



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY  
REGION IX 75 Hawthorne Street  
San Francisco, CA 94105

December 4, 2002

Ken Beck  
Bureau of Reclamation  
Western Colorado Area Office  
835 East Second Avenue, Suite 400  
Durango, Colorado 81301

Dear Mr. Beck:

The Environmental Protection Agency (EPA) has reviewed the Draft Environmental Impact Statement (DEIS) for the **Navajo Reservoir Operations, San Juan River Basin**, New Mexico, Colorado, and Utah. (CEQ Number: 020370, ERP Number: IBR-K39076-00). Our review is pursuant to the National Environmental Policy Act (NEPA), Council on Environmental Quality (CEQ) regulations (40 CFR Parts 1500-1508), and Section 309 of the Clean Air Act. This letter provides a summary of EPA's concerns. Our detailed comments are attached.

The Bureau of Reclamation (Reclamation) in cooperation with multiple Federal, Tribal, and State agencies, proposes to implement the San Juan River Basin Recovery Implementation Program's *Flow Recommendations for the San Juan River* (Flow Recommendations)(1999) or a reasonable alternative to those recommendations. Reclamation would continue to operate Navajo Dam to meet authorized project purposes while modifying reservoir release patterns to meet Flow Recommendations designed to maintain or improve habitat for the razorback sucker and Colorado pikeminnow.

Upon completion of the Navajo Unit in 1962, criteria governing releases of water from the dam focused on meeting irrigation needs, providing flood control, maintaining stable river flows, and providing a recreation pool in Navajo Reservoir. As a consequence, the natural hydrograph of the San Juan River was changed, adversely affecting native fish populations and their habitat. The Flow Recommendations attempt to mimic this natural hydrograph in terms of magnitude, duration, and frequency of flows in the river downstream from Farmington, New Mexico.

The need for the Flow Recommendations stems from Endangered Species Act (ESA) consultations with the US Fish and Wildlife Service (USFWS) on other Basin projects (e.g., Animas-La Plata Project and Navajo Indian Irrigation Project) that affect flows in the San Juan River. These projects and future water development projects in the Basin are constrained by the need for ESA compliance. The Flow Recommendations have been identified by the USFWS as a reasonable and prudent alternative to a jeopardy opinion regarding the Colorado pikeminnow

and razorback sucker. Implementing the Flow Recommendations would allow water development to proceed consistent with the ESA and other applicable laws.

The alternatives are formulated in terms of flow rates representing minimum and maximum limits in cubic feet per second (cfs) in the release rates from Navajo Dam. Three alternatives are evaluated in detail: No Action, 250 cfs minimum/5000 cfs maximum (Flow Recommendations and the Preferred Alternative), and 500 cfs/5000 cfs.

The proposed project is located within three US EPA Regions: Region 6 (New Mexico), Region 8 (Colorado and Utah), and Region 9 (Navajo Nation). Region 9 has taken the lead for this review in coordination with Region 6 and 8. Specifically, Region 9 is working closely with Region 8 EPA which provided comments on the Animas-La Plata Project and has an interest in the Navajo Reservoir Operations project.

We commend the goal to mimic the San Juan River natural hydrograph to benefit native endangered fish species while meeting authorized project purposes for the Navajo Unit. EPA supports the efforts to reoperate the Navajo Reservoir to restore the river habitat. We note that the 250cfs/5000cfs preferred alternative appears to be the only alternative to meet all the flow requirements which would allow water development to proceed.

The DEIS states that Reclamation is evaluating the need for a Memorandum of Agreement (MOA) to protect water released for endangered species from diversion by intervening appropriators (pg. 2-11). We strongly recommend an MOA or other mechanism be put in place that administers and protects the environmental water released from Navajo Reservoir, past intervening appropriators, to and thru the critical fish habitat reach in the San Juan River. We note the Navajo Nation has stated its willingness to assist with the MOA by establishing their future diversion points below the critical fish habitat. Protection against diversion of released environmental water is important given the increasing competition for scarce San Juan River water and proposed future water supply development projects.

