

Hydrology Water Resources



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208•736•8543 FAX: 736•8506 December 13, 2011

Rangen, Inc. 115 13th Ave. South Buhl, ID 83316

Re: Proposed Water Call

Dear Sirs:

This letter is in response to your request for assistance from Brockway Engineering, PLLC in preparation and support of a water call on the Rangen aquaculture facility at the head of Billingsley Creek. I will be able to assist in this endeavor and have indicated my availability to your attorney, Robyn Brody.

I am familiar with the water supply system for the Rangen aquaculture facilities, in particular the Martin-Curran tunnel collection system and piping. I have reviewed historical water measurement data and IDWR information relative to flow measurement facilities and results. Flow from the Curran tunnel has decreased significantly since the 1960's as a result of changes in water management on the Eastern Snake Plain and in particular as a result of additional ground water pumping for irrigation. This flow reduction is manifested to varying degrees in all springs issuing from the ESPA in the Kimberly-King Hill reach of the Snake River and is documented in the December 9, 2011 memo by Leonard Rice Engineering Inc.

Determination of the impact of junior groundwater pumping on the ESPA on spring flows can be determined utilizing the ground water model developed by IDWR and the Idaho Water Resources Research Institute. The current version of the model, ESPAM1.1, has been used to analyse ground water transfer impacts as well as curtailment evaluations for water calls by spring users and canal companies. The update of the ESPAM1.1 model is currently in the final phases of calibration by IDWR with guidance from the Eastern Snake Hydrologic Modeling Committee (ESHMC). This model, called ESPAM version 2.0, constitutes the best available science and tool for evaluating impacts from pumping and recharge changes on the ESPA. Significant improvements incorporated in the ESPAM2.0 model is the fact that the output is calibrated to individual spring historical measured discharge and, as such, can simulate impacts on individual springs, such as Curran Tunnel.



I have reviewed the Rangen water rights and the model analysis conducted by Leonard Rice Engineers which evaluated the historical decrease in Curran Tunnel discharge caused by ground water pumping from the ESPA by ground water right holders junior to July 13, 1962. The latest calibration version of the ESPAM2.0 model (IDWR version E110712A) was utilized and the current IDWR water rights data base was used to identify ground water users and locations. The model analysis as outlined in the Leonard Rice memo of December 9, 2011 identified a 17cfs increase in Curran Tunnel discharge as a result of the cessation of pumping by junior water users on the ESPA. This value was obtained by comparing the predicted Curran tunnel discharge obtained with the fully populated ESPAM2.0 model with the same model with junior ground water pumping deleted. I agree with the procedure utilized, simulated model results, and conclusions by Leonard Rice Engineers Inc.

Sincerely E Auntur Charles E. Brockway, P.E.

Cc: Robyn Brody, Attorney