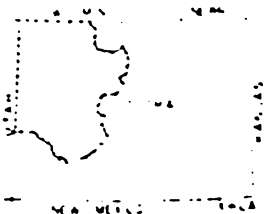


**Note:**

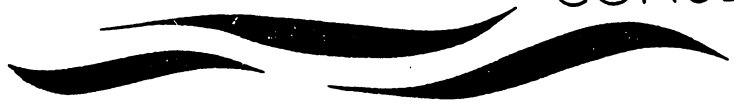
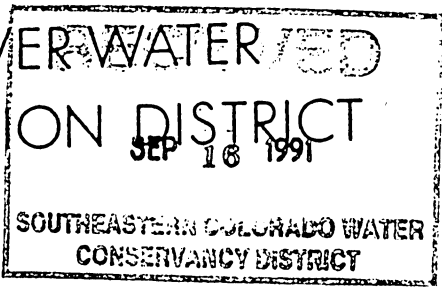
Materials in this file  
previously marked confidential  
are open to researchers.

Please consult staff with any questions.

Colorado State University Libraries  
Archives and Special Collections



# COLORADO RIVER WATER CONSERVATION DISTRICT



September 9, 1991

**DIRECTORS AND OFFICERS - 1991**

President  
THEODORE L. BROOKS  
Montrose County  
Vice President:  
BILL NEEDHAM  
Grand County

Ms. Margot Zallen, Esq.  
P. O. Box 15486  
Denver Federal Center  
Denver, CO 80225

ROBERT W. CHILD  
Pitkin County  
DEAN VISINTAINER  
Moffat County

RE: Ruedi Reservoir

Dear Ms. Zallen:

RICHARD TISDEL  
Ouray County  
GREGORY K. HOSKIN  
Mesa County  
CHARLES R. IRBY  
LaCrosse County  
SY J. RECTOR  
Rio Blanco County

A copy of letter dated September 6, 1991 from John D. Musick, Jr. has been forwarded to me. It is attached hereto for your convenience.

JOE SANDS  
Summit County  
DON WELCH  
Eagle County

In this letter Mr. Musick states:

JEAN COLE  
Garfield County  
C.A. CANNON  
Delta County  
WESLEY E. SIGNS  
Routt County  
LEE L. SPANN  
Gunnison County

"They (Aspen-Pitkin County) are willing to discuss the assignment of their interest in the decrees for Ruedi Reservoir for use for endangered species stream flow supplementation."

PURVIS C. VICKERS  
Hinsdale County

The decrees for Ruedi Reservoir (CA 4613, first filing and 81CW34, Water Division No. 5, second filing) are owned by the Colorado River Water Conservation District. In a letter agreement, attached hereto for your information, Aspen-Pitkin County may use the River District's water rights for the generation of hydroelectric power at Ruedi Reservoir provided that use is in conformity with the Agreement with the Bureau of Reclamation dated August 13, 1984, (See Paragraph 4).

E. L. BUSBY  
Treasurer  
ROLAND C. FISCHER  
Secretary-Engineer  
DONALD H. HAMBURG  
General Counsel



Ms. Margot Zallen, Esq.  
September 9, 1991  
Page Two

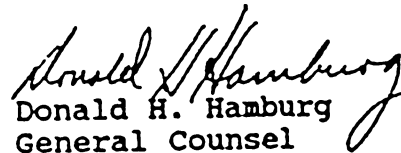
---

As you well know, the Bureau Agreement states that Aspen-Pitkin may use Bureau property for generation of hydroelectric power subject to the authorizing legislation for the Fryingpan-Arkansas Project by the United States Congress under the Act of August 16, 1962 (72 Stat. 389) and the Operating Principles adopted pursuant to that law.

It, therefore, is clear that Aspen-Pitkin County has no legal interest in the Ruedi decrees to assign.

If you have any questions, please feel free to call upon me.

Very truly yours,

  
Donald H. Hamburg  
General Counsel

DHH/sln

Enclosures

c: CRWCD Board of Directors  
John D. Musick, Jr., Esq.  
Wendy Weiss

RECEIVED

SEP 09 1991

COLORADO RIVER WATER  
CONSERVATION DISTRICT

LAW OFFICES OF  
JOHN D. MUSICK, JR.  
ATTORNEYS AT LAW  
4141 ARAPAHOE AVENUE  
P. O. BOX 4579  
BOULDER, COLORADO 80306-4579  
TELEPHONE (303) 447-1974  
FAX (303) 447-1977

PER \_\_\_\_\_

ASPEN OFFICE  
616 E. HYMAN AVE.  
P. O. BOX 4420  
ASPEN, COLORADO 81612-4420  
TELEPHONE (303) 928-7977  
FAX (303) 928-7982

