

ORIGINAL

Shelley M. Davis, ISB #6788  
**BARKER ROSHOLT & SIMPSON LLP**  
1010 W. Jefferson St., Ste. 102  
P.O. Box 2139  
Boise, ID 83701-2139  
*Telephone: (208) 336-0700*  
*Facsimile: (208) 344-6034*

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WATER RESOURCES  
WESTERN REGION

*Attorneys for Boise Project Board of Control*

BEFORE THE DEPARTMENT OF WATER RESOURCES  
OF THE STATE OF IDAHO

|                                  |   |                               |
|----------------------------------|---|-------------------------------|
| IN THE MATTER OF PERMITS TO      | ) |                               |
| APPROPRIATE WATER NOS. 63-       | ) |                               |
| 34079 & 63-34080, IN THE NAME OF | ) | <b>BOISE PROJECT BOARD OF</b> |
| CHRIS EMMERT                     | ) | <b>CONTROL'S POST-HEARING</b> |
|                                  | ) | <b>CLOSING ARGUMENT</b>       |
|                                  | ) |                               |

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COMES NOW, the Protestant, Boise Project Board of Control, by and through its counsel of record and hereby submits this Post-Hearing Closing Argument, in the above-referenced protested Applications, for the hearing held on April 6, 2017. The evidence presented at the contested case hearing demonstrates that granting the permits requested by Applicant will injure the Boise Project Board of Control's water rights, and interfere with its ability to deliver water to land owners in the irrigation districts served in the vicinity of Lake Lowell. For this reason, the Idaho Department of Water Resources must deny application for permit numbers 63-34079 and 63-34080.

**SUMMARY OF PERTINENT TESTIMONY AND EVIDENCE**

Pursuant to Idaho Code § 42-203A(5) where the application "will reduce the quantity of water under existing water rights...the director of the department of water resources may reject such application and refuse issuance of a permit therefor[.]" The evidence established at hearing

determined that the proposed groundwater pumping by the Applicant will reduce the quantity of water under existing water rights. The expert hydrologists disagree only as to the degree to which the quantity of water will be reduced under the Boise Project Board of Control's member irrigation district's water rights.

Applicant primarily relied upon the report prepared by Terry Scanlan and Christian Petrich titled "Expert Report in Support of Water Right Applications 63-34079 and 63-34080," Ex. 1, as well as the testimony of those two experts at the hearing. The report was the result of modeling the impact of the proposed new groundwater pumping using the Treasure Valley Hydrologic Project model ("TVHP model") which was developed by Dr. Petrich to produce the 2004 Simulation of Increased Ground Water Withdrawals in the Lower Boise River Basin. Ex. 106. In the 2004, report Dr. Petrich recognized that "[i]n general, where model predictions depend on regional or averaged hydraulic properties, this model's performance should be relatively good. Where model predictions depend on local detail, use of this model may result in error, or a higher degree of uncertainty." Ex. 106, p. 16. In testimony, Dr. Petrich stood by that representation in the 2004 report. Nevertheless, that is the model that the Applicant's experts relied upon to analyze the two pending applications.

In the report, the experts "arbitrarily" determined to model an average annual pumping rate of 235 AF. Ex. no. 1. Based on the model results, the predicted injury to Lake Lowell is estimated to be 6.1 AF per year. *Id.* p. 23. However, the vast majority of the injury predicted by the model is to the drains in the vicinity of Lake Lowell. The impact to the drains is predicted to be 69.5% percent of the losses induced by the groundwater pumping proposed under the two applications. *Id.*, p. 21-22. The TVHP model is a steady-state model and was unable to model the impacts to the canals in the vicinity of Lake Lowell. In direct testimony, Mr. Scanlan testified

that the groundwater pumping that is sought to be authorized under the two applications will result in less water being discharged to seepage in the Boise and Snake Rivers, less water in the drains and more water seeping from Lake Lowell and less water getting to Lake Lowell. Therefore, even applying the basic conclusions of the Applicant's expert report, the new groundwater pumping will reduce the quantity of water available under the Boise Project Board of Control's member irrigation districts' water rights.

