BEFORE THE DEPARTMENT OF WATER RESOURCES

OF THE STATE OF IDAHO

IN THE MATTER OF DISTRIBUTION OF WATER TO VARIOUS WATER RIGHTS HELD BY OR FOR THE BENEFIT OF A&B IRRIGATION DISTRICT, AMERICAN FALLS RESERVOIR DISTRICT #2, BURLEY IRRIGATION DISTRICT, MILNER IRRIGATION DISTRICT, MINIDOKA IRRIGATION DISTRICT, NORTH SIDE CANAL COMPANY, AND TWIN FALLS CANAL COMPANY	)	**ORDER ON RECONSIDERATION OF *FINAL ORDER REGARDING METHODOLOGY FOR DETERMINING MATERIAL INJURY TO REASONABLE IN-SEASON DEMAND AND REASONABLE CARRYOVER***

I. Procedural Background

1. On April 7, 2010, the Director of the Department of Water Resources ("Director" or "Department") issued his *Final Order Regarding Methodology for Determining Material Injury to Reasonable In-Season Demand and Reasonable Carryover* ("Methodology Order"). On April 15, 2010, during a status conference on a related matter, the Director informed the parties that he would provide background technical information concerning the Methodology Order. On April 21, 2010, timely petitions for reconsideration to the Methodology Order were filed by the City of Pocatello ("Pocatello"), the Idaho Ground Water Appropriators, Inc. ("IGWA"),[1] and the Surface Water Coalition ("SWC").[2]

2. On April 21, 2010, the Department provided the parties with the requested technical information. On April 29, 2010, Pocatello filed its *Submission of Supplemental Technical Information*. On April 29, 2010, IGWA filed its *Supplemental Information to be Considered with the Corrected Petition for Reconsideration and Request for Additional Information*. On May 6, 2010, the Director issued an order granting the petitions for reconsideration, stating that any

[1] IGWA and Pocatello may sometimes be referred to collectively as "Ground Water Users."

[2] On April 22, 2010, IGWA filed a corrected petition for reconsideration to correct identified errors in its timely April 21, 2010 filing. The SWC has alleged that IGWA's corrected petition for reconsideration and subsequent filing of April 29, 2010 (*Supplemental Information to be Considered with the Corrected Petition for Reconsideration*) should be considered untimely. The Director denies the SWC request. IGWA timely filed its original petition for reconsideration. Moreover, the Director specifically informed the parties that any and all supplemental briefing filed by May 10, 2010 would be considered. *Order Granting Petitions for Reconsideration* (May 6, 2010).

responsive briefing must be received no later than May 10, 2010 to be considered, and that he would "expeditiously issue an order on reconsideration." *Order Granting Petitions for Reconsideration* at 1. On May 7, 2010, the SWC filed a *Response to IGWA's and City of Pocatello's Petitions for Reconsideration/Comments on Technical Information* (May 7, 2010). On May 10, 2010, the Department received the *City of Pocatello's and IGWA's Response to SWC's Petition for Reconsideration, Reply in Support of Petition for Reconsideration.*

3. On May 10, 2010, the Director informed the parties that, pursuant to Idaho Code § 67-5251(4), the Director would hold a hearing to allow the parties to "contest or rebut the 2008 data." *Notice of Hearing Regarding 2008 Data.* The hearing was scheduled to commence May 24, 2010.

4. On May 13, 2010, citing Idaho Code § 42-1701(A)(2), Pocatello moved the Director to appoint an independent hearing officer to preside at the hearing on the use of 2008 data. On May 18, 2010, the Director denied Pocatello's request: "The Director is best positioned to preside in these hearings. Appointment of an independent hearing officer would only serve to delay these proceedings and ultimately delay administration of hydraulically connected surface and ground water rights during the 2010 irrigation season." *Order Denying Request for Independent Hearing Officer* at 1. The parties were informed that Department employee Mathew Weaver would be available to testify regarding 2008 data.

5. On May 20, 2010, IGWA and Pocatello requested that the Director make available additional Department witnesses at the hearing on the use of 2008 data. In order to avoid repetition, the Director denied the request and reaffirmed that Mr. Weaver "shall be available to present evidence and testimony and be subject to examination at the hearing." *Order Limiting Scope of Evidence and Offering Witnesses (Methodology Order)* (May 21, 2010) at 2.

6. On May 21, 2010, the United States Bureau of Reclamation ("USBR") informed the Director and the parties that it would not participate in the May 24, 2010 hearing on the Methodology Order. *Reclamation's Notice Regarding the Hearing on the Use of 2008 Data and Methodology Steps 3 and 4.*

7. On May 24, 2010, hearing commenced before the Director on updating the technical record with 2008 data. Mr. Weaver was called by Deputy Attorney General Chris M. Bromley to present the data relied upon by the Department in the Methodology Order. Mr. Weaver was cross-examined by attorneys for the Ground Water Users and the SWC. Dr. Charles M. Brendecke was called by IGWA and testified primarily concerning adjustments that, in IGWA's opinion, the Director should have made to properly account for the SWC's crop water needs.