JOHN D. MUSICK, JR.\*  
GEORGE M. HILGENDORF\*  
OF COUNSEL  
RON S. JONG  
MICHAEL M. MCCANN\*\*

September 6, 1991

\*ALSO ADMITTED IN HAWAII  
\*ALSO ADMITTED IN ILLINOIS  
\*\*ALSO ADMITTED IN NEW YORK AND DISTRICT OF COLUMBIA

Ms. Margot Zallen, Esq.  
P.O. Box 25486  
Denver Federal Center  
Denver, CO 80225

RE: Ruedi Reservoir

Dear Ms. Zallen:

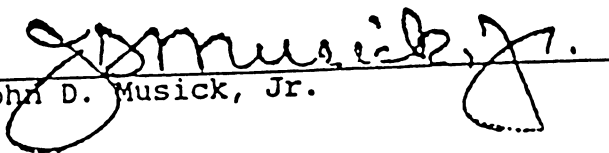
The purpose of this letter is to request a meeting at your earliest convenience to discuss the issues regarding the use of Ruedi Reservoir for supplementary endangered species streamflow requirements. As I stated at the meeting of the Colorado Water Conservation Board, my clients strongly support the Endangered Species Act. However, they have severe reservations about the use of Ruedi Reservoir Water for those purposes.

They are willing to discuss the assignment of their interest in the decrees for Ruedi Reservoir for use for endangered species streamflow supplementation. In fact, they may be willing to consider making significant contributions of money or water rights for accomplishing that notable objective. However, all of this must occur in an open dialogue immediately.

Otherwise they will have no alternative but to proceed with enforcing their rights to the decrees and to require environmental review of this matter. We stand ready to meet and discuss this issue at any time convenient to you.

Very truly yours,

LAW OFFICES OF  
JOHN D. MUSICK, JR.

By   
John D. Musick, Jr.

JDM:rw  
cc:(w/enclos.)  
Roy Romer, Governor of Colorado

# COLORADO RIVER WATER CONSERVATION DISTRICT

May 21, 1985

DIRECTORS AND  
OFFICERS - 1985

EDWARD M. COX  
Montrose County

JOHN P. HARRIS  
Montrose County

MICHAEL E. BRONKHORST  
Montrose County

EDWARD M. COX  
Montrose County

JOHN P. HARRIS  
Montrose County

MICHAEL E. BRONKHORST  
Montrose County

EDWARD M. COX  
Montrose County

JOHN P. HARRIS  
Montrose County

MICHAEL E. BRONKHORST  
Montrose County

EDWARD M. COX  
Montrose County

JOHN P. HARRIS  
Montrose County

MICHAEL E. BRONKHORST  
Montrose County

EDWARD M. COX  
Montrose County

JOHN P. HARRIS  
Montrose County

MICHAEL E. BRONKHORST  
Montrose County

EDWARD M. COX  
Montrose County

JOHN P. HARRIS  
Montrose County

MICHAEL E. BRONKHORST  
Montrose County

Board of County Commissioners of Pitkin County  
Attention: Thomas Blake, Chairman  
506 E. Main  
Aspen, Colorado 81611

Aspen City Council  
Attention: William Stirling, Mayor  
130 S. Galena  
Aspen, Colorado 81611

Gentlemen:

Pursuant to the action of the Board of Directors of the Colorado River Water Conservation District taken at its regular meeting held on April 16, 1985, I am authorized to enter into this letter agreement. The letter agreement would be effective upon execution by both parties and the execution of the Stipulation in Case No. 80CW565, which Stipulation is enclosed herein.

The parties to this Letter Agreement are Pitkin County and the City of Aspen, hereinafter "Aspen-Pitkin County", and the Colorado River Water Conservation District, hereinafter "River District".

The terms of this Letter Agreement are as follows:

- 1) The River District recognizes that recreation on Ruedi Reservoir constitutes a beneficial use of water of that Reservoir, and provides a real economic benefit to the Roaring Fork Valley and Western Colorado.
- 2) The River District recognizes that Aspen-Pitkin County will operate a hydroelectric facility at Ruedi Reservoir

and that the operation of this hydroelectric facility will benefit the residents of the City of Aspen and Pitkin County.