R.D. Schmidt, who modeled the proposed new groundwater pumping under the two applications on behalf of the Boise Project Board of Control, predicted similar impacts to the Lake Lowell water supply. However, his modeling results predicted substantial impacts to the Mora Canal, New York Canal, and Deer Flat Highline Canal used by the Boise Project Board of Control to provide surface irrigation water to three irrigation districts. Mr. Schmidt employed the analytic elements model, which he had previously used in his 2003 report titled "Analysis of Hydrologic Impacts of New Groundwater Pumping in the Dry Lake Area of Canyon County, Idaho." Ex. 112. In that report he describes how the model was developed specifically to predict groundwater conditions in the area south of Lake Lowell.

A combination of flow-specified and head-specified analytic elements are used to represent the hydrologic features of the Dry Lake area. Flow-specified analytic elements are used to represent wells and on-farm loss. Specified flows for these elements, i.e. pumping rates and on-farm infiltration rates, are obtained directly from the Boise Basin water budget.

Canals, drains, Lake Lowell, and the Snake River are all represented in the model by head-specified elements, for which an elevation and a bed conductance must be specified. Elevations of all canals, drains, rivers, and reservoirs are taken from USGS digital elevation maps. Bed conductances are via model calibration.

Some canals and drains in the Dry Lake area are in direct contact with the underlying water table and some are perched above the water table.

Ex. 112, pp. 22-23. Mr. Schmidt, explaining his use of the analytic elements model to model the impact of the proposed new pumping for the two applications at issue in this matter observed, that “[u]nlike numerical models which require spatial approximation using a grid mesh, analytic element models have unlimited spatial resolution, and are especially well suited to conjunctive surface and groundwater problems involving a dense network of interacting surface and groundwater water features.” Ex. 110, p. 2. Contrast this with the inherent limitations observed by Dr. Petrich in the TVHP model. Applying the tailored modeling analysis of the analytics model, Mr. Schmidt determined that approximately 2.1% of the proposed Emmert groundwater pumping would be felt by Lake Lowell, a figure comparable to that found by the Emmert’s experts. However, as opposed to 69.5% of the new depletions being attributed to drain losses by the Petrich and Scanlan report, Mr. Schmidt’s modeling results predict that 41.9% of the proposed impacts will be attributed to the drains and 26.4% of the losses will be attributed to canal depletions in the vicinity of Lake Lowell, 19% percent of that in the Boise Project’s Mora, New York, and Deer Flat Highline canals. *Id.*, p. 4.

Unlike the Scanlan and Petrich report, Mr. Schmidt also modeled the total volume of groundwater pumping that is sought through application nos. 63-34079 and 63-34080. Mr. Schmidt’s modeling results predict that if the entire application amounts were pumped, 668 AF, it would result in additional induced seepage from the Mora, Deer Flat Highline and New York canals amounting to a loss of 126.58 AF. Ex. 110, p. 31. Even at the amount modeled in the Petrich/Scanlan report of 235 AF, the three canals would experience a loss through induced seepage of 44.5 AF. *Id.*, p. 32.<sup>1</sup> These are losses that Mr. Tim Page, manager of the Boise Project Board of Control, testified that the Project cannot afford.

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<sup>1</sup> Terry Scanlan testified in rebuttal that he does not believe that the section of the Mora, Deer Flat Highline and New York canals are in contact with the groundwater in the areas identified by Mr. Schmidt’s report at p. 21. No

Mr. Schmidt's modeled calculations for the canal depletions become more striking when compared to the modeled drain depletions produced by the Applicant's experts. The Petrich/Scanlan report predicts 69.5% of the reductions caused by the Emmert proposed groundwater pumping to come from drains in the Lake Lowell vicinity. Ex. 1, p. 21. In his report, Mr. Schmidt predicts 26.5% of the impact from the proposed new pumping to come from the canals, and 36.6% of the new pumping to come from drains, for a combined total of 63% of the proposed impact. Ex. 110, p. 26. Since the TVHP steady-state model does not take into account head-dependent boundary conditions, it is unable to distinguish between the drains and canals, where those canals are in contact with the groundwater. The remarkably close calculations, when you combine Mr. Schmidt's modeled results for canals and drains, bolsters his conclusion that the new groundwater pumping will not only injure the Boise Project's member irrigation districts' water rights in Lake Lowell, but also in the delivery canals.

