, the BOR has not provided protection for fish and wildlife as required by NEPA, CEQA and various federal and State statutes requiring they do so. It is clear that the BOR's priority use of water is for agricultural interests and water contractors. We are not alone in this assessment as the FWS has bluntly stated:

*"On balance, it is the Service's opinion that Reclamation's alternatives presented in the EIS do not provide equal consideration to fish and wildlife resource".*

The National Economic Development's benefit/cost analysis reveals a **negative benefit** of the proposed plan in excess of \$15 million per year excluding costs of monitoring and mitigation. We fail to understand the proponent's inability of taking the analysis beyond a conceptual level given the magnitude of taxpayer expense. It is incomprehensible that a risk manager would propose a solution with a negative \$15.6 million annual benefit and increased environmental risks versus a plan with positive \$3.6 million annual benefit and lower environmental risks. If there were no federal subsidy (which in our opinion there should not be) would the BOR continue with its proposal? This is not the time to try and deceive the public currently disturbed about the environmental consequences of agricultural practices conceived by those who most benefit while being financially shored up by misallocated tax resources.

In summation we think the proposed plan as presented by the BOR is too flawed with uncertainty, ecological risks, and cumbersome costs to be considered viable. The plan should be discarded and work to retire the maximum land areas necessary commenced with. Again, the FWS states our opinion in very unambiguous language:

*"The Service strongly prefers to address SLU drainage issues with options that would eliminate the need for drainage service altogether. The Service believes the SLDFR should seek a more permanent and complete resolution of drainage issues in the San Joaquin Valley. Drainwater management is expensive and risk-laden. There are simply too many outstanding uncertainties associated with the SLDFR to safely project successful, cost-effective implementation of a drainage*

*management strategy; manageable wildlife risks; and therefore, adequate and feasible mitigation.”*

We believe we have provided the BOR of a detailed response and look forward to receiving a timely and comprehensive reply to our concerns and suggestions, as well as a meaningful response to the specific comments to the Conceptual Monitoring Plan. We are especially eager to assist the BOR to deciding on a plan detailing a quick, cost effective, reliable and realistic solution to the San Luis Units Drainage problems.

Sincerely,

A handwritten signature in black ink, appearing to read "Bill Jennings".

Bill Jennings, Chairman  
California Sportfishing Protection Alliance

A handwritten signature in black ink, appearing to read "Carolee Krieger".

Carolee Krieger, President  
California Water Impact Network

cc: Senator Dianne Feinstein

Senator Barbara Boxer

Representative George Miller

Representative Mike Thompson

John F. Davis, Acting Regional Director, MP-USBR

Steve Thompson, Cal/Neva Manager, USFWS

Interested parties

**SPECIFIC COMMENTS BY CSPA AND CWIN ON THE CONCEPTUAL  
MONITORING, COMPLIANCE, AND ADAPTIVE MANAGEMENT PLAN FOR THE  
SAN LUIS UNIT DRAINAGE MANAGEMENT PLAN 2<sup>ND</sup> DRAFT 2/29/2008**

Thank you for providing us with the opportunity to comment on the Conceptual Monitoring, Compliance, and Adaptive Management Plan for the San Luis Unit Drainage Management Plan 2nd DRAFT 2/29/2008. We are providing comments to express our concerns and apprehension related to the implementation, monitoring, risk assessment and risk management plans as proposed.

We are not implying any agreement with the implementation plan as proposed by providing input to the draft conceptual monitoring plan. In fact, as is evidenced by the general weakness of the monitoring document, development of a sound and reliable risk management plan that effectively incorporates the stage of monitoring requires an implementation plan which is coherent and based on sound scientific and economic principals. We do not believe this to be the case for the following reasons:

- Biological treatment effectiveness is unproven.
- Solar evaporator mitigation process is incomplete and based on non-scientific assumptive reasoning, particularly related to water ponding risks. Water quantity needs for mitigation exceed contractual amounts available to WWD.
- The amount of acreage to be retired is less than 1/3 of the amount identified as the most cost effective alternative (300,000 acres) under in the Bureau's own Final EIS and Record of Decision for San Luis Drainage (Appendix N), and is clearly inadequate to address all the potential problems raised by a 9(d) repayment contract that Westlands et al would get in perpetuity. The linkage between the drainage proposals and the rest of the Westlands "package" above remain a serious concern and the setting of such a precedent would have dire implications for water contracts statewide. CSPA and CWIN unconditionally oppose any other solution.
- The 9(d) repayment contract jeopardizes availability of water for environmental uses and protection of ecosystems and species already listed as stressed and endangered, thereby further corrupting the CVPIA's mandate to restore fisheries and water quality in the Central Valley.
- The amount of contaminated drainage water, as well as economic costs/losses will be much larger than envisaged in the Bureau's Final EIS because of the lower amount of land retirement, requiring more treatment and disposal actions than were addressed in the Bureau's preferred alternative.
- The decision making process for reducing land retirement totals not identified.