II. Responses to Requests for Reconsideration

A. Pocatello Technical Exceptions with Project Efficiency ("Ep")

8. In its April 29, 2010 *Submission of Supplemental Technical Information* ("Pocatello Technical Submission"), Pocatello takes exception with the method by which the Department

calculates project efficiency ("Ep") in the Methodology Order. Pocatello proposes using the following equation for forecasting the water supply prior to the irrigation season. The equation is:

$$\text{Predicted In-Season Demand} = \frac{\text{Irrigation Acres x Crop Water Need (CWN)}}{\text{Project Efficiency (Ep)}}$$

9. This equation is essentially the mathematical expression within the parenthesis of the equation found in Finding of Fact 53 of the Methodology Order that computes the component of in-season demand during the irrigation season. To write the parenthetical expression identically to Pocatello's equation only requires multiplying (CWN/Ep) by the number of acres irrigated.

10. The following are contrasts between Pocatello's proposal and the Department's methodology:

- Pocatello would forecast the SWC's April demand shortfall (Methodology Step 3) as a function of baseline crop water need ("CWN") as opposed to the Department's determination of a baseline demand based on historical diversions, otherwise known as baseline year.

- Pocatello would compute Ep by averaging monthly project efficiencies rather than the month-specific project efficiency that is described in the Methodology Order. In other words, instead of employing the Department's methodology of computing reasonable in-season demand ("RISD") every month using monthly CWN and Ep values, Pocatello would determine a season CWN divided by a season wide average Ep. Furthermore, prior to averaging the monthly efficiency values, Pocatello would give greater proportionate weight to efficiency values during months of higher crop water need, thereby computing a season long "weighted average."

11. Pocatello proposes an example of predicting an upcoming RISD for Twin Falls Canal Company ("TFCC") by averaging 2000 through 2008 CWN, resulting in an average of 25.6 inches per acre, and dividing the average CWN of 25.6 inches by an Ep of 43.6% (weighted seasonal average based on monthly CWN). Assuming Pocatello's assertion that TFCC has an irrigated surface area of 183,589 acres, the computed projected RISD is 897,359 acre-feet. *See* Ex. 4301, Table 10, p. 25.

12. Pocatello compares its example computation to another computation using the same equation by substituting a "reasonable" Ep value of 53% for the weighted Ep value. This "reasonable" Ep value is taken from publications and documents that have no relationship to actual efficiencies of delivery and application of water within the TFCC system. Pocatello's use of a "reasonable" Ep for TFCC would result in a predicted RISD of 738,102 acre-feet.

13. Both of the predicted RISD values computed by Pocatello are much lower than the baseline diversion of 1,045,382 acre-feet (2006/2008 average) established in the Methodology Order. *Methodology Order* at 12, ¶ 29. The difficulty with using either of Pocatello's approaches is two-fold: (1) the CWN is an average CWN from 2000-2008, rather than relying on a baseline value; *see* R. Vol. 37 at 7097, ¶ 4 ("The recommendation is that the ground water users' average diversion

budget analysis for the period from 1990-2006 not be accepted in determining a baseline supply to predict needs. . . . [T]he end result would not lead to an acceptable baseline."); and (2) the seasonal average Ep is much higher than any Ep historically realized by TFCC, *see, infra,* Finding of Fact 21 (Seasonal Ep Comparison).

14. Based upon the Department's analysis and the recommendation of the hearing officer, it would be inappropriate to rely on a straight average of historical diversions or CWN values in determining RISD. As described in greater detail in the Methodology Order (Findings of Fact 15-26), reliance on a straight average CWN in a high demand year, similar to reliance on straight average historic diversions, leads to the underprediction of CWN and consequently the underpredictions of RISD and demand shortfalls.

15. Pocatello advocates for the use of a weighted seasonal average Ep, rather than the month-specific distribution of Ep that is described in the Methodology Order. Pocatello argues that by using a monthly Ep value there is a disconnect between diverted water consumed by crops and diverted water stored in the soil for future use, which under predicts Ep. Taking Pocatello's example one step further, and looking at a subsequent month in which CWN is supplied by both diversions and residual soil moisture carried over from previous months, Ep would be over predicted for that month. Therefore, the under prediction of Ep in one month is balanced by the over prediction of Ep in a subsequent month. A monthly Ep distribution represents a more accurate depiction of actual in-season historical water use by the SWC than a weighted seasonal average Ep. Furthermore, monthly distributions do not bias the estimation of Ep in the manner described by Pocatello.

