

**APPENDIX D**

Comments and Forum Responses

Written Responses Received

# COMMENTS AND FORUM RESPONSES

## Overview

In preparation of this Review, the Forum held five public meetings across the Upper and Lower Basin to receive both oral and written statements. Meetings were held in Rock Springs, Wyoming, on August 13<sup>th</sup>; Montrose, Colorado, on August 14<sup>th</sup>; Price, Utah, on August 15<sup>th</sup>; Farmington, New Mexico, on September 4<sup>th</sup>; and Phoenix, Arizona, on September 5, 2002. All oral and written statements have been reviewed and considered in preparing the Review.

## Overview of Public Meetings

At the public meetings, letters, oral or written statements were received from the following organizations:

BHP Billiton  
U.S. Bureau of Reclamation  
Southern California Salinity Coalition  
The Metropolitan Water District of Southern California  
Navajo Nation-Department of Water Resources  
Petroleum Association of Wyoming  
U.S. Department of Agriculture  
U.S. Fish and Wildlife Service  
Western Slope Environmental Resources Council

In addition, written comments were received at the office of the Forum from the following organizations:

Colorado River Board of California  
Coachella Valley Water District

## Summary of Comments on the Proposed 2002 Review and Forum Response

Listed below is the Forum's summary of each comment received and the Forum's response. Appended to this Appendix is a copy of the each written comment received. The Forum is appreciative of these comments and found them helpful.

1. BHP Billiton, letter signed by John Grubb, President BHP Billiton. Letter dated September 4, 2002 and received September 4, 2002 in Farmington, New Mexico. General support for the program, however, had a personalized comment concerning the application of the standards to “stormwater discharge permits”.

Forum’s response: The proposed policy deals with processed wastewater discharges. Stormwater runoff is currently and more appropriately addressed within the individual state’s NPDES permitting program.

2. U.S. Bureau of Reclamation, letter signed by David Trueman, Program Manager for Reclamation’s Basinwide Salinity Control Program. Letter dated August 14, 2002, and received in Rocks Spring, Wyoming, supporting the program.

Forum’s response: The Forum appreciates the agency’s support and looks forward to a continuing partnership relationship as the Basinwide Salinity Control Program continues to be implemented.

3. Southern California Salinity Coalition, statement presented by Richard Atwater, president of the SCSC. Statement dated September 5, 2002, and received in Phoenix, Arizona. Statement supported the recommended federal funding level in the 2002 Review.

Forum’s response: The Forum not only appreciates the support of the salinity program expressed in the comment but is also pleased to learn of the creation of the coalition and looks forward to working with it in the future.

4. The Metropolitan Water District of Southern California, statement presented by Dennis Underwood, Vice President, Colorado River Resources. Statement dated September 5, 2002, and received in Phoenix, Arizona, urging the Forum to consider creating an institutional structure to permit offsite salinity projects to be funded when on-site salinity mitigation is infeasible.

Forum’s response: The new policy on NPDES Discharges provides the opportunity for individual states to require or allow the establishment of salinity-offset measures. The Forum and its Policy Committee will continue to investigate arrangements for such institutional measures throughout the Basin. The Forum will work with each of the affected States to determine the most effective structure and means to implement salinity-offset procedures.

5. Navajo Nation, Department of Water Resources, Division of Natural Resources, statement dated September 4, 2002. Statement received September 5, 2002, at Farmington, New Mexico addresses the opportunities that exist to control salinity both on-farm and off-farm within the Navajo Nation but have not been implemented due to cost-effectiveness.

Forum's response: The Forum thanks the Water Management Branch for its comments and will continue to explore opportunities for salinity control as described in its statement. The Forum appreciates the Navajo Nation's continuing efforts to identify salinity control projects.

6. Petroleum Association of Wyoming (PAW), letter signed by John Robitaille, Vice President, dated August 12, 2002 and received in Rock Springs, Wyoming on August 13, 2002. Letter makes various comments on the proposed Policy for Implementation of Colorado River Salinity Standards Through the NPDES Permit Program.
  - a. PAW believes the revisions as written may have negative effects on the efficient production of coal bed natural gas and may well render operations in the Colorado River Basin economically unfeasible.

Forum's response: The Forum agrees that depending upon the quality of the produced water and the cost and availability of treatment or disposal alternatives there may be proposed developments that are not both economically feasible and environmentally sound. The Forum agrees that it is appropriate for the state permitting authority to consider "whole project economics" and cost-benefit analyses when making permitting decisions. The proposed policy establishes clear environmental goals and strives to allow a good deal of discretion to the permitting authority in making economic feasibility determinations.

In order to accent this intent, the Forum has changed Section I.A.1.b.v. to read:

*A statement as to the one plan among the alternatives for reduction of salt discharge that is recommended by the applicant and also information demonstrating any of the other evaluated alternatives that were determined to be economically infeasible.*

This information will allow the permitting authority to consider not only the cost of alternative plans in relation to the tons of salt removed but also the cost of alternative treatment and disposal options in relation to the viability of the proposed development. The Forum does not believe these revisions will render all operations in the Basin economically infeasible.

- b. PAW does not believe multiple discharging facilities should be considered as a *single industrial source*.

Forum's response: This issue was carefully considered in the formation of the policy and was deemed to be necessary to ensure that the salinity standards would not be exceeded due to industrial development in the Basin. This rationale is explained in the preamble to the policy on page B-3 under the heading "New Industrial Sources with Operations and Discharges at Multiple Locations under Common or Affiliated Ownership or Management."

- c. PAW questioned the ability to obtain a "fresh water waiver" if the discharging facility has common ownership with discharging facilities that do not qualify.

Forum's response: The policy can be best clarified by referring to Section D.3.c., on page B-11. This portion of the policy assures that individual discharges that qualify for fresh water waiver will be authorized even if they are part of a non-qualifying industrial source with multiple discharging locations.

- d. PAW proposed that a procedure should be established to determine if salt removal is not economically feasible.

Forum's response: It is not the purpose of the Forum's policy to determine what is feasible and what is not but rather to require that such a determination be made by the proper permitting authority before allowing a discharge in excess of one ton per day or 366 tons per year of salt. The policy does provide guidance on the type of information that is necessary to make such a determination. But because of the great variety of industries and discharges affected by this policy and the many variables to consider, it would not be reasonable for the basinwide policy to be more detailed than it is. This is another area where discretion must be left to the individual states and permitting authorities based on site specific circumstances.

- e. PAW questioned how the policy for pilot projects would be administered?

Forum's response: The purpose of the allowance for pilot projects is to provide a means for gathering information, not to provide a permanent exemption for a limited number of wells to avoid compliance with the policies. It is hard to see how a pilot project that itself cannot meet the normal salinity requirements could lead to a determination that full production would. The Forum intended that the salt loading from pilot wells be combined with any other wells the company drills if they are to be retained for production after the information gathering phase is completed. This has been clarified in Section D.5 of the policy.

- f. PAW asked for an exemption for discharges to total containment ponds.

Forum's response: The policy applies to NPDES discharges to the Colorado River system. True total containment is an alternative means of disposal that does not result in a load to the Colorado River system and as such is not affected by these policies. Permitting of this alternative will be left to the state processes and discretion.

- g. PAW asked a number of questions regarding implementation of the policy related to permit processing time frames, pilot project permitting, permit duration, permit renewal, and grandfathering of existing activities.

Forum's response: Questions 1 through 4 cannot be addressed within the Forum policy but are rather a subject for the individual states' permitting regulations and procedures. In regard to question No. 5, the Forum policy does allow for grandfathering of several aspects. The combining of salt loads from discharges at multiple locations applies only to new industrial sources (initiated after adoption of these policies) as stated in the preamble under "new industrial sources with operations and discharges from multiple locations" and in the proposed policy at I.A.1. Likewise, existing discharges that are operating under a waiver based on a previous feasibility study do not necessarily have to address the new salinity offset requirements upon renewal as detailed at I.A.1.iv.E.

- h. PAW requested a clarification of whether one or all of the criteria in Section I.D.2. need to be met.

Forum's response: The policy is written such that all of the criteria must be met to be considered a "new industrial source with operations and discharging facilities at multiple locations."

- i. PAW suggested including definitions for the terms "interrelated and integrated" in Section I.D.2.a. in the context of oil and gas development activities.

Forum response: The Forum believes it is best to leave the referenced terms undefined in the Forum policy to allow states and permitting authorities adequate flexibility to interpret the meaning in the context of their own programs and circumstances and to avoid unintended consequences. Additionally, the concept does not only apply to oil and gas development activities.

- j. PAW recommended adding language to address facilities located in an “oil and gas field” and requested a clarification of what constitutes the 8-digit hydrologic watershed unit.

Forum’s response: An 8-digit hydrologic unit is a watershed or watershed segment delineated and mapped by the U.S. Geological Service (USGS). Watershed boundary maps are readily available from the USGS or multiple state agencies throughout the U.S. There are many considerations to be made when determining which facilities should be combined as a “single industrial source”. The Forum believes it is appropriate to amend the language in Section I.D.2.b. to read “*The discharging facilities are located on contiguous or adjacent properties or are within a single production area e.g. geologic basin, geohydrologic basin, coal or gas field or 8-digit hydrologic unit watershed area; and*” to reflect the intent of the policy that those are examples of logical groupings, not an exhaustive list of all the possibilities. The Forum does not believe it is necessary to address and define “oil and gas field” as proposed by the commentator.