EPA advocates balancing available water supplies, water supply commitments, and environmental needs. We believe that long-term water supply planning should focus, in part, on a determination of available supplies and bringing water supply commitments and needs into alignment with these supplies. It is clear from the DEIS that there are many water supply demands being made on the already constrained San Juan River Basin supply. We are concerned with the long-term sustainability of additional water development in the Basin. We urge the Bureau of Reclamation to work with other Federal, Tribal, and State agencies, and the San Juan River Basin Recovery Implementation Program towards an equitable balance of available water supplies, water supply commitments, and environmental needs. All available tools for enhancing water management flexibility and reliability should be evaluated for use. These tools could include water transfers, conservation, pricing, on- and off-farm irrigation efficiencies, operational flexibilities, market-based incentives, water acquisition, conjunctive use, voluntary temporary or permanent land fallowing, and wastewater reclamation and recycling.

Given the number of proposed water development projects and the scarcity of additional water supplies, we believe priority should be given to those projects that maximize environmental and human health benefits. For example, projects which provide drinking water to Indian Tribal members which currently have no running water would significantly improve human health and help meet the goals of the Safe Drinking Water Act. We note that projects such as the Navajo-Gallup Water Supply Project would provide municipal and domestic water supply to portions of the Navajo and Jicarilla Apache reservations which still lack running water and adequate domestic water supplies.

While we support reoperation of Navajo Dam to implement the Flow Recommendations, we have concerns regarding water quality, mitigation, indirect and cumulative impacts, and monitoring and the adaptive management plan. Because of these concerns, we have rated this DEIS as category EC-2, Environmental Concerns - Insufficient Information (see attached "Summary of the EPA Rating System"). We appreciate the opportunity to review this DEIS. Please send two copies of the Final EIS (FEIS) to this office at the same time it is officially filed with our Washington, D.C. office. If you have questions or wish to discuss our comments, please call Ms. Laura Fujii, of my staff, at (415) 972-3852 or [fujii.laura@epa.gov](mailto:fujii.laura@epa.gov).

Sincerely,

/S/

Lisa B. Hanf, Manager  
Federal Activities Office

Enclosure: Detailed Comments (5 pages)  
Summary of the EPA Rating System

cc: Stanley Pollock, Navajo Nation  
US Fish and Wildlife Service  
New Mexico Department of Game and Fish  
New Mexico Department of the Environment  
Bill Miller, San Juan River Basin Recovery Implementation Program

## **DETAILED COMMENTS**

### **Water Quality**

1. EPA is concerned with the potential for increased exceedences of water quality standards. The Draft Environmental Impact Statement (DEIS) states that water quality in the San Juan River progressively degrades downstream due to natural and induced bank erosion, diversions, agricultural and municipal use, and tributary contributions. Portions of the river are listed as impaired and the stretch of river between Farmington and Shiprock already has a high number of water quality standard exceedences (pg. III-87). The proposed project will result in low flows which will further exacerbate this degrading water quality condition (pg. III-96). Of specific concern is selenium where selenium concentrations are already clearly elevated in all biota above ambient background concentrations (pg. III-93). Other constituents of concern are arsenic, copper and zinc.

#### *Recommendations:*

We urge Reclamation to work with other Federal, Tribal, and State agencies, and the San Juan River Basin Recovery Implementation Program to aggressively address the degrading water quality conditions. For example, we recommend all parties work with the New Mexico Department of Environment on the development of Total Maximum Daily Loads (TMDLs), implementation of Best Management Practices which will reduce nonpoint source pollution, and measures to maximize water use efficiency so that diversions during low flows can be minimized. Improving existing water quality will help maintain and enhance beneficial uses.

One method to reduce adverse water quality effects of low flows is to increase water management flexibility through greater water use efficiencies. We recommend the FEIS describe possible options for improving water use and the process for implementing these options. While we recognize that Reclamation may not have direct authority to implement these options, our goal is to encourage the identification and evaluation of increased water use efficiency measures which could be implemented by any interested party. A list of possible options or measures for improving irrigation water productivity are listed below<sup>1</sup>:

<u>Category</u>	<u>Option or Measure</u>
Technical	- Land leveling to apply water more uniformly - Surge irrigation to improve water distribution - Efficient sprinklers to apply water more uniformly

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<sup>1</sup>Sandra Postel, *Pillar of Sand: Can The Irrigation Miracle Last?*, Worldwatch Institute Book, (W.W. Norton & Company, 1999), pgs 37-39.