16. While the Department has determined in the previous finding that the monthly determination of Ep, and subsequent computation of RISD by month more precisely represents the actual distribution of in-season water demand, the proposed season long averaging of Ep has additional flaws. Pocatello argues that a seasonal average Ep should be computed by assigning a greater proportional weight to months of higher CWN. The averaging of these individual monthly values results in a "weighted" seasonal average Ep. If the Department were inclined to adopt seasonal averaging of Ep, it would be more appropriate to weight the average Ep to adjusted monthly diversions rather than monthly CWN. Computing a seasonal Ep that is weighted to monthly CWN is misleading because the computation ignores or dampens the effects of beneficial diversions of water necessary to rear crops that lie beyond simply meeting the consumptive requirement of the plant (i.e. canal charging, availability of a steady supply of water, chemigation, soil tillage, etc.). By biasing Ep to CWN, the Ep value is overestimated and consequently the calculated prediction of RISD is underestimated.

17. The Department analyzed the use of weighted seasonal average Ep (weighted to adjusted monthly diversions), versus the monthly distributed Ep established in the Methodology Order on calculated season total RISD volumes. However, where Pocatello proposed a straight average CWN from 2000-2008 of 25.6 inches, the comparative analysis uses a baseline CWN of 26.7 inches (average of 2006 and 2008), as this is consistent with the Department's baseline approach. In addition, the Ep value has been weighted to monthly adjusted diversions, not CWN, because, for reasons previously discussed, the Department does not find it appropriate to weigh Ep to CWN. The Department conducted this analysis for each entity for the years 2000-2005 and 2007

(2006 and 2008 were intentionally omitted because they are the baseline year). The following table illustrates the percent difference in season total RISD based upon the two Ep approaches. Negative values indicate that the seasonal total volume of RISD predicted with a weighted seasonal average Ep (as proposed by Pocatello) is greater than the season total volume of RISD predicted in the Methodology Order.

	A&B	AFRD2	BID	Milner	Minidoka	NSCC	TFCC
2000	-1.36%	-2.78%	-1.82%	-1.06%	-1.65%	-3.96%	-9.24%
2001	3.09%	0.53%	1.77%	2.20%	2.24%	0.06%	-4.98%
2002	-2.69%	-1.15%	-5.93%	2.18%	-8.70%	-2.00%	-7.58%
2003	-0.29%	-2.25%	-3.81%	-0.88%	-2.66%	-1.94%	-8.62%
2004	-0.90%	-0.42%	1.01%	-0.71%	0.67%	2.59%	-2.16%
2005	-4.32%	-2.12%	-7.58%	0.74%	-11.30%	-5.95%	-7.37%
2007	1.30%	0.71%	3.11%	-2.23%	5.94%	1.18%	-3.94%
max:	3.09%	0.71%	3.11%	2.20%	5.94%	2.59%	-2.16%
avg:	-0.74%	-1.07%	-1.89%	0.03%	-2.21%	-1.43%	-6.27%
min:	-4.32%	-2.78%	-7.58%	-2.23%	-11.30%	-5.95%	-9.24%

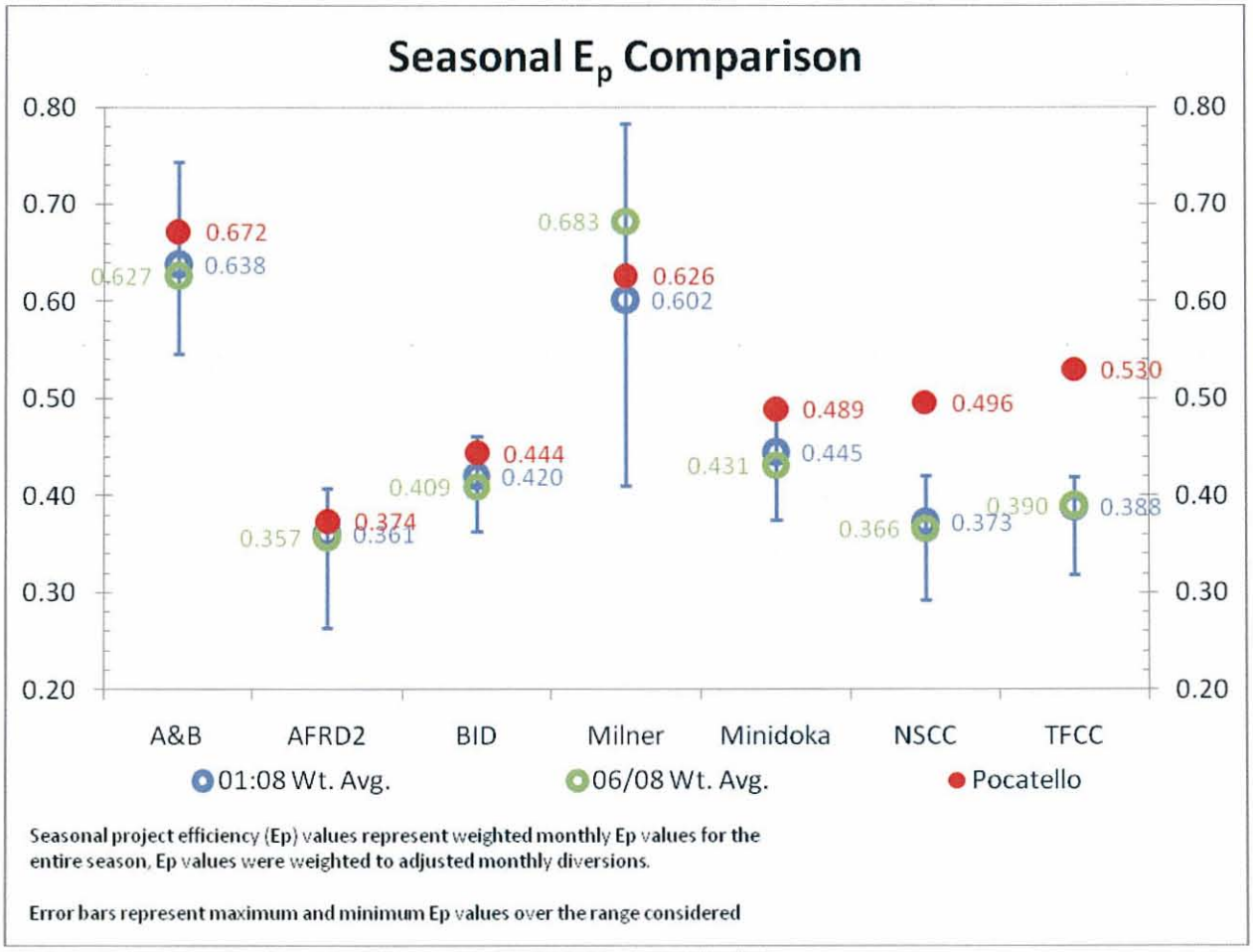
Weighted Ep with April/Oct Adjustments.