- k. PAW believes the language in Section I.D.2.c. regarding common or affiliated ownership will cause confusion for regulatory agencies and owner/operators of oil and gas development projects.

Forum’s response: The Forum agrees that there may be some difficulties and challenges in administrating the policy, especially in relation to the buying and selling of properties, company mergers, and permit transfers. The Forum subcommittee attempted in earlier versions of the policy to more precisely define these terms and concluded that greater definition would only constrain the application and result in greater regulatory confusion. The Forum believes, however, that the policy allows sufficient flexibility and that the states are capable of managing the program in a reasonable and fair manner. The concept of combining discharges under common ownership is important to achieving the goals of the program.

- 7. U.S. Department of Agriculture, Natural Resources Conservation Service (NRCS), statement presented by Travis James, Colorado Salinity Coordinator, Natural Resources Conservation Service. Statement dated August 13, 2002, and received in Rock Springs, Wyoming. Statement acknowledges that the NRCS continues to be an active partner in working to accomplish the Plan of Implementation to comply with the water quality standards for salinity of the Colorado River.

Forum’s response: The Forum acknowledges the important and beneficial accomplishments of the NRCS to control the River’s salinity and USDA’s recognition of its continuing, pivotal role in the basinwide salinity control program.

8. U.S. Fish and Wildlife Service (USFWS), letter signed by Henry R. Maddux, Utah Field Supervisor. Letter dated September 3, 2002, and received in Price, Utah, providing additional language for updating the language describing salinity control activities in Colorado.

Forum's response: The Forum thanks the USFWS for providing the description of Colorado activities in the "State Programs." Section entitled *Other Activities* on page 4-19 has been revised consistent with the language recommended by USFWS.

9. Western Slope Environmental Resource Council (WSERC) and High Country Citizens' Alliance (HCCA), letter signed by Jeremy D. Pickett, Assistant Director/Public Lands Coordinator, Western Slope Environmental Resource Council. Letter dated August 30, 2002, and received in Price, Utah, recommending that the revised policy proposal apply the one-ton per day limitation to each "field" of oil and/or gas production, regardless of ownership or management affiliation.

Forum's response: The Forum thanks WSERC and HCCA for their joint written comments. These entities recommend in their statement that the revised policy proposal apply the one-ton per day limitation to each "field" of oil and/or gas production, regardless of ownership or management affiliation. The Forum considered their suggestion of applying the one-ton per day to each field regardless of owner/management affiliation and determined it would be even more burdensome administratively than the proposed policy. The implications of the concept of common or affiliated ownership or management were carefully considered by the revised policy. The Forum recognizes the administrative challenges identified and believe the policy is the most effective means of regulating these activities.

The Water Quality Standards for Salinity developed by the Forum contain numeric criteria at three stations in the Lower Basin. The Forum believes those points are the appropriate locations and the basinwide numeric criteria are at the appropriate concentrations. The concluding sentence asks that the Forum explore ways to mitigate potential damages "upon the environment or agricultural uses as a result of the cumulative impacts of permitted industrial discharges." The numeric criteria was established based on ambient levels in the River in 1975 to maintain or improve the existing water quality and to reduce cumulative impacts in the Lower Basin. Impacts on agricultural production (including sensitive crops) are a major focus of the Program. Impacts to municipal and industrial water users are also of significant concern to the Forum.

Since salinity is primarily an economic pollutant, costs of treatment need to be considered in determining whether waivers of the no-salt-discharge policy are appropriate. However, the permitting state may have water quality standards to protect designated uses for given



stream segments that are more stringent than the numeric standards or waivers available under the proposed policy.

10. Colorado River Board of California, letter signed by Gerald R. Zimmerman, Executive Director. Letter dated September 5, 2002 received by FAX on September 5 and hard copy on September 6, 2002. Support for maintaining the numeric criteria and Plan of Implementation.

Forum's response: The Forum appreciates California's ongoing support of the Forum's activities and its efforts in seeking Federal appropriations for the Salinity Control Program.

11. Coachella Valley Water District (CVWD), letter signed by Tom Levy, General Manager-Chief Engineer. Letter dated August 21, 2002 and received by mail on August 29 at the Forum's office. Support for the 2002 Review but commented on the need for increased Federal funding.

Forum's Response: The Forum appreciates the support of the CVWD. With respect to the need for increased Federal funding, the Forum agrees and the Forum will continue its effort to request the Congress and the Federal Administration to appropriate the needed funding.

Written Responses Received



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New Mexico Coal

September 4, 2002

Jack A. Barnett, Executive Director  
Colorado River Basin Salinity Control Forum  
106 West 500 South, Suite 101  
Bountiful, UT 84010

Re: *Comments of BHP Billiton on 2002 Review, Water Quality Standards for Salinity, Colorado River System*

Dear Mr. Barnett:

BHP Billiton ("BHP") received and reviewed the Colorado River Basin Salinity Control Forum's 2002 Review, Water Quality Standards for Salinity, Colorado River System (Proposed). BHP, through its subsidiaries, owns and operates three coal mines in the San Juan River Basin. As part of those operations, BHP has various NPDES permits, both for purposes of traditional point source discharges and for stormwater discharges.

BHP generally supports the efforts of the Colorado River Basin Salinity Control Forum, and as a general matter, supports the Forum's efforts documented in the 2002 Review, Water Quality Control Standards for Salinity for the Colorado River System ("Proposed Standards"). However, in its current form, BHP believes the Proposed Standards contain a serious ambiguity regarding the applicability of the implementation of the standards in the NPDES Permit Program. The Proposed Standards are clear that the implementation of the "no salt discharge" will apply to traditional "end of pipe" municipal and industrial discharges. However, the Proposed Standards are ambiguous as to whether the "no salt discharge" requirement also will apply to NPDES stormwater discharge permits. Although it may be appropriate to implement a no salt discharge to traditional end of the pipe municipal and industrial discharges, it would be inappropriate to apply such a standard to stormwater permits. Indeed, such a standard would not be practical because it would not be achievable in the stormwater context. BHP does not believe it was the Forum's intent to include stormwater permitting within the ambit of the "Policy for Implementation of Colorado River Salinity Standards Through the NPDES Permit Program." Accordingly, the Proposed Standards should be clarified to reflect that the policy is not intended to apply to stormwater permits.

Thank you for the opportunity to provide these comments. Please feel free to contact me should you have any questions regarding our comments.

Very truly yours,

John Grubb  
President

cc: Jay C. Groseclove, P.E., New Mexico Interstate Stream Commission

A member of the BHP Billiton group  
which is headquartered in Australia  
Registered Office: 600 Bourke Street  
Melbourne Victoria 3000 Australia  
ABN 49 004 028 077  
Registered in Australia



# United States Department of the Interior

## BUREAU OF RECLAMATION

Upper Colorado Regional Office  
125 South State Street, Room 6107  
Salt Lake City, Utah 84138-1102

**AUG 14 2002**

IN REPLY REFER TO:

UC-240

RES-9.00

HAND DELIVERED

Colorado River Basin  
Salinity Control Forum  
106 West 500 South  
Bountiful, UT 84010

Subject: Statement by the Bureau of Reclamation on the Triennial Review of the Water Quality Standards

Dear Mr. Chairman:

Thank you for the opportunity to comment on the Triennial Review of the Water Quality Standards and the Plan of Implementation to meet the standards.

Reclamation is a long standing supporter of the Colorado River Basin Salinity Control Program and the Triennial Review process. As lead Federal agency in managing the Program, Reclamation helped develop the Review along with the numerous other State and Federal agencies. Having actively participated in the Review, we find that the standards and plan of implementation should continue to meet the purposes of the Colorado River Basin Salinity Control Act and the Clean Water Act in both an efficient and highly effective manner.

Over the past 25 years, the Program has been successful at maintaining salinity below the standards in part due to the unprecedented cooperation between the Federal agencies, the seven Basin States, and the Congress. However, the largest portion of the credit should go to our many local supporters who actually put the improvements on the ground and make these improvements effective. We in Reclamation appreciate the cooperative efforts of all participants and look forward to continuing our role in the Program.

Sincerely,

David Trueman  
Program Manager

A Century of Water for the West  
1902 - 2002

**STATEMENT**  
**OF**  
**SOUTHERN CALIFORNIA SALINITY COALITION**

**SEPTEMBER 5, 2002**

**EXECUTIVE DIRECTOR JACK BARNETT AND MEMBERS OF THE SALINITY CONTROL FORUM:**

My name is Richard Atwater and I am testifying on behalf of the Southern California Salinity Coalition. The Salinity Coalition is a non-profit corporation and represents the wastewater (POTW's), groundwater, water supply agencies in Southern California plus other interested public agencies and interest groups seeking solutions to salinity problems affecting Southern California.

The Coalition grew from the U.S. Bureau of Reclamation and Metropolitan Water District of Southern California joint Salinity Management Study. This study was adopted by the Metropolitan Water District Board in June 1999.

