IN THE DISTRICT COURT OF THE FIFTH JUDICIAL DISTRICT OF THE STATE OF IDAHO, IN AND FOR THE COUNTY OF TWIN FALLS

RANGEN, INC.,

Petitioner,

vs.

THE IDAHO DEPARTMENT OF WATER RESOURCES and GARY SPACKMAN in his capacity as Director of the Idaho Department of Water Resources,

Respondents,

IDAHO GROUND WATER APPROPRIATORS, INC., A&B IRRIGATION DISTRICT, BURLEY IRRIGATION DISTRICT, MILNER IRRIGATION DISTRICT, AMERICAN FALLS RESERVOIR DISTRICT #2, MINIDOKA IRRIGATION DISTRICT, NORTH SIDE CANAL COMPANY and TWIN FALLS CANAL COMPANY,

Intervenors.

Case No. CV-2014-2446

RANGEN, INC.'S OPENING BRIEF

On Review from the Idaho Department of Water Resources

Honorable Eric J. Wildman, Presiding

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I. STATEMENT OF THE CASE

This is an appeal from decisions made by the Idaho Department of Water Resources ("IDWR") and its Director, Gary Spackman, relating to the first of a series of "mitigation plans" filed by Idaho Ground Water Appropriators, Inc. ("IGWA"). This appeal is taken from the Director's orders partially granting IGWA's First Mitigation Plan: 1) the *Order Approving in Part and Rejecting in Part IGWA's Mitigation Plan; Order Lifting Stay Issued February 21, 1014; Amended Curtailment Order* issued in Case Nos. CM-MP-2014-001 and CM-DC-2011-004 on April 11, 2014 ("*Order on IGWA's First Mitigation Plan*"), 2) the *Final Order on Reconsideration* issued in Case Nos. CM-MP-2014-001 and CM-DC-2011-004 on May 16, 2014, 2014, and 3) the *Amended Order Approving in Part and Rejecting in Part IGWA's Mitigation Plan; Order Lifting Stay Issued February 21, 2014; Amended Curtailment Order* issued in Case Nos. CM-MP-2014-001 and CM-DC-2011-004 on May 16, 2014 ("*Amended Order on IGWA's First Mitigation Plan*") (hereinafter these are sometimes collectively referred to as "the Orders").

II. INTRODUCTION AND PROCEDURAL BACKGROUND

On January 29, 2014 the Director issued the Final Order Regarding Rangen, Inc.'s Petition for Delivery Call; Curtailing Ground Water Rights Junior to July 13, 1962 (the "*Curtailment Order*") (Exhibit 2042). In addition to determining that Rangen is being materially injured by junior-priority ground water pumping, the Director determined the quantity of water that would be expected to be available to Rangen's water rights if curtailment of junior-priority ground water rights occurred within the Eastern Snake Plain Aquifer and West of the Great Rift. The Director based this determination upon simulations using the Department's ground water model, ESPAM2.1. According to those simulations the flow in the Martin-Curren Tunnel would increase by 9.1 cfs at steady state. Accordingly, the *Curtailment Order* specified that any mitigation plan

must provide: 1) "simulated steady state benefits of 9.1 cfs to [the] Curren Tunnel", or 2) "direct flow of 9.1 cfs to Rangen." (Exhibit 2042, p. 42). The Director also ordered that mitigation provided by direct flow may be phased-in over five years. *Id.*

IGWA filed its first mitigation plan on February 11, 2014 (Exhibit 2020). IGWA's First Mitigation Plan contained nine mitigation proposals. On April 11, 2014, following a three day hearing, the Director approved some mitigation credit for two of the nine proposals and rejected the other seven. *Order on IGWA's First Mitigation Plan*, (A.R., pp. 464-520). The mitigation credit that was approved by the Director was not sufficient to meet the mitigation obligation in the Curtailment Order. As a result, the *Order on IGWA's First Mitigation Plan* also included a revised curtailment order. (AR, pp. 464-520). Following various motions for reconsideration, the Director issued an *Amended Order on IGWA's First Mitigation Plan* (A.R., pp. 597-620). The *Amended Order on IGWA's First Mitigation Plan* included clarifications regarding the Director's ruling on two of the proposals that were rejected. The Amended Order also includes changes to reflect a letter from Morris submitted after the hearing in which he agreed to cease diverting .3 cfs from the Martin-Curren Tunnel. (A.R., p. 536).