18. In the previous table, the average discrepancy in predicted RISD between both methods is less than 6.5% for all entities; with the exclusion of TFCC, the average discrepancy drops to less than 2.5%. There is no clear trend of under prediction or over prediction of RISD by either of the methods. With the exception of TFCC, the use of Pocatello's method would both over predict and under predict RISD when compared to the Department's method, depending on the year. Based on the Department's analysis, as summarized above, the Department did not find compelling evidence to support the modification of the calculation and use of Ep in the Methodology Order.

19. Pocatello asserts that the Department's Ep is not appropriate because the Methodology Order does not apply "a reasonableness test . . . ." *Pocatello Technical Submission* at 6 of 16. Application of a reasonableness test would "avoid a windfall for seniors through over-prediction of shortages." *Id.* at 7 of 16. In the Methodology Order, the Department accounted for extremes in the data set "[b]y including only those values within two standard deviations . . . ." *Methodology Order* at 16, ¶ 44.

20. As found by the hearing officer in his recommended order, members of the SWC operate reasonably and without waste. R. Vol. 37 at 7102-04. As stated in the Methodology Order, the Director expects that, during periods of limited water supply, members of the SWC should exercise higher degrees of efficiency than during periods of abundant supply. The Director will not, however, impose greater project efficiencies upon members of the SWC than have been historically realized. In the future, "[i]f the Director identifies reasonable conservation practices that are not being utilized, the Director may consider that fact in . . . determination of need." *Id.* at 7104.

21. As depicted below, the "reasonable" values proposed by Pocatello are greater in every instance than the historic Ep achieved by the SWC during a time of severe drought. "There is debate over whether the extended drought in the 1930's was less or more severe than the extended drought in the first half of this decade, sometimes described as a five hundred year event." R. Vol. 37 at 7061 (Recommended Order). In the case of North Side Canal Company and TFCC, the values proposed by Pocatello are substantially greater than the maximum Ep values ever achieved by those entities.



Seasonal Ep Comparison (2001-2008; 2006/2008; Pocatello).

B. SWC Technical Issues

22. The SWC argues that it was incorrect for the Department to state that "[s]prinkler systems are currently the predominate application system" for the SWC. *See Methodology Order* at 11. In its petition for reconsideration, the SWC points out that TFCC is approximately 75% gravity irrigated. *SWC Reconsideration* at 9-10. The Director agrees with the percentage assigned by the SWC to TFCC. The Finding of Fact, however, addressed the SWC as a whole. As a whole, using the SWC's values, approximately 60% of the SWC is irrigated by sprinkler. Ex. 8000, Vol. IV, Apdx. AU, Tables 2 and 5. The phrase "predominate application system" is therefore appropriate.

SWC Member	Irr. Area (Record)	Gravity Irr. Land (%)	Gravity Irr. Land (ac)	Sprinkler Irrigated Land (%)	Sprinkler Irrigated Land (ac)
A&B	17,301	27%	4,671	73%	12,630
AFRD2	62,402	35%	21,841	65%	40,561
Burley	45,355	26%	11,792	74%	33,563
Milner	13,548	25%	3,387	75%	10,161
Minidoka	77,360	19%	14,698	81%	62,662
NSCC	162,146	12%	19,458	88%	142,688
TFCC	202,690	75%	152,018	25%	50,673
	580,802		227,865		352,937
			39.2%		60.8%

Data from SCW Expert Report, Ex. 8000, Vol. IV, Apdx. AU, Tables 2 and 5.

