WCN-SMcCall
ENV-4.00/PRJ-13.00

Subject: Wayne N. Aspinall Unit Operations

Dear Interested Party:

Enclosed is a summary of our January 18, 2001 meeting to coordinate Reclamation's operation of the Aspinall Unit. Also included is a summary of a meeting held on the same date to discuss Gunnison River fluctuations. Highlights of the operation meeting include:

–Since August, flows in the Black Canyon have gradually decreased from 1,100 cfs to around 600 cfs. At the end of December, Blue Mesa water elevation was 10 feet below target levels. This was due to relative low (72 percent of average) inflow into the reservoir in the spring of 2000 and due to relatively high releases in the summer of 2000 to assist in meeting power needs.

–January 1 snowpack readings showed a 90 percent of average predicted inflow to Blue Mesa this spring. Blue Mesa would be expected to fill under these conditions. Runoff predictions often change significantly between January and May, so inflow predictions are **very preliminary** at this time.

–Maintenance activities were discussed, including plans for cleaning trash racks at Morrow Point Dam and removing material deposited at the upper end of Crystal Reservoir. The potential for these activities to increase sediment discharge into the Gunnison Gorge and Black Canyon of the Gunnison National Park was discussed. Further planning and scheduling of these activities is ongoing.

–The Department of Justice announced that the application had been filed to quantify the reserved right for the Black Canyon of the Gunnison National Park and also discussed the general process for quantification. Public meetings on this will begin February 28 and March 1 in Gunnison and Delta. The Fish and Wildlife Service updated the status of flow recommendations for endangered fish species.

If you have any suggestions on improving the operation meetings or the summaries of the meetings, please let us know. The next operation meeting is scheduled for **Thursday, April 26 th at 12:30 in Reclamation's Grand Junction Office** (note this is a change from the previously announced date)**.** If you have questions, please call me at (970) 248-0652.

Sincerely,

/s/

Dan Crabtree
Water Management Group Chief

Enclosure

Distribution (see attached list)

bc: w/ enclosure

Curecanti Field Division, Attention: CCI-100 1820 South Rio Grande Avenue, Montrose CO 81401

John Bezdek, Office of Interior Solicitor, 1849 C St. NW, Mail Stop 6412, Washington, D.C. 20240

Regional Director, Salt Lake City UT
Attention: UC-400, UC-434, UC-438, UC-600, UC-723, UC-720, UC-726 (ea w/encl)

Director, Technical Service Center, Denver CO
Attention: D-8510 (w/encl)

WCN-CDeAngelis, SMoyer, EWarner, SMcCall, JOzga, CStanton, KFogelquist, MSteves, RStorbo, JWright, DCrabtree (ea w/ encl)

WCS-RSwickard, JSimons, PPage

Distribution List -January 18, 2001Aspinall Operation Meeting
*An asterisk indicates person attended the meeting