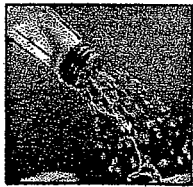
**RECOMMENDATION**

1. The Southern California Salinity Coalition supports the recommended federal funding level in the 2002 Review. Controlling salinity concentrations in the Colorado River is a very high priority for all the members of the Southern California Salinity Coalition.
2. The Coalition supports the efforts of the Metropolitan Water District of Southern California to implement the action plan included in the Salinity Management Study. These include:
  - Source control salinity measures to reduce the concentration of imported supplies (Colorado River and California State Water Project);
  - Control of local sources of salt, including the regulation of water softeners;
  - Construct brine sewers to export salts within the watershed's of Southern California to the Pacific Ocean; and
  - The desalination of wastewater and brackish groundwater to allow reuse and recycling of salinity impaired local suppliers will reduce our dependence on Colorado River imported supplies (and State Water Project).

**CONCLUSION**

On behalf of the Southern California Salinity Coalition, thank you for the opportunity to testify and we look forward to working with members of the Forum in implementing the 2002 Review, Water Quality Standards for Salinity for the Colorado River.

# Seeking Salinity Management Solutions



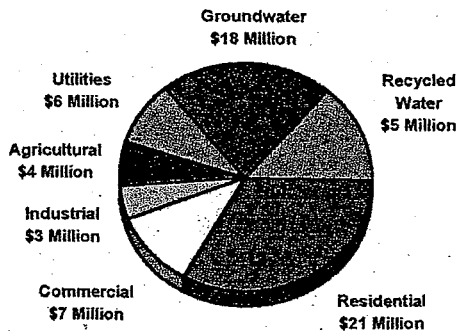
## Where does salt come from?

Salt comes naturally from certain soil formations in contact with groundwater and from ocean intrusion. Agricultural and urban uses contribute greatly to salinity in water.

## Why is salt a problem?

Recent Salinity Management Study conducted by Metropolitan Water District and the US Bureau of Reclamation estimates that \$95 million per year of economic benefit would result if imported supplies experienced a 100-mg/l reduction in salt content over their historic average.

### Annual Benefits of 100 mg/L Salinity Decrease in Imported Water Supplies in Southern California (\$95 Million)



On a larger scale, the impacts to the Lower Colorado River Basin community are estimated at \$750 Million/year (\$382.5 M for Residential, \$180 M Infrastructure Utilities and \$37.5 M Industry).

Degradation of existing groundwater basins usually recharged with imported and recycled waters is another major impact. This impact determines limitation on the wastewater recycling.

## How has the salt problem been affected by regulatory actions?

Recycling and compliance with state and federal wastewater discharge permits becomes difficult to accomplish with salinity. The upcoming Salinity Summit II will address regulatory actions needed to help solve the salinity problem in the Southern California region.

Salinity is a measure of mineral salts dissolved in water. At salinity levels of about 1000 mg/l, potable and recycled water uses are significantly impaired, and alternate lower salinity supplies are typically sought.

## Disposal Solutions

*An obstacle to treatment is the lack of enough brine disposal alternatives. Brine is the concentrate formed by the salt removed. Brine is normally disposed to the ocean via pipelines or outfalls. Several outfalls are required to provide the brine disposal.*

Hardness, a part of salinity, causes deposits in plumbing systems and appliances. Water softeners reduce hardness, but adds other salts to the water and wastewater in the process.

## What can be done?

A long-term solution require concurrent management of both imported and local sources of salt for the region. Investments in source control measures are necessary to avoid the expensive process of remediation.

At the region level, treatment is an alternative that will focus on the removal of salt by physical actions.

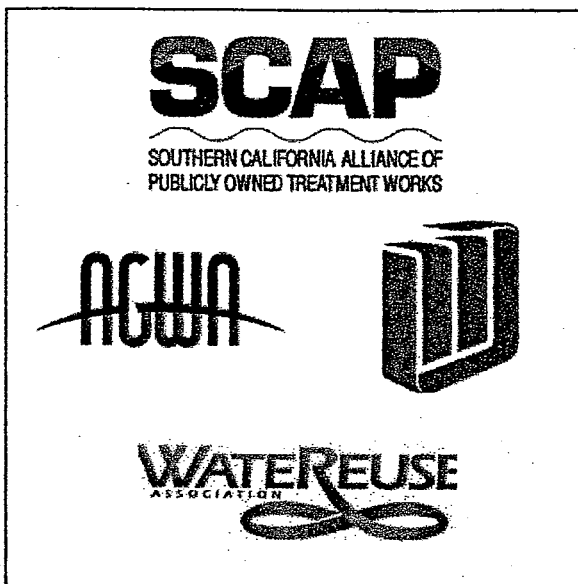
## What is the Southern California Salinity Coalition?

The Southern California Salinity Coalition was formed to fill a need for a collaborative regional partnership to seek solutions for the region's salinity problems.

## Salinity Summit

*The coalition is organizing a second salinity summit that will address the impact of regulatory and legislative actions on the solution of the salinity problem and propose a list of projects that have been identified as solutions to the problem.*

# Seeking Salinity Management Solutions



What will solutions cost and how will they be funded?

Funding for the projects will require commitment from federal, State and local agency levels. The Salinity Coalition has estimated the cost of a salinity management program to be over \$1 billion during the next twenty years (See table for breakdown).

Proposed State and Federal Funding

Program Area	Loan (\$M)	Grants (\$M)	Total (\$M)
Desalinization	467.5	82.5	550
Brine Disposal	212.5	37.5	250
Wastewater Systems	85	15	100
Watershed/Source Control	25	25	50
R&D	0	50	50
Total Estimated Annual Expenditure		210	1,000

# Seeking Salinity Management Solutions

Salinity Management Projects						
Region	Project Type	Project Name	Description	Cost in Millions of Dollars	Estimated Start Horizon (years)	
San Jacinto Basin	Desalter	Menifee Phase 2	Extraction wells, feedwater pipelines and 4 mgd desalination facility	10.5	5	
	Brine Line	Lake Elsinore - Temecula Brine Line Extension	Receiving station, pumps and 110,880 LF of 12" Pipeline	12	3	
	Desalter	South Perris Desalter and Lakeview Groundwater Remediation	Recharge wells, extraction wells, pipelines and 4.5 mgd desalination facility	20.1	1	
	Brine Line	Sun City - Winchester Brine Line Extension	26,776 LF of 20" Pipeline	4.8	2	
	Brine Line	Sun City to Perris and Moreno Valley Brine Line Extension	43,800 LF of 18" Pipeline and 34,320 LF of 12" Pipeline	9.3	1	
Chino Basin	Desalter	Chino Desalter Expansion	Addition of 5.8 mgd desalting capacity	12	1	
	Manure Processing	Chino Organic Center		50	2	
	Desalter	East Chino Basin Desalter	26.5 mgd desalination facility	43	2	
	Desalter	West Chino Desalter	9.5 mgd desalination facility	17	8	
Orange Co Basin	Brine Line	SARI Downstream Protection	Relocation to avoid river scour	35	2	
	Desalting	Orange County Ground Water Replenishment System (\$20 million is already authorized)	60 mgd wastewater treatment facility to groundwater recharge standards	325	1	
	Brine Line	Orange County Regional Brine Line	21 miles of pipeline ranging from 6 to 16 inches	13.7	2	
	Pipeline	MWD Diemer filtration Plant Bypass Pipeline	1,000 feet of 72 inch pipeline	3.5	1	
	Desalting	Irvine Desalter	7 mgd desalter for groundwater cleanup	38	1	
	Desalting	Frances Desalter	10 mgd desalter for cleanup Irvine Subbasin	24	1	
	Upper Santa Ana River Watershed	Desalter connections	Arlington Desalter Direct Deliveries	22,000 LF of 24" Pipeline and pumping facilities	15	1
Desalter		Riverside Colton Desalter and Conjunctive Use project	18.9 mgd desalination facility	50	2	
Brine Line Improvements		SARI Upstream Protection	Improvements to existing brine line for flood control work	1	1	
Desalter		Western-Elsinore Valley Desalter	6 mgd desalination facility	16	5	
Bunker Hill Basin		Desalter	San Bernardino Desalter and Conjunctive Use	12 mgd desalination facility	130	10
	Ventura County	Brine Line	Venture Co. Brine Disposal	37.2 miles of 36" Pipeline	41.3	5
LA County		Brine Line	San Fernando Valley/West Basin Brine Disposal	32.3 miles of 36" Pipeline	44.3	5
		Brine Line	Raymond Basin Brine Disposal	14.1 miles of 21" Pipeline	9.9	5
	Desalter	West Basin Chevron	4.3 mgd desalination facility	15	5	
	TDS Bypass Sewer	JOF Unit 4 Relief sewer project near Los Coyotes WRP and other WRP bypass Sewers	Sewer Modifications to bypass high TDS wastewater around Water Reclamation Plants	5	1-5 years	
	Study	Technology Evaluation and Waste Stream Study	Study to evaluate BMP technologies in the LACSD sewerage system to improve effluent TDS and water quality	1	1-5 years	
San Diego County	Brine Line	San Diego Industrial Brine Export	23.5 miles of 18" Pipeline	16	5	
	Brine Line	Bonsall Desalter Brine Disposal	10 miles of 10" pipeline	4.7	5	
Southwest Orange County	Desalting	3A Water Reclamation Plan	Provides desalting at WRP for reclamation use requirements	0.7	10	
	Desalting	J.B. Latham (SERRA) WWTP	Provides desalting at WRP for reclamation use requirements	3.1	10	
	Desalting	San Clemente WRP	Provides desalting at WRP for reclamation use requirements	1.7	10	
North San Diego County	Desalting	Carlsbad WRP	Provides desalting at WRP for reclamation use requirements	3.3	10	
	Desalting	San Elijo WRF	Provides desalting at WRP for reclamation use requirements	0.75	10	
	Desalting	San Pasqual WRF	Provides desalting at WRP for reclamation use requirements	1.5	10	
	Desalting	North City WRF	Provides desalting at WRP for reclamation use requirements	10.6	10	
South San Diego County	Desalting	South Bay WRP	Provides desalting at WRP for reclamation use requirements	5.3	10	
	Desalting	Ralph C. Chapman WRP	Provides desalting at WRP for reclamation use requirements	3.3	10	
	Desalting	San Pasqual WRF	Provides desalting at WRP for reclamation use requirements	1.5	10	
Total Cost (millions)				998.66		



