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DEPARTMENT OF
WATER RESOURCES

received via
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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	)	BOISE PROJECT BOARD OF
CHRIS EMMERT	)	CONTROL'S PETITION FOR
	)	RECONSIDERATION OF
	)	PRELIMINARY ORDER
	)	APPROVING APPLICATIONS FOR
	)	PERMIT

The Boise Project Board of Control, by and through its counsel of record, the law firm Barker Rosholt & Simpson LLP, and pursuant to Idaho Code § 67-5243(3) and Rule 730 of the Idaho Department of Water Resources Rules of Procedure, IDAPA 37.01.01.730, hereby Petitions this Hearing Officer for reconsideration of its Preliminary Order Approving Applications for Permit, served on June 19, 2017. Specifically, the Boise Project Board of Control requests that the Hearing Officer reconsider his rejection of the expert analysis supplied by R.D. Schmidt concerning the impacts on the canal depletions where the canals are in direct contact with the groundwater table, as well as the Hearing Officer's heavy reliance on the testimony of Terry Scanlan concerning Mr. Scanlan's visual inspection of the canals sometime in April, 2017.

In his Findings of Fact numbered 21 and 22, the Hearing Officer rejected the analysis and report of R.D. Schmidt and determined that the analytic elements model employed by Mr.

Schmidt was not reliable for purposes of modeling the impacts of the Emmert pumping on the groundwater supply stating “[t]wo-dimensional AEM modeling is not suitable for such three-dimensional complexities.” Finding of Fact, 22. In his testimony, however, Mr. Schmidt testified that the GFLOW model and AEM methods he employed are superior to and more reliable than the Treasure Valley Hydrologic Model and Thies analysis performed by Dr. Petrich for several reasons. First, a 1956 USGS report on groundwater hydrology in the Dry Lake area (Stevens, 1956) indicated a small, highly permeable zone of Terrace Gravels resulting in high canal seepage loss and elevated groundwater levels near Richards Point along the southern boundary of Lake Lowell. When groundwater pumping increased in 1977 groundwater levels in the area declined and Mora Canal segments gradually became percolating resulting in increased canal seepage. Mr. Schmidt’s GFLOW model results indicated that a portion of the Mora Canal, the Deer Flat High Line Canal, and the New York Canal remain in contact in the area and are head dependent. Dr. Petrich’s use of the TVHP model could not have modeled the canal seepage because it fixes ‘a priori’ all canal seepage rates using flow specified boundary conditions. Therefore, the TVHP model is incapable of making any prediction whatsoever as to whether the new pumping would or would not affect an increase in canal seepage in the model area.

Furthermore, the Hearing Officer’s assumption that the GFLOW model is merely a two-dimensional model that ignores vertical flow characteristics is not supported by the record. Mr. Schmidt testified that the GFLOW model does not ignore vertical flow characteristics or the influence of deeper aquifer interactions on the upper aquifer layer. The GFLOW model incorporates a component of upward leakage from a deeper aquifer layer as specified in the Newton hydrologic model. (Newton, 1991). *See* Ex. 110, p. 17.

Contrast this testimony with that of Dr. Petrich. The Boise Project Board of Control's exhibit no. 106 is a report titled "Simulation of Increased Ground Water Withdrawals in the Lower Boise River Basin," which was authored by Christian Petrich and was completed in February, 2004. In his report the TVHP is described as follows:

The Treasure Valley ground water flow model was constructed with the USGS MODFLOW code (Donald and Harbaugh, 1996) and calibrated to steady-state hydraulic conditions using the PEST parameter estimation code (Doherty, 2000). The calibration was based on over 200 water level and 6 vertical head difference observations. Predictive analysis (Doherty, 2000) was used to estimate worst (and best) potential outcomes given parameter non-uniqueness in the calibrated model.

Ex. 106, p. ii. Later in the report, the TVHP model clarifies that the data used to develop the model "included 200 head measurements ('head' observation group) and 6 assumed or observed vertical head difference values ('grad' observation group). The head measurements consisted of average water levels based on measurements conducted in spring and fall of 1996." *Id.*, p. 10. Dr. Petrich also observes of the TVHP model, "[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." *Id.*, p. 16.

Conversely, the GFLOW (Scientific Software, 2017) model, and AEM analysis provides a localized and thorough analysis of the hydrologic impacts on Lake Lowell and the delivery canals, because "[a]ll surface water hydrologic features, including canals, drains, Lake Lowell, and the Snake River in the South Lake Lowell model are represented by strings of source-sink analytic elements, for which an elevation (head) and a bed resistance to seepage loss are specified. Canal, drain, river, and reservoir water elevations are taken from USGS digital elevation maps. Bed resistances are derived through model calibration." Ex. 110, p. 2. The substantial record in this contested case does not support the Finding of Fact that "[t]wo-

dimensional modeling is not suitable for such three-dimensional complexities.” Finding of Fact no. 22.