Argonne National Laboratory . . . . . John Hayse, Kirk Lagory*
City of Grand Junction . . . . . Greg Trainor
Club 20 . . . . . Stan Broome
Colorado State University . . . . . Brett Johnson
Daily Sentinel . . . . . Dave Buchanan
Environmental Defense Fund . . . . . Jim Martin
Gunnison Basin POWER . . . . . Ralph (Butch) Clark*, Ramon Reed
Gunnison Country Times . . . . . Pat Daniel
Gunnison River Expeditions . . . . . Hank Hotze* Bo Gates
Helton & Williamsen, P.C. . . . . . Duane Helton
High Country Citizens Alliance/Sierra Club . . . . . Steve Glazer*
Matt Owens Fly Company . . . . . Matt Owens
KNFS Environmental Services (Trans Colorado Pipeline Project) . . . . . Craig Meis
Trout Unlimited . . . . . Pat Oglesby*, Melinda Kassen*
Western Colorado Congress . . . . . Fred Wetlaufer
University of Montana . . . . . Jack Stanford
Co. River Water Conservation District . . . . . Dave Kanzer*, Marlene Zanetell*, Ray Tenney
Colorado River Energy Distributors . . . . . Cliff Barrett
North Fork Water Conservancy District . . . . . Tom Alvey
Redlands Water and Power Company . . . . . Gregg Strong*
Uncompahgre Valley Water Users Association . . . . . Marc Catlin*, Jim Hokit*
Upper Colorado River Commission . . . . . Everett Sunderland
Upper Gunnison R. Water Conservancy District . . . . . Kathleen Klein, Mark Schumacher, Tyler Martineau, Dennis Steckel*, Jim Slattery
Delta County Commissioners . . . . . Donna Ferganchick, Jim Ventrello*
Delta County . . . . . Duane Freeman*
City of Delta . . . . . Richard Sales*, Wilma Ervin*
Gunnison County Commissioners . . . . .
Colorado Department of Agriculture . . . . . Jim Miller
Colorado Division of Water Resources . . . . . Wayne Schieldt, Frank Kugel*, Richard Rozman
Colorado Division of Wildlife . . . . . Daniel Brauch*,Sherman Hebein*, Pat Martinez, Rick Anderson
Colorado Water Conservation Board . . . . . Randy Seaholm, Ray Alvarado*, Michelle Garrison*
Wyoming State Engineers Office . . . . . John Shields
Congressman Scott McInnis . . . . . Joy Peck
Senator Wayne Allard . . . . . Shane Henry
Senator Ben Nighthorse Campbell . . . . . George Rossman, Katie Aggler
Army Corps of Engineers . . . . . Grady McNure
Bureau of Land Management . . . . . Allan Belt, Dennis Murphy*, Jim Ferguson*, Carl Bauer*, Roy Smith, Jim Ferguson*
Fish and Wildlife Service . . . . . Rick Krueger, Frank Pfeifer, Al Pfister, Chuck McAda*, Terry Ireland George Smith
National Park Service . . . . . Sheridan Steele, Myron Chase; Ken Stahlnecker, Mark Wondzell*

Ron Thomas, Bill Hansen, Chuck Pettee

National Weather Service . . . . . Bill Reed, Brian Avery

National Oceanic & Atmospheric Administration . . . . . Andrea Ray*, Klaus Weickmann

U.S. Geological Survey . . . . . Paul von Guerard*, Bob Jenkins, Gordon Mueller

Land and Water Fund . . . . . Bart Miller*

Western Area Power Administration . . . . . Shane Collins*, Clayton Palmer

Jeff Ackerman, Kathy Crane*, Ken Green, Annette Falvo, Ken Otto*,Gary Burton; Margaret Matte

Bureau of Reclamation...Carol DeAngelis*, Sue Moyer, Ed Warner*, Steve McCall*, Coll Stanton*, Karen Fogelquist, John Ozga*, Russ Storbo*, Ruth Rydiger, Gary McDermott, Don Phillips*, Dick Girvan*, Arlo Allen, Jane Blair*, Paul Davidson*, Larry Crist, Christine Karas, Tony Morton, Terry Stroh*

Interior Solicitors Office . . . . . John Bezdek*, Peter Fahmy

Department of Justice . . . . . Dave Gehlert*

Aspinall Unit Operation Coordination Meeting
January 18, 2001

Participation: This meeting was held at the Montrose Civic Center in Montrose. Attendees are noted on the distribution list.

Purpose of Meeting: The purpose of these meetings-- held in January, April, and August-- is to gather input for determining upcoming operations for Blue Mesa, Morrow Point, and Crystal Reservoirs. This input is used in Reclamation's development of an overall 24-month study for operation of Reclamation projects in the Upper Colorado River Basin, which includes plans for Glen Canyon, Flaming Gorge, and Navajo Units as well as the Aspinall Unit. Operation of the Aspinall Unit considers projected inflows to its reservoirs, flood control needs, existing water rights, minimum instream flows, target elevations for reservoirs, flow needs for endangered fish and other resources, recreation, hydropower needs and other factors. In addition, the meetings are used to coordinate activities and exchange information among agencies, water users, and other interested parties concerning the Gunnison River.

