



# **COLORADO AG WATER ALLIANCE**

## **AG WATER WORKSHOP**

**RESERVOIR DREDGING**

**AIMS COMMUNITY COLLEGE**

**GREELEY, COLORADO**

**JANUARY 23, 2020**





# **FIRE MOUNTAIN CANAL & RESERVOIR COMPANY & NORTH FORK WATER CONSERVANCY DISTRICT**

**HOTCHKISS & PAONIA COLORADO**

**STEVE FLETCHER**  
MANAGER/DAM TENDER





# PAONIA DAM

THE FIRST COMPLETED PARTICIPATING PROJECT  
OF THE  
COLORADO RIVER STORAGE PROJECT

BUILT FOR AND BY THE PEOPLE  
OF THE UNITED STATES

OPERATED BY THE NORTH FORK WATER CONSERVANCY DISTRICT

DEDICATED SEPTEMBER 29, 1962

UNITED STATES DEPARTMENT OF THE INTERIOR

STEWART L. UDALL, SECRETARY

BUREAU OF RECLAMATION

FLOYD E. DOMINY, COMMISSIONER



PAONIA DAM & RESERVOIR  
IS LOCATED IN GUNNISON  
COUNTY 16 MILES NE OF  
PAONIA CO. ALONG CO. HWY  
133 ABOVE THE TOWN OF  
SOMERSET. THE DAM WAS  
BUILT ON MUDDY CREEK  
UPSTREAM FROM ITS  
CONFLUENCE WITH  
ANTHRACITE CREEK. THESE  
TWO CREEKS TOGETHER  
FORM THE NORTH FORK OF  
THE GUNNISON RIVER.  
PAONIA DAM IS OWNED BY  
USBOR, AND IS OPERATED  
AND MAINTAINED BY THE  
FIRE MOUNTAIN CANAL AND  
RESERVOIR COMPANY  
UNDER CONTRACT WITH  
THE NORTH FORK WATER  
CONSERVANCY DISTRICT.





PAONIA RESERVOIR  
PROVIDES IRRIGATION  
WATER TO  
APPROXIMATELY 15,300  
ACRES OF LAND AND HAS  
RECREATION AND FLOOD  
CONTROL BENEFITS.  
WHEN THE  
CONSTRUCTION OF THE  
DAM WAS COMPLETED IN  
1962 THE RESERVOIR HAD  
AN ACTIVE STORAGE  
CAPACITY OF 18,150 AF.  
SEDIMENT FROM MUDDY  
CREEK FLOW INTO THE  
RESERVOIR AND HAS  
REDUCED THIS STORAGE  
CAPACITY TO AROUND  
15,000 AF.





# DAM FACTS

- ZONED EARTH FILL EMBANKMENT
- DAM HEIGHT – 199 FT
- DAM COMPLETED – 1962
- OUTLET WORKS (CAP. 1,130 FT<sup>3</sup>/S)
  - RIGHT ABUTMENT
  - SQUARE INTAKE TOWER (60 FT)
  - TUNNEL
  - TWIN HP GATES (2.75 FT X 2.75FT)
- SPILLWAY (CAP. 12,600 FT<sup>3</sup>/S)
  - UNCONTROLLED OGEE CREST AND OPEN CHUTE
- COMMON OUTLET/SPILLWAY STILLING BASIN