- Uncertainty as to whether the Ecological Risk assessment found in appendix G of the Final EIS is pertinent to the alternative proposed. There are simply too many outstanding uncertainties associated with the SLDFR to safely predict successful, cost-effective implementation of a drainage management strategy; manageable wildlife risks; and, therefore, adequate and feasible mitigation.
- Lack of any contingency plans to cease water deliveries to drainage-impaired land and close solar evaporator complexes should treatment, compensation, and/or mitigation efforts fail.
- Lack of compliance with the Fish and Wildlife Coordination Act (FWCA) as related to concentration of Se, TDS, and heavy metals.
- Negative benefit to cost analysis for implementation of project. From an investor standpoint, investment of this enormous amount of money and resources into a project with so much uncertainty would be reckless .

The encompassing concern of these points is that this monitoring plan is being developed without adequate and meaningful public review of the implementation plan that is to be monitored. Before there can be a monitoring plan, there needs to be a drainage plan that has it's time for public review and comment. That public comment period has already occurred and resulted in the Record of Decision for the San Luis Drainage. This now appears to be an effort to undermine an existing NEPA document and a previous decision in order to select an alternative that is more satisfactory to the San Luis Contractors because of their tremendous political influence with certain members of Congress, and the Bush Administration. We find the political pressure to achieve a "consensus" on this matter highly distasteful, inappropriate, environmentally disastrous and a waste of the taxpayers' money.

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### **Comments to the Monitoring Plan**

For clarification, we provide the section that we are commenting on in *italics* with page number, *followed* by our comment in **bold**.

*Given this discrepancy, it is unclear how drainage from the remaining 94,000 acres in the Water Needs Alternative would be managed by WWD, as the land retirement/drainage management facilities as identified in the SLDFR In-Valley Water Needs. P.5 It should be noted that most active IFDM systems are either in a pilot stage or have only been implemented on a small scale (~1,000 acres of drainage service). As*



*best as we can discern at this time, there are four proposed regional systems that would address drainage for approximately 122,833 to 187,116 acres of irrigated lands. p. 11*

**With all the uncertainty concerning the proposed treatment process as described utilizing the IFDM plan it is difficult to ascertain how the authors of this plan were able to conclude that it is scientifically or economically feasible to reduce the land retirement from 194,000 acres as specified in the ROD to 100,000 acres as requested by WWD. The discrepancies in land area obviously effect any completion of a sound monitoring plan. It is perplexing to us that the BOR continues with its plan while in the document titled APPENDIX M BIOLOGICAL CONSULTATION AND CONCURRENCE APPENDIX M1 Fish & Wildlife Coordination Act Report for the San Luis Drainage Feature Re-Evaluation the FWS states:**

“To avoid and minimize risks and effects to fish and wildlife resources in the San Joaquin Valley and Pacific Flyway, the Service recommends land retirement on all drainage impaired lands in the SLU. This approach would maximize the elimination of drainage at its source, and therefore avoidance of adverse fish and wildlife effects. As an example, retiring drainage impaired lands in the SLU should reduce water demand such that unmet environmental needs, including refuge level 4 water supplies, could be met through water made available via land retirement. We believe the Service’s Preferred Land Retirement Alternative (full retirement) for the San Luis Drain Feature Re-Evaluation Project would release Reclamation from any future obligation to provide drainage service to the SLU while maximizing avoidance of adverse environmental effects. Our contention is that a full retirement alternative represents the most logical and least risky option to finally solve the drainage problem from the perspective of protecting and enhancing regional fish and wildlife resources. This land retirement alternative is compatible with CALFED and CVPIA goals and objectives by reducing project water demand, increasing available supplies, enhancing fish and wildlife habitat, and reducing contaminants reaching the Delta. It is an approach that appears most compatible with both the Service and Reclamation’s respective missions, since the goal is to find a drainage solution for the study area which includes measures to preserve, protect, restore, and enhance fish and wildlife resources affected by water deliveries to the SLU.”

