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United States Department of Agriculture



Natural Resources Conservation Service
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January 27, 2005

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DEPT. OF OIL, GAS & MINING

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Dear Partner,

Enclosed is a copy of the Finding of No Significant Impact (FONSI) for the Muddy Creek Unit of the Colorado River Salinity Control Program, Emery and Sevier Counties, Utah, for your information.

If you would like to receive a copy of the final Environmental Assessment for the Muddy Creek Unit, please send your request to the above address attention Dee Cummings.

If you have any questions, please contact Marnie Wilson at (801) 524-4591.

Sincerely,

Sylvia A. Gillen, Acting

SYLVIA A. GILLEN
State Conservationist

Enclosure

cc:

- Lisa Coverdale, ASTC, NRCS, SLC, UT
- Travis James, BRC, NRCS, SLC, UT
- Mary Grande, Acting SRC, NRCS, SLC, UT
- Marnie Wilson, CRS, NRCS, SLC, UT
- Barry Hamilton, AC, NRCS, Price, UT
- Gary Roeder, ARC, NRCS, Price, UT

Billing Code:

Finding of No Significant Impact
For
Muddy Creek Unit of the Colorado River Salinity Control Program
Emery and Sevier Counties, Utah

Introduction

The Muddy Creek Unit plan/environmental assessment were developed under authority of the Soil Conservation and Domestic Allotment Act of 1936. Funding for implementation is expected to be provided under the Federal Improvement and Reform Act of 1996, Public Law 104-127, as amended; Food Security Act of 1985, Subtitle D, Title XII, 16 U.S.C. 3830 et seq. An environmental assessment was undertaken in conjunction with the development of the salinity control plan. This assessment was conducted in consultation with local, State and Federal agencies, as well as interested organizations and individuals. Copies of the plan/environmental assessment may be obtained from Sylvia Gillen, Utah State Conservationist at the following address. Data developed during the environmental assessment are available for public review upon request.

Sylvia Gillen, State Conservationist
Natural Resources Conservation Service
Wallace F. Bennett Federal Building
125 South State Street, Room 4002
Salt Lake City, UT 84138-1100

Background

The Muddy Creek Unit has been identified by the United States Department of Agriculture – Natural Resources Conservation Service as an area for potential salt load reduction activities.

The combined plan environmental assessment has three major components: (1) to determine the contribution of salt loading from the irrigated agricultural lands; (2) to determine the opportunity for USDA to reduce salt loading through improvements to the irrigation delivery and application systems; (3) to determine environmental effects of the proposed action.

Approximately 6,050 acres can be irrigated in the Muddy Creek Project Area above I-70, located in Emery and Sevier Counties in Utah. Irrigation water is provided to 82% of the irrigated land by the Muddy Creek Irrigation Company. The Muddy Creek Irrigation Company diverts water directly from Muddy Creek, approximately 3.2 miles upstream from the bridge on Utah Highway 10. There are two points of diversion that serve small acreages located on Lower Muddy Creek directly above I-70. There are two points of diversion located on Quitcupah Creek, and one point of diversion located on Ivie Creek, that services the balance of irrigated land in the project area.

The majority of cultivated soils in the project area are formed from alluvium from the Mancos shale formation. This formation contains considerable amounts of calcium, sodium, and sulfate salts. The soils are inherently saline, ranging from slightly saline to strongly saline. Because of the arid climate, salts have not been leached naturally from

the soil profile, and the application of excess irrigation water to the soil greatly accelerates the leaching process, resulting in salt loading to Muddy Creek and the Colorado River.

