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Attorney for Fremont-Madison Irrigation District, Inc.

BEFORE THE DEPARTMENT OF WATER RESOURCES  
 OF THE STATE OF IDAHO

IN THE MATTER OF DISTRIBUTION OF	)	<b>CASE NO. CM-DC-2011-004</b>
WATER TO WATER RIGHT NOS. 36-02551	)	
AND 36-07694	)	<b>FREMONT-MADISON IRRIGATION</b>
	)	<b>DISTRICT'S EXPERT WITNESS</b>
	)	<b>DISCLOSURE</b>
(RANGEN, INC.)	)	
	)	
_____	)	

Comes now, Fremont-Madison Irrigation District, Inc., through its attorney of record, and, pursuant to the order of the Department, discloses the following expert witness. Fremont-Madison does so with the intent of complying with the Department's scheduling order in the event that the Department grants its Petition to be Designated a Respondent.

**Bryce Contor**

Mr. Contor's resume is attached as Exhibit A

Mr. Contor is expected to testify regarding ESPAM 2 and specifically address the following issues:

**FREMONT-MADISON IRRIGATION DISTRICT'S EXPERT WITNESS DISCLOSURE**

1. Technical considerations of de minimus effects and trim line;
2. Technical considerations of futile call;
3. Reach discretization for model use;
4. Temporal discretization for model use;
5. Temporal uncertainty of model representation of propagation of pumping effects;
6. Spatial uncertainty of model representation of propagation of pumping effects;
7. General sources of model uncertainty, with qualitative and quantitative discussion of uncertainty;
8. Temporal delay in propagation of effects of curtailment.

In addition, Mr. Contor may testify in rebuttal to testimony or expert testimony of other witnesses and experts.

DATED this 21<sup>st</sup> day of August, 2012.



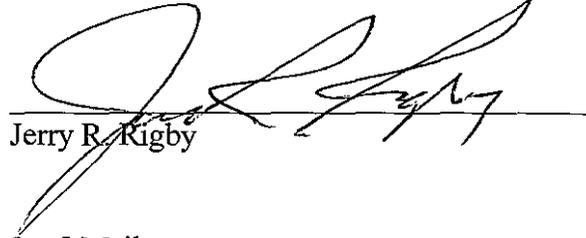
Jerry R. Rigby  
of RIGBY, ANDRUS & RIGBY, Chartered

CERTIFICATE OF SERVICE BY MAIL, HAND DELIVERY  
OR FACSIMILE TRANSMISSION

I hereby certify that a true and correct copy of the foregoing document was on this date served upon the persons named below, at the addresses set out below their name, either by mailing, hand delivery or by telecopying to them a true and correct copy of said document in a properly addressed envelope in the United States mail, postage prepaid; by hand delivery to them; or by facsimile transmission.

DATED this 21<sup>st</sup> day of August, 2012.

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**FREMONT-MADISON IRRIGATION DISTRICT'S EXPERT WITNESS DISCLOSURE**

- Page - 3

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**FREMONT-MADISON IRRIGATION DISTRICT'S EXPERT WITNESS DISCLOSURE**

**- Page - 4**

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## RESUME OF BRYCE A. CONTOR, SENIOR HYDROLOGIST

### Highlights

Mr. Contor was intimately involved with the development of both ESPAM1.1 and ESPAM2.0 for the entire 11-year period spanning development of both models. For nine of those years he led water-budget development for the models. He developed and processed many individual modeling runs for IDWR modeling scenarios using ESPAM1.1, serving as primary author for Idaho Water Resources Research Institute scenario documents. He also worked on water budgets and response functions for the Spokane Valley Rathdrum Prairie Aquifer

In private practice Mr. Contor has operated both ESPAM1.1 and ESPAM2.0 for diverse groundwater/surface-water interaction questions. He has generated and used large databases of transient response functions for both models, and constructed small semi-calibrated and uncalibrated aquifer models for other basins.

Mr. Contor holds an MS degree in hydrology from University of Idaho.

### Work Experience

2010 - Current

Hydrologist, Rocky Mountain Environmental Associates, Inc., Idaho Falls, Idaho. Position includes aquifer modeling, hydrologic field investigation, hydrologic analysis and GIS work.

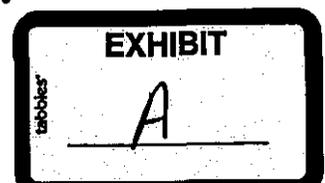
2001 - Current

Research Hydrologist, Idaho Water Resources Research Institute, University of Idaho, Idaho Falls, Idaho. Tasks included lead responsibility for the entire ESPAM1.1 water-budget, and for the ESPAM2.0 water budget through 2010. Part time since 2010.

1996 - 2001

Senior Water Resource Agent, Idaho Department of Water Resources and North

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Water Measurement District. Duties included evaluation of water-right claims, making water-right recommendations in the Snake River Basin Adjudication, and the measurement of water discharge and power consumption of irrigation wells for estimation of ground water withdrawal volumes.

1980 - 1995

Farmer (self employed), farm manager, irrigation foreman, seed-company field representative, canal-company board member and canal secretary.