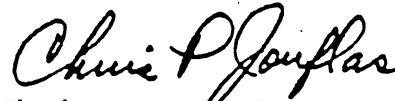
- 3) Aspen-Pitkin County recognizes the River District's responsibility to make available, for all beneficial uses, the water stored in Ruedi Reservoir.
- 4) The River District grants Aspen-Pitkin County the right to use its decree granted in Civil Action No. CA 4613 for Ruedi Reservoir (first filling) and its decree in 81CW34, Water Division No. 5 (second filling) for the generation of hydroelectric power at Ruedi Reservoir, provided that it is utilized in conformity with and pursuant to that certain Agreement between the United States Bureau of Reclamation and Aspen-Pitkin County for the use of Bureau land and reservoir at Ruedi, dated August 13, 1984. The right to use the River District's decrees for generation of hydroelectric power shall be valid as long as Aspen-Pitkin County holds a valid FERC license for the hydroelectric project as Ruedi Reservoir.
- 5) <sup>and Aspen and Pitkin County</sup> The River District would not oppose the second round marketing of Ruedi water by the Bureau in accordance with the preferred alternative identified in the Ruedi Water Marketing EIS dated October 10, 1983. *W*  
*TB*  
*CPD*
- 6) Aspen-Pitkin County would not oppose the assignment of first and second round water sales contracts from the Bureau of Reclamation to the River District, provided that the proper parties agree to said assignment.
- 7) Both Aspen-Pitkin County and the River District recognize that upon completion of the second round of Ruedi Reservoir water marketing, the Bureau of Reclamation has reserved the right to, in the future, market additional water from Ruedi Reservoir. Neither Aspen-Pitkin County or

Pitkin County Commissioners Board  
Aspen City Council  
May 21, 1985  
Page Three

the River District have adopted a position or commitment with respect to future water sales beyond the first and second round sales.

- 8) The River District and Aspen-Pitkin County hereby express their mutual support for the conversion of the Basalt Conduit, direct flow water right, to a water storage right in Ruedi Reservoir.

Very truly yours,



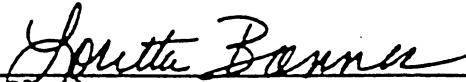
Chris P. Joufflas,  
President  
Colorado River Water  
Conservation District

/eb

Approved As to Form and Substance



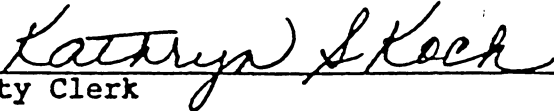
Chairman, Board of County Commissioners  
of Pitkin County



County Clerk



Mayor, City of Aspen



City Clerk



Wright Water Engineers, Inc.

RECEIVED

FEB 10 1993

DENVER OFFICE  
2490 West 26th Ave., Suite 100 A  
Denver, Colorado 80211  
FAX (303) 480-1020  
(303) 480-1700

GLENWOOD SPRINGS OFFICE  
818 Colorado Avenue  
P.O. Box 219  
Glenwood Springs, Colorado 81602  
FAX (303) 945-9210  
Denver Line (303) 893-1608  
(303) 945-7755

February 8, 1993

Howard Holme, Esq.  
Fairfield & Woods  
1700 Lincoln St., Ste. 2400  
Denver, CO 80202

Mr. Tommy Thomson  
Southeast Colorado Water  
Conservancy District  
P.O. Box 440  
Pueblo, CO 81002

RE: Ruedi Hydropower

Dear Howard and Tommy:

I thought you might be interested in the recent paper we completed for the 1993 ASCE International Hydropower Conference.

It describes the Ruedi hydropower plant and the success that it has represented for all of the parties involved. None of this would have been possible if it were not for the cooperation and encouragement of the Southeast District.

Very truly yours,

Wright Water Engineers, Inc.

By: Bob McGregor  
Dr. F. Robert McGregor, P.E.  
Senior Engineer

cc: Mr. Jon Jones  
FRM/lal  
Enc.  
L-Holmc.FRM  
991-999.000



## RUEDI HYDROPOWER: AN ECONOMIC AND ENVIRONMENTAL SUCCESS

Dr. F. Robert McGregor, P.E., M.A.S.C.E.<sup>1</sup>

John Musick, Esq.<sup>2</sup>

Mark Fuller<sup>3</sup>

Wayne Chapman<sup>4</sup>

Dr. John R. Sheaffer<sup>5</sup>

### Abstract

The Federal Energy Regulatory Commission issued a license in 1983 to the City of Aspen and Pitkin County, Colorado, to construct and operate a 5.0-megawatt hydropower plant (Ruedi plant) on the main outlet works at Ruedi Dam. Ruedi Dam, a 285-foot high structure which stores 102,369 acre-feet of water, was constructed on the Fryingpan River in the Colorado River Basin in western Colorado by the U.S. Bureau of Reclamation as a part of the Fryingpan-Arkansas transmountain diversion project. The Fryingpan River below Ruedi Dam is a gold metal trout stream which experiences heavy recreational use. Special attention was paid during the feasibility studies and the design of the Ruedi plant to the protection of wetlands and in-stream environmental values.

After a review of competitive proposals, a final design, construction and operations contract was awarded to General Electric Corporation. The contract included incentive clauses and bonus awards to General Electric for power production in excess of 18,000,000 kilowatt hours (kwh) per year.

---

<sup>1</sup>Senior Engineer, Wright Water Engineers, Inc., Denver, Colorado, USA.

<sup>2</sup>Attorney, Boulder, Colorado, USA.