Rangen's substantial rights have been prejudiced by the Department's Orders. As a result of these orders, junior priority ground water pumping continues unabated while Rangen continues to suffer material injury to its water rights. The Director's decision should be reversed, and this matter remanded for further proceedings.

III. STANDARD OF REVIEW

The standard of review for factual matters under the Idaho Administrative Procedures Act is as follows:

> The Idaho Administrative Procedures Act (IDAPA) governs the review of local administrative decisions. In an appeal from the decision of district court

> acting in its appellate capacity under the IDAPA, this Court reviews the agency record independently of the district court's decision. The Court does not substitute its judgment for that of the agency as to the weight of the evidence presented. The Court instead defers to the agency's findings of fact unless they are clearly erroneous. In other words, the agency's factual determinations are binding on the reviewing court, even where there is conflicting evidence before the agency, so long as the determinations are supported by substantial competent evidence in the record. Here, the Board is treated as an administrative agency for purposes of judicial review. . . . The Court may overturn the Board's decision where the Board's findings: (a) violate statutory or constitutional provisions; (b) exceed the agency's statutory authority; (c) are made upon unlawful procedure; (d) are not supported by substantial evidence in the record; or (e) are arbitrary, capricious, or an abuse of discretion. The party attacking the Board's decision must first illustrate that the Board erred in a manner specified in I.C. § 67-5279(3), and then that a substantial right has been prejudiced. If the Board's action is not affirmed, "it shall be set aside ... and remanded for further proceedings as necessary."

Urrutia v. Blaine County, 134 Idaho 353, 357, 2 P.3d 738, 742 (2000) (citations omitted). Courts review legal issues de novo. *Polk v. Larrabee,* 135 Idaho 139, 144, 15 P.3d 1147, 1152 (2000).

IV. ARGUMENT

The Director approved some mitigation credit for only two components of IGWA's First Mitigation Plan. The first of those components consists of activities that function as a substitute for curtailment, which the Director refers to as "aquifer enhancement activities." This component includes activities such as conversion from ground water to surface water, voluntary curtailment, and recharge. The second component consists of credit due to "foregone diversion of Curren Tunnel water by [Butch] Morris."

With regard to the first component, the Director concluded that:

> 56. IGWA's evidence established that it can provide an average of 1.7 cfs of water to Rangen through its aquifer enhancement activities, based on steady state ESPAM 2.1 model runs.
>
> 57. IGWA's evidence established that it can provide 1.2 cfs of water from its aquifer enhancement activities, based on transient ESPAM 2.1 model runs, from April 1, 2014, through March 31, 2015.

Amended Order on IGWA's First Mitigation Plan, (A.R., pp. 613-614). The Director abused his discretion and acted outside his authority by giving credit in these two calculations for activities to be performed in the future without including appropriate provisions to protect Rangen's senior water rights.

With regard to the second component, the Director concluded:

> 55. IGWA's evidence established that foregone diversion of Curren Tunnel water by Morris is predicted to deliver an average of 1.8 cfs water directly to Rangen from April 1, 2014, through March 31, 2015, if Morris foregoes diversion of all water from the Curren Tunnel as stated in his letter.

Amended Order on IGWA's First Mitigation Plan, (A.R., p. 613). This conclusion is not supported by substantial evidence in the record. This determination was arbitrary and capricious, an abuse of discretion, and in violation of the Director's clear legal duty to distribute water in accordance with the prior appropriation doctrine.