**1962**



**2017**

**60 FEET OF SEDIMENT**





























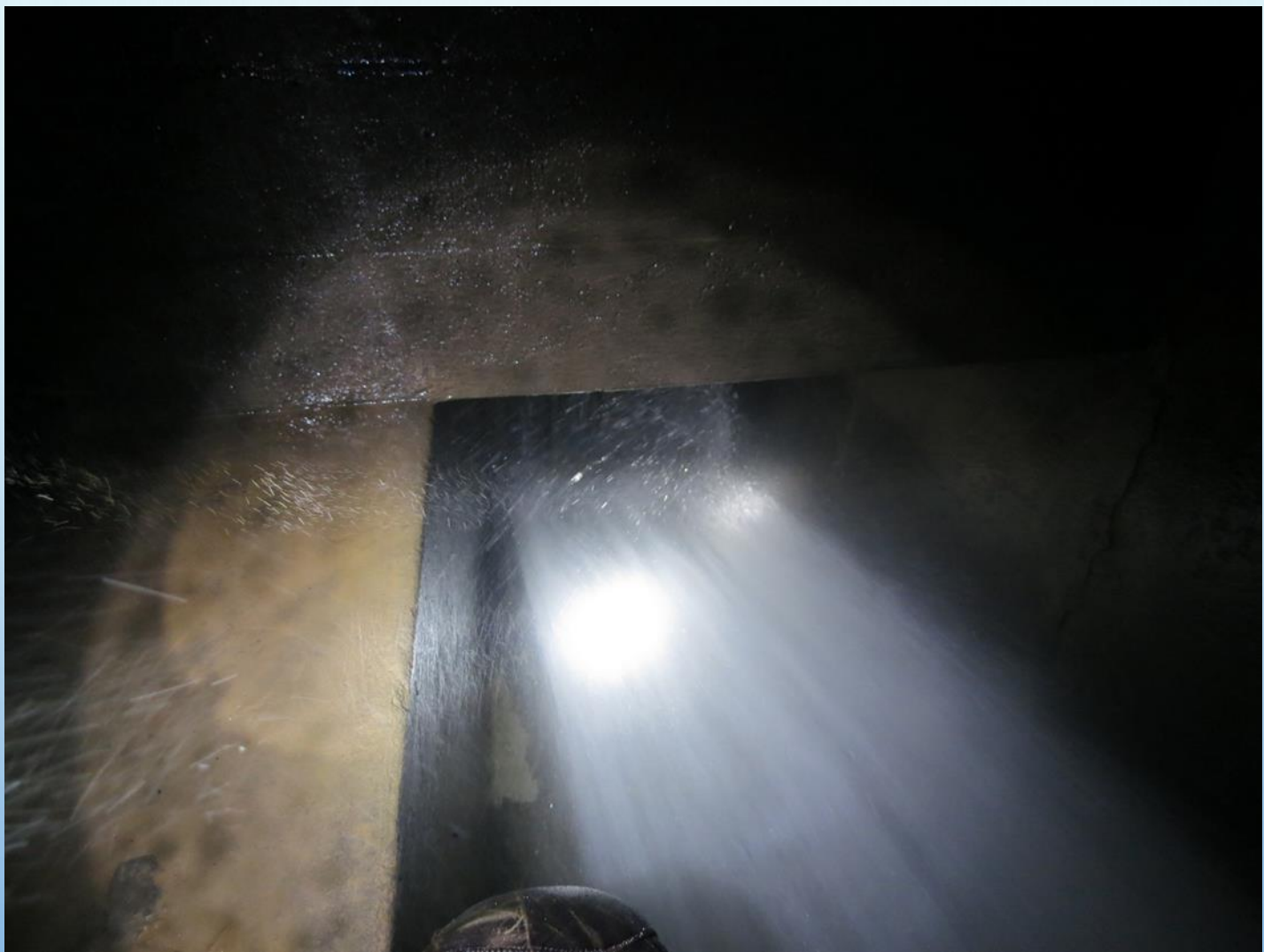


















Owner

Concerns	Idea	Bucket	White-up
Reclamation	Raise Dam+Spill	②	EP
	Periodic Dredging (bowl)	②	TF
	Additional Intake for Sluicing (Upstream)	①	BG
	Reclaim + Rehab Ex.	①	P/SH
	Enlarge Ex. Intake	①	CG/TF/B

