

Paradox Evaporation Pond Pilot Study

Background: The Paradox Valley was formed from the collapse of a salt anticline (dome) located in southwestern Colorado. The Dolores River, as it passes through the valley, historically picked up an estimated 205,000 tons of salt annually. The Colorado River Basin Salinity Control Act (Public Law 93-320) of 1974 authorized the Bureau of Reclamation (Reclamation) to investigate and construct the Paradox Valley Unit (PVU). The PVU currently intercepts brine groundwater and disposes it by deep well injection. Approximately 110,000 tons of salt that would have otherwise entered the Dolores River annually is injected into a 15,932 foot deep well located south of Bedrock, Colorado. The PVU is designed to prevent this natural salt load from entering the river and degrading the water quality of the main stem of the Colorado River.

The existing deep-injection well, completed in 1988 by Reclamation, is nearing the end of its useful life and action will be needed by Reclamation to continue long term salinity control at the Paradox Unit. A new injection well alternative and an evaporation pond alternative, as well as other alternatives are being considered for future brine disposal. Reclamation intends to conduct a study/Environmental Impact Statement to develop and evaluate alternatives for the continued operations of the Paradox Unit.

As part of this study, the Colorado River Basin Salinity Control Forum (Forum) has requested that Reclamation develop a pilot study to gather information to evaluate the use of evaporation ponds as an alternative to deep well injection to control salt brine from entering the Dolores River near Bedrock, Colorado. The Forum is comprised of representatives appointed by the governors from the respective states in the Colorado River Basin (Colorado, Wyoming, Utah, New Mexico, Arizona, Nevada, and California) and was created for interstate cooperation and to provide the states with the information necessary to reduce salinity concentrations in the Colorado River and to comply with Section 303 (a) and (b) of the Clean Water Act.

Paradox Evaporation Pond Pilot Study: The proposed pilot study would include the construction and operation of one or more evaporation ponds (between 1 and 15 acres in size) within the Paradox Valley to evaluate the feasibility of evaporation ponds as a method for long-term salt removal. Salt brine collected at the existing PVU Well Field would be piped to the evaporation pond(s). The pilot study would be operated for a period of three to five years to gather information on evaporation rates, advanced evaporation techniques and operational costs.

The pilot study would also monitor and evaluate other environmental factors, such as potential impacts on migratory birds and other wildlife, hydrogen sulfide removal techniques, and methods for disposal of brine evaporate. The pilot study would test strategies aimed at preventing harm to migratory birds (as outlined in the federal Migratory Bird Treaty Act of 1918). The U.S. Fish and Wildlife Service indicated during a recent Forum meeting that pond netting must be incorporated into the pond designs. Net supports would be in place and netting available onsite, ready to install, if impacts occur and other mitigation techniques are not effective. Reclamation is considering using both active and passive deterrents (coloring the brine, noise cannons, flashing lights, and bioacoustics, as well as other methods with potential to deter birds from using the evaporation pond(s)).

Environmental Assessment: Reclamation has identified three potential sites for the pilot study, although additional sites may be considered during the National Environmental Policy Act (NEPA) process (see attached map). It is anticipated that the footprint of the pilot study will not exceed 40 acres in size. Reclamation proposes to enclose and stabilize (cover) the salt brine evaporate in place following the

study, subject to local, state and federal laws and regulations. The long-term storage of the salt brine evaporate accumulated during the pilot study may also require additional permitting as a landfill. Removal and disposal of salt brine evaporate at an existing permitted landfill locations will also be explored.

Reclamation is conducting public scoping to identify issues and concerns to assist in the preparation of an environmental assessment (EA). The EA will evaluate the effects on the human environment from the construction and operation of the proposed Paradox Evaporation Pond Pilot Study. If, based on the analysis completed during development of the EA, Reclamation concludes the proposed action would have no significant impact on the human environment; preparation of an Environmental Impact Statement would not be required before the pilot study could be implemented.

Public Scoping Meeting: Public scoping meetings on the pilot evaporation proposal are scheduled on the dates and locations provided below:

Paradox, Colorado- Paradox Community Center, 21665 6.00 Road (basement of the red church in Paradox Valley) on Tuesday, **December 6, presentation at 6 PM, with an open house from 5-7 PM**

Montrose, Colorado- Holiday Inn Express, 1391 S Townsend Ave. on Thursday, **December 8, presentation at 6 PM, followed by a questions and answer session**

Public Comments: Reclamation requests written comments on the proposed pilot study are received by January 30, 2012. Comments may be provided at a public scoping meetings listed above, emailed to TStroh@usbr.gov, or mailed to:

Area Manager
Bureau of Reclamation
2764 Compass Drive, Suite 106
Grand Junction, Colorado 81506

Reclamation Contacts: For additional information, please contact:

Terry Stroh, Bureau of Reclamation, Grand Junction, Colorado
970-248-0608; TStroh@usbr.gov

Andy Nicholas, Bureau of Reclamation, Paradox Valley, Colorado
970-859-7214; ANicholas@usbr.gov