On rebuttal, Dr. Petrich raised some issues that he asserted cast doubt on some of the findings of Mr. Schmidt's report. Primarily, Dr. Petrich alleged that groundwater pumping has not resulted in an increase of 40,000 AF/yr loss from the Mora Canal, and alleged that the causal correlation between increased canal losses and groundwater pumping could not be borne out. In his earlier testimony and in his report, however, Mr. Schmidt made clear that the 30 year period of study between 1967 and 1997, during the period after 1977 when groundwater pumping increased substantially in the Lake Lowell vicinity, losses from the Mora Canal increased dramatically. Ex. 110, pp. 13-15. He testified that the Boise Project Board of Control had made no changes in the canal system that would have created such an impact, and further that a 1956

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opinions or analysis were provided in the Scanlan/Petrich report that would support this opinion. Rather, Mr. Scanlan relied upon Google Earth images and driving in the vicinity of the canals to observe them. As there is no basis for Mr. Scanlan to have offered his opinion disagreeing with Mr. Schmidt's modeled results, Mr. Scanlan's rebuttal testimony should be disregarded.

USGS report on groundwater hydrology indicates a small highly permeable zone of Terrace Gravels resulting in high seepage loss and elevated groundwater levels near Richard's Point along the southern boundary of Lake Lowell. When groundwater pumping increased in 1977, groundwater levels in this area declined and Mora canal segments gradually became percolating, resulting in increased canal seepage. Gflow model results indicate that a small portion of the Mora Canal remains in contact with the ground water in this area and is head dependent.

Dr. Petrich also opined that such losses in the Mora Canal, if induced by groundwater pumping, likely would have coincided with substantial groundwater level declines in the immediate vicinity of the canal. Mr. Schmidt testified that is not the case. In order for canal seepage to be dependent on aquifer head the aquifer beneath the canal must be locally confined. The decline in confined aquifer head condition that accompanies new pumping is comparatively small and is localized in the immediate vicinity of the canal, which would result in the increased canal seepage.

Ultimately, Dr. Petrich opined that even though the source of the Emmert proposed groundwater pumping includes seepage from agricultural irrigation and canal seepage, the Applicant's proposed pumping will not likely induce a measurable amount of seepage from the Boise Project facilities in the vicinity of the proposed points of diversion. The modeling results from Mr. Schmidt's highly tailored analytic elements model contradict Dr. Petrich's prediction. This is because, as Dr. Schmidt testified, the TVHP model used by Dr. Petrich fixes a priori all canal seepage rates using flow specified head boundary conditions, which renders the model incapable of making any prediction whatsoever as to whether the pumping could or could not affect an increase in canal seepage in the model area.

The Applicant's expert report proposed a potential mitigation proposal to mitigate for impacts to Lake Lowell. Ex. 1, p. 24. The proposal was to voluntarily forgo diverting a portion of the Emmert's use of Boise-Kuna Irrigation District surface water in an amount equal to the predicted depletion from Lake Lowell. This is an unworkable solution for many reasons. Both Dr. Petrich and Tim Page testified that the table, Ex. 105, demonstrates that the level of Lake Lowell has been declining for the past 55 to 60 years. Additional stresses on the Lake cannot be mitigated by voluntarily forgoing diversion of a small amount of surface water. The delivery of surface water in the area is more complicated, and such voluntary non-diversion does not mean that the water will remain in Lake Lowell, as Tim Page testified. Additionally, Mr. Page testified from exhibit no. 109, which is a compilation of actual delivery records for the Emmert properties identified as the place of use for the two applications at issue in this proceeding, that in most years between 2010 and 2016, the Emmert property was delivered nearly the 4 AF/acre that it claims is necessary to grow its seed crop. Forgoing surface delivery will simply result in additional ground water pumping. Mr. Page also testified, comparing exhibit 109 to exhibit 111, a list of average surface water use throughout the entire Boise Project service area for the years 1996 through 2016, that in each year between 2010 and 2016 the Emmert property used more surface water than average project-wide. No mitigation was proposed to mitigate for the substantial impacts that Mr. Schmidt's report predicted would be felt by the Mora, New York and Deer Flat High Line canals.