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**Please provide a key to the alpha designations (A-O) as marked on the MAP in Figure 1.**

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*7.9 acres of solar evaporators are needed to handle 30 acre-ft of drainage, thus, the four solar evaporator facilities would need to average 452 acres in size. For WWD alone the volume could be 2,815 acre-ft per year and would require three solar evaporators averaging 247 acres in size. p. 11*

**The document continuously states that these solar evaporator areas pose high risk to wildlife for exposure to SE and high concentrations of salts and heavy metals. Has a risk assessment been performed? If yes, how do we get a copy of it? Additionally, if a risk assessment exists, has a Risk Management plan been developed and again, where is it? It is not possible to develop a scientifically sound monitoring plan without these analyses. Please explain how the following statement from the FEIS was utilized in your decision making process:**

“At the range of Se concentrations predicted to occur in the proposed evaporation basins, it is expected that several weeks to several months of continuous exposure would be required for individual birds to experience adverse effects. It was assumed (as a worst-case scenario) that most birds at the site would spend a sufficient amount of time at the site to allow for Se concentrations to accumulate in their tissues.” (*Exposure Assessment FEIS* p.62.)

**Please explain how the following statement from the APPENDIX M1 Fish & Wildlife Coordination Act Report for the San Luis Drainage Feature Re-Evaluation was utilized in your decision making process:**

“The Service is extremely uncomfortable permitting evaporation basins as a drainage-service option given the history of Kesterson Reservoir. We therefore believe that the only real, sustainable solution to the drainage problem in the San Joaquin Valley is to remove the fundamental underlying source of the problem.”

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*Although the final report of the San Joaquin Valley Drainage Program documented baseline conditions, those data are now almost 20 years old and are in need of updating. p. 12*

**What specifically is being proposed to update the outdated baseline data? This is critical for a scientifically sound monitoring plan. We believe it therefore prudent to perform a reconnaissance level survey to determine the extent and severity of contamination in drainage water of the SLDFR project area and revise all appropriate aspects of the SLDFR FEIS/ROD accordingly**

*As land is retired under the drainage management program there is the potential for dust to blow off of the land and cause air quality problems. Drift from the spray solar evaporators may also be considered an air quality issue since the water droplets themselves can cause an air quality problem and as the water evaporates in the air the remaining airborne salt particles may become a potential hazard. Air quality monitoring should be done under appropriate state and federal regulations by agencies responsible for air quality control. p.13*

**Is the risk assessment in appendix G of the FEIS used in making your decisions related to alternative being proposed. If so please explain the decision making process in detail. Additionally, if a risk assessment exists was used in your**

decision, has a Risk Management plan been developed and again, where is it? It is not possible to develop a scientifically sound monitoring plan without these analyses. In fact monitoring is only one stage of a Risk Management plan. This air borne drift is a possible exposure pathway to humans in addition to wildlife. What is the opinion of the Air Quality Control Board concerning these issues? The document fails to provide any specific information about this potential exposure pathway.

*By law, adequate CEQA documentation must be prepared, publically reviewed, and adopted before any proposed Drainage Plan can be implemented p16*

**Additionally, CEQA will require a scientifically and legally sound Mitigation and Monitoring Plan. Will one be available, and if so, when?**

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On pages 16-20 the plan lists seventeen Federal and State regulations that must be incorporated into the monitoring plan but does not adequately describe how the monitoring plan will achieve meeting any of these regulations. Beyond providing a brief description of what the regulation is this plan fails to incorporate them into its process. While the concept of the Interagency Management and policy team as outlined in section 8 is a start, the lack of details related to authoritative responsibilities among all the agencies is disturbing. We recommend that you ensure all effected agencies are actively engaged with the preliminary analysis and provided every opportunity to comment before being saddle with risk management responsibilities. Is there a process to ensure that the effected agencies have “signed off” on these proposals prior to moving forward? If yes, please describe the process in detail.

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The plan provides a text book description of adaptive management including decision analysis processes (pages 20- 23) without any specifics related to the SLD program. While providing such information is helpful to those who may be unaware of what these environmental management practices are, failing to provide specific details of the processes as related to the SLD monitoring plan is pretty much useless to the task at hand. Please provide a decision making analysis of how the implementation of this proposal came to be specifically addressing detailed monitoring tasks including costs and funding sources.