- Low energy precision application sprinklers to cut evaporation and wind drift losses
- Furrow diking to promote soil infiltration and reduce runoff
- Drip irrigation to cut evaporation and other water losses and to increase crop yields.

- Managerial
- Better irrigation scheduling
  - Improving canal operations for timely deliveries
  - Applying water when most crucial to a crop's yield
  - Water-conserving tillage and field preparation methods
  - Better maintenance of canals and equipment
  - Recycling drainage and tail water

- Institutional
- Reducing irrigation subsidies and/or introducing conservation-oriented pricing
  - Establishing legal framework for efficient and equitable water markets
  - Fostering rural infrastructure for private-sector dissemination of effective technologies
  - Better training and extension efforts

- Agronomic
- Selecting crop varieties with high yields per liter of transpired water
  - Intercropping to maximize use of soil moisture
  - Better matching crops to climate conditions and the quality of water available
  - Sequencing crops to maximize output under conditions of soil and water salinity
  - Selecting drought-tolerant crops where water is scarce or unreliable
  - Breeding water-efficient crop varieties.

2. According to the Draft EIS (page III-97) the facility most affected by the proposed change in San Juan River flows would be the Bloomfield wastewater treatment facility, the only publicly owned treatment works (POTW) below the reservoir and above the confluence with the Animas River. Below this confluence, minimum flows are likely to remain above 500 cubic feet per second (cfs). According to the DEIS, the other POTW facilities on the San Juan River owned by the Towns of Farmington and Shiprock are not likely to be affected because they are downstream of the Animas River confluence. During Reclamation's summer low flow test, the flow past the Bloomfield plant was reduced to 130 cfs, significantly lower than the critical low flow loading requirements for their existing discharge permit. A revised river low flow condition could result in the need to amend the Bloomfield permit conditions to assure that in-stream water quality requirements are attained.

*Recommendations:*

Reclamation should work with New Mexico Department of the Environment to address this issue in the Final EIS (FEIS). We recommend that additional information be provided in the FEIS on the effect the proposed flow recommendations would have on Bloomfield's effluent requirements and the potential costs of meeting these requirements.

## **Mitigation**

1. We note the potential adverse effects to hydroelectric generation, the downstream trout fishery, and river rafting which could be caused by the reduction of flows to 250 cfs under the Preferred Alternative. While we concur with the need to address stressed native fisheries, we also believe measures should be taken to minimize the impacts to other beneficial uses.

### *Recommendation:*

We urge Reclamation to make full use of the interim water supply flexibility provided by unused apportionments to minimize the adverse effects of the proposed reoperation on other beneficial uses of the San Juan River. As noted above, we also believe efforts to maximize water use efficiencies could help alleviate the affects of low flows by reducing current diversions that occur below Navajo Dam.

2. Reclamation states that they will not take a lead responsibility in terms of funding or implementing the possible mitigation measures that have been suggested by the US Fish and Wildlife Service and New Mexico Department of Game and Fish. Reclamation commits to working with others to reduce impacts. However, they state funding of mitigation measures that are in response to implementing the Preferred Alternative should be shared by all parties that benefit from implementation of this alternative (pg. IV-3).

### *Recommendation:*

EPA acknowledges that all parties that benefit from implementation of the Preferred Alternative should share in the funding and implementation responsibility for minimizing adverse impacts of this alternative. However, we urge Reclamation to take a leadership role in the development of a detailed mitigation plan which identifies mitigation measures, funding sources, and implementation responsibility. We recommend this mitigation plan be included in the FEIS.

## **Indirect and Cumulative Impacts**

Reasonably foreseeable water development projects have been integrated into the baseline evaluation through the inclusion of their proposed diversions into the hydrologic model used to evaluate potential impacts. Thus, in theory, indirect and cumulative impacts of their diversions have been incorporated into the effects analysis for the trout fishery, irrigation diversions, recreation, hydropower, and Indian trust assets (pg. III-82). However, it does not appear that an evaluation of the indirect and cumulative effects of reasonably foreseeable projects, other than the depletions on the San Juan River, have been evaluated. For example, full build-out of the Navajo Indian Irrigation Project could further exacerbate the water quality conditions in the river by increasing irrigation return flows containing pesticides and nutrients.