C. Specific Findings of Fact in the Methodology Order

23. The Director will issue, contemporaneously herewith, an amended Methodology Order that is consistent with the changes that will be discussed herein. The purpose of issuing an amended Methodology Order is to provide the parties with a single, comprehensive document.

i. Finding of Fact 16: Considerations for the Selections of a Baseline Year

24. The Director has expanded upon this paragraph in order to provide the parties with a better understanding of the Methodology Order.

ii. Finding of Fact 18: Source for Climate Data

25. The SWC seeks clarification of the Methodology Order's use of data relative to climate: "it is unclear whether the Director retrieved data from the National Weather Service's Twin Falls station (Ex. 3024) or the Agrimet station." *Surface Water Coalition's Petition for Reconsideration and Clarification of April 7, 2010 Final Order* at 5 (April 21, 2010) ("SWC Reconsideration"). The data used by the Department is from the National Weather Service.

iii. Finding of Fact 18, Footnote 3: Text

26. Referencing footnote 3 from the Methodology Order, the SWC seeks clarification of a data source: "it is not clear where the Director actually retrieved the 'raw Agrimet precipitation data' that is presented in the *Order*." *SWC Reconsideration* at 6. The data used by the Department is from the National Weather Service, not Agrimet. Footnote 3 should therefore read as follows:

> Chart created from raw NOAA National Weather Service total precipitation data obtained from the NCDC's Climatological Data Annual Summary Idaho report series for the Twin Falls 6 E weather station (formerly Twin Falls WBASO and Twin Falls WSO).

iv. Finding of Fact 18, Footnote 4: 2008 Data

27. The parties were provided the opportunity to contest and rebut the Department's use of 2008 data. The parties presented no persuasive argument as to why the Department should not include the use of 2008 data in these proceedings. At hearing, IGWA's expert, Dr. Charles M. Brendecke, stated he did not question the underlying 2008 raw data. Tr. p. 89, lns. 7-10. The Department will therefore include 2008 data in its determination of material injury to RISD and reasonable carryover. When Water District 01 finalizes its water rights accounting data for the previous irrigation season, the Director will update the data relied upon in the Methodology Order. Use of updated data may cause the Director to re-examine his determination of an appropriate baseline year(s) for the SWC. Because 2008 data will be used, the Director will strike footnote 4 in the amended Methodology Order. Furthermore, the Director will remove all charts, graphs, and tables in the amended Methodology Order that do not contain 2008 data.

v. Findings of Fact 14 and 63: Time of Need

28. The SWC states that there is an inconsistency between Finding of Fact 14 and Finding of Fact 63, relative to demand shortfall. The Director agrees that there is an inconsistency between the two findings of fact. In order to resolve the inconsistency, the last sentence of Finding of Fact 63 should read as follows: "The amounts will be calculated in April, and, if necessary, at the middle of the season and at the time of need."

vi. Findings of Fact 26-30: Selection of the Initial Baseline Year

29. Because the use of 2008 data is appropriate, the Director will use the average of 2006/2008 as the initial baseline year.

vii. Finding of Fact 43: Adjustments to Diversion Data

30. At the May 24, 2010 hearing, IGWA inquired of Mr. Weaver whether the Department made certain adjustments to diversion data. Mr. Weaver explained that the only adjustments made were for wheeled water and recharge. Tr. p. 57, lns. 17-25. For purposes of establishing the 2006/2008 baseline year, and application of Steps 3 and 4, Mr. Weaver correctly stated that the only adjustments made by the Department were for wheeled water and recharge. Only wheeled water and recharge were deducted from the SWC diversions because that water passed through SWC headgates and was not beneficially used by the SWC.

31. Adjustments, as they become known to the Department, will be applied during the mid-season updates and in the reasonable carryover shortfall calculation. Examples of adjustments that can only be accounted for later in the season include SWC deliveries for flow augmentation, SWC water placed in the rental pool, and SWC private leases. Adjustments are unique to each irrigation season and will be evaluated each year. Any natural flow or storage water deliveries to entities other than the SWC for purposes unrelated to the original right will be adjusted so that the water is not included as a part of the SWC water supply or carryover volume. Water that is purchased or leased by an SWC member may become part of IGWA's shortfall obligation to the extent that member has been found to have been materially injured. *See e.g.* R. Vol. 38 at 7201, fn.

11 (Eighth Supplemental Order). Conversely, adjustments will be made to assure that water supplied by an SWC member to private leases or to the rental pool will not increase the shortfall obligation to the same SWC member.

viii. Findings of Fact 32-40: Assessment of Water Balance Studies Presented at Hearing

32. The Director has modified these paragraphs to provide better understanding of the Methodology Order relative to the Department's assessment of the water balance studies.

ix. Finding of Fact 44: Monthly Ep Table

33. In its Technical Supplement, Pocatello notes there is a discrepancy between the table contained in Finding of Fact 44 and the associated spreadsheet located in Exhibit 2 (admitted at the May 24, 2010 hearing on the Methodology Order) that was shared with the parties prior to hearing. The discrepancy is also noted by the SWC in its *Response to IGWA's and City of Pocatello's Petition for Reconsideration/Comments on Technical Information*. The correct values are contained in the spreadsheet in Exhibit 2. The table below will be used in place of the table contained in Finding of Fact 44.