In Finding of Fact no. 21, the Hearing Officer dismissed Mr. Schmidt’s report findings that increased groundwater pumping between 1967 and 1997 resulted in increased canal seepage, by stating that “1997 was twenty years ago.” Finding of Fact no. 21. Mr. Schmidt’s modeling relied on 30 years of compiled data as well as “a computer based model of the Boise basin south of Lake Lowell that was developed by the Bureau of Reclamation in 2003....[and] Reclamation hydrogeologic investigations, IDWR and USGS observation well data, and a later published water budget for irrigated lands in the Boise basin (USBR, 2008)[.]” Ex. 110, p. 8. The substantial record in this contested case does not support dismissing Mr. Schmidt’s findings concerning the potential withdrawal that will be induced by the Emmert Applications simply because “1997 was 20 years ago,” when the data relied upon for Dr. Petrich’s model is based on only 1 year of study, 21 years ago, and where the TVHP model failed to model the impacts of the withdrawals on any water body other than Lake Lowell.

Finding of Fact no. 22 is also contradicted by Mr. Schmidt’s analysis. The Hearing Officer found that the “likelihood that the canals are not in direct contact with the aquifer is further supported by the geology of the area. The clay layers interbedded with the water-bearing layers of basalt and sand will impede the vertical development of cones of depression caused by pumping ground water.” Compare this conclusion to Mr. Schmidt’s analysis providing “[c]alibrated aquifer permeabilities range from 0.1 to 75 feet/day, which is comparable to the Treasure Valley groundwater model (Petrich, 2002) and to the earlier USGS model (Newton, 1991). One area of higher permeability is associated with a geologic structure just south of Lake Lowell.” Ex. 110, p. 20.

The Hearing Officer in the Preliminary Order also relies heavily on the last introduced testimony of Terry Scanlan, testimony that was admitted over the objection of counsel for the Boise Project Board of Control, who objected because neither the substance of the opinion, nor any documentary evidence in support of the opinion had ever been disclosed to counsel prior to the contested case hearing. “[Rule 26] unambiguously imposes a continuing duty to supplement responses to discovery with respect to the substance and subject matter of an expert’s testimony where the initial responses have been rejected, modified, expanded upon, or otherwise altered in some manner.” *Zylstra v. State*, 157 Idaho 457, 466, 337 P.3d 616, 625 (2014), *quoting Radmer v. Ford Motor Co.*, 120 Idaho 86, 89, 813 P.2d 897, 900 (1991). “‘Typically, failure to meet the requirements of Rule 26 results in exclusion of the proffered evidence.’...Concerns are heightened when expert testimony is involved.” *Id.* Counsel for the Boise Project Board of Control objected to the admission of Mr. Scanlan’s testimony concerning his site visit to observe the canals in the vicinity of the locations identified by Mr. Schmidt as being hydraulically connected to the groundwater, and his statements concerning viewing Google Earth images, because it had never before been disclosed as a subject on which the Emmert’s experts intended to testify. *See* Ex. 1, and Attachment A, “Applicant’s First Supplemental Response to Boise Project Board of Control’s First Discovery Requests.” The Hearing Officer overruled the objection stating that he was curious to learn more about the subject of the testimony. The Hearing Officer’s reliance on this testimony, including in his Conclusions of Law where he holds “Scanlan’s recent observations discredit the idea that there currently is a direct connection between the ground water and the canals,” is deeply prejudicial to the Boise Project Board of Control. Conclusion of Law no. 2.

At Conclusion of Law no. 6 the Hearing Officer states that he will not “add an arbitrary volume to the mitigation requirement to account for canal losses,” because “Page did not provide figures for the record that could be used to determine the percentage loss.” The lack of such testimony would have been rectified had the Boise Project known that Mr. Scanlan intended to offer an opinion concerning the interconnection between the canals and the ground water. Mr. Schmidt’s report already held that under the diversion amount recommended for the Emmert rights in the Preliminary Order, 235 AF, 44.5 AF of water would be lost annually due to induced seepage in the Deer Flat High Line, New York Canal, and Mora Canal. Certainly, however, if the Boise Project had advance notice of the substance of Mr. Scanlan’s testimony, which by the way was offered last in order of witnesses at the hearing, Mr. Page would have been better prepared to provide the Hearing Officer with the information he states is unavailable to allow him to estimate the percentage loss to the canals. Conclusion of Law no. 6.