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*Increasing land retirement or fallowing must be considered as an important management action that can be taken should the level of impacts become unacceptable. P24*

**Best environmental management practices are proactive versus reactive. The amount of land to be retired should be identified prior to implementing these complex, expensive and unproven IFDM practices as related to SLD monitoring.**

*Drainage management must begin with source control. Implementation of various source control measures would reduce the amount of drainage that must be addressed and lead to reduced impacts to resources, smaller scale drainage management facilities, less required mitigation, more native habitat restoration opportunities, and lower management and monitoring costs in the long-term.p24*

**We agree with this strategy and recommend that you consider following it versus the complex and risky plan being proposed. The FEIS and ROD delineate source control techniques from outright land retirement. We recommend providing an analysis comparing the results of performing source control versus land retirement as related to risk reduction. We ultimately believe that land retirement would be more cost effective while significantly lowering risks. A decision making analysis would be helpful in comparing these two scenarios.**

*The CVPIA Land Retirement Program showed that restoration of retired agricultural land to upland habitat in the San Joaquin Valley is possible. p 24*

**Please expand this thought as a cost benefit analysis and as related to the proposed plan. Include any other factors used in making the decision to retire land versus using source control techniques. This includes, but is not limited to the fact that the CVPIA Land Retirement Program shows direct and rapid decline in high groundwater and reduction of drainage water that must be otherwise treated. This is proven and cost effective treatment, yet it is more or less completely ignored. This makes no sense whatsoever and reeks of politics.**

*Triggers should be identified for surface water, groundwater, influent and effluent within treatment systems, and biological components. Physical triggers such as ponding, groundwater movement, and wildlife use must also be developed. Triggers may also be defined based on established monitoring intensity. p25*

**This is the crux of the matter as related to monitoring activities within a viable risk management plan as incorporated within an adaptive management program. Triggers are so critical to a realistic monitoring plan that it is beyond comprehension how such a statement can be incorporated into any viable monitoring plan itself absent any details - “conceptual” or otherwise.**

*The Service has developed mitigation protocols to address impacts from solar evaporators; however, they are limited to the types of impacts associated with the larger deeper ponds and focus on shorebird impacts. p27*

**Mitigation protocols are essential to the specifics of the proposed plan in hand. A plan limited to one species of wildlife is not viable or scientifically sound.**

*As with the larger solar evaporators, closure plans for the solar evaporators must be prepared including a funding mechanism p27*

**This is the first reference related to funding. Is there a particular reason why funding is specifically critical for this aspect of the plan as opposed to other aspects of the plan? What does the term funding mechanism mean? Is it related to source of funding or to the criteria for which funding is generated? Have costs actually been established for this activity? Has a cost analysis been performed under the NED? How does the proposed plan compare to the NED analysis? What is the justification for selecting the least cost effective alternative? How does the following FWS statement effect your decision making process in respect to this issue?**

*“Given such attendant uncertainty in the risk assessment projections, mitigation through compensation must include a contingency plan to cease water deliveries to drainage-impaired land and close evaporation pond complexes should treatment, compensation, and/or mitigation efforts fail. In such an unfortunate circumstance, adequate mitigation measures would shift the risk back upon the project itself, and in this worst case scenario, Reclamation would be forced to abandon all investments in the infrastructure towards In-Valley drain water disposal and re-evaluate from the remaining options”.*

*The water quality of reused drainwater would initially be similar to the water quality of the shallow water table beneath the reuse facility. In general, it is expected that shallow groundwater quality would gradually decline beneath the reuse areas during long-term use, as do all aquifers underlying irrigated farmlands (SLDFR FEIS). The reuse facilities will be designed to concentrate the drain water above levels in the shallow groundwater underlying the agricultural service areas.p33*

**The section on groundwater quality degradation is informative only in that it is obvious that the monitoring plan is inadequate as presented to provide timely safeguards against groundwater contamination. Groundwater contamination is complex and extremely costly to abate. Again we are uncertain as to whether a risk assessment had been performed specific to ground water contamination. Please advise as to the status of a risk assessment and how it has been incorporated into the risk management plan to avoid reactive clean up activities.**

*These intermittent occurrences can result in short-term selenium exposure risks to opportunistic shorebirds and waterfowl foraging at the temporarily inundated sites because of the high selenium concentrations in drainwater. P35*

**The section on storm events is totally inadequate. Is there any detailed assessment beyond the generalized statements as provided? What was the**