### **Education**

- 2005 M.S., Hydrology, University of Idaho, Moscow ID
- 1994 B.S., Agricultural Economics, Brigham Young University, Provo, UT, Cum Laude
- 1980 Associate, Farm Crops Management, Ricks College, Rexburg, ID

### **Peer-Reviewed Publications**

- B. Contor and G. Taylor. 2011. *Why Improving Irrigation Efficiency Increases Total Volume of Consumptive Use*. Proceedings, International Congress on Irrigation and Drainage, October 2011.
- G. Taylor, B. Contor and J. Hamilton. 2010. *The ABC's of Apples, Bees and Connections Hydrologic*. Choices Magazine, Agricultural and Applied Economics Association. Volume 25 No. Article 144.  
<http://www.choicesmagazine.org/magazine/article.php?article=144>
- B.A. Contor. 2010. *Status of Ground Water Banking in Idaho*. Journal of Contemporary Water Research and Education. Volume 144, Issue 1, pp 29-36.
- B.A. Contor. 2009. *Ground-water Banking in Aquifers that Interact with Surface Water, Using Double-entry Accounting and Aquifer Response Functions*. Journal of the American Water Resources Association, Volume 45, Issue 6, pp 1465-1474.
- Gary S. Johnson, Bryce A. Contor, Donna M. Cosgrove. 2008. *Efficient and Practical Approaches to Ground-water Right Transfers Under the Prior Appropriation*

Doctrine and Snake River Example. Journal of the American Water Resources Association, Vol 44 Issue 1, February 2008, pp 27-36.

E. B. Rafn, B.A. Contor and D.P. Ames. 2008. Evaluation of a Method for Estimating Irrigated Crop-Evapotranspiration Coefficients from Remotely Sensed Data in Idaho. Journal of Irrigation and Drainage Engineering. Vol. 134, Issue 6, pp 722-729.

Paul A. Hsieh, Michael E. Barber, Bryce A. Contor, Md. Akram Hossain, Gary S. Johnson, Joseph L. Jones, and Allan H. Wylie. 2007. Ground-water Flow Model for the Spokane Valley-Rathdrum Prairie Aquifer, Spokane County, Washington, and Bonner and Kootenai Counties, Idaho. Scientific Investigations Report 2007-5044, US Geological Survey.

B. Contor and R.D. Schmidt. 2006. Ground-water Banking in the Eastern Snake Plain Aquifer, Ground Water and Surface Water Under Stress: Competition, Interaction, Solutions. 2006. US Committee on Irrigation and Drainage.

Gary S. Johnson, Robert L. Harris, Bryce Contor and Donna M. Cosgrove. 2004. Ground Water Right Transfers In the Snake River Plain, Idaho. The Water Report, December 15, 2004.

### **Idaho Water Resources Research Institute Publications (partial list)**

B.A. Contor. 2011. Adaptation of the Glover/Balmer/Jenkins Analytical Stream-Depletion Methods for No-Flow and Recharge Boundaries. IWRRRI Technical Completion Report 201101

B.A. Contor, S.L Taylor and G.W. Quinn. 2009. Monitoring of Egin, Idaho Recharge Experiment, Fall 2009. IWRRRI Technical Completion Report 200901.

G.S. Johnson, B.A. Contor and S.L. Taylor. 2009. Evaluation of Potential Errors Resulting from Imposing Linearity in Development of Capture Response Functions for the Spokane Valley – Rathdrum Prairie Aquifer. IWRRRI Technical Completion Report 2009-04

B.A. Contor, P.L. Pelot and G.L. Moore. 2008. The Potential Application of Additional Surface Water to Irrigated Lands Having Both Surface-water and Groundwater Irrigation Rights. IWRRRI Technical completion report 200802.

- B.A. Contor and P.L. Pelot. 2008. Effects of Changes in Crop Mix Upon Consumptive Use of Irrigation Water in the Eastern Snake Plain of Idaho. IWRRRI Technical Report 200801.
- B.A. Contor. 2007. Hydrologic Impacts of Current Water-Use Practices and Current Hydrologic Conditions - "Current Practices" Scenario. IWRRRI Technical Completion Report 200702.
- B.A. Contor, D.M. Cosgrove, G.S. Johnson, N. Rinehart. 2006. Hydrologic Effects of Ground-water Pumping Using Eastern Snake Plain Aquifer Model Version 1.1 - "Curtalement Scenario." IWRRRI Technical Completion Report 2006-001
- D.M. Cosgrove, B.A. Contor, N. Rinehart, G.S. Johnson. 2005. Hydrologic Effects of Continued 1980-2002 Water Supply and Use Conditions Using Snake River Plain Aquifer Model Version 1.1 - "Base Case Scenario." IWRRRI Technical Completion Report 05-020
- B.A. Contor, D.M. Cosgrove, G.S. Johnson. 2005 Hydrologic Implications of Continued Drought and Potential Recovery From Drought - "Drought Scenario." IWRRRI Technical Completion Report 05-004 (Draft released in 2007 but never finalized)
- B.A. Contor, D.M. Cosgrove, G.S. Johnson, N. Rinehart, A. Wylie. 2004. Hydrologic Effect of Changes in Surface-water Irrigation - "No Surface-water Changes Scenario." IWRRRI Technical Completion Report 04-003
- B.A. Contor, D.M. Cosgrove, G.S. Johnson, N. Rinehart, A. Wylie. 2004. Managed Recharge in the Thousand Springs Area - "Recharge Scenario." IWRRRI Technical Completion Report 04-002

Additional Idaho Water Resources Research Institute publications may be reviewed at <http://www.iwrri.uidaho.edu/default.aspx?pid=91431> and <http://www.if.uidaho.edu/~johnson/ifiwrrri/projects.html>). This includes numerous water-budget design documents for ESPAM1.1 and ESPAM2.0.