Month	A&B	AFRD2	BID	Milner	Minidoka	NSCC	TFCC	Monthly Avg.
4	1.08	0.24	0.27	1.36	0.17	0.13	0.22	0.50
5	0.42	0.28	0.31	0.59	0.27	0.28	0.32	0.35
6	0.64	0.40	0.48	0.62	0.50	0.44	0.51	0.51
7	0.79	0.44	0.56	0.66	0.64	0.48	0.55	0.59
8	0.68	0.38	0.42	0.56	0.48	0.39	0.41	0.47
9	0.51	0.26	0.32	0.49	0.35	0.29	0.24	0.35
10	0.16	0.41	0.11	0.34	0.11	0.22	0.11	0.21
Season Avg.	0.61	0.34	0.35	0.66	0.36	0.32	0.34	0.43

SWC Member Average Monthly Project Efficiencies from 2001-2008.

x. Findings of Fact 49 and 52: Milner Agrimet Data

34. The Department has discovered an error in findings of fact 49 and 52. Findings of fact 49 and 52 state that the Methodology Order uses the Rupert Agrimet station for Milner. This is incorrect. For Milner, the Methodology Order uses the Twin Falls Agrimet station.

xi. Findings of Fact 54, 55, and 56: Clarification of PE and Ep

35. The SWC seeks clarification of the Department's definition of "PE." *SWC Reconsideration* at 24. In order to use the correct terminology, "Ep" should be substituted for PE in findings of fact 54, 55, and 56.

xii. Finding of Fact 56: October RISD Adjustment

36. In order to properly account for carryover storage, the Department will add a footnote in the second sentence following the phrase, "or less than the October minimum diversion volume . . . .". The text of the footnote will read as follows:

> Minimum October diversion values will not be considered for years in which a SWC entity had zero carryover storage, as the Department will consider this an indication that October diversions were potentially limited by available water supply.

xiii. Finding of Fact 57-59: Adjustment of Forecast Supply, April 1

37. In order to account for known natural flow diversions and known storage accruals, the Director will add the following paragraph after Finding of Fact 59:

> If, at any time prior to the Director's final determination of the April Forecast Supply, the Director can determine with certainty that any member of the SWC has diverted more natural flow than predicted, or has accrued more storage than predicted, the Director will revise his initial, projected shortfall determination.

xiv. Finding of Fact 59: Predicting Reservoir Fill and Storage Allocation

38. The Methodology Order explained the process by which the Director would predict natural flow for the SWC at the start of the irrigation season. *Methodology Order* at 10, ¶ 22; 20, ¶ 58. Due to oversight, the Methodology Order was less specific on the method by which the Department would predict reservoir fill and storage allocations. *Id.* at 20, ¶ 59. In the *Fifth Supplemental Order Amending Replacement Water Requirements Final 2006 & Estimated 2007* ("Fifth Supplemental Order"), the Director explained the process by which reservoir fill and storage allocations are predicted. R. Vol. 23 at 4295-97. The process the Director uses to predict reservoir fill and storage allocations in the Methodology Order is the same process the Director used to predict reservoir fill and storage allocations in the Fifth Supplemental Order.

39. The Department will evaluate the current reservoir conditions and the current water supply outlook to determine historical analogous year or years to predict reservoir fill. The Department may find it appropriate to use a combination of different analogous years for individual reservoir fill. The analogous year or years fill volume, an estimated evaporation volume, and the previous year's carryover volume will be used as inputs to the Department's accounting program for storage. The program will be used to determine the individual storage water allocation for each SWC member. The Forecast Supply (the combination of the forecast of natural flow supply and the storage allocation) for each of SWC member will be determined by the Director shortly after the date of the Joint Forecast.

xv. Finding of Fact 60: Early to Mid-July

40. The Reach Gain Analysis should have been located in Finding of Fact 60 instead of Finding of Fact 61, as the chart was intended to provide an understanding of how the Department will make its early to mid-July adjustment. The chart is not used to determine Time of Need. The Department will also remove the years 1992-1994 from the chart because they are not relevant to the discussion contained in Finding of Fact 60.

xvi. Findings of Fact 64-76: Reasonable Carryover

41. While the equation for determining material injury to reasonable carryover was explicitly stated in Finding of Fact 12, due to inadvertence, there was no resulting discussion of how the Department will compute reasonable carryover shortfall in Findings of Fact 64-76. In order to provide clarity, the amended Methodology Order will include a section specifically detailing the Department's approach.