A. The Director erred by allowing out of priority pumping based upon activities that *may* occur in the future.

The first component of IGWA's mitigation plan consists of activities such as voluntary curtailment, conversions from ground water to surface water and recharge conducted by IGWA. Rangen does not dispute that IGWA is conceptually entitled to some credit for these types of activities. When done appropriately, these are precisely the types of activities that mitigate for the impacts caused by pumping groundwater. The problem is that the Director gave credit not only for the simulated residual effect of past activities, but also for the anticipated effect of future activities that ***may*** occur. Since granting mitigation credit means that out-of-priority ground water pumping continues to occur now, this impermissibly places the entire risk of whether those future activities will actually occur on Rangen.

The Director gave credit for future activities in the calculation of both simulated steady state as well as transient model runs. These future activities are, in part, the basis for Conclusions

of Law 56 and 57 in the *Amended Order on IGWA's First Mitigation Plan.* The Director approved 1.7 cfs of steady state mitigation credit and 1.2 cfs of direct flow mitigation credit for "aquifer enhancement activities." *Amended Order on IGWA's First Mitigation Plan,* (A.R., pp. 613-614).

Exhibit 1025 summarizes the Department's calculation of the steady state benefit of activities occurring in 2011, 2012, and 2013. (Exhibit 1025). The Department's modeler, Jennifer Sukow, testified that the steady state calculations are based upon the assumption that activities would continue permanently. With regard to Exhibit 1025, Ms. Sukow testified as follows:

> Q. I notice that there's a difference between 2011, 2012, and 2013 for each of these.
>
> It appears, based upon the difference that the same activities don't actually occur in each year; is that correct?
>
> A. That's correct.
>
> Q. Okay. And so the assumptions that go into each of these, that the activity is going to occur permanently, is not really a correct assumption, is it?
>
> A. Yeah, that's true.
>
> Q. Did you make any attempt to determine for any of these given years what the effect would be now? Did you do any transient runs on -- on these activities?
>
> A. No, we have not done any transient runs.
>
> Q. So going forward, for instance for 2014, did you make any attempt to determine what the value would be for 2014?
>
> A. No. That would depend on what practices they actually carry out in 2014.
>
> Q. And same thing for 2015 and beyond; correct?
>
> A. Yes. It will always depend on what practices they actually undertake.
>
> Q. So under this analysis that you're doing here, you're just looking back at what happened in previous years and making no attempt to predict what the effect will be in the future; correct?
>
> A. That's correct.
>
> Q. What would happen to the numbers that you've got here if the activities stopped or changed?
>
> A. These numbers will change.

(Tr., Vol. II, p. 313, l. 2 – p.314, l. 8).

The Department's transient model runs are summarized in a table included with Exhibit 3001 labeled 2005_2013 Transient.xlsx, and only provided electronically. *See* attached Appendix A. Footnote 10 to that table states "Predicted average benefit assumes that conversions, voluntary curtailment, and CREP in 2014-2018 will be identical to 2013 mitigation activities. Non-IWRB

sponsored recharge in 2014-2018 was assumed to be zero." The effect of these two different assumptions can be seen by comparing rows 10 and 11 of the table, which represent recharge, to other rows such as row 6, which represents conversions. In rows 10 and 11 where the assumption in future years is zero, the simulated result in future years goes down. In contrast, in row 6 where the assumption is that activities will continue, the simulated result in future years goes up.

Contrary to the assumptions underlying the Director's calculations, the activities for which IGWA received mitigation credit are not permanent. Conversions from groundwater to surface water constitute a substantial portion of these activities. (Exhibit 1025). For example, of a total simulated steady state benefit at the Martin-Curren Tunnel of 1.7 cfs for all activities that occurred in 2011, conversions account for 1.4 cfs. Yet, all, or nearly all, of these conversions are so called "soft conversions." This means that a farmer can simply flip a switch to use ground water again if surface water becomes unavailable. Lynn Carlquist of North Snake Ground Water District described these soft conversions:

> Q. Now, I want to understand how the conversions might work.
> You characterized almost all conversions as soft; correct?
> A. Yes.
> Q. And so we're on the same page, conversions are where people go from groundwater rights to surface water rights; correct?
> A. Yes.
> Q. And you described it in such a way that if the people who do those conversions, they have the ability to turn on their pumps if they're not obtaining surface water; correct?
> A. That's correct.