**STATEMENT**  
**OF**  
**THE METROPOLITAN WATER DISTRICT OF SOUTHERN CALIFORNIA**  
**BEFORE THE COLORADO RIVER BASIN SALINITY CONTROL FORUM<sup>1</sup>**  
**SEPTEMBER 5, 2002.**

EXECUTIVE DIRECTOR BARNETT AND MEMBERS OF THE FORUM:

The Metropolitan Water District of Southern California (Metropolitan) appreciates the opportunity to submit this statement regarding the report "2002 Review, Water Quality Standards for Salinity, Colorado River System" (2002 Review) prepared by the Colorado River Basin Salinity Control Forum (Forum). Metropolitan supports the report's plan of implementation to maintain the salinity concentrations at or below the numeric criteria through the year 2020. We urge the adoption of the 2002 Review by each of the Colorado River Basin states. Metropolitan is a public agency created in 1928 to meet supplemental water demands of those people living in what are now portions of a six-county region of Southern California. Today, the region served by Metropolitan includes over 17 million people living on the coastal plain between Ventura and the international boundary with Mexico. It is an area larger than the State of Connecticut and, if it were a separate nation, would rank in the top ten economies of the world.

Included in our region are more than 225 cities and unincorporated areas in the counties of Los Angeles, Orange, San Diego, Riverside, San Bernardino, and Ventura. We provide more than half the water consumed in our 5,200-square-mile service area. Metropolitan's water supplies come from the Colorado River via the Colorado River Aqueduct and from northern California via the State Water Project's (State project) California Aqueduct.

### **Introduction**

Metropolitan supports the federal funding level recommended in the 2002 Review. It is important that water source controls for salinity continue to be implemented to assist in achieving Metropolitan's imported water salinity target of 500 milligrams per liter. The high salinity concentration of Colorado River water results in financial impacts to residential, commercial, industrial, and agricultural water users as well as groundwater and recycled water resources and utility distribution systems. It is vital that the President and Congress provide the U.S. Bureau of Reclamation and the U.S. Department of Agriculture with the funding necessary to successfully carry out their commitment to natural resources conservation.

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<sup>1</sup> Presented by Dennis B. Underwood, Vice President, Colorado River Resources in Phoenix, Arizona.

## **Salinity Impacts In Southern California**

Salinity has always been a concern of water resource managers in Southern California. When salinity concentrations of imported water are reduced, the region benefits from improved use of local groundwater and recycled water and reduced costs to water consumers and utilities. Metropolitan estimates that \$95 million (1998 dollars) of economic benefits would result annually if the Colorado River Aqueduct and State project waters were to simultaneously experience a 100 milligrams per liter reduction in salt content from their historic average. Conversely, about the same dollar amount of impacts would result if imported water salinity increased by 100 milligrams per liter.

In 1999, Metropolitan completed a Salinity Management Study (Study) in close collaboration with its member agencies and numerous other concerned agencies including the U.S. Bureau of Reclamation. The Study identified the impacts of salinity on the coastal plain of Southern California and recommends a long-term strategy and action plan.

About half of the region's salt is contributed by imported water, and the other half comes from local sources. Colorado River water constitutes Metropolitan's highest source of salinity, varying from 513 to 760 milligrams per liter since 1972. Hardness comprises about one-half of the Colorado River Aqueduct salt load and causes troublesome scaling problems to indoor plumbing appliances and equipment in homes, businesses and industries.

The State project provides Metropolitan with lower salinity water than from the Colorado River. State project salinity levels can change rapidly in response to hydrologic conditions however, and such changes are noticeable and disruptive as compared to the very gradual, almost imperceptible changes that occur in local streams, groundwater and wastewater collection systems. A CALFED Bay-Delta solution could lower State project salinity by 80 milligrams per liter and reduce its short-term variability. Local salinity sources include naturally occurring salts, salts added by urban water users, infiltration of brackish groundwater into sewers, irrigated agriculture, and confined animal waste management practices. Urban use salt contributions to wastewater range from 250 to 400 milligrams per liter or more in some locations.

In recognition of the increasing threat of elevated salinity levels in water supplies and wastewater discharges, a coalition of Southern California water and wastewater agencies were brought together in 2002 to formalize the Salinity Management Coalition. The Coalition proposes to address the critical need to remove high salt levels in Southern California's water supplies and wastewater discharges.

### **Metropolitan's Action Plan**

Metropolitan's Board of Directors adopted a salinity management policy and corresponding Action Plan in April 1999. Metropolitan is committed to the following long-term policy to control salinity:

- Protect Metropolitan's imported source supplies from additional salinity, and where feasible seek reductions.

- Achieve, to the extent reasonable and practical, a total dissolved solids concentration objective of 500 milligrams per liter in Metropolitan's distribution system.
- Recognize that natural events beyond Metropolitan's control will at times increase the salinity of imported water supplies, hindering Metropolitan's ability to continuously meet its 500 milligram per liter objective.
- Optimize the long-term use of State project supplies in conjunction with Colorado River water in pursuing salinity management objectives and Metropolitan's integrated resource plan.
- Integrate water quality and quantity objectives in planning facilities and resources.
- Support regional regulatory and management actions to minimize salinity contributions to groundwater and recycled water resources.
- Make the Salinity Action Management Plan the primary strategy to carry out this policy. Regularly assess the implementation and results of the Action Plan, and make revisions based upon experience gained and changing conditions.

The Action Plan consists of four basic components:

- Imported water source control actions,
- Distribution system salinity management actions,
- Collaborative actions with other agencies, and
- Local actions to protect groundwater and recycled water supplies.

The foundation of Metropolitan's action plan is an imported water salinity target of 500 milligrams per liter. Managing imported water salinity through blending would be supplemented by source control in the two imported water river systems, storage and exchange operations along the Colorado River Aqueduct, and a CALFED solution.

### **Plan of Implementation for Colorado River Salinity Control**

Metropolitan supports the Forum adopting the revised Policy for Implementation of Colorado River Salinity Standards through the National Pollutant Discharge Elimination System Permit Program contained in Appendix D of the report. In particular, Metropolitan is pleased that the Forum has chosen to address the discharge of water from new industrial sources with operations at multiple locations which are under common or affiliated ownership or management. While the discharge from one of these locations may contain less than one ton of salt per day, considering the operations collectively much more than one ton of salt per day would enter the Colorado River system, adversely affecting achievement of the water quality standards for salinity.

In order to conserve Colorado River system water, while not having an adverse effect on maintaining salinity at or below the numeric criteria, Metropolitan favors the inclusion of benchmark salinity concentrations in the policy for determining whether the discharge can be considered to be fresh water and therefore permitted. Maximum salinity concentrations of 500 milligrams per liter at or above Lees Ferry, Arizona, 650 milligrams per liter from that point to below Hoover Dam, and 675 milligrams per liter to below Parker Dam are appropriate benchmarks for that determination.

To minimize additional salt loading to the Colorado River system, Metropolitan is encouraged by the addition of the evaluation of offsetting all or part of the salt load from new construction through offsite salinity control projects to be undertaken by the Forum. This will facilitate implementation of the most cost effective salinity control projects basinwide. Metropolitan urges the Forum to consider creating an institutional structure to permit such offsite projects to be funded.

### **Colorado River Basin Salinity Control Program Funding**

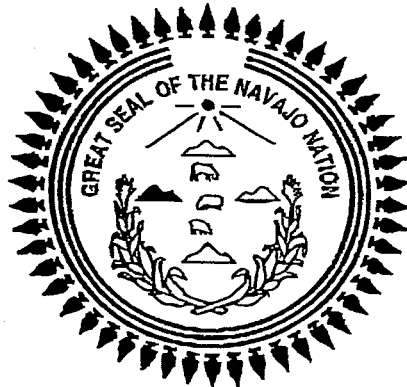
It is imperative that adequate federal funding be provided to meet the goals of the Colorado River Basin Salinity Control Program (Program). Metropolitan supports the 2002 Review's conclusion that about \$10.5 million in federal capital funding and \$3 million in federal operations and maintenance funding are needed each year through the planning period for the Bureau of Reclamation's portion of the Program. We believe that the U.S. Department of Agriculture should increase federal funding for the Colorado River salinity control activities of the Environmental Quality Incentives Program to at least \$13.8 million per year. Metropolitan also recognizes the important role that the Bureau of Land Management (BLM) can play in controlling salt contributions from non-point sources and awaits BLM's submittal of its status report to Congress on its basinwide program.