42. Reasonable carryover shortfall is the numerical difference between reasonable carryover and actual carryover, calculated at the conclusion of the irrigation season. Actual carryover is defined as the storage allocation minus the total storage use plus or minus any adjustments. Examples of adjustments include SWC deliveries for flow augmentation, SWC water placed in the rental pool, and SWC private leases. Adjustments are unique to each irrigation season and will be evaluated each year. Any storage water deliveries to entities other than the SWC for purposes unrelated to the original right will be adjusted so that the water is not included as a part of the SWC carryover volume. Water that is purchased or leased by an SWC member may become part of IGWA's carryover shortfall obligation. *See e.g.* R. Vol. 38 at 7201, fn. 11 (Eighth Supplemental Order). Conversely, adjustments will be made to assure that water supplied by a SWC member to private leases or to the rental pool will not increase the reasonable carryover shortfall obligation to the same SWC member.

xvii. Order Paragraph 1 (Step 1): Irrigated Shapefiles

43. The Director has added additional text to this paragraph in order to provide the parties with a better understanding of the Methodology Order.

xviii. Order Paragraphs 5 (Step 4) and 15 (Step 10): Modeled Curtailment

44. The Methodology Order did not state with specificity the scope of ordered curtailment. Questions have arisen as a result. To be clear, the scope of curtailment in the Methodology Order is intended to be consistent with previous Department determinations. If junior ground water users cannot meet the volumetric obligations that are established by application of the Methodology Order (i.e. Steps 4 and 10), the Department will use the ESPA Model to determine the priority date necessary to provide the volumetric shortfall necessary to increase reach gains between the Near Blackfoot and Minidoka gages. The ESPA Model will be run to determine the priority date necessary to produce this volume within the model boundary of the ESPA. However, because the Director can only curtail junior ground water rights within the area of common ground water supply, CM Rule 50.01, junior ground water users will be required to meet the volumetric

obligation within the area of common ground water supply, not the full model boundary. Ordered curtailment within the area of common ground water supply is consistent with the CM Rules and prior determinations by the Director. *See e.g.* R. Vol. 8 at 1386 (May 2005 Order).

xix. Order Paragraphs 5-8: Time of Need

45. Time of Need will occur no sooner than the Day of Allocation, and subsequent in-season steps will not be computed after the Time of Need is established and water is to be provided to members of the SWC.

xx. Order Paragraphs 8 and 10: Baseline Demand/Projected Demand

46. For purposes of consistency, the phrase "projected demand" should be replaced with "baseline demand" in Order paragraphs 8 and 10 of the Methodology Order.

xxi. Order Paragraph 16: Attachment A

47. When the Methodology Order was issued, the parties did not have the background technical data contained in Exhibit 2. Now that the parties have the information contained in Exhibit 2, which will allow the parties to run scenarios, the illustrative accounting examples contained in Attachment A are no longer necessary. Order paragraph 16 and Attachment A will therefore be removed from the amended Methodology Order.

D. Use of Data in the Record

48. The Ground Water Users have presented general argument that the Methodology Order is not based on the record. All sources of data used by the Department in the Methodology Order were presented in the 2008 administrative proceeding before the hearing officer. In prior Department orders regarding material injury to the SWC, the Department provided tabular summaries of natural flow and storage data. *See e.g.* R. Vol. 8 at 1381-82; 1416-22 (May 2005 Order); R. Vol. 23 at 4290-93; 4295-98 (Fifth Supplemental Order). In the course of preparing the Methodology Order, the Department discovered that certain natural flow and storage summaries could not be reconciled with finalized Water District 01 data. For example, the Department discovered data errors in its regression equations for predicting natural flow in Step 3. *See Order Regarding IGWA Mitigation Obligation* at 2, fn. 1; 3, fn. 2. Errors were the result of data transcription errors, mathematical errors, and use of incorrect source data. As explained by Mr. Weaver at hearing, in order to use accurate information, the Department corrected the errors.

49. Exhibit 2 contains natural flow and storage diversion data from Water District 01 that was relied upon by the Department in the Methodology Order, including data from the 2008 irrigation season. Additionally, Exhibit 2 includes evapotranspiration and monthly precipitation data from the USBR, crop distribution data from the United States Department of Agriculture's National Agricultural Statistics Service, Heise natural flow data from the USBR, climate data from the National Oceanic and Atmospheric Administration's National Weather Service, and water rights data from the Department's water rights accounting program. Sources of data are available in the public domain and were prepared by state or federal entities. Exhibit 2 provides transparency into

the Department's methodology for determining material injury to the SWC. When Water District 01 finalizes records for a previous irrigation season, the Department will update the data in the Methodology Order. Updated data may cause the Director to re-examine his determination of an appropriate baseline year(s) for the SWC. Record citations for data contained in Exhibit 2 are referenced in the Methodology Order.

ORDER

Based upon and consistent with the foregoing, IT IS HEREBY ORDERED as follows:

The use of 2008 data in the Methodology Order is appropriate and shall be used. Issued contemporaneously herewith is the *Amended Final Order Regarding Methodology for Determining Material Injury to Reasonable In-Season Demand and Reasonable Carryover*, which incorporates changes discussed in this order on reconsideration.