Ultimately, both expert reports conclude that the proposed new groundwater pumping sought in application nos. 63-34079 and 63-34080 will injure the Boise Project Board of Control's member irrigation districts' water rights. The only dispute is as to the magnitude of such injury. Mr. Schmidt's analytic elements model, using thirty years of GFlow data, and that

incorporates USGS digital elevation maps for the canals, drains, rivers and reservoirs, is the more reliable of the two models. Based on the predicted impacts of the new pumping on Lake Lowell and the three canals, the applications should be denied.

### **LEGAL ANALYSIS**

Idaho Code § 42-203A(5) provides that “where the proposed use is such: (a) that it will reduce the quantity of water under existing water rights, or (b) that the water supply itself is insufficient for the purposes for which it is sought to be appropriated,...or (e) that it will conflict with the local public interest as defined in section 42-202B, Idaho Code....; the director of the department of water resources may reject such application and refuse issuance of a permit therefor, or may partially approve and grant a permit for a smaller quantity of water than applied for, or may grant a permit upon conditions.” Additionally, the Department’s water appropriation rule 45 provides the criteria for determining when an application will reduce the quantity of water under existing water rights, stating “the amount of water available under an existing water right will be reduced below the amount recorded by permit, license, decree or valid claim or the historical amount beneficially used by the water rights holder under such recorded rights, whichever is less.” IDAPA 37.01.08.045.01.a.i.

Here, it is undisputed that the applications will reduce the water supply in Lake Lowell, and Mr. Schmidt’s expert report predicts an even more substantial injury to the Mora, New York and Deer Flat Highline canals. Ex. 110. Mr. Page has already testified that if those impacts to the canals occur it will cause serious injury to the Boise Project’s ability to deliver water to downstream water users.

It is also undisputed that the lake level of Lake Lowell has been in decline for decades, and any additional losses suffered as the result of additional groundwater pumping cannot be sustained. Ex. 105. Lake Lowell is, as Mr. Page testified, an important source of irrigation water for thousands of downstream acres. As this hearing officer is well aware, the Boise Project Board of Control has protested 21 similar applications for new groundwater withdrawals in the area south of Lake Lowell, and in addition to protesting the individual reduction that will occur to Lake Lowell as a result of the 2 applications at issue here, the Boise Project believes it is the duty of the Department of Water Resources to review the reductions that will occur under these applications individually, and the cumulative impacts allowing such an application to be permitted will have on the ground and surface water resources in this already declining area of water supply.

Local public interest is defined at I.C. § 42-202B(3) “as the interests that the people in the area directly affected by a proposed water use have in the effects of such use on the public water source.” In *Chisolm v. Idaho Dept. of Water Resources*, 142 Idaho 159, 125 P.3d 515 (2005), the Court there stated that “‘Local public interest’ should be read broadly so as to secure the greatest possible benefit.....Factors of the local public interest carry different weight depending on the specific circumstances and interests involved, and both the benefits and detriments must be considered.” *Id.* at 164, 125 P.3d at 520, citing *Shokal v. Dunn*, 109 Idaho 330, 338-339, 707 P.2d 441, 449-450 (1985). Here, the Department must weigh the incremental amount of benefit that Mr. Emmert claims will be achieved, to make up the generally small difference between his surface water use and the 4 AF/acre he claims is necessary to produce his seed crop, (see Exs. 109 and 111) against the Boise Project Board of Control’s obligation to deliver water from Lake Lowell to thousands of acres downstream. The Department must also take into the account the

precedent that may be set by granting such a permit based on the proposed mitigation, i.e. the voluntarily non-use of a certain portion of surface water, and whether such a precedent is supportable for the additional 127.6 cfs of new groundwater diversions sought by the other 21 applications that the Boise Project Board of Control is currently protesting.