(Tr., Vol. I, p. 152, l. 9 – 22). Carlquist testified that ground water pumpers expected to be able to go back to using ground water at any time that surface water was not available.

> Q. And you in fact expressly tell them that if they're not getting their surface water they need to be able to turn their pumps back on; correct?
> A. Yes, that's what we've told them. If we can't get the water, that's why they need to maintain that connection.
> Q. All right. And so most everyone maintains a connection to their groundwater pumps; correct?

A. Yes.
Q. And you agree that they -- you, sitting here today, you agree that they should be able to turn their pumps back on when they need water?
A. Yes.

(Tr., Vol. I, p.153, l. 18 – p. 154, l. 5).

The *Amended Order on IGWA' First Mitigation Plan* does not contain any provision identifying the converted acres or other future activities for which IGWA has already been given mitigation credit. There are no provisions in the *Amended Order* to ensure that these future activities will occur. There are similarly no contingency provisions if the future activities do not or cannot occur as required by IDAPA 37.03.11.043.03.c. *See, In Matter of Distribution of Water to Various Water Rights*, 155 Idaho 640, 315 P.3d 828 (2013). There is a risk that these mitigation activities will not occur in the future, and placing that risk upon Rangen impermissibly turns the prior appropriation doctrine upside down. *See, id.* Unfortunately, unlike the farmers, Rangen is not able to simply turn a pump on when the expected water does not come. There is a distinct difference between mitigation credit for the residual and ongoing effects of activities that have already occurred and mitigation credit for activities that ***may*** be performed in the future. The Director's *Amended Order* improperly fails to account for this difference. The Director abused his discretion, exceeded his authority, and/or acted outside the law by failing to identify the future activities for which mitigation credit was given and providing a means of enforcement and monitoring. As such, his decision should be reversed and this case remanded for further proceedings.

B. The Director erred by approving 1.8 cfs of mitigation credit due to foregone diversion of Martin-Curren Tunnel water.

The Director also erred by approving 1.8 cfs of mitigation credit due to "foregone diversion of Curren Tunnel water by [Butch] Morris." *Amended Order on IGWA's First Mitigation Plan* (A.R., p. 613, ¶55). Butch Morris holds multiple water rights from the Martin-Curren Tunnel.

Morris and IGWA entered into an agreement wherein Morris agreed to forego his use of water from the Martin-Curren Tunnel so that IGWA could obtain mitigation credit. (Exhibit 2032). The Director concluded that Morris' agreement to forego use of water from the Martin-Curren tunnel resulted in 1.8 cfs of mitigation credit for IGWA for Rangen's 1962 water right. This conclusion is not supported by substantial competent evidence, is arbitrary and capricious, and an abuse of discretion. In making this determination, the Director violated his clear legal duty to distribute water in accordance with priority and failed to consider the amount of additional water actually available to Rangen's 1962 water right.

1. The Director failed to distribute the water in the Martin-Curren Tunnel by priority when giving credit for IGWA's agreement with Butch Morris.

Neither the Director, IGWA, nor Butch Morris have the authority to dictate or change how water in the Martin-Curren Tunnel is distributed. The Idaho Constitution and the doctrine of prior appropriation dictate that the Martin-Curren Tunnel water must be distributed in accordance with the relative priorities of the water rights. The Director has a clear legal duty to distribute the water in accordance with those priorities. *Idaho Code § 42-602.*

There are fourteen water rights allowing water from the Martin-Curren Tunnel to be used for various purposes. The owners, quantities, and relative priority of those water rights are set forth on Exhibit 1049. The following chart shows those rights:

Water Right Holder	**Water Right Number**	**Water Right Quantity (cfs)**	**Priority Date**
Morris	36-134D	1.58	10/9/1884
Morris	36-134E	0.82	10/9/1884
Candy	36-134A	0.49	10/9/1884
Rangen	36-134B	0.09	10/9/1884
Musser	36-102	4.1	10/9/1884

Rangen	36-135A	0.05	4/1/1908
Candy	36-135B	0.51	4/1/1908
Morris	36-135D	1.58	4/1/1908
Morris	36-135E	0.82	4/1/1908
Rangen	36-15501	1.46	7/1/1957
Rangen	36-02551	48.54	7/13/1962
Rangen	36-07694	26	4/12/1977

There is no dispute that the flow of water from the Martin-Curren Tunnel has been insufficient to satisfy these water rights for years. (Exhibit 1049; Exhibit 2045).