*Recommendation:*

We recommend the FEIS expand the indirect and cumulative impact evaluation to consider the potential effects of all reasonably foreseeable projects that could affect the San Juan River system and its beneficial uses. For example, other issues to examine are the potential loss of sensitive species habitat from induced growth or conversion to agricultural land and higher pollutant loads to the river from irrigation return flows.

## **Monitoring and the Adaptive Management Plan**

The Flow Recommendations are based 1998 data. Thus, the Flow Recommendations propose an adaptive management process based on new information as it becomes available (pg. I-8). The DEIS does not appear to provide a detailed monitoring or adaptive management plan. While EPA believes adaptive management may be appropriate, adaptive management is dependent upon accurate and timely monitoring and feedback to ensure new information is effectively integrated into project decisions and operations. Without a detailed monitoring or adaptive management plan, we are concerned that the adaptive management process may not be effectively implemented.

*Recommendation:*

We recommend the FEIS provide a detailed monitoring and adaptive management plan. In addition, it is often helpful to provide a detailed governance plan which clearly delineates each participants role, responsibilities, when certain actions should be taken, and anticipated outcomes.

## **General Comments**

The DEIS states that the Navajo Dam hydroelectric generators, as currently configured, experience extreme vibration when flows through the penstocks are reduced below 350 cfs. As the flows decrease the noise from the hydroelectric generators increases (pg. III-77). Although the DEIS indicates that a modification to the power plant may alleviate potential damage to the turbines, it does not appear to address the potential adverse effects to personnel or safety.

*Recommendation:*

We recommend the FEIS clarify the extent of the noise and potential safety hazard to personnel of utilizing the turbines below the 350 cfs flow rates. The clarification should state if the increased noise is a problem or not, whether a safety hazard could be created, and whether the proposed modifications to the units would resolve potential safety issues.



Summary Paragraph

**DEIS Navajo Reservoir Operations, San Juan River Basin**

New Mexico, Colorado, and Utah. (CEQ Number: 020370, ERP Number: IBR-K39076-00)

EPA commends and supports the goal to mimic the San Juan River natural hydrograph to benefit native endangered fish species while meeting authorized project purposes for the Navajo Unit. We are concerned with the long-term sustainability of additional water development in the Basin. EPA urges the Bureau of Reclamation to work towards an equitable balance of available water supplies, water supply commitments, and environmental needs. We strongly encourage development of the Memorandum of Agreement to protect water released for endangered species from diversion by intervening appropriators. While EPA supports reoperation of Navajo Dam to implement the Flow Recommendations, we have concerns regarding water quality, mitigation, indirect and cumulative impacts, monitoring and the adaptive management plan.

**DEIS Navajo Reservoir Operations, San Juan River Basin**

New Mexico, Colorado, and Utah. (CEQ Number: 020370, ERP Number: IBR-K39076-00)

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**cc list:**

Stanley Pollock, Navajo Department of Justice, Navajo Nation, P.O. Box 9000, Window Rock, AZ 86515

Eugenia Quitana, Navajo EPA, Navajo Nation, P.O. Box 9000, Window Rock, AZ 86515

Bill Miller, Chairman, San Juan River Basin Recovery Implementation Program, Biology Committee, Miller Ecological Consultants, Inc., 1113 Stoney Hill Drive, Suite A, Fort Collins, CO, 80525.

**Keri - I do not know the regional offices or addresses for the Agencies below. Please call Wes Wilson, 303-312-6562; rob Lawrence, 214-665-8150 for appropriate address information or Ken Beck, Bureau of Reclamation Western Colorado Area Office, 970-385-6558 for the information. Thanks.**

US Fish and Wildlife Service

New Mexico Department of Game and Fish

New Mexico Department of the Environment

**bcs:**

Wes Wilson, Region 8, 303-312-6562

Rob Lawrence, Chief, Office of Planning and Coordination, Region 6 EPA, 214-665-8150, 214-665-7446 (FAX)