Muddy Creek contributes approximately 90,000 tons of salt per year to the Dirty Devil River, a tributary of the Colorado River. Of the 90,000 tons, approximately 15,000 tons is directly attributed to irrigated agriculture from within the proposed project area. The Bureau of Reclamation was consulted to provide the benchmark salt loading conditions for the study. Monthly monitoring of flow and water quality was available for a 30 year historical analysis. The approximate range of salt loading was 3,145 tons to 36,342 tons per year to Muddy Creek. The data indicated that there was also a 1-2 year time lag between wet and dry conditions, and salinity flow response at the gauging station at I-70. This implies that a fairly large ground water storage reservoir with an 18 month drain-out time lag exists within the project area. It was estimated that 5,397 tons of salt were a result of off-farm seepage losses from canals and lateral ditches. It is estimated that on-farm deep percolation from inefficient farm irrigation systems contributes 9,583 tons of salt to Muddy Creek.

The preferred alternative plan contains both structural and management practices necessary to improve irrigation efficiencies, which results in reduced salt loading to the Muddy Creek and Colorado River. The preferred alternative when fully implemented would reduce salt loading to Muddy Creek and the Colorado River by 11,677 tons, or a 78% reduction of the current salt loading level of 14,980 tons. On-farm measures in the

preferred plan would control 8,149 tons, while off-farm and near farm canal and lateral improvements would reduce salt loading by 3,528 tons.

Table 1: Total Salt Load Reduction for Muddy Creek Basin

Salt Load Source	Present Condition Tons/Year	% Planned Reduction	Reduction Tons/Year	After Tons/Year
Natural & Other Sources	75,020			75,020
**Agricultural Sources				
Off-Farm	5,393	65.4%	3,528	1,865
On-Farm	9,587	85.00%	8,149	1,438
Total	*90000	13.00%	11,677	78,323

* Based on Colorado River Water Quality Improvement Program, Dirty Devil River Unit, Utah, Planning Report, May 1987.

**Agricultural Sources based on U.S. Bureau of Reclamation, Upper Colorado River Region, Salt Lake City, Utah, Unpublished data summary, Emery Irrigation Area, Dirty Devil Unit, 2003

The above table illustrates the salt reduction estimated from implementation of the preferred plan alternative. This alternative assumes that all planned off-farm and on-farm planned practices are installed to treat 6,050 acres of irrigated land in the Muddy Creek project area. The no-action plan alternative as outlined in the Environmental Assessment assumed that only 868 tons of salt would be reduced if no action was taken by USDA-NRCS.

Consultation – Public Participation

The San Rafael Soil Conservation District led the public participation process from a request by the Muddy Creek Irrigation Company. Public involvement in the planning process began August 12, 2003. Several public meetings were held during development of the plan. Public involvement consisted of scoping, shareholder meetings, Soil Conservation District meetings and field tours with various participating agencies and

groups. Federal agencies, State agencies, local agencies, and elected representatives were consulted during project plan development, in addition to coordination with 10 Native American Tribes.

Proposed Action

The proposed action in this plan includes;

- A reorganization of the off-farm irrigation water delivery system. Proposed improvements include; the construction of four diversion and sediment control structures, a 37 acre foot irrigation regulating reservoir, two smaller settling ponds. The last 6.12 miles of the Muddy Creek Canal and 45.92 miles of off-farm irrigation lateral ditches will be abandoned and replaced with 10.43 miles of PVC pipeline ≥ 24 " diameter, and 18.23 miles of PVC pipeline < 24 " diameter. The pipelines will be either gravity, and or pumped pressure systems that services 100% of the irrigated acreage within the project area. This action will result in a 3,760 acre foot reduction of seepage from off-farm canals and lateral ditches; this is a 65% reduction in seepage loss from the present condition.
- The conversion of unimproved flood irrigation systems (20-35% efficiency) to sprinkler irrigation systems (60-80% efficiency) on 6,050 acres within the project area. The average efficiency increase from the present system to the planned system is estimated to be 40%. This action will result in a 8,685 acre foot

reduction in irrigation system deep percolation; this is an 85% reduction in deep percolation from the present condition.

- A commitment of NRCS to provide technical and financial assistance to for the planning and implementation of voluntary wildlife habitat replacement for wildlife habitat values foregone.
- Publish an annual monitoring and evaluation report which measures the effectiveness of the project as it relates to salt load reduction, economic impacts, and wildlife habitat replacement.