Handouts provided included data on August-January operations; projected inflows to the reservoirs; and potential operation plans under maximum, most, and minimum probable water supply forecasts.

Activities related to long-term operation planning were also discussed at the meeting. Many of the field studies leading to flow recommendations to help recover downstream endangered fish and to quantify a Federal reserved water right for the Black Canyon of the Gunnison National Park have been completed. The Fish and Wildlife Service review draft of a 'Synthesis Report' that includes flow recommendations for endangered fish was also discussed. These operation meetings will be used more in the future to discuss proposals for long-term operation plans to address these and related resource management issues.

Reserved Right for the Black Canyon of the Gunnison National Park: Dave Gehlert with the Department of Justice was introduced at the beginning of the meeting to provide an update on the reserved right. Dave indicated that the application to quantify the right was filed today with District Court, Water Division No. 4 in Montrose. He indicated that copies were being sent to many people, including those on the Aspinall operation mailing list; and he emphasized that this will begin a negotiation process with a goal of finding a solution that works for everyone. The National Park Service will host public meetings to discuss the basis for the right–February 28 in Gunnison and March 1 in Delta. Times and locations will be announced when finalized. Mark Wondzell with NPS also indicated that he could meet with boards or organizations to help explain the right. In response to questions, Dave Gehlert indicated that there will be a stay of litigation filed later to allow a negotiation process, a process which may be lengthy.

Operations:

August-January 2000 Operations: Black Canyon flows during this period ranged from around 1,100 cfs

in August to 650 cfs in January. Blue Mesa Reservoir elevation was 10 feet below the winter target at the end of December; this can be attributed to relatively low runoff in the spring of 2000 (72% of normal) and to relatively high releases in the summer for hydropower production.

Following the end of the irrigation season, the Gunnison Tunnel was opened 3 times, for about 24 hours each time, to fill Fairview Reservoir which supplies the Uncompahgre Valley with drinking water. This causes an approximate 65 cfs drop in downstream canyon flows. On October 31 there were fluctuations in the river as the tunnel was shut down. The normal procedure of reducing Crystal releases to correspond to the tunnel closure was followed, but a mechanical problem caused tunnel shutdown to be interrupted.

January-April 2001 Operation: Based on January 1 snowpack readings and other factors, the April - July inflow to Blue Mesa was predicted at 630,000 acre-feet or 90 percent of normal. This amount of runoff places us in an "average dry year" category. Assuming normal snowfall occurs in coming months, Blue Mesa should fill. Under this same assumption Black Canyon flows should remain around 650 cfs before the runoff and around 800-1,000 cfs for the summer and early fall. It was noted that significant changes in snowpack often occur between now and May, so any predictions at this time are **very preliminary**.

The Colorado Division of Wildlife requested stable flows in April to facilitate efforts to spawn rainbow trout downstream from Crystal. Reclamation and CDOW will coordinate this. A late September flow of 600 cfs for 5 days was requested for trout monitoring in the Gunnison Gorge–date will be set later.

The Uncompahgre Valley Water Users also need to accomplish some work on the Gunnison Tunnel Diversion Dam early this spring-lst half of March–and flows of 550 cfs or less would facilitate this. Based on present operation predictions, this request should be met.

Aspinall Unit Maintenance Work: Don Phillips reviewed the general operation and maintenance (O&M) schedule for the dams; all three dams are undergoing normal O&M this winter which does not affect releases. The trash racks at Morrow Point have never been cleaned and this work needs to be done in the near future–a photograph showing the amount of Morrow Point draw down necessary to accomplish the work was provided. The draw down will also help Reclamation determine a safe draw down rate criteria. For the trash rack cleaning, the draw down could take 1-3 months.