Concerns: Continue operation, public safety, cost

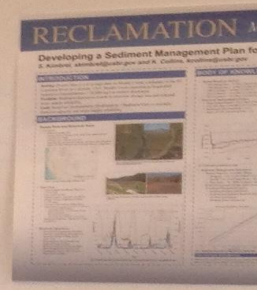
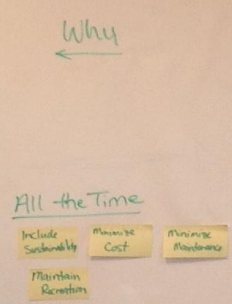
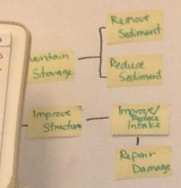
Users: Recreationalists

Concerns	Idea	Bucket	White-up
boating, fishing, reservoir access	Upstream Check Structures	①	CG
	Upstream Excavation	①	JH
	Increase Efficiency during Sluicing	②	BG
	Midpoint Downstream	②	SH
	Permanent Dredging Operation (specify include reservoir bath)	①	EP
	Dam Breach (include hazard water cases)	②	TL

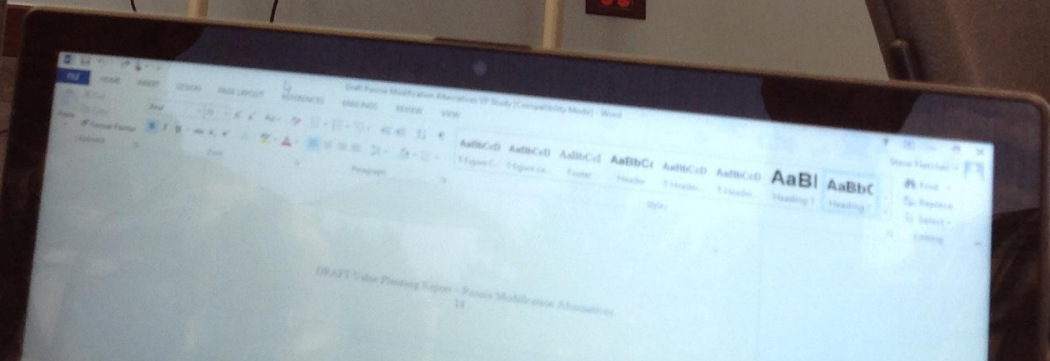
Concerns: boating, fishing, reservoir access

How

Idea	Bucket	White-up
Air release/vent	②	JH
<del>Build Butthead</del>	②	EP
Sediment Pump	①	TL
Improved Access to Ex. Intake	①	CG
Temporary Raise of Spillway for Sluicing	②	



native  
gn Consideration  
position Table





Deliver water

Pump over dam

Groundwater

Siphon

New outlet BG TGF PE CG

Truck water

Canal

Bypass tunnel through abutment CG TGF EP TL BG

Bypass water users TL

Breach dam

Remove dam

Improve Structure

Add air burst system EP

Sliding gates TL

Add more gates TL

More gates w/ air burst

Remove trashrack - new/reconfigure valve PE BG TGF

Trashrack grinder JF, BG TGF

Trash rack BG EP

Open original bypass JF TL BG TGF

Air release/vent JF PE

Build bulkhead EP BG PE

New intake

Helicopter scooping

Coordinate w/ brick company

Sediment pumps TL BG EP

Access to ups conduit

Add ramp/improved road/bridge to intake TL BG EP PE CG

Selective excavation to encourage erosion TL BG

Permanent dredge operation TL BG

Soil remet

Raise intake (tower)