Total off-farm construction cost is estimated to be \$8,872,752. Total on-farm construction cost is estimated to be \$5,760,300. Technical assistance cost for planning, contracting, installation, follow-up, and monitoring is estimated to be \$3,307,927. It is recommended that the federal cost-share used to implement the plan not be greater than 75% of the construction cost, however, program rules allow for up to 90% cost sharing for individual producers identified as limited resource or beginning farmers.

A cost effectiveness analysis was used to determine the annual cost per ton of salt reduction. The reduction of salt loading resulting from this proposed action is estimated to be 11,677 tons per year. The formula for computation of cost per ton is;

$$\text{Cost Per Ton} = \frac{(\text{Financial Assistance} + \text{Technical Assistance}) \times (\text{Amortization Factor})}{\text{Tons of Salt Removed}}$$

- Amortization Factor = .07546 based on 25 year benefit at 5.625% interest.
- Financial Assistance (FA) = \$ 8,347,596

- Technical Assistance (TA) = \$ 3,307,972
- FA + TA = \$11,655,523
- Project Tons Removed = 11,677 tons

Cost per to = $11,655,523 \times .07546 \div 11,677 = \75.32

The cost per ton of salt removed for this project is estimated to be \$75.32

Note: All costs 2004 Price Base

Basic Conclusions

The conservation treatment associated with this proposed action will not change the air quality or potable water quality of the area. The project will not create any new hazard to the transportation or utility infrastructure in the project area. For these reasons it is determined that public health and safety conditions within the project area will not be significantly impacted.

There are no known unique geographic features in the project area that could be impacted by the proposed action.

During the inter-agency review process, no highly controversial effects were identified, and general comments were addressed to the satisfaction of all parties. Past experience with similar projects in the area provide a high degree of confidence in the predicted impacts of the proposed actions.

This project is not unusual and is similar to other projects currently being implemented in the same county and geographic region. For this reason NRCS feels confident that no new precedents are being set with implementation of this project.

No significant individual or cumulative effects to the human environment are expected in consideration of the context and intensity of the proposed action.

Identified cultural resources should not be impacted by the proposed action because they would be located through an intensive pedestrian cultural resource survey and avoided with a 65 foot protective buffer zone as is stipulated in the NRCS/UTSHPO Memorandum of Understanding. In the event that a cultural resource can not be avoided, NRCS would determine appropriate mitigation measures in consultation with the UTSHPO and other consulting parties. In consideration of NRCS policy and the agreements in place to protect cultural resources, this project will not impact cultural resources within the project area.

Threatened and endangered species habitat does exist within the project area. All determinations of potential effects have been agreed upon in consultation with the United States Fish and Wildlife Service.

Communications with State and Federal natural resource management agencies did not reveal any violations of law, including the National Environmental Policy Act.

Wetlands do exist within the project area. Most of the wetland acreage that occurs within the project boundaries are artificial, "irrigation dependent" wetlands. Wetland functions for the majority of these wetlands are already impacted by the land use associated with them. The proposed action will likely impact both the distribution and size of these wetlands, with associated change in the vegetative composition. NRCS has identified geographic areas within the project area where critical habitat replacement practices may be implemented for the voluntary replacement of wildlife habitat values forgone.

Natural wetlands also occur within the project area, the distribution, size, and function of these wetlands should not be impacted by the proposed action.

Water quality of Muddy Creek, a tributary to the Colorado River, will be enhanced due to a reduction in salt loading from irrigation and agricultural sources.

Agricultural producers in the area are supportive of the plan because of the positive economic benefits to the area, improved production potential, water conservation potential, and agricultural sustainability in the area.

Ultimate Conclusion

I find that neither the proposed action nor any of the alternatives is a major Federal action significantly affecting the quality of the human environment.



SYLVIA GILLEN, State Conservationist