A gravel bar that has developed at the upper end of Crystal Reservoir at the mouth of Cimarron Creek needs to be removed–a total of around 10,000 cubic yards of material is involved. The buildup of material at this location gradually reduces hydropower production at Morrow Point.

Reclamation indicated that they were beginning both planning and environmental assessment work on these activities. Public input on environmental or other concerns would be appreciated. Scoping comments should be sent to Reclamation at the letterhead address.

Reclamation noted that draw downs at Crystal Reservoir for trash rack cleaning in 1999 resulted in significant sediment being carried downstream in the Gunnison River. There are reasons why this problem should be less at Morrow Point (i.e. fewer sources of sediment than at Crystal Reservoir, ability to control or minimize flows through Morrow Point during the draw down without affecting downstream flows, and the location of downstream Crystal Reservoir which could help settle out sediments); however, sediment is still a concern. Reclamation plans to initiate water quality monitoring in the Gunnison River to determine baseline conditions and to assess any changes that might occur during the maintenance activities.

Initial concerns from those in attendance included:
-sediment increases in September would interfere with CDOW fishery monitoring
-sediment increases in fall could interfere with brown trout spawning
-sediment increases in summer or fall interfere with downstream recreation
-completing one or both work items in the spring would allow spring releases to carry sediment through the system and reduce impacts
-potential landslide areas need to be addressed

Agency/Organization Activities and Discussion of Related Activities:

Fish and Wildlife Service - FWS has completed a draft of the synthesis report and peer review has been completed. The report, which addresses flow needs of downstream endangered fish, has been reviewed by the Biology Committee of the Recovery Program-at least 2 minority reviews will ask that report not be accepted without modifications. The report next goes to the Recovery Program Management Committee.

Generally the draft report calls for a more natural hydrograph, with magnitude of the spring peak varying with the amount of unregulated inflow to Blue Mesa. A base flow of 300 cfs downstream from the Redlands Diversion is discussed in the report. The types of peaks discussed are listed below (draft) –these are flows at the Whitewater gage so they include flows from the North Fork, Uncompahgre and other tributaries as well as from the Aspinall Unit:

Extremely dry year–4,000 cfs or greater
Moderately dry year- 7,000 cfs or greater
Average dry year-9,500 cfs or greater
Average wet year-12,500 cfs or greater
Moderately wet year-16,000 cfs or greater
Wet year-20,000 cfs or greater

In response to a question about a spring peak for endangered fish in 2001, Reclamation and the Service indicated that they would discuss this at the April operation meeting when snowpack conditions are better known.

Colorado Division of Wildlife - CDOW continued to emphasize the importance of the kokanee

salmon fishery at Blue Mesa–not only the recreational aspect, but the eggs from this fishery support many other Colorado waters. Kokanee had been on a decline since 1993; the year 2000 return to the East River was up over recent years–possibly due to increase stocking in 1996. Colorado State University research on the reservoir fishery continues with CDOW and Reclamation support. Kokanee stocking of Morrow Point is planned, but may be delayed until more is known about Morrow Point trash rack cleaning.

The CDOW collected 24,000 rainbow eggs downstream from Crystal in April 2000, resulting in 19,000 fish. CDOW plans to stock these as 4-5" fish after the spring runoff. Last year Colorado River rainbows were stocked downstream from Crystal and in the Gunnison above Blue Mesa. New regulations in the East Portal area call for "catch and release" rainbow fishing and flies and artificial lures only.

Monitoring in the Ute Park area in September 2000 showed essentially no rainbow recruitment - rainbow fry are present in August but are absent by September. This continuing trend, due to whirling disease, has just about eliminated the rainbow fishery. Overall brown trout are doing well and Gold Medal criteria is still met. There may be some evidence that siltation from the 1999 Crystal trash rack cleaning (or subsequent fall flushing flow) depressed brown numbers from that year.

