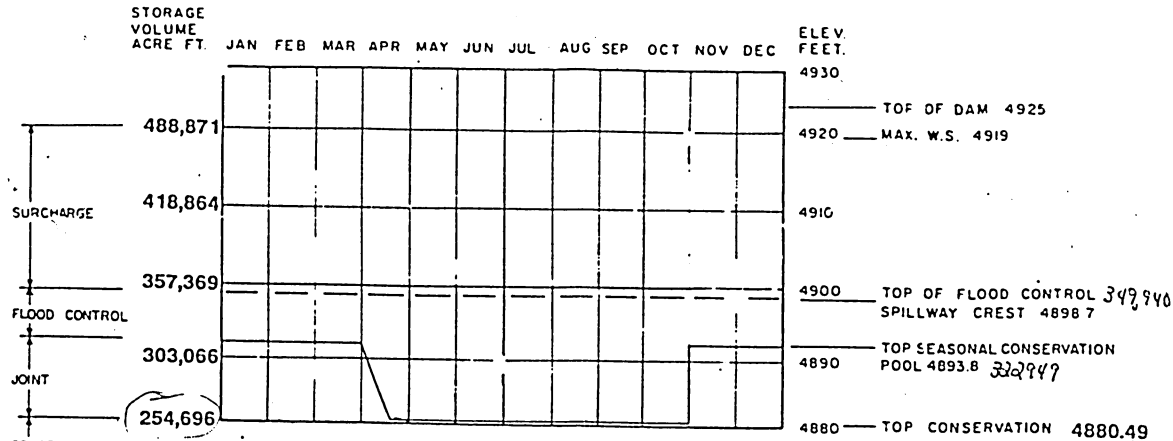


FLOOD CONTROL CRITERIA

REQUIRED SEASONAL FLOOD SPACE



1. FLOOD SPACE IS 27,000 ACRE-FEET. AN ADDITIONAL 66,000 ACRE-FEET OF SPACE IS REQUIRED FOR FLOOD CONTROL FROM 15 APRIL THROUGH 31 OCTOBER. THE 66,000 ACRE-FEET MAY BE USED FOR CONSERVATION STORAGE FROM 1 NOVEMBER THROUGH 14 APRIL OF THE FOLLOWING YEAR. CONSERVATION STORAGE IN THE 66,000 ACRE-FEET OF JOINT-USE SPACE WILL BE EVACUATED BY 15 APRIL.

2. FLOOD CONTROL RELEASES FROM PUEBLO RESERVOIR WHEN COMBINED WITH DOWNSTREAM INFLOW WILL NOT EXCEED 6,000 C.F.S. AT THE ARKANSAS RIVER AVONDALE GAGE. WATER STORED IN THE FLOOD SPACE WILL BE RELEASED AS RAPIDLY AS FEASIBLE BY DOWNSTREAM CONDITIONS.

3. FLOOD CONTROL SPACE WILL BE 93,000 ACRE-FEET FOR LIFE OF THE PROJECT. ADJUSTMENT WILL BE MADE IN THE CONSERVATION POOL AS SEDIMENT ACCUMULATES IN THE RESERVOIR, TO MAINTAIN THE FLOOD CONTROL ALLOCATION.

4. THIS DIAGRAM IS IN ACCORDANCE WITH THE FLOOD CONTROL REGULATIONS PUBLISHED IN THE FEDERAL REGISTER, C.F.R. TITLE 33, CHAPTER 11, PART 209, PARAGRAPH 209.11.

256,949

REVISED, AUGUST 1994

APPROVED:

B. E. Martin

B. E. MARTIN
REGIONAL DIRECTOR
LOWER MISSOURI REGION
U.S. BUREAU OF RECLAMATION

APPROVED:

Robert J. Dacey

ROBERT J. DACEY
BRIGADIER GENERAL
DIVISION ENGINEER
SOUTHWESTERN DIVISION
U.S. ARMY CORPS OF ENGINEERS

ARKANSAS R. BASIN	ARKANSAS R. COLO.
PUEBLO DAM WATER CONTROL MANUAL	
WATER CONTROL DIAGRAM	
PUEBLO DAM & RESERVOIR	
SCALE AS SHOWN	
ALBUQUERQUE DISTRICT, ALBUQUERQUE, N.M.	
TO ACCOMPANY WATER CONTROL MANUAL DATED:	FILE NO. ARR-RM-C-E

EXHIBIT E

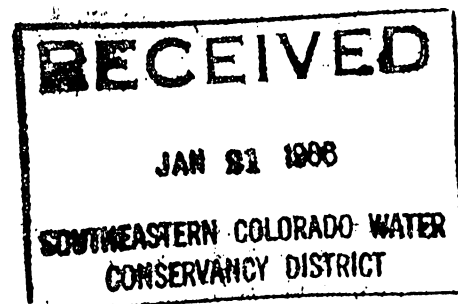


DEPARTMENT OF THE ARMY
ALBUQUERQUE DISTRICT, CORPS OF ENGINEERS
P. O. BOX 1580
ALBUQUERQUE, NEW MEXICO 87103-1580

REPLY TO
ATTENTION OF:

Engineering and Planning Division
Planning Branch

JAN 16 1986



Mr. Charles L. Thomson
General Manager
Southeastern Colorado
Water Conservancy District
P.O. Box 440
Pueblo, Colorado 81002

Dear Mr. Thomson:

This letter is a reply to your letter of December 20, 1985, requesting the policy requiring the water level at Pueblo Reservoir be at 264,795 acre-feet on April 15 be extended at least until May 15.

