



7 April 2011

Mr. Stanley Clark  
Eastern Idaho Water Rights Coalition  
P.O. Box 50125  
Idaho Falls, ID 83405-0125

Re: Proposed Changes to Conjunctive Management Rule 50

Dear Mr. Clark:

As requested, we have reviewed the proposal to change the definition of the Area of Common Ground Water Supply under Rule 50 (CMR 50) of Idaho's Rules for Conjunctive Management of Surface and Ground Water Resources (IDAPA 37.03.11). The proposal is to use the Idaho Department of Water Resources Eastern Snake Plain Aquifer Model Version 1.1 (ESPAM1.1) as the boundary defining the Area of Common Ground Water Supply. We have reviewed the water-level maps and aquifer transmissivity maps in the Eastern Snake Plain Aquifer Model Final Report, July 2006, by D. M. Cosgrove, B. A. Contor and G. S. Johnson of Idaho Water Resources Research Institute (IWRRI), along with the report Model Boundary, November 2004, by Allan Wylie, also of IWRRI. In prior work on other projects in the Rexburg area, we have also reviewed the geologic work of Dr. Glenn Embree, long-time geology professor at Brigham Young University Idaho.

The hydrologic basis for the definition of the Area of Common Ground Water Supply is set forth in the CMR as:

"The Eastern Snake Plain Aquifer supplies water to and receives water from the Snake River" (CMR 050.01.a).

Dr. Wylie presents a less-stringent rationale for the definition of the ESPAM1.1 aquifer boundary:

"... these areas appear to be hydraulically connected [to the Snake River Plain Aquifer]...."

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*"Extending the boundaries to Include land with similar irrigation practices is desirable, if the resulting boundary does not cross a hydrologic barrier"* (emphasis added).

In our professional opinion, inclusion of the Rexburg Bench within the Area of Common Groundwater Supply is inappropriate for the following reasons:

1. Model data show steep hydraulic gradients between the Rexburg Bench and the Eastern Snake Plain Aquifer;
2. Model-estimated transmissivity is low in the same location;
3. Both topography and geologic mapping suggest the presence of fault(s) that constitute a hydrologic barrier.

We believe it is extremely unlikely that the Rexburg Bench "receives water from the Snake River." We also believe the ESPAM1.1 boundary crosses a hydrologic barrier. **Therefore, it is our professional opinion that the Rexburg Bench does not meet the hydrologic criteria of CMR 050.01a, and it may not meet Dr. Wylie's criteria for the aquifer model.** We believe that the existing Area of Common Groundwater Supply is more compatible with the criteria than any derivative that may be made from the ESPAM1.1 model boundary.

Sincerely,

W. Roger Warner,  
Hydrologist  
Vice President