Metropolitan supports continued analysis of the long-term effectiveness of existing salinity control measures recognizing that on-farm measures installed through the Department of Agriculture program have a life expectancy of 15 to 20 years, prior to a need for major maintenance. As significant funding of the Department of Agriculture program began in 1986, the implications of this life expectancy on future Department of Agriculture funding needs should be considered by the Forum annually.

### **Conclusion**

We urge the adoption of the 2002 Review by the Basin states and its approval by the U.S. EPA, and increased federal funding for the Colorado River Basin Salinity Control Program. Thank you for your consideration of our statement.

**COMMENTS TO THE  
COLORADO RIVER BASIN SALINITY CONTROL FORUM**



Submitted to

**Jack A. Barnett, Executive Director  
Colorado River Basin Salinity Control Forum  
106 West 500 South, Suite 101  
Bountiful, Utah 84010**

Pursuant to  
**PUBLIC LAW 104-20**  
An Act to Amend the Colorado River Basin  
Salinity Control Act of 1974

Submitted by the

**NAVAJO NATION  
DEPARTMENT OF WATER RESOURCES  
DIVISION OF NATURAL RESOURCES**

September 4, 2002

## INTRODUCTION

At the Hoover Dam, the Colorado River delivers approximately nine million tons. It has been estimated that salinity damages in the United States portion of the lower basin total \$311 million annually. The Colorado River salinity control program has significantly reduced the economic damages. An additional concern in the San Juan River Basin is the water quality within the designated critical habitat of two endangered species, the Razorback Sucker and the Colorado Pikeminnow.

The U.S. Department of Agriculture conducted a salinity verification report which indicated that the San Juan River basin is a potential problem area within the Colorado River Basin. In response to these concerns and to Public Law 104-20, the Navajo Nation Department of Water Resources (NDWR) investigated opportunities to address salinity along this reach of the San Juan River.

The flow of saline water into the San Juan River is partly attributed to natural sources including leakage of saline water into the River's alluvium. Approximately half of the total is attributed to human induced effects such as discharges from wells drilled for oil and uranium exploration or irrigation return flows. The Navajo Nation has proposed projects that will decrease the salinity of the San Juan River which flows through the Navajo Nation. This strategy includes three distinct components:

1. The first component is to reduce saline discharges from the Navajo irrigation projects located along the San Juan River.
2. The second component is to improve on-farm irrigation water delivery on Navajo trust land along the San Juan River.
3. The third component is to reduce saline discharges from uncapped wells in the San Juan River Basin within the Navajo Reservation.

However, the Navajo Nation has been frustrated in its attempts to secure P.L. 104-20 funding to implement these programs. One of the obstacles facing the Navajo Nation's proposals in recent years has been that accurate information needed to verify the potential positive impacts of these salinity control measures has been lacking. However, the Navajo Nation working close with Reclamation, the Bureau of Land Management and the U.S. Department of Agriculture has greatly improved the quality of descriptive information in this area. With this additional information at hand, the time is right to address the salinity issue along this reach of the San Juan River.

## COMPONENT #1 - NAVAJO IRRIGATION SYSTEM IMPROVEMENTS

The USGS records indicate that approximately 157,000 tons of salt are discharged annually into the San Juan River from the Fruitland, Hogback, and Cudei Irrigation areas in the Navajo Nation. A 1993 study by the US Department of Agriculture indicates that nearly 50,000 tons of salt, in addition to other nutrients and pesticides, may be picked up annually by excess irrigation water returning to the San Juan River.

The Fruitland, Hogback, and Cudei Irrigation Projects were constructed to provide water to approximately 12,000 acres of land through 304 miles of largely unlined canals and laterals. The irrigation delivery and return systems flow over terrain composed of rocks from the salt bearing Mancos Shale or from soils derived from that rock. The USDA estimated that approximately 14,400 tons of salt are picked up due to "off farm" canal seepage and 34,000 tons of salt are picked up due to on-farm water use. However, these ponding tests produced inconclusive results.

In the 1993 study the U.S. Department of Agriculture proposed pipe or concrete lining to repair about 200 miles, or two thirds, of the irrigation project canals and laterals. Based on that investigation the estimated amount of salt picked up due to the "off-farm" canal seepage could be reduced by two thirds. The Reclamation has indicated that lateral and canal improvements typically cost about \$100 per ton or more. For this treatment to be cost effective, a cost sharing component of approximately 60 percent may be needed.

Additional study of these irrigation projects is needed to determine the cost per ton more accurately. The NDWR is proposing to conduct this type of investigation. If the results indicate that salinity control measures are warranted, proposals based on these findings will be submitted for future funding. The NDWR will rely on the Reclamation Farmington Construction Office for technical assistance and both office will need to coordinate manpower and other resources accordingly.

In 1997 the Bureau of Indian Affairs assisted the NDWR with interpretation of the soils that the Shiprock canals pass through. In addition, the digital soil map layers are available for the Shiprock Area and the digital map layers of the canal system based on 1999 areal photogrammetric surveys are complete.

The U.S. Department of Agriculture proposed using pipe or concrete lining to repair about 200 miles, or two thirds, of the irrigation project canals and laterals. Based on that proposal the salt picked up due to the "off-farm" canal seepage would be reduced by two thirds or 9,600 tons. This NDWR proposal is for a single year pilot program that would treat approximately 2.5 miles. Based on the average benefit per mile, this treatment would result in a reduction of approximately 150 tons of salt per year. However, this treatment would target specific sites where seepage and the salt loading are the greatest.

It is not unreasonable to assume that the worst 3,500 feet of canal and 10,000 feet of lateral may each lose 500 acre-feet per year. Based on the Water Salt Balance presented in the July 1993 USDA

Salinity Verification study, this volume of canal seepage may result in a salt load of 2,100 tons per year. For the purposes of the unit cost analysis, the assumed life expectancy of this treatment is 50 years. Canal lining and other system improvements require little long term active management and they can be expected to have long project lives. Given these factors and standard maintenance procedures, this treatment has a moderately low risk.

## **COMPONENT #2 - ON-FARM IRRIGATION WATER DELIVERY TO NAVAJO TRUST LAND**

The USDA Salinity Verification investigation indicates that approximately 14,400 tons of salt are picked due to "Off Farm" canal seepage and 34,000 tons of salt are picked up due to on-farm water use. Component #2 addresses the on-farm salt loading. In addition to the direct reduction due to this component, the indirect benefits are significant. Technically, the Shiprock farming systems lag behind the farming practices of other parts of the United States. Special consideration should be made because these farmers lack the means to install systems which are more efficient.

In its Salinity Verification investigation USDA recommends an on-farm program to improve about 80 percent of the furrow and flood irrigated fields. Recommended treatment includes ditch lining, gated pipes, surge valves, water control structures, land leveling, and irrigation water management. The NRCS recommends a flexible approach to treatment depending on the on-farm circumstances and the potential for salinity reduction. The NRCS favors technically robust application combined with education. All of the eligible fields are Navajo trust land.

The PL104-20 salinity control funds would only be part of the overall on-farm package. This program would be combined with State, Federal and Tribal resources. Requests have been made to the USDA EQIP program, the New Mexico State legislature and the Navajo Nation to supplement this program. Farmers may be required to contribute 10 percent on a cost sharing basis. These treatments may cost \$900 per acre. This cost sharing may include: 1) P.L. 104-20 at 450 \$/acre, 2) Participants at 90 \$/acre, and 3) Other Programmatic Funding at 360 \$/acre. The P.L. 104-20 Annualized Cost is \$30 per ton.

In 1997 the Bureau of Indian Affairs assisted the NDWR with interpretation of the soils that the Shiprock laterals pass through. In addition, the digital soil map layers are available for the Shiprock Area and the digital map layers of the farming units based on 1999 areal photogrammetric surveys are complete.

Based on the Salt Verification Study, a four million dollar on-farm program would treat approximately 6,000 acres of land and reduce salt loading by about 26,000 tons per year. A \$355,000 on-farm program would reduce salt loading by 1,300 tons per year. Slightly less than 50 percent of the total project cost would be provided by PL 104-20 salinity control funds. These program criteria will target areas with the greatest potential for salt reduction. The overall life of this treatment is fifteen years.



### **COMPONENT #3 - REDUCTION OF SALINE WELL DISCHARGES**

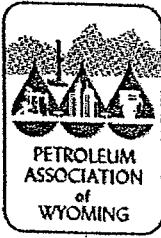
Abandoned, orphaned and unused wells will be permanently plugged throughout the entire depth of casing. This treatment will essentially eliminate the flow of saline water leaking into the San Juan River alluvium or discharging through surface flows. Salt production will be documented during the reconnaissance survey to determine the most effective candidate wells and verify salinity reduction. In its 1996 Largo Canyon Watershed Plan, the Bureau of Land Management estimated the cost of treating these wells and well pads to be between \$10,000 and \$15,000 per well. In the late 1990's the Navajo Nation, the Reclamation Salinity Control Program, and the Bureau of Land Management successfully plugged numerous wells in the San Juan River Basin within the Navajo Reservation.