**decision making process in selecting 100 year rain events? Best environmental management practices are based on proactive versus reactive processes.**

*Although aquatic systems are the ones most recognized as being a risk hazard for selenium, terrestrial habitats can also be a problem especially when dealing with the high concentrations of selenium in the drainwater at reuse and treatment areas (Figure 7). Monitoring of IFDM operations documented terrestrial wildlife exposure to selenium that can put certain species at risk (USFWS, 2006). P36*

**Best environmental management practices are based on proactive versus reactive processes. We are concerned about the absence of a monitoring program and risk management plan with recommendations to address potential San Joaquin kit fox exposure to selenium. Selenium uptake by salt-tolerant crops irrigated with drain water at the IVT will continue to be monitored. If selenium concentrations in these crops reach the Level of Concern threshold for dietary effects on mammals (3 mg/kg), a contingency plan and monitoring program will be instituted to determine selenium dietary effects on the small mammal prey of San Joaquin kit fox. The contingency and monitoring program should be identified NOW, not later.**

*The flow weighted average concentrations of selenium and TDS after reuse and RO treatment are estimated to be 534 µg/L and 32,520 mg/L, respectively (SLDFR FEIS and WWD et al., July 2007).*

*The predicted 10 µg/L was never achieved in a combined RO and selenium treatment system pilot test and the final oxidation step described in the SLDFR FEIS and WWD et al. 2007 has not been field verified (USBR and Applied Biosciences Corporation, 2004; USBR, 2006; USBR, 2007; PCI Membrane Systems, 2007). The pilot projects for RO treatment were very mixed and did not operate for more than a week at a time (PCI Membrane Systems, 2007). P43*

**If the proposed treatment processes are not proven to be effective, why are you proposing them as a viable solution to the problems at hand? The levels of SE and TDS are extremely high after the first stage RO treatment. The chemical reduction and lowering of pH associated with selenium removal could also affect the toxicity of other elements in the evaporation basin waters, which in turn could complicate management procedures and increase costs. What concentration of SE and TDS were achieved after the biological treatment and how does that affect your risk assessment and management plan? Please explain your decision making process as related to the following statement from the FEIS:**

*“Service recommended chronic water quality criterion of 2 µg/L for the protection of waterbirds. Current guidelines (Service) indicate that the respective background concentrations of Se in water (as total recoverable Se) and waterbird eggs are <2 µg/L and <6 mg/kg dry weight. Concentrations in water between 2 to 5 µg/L and in eggs*

Between 6 to 10 mg/kg dry weight have the potential to cause effects.”

**Please explain how the following statement from the APPENDIX M1 Fish & Wildlife Coordination Act Report for the San Luis Drainage Feature Re-Evaluation was utilized in your decision making process:**

“In the interagency meeting held December 6, 2005, Reclamation indicated that the project is predicated on the successful compliance with the 10 ug/L waterborne selenium concentration following pre-treatment. Further, it was agreed that the effluent would be treated to oxidize the selenium to selenate. These thresholds form the basis for the underlying risk assessments, and this agreement is therefore a critical project element. The Service’s understanding of this agreement is that failure to meet this objective will necessitate future FWCA, National Environmental Policy Act, and ESA consultation.”

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*The evaporators will be designed to each hold enough water to accommodate runoff from a 100 year storm (30 AF) and a buffer of 15 AF. However the evaporator will be designed so it can be isolated from the collection system during periods of rain (WWD Nov 2007). P45*

**The decision making process and section on storm events is totally inadequate. Is there any detailed assessment beyond the generalized statements as provided? Best environmental management practices are based on proactive versus reactive processes.**

*The entire area of the water catchment basin needs to be permanently covered with netting or otherwise constructed to ensure protection of avian wildlife.” Netting may be problematic within the sprinkler solar evaporator. The potential area needing netting may be too large to properly install the netting. Also the salt buildup on the netting over time could make it difficult to maintain. Operationally it is expected that any netting used at evaporation systems will be monitored to assure its proper maintenance and effectiveness. P45*

**By your own admission this netting plan appears to be a risky proposition. Please reassess this idea with sound scientific methods including a decision making process guide as based on risk assessment and risk management methodology.**

*The lifespan of the facilities is expected to be 50 years. P 47*

**What is this projection based on? In fact the uncertainties related to the facilities successful functioning could very well result in a much reduced lifespan than assumed.**