<sup>3</sup>Director, Open Space and Trails, Pitkin County, Colorado, USA.

<sup>4</sup>Director, Neighborhood Housing & Conservation, Cincinnati, Ohio, USA.

<sup>5</sup>President, Sheaffer and Roland, Inc., Wheaton, Illinois, USA.

The project was completed for a capital cost of approximately \$4,100,000 and was placed into operation in September 1985. It has produced an average of 18,600,000 kilowatt hours of power per year without compromising the environmental protection values planned for the project.

The Ruedi plant has provided significant economic benefits to Aspen and Pitkin County. The construction of the Ruedi plant enabled the City of Aspen to develop a more diversified mix of supply of electrical power for its service area. The diversified sources of supply have proven to be reliable and is \$300,000 to \$600,000 per year less expensive than the previous 30-year "All Requirements" supply contract with PSCo. After the debt for the project has been retired, the net benefit will grow to \$600,000 to \$1,000,000 per year.

The reduced power costs have permitted the City of Aspen and Pitkin County to apply the revenues from retail power sales toward upgrading electric distribution lines, burying overhead power lines and developing other hydropower and water resource projects.

Thus, the Ruedi plant has placed the energy production potential of the BuRec Ruedi Dam into beneficial use in an environmentally sound manner. Furthermore, it has provided Aspen with the opportunity for some energy independence and to diversify the sources for its power supply. This has produced substantial economic benefits in the near term and the long run. The project serves as a model for intergovernmental and public/private industry cooperation.

### Project Description

The City of Aspen, Colorado (Aspen) and the Board of County Commissioners of Pitkin County, Colorado (Pitkin County) applied to the Federal Energy Regulatory Commission (FERC) for a preliminary permit to develop hydropower at Ruedi Dam on October 24, 1980. After the completion of feasibility studies, Aspen and Pitkin County filed a license application for a 5.0-megawatt plant (Ruedi plant) with the FERC. The FERC awarded the license for a 5.0-megawatt facility to Aspen and Pitkin County in 1984.

Ruedi Dam is a U.S. Bureau of Reclamation (BuRec) facility which is part of the Fryingpan-Arkansas project (Fry-Ark). The Fry-Ark project is a major water resources development project for the diversion of water from the Colorado River Basin into the Arkansas River Basin.

Ruedi Dam was completed in 1968 and is located just upstream from the confluence of Rocky Fork Creek and the Fryingpan River. It is about 60 miles north of the City of Aspen in Pitkin County and is within the White River

National Forest. The dam is a 285-foot high structure with a storage capacity of 102,369 acre-feet.

The dam includes a main outlet works, an auxiliary outlet works, and an overflow spillway. The main outlet works are used to release water under normal operating conditions. These facilities include a submerged hexagonal intake structure leading to a 10-foot diameter concrete-lined circular tunnel. The tunnel leads to a gate chamber housing a 5-foot by 6-foot high-pressure control gate. From the gate chamber, a 76-inch diameter steel pipe leads to a control house with two 3.5 by 4-foot tandem gates and a stilling basin. A wye to a short 76-inch diameter steel pipe with a dished head was installed as a part of the original construction just upstream of the tandem gate control house. The hydropower facilities were connected to the existing main outlet works at this wye. The main outlet works has a capacity of 1,000 cubic feet per second (cfs).

The dam's auxiliary outlet works are used for releases during periodic shutdown of the main outlet works for maintenance. They are located at the right abutment of the dam and include a separate intake structure, a 72-inch diameter concrete-lined circular tunnel, directly beneath the centerline of the spillway. The auxiliary outlet works have a capacity of 600 cfs.

The Ruedi plant uses the BuRec-controlled outflows through the main outlet works to generate electricity. The flows are intercepted at the wye and diverted through a new penstock to a powerhouse located adjacent to the existing main outlet works stilling basin.

The electric power is connected to a 25 kV line in the local power grid in the Fryngpan River Valley and is delivered 15 miles west to a substation in Basalt, Colorado. The power is then wheeled by Holy Cross Electric Company to another substation owned by Aspen near its City limits. Aspen then uses the power for distribution to its own customers within its own electrical utility service area. The power generated by the project in effect replaces the power purchased by Aspen from other sources.

The project has operated as a baseload facility and does not have any diurnal peaking capacity. The flows diverted through the Ruedi plant are controlled by the BuRec. The Ruedi plant operating personnel are responsible for operating and maintaining the hydropower facilities in such a way that will not be detrimental to any of the existing project works.

Some uncertainty has existed regarding the future operations of Ruedi Reservoir largely due to three factors: (1) the Fry-Ark downstream senior conditional water rights have not yet reached their full levels, (2) downstream senior conditional water rights have not yet been perfected, (3) future development needs from downstream users such as the oil shale industry have not yet materialized, and (4) the BuRec has not finalized its marketing program