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Department of Water Resources
Eastern Region

September 3, 2013

Mr. James Cefalo
Water Resources Program Manager
Idaho Department of Water Resources
900 N. Skyline Drive, Suite A
Idaho Falls, Idaho 83402-1718

RE: CLOSING REMARKS – TRANSFER NO. 77610, PARKINSON FARMS

Dear Mr. Cefalo,

We are pleased to submit the closing remarks for the supplemental hearing regarding our application for transfer no. 77610.

We have shown that both existing points of diversion are in the same subaquifer unit as the proposed point of diversion. The Wilse Nielson well log is clearly the east point of diversion. A water table map prepared by the USGS (Bassick and Jones, 1992) shows the hydraulic connection between the existing and proposed points of diversion.

Our request for transfer to the new proposed point of diversion will not injure other water rights by causing a reduction in rising waters in the Big Lost River. All technical experts agreed that the proposed transfer will not affect rising waters in the Big Lost River near the proposed point of diversion. Historical records indicate that there has been a separation of the aquifer and the Big Lost River below Moore for several decades. The drop in aquifer levels is tied most closely to flow in the Big Lost River below the Mackay Reservoir. The actual cause of the decrease in flow below Mackay was of considerable debate during the hearing. One technical expert characterized recent history as a series of closely spaced droughts (Owsley, Figure 4), another characterized the decrease in streamflow over the past 30 years as a change in the climate (Wood, page 10) and the third expert determined that there is no statistically significant change in either precipitation or temperature over the past 60 years (Brockway, p. 6), but offered no explanation for the decrease in river flow below Mackay. Irregardless of the cause, we know that water levels in the aquifer have dropped markedly post-1985 most apparently because of decreased flow in the Big Lost River below Mackay Reservoir. We have shown through physical arguments that dropping the aquifer level less than one foot at Moore, under the worst case pumping scenario for this proposed transfer, will have an insignificant effect on rising waters compared to discharge from water flowing in the Big Lost River. This is due to the very small cross-sectional area of the river channel near Moore and the small upward vertical head gradient for carrying water upward from the aquifer to the river channel when compared to the large cross-sectional area and steep vertical gradient of water flowing in river below Moore.

The protestants water expert using a statistical method calculated that the impact on water levels from pumping is more significant than stream flow. We challenged this finding due to the fact that using streamflow to predict pumping means that they are not independent in a data context and because most of these wells are supplemental wells means that pumping/streamflow are not

independent in a physical context. Unaddressed violations of independence can result in the problems of implicit independent variables and multicollinearity. If the assumption of independence is violated then multiple linear regression is not appropriate. Further, we argue that the statistical approach has the problem of missing variables, for instance, valley underflow, conversion of flood to sprinkler irrigation and reduced recharge. There are too many violations of statistical assumptions to be able to rely on the partition between pumping and streamflow effects.

There are several mechanisms that are likely sources of rising waters. The most likely of these is the lateral flow of water in permeable gravels above clay layers. The most probable source for water to wet the subsurface above the clay layers is at land surface, including; canal leakage, irrigation returns and flow in the Big Lost River. Although possible, it is less likely that an elevated water table could carry water upward through a clay layer to generate water for lateral flow in quantities large enough to be a significant source of rising water. The physical separation of the water table from land surface in the area of rising water has historically been more than 30 ft (Owsley, figure 8, back to the late 1940s). These arguments suggest that the impacts from pumping for this transfer will have impacts on rising water that are exceedingly small. No calculations of impacts on rising waters from this transfer were presented at the hearing.

The Director asks, in the remand on page 6, if ground water is unavailable at the existing points of diversion: as we pointed out, in Parkinson Farms exhibit number XIV, Parkinson Farms has invested heavily in the proposed additional point of diversion. We were successful in the endeavor. Also it is a well known fact that making well improvements is risky because positive results are generally far from being certain.

The Director asks if it is in the local public interest to increase diversions of ground water in an area where existing pumping caused ground water level declines that may have (a) dried up portions of the Big Lost River, (b) decreased the quantity of water available to senior water right holders? This transfer will neither dry up portions of the Big Lost River nor decrease the quantity of water available to senior users. We conducted a pumping test and used the data to calculate the potential aquifer impacts. Under the worst possible pumping scenario this transfer will only drop the water level 4 ft at a radius of $\frac{1}{4}$ miles, probably less. Since the aquifer is already separated from the river channel at this location, this transfer will not cause a greater impact. At the current river/aquifer point of connection the impacts are very, very small, thus drying up a portion of the Big Lost River is an overstatement. The available data are insufficient to even calculate an actual impact on the River at Moore. Further, decreasing the amount of water available to senior users is not an issue. In the unlikely case that this transfer might move the aquifer/river connection further upstream it makes no difference to senior water users. Any rising water generated when the river is mostly dry will not be able to flow across the many miles of dry river bed to senior surface water right holders. We suspect that Rule 30 has had a very significant impact on aquifer levels because it has reduced aquifer recharge.

Exhibit numbers XV and XVI show several significant differences from the previous application number 4573 of 1995 and 1996. The current application also can and will stand on its own merits because of "due process" as we mentioned in exhibit number XV.

The Idaho Department of Water Resources has established Rule 50 to mitigate the impact of groundwater pumping on surface water users. Under Rule 50 all wells are treated equally regardless of location and transfers should comport with this policy decision. Rule 50 is the policy tool for mitigating impacts on surface water users.

Also mitigation under rule 50 possibly will be improved upon so that the water rights involved may be more adequately satisfied in the future.

This case has been a learning experience. The American way of "due process" as mentioned in Parkinson Farms exhibit number XV has been and is being demonstrated as a result of additional factual development and consideration.

We have met the burden of proof for the review criteria and have established that this transfer will not cause significant injury to other water rights.

Respectfully,

Parkinson Farms
By Ralph S. Parkinson
Ralph S. Parkinson