Under the prior appropriation doctrine, the owners of the various water rights are entitled to use the available water in order of priority since there is a shortage. If an owner forgoes use of water for some reason, the water becomes available to the next water right in order of priority. For a variety of reasons including the shortage of water, only Rangen currently beneficially uses any substantial amount of water from the Martin-Curren Tunnel (Tr., Vol. II, p 381, l.1 – p. 383, l. 2). Morris, Candy, and Musser, the owners of the other Martin-Curren Tunnel water rights, have decided to use water from other sources rather than the Martin-Curren Tunnel.

The quantity of water necessary to satisfy Rangen's 1884, 1908, and 1957 water rights is 1.6 cfs. Even if all other water rights in the Martin-Curren Tunnel use no water, if the water in the Martin-Curren Tunnel is distributed in priority, there is no water available for Rangen's 1962 water right (which also means there is no water available for mitigation credit for injury to that right) until the flow in the Martin-Curren Tunnel is greater than 1.6 cfs. The following chart illustrates this point:

Water Right Holder	**Water Right Number**	**Water Right Quantity (cfs)**	**Priority Date**	**Allocation of Flow in Priority Assuming no Use by Morris, Candy or Musser**

Morris	36-134D	1.58	10/9/1884	0
Morris	36-134E	0.82	10/9/1884	0
Candy	36-134A	0.49	10/9/1884	0
Rangen	36-134B	0.09	10/9/1884	0.09
Musser	36-102	4.1	10/9/1884	0
Rangen	36-135A	0.05	4/1/1908	0.05
Candy	36-135B	0.51	4/1/1908	0
Morris	36-135D	1.58	4/1/1908	0
Morris	36-135E	0.82	4/1/1908	0
Rangen	36-15501	1.46	7/1/1957	1.46
Rangen	36-02551	48.54	7/13/1962	-
Rangen	36-07694	26	4/12/1977	-
				1.60

The Director concluded that Morris' "foregone diversion" of Martin-Curren Tunnel is predicted to deliver an average of 1.8 cfs of water. (A.R., p. 613 – 614). While Rangen takes issue with that calculation since actual flows are lower than that (*see* argument below in Section 2), even if it is assumed that the Martin-Curren Tunnel has an actual flow of 1.8 cfs, IGWA cannot be given credit for that amount. The Director must distribute 1.6 cfs of that flow to Rangen's earlier priority rights. Once those rights are satisfied, then the Director can give credit to IGWA for Morris' foregone diversions. Again, assuming the 1.8 cfs average flow used by the Director, 1.6 cfs would be distributed to Rangen's earlier rights and IGWA should be given mitigation credit for .2 cfs – not 1.8 cfs as the Director calculated.

The mitigation credit given by the Director completely ignored Rangen's earlier priority water rights. When the Martin-Curren Tunnel water is administered in accordance with the prior appropriation doctrine, there must be 1.6 cfs of water allocated to Rangen's earlier rights. Only after those earlier rights are satisfied can IGWA be given any credit for Butch Morris' agreement not to use Martin-Curren Tunnel water. The Director's decision to give IGWA 1.8 cfs mitigation credit is contrary to the doctrine of prior appropriation, arbitrary and capricious, and an abuse of discretion. As such, his decision should be reversed and this matter should be remanded for further proceedings.