*During pilot testing by the Department of Water Resources (Appendix E) at a 30 meter by 30 meter sprinkler solar evaporator, significant drift occurred off site. P47*

**Has a risk assessment been performed? If yes, it would be very helpful to summarize the results related to this issue. Additionally, if a risk assessment exists, has a Risk Management plan been developed and again, where is it? It is not possible to develop a scientifically sound monitoring plan without these analyses. This is a possible exposure pathway to humans in addition to wildlife. What is the opinion of the Air Quality Control Board concerning these issues? The document fails to provide any specific information about this potential exposure pathway.**

*Even within the sprinkler solar evaporator, invertebrates such as brine flies may survive which can attract various bird species. Salt encrustation may occur on the feathers and legs of birds that may land in salt-saturated waters within solar evaporators. Also, birds are generally known to fly through or land under water sprinklers for bathing—hundreds of acres of solar evaporators provide such an opportunity. Drift from the site will deposit salt and selenium on nearby soils and vegetation potentially exposing other wildlife. This may be of particular concern if vegetated wind breaks are incorporated into the design to stop drifting. P48*

**Has a risk assessment been performed? If yes, it would be very helpful to summarize the results related to this issue. Additionally, if a risk assessment exists, has a Risk Management plan been developed and again, where is it? It is not possible to develop a scientifically sound monitoring plan without these analyses. This is a possible exposure pathway to humans in addition to wildlife. What is the opinion of the Air Quality Control Board concerning these issues? The document fails to provide any specific information about this potential exposure pathway.**

**Please explain how the following statement from the APPENDIX M1 Fish & Wildlife Coordination Act Report for the San Luis Drainage Feature Re-Evaluation was utilized in your decision making process:**

*“The risk assessment has not quantified risk, or prescribed mitigation for impacts associated with salt toxicosis or encrustacean (known fatal endpoints on existing evaporation ponds).”*

*Mitigation habitat will be provided on an as-needed basis. This should be determined by the results of the monitoring, and the ultimate performance of the adaptive management process. Service policy favors a three-tiered approach to mitigation. This includes, first, avoidance; second, minimization; and finally, compensation. P49*



**An approach based on simple precautionary principals would negate this proposed tiered system. Please rethink your strategies to avoidance, avoidance, and avoidance. The toxicity and intrinsic risk to ecosystem's vigor by these contaminants requires more stringent compliance guidelines than a misdemeanor crime as being proposed. It should be a major felony crime.**

*This approach works on the premise that the provision of clean habitat near already attractive (yet contaminated) habitats can serve to draw birds away from exposure and contaminant risk as long as the contaminated site is also made to be less attractive.*  
p.50

**Is this statement based on any scientific studies? What are the criteria delineating "attractive" versus "less attractive"? For instance, what consideration is given to migrating flocks and area of habitat required per individual?**

*To minimize the cost of the monitoring system while ensuring its effectiveness, the monitoring system itself should be adaptive and compliance-based. That is, as long as the system operates properly, as confirmed by basic monitoring of the physical functioning of the system, relatively little monitoring will be required. However, if some aspect of the system fails to meet specified design criteria in any way that could place human or wildlife health at risk, then additional monitoring may be triggered in order to ascertain the extent of that risk.*

*If the additional monitoring indicates that any wildlife are exposed to such aquatic food, then further monitoring should be triggered to assess whether any exposed wildlife assimilates enough contaminants to.* p.52

**The above statements provide for the set up of a perpetuating vicious cycle as based on the high probability that the proposed plan will be ineffective in preventing further degradation of surface and ground water and air quality, while increasing the risk of exposure of toxic substances to both wildlife and human populations.**

*Monitoring will also identify when an existing or potential beneficial use impairment is imminent. A conceptual groundwater monitoring plan is found in Appendix G.* p.55

**We requested copies or access to the appendices and were told that due to size it was not possible to distribute them. ... We are unable to comment on information intentionally withheld. Due to the size of all these documents please provide access to them via a designated website where we can download them.**

*The salt crust that accumulates in the solar evaporators should be tested periodically to monitor the fates of salts, selenium, and other contaminants in the drainwater stream.*

*In addition the salt crust should be checked for the presence of salt tolerant organisms that could feed into a local wildlife foodchain p.56*

**If indeed there is a risk of having this exposure pathway opened up through the proposed plan then again we must ask... where is the risk assessment and risk management plan? Where is the cost benefit analysis under the NED?**