IT IS FURTHER ORDERED as follows:

Unless addressed herein, the remainder of all requests for reconsideration by the parties to the Methodology Order have been considered and are DENIED.

Dated this 16th day of June, 2010.

GARY SPACKMAN
Interim Director

CERTIFICATE OF SERVICE

I HEREBY CERTIFY that on this 16th day of June, 2010, the above and foregoing, was served by the method indicated below, and addressed to the following:

John K. Simpson BARKER ROSHOLT & SIMPSON, LLP P.O. Box 2139 Boise, ID 83701 jks@idahowaters.com	☒ U.S. Mail, postage prepaid ☐ Hand Delivery ☐ Overnight Mail ☐ Facsimile ☒ Email
Travis L. Thompson Paul L. Arrington BARKER ROSHOLT & SIMPSON, LLP P.O. Box 485 Twin Falls, ID 83303 tlt@idahowaters.com pla@idahowaters.com	☒ U.S. Mail, postage prepaid ☐ Hand Delivery ☐ Overnight Mail ☐ Facsimile ☒ Email
C. Thomas Arkoosh CAPITOL LAW GROUP, PLLC P.O. Box 32 Gooding, ID 83339 tarkoosh@capitollawgroup.net	☒ U.S. Mail, postage prepaid ☐ Hand Delivery ☐ Overnight Mail ☐ Facsimile ☒ Email
W. Kent Fletcher FLETCHER LAW OFFICE P.O. Box 248 Burley, ID 83318 wkf@pmt.org	☒ U.S. Mail, postage prepaid ☐ Hand Delivery ☐ Overnight Mail ☐ Facsimile ☒ Email
Candice M. McHugh RACINE OLSON 101 Capitol Blvd., Ste. 208 Boise, ID 83702 cmm@racinelaw.net	☒ U.S. Mail, postage prepaid ☐ Hand Delivery ☐ Overnight Mail ☐ Facsimile ☒ Email
Randall C. Budge Thomas J. Budge RACINE OLSON P.O. Box 1391 Pocatello, ID 83204-1391 rcb@racinelaw.net tjb@racinelaw.net	☒ U.S. Mail, postage prepaid ☐ Hand Delivery ☐ Overnight Mail ☐ Facsimile ☒ Email
Kathleen Carr US Dept. Interior 960 Broadway Ste 400 Boise, ID 83706 kathleenmarion.carr@sol.doi.gov	☒ U.S. Mail, postage prepaid ☐ Hand Delivery ☐ Overnight Mail ☐ Facsimile ☒ Email

David W. Gehlert Natural Resources Section Environment and Natural Resources Division U.S. Department of Justice 1961 Stout Street, 8th Floor Denver, CO 80294 david.gehlert@usdoj.gov	☒ U.S. Mail, postage prepaid ☐ Hand Delivery ☐ Overnight Mail ☐ Facsimile ☒ Email
Matt Howard US Bureau of Reclamation 1150 N Curtis Road Boise, ID 83706-1234 mhoward@pn.usbr.gov	☒ U.S. Mail, postage prepaid ☐ Hand Delivery ☐ Overnight Mail ☐ Facsimile ☒ Email
Sarah A. Klahn WHITE JANKOWSKI 511 16th St., Ste. 500 Denver, CO 80202 sarahk@white-jankowski.com	☒ U.S. Mail, postage prepaid ☐ Hand Delivery ☐ Overnight Mail ☐ Facsimile ☒ Email
Dean A. Tranmer City of Pocatello P.O. Box 4169 Pocatello, ID 83205 dtranmer@pocatello.us	☒ U.S. Mail, postage prepaid ☐ Hand Delivery ☐ Overnight Mail ☐ Facsimile ☒ Email
Michael C. Creamer Jeffrey C. Fereday GIVENS PURSLEY LLP P.O. Box 2720 Boise, ID 83701-2720 mcc@givenspursley.com jcf@givenspursley.com	☒ U.S. Mail, postage prepaid ☐ Hand Delivery ☐ Overnight Mail ☐ Facsimile ☒ Email
William A. Parsons Parsons, Smith & Stone, LLP P.O. Box 910 Burley, ID 83318 wparsons@pmt.org	☒ U.S. Mail, postage prepaid ☐ Hand Delivery ☐ Overnight Mail ☐ Facsimile ☒ Email
Lyle Swank IDWR—Eastern Region 900 N. Skyline Drive Idaho Falls, ID 83402-6105 lyle.swank@idwr.idaho.gov	☐ U.S. Mail, postage prepaid ☐ Hand Delivery ☐ Overnight Mail ☐ Facsimile ☒ Email

Allen Merritt Cindy Yenter IDWR—Southern Region 1341 Fillmore St., Ste. 200 Twin Falls, ID 83301-3033 allen.merritt@idwr.idaho.gov cindy.yenter@idwr.idaho.gov	☐ U.S. Mail, postage prepaid ☐ Hand Delivery ☐ Overnight Mail ☐ Facsimile ☒ Email

Deborah J. Gibson

Deborah Gibson
Administrative Assistant to the Director