MEMORANDUM

TO: Keith Higginson & Norm Young

FROM: TIM LUKE

DATE: August 9, 1993

RE: Curran Tunnel Measurements

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On 8/6/93, the following measurements were made at the Curran Tunnel by myself, Mel Schulte and Bret Barry (both from Southern Region office):

MEASUREMENT	TIME	METHOD	Q (cfs)
Open discharge inside tunnel	12:50 p.m.	current meter (Swoffer 2100)	5.20
Rangen Lab pipeline from tunnel	2:15 p.m.	Polysonic meter	1.08
Total Tunnel Discharge			6.28
Candy Pipeline	3:00 pm	Polysonic meter	0.175
Musser Pipeline	3:20 pm	Polysonic meter	1.43
Crandelmire Pipeline	3:45 pm	Polysonic meter	3.97
Total Irrigation Pipeline Discharge from Tunnel			5.58

Note that the total irrigation pipeline measurements are 0.38 cfs or 171 gpm higher than the open discharge current meter measurement in the tunnel, a difference of 7 percent. The difference may be due to the difficulty of metering the tunnel and the low discharge obtained from the Candy pipeline. There was at first some difficulty in getting a steady reading on the Candy pipeline. We observed that the pump and sprinkler lines connected to this pipeline were not on at the time, but that there were some drip irrigation hoses which were irrigating various orchard and shade trees.

All of the flow from the tunnel was being diverted to the three irrigation pipelines and the Rangen Lab pipeline. There was no overflow from the upper collector to the lower collector and only minor leakage from the tunnel past the upper collector.

In addition to the above measurements, I also measured flow over a standard sharp crested rectangular weir in the Curran Ditch. As best as I could measure, this weir is 9.5 ft wide, not 10 feet wide as measured and reported to me the previous day by the watermaster, George Lemmon. The head over this 9.5 ft. weir was 0.55 ft., and the discharge equal to 12.75 cfs. All the flow of Billingsley Creek was being diverted to the Curran Ditch except for some leakage past the control structure/headgate to the creek (estimate 1 cfs or less).

10 ft weir = 13.4 cfs