My staff has fully considered your request, both with regard to your needs as well as the requirements for flood control. A hydrologic analysis was made, routing the April 1942 flood through Pueblo Reservoir. Actual historic flows on the Arkansas River at the Pueblo and Las Animas gages were used, with releases controlled at Pueblo Reservoir to minimize downstream flooding on the Arkansas River.

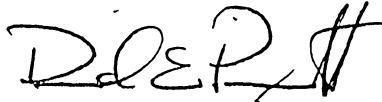
The above routing, assuming the joint-use space is full on April 15, resulted in a 20 day uncontrolled spill through the last week of April and the first half of May. In addition, we were unable to evacuate the flood space in Pueblo until June 1. Thus, the ability to protect against spring storms was greatly reduced.

The routing was repeated, assuming the joint-use space was empty on April 15. The flood was still not entirely contained. Downstream flows exceeded channel capacity on 4 days. However, if releases from Pueblo had not been reduced to zero, flooding would have been much more severe. Enclosed are graphs of both routings.

This analysis indicates clearly that joint-use storage must be evacuated by April 15 if a flood similar in nature to the 1942 April flood is to be contained.

I regret that in the interest of flood control we will not be able to extend the evacuation date past April 15. If you would like to schedule a meeting in Pueblo as previously discussed please let me know. My phone number is (505) 766-2732.

Sincerely,



David E. Peixotto
Lieutenant Colonel, CE
District Engineer

2 Enclosures
Graphs

Tommy,

Sorry the answer couldn't be more positive. We looked at this very closely to see if we could find a way. If you have some other thoughts, let's explore them.

I look forward to seeing you again. Too bad our calendars didn't fit on my last trip to Pueblo



DEPARTMENT OF THE ARMY
ALBUQUERQUE DISTRICT, CONFG OF ENGINEERS
P. O. BOX 1550
ALBUQUERQUE, NEW MEXICO 87103-1580

RECEIVED

AUG 15 1988

SOUTHEASTERN COLORADO WATER
CONSERVANCY DISTRICT

August 8, 1988

Engineering and Planning Division
Planning Branch

Mr. Russell K. Livingston
Chief, Pueblo Subdistrict
Water Resources Division
U.S. Geological Survey
P.O. Box 1524
Pueblo, Colorado 81002-1524

Dear Mr. Livingston:

I have reviewed your proposal, "Probability analysis of daily flood flows into Pueblo Reservoir during April and May", which was transmitted by letter dated April 5, 1988. This, along with discussions from your meeting in Pueblo on June 2, 1988, have provided a better understanding of your proposed study.

I want to assure you that we have an open mind with respect to the April 15 evacuation criteria for Pueblo Reservoir. With the current drought conditions in parts of our nation, many reservoir projects are being re-evaluated to identify operational changes that can enhance their usefulness.

We intend to fully cooperate with you in your study and offer our technical participation, when appropriate. The results of this study will not necessarily result in modification of the April 15 deadline, at least in some years.

We prefer that you do not pursue implementation of a change in the Pueblo operating criteria that will require a daily computer analysis of the current hydrologic and meteorological conditions to determine the associated risks. Instead, I recommend you direct your efforts to using computer simulations to develop criteria to follow (i.e. set of operational curves), where the risk analysis is completed ahead of time. The operational methodology that results should be simple enough to implement without extensive computer runs, excessive time, and shouldn't be too complex for everyday flood control regulation.

The U.S. Army Corps of Engineers considers this study to be a re-evaluation of the existing Water Control Plan. This type of effort is not easily funded through our normal budget process. If funding approval is received for financial assistance in the study, money would not be available until FY91. Certainly, some technical assistance is available throughout the proposed study life.

I invite you to Albuquerque to meet with my staff and to discuss specifics of the study and coordination requirements.

Sincerely,

Samuel N. Aiken, P.E.
Chief, Engineering and Planning Division

Copies Furnished:

Mr. Charles L. Thompson
General Manager
Southeastern Colorado Water
Conservancy District
Box 440
Pueblo, Colorado 81002

Mr. Raymond H. Willms
Project Manager
Eastern Colorado Project Office
Bureau of Reclamation
P.O. Box 449
Loveland, Colorado 80539-0449

Mr. Jack Garner
Chief, Pueblo Field Division
Bureau of Reclamation
P.O. Box 515
Pueblo, Colorado 81002