Assuming an average rate of discharge of 15 gallons per minute each well potentially produces 100 tons of salt per year. Plugging five wells will eliminate 500 tons of salt per year. For the purposes of the unit cost analysis, the assumed life expectancy of this treatment is 50 years. The P.L. 104-20 annualized cost per ton is \$11.60.

## REFERENCES

This scope of work is based on the technical findings from the following investigations:

1. On-farm Irrigation Improvements, McElmo Creek Unit, Salinity Control Study, Colorado River Salinity Program, Soil Conservation Services, Denver, CO, January 1983.
2. Preliminary Evaluation of Potential Impacts of Abandoned Wells on Groundwater Quality in the Aneth Oil Field, San Juan County, Utah, Unpublished Reports, Uribe and Associates, Oakland CA 1992.
3. Records of wells in sandstone and Alluvial Aquifers and Chemical Data for Water from Selected Wells in the Navajo Aquifer in the Vicinity of the Greater Aneth Oil Field, San Juan County, Utah, USGS Open File Report 92-124, 1992.
4. Salinity Verification, Phase 1 Final Report for Navajo nation Unit, San Juan County, New Mexico, Salinity Control Study, USDA Soil Conservation Service, et al, July 1993.
5. Salinity Increase in the Navajo Aquifer in Southeastern Utah: David L. Naftz and Lawrence E. Spangler, Water Resources Bulletin, Vol. 30, No. 6, p. 1119-1135, December 1994.
6. Quality of Water Colorado River Basin, Progress Report No. 17, United States Department of Interior, January 1995.
7. Reconnaissance Report for Required Rehabilitation of the Shiprock Irrigation Projects in Fiscal 1995, Navajo Nation, Division of Natural Resources, and U.S. Bureau of Reclamation, Office of Native American Affairs, February 14, 1995.
8. Largo Canyon Watershed Restoration Plan, U.S. Bureau of Reclamation, 1996



# PETROLEUM ASSOCIATION OF WYOMING

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August 12, 2002

Colorado River Salinity Control Forum  
106 West 500 South, Suite 101  
Bountiful, UT 84010

Dear Forum Members:

The Petroleum Association of Wyoming (PAW) welcomes this opportunity to present to the Colorado River Salinity Control Forum regarding the proposed revisions to the proposed Colorado River Salinity Policy revisions for NPDES permitting (appendix D) in the Colorado River Basin. PAW is Wyoming's largest and oldest oil and gas trade association, members of which account for over 90% of the natural gas and over 80% of the crude oil produced in the state.

PAW believes these revisions, as written, will do little to benefit the development of natural gas. We believe the revisions, as written, may have negative effects on the efficient production of coal bed natural gas and may well render operations in the Colorado River Basin economically unfeasible.

The policy authorizes a discharge of salinity from a single point source of up to one ton per day or 366 tons per year in certain circumstances. The revisions define facilities discharging at multiple locations as "a single industrial source" if the facilities are interrelated, located within a single production area, or owned or operated by affiliated ownership or management. Individual discharge locations that would by themselves contribute less than one ton of salt per day would probably exceed the limit when combined with other discharges as "a single industrial source." When determining effluent limitations for salinity, PAW does not believe multiple discharging facilities should be considered as a "single industrial source". The effluent limitations at each outfall should be measured separately. As proposed, the revisions restrict an operator with multiple outfalls to the same annual limits as an operator with a single outfall.

The policy revisions allow the permitting authority to "permit the discharge of salt from a new industrial source with operations and discharging facilities at multiple locations" if the discharge qualifies as fresh water and has no adverse effect on achieving the adopted numeric standards for the Colorado River. It is reasonable to assume areas exist within the Basin that could qualify for a "fresh water waiver". However, it is not clear if these areas would be permitted through the NPDES process with a "fresh water waiver" if they had common ownership with discharging facilities that do not qualify. The

policy should allow for a separate permit for facilities qualifying for a fresh water waiver. Fresh water facilities should not be combined with non-qualifying facilities as "a single industrial source". When it is shown fresh water is achievable, fresh water waivers should be granted under a permit by rule process rather than the general permit process.

The proposed policy revisions allow producers to prove that salt removal is not economically feasible. PAW believes this process, to determine if salt removal will render projects economically unfeasible, needs to become very well defined, simple and easily implemented for DEQ and industry.

In addition, the revisions make temporary allowances for very small-scale pilot projects with five or less discharge locations in undeveloped areas. This provides the operator an opportunity to determine a project capable of production, however, all the discharging facilities would be considered "a single industrial source" upon the date of the first permit renewal potentially putting the operator in the position of having wells capable yet unable to produce because an NPDES permit could not be re-issued due to limits set by this policy. PAW believes should a NPDES discharge be issued for total containment, this policy should not apply, and provisions for these actions should be included in the policy.

PAW supports the exclusion for the pilot projects; however, we offer the following questions regarding the administration of the policy:

1. How difficult will re-permitting be and how much time will be allotted for each re-permitting effort?
2. Will the wells that were permitted for pilot projects be required to be shut-in until such time as a new permit is issued?
3. What is the duration (in years) of permits for pilot projects?
4. Once a permit is re-issued, how many years will that permit be valid?
5. Will permits that have been previously issued be impacted by this decision, or will those permits be "grandfathered"?

PAW requests clarification on several issues:

1. Section I, (D), (2) – PAW believes there needs to be clarification if all of the criteria must be met or any one of the criteria must be met to qualify. (Is the intent of the policy to say "if one or more" or "meet all of the criteria set below"?)
2. Section I, (D), (2), (a) – If any of the criteria (a, b or c) can cause qualification then the language "any way" is too broad. For instance, two gas fields at opposite ends of the state could be considered to be "interrelated" if under common management. The term "interrelated or integrated" needs to be better defined for oil and gas operations. PAW suggests "interrelated" be defined as producing from the same horizon, while "integrated" be defined as sharing the same gathering and treating

3. Section I, (D), (2), (b) – PAW recommends language be added that will address facilities located in an “oil and gas field” as defined by the Wyoming Oil and Gas Conservation Commission or recognized literature. PAW requests clarity as to what constitutes the 8-digit hydrologic watershed unit. PAW believes if a field exists in two different hydrologic watershed units, the separate units should be considered as two different industrial sources.
4. Section I, (D), (2), (c) – PAW believes this language will cause confusion for regulatory agencies and owner/operators of oil and gas development projects when trying to administer the program. For instance, a company will hold leases over a large geographic area. Within that area multiple fields may be developed in different horizons or geologic zones. Administration of multiple fields under one permit would not be reasonable as each field would have its own specific water quality, quantity and other parameters to consider. Furthermore, if a single NPDES permit were issued for a geographic area containing a number of distinct oil and gas fields there would need to be a new permit issued to the purchasing company. Since the new company would acquire a new permit when by reason of selling properties there could be two or more permits issued each with its own limit for tonnage of salt discharged per year. The system does not appear to be manageable.

PAW requests NPDES permits are issued on a “field” (as defined in Manual of Oil and Gas Terms, by Williams and Meyers, 1971)<sup>1</sup> basis and they be further delineated by the 8-digit hydrologic watershed. PAW is requesting the inclusion of the offered definitions for “interrelated” and “integrated”. In addition, PAW is asking for a simple, well-defined process to determine if salt removal will cause a project to become economically unfeasible.

Sincerely,



John Robitaille  
Vice President

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<sup>1</sup> The general area underlaid by one or more pools. Ore Rev. Stat. § 520.005. The words “field” and “pool” mean the same thing when only one underground reservoir is involved; however, “field”, unlike “pool”, may relate to two or more pools. The Supreme Court of Texas has observed that “The word ‘field’ as used in the oil industry has a meaning which is usually determined from the context in which it is used. It may refer to a certain geographical area from which oil is produced or it may be restricted to a particular reservoir.” Railroad Commission v. Rio Grande Valley Gas Co., 405 S.W.2d 304 at 309, 24 O & G.R. 818 at 822-823 (Tex. 1966). In the instant case the court found that the term “field” as used in the Common Purchaser Act had the former definition.

**United States Department of Agriculture**



**NRCS** Natural  
Resources  
Conservation  
Service

P.O. Box 2890  
Washington, D.C. 20013

August 13, 2002

Mister Chairman, my name is Travis James, Colorado River Salinity Coordinator, Natural Resources Conservation Service of the United States Department of Agriculture, Salt Lake City, Utah. Thank you for the opportunity to offer comments on behalf of USDA-NRCS. As you are aware, NRCS has been closely involved in the preparation of the 2002 Review document being presented for comments at this meeting.

USDA has been providing assistance to private landowners in the Colorado River Basin in a systematic fashion since the 1930's. The Agricultural Stabilization and Conservation Service (ASCS) and the Soil Conservation Service (SCS), in particular, provided financial and technical assistance to improve irrigation and cropping systems in the major agricultural areas in the Basin. These systems impacted salt delivery to the Colorado River. In the mid-1970's USDA began focusing its efforts on measures to improve irrigation efficiencies and reduce salt loading. Integrated area-wide planning with the Bureau of Reclamation began in earnest with enactment of the Colorado River Basin Salinity Control Act of 1974.

