



State of Idaho
DEPARTMENT OF WATER RESOURCES

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CECIL D. ANDRUS
GOVERNOR

R. KEITH HIGGINSON
DIRECTOR

June 24, 1994

Dan Weitz
9067 W Brookview Ct
Boise ID 83709

RE: Weir Measurement

Hi Dan,

This letter summarizes the department's conclusions regarding Clayton Colthorp's weir measurements and technique. Idaho Department of Water Resources has adopted the Bureau of Reclamation's water measurement standards, which are referenced below.

A field visit June 23, 1994 determined that a properly constructed weir was in place. A post driven into the bed of the weir pond was also in place and properly constructed, where the measurement ledge on the post was level with the top of the weir's crest.

According to the Bureau of Reclamation, a more accurate head measurement is preferably from a properly placed post, rather than from the top of a weir crest. When measuring the head using a post, the angle of the ruler or staff gage is not applicable because the location of the post is in the weir pond, where water velocity is slower, making an accurate head reading much easier to determine. The head is the vertical distance between the post ledge and the surface of the water, as measured by a ruler or staff gage.

If a weir crest is used for the head measurement, the ruler or staff gage needs to be held at a 45 degree angle. The head reading is then the level of the "water lip" on the staff gage or ruler, as determined by the measurer. The water surface as it flows over the crest is drawn down as velocity increases. For this reason the measurement at or on the crest is not as accurate as the post method described above. Clayton measures at the post, then double checks this reading with a weir crest measurement. At the time of the field visit, Clayton conducted both measurements properly and accurately.

Enclosed is a water measurement handbook that describes weirs and includes the conversion tables IDWR uses for weir measurements.

Let me know if you have any questions Dan.

Sincerely,



Lori A. Graves
Sr. Water Resource Agent

CC: Clayton Colthorp,
Mountain Home Irrigation District Manager