If the Department disagrees that the applications should be denied, but rather should be permitted with conditions requiring mitigation, the Department cannot recommend the mitigation proposed by the Applicant. Such mitigation, as has already been discussed, would merely result in increased ground water pumping and additional losses from the delivery canals and Lake Lowell. If the Department is inclined to grant permits to the Applicant for the two applications, the Boise Project Board of Control requests that the permits be conditioned on the provision of storage water from the Water Supply Bank in the amount of 81 AF/yr (the combined predicted losses from Lake Lowell, and the New York, Deer Flat Highline and Mora Canals under the 235 AF/yr pumping scenario modeled by Mr. Schmidt) from the Boise River storage reservoirs, to be acquired annually in every year that the Applicant intends to use ground water to supplement its surface water supply. Such rental shall be made prior to the irrigation season, confirmed in writing to the Boise Project Board of Control, and available in time for the Boise Project Board of Control to deliver to Lake Lowell during the early season fill of Lake Lowell. If the water is not available to be rented by the Applicant in each year that the Applicant intends to supplement its surface water supply with ground water pumping, then the Applicant may not operate its ground water wells in years where mitigation water from the Water Supply Bank is unavailable to be rented and delivered to Lake Lowell.

This is the least onerous mitigation that the Boise Project Board of Control believes could be provided by the Applicant in order to ensure that the injury predicted by both experts in this

case does not adversely impact the Boise Project Board of Control's member irrigation districts' water rights, and prevent interference with its ability to deliver water to downstream water users in the irrigation districts. Absent this minimum level of mitigation, the applications must be denied.

### **CONCLUSION**

Application nos. 63-34079 and 63-34080 must be denied. The proposed new groundwater depletions will injure the existing Lake Lowell water rights, as well as the water rights delivered downstream through the Mora, New York and Deer Flat Highline canals. Allowing the applications to be permitted causes injury to existing water rights and conflicts with the local public interest in preserving groundwater levels, and in the conservation and efficient use of Lake Lowell surface water.

DATED this 24<sup>th</sup> day of April, 2017.

**BARKER ROSHOLT & SIMPSON LLP**



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Shelley M. Davis  
*Attorneys for Boise Project Board of Control*

## CERTIFICATE OF SERVICE

I HEREBY CERTIFY that on this 24<sup>th</sup> day of April, 2017, I caused to be served a true and correct copy of the foregoing **BOISE PROJECT BOARD OF CONTROL'S POST-HEARING CLOSING ARGUMENT** by the method indicated below, and addressed to each of the following:

Original to:

Idaho Department of Water Resources  
Western Region  
2735 Airport Way  
Boise, ID 83705-5082  
Fax No. (208) 334-2348

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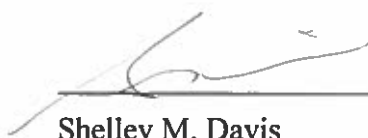
John Marshall  
JOHN MARSHALL LAW, PLLC  
575 W. Bannock St., Ste. B  
Boise, ID 83702  
[johnmarshall@jmarshalllaw.com](mailto:johnmarshall@jmarshalllaw.com)

☐ Hand Delivery  
☐ U.S. Mail, postage prepaid  
☐ Facsimile  
☐ Overnight Mail  
☒ Email

Shelley Keen  
Idaho Department of Water Resources  
Idaho Water Center  
322 East Front Street  
Boise, ID 83702-7374

☒ Hand Delivery  
☐ U.S. Mail, postage prepaid  
☐ Facsimile  
☐ Overnight Mail  
☒ Email

**BARKER ROSHOLT & SIMPSON LLP**

  
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Shelley M. Davis  
*Attorneys for Boise Project Board of Control*