*Air downwind of the solar evaporators should be tested for appropriate constituents of concern to ensure compliance with applicable air quality standards under regulatory guidance from air quality agencies. p.56*

**When will the AQCB be brought into the loop with this proposal? We suggest they be provided the chance to review the proposal with the explicit task of recommending a solution to minimizing risk to air quality and the possible increased risk of exposing human and wildlife to toxic elements being generating. This agency should have approval authority and responsibility on these issues.**

*These goals must be based on sound science and a clearly articulated rationale. Examples of some of these goals are: zero incidences of standing water; no redistribution and resuspension of contaminants beyond controlled and isolated facilities; removal and containment of selenium from waste stream through pretreatment to yield 10 ppb or less as selenate p.66*

**In reference to triggers these goals are a start, however, we believe a meticulous listing is required to formulate a meaningful monitoring stage . How does your threshold of 10 ppb relate to the following statement taken from the FEIS?**

“Service recommended chronic water quality criterion of 2 µg/L for the protection of waterbirds. Current guidelines (Service) indicate that the respective background concentrations of Se in water (as total recoverable Se) and waterbird eggs are <2 µg/L and <6 mg/kg dry weight. Concentrations in water between 2 to 5 µg/L and in eggs between 6 to 10 mg/kg dry weight have the potential to cause effects.” FEIS p.G51

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*A three strikes concept could be considered as a final factor in an ultimate decision to apply the most restrictive actions such as increased land retirement, sump closure, facility closure, or to consider breach of the associated settlement contract. However, compliance with regulatory requirements is mandatory and enforcement action can be taken at any time the facility is determined to be out of compliance by the appropriate regulatory agency. P67*

**Why three strikes? We believe zero tolerance is the correct precautionary principal when working with toxic substances at lethal concentrations such as are being worked with in the proposal. Once Se enters the aquatic environment, it has the potential to bioaccumulate in primary and**

secondary consumers (e.g., zooplankton, benthic invertebrates), and biomagnifies as it reaches top-level predators (e.g., predatory fish, birds and mammals). This phenomenon has been observed to result in a two- to six-fold increase in Se concentrations between primary producers and forage fish. The exposure is a function of a receptor's foraging behavior and depends on life-history strategies such as dietary preferences, food ingestion rates, and seasonal behavior. After exposure, the dose, represents the average amount of a chemical that an individual member of a population ingests. Please explain how the dose-response analysis was utilized in making your decision related to this issue.

*A satisfactory cost estimate is not possible as yet due to the many components needing monitoring and the current unknowns in the design, size, and location of the facilities.*  
p.79

Cost estimates are critical to properly evaluate the cost benefits of implementation including monitoring versus land retirement. The National Economic Development (NED) Analysis of Alternatives provides a good summary of the negative economic benefits of the implementation plan. These costs do not include monitoring and mitigation expenses. Adding the costs of extensive monitoring and risk management will only reduce the economic benefits further by adopting any alternative other than the In-Valley Drainage Impaired Area Land Retirement, which showed an annual benefit of \$3.643 million/year. The ROD for the SLDFRE selected the less cost effective In Valley Water Needs Land Retirement Alternative, which loses \$10.149 million/year, and now the proposed San Luis Drainage "Settlement" calls for implementation of a perverted version of the In Valley Groundwater Quality Land Retirement Alternative at a loss of "only" \$15,603 million/year, not counting mitigation and monitoring. Boy, what a deal for the taxpayers and the environment!

**Table N-10**  
**Benefit/Cost Summary**  
**Changes Relative to the No Action Alternative (\$/year in 2050)**

Subarea	In-Valley Disposal	Out-of-Valley Disposal	In-Valley/ Groundwater Quality Land Retirement	In-Valley/ Water Needs Land Retirement	In-Valley/ Drainage- Impaired Area Land Retirement
Total NED Benefit	\$37,962,000	\$38,430,000	\$31,164,000	\$20,629,000	\$9,931,000
Total NED Cost	51,225,000	51,370,000	46,767,000	30,778,000	6,288,000
<b>Net NED Benefit</b>	<b>-\$13,263,000</b>	<b>-\$12,940,000</b>	<b>-\$15,603,000</b>	<b>-\$10,149,000</b>	<b>\$3,643,000</b>

<sup>Notes:</sup>  
APPENDIX N National Economic Development (NED) Analysis of Alternatives  
Bureau of Reclamation