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# State of Utah

## DEPARTMENT OF NATURAL RESOURCES

### Division of Water Rights

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April 30, 2018

#### LETTER REGARDING PROPOSED GROUNDWATER MANAGEMENT POLICY FOR MALAD AND BEAR RIVER DRAINAGES IN WATER RIGHT AREA 29

The State Engineer held a public meeting in Brigham City on January 10, 2018. At the public meeting the USGS study “Hydrology and numerical simulation of groundwater flow and streamflow depletion by well withdrawals in the Malad-Lower Bear River Area, Box Elder County, Utah was summarized and a proposed groundwater policy was presented. Several comments were received, some expressing support of the proposed policy and some expressing concerns. The State Engineer appreciates this feedback and wishes to address some general concerns that were expressed.

The Bear River Club Company and the U.S. Fish and Wildlife Service expressed concern that any new groundwater appropriations would diminish surface water flows during summer months when flows in surface sources are insufficient to supply full diversion under their existing rights. The U.S. Fish and Wildlife Service emphasized that the timing of the impacts on surface sources is important, as existing surface rights are limited during summer months, while the proposed policy is based on unappropriated water available on an annual basis.

The State Engineer believes the proposed policy does properly consider the possibility of impacts to existing rights. In other areas of the state, the State Engineer has either stopped approving new appropriations or has required mitigation when it is clear that additional water development cannot occur except by impairing existing rights. In this basin, it is clear the available water resources are not being fully utilized. It is uncertain what the total impact of new appropriations on rivers during the summer months would be when considering not only the new diversions but also the return flows that would result from new uses.

In many basins where all natural discharge from the aquifer system has been captured by diversions under existing rights, or where the only groundwater discharge is to fully appropriated sources such as rivers and springs, any new groundwater consumption would impact existing water rights. This is not the situation within Water Right Area 29. The USGS study estimates that 48,000 acre-feet of groundwater is being lost to diffuse seepage and evapotranspiration within their study area. Groundwater discharge is estimated to be 169,000 acre-feet to the Malad River, Bear River and springs, some of which is diverted. However, the average annual flow of the Bear River near Corinne, as reported in the USGS report, of 1,200,000 acre-feet is far in excess of existing rights. The State Engineer believes water is still available to appropriate for beneficial use.

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The available information for this policy area indicates new groundwater consumption may impact surface rivers and springs in varying degrees. The Malad and Bear Rivers have excess water during much of the year, and rights to use these sources are unsatisfied primarily during the summer. The impact of groundwater pumping on these rivers specifically during summer months is not clear. The capture map analysis in the USGS report does not provide a way to estimate the summer impacts or how long it will take for new pumping to affect surface flows. As noted in the USGS report, the capture maps and the underlying groundwater model “cannot be used to evaluate the timing of the effects of increased withdrawals or other changes, only the long-term (ultimate) results.” (pg. 73) The timing of impacts depends on the distance to surface sources and aquifer storage properties that are spatially variable and unknown.

In addition to considering possible diminishment of surface flows, at times, due to new groundwater use, possible augmentation of surface flows due to return flows from new water use should also be considered. Water use is rarely fully consumptive. Usually a portion of the diverted water returns to the hydrologic system. The timing and quantity of this return flow depends on site-specific characteristics and on factors that the water user has some degree of control over.

Utah law governing approval criteria for water right applications is designed to provide an experimentation period where applicants are permitted the opportunity to find available water and put it to beneficial use –in spite of uncertainty regarding its availability or low probability of impacts to existing rights. The approval of these applications does not authorize impairment to existing rights. The proposed policy offers protection to existing rights by limiting new groundwater appropriations to 10,000 acre-feet. As mentioned in the proposed policy, the State Engineer will continue to monitor groundwater levels in the area to watch for impacts to surface sources.

Each application will continue to be considered on its individual merit. Approval of applications will either be conditioned to address issues or no approval will be granted where a compelling case can be made for impairment of existing water rights. Impairment may be demonstrated either based on a better understanding of groundwater withdrawal effects on surface rights at critical times or based on interference with existing groundwater withdrawals.

The U.S. Fish and Wildlife Service noted summer flows in the Bear River measured at the gage near Corinne have declined over time. It does appear the occurrence of low summer flows has been more frequent since about 1986. Groundwater level monitoring and the magnitude of recorded groundwater withdrawals suggest the use of groundwater is not primarily responsible for this change. The State Engineer believes this change is primarily related to changes in irrigation practice and river management and not groundwater development. The State Engineer does not believe the current groundwater development has significantly impacted the flows to rivers. If evidence exists which links declines in summer flows directly to groundwater withdrawals in Area 29 we encourage individuals to provide this data.

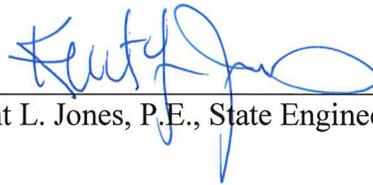
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The State Engineer hopes this letter helps clarify how the proposed groundwater policy aims to protect prior water rights while putting to beneficial use the greatest amount of available water.

The attached policy is hereby adopted, effective as of this date, April 30, 2018.

Sincerely,



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Kent L. Jones, P.E., State Engineer