Sluiceway through dam

Multiple sluiceways (different elevations) PE EP JF CG TGF

Add batch plant d/s

Process aggregates u/s

Temporary spillway crest raise for sluicing CG

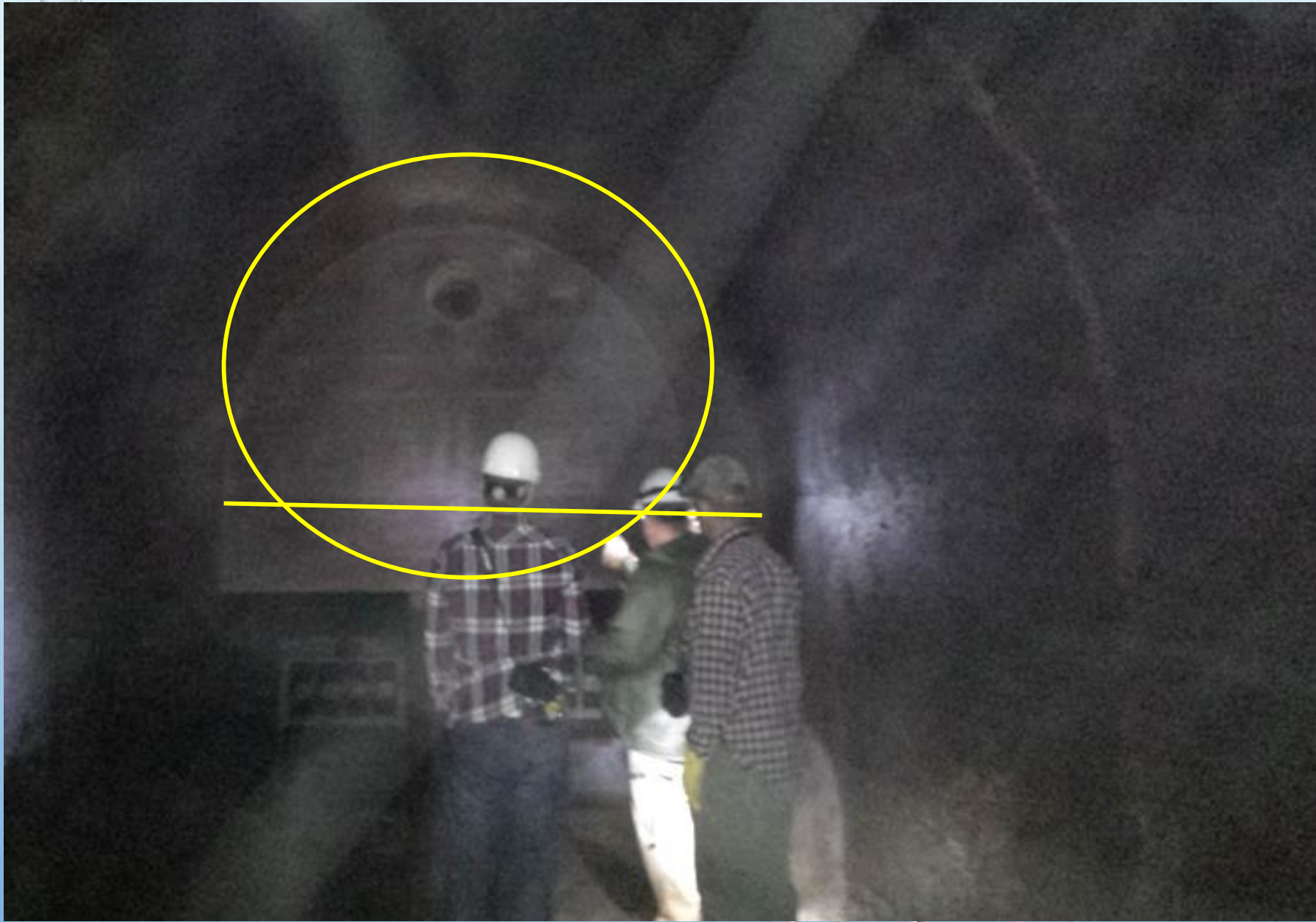
WTP - filter system

Add gold to encourage mining

Pipe in the bottom of reservoir (Sluice bypass)

Check dam on tributary

















01/01/2020











# QUESTIONS

