Berkey, Jennifer

From: Luke, Tim
Sent: Friday, July 16, 2004 11:26 AM
To: Berkey, Jennifer
Cc: Burrell, Steve; Knowles, Corbin
Subject: Branchflower Hydro

Jennifer,
I got hold of Mike Branchflower today and asked for flow measurements through the power plant on Billingsley Creek for Monday and Tuesday of this week, as well as bypass flow readings. He will get those and provide them to Frank Erwin on Monday, and Frank will have to report to you or you could call him. Mike was going to call me Monday, but since I'm out, I left him the option of calling either you or Frank. Since I thought it was possible you might be out Monday I suggested maybe it was better to report to Frank and he agreed to do that. Please try to get the measurements from Frank and add them to the spreadsheet that we discussed.

He told me the bypass consists of two submerged orifices. I measured the head differential on Monday evening when I was there but I was unable to measure the size of the orifices (I thought there was only one). Mike said there is a transducer or device in the creek/diversion pool across the creek from the orifice near the little bridge or walkway which is relayed to a computer in the plant and converts that head to a measured bypass. I'm not sure how this actually works without knowing the water level downstream of the orifice. Mike thought that there was just the one transducer. I asked Mike to also report the area or size of the orifice openings (height and width) so we could check the measurement he will report. Steve Burrell may know more about this as he went down there earlier this year to get further information on the hydro plant and bypass. I think Steve may have the orifice dimensions but I did not find it in the file -perhaps Steve has notes elsewhere. Mike said that the control gates in the creek is also supposed to release a little bit of water or be open one to two inches for some flow bypass but I do not recall seeing any flow under those gates other than perhaps a little bit of leakage. Mike said there has been beaver problems at those gates.

Tim

Call for data:
~~Mike Branchflower (Frank Erwin)~~
Frank Erwin - Branchflower Hydro data 208-837-4433
- ask about gage location left message Frank will call Mike again

Joe Chapman - IDFG Hatchery data from July 14 (837-4892)
left message

Leo Ray - Big Bend trapezoidal flume readings from July 14
837-6114 (cell 280-0032)
Corbin has these readings

Dan Yore - Hunt Ditch readings from July 16 or earlier in week
837-6595 left message

IPCO - Roger Fuhriman or Peter Vidmar - IPCO Pipe Ditch Upper Tucker Springs
left message

Data from Corbin Knowles via telephone 8/9-10/2004

State Hatchery

Upper Tucker Lg - 36.5 cfs 8/4/2004
~~35.73 on July 8~~ ~~36.75~~

7/9 33.0 cfs
thru next week

Sm - 8.4 cfs

44.9 cfs ~~8/30/2004~~

Hoagland Ditch before Musser/Littlefair

5.12 cfs 7/30/2004

Leo Ray - Big Bend Ditch

Norwood Sub Pipe -

call Frank Erwin (Branch Power Data)
call Joe Chapman (DFS
call Dan Yore (Hunt Ditch)
call Leo Ray (Big Bend Ditch)

Dan Yore - measures from the back

measure gate opening - (nut to top of stem - 1½)

July ~~8~~ 3-8 off ~~July 11~~ ~~July 18~~

10" stem = 8.5" opening

July 8 28.2
July 9 28.2
July 11 33.7
July 15 28.2

Indian Springs

Reeses/Plothiers in same system

other on separate system

Florence Spring

Per Corbin

Leo Ray's measurement of Big Bend 2 ft-trapezoidal flume on 7/14/2004

$h_{us} = 27\frac{3}{4}$ in $h_{ds} = 26\frac{1}{2}$ in corr = 0.72

Calculations (JB)

$h_{us} = 2.31$ ft $h_{ds} = 2.21$ ft

$\frac{h_{ds}}{h_{us}} = \frac{2.21}{2.31} = 0.957$ (> 0.80)

correction $\frac{Q}{Q_o} = 0.78$ from Fig. 9 UI Water Measurement

From Table 8 $Q_o = 40.65$

$Q = (40.65)(0.78) = 31.8$ cfs