Even if the Hearing Officer continues to rely upon the improperly admitted testimony of Mr. Scanlan, the Hearing Officer should recall that Mr. Scanlan also testified that some wells in the vicinity of the canals’ interconnection with the groundwater table are as shallow as 10 feet, and that the groundwater levels in April, when Mr. Scanlan observed them, would be at their lowest level because the groundwater table increases during the irrigation season. When the shallow groundwater table increases during the irrigation season, during the same time that the Emmert’s propose to pump groundwater under the two permits at issue in this contested case, Mr. Schmidt’s analysis predicts a direct connection between certain portions of the three canals, and the shallow groundwater table, which will induce additional seepage in the amount 44.5 AF. Ex. 110, pp. 20-22.

CONCLUSION

The substantial record in this contested case does not support this Hearing Officer's rejection of the findings of R.D. Schmidt in his report, "Conjunctive Hydrologic Modeling Analysis of Proposed New Groundwater Pumping in the Boise Basin South of Lake Lowell." Mr. Schmidt provided testimony describing why the GFLOW and AEM modeling were superior modeling tools for purposes of modeling the impacts of discreet groundwater pumping, such as was undertaken here. Dr. Petrich's own prior study explained by the TVHP model is an inferior tool for discreet modeling and is better suited to regional or basin-wide modeling efforts. If this Hearing Officer does not reconsider his findings in these respects, there is a strong likelihood that the Boise Project Board of Control will suffer significant canal losses as a result of the Emmert well pumping that cannot be mitigated with the provision of 3.1 AF of replacement mitigation water annually.

DATED this 30th day of June, 2017.

BARKER ROSHOLT & SIMPSON LLP



Shelley M. Davis

Attorneys for Boise Project Board of Control

CERTIFICATE OF SERVICE

I HEREBY CERTIFY that on this 30th day of June, 2017, I caused to be served a true and correct copy of the foregoing **BOISE PROJECT BOARD OF CONTROL'S PETITION FOR RECONSIDERATION OF PRELIMINARY ORDER APPROVING APPLICATIONS FOR PERMIT** by the method indicated below, and addressed to each of the following:

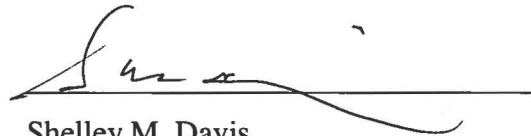
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BEFORE THE STATE OF IDAHO DEPARTMENT OF WATER RESOURCES

IN THE MATTER OF APPLICATIONS
FOR PERMIT NOS. 63-34079 AND 63-
34080

APPLICANT'S FIRST SUPPLEMENTAL RESPONSE TO
BOISE PROJECT BOARD OF CONTROL'S FIRST
DISCOVERY REQUESTS

INTERROGATORY NO. 1: Please identify each person whom you intend to call as an expert witness at this hearing in this matter, and provide all relevant information pursuant to the Idaho Rules of Civil Procedure, and the Idaho rules of evidence, ...

SUPPLEMENTAL RESPONSE: Terry Scanlan and Christian Petrich have developed additional opinions following their review of Robert D. Schmidt's report entitled *Conjunctive Hydrologic Modeling Analysis of Proposed New Groundwater Pumping in the Boise Basin South of Lake Lowell (Appl. 63-84079 and 63-84080)*:

1. Groundwater pumping likely has not resulted in an increase of 40,000 AF/yr losses from the Mora Canal. The reasons for this are: a) the inferred correlation between groundwater pumping and canal losses does not prove causation; b) induced losses can only occur in reaches of the canal that are in direct hydraulic connection with regional aquifer; c) most of the Mora Canal is not in direct hydraulic connection with the regional aquifer; d) the claimed losses, if induced by groundwater pumping, likely would have coincided with substantial groundwater-level declines in the immediate vicinity of the canal—declines which are not apparent in the historical record.

2. While the source of groundwater in the vicinity of the applicant's proposed PODs includes incidental seepage from agricultural irrigation and canal seepage, the applicant's proposed pumping will not likely induce a measurable amount of seepage from Boise Project facilities in the vicinity of the proposed PODs.

3. The GFlow model is not an appropriate tool for modeling the impact of the Emmert wells. The reasons for this are: a) the model simulates only 2-dimensional, ignoring the vertical groundwater-flow characteristics in the vicinity of the proposed PODs; and b) GFLOW's identification of "connected reaches" almost certainly does not distinguish between regional and locally-perched aquifer characteristics.

Dated this 3rd day of April, 2017.

JOHN MARSHALL LAW PLLC



John M. Marshall, for the Applicant

CERTIFICATE OF SERVICE

I HEREBY CERTIFY that on the 3rd day of April, 2017, I caused a true and correct copy of the foregoing to be served by the method indicated below, and addressed to the following.

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