



State of Idaho  
DEPARTMENT OF WATER RESOURCES

Western Region, 2735 Airport Way, Boise, Idaho 83705-5082 - (208) 334-2190  
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November 10, 1994

CECIL D. ANDRUS  
GOVERNOR

R. KEITH HIGGINSON  
DIRECTOR

Bill Perkins, Pres.  
Squaw Creek Irrigation Co.  
Ola, ID 83657

RE: Sage Hen Res. Measurement Weir

65-2925

Dear Mr. Perkins:

As we discussed at the May inspection of the weir below the reservoir outlet, I was able to observe the weir, and take flow measurements during reservoir releases in late July. Flow measurements were taken above the weir, near the walk bridge below, and at the road culvert.

The weir is structurally adequate for flow measurement, but a problem arises with the location. During measurements, weir gauge readings were surging from .90 ft. to 1.10 ft., and flow velocities over the weir varied from 2.51 ft/sec on the right side to 4.20 ft/sec. on the left side. As you are aware, flow over a weir blade must be uniform, with a calm (nonturbulent) pool above the weir for accuracy. In comparing the flow readings taken near the walk bridge and above the weir, with the calculated weir flow, the weir readings are low. The influence of the variable reservoir level (head) on the outlet channel flow, and location of the weir prevents accurate flow calibration.

Ideally, the creek area near the beaver dam (between the outlet and walk bridge) would be a good weir location as the creek channel is fairly straight, slope is minimal, and release flows appear uniform. The problem with the weir in this area is the structure must withstand large spillway overflows.

The Department would like to encourage you to actively pursue a outlet pipe repair plan, so the work can be completed by the end of 1995. As we recently discussed, if replacing the metal pipe below the gate is not feasible, investigating an epoxy/liquid steel coating for the concrete maybe an option. Please keep the Department informed of your progress, final plans, and work schedule.

Please contact me at the Western Regional Office, phone 334-2190 if you have any questions.

Sincerely,

A handwritten signature in cursive script that reads "John Westra".

John Westra  
Western Region

cc: IDWR State Office.