Colorado River Water Conservation District - District representatives asked how fish flows, reserved right, and Gunnison River Programmatic Biological Opinion will be coordinated. In response, Reclamation recognized that these may be separate programs, but Interior intends that the reserved right and endangered fish flows will not conflict.

Sierra Club/High Country Citizens - Working on water quality standards for the Gunnison River. Mentioned that the Union Park court decision seemed to emphasize 240,000 af of yield in Blue Mesa—is this number still being used considering endangered fish and other new demands on the water? Reclamation responded that the term "up to 240,000 af" is used and actual yield will be determined in cooperation with the State of Colorado.

Colorado Water Conservation Board - The Board representative indicated that meetings on the Gunnison River Basin Programmatic Biological Opinion will start this month.

U.S. Geological Survey- The Gunnison gage below the Tunnel has been funded and will continue.

Bureau of Land Management - BLM representatives reiterated their concerns that operation and maintenance activities may add sediment to the river. Recreation use and commercial guiding were impacted during the Crystal trash rack cleaning in September, 1999. In terms of flows, boaters like flows over 1,000 cfs; key season is end of June through September, with float fishing continuing into October. The 500-550 cfs monitoring flow (see NPS input) proposed for August can be dangerous to boaters.

This summer BLM will start work on a management plan for the area–contact BLM in Montrose to be

on mailing list (970-240-5300).

Western Area Power Administration - In response to audience questions, WAPA indicated that the Upper Basin Fund's financial condition is grim at the moment, and rate increases to cover power purchases may be looked at. Steve Glazier asked if, because of proposed fish flows for CRSP Units, it would be appropriate for WAPA to give the "5 year notice" to customers that delivery contracts may need to be modified–in other words look at long-term power obligations.

Uncompahgre Valley Water Users - The water users need to do maintenance work on the Gunnison River diversion dam early this spring. A one day window of flows 550 cfs or less between March 1 and March 21 would help. Reclamation will coordinate this with the water users; based on present flow predictions, this should not be a problem.

National Park Service -Depending on hydrologic conditions, the NPS would like 10 days of monitoring flows in the 500-550 cfs range in late July-early August to help monitor vegetation. They will discuss this more at the April meeting. The Bureau of Land Management mentioned that this was during peak of recreation season and that flows in that range can be dangerous to boaters.

In regard to the reserved right, NPS reminded people that while both the reserved right and endangered fish flows seek a more natural hydrograph, the National Park is upstream from the endangered fish area and desired flow numbers will be different (NPS flows measured at Gunnison River below Tunnel gage and FWS flows measured at Gunnison River near Grand Junction (Whitewater gage).

Gunnison Basin Power - Looking at long-term climate aspects of operations and icing above the reservoir. Winter reservoir elevation targets to reduce icing restricts filling of the reservoir in some years.

City of Delta-The city is working on a proactive river project that looks at flooding and other river management concerns. Would welcome participation of attendees. City is concerned that flooding may occur with implementation of the reserved water right.

Trout Unlimited-Concerned with siltation during operation & maintenance work; the lower river was hurt by sediment when Crystal trash racks were cleaned in 1999.

NOAA-Doing studies on climate variability and forecasting of El Nino and La Nina. This year appears to be in a "neutral" condition.

Next Meeting: **12:30 on April 26th (NOTE: This is a change from previously announced date) in Reclamation's Grand Junction Office.**

Gunnison River Fluctuations
Pre-Meeting January 18, 2001 Montrose Colorado

An informal meeting preceding the operations meeting was held to discuss Gunnison River fluctuations downstream from Crystal Dam. Reclamation provided the following background information (some of the graphs displayed are attached):

Crystal Reservoir is operated to smooth out peaking releases from upstream Morrow Point (see figure 1).