Agricultural practices to control salinity were first cost-shared in 1979 and 1980 in the Grand Valley and Uinta Basin areas through the Agricultural Conservation Program (ACP). In 1984, the Salinity Control Act was amended by Public Law 98-569. This amendment permitted the Secretary of Agriculture to establish a voluntary on-farm salinity control program to be administered by USDA. Funding for the program was initiated in 1987.

Six on-farm salinity control projects are currently being implemented by the Natural Resources Conservation Service (formerly the SCS) and the Farm Service Agency (formerly the ASCS). These projects are displayed in the table below:

**Measures in Place through 2001**

<b>Project Location</b>	<b>Annual Tons of Salt Controlled</b>
Big Sandy River, Wyoming	37,000
Grand Valley, Colorado	85,500
Lower Gunnison, Colorado	58,900
McElmo Creek, Colorado	17,700
Price-San Rafael, Utah	13,200
Uinta Basin, Utah	106,000
<b>Total Tons</b>	<b>318,300</b>

Planning is underway to implement salinity control measures in the Mancos River Valley, in Colorado and to expand the Price-San Rafael Project in Utah.

The 1996 Farm Bill combined the functions of several USDA conservation programs including the Colorado River Basin Salinity Control program into the Environmental Quality Incentives Program (EQIP). All USDA on-farm funding has been provided from EQIP. The 1996 Farm Bill also initiated the development of local conservation work groups that identify resource concerns and prioritize control measures. These groups have contributed greatly to the success and practicability of USDA's salinity control program. With enactment of the 2002 Farm Bill, EQIP will continue to be the funding vehicle for USDA's Colorado River salinity control programs. Congress has authorized significantly more funding for the next six years that can be used for salinity control.

The Basin States Cost Share Program has been made available by the Bureau of Reclamation to amplify the USDA on-farm program. Each USDA dollar spent for salinity control allows the Basin States program to provide 43 cents of additional salinity control activity. This program has helped to offset the "lean" years of USDA appropriations.

NRCS continues to be an active partner in working to accomplish the plan of implementation for the Colorado River Basin in order to comply with the water quality standards of the Clean Water Act. Investigations are underway to identify potential geographic areas for salinity control as well as innovative methods of salinity control. NRCS is cooperating with the Bureau of Land Management and state agencies to locate salt sources on grazing lands that might be controlled. NRCS is working with the U.S. Fish and Wildlife Service and state wildlife agencies to ensure that the salinity control program is minimizing impacts to wetlands and the wildlife species that depend on such habitat. NRCS is also cooperating with research agencies and universities to refine our techniques and science in determining the effectiveness of salt control measures.

NRCS accepts its role as a full partner with the States in meeting the water quality standards required for the Colorado River. NRCS recognizes the on-going commitment necessary to meet the schedule presented in the plan of implementation.

SEP 04 2002



United States Department of the Interior  
FISH AND WILDLIFE SERVICE  
UTAH FIELD OFFICE  
2369 WEST ORTON CIRCLE, SUITE 50  
WEST VALLEY CITY, UTAH 84119

In Reply Refer To

FWS/R6  
ES/UT

September 3, 2002

Jack A. Barnett, Executive Director  
Colorado River Basin Salinity Control Forum  
106 West 500 South, Suite 101  
Bountiful, Utah 84010

Dear Mr. Barnett:

The U.S. Fish and Wildlife Service (FWS), has reviewed the draft 2002 Review Water Quality Standards for Salinity, Colorado River System (draft 2002 Triennial Review). The document was circulated to all Upper Colorado River Basin Ecological Services field offices. We are forwarding to you as an attachment comments prepared by our Western Colorado Field Office. These comments are intended to provide the most current information regarding the selenium reduction project recently completed in the Uncompahgre Valley. We believe that including the the information in the Western Colorado Field Office's memorandum in the 2002 Triennial Review will improve the accuracy and completeness of the document. Either Lucy Jordan, FWS representative to the Work Group, or Rick Krueger, Contaminants Specialist with our Western Colorado Field Office, would be willing to work with you to incorporate this information appropriately into a final document. Lucy Jordan will be attending the Work Group meeting in Phoenix on September 6, 2002, when final revisions to the document will be considered. Rick Krueger can be reached at (970) 243-2778 ext. 17, or email: [rick\\_krueger@fws.gov](mailto:rick_krueger@fws.gov).

If the FWS can be of further assistance, please contact Dr. Lucy Jordan at the letterhead address or telephone (801) 975-3330 ext. 143.

Sincerely,

Henry R. Maddux  
Utah Field Supervisor

attachment

cc: Western Colorado Field Office (Attn: Rick Krueger), 764 Horizon Drive, Building B,  
Grand Junction, Colorado 81506-3946



BOR - Regional Office,(Attn: Dave Trueman), Colorado River Basin Salinity Control  
Program, 125 South State Street, Room 6107, Salt Lake City, Utah 84138-1102



# United States Department of the Interior

FISH AND WILDLIFE SERVICE  
Ecological Services  
764 Horizon Drive, Building B  
Grand Junction, Colorado 81506-3946



IN REPLY REFER TO:

ES/CO:EC/Water Quality  
MS 65412 GJ

August 26, 2002

## Memorandum

To: Field Supervisor, Ecological Services, West Valley City, Utah, Mail Stop 65411

From: Western Colorado Field Supervisor, Ecological Services, Grand Junction, Colorado, Mail Stop 65412 *Allan R. Pfister*

Subject: Comments on Draft 2002 Review Water Quality Standards For Salinity, Colorado River System

The Western Colorado Field Office received your July 30, 2002, subject draft report August 12, 2002. We are providing the following comments on the section describing efforts within Colorado where selenium is discussed (last paragraph, page 4-19). This paragraph is out of date because the demonstration project mentioned has since been completed and data on the effectiveness of reducing selenium has been published. We recommend the following language be substituted for the referenced paragraph:

Selenium, a naturally occurring element that is essential in trace amounts, and yet toxic to fish and birds at slightly higher concentrations, is liberated by the same processes which load salt to the river systems. The National Irrigation Water Quality Program (NIWQP), a Department of Interior program comprised of representatives from the Service, Bureau of Reclamation, U.S. Geological Survey, and Bureau of Indian Affairs has been charged with identifying and remediating selenium loading as a result of the construction and operation of Federal irrigation projects. Two Bureau of Reclamation projects, the Grand Valley and Lower Gunnison units have been identified by the NIWQP as contributing more than 50 percent of the total selenium load to the upper Colorado River Basin.

In 2000 a demonstration project placed 7.5 miles of earthen canals into piped laterals within the Lower Gunnison unit in an area identified as Montrose Arroyo. This demonstration project was built using a cost share of 44 percent of the total cost of the project provided by the NIWQP and Uncompahgre Valley Water Users Association (UVWUA) thereby, "buying down" the portion provided by the Bureau of Reclamation's cost competitive salinity control program. Prior to construction of the project comprehensive baseline data were gathered to determine existing salinity and selenium loads emanating from the basin. Once the project was completed, extensive monitoring

was instituted to quantify the amount of selenium and salt loading reduction. The first year's data showed a 28 percent decrease in downstream selenium loading and a 16 percent decrease in salinity loading (U.S. Geological Survey Water Resources Investigation Report 01-4204, 2001). Selenium and salt loading from the basin continues to be monitored to determine long term effects. In addition, all wildlife habitat that was lost due to the reduction in seepage from the canals was replaced in kind as a portion of the cost of this project.

Because of the success of this demonstration project, the UVWUA has put in a request to the Energy and Water Appropriations Bill: Departmental Irrigation Drainage Program to provide \$750,000 to initiate and continue remediation of Federal irrigation projects in the Lower Gunnison River Basin. This proposal, if funded, will be part of a ten year 15 million dollar cooperative effort between the Bureau of Reclamation Salinity Control Program, UVWUA and the NIWQP to aggressively reduce selenium loading within the Lower Gunnison River Basin and provide additional benefits downstream.

Additionally, the Colorado Nonpoint Source Council has funded a Clean Water Act Section 319 grant to begin a process to target selenium loading in the Gunnison and Uncompahgre valleys, with the goal of further reducing the selenium load. Selenium Task Forces have also been formed in both the Gunnison/Uncompahgre and Grand Valley Basins to address selenium at the local level to facilitate meeting state water quality standards in the Uncompahgre, Gunnison, and Colorado rivers and associated tributaries.

If the above information is added to the Colorado section it will help identify the issues associated with selenium, which are relevant to the salinity program, and identify projects that have been completed or are proposed for the future. If you have any questions please feel free to call Rick Krueger of my staff at (970) 245-3920 or 243-6209, extension 17.

cc: Bureau of Reclamation, Grand Junction (Attn: Mike Baker)  
Bureau of Reclamation, Denver (Attn: John Harb)

RKrueger:WtrQualSalinityReview.wpd:082602



# Western Slope Environmental Resource Council

Colorado River Basin Salinity Control Forum  
106 West 500 South, Suite 101  
Bountiful, UT 84010

To Whom It May Concern:

August 30, 2002

We appreciate the opportunity to provide feedback to the Colorado River Basin Salinity Control Forum. The following comments regarding proposed policy changes for implementation of Colorado River salinity standards through the NPDES permit program are submitted on behalf of the Western Slope Environmental Resource Council (WSERC) and the High Country Citizens' Alliance (HCCA).