Changes in Crystal releases are directed from Reclamation's Salt Lake Office to the control center at Page AZ where Crystal changes are remotely controlled. Salt Lake discusses changes with Reclamation's Grand Junction Office and WAPA. Reclamation's Grand Junction Office checks with CDOW and FWS on major changes and uses a "fax tree" and news releases to keep people informed.

More people are monitoring flows as information is readily available over the Internet. If people have questions or concerns with what they see at the Gunnison River Gage, they are urged to call Reclamation in Grand Junction–to have their questions answered or to alert Reclamation to a sudden fluctuation that may have been missed (970-248-0618). A toll free # 1-800-276-4828–is updated frequently and is a good source of information on Gunnison flows (also Lake Fork, Taylor, Uncompahgre, Dolores, and Colorado Rivers).

Fluctuations downstream from Crystal can occur for several reasons:

-When Crystal releases are set for a constant or stable MW production, water releases vary due to changes in Crystal Reservoir elevation. At less than full MW production, releases are generally evened out by a "flow controller" with fluctuations less than 50 cfs; however, at full power production–as seen in August of 2000–daily flows can fluctuate 200 cfs (see figure 2).

-Unforeseen events (power outages, mechanical problems) and municipal diversions through Gunnison Tunnel. Bypass outlets are set to minimize changes in releases if the powerplant goes down.

–If Morrow Point releases were continued in a peaking mode during a Crystal spill, Crystal's reregulating ability would be reduced.

Paul Davidson discussed the fluctuations that occurred last August. In the last few years, we have had equipment problems that prevented full (30 MW) power production. This was corrected last summer and the plant was operated at 30 MW in August to help meet power needs (this not only produces more power at Crystal, but allows higher releases through Morrow Point and Blue Mesa). When set at a

constant 30 MW, changes in Crystal Reservoir elevations (caused by Morrow Point peaking) determine how much flow is released to produce the 30 MW (see figure 3). Release changes are not sudden–occur over an 8-12 hr period (figure 2). When power production is 28 MW or lower, the "flow controller" adjust the power production from the turbines in order to keep a more constant release rate.

Graphs of other years (see figure 4, August 1997 for example) showed that August of 2000 was not unique, but it was unusual in terms of magnitude of fluctuations and length of time they occurred. The August 2000 fluctuations caused a 0.4 foot change in river elevation over an 8-12 hour period at the gage site (figure 2). It was discussed that the change in elevation would vary with location–also changes would gradually attenuate downstream.

Is there criteria for fluctuations downstream? Reclamation has ramping criteria and criteria for important life stages of trout, but there is no specific daily fluctuation criteria. The general rule has been to try and minimize daily fluctuations. There was an informal discussion on the significance of daily fluctuations-input from those in attendance included:

-CDOW indicated that fluctuations at lower flow levels (e.g. a 200 cfs fluctuation when river flows were 600 cfs) are harmful to trout. At higher flows–say over 1,000 cfs-fluctuations are less of a problem. At 300 cfs, CDOW would be very concerned with fluctuations. Fluctuations would mainly affect young fish, although significant fluctuations can also affect insects.

-Reclamation indicated that the "flow controller" would be in effect when powerplant was set below full capacity of 30 MW which keeps daily fluctuations down to 50 cfs or so a day. Fluctuations greater than 50 cfs would not be expected when low flows were occurring (for example at 600 cfs) since low flows would require Crystal to be operating at less than full power (30 MW). Figure 5 gives a general idea of how often powerplant has been at full capacity in recent years.

-There are safety concerns; people may wade across the river at 600 cfs in some areas but be stranded later in the day at 800 cfs.

-Fluctuations can affect fish feeding behavior.

-Fish and Wildlife Service has not identified any problems downstream in endangered fish habitat but will look into it more.

The meeting had to break to get ready for the operation meeting. Reclamation, with help from NPS, CDOW, and FWS, will review available cross section information and other data to better assess river stage at various flow levels and river locations.