WSERC is a 25 year old, grassroots, non-profit citizens group dedicated to protecting and enhancing the natural environment and quality of life in Delta County and Colorado's Western Slope.

HCCA is a 25 year old, grassroots, non-profit organization actively working to protect, restore and enhance the natural ecosystems and quality of life in the Upper Gunnison River Basin, throughout the Mountain West.

We are particularly concerned about potential adverse impacts to the Colorado River System, which may result from recently proposed coal bed methane (CBM) development in both Delta and Gunnison Counties in Western Colorado. As such, we applaud the Forum's efforts to establish new policies regulating "New Industrial Sources with Operations and Discharges at Multiple Locations under Common or Affiliated Ownership or Management."

The proposed changes, which would limit the (unpermitted) discharge of saline water to one ton per day (or 366 tons per year) per "operator," are a significant step in the right direction. However, ownership and/or management of oil and natural gas wells is convoluted at best, as this industry often involves complicated partnerships, frequent transfer of mineral rights and infrastructure, and (sometimes) even abandonment of property such as derelict wells and related structures. In our estimation, the common or affiliated ownership or management definition constitutes a significant challenge in terms of administering regulations and ensuring compliance.

We suggest the following revision to the aforementioned policy. The one ton per day limitation would likely be more effective if applied to each "field" of oil and/or gas production, regardless of ownership or management affiliation. This approach would seemingly reduce the potential for lack of accountability and cumulative, adverse impacts at the local level, where a given field might be occupied by multiple operators.

With regard to permitting process, it appears that there are numerous instances in which exemptions for discharge of highly saline water can be obtained. This leads us to question whether some stretches of rivers in the Colorado Basin may be at higher risk of salinity contamination than others, depending on

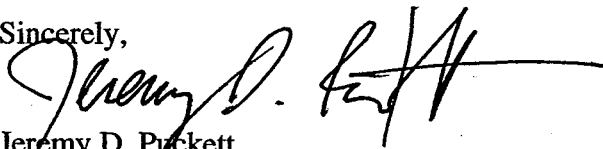
dilution from tributary sources or other factors. Likewise, we are also concerned about any potential conflicts that may arise as a result of reliance on salinity-offset programs.

It seems highly probable that exemptions and other special arrangements may result in localized, high-salinity discharge zones, where agricultural endeavors and the environment are likely to be damaged as a direct result of NPDES permits being issued to industrial operations. The fact that an industrial entity can claim salinity control measures to be impractical – thereby allowing them to exceed reasonable discharge limits – seems to create a situation ripe for conflict with potentially injured constituents.

In addition, we would like the Forum to revisit the standards regulating acceptable levels of salinity. Agricultural uses include both livestock watering and crop production, yet several crops are less tolerant of salinity than livestock. If established salinity limits do not protect these more sensitive uses, a reduction in productivity can be expected. Therefore, we ask that the Forum consider setting salinity standards at a level that will protect more sensitive crops.

In conclusion, we support the Colorado River Basin Salinity Forum's efforts to tighten policies regulating the discharge of high salinity water from "New Industrial Sources with Operations and Discharges at Multiple Locations," but we would ask that the policy be applied to each oil and gas field rather than "Common or Affiliated Ownership or Management." In addition, we request that the Forum explore ways to mitigate potential damages that may be inflicted upon the environment or agricultural uses as a result of the cumulative impacts of permitted industrial discharges which exceed the allowed one ton per day limit.

Sincerely,



Jeremy D. Puckett  
Assistant Director/Public Lands Coordinator  
Western Slope Environmental Resource Council

Steve Glazer  
Water Program Director  
High Country Citizens' Alliance

**COLORADO RIVER BOARD OF CALIFORNIA**

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September 5, 2002

Mr. Jack Barnett  
Executive Director  
Colorado River Basin Salinity Control Forum  
106 West 500 South, Suite 101  
Bountiful, UT 84010

Dear Mr. Barnett:

The Colorado River Board of California (CRB) has reviewed the "2002 Review - Water Quality Standards for Salinity Colorado River System" and concurs there is no need to modify the standards at this time. The CRB also supports the plan of implementation in order to meet the water treaty obligations of the United States to Mexico on the Colorado River as well as the water quality objectives of the Clean Water Act.

Salinity has long been recognized as one of the major problems associated with the use of Colorado River water in the Lower Basin States. In the 2002 Review, the economic damages in the Lower Basin States is estimated to be at least \$200 million per year. Without additional salinity control measures, the salinity of the Colorado River is projected to increase above the numeric criteria, and if the salinity levels were to increase back to 1972 existing conditions, economic damages could approach approximately \$500 million per year. Salinity control is both a western interstate water quality issue as well as an international water quality issue in meeting the requirements of Minute No. 242 pursuant to the 1944 Mexican Water Treaty. These obligations are a federal obligation and the CRB strongly believes that the Congress must provide the funding to its federal agencies to meet these obligations.

The CRB urges the adoption of the 2002 Review by the Basin states, its approval by the U.S. Environmental Protection Agency, and increased federal funding for the Colorado River Basin Salinity Control Program.

Sincerely,

A handwritten signature in black ink, appearing to read "Gerald R. Zimmerman".

Gerald R. Zimmerman  
Executive Director



AUG 29 2002

ESTABLISHED IN 1918 AS A PUBLIC AGENCY

## COACHELLA VALLEY WATER DISTRICT

POST OFFICE BOX 1058 • COACHELLA, CALIFORNIA 92236 • TELEPHONE (760) 398-2651

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REDWINE AND SHERRILL, ATTORNEYS

August 21, 2002

Jack A. Barnett  
Executive Director  
Colorado River Basin Salinity Control Forum  
106 West 500 South, Suite 101  
Bountiful, Utah 84010-6232

Dear Mr. Barnett:

The Coachella Valley Water District has received the (proposed) *2002 Review of Water Quality Standards for Salinity in the Colorado River System* and welcomes an opportunity to offer the following observations:

We concur with the *2002 Review's* conclusions that the numerical criteria already in place for salinity on the Colorado River need not be modified from those that were established in 1974. This criteria is based on the presence of partially dissolved solids in the river in about 1972 at three locations: Lake Mead, Lake Havasu and Imperial Dam.

In recent years, however, federal funding to address the issue of salinity in the Colorado River has been far from adequate. Bureau of Reclamation salinity-control money, which peaked at \$34 million in 1992, dropped to a paltry \$9.8 million in the last approved fiscal year budget. Funding for the United States Department of Agriculture's salinity-control programs has gone from \$14.8 in 1992 to less than \$4 million in 1998.

Thus, CVWD is strongly in support of the *2002 Review's* recommendations that federal funding of at least \$10.5 million for the Bureau of Reclamation's on-going off-farm salinity-control efforts; and at least \$13.8 million for USDA's on-farm salinity-control efforts, is essential. Congress recently approved a milestone farm bill, so the money *is* available.

As you no doubt are aware, California is in the midst of a crisis with respect to Colorado River water. The state is using nearly 800,000 acre-feet per year in excess of its guaranteed allotment of 4.4 million acre-feet. Significant agreements—such as the Quantification Settlement Agreement (QSA)—are edging toward approval and implementation, and will go far toward addressing the problem of water quantity.

Water quality is a separate issue, however, and for the QSA and other accords to succeed it is crucial that the salinity in the Colorado River be decreased or—at the very worst—maintained at current levels and not allowed to increase. Salinity control programs, even with modest funding, have been credited with eliminating \$300 million in economic losses tied directly to salinity, but economic losses from the status quo with respect to salinity are estimated still to be in excess of \$200 million a year.

Annually Coachella Valley Water District provides its agricultural constituents with more than 300,000 acre-feet of Colorado River water, which is used to irrigate nearly 80,000 of the most productive acres of cropland in the entire nation (Average gross value per acre: \$8,962).

Terms of the QSA call for CVWD to obtain significant amounts of additional Colorado River water, which will be used to offset the demand on the aquifer that serves the entire Coachella Valley's ever-increasing need for groundwater to meet domestic and related demands.

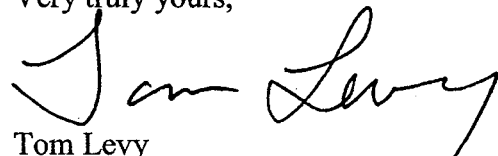
We are in the process of approving a 35-year *Water Management Plan*, which calls for increased use of Colorado River water for agricultural purposes, irrigation of golf courses and other private and public areas and specialized, outdoor uses in new housing developments.

CVWD also plans to increase the amount of Colorado River water it uses to directly replenish the aquifer through existing percolation ponds and other facilities being planned, developed and tested.

Increased salinity in Colorado River water would diminish the quality of water being delivered to our constituents now, and the overall quality of our groundwater supplies. This is unacceptable to our dedicated efforts to bring the highest quality water possible to our constituents.

So again, we support the findings of the *2002 Review* and urge Congress to authorize the funding necessary to make its recommendations effective.

Very truly yours,



Tom Levy  
General Manager-Chief Engineer

JP



For additional information please contact:

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