2. The Director approved mitigation credit in excess of the amount of water flowing from the Curren Tunnel

The most obvious limitation on potential credit due to foregone diversions from the Martin-Curren Tunnel is the actual flow of water from the Tunnel. IGWA acknowledged that the maximum credit it should receive for diversions made by Butch Morris from the Sandy Pipeline instead of the Martin-Curren Tunnel is the actual flow of the Tunnel. (Hrg Tr.: T.J. Budge opening, Vol. I, P. 68 L. 23 – P. 69 L.5; Brendecke, Vol. III, P.14 L.21 – P.15 L.1; Carlquist, Vol. I, P. 172 L.5-9). Despite IGWA's acknowledgement, the Director did not base his calculation of mitigation credit for the Sandy Pipeline useage on the actual flows in the Tunnel. The Director based his mitigation credits upon the average flow from April 15 through October 15 during the period from 2002 through 2013, which was 3.7 cfs. During the irrigation season in 2013, however, the actual flow of water in the Martin-Curren Tunnel was as low as 0.74 cfs. (Exhibit 2045).

The use of average past flows is not appropriate for the evaluation of a mitigation proposal based upon the delivery of actual water. The CMR's require the Director to consider whether a mitigation plan "will provide replacement water, at the time and place required by the senior-priority water right, sufficient to offset the depletive effect of ground water withdrawal on the

water available in the surface or ground water source at such time and place as necessary to satisfy the rights of diversion from the surface or ground water source." IDAPA 37.03.11.043.03.b. When considering the benefit, if any, of "aquifer enhancement activities" that take place some distance away, the benefit will be delayed and spread out over time. (Exhibit 1025 and Appendix A). These benefits are not directly measurable. In contrast, deliveries of water are subject to measurement and occur at specific points in time and in specific quantities. Timing matters. There is a big difference, for instance, between the delivery of 12 cfs all at once in June and the delivery of 1 cfs per month for 12 months even though the average is the same. While the delivery of 1 cfs per month may result in water at a time and place useful to a fish raising facility, 12 cfs all at once may not. The flow in the Martin-Curren Tunnel during a substantial portion of the year is less than the 1.6 cfs needed to satisfy senior water rights as discussed above. (Exhibit 2045). Rangen's 1962 water right receives no benefit from the Morris Agreement during those times. Since Morris can only take water during the irrigation season, Rangen similarly receives no benefit during the non-irrigation season. The Director did not properly consider whether the delivery of any water as a result of the agreement with Morris would actually result in water at a time and place that provides a benefit and what that benefit might be. The benefit, if any, would not necessarily be equal to the average predicted by the Director.

Given current flows in the Martin-Curren Tunnel, the use of such an average derived from past flows gives IGWA mitigation credit for delivering more water than is actually flowing from the Martin-Curren Tunnel and available to satisfy Rangen's 1962 water right. There is insufficient evidence to conclude that flows in the Martin-Curren Tunnel will be 3.7 cfs or greater in 2014. The flows are in fact lower than that now. The Order states that "if the proposed mitigation falls short of the annual mitigation requirement, the deficiency can be calculated at the beginning of the

irrigation season. Diversion of water by junior water right holders will be curtailed to address the deficiency." *Amended Order on IGWA's First Mitigation Plan* (A.R., p. 602). This improperly shifts the risk related to the First Mitigation Plan to Rangen, the senior water right holder, in violation of the Idaho Supreme Court's decision *In the Matter of Distribution of Water to Various Water Rights*, 155 Idaho 640, 315 P.3d 828 (2013). The Director's calculation of mitigation credits was an abuse of discretion and contrary to Idaho law. As such, it should be reversed.

C. Rangen's substantial rights have been prejudiced.

Rangen's substantial rights have been prejudiced by the Orders at issue. The Orders diminish Water Right Nos. 36-02551 and 36-07694, as those rights were decreed by the Snake River Basin Water Adjudication and permitted and licensed by the Department. Furthermore, Rangen's substantial rights have been prejudiced by the failure of the Director and Department to deliver the amount of water necessary to address Rangen's injury caused by junior-priority groundwater pumping.

V. CONCLUSION

For the reasons specified above, Rangen requests that the Court find that the Orders were in violation of Idaho law, in excess of the statutory authority or administrative rules of the Department, arbitrary capricious, and an abuse of discretion. Rangen requests that the Orders be reversed and this matter remanded for further proceedings.

DATED this 10th day of September, 2014.

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By _____
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By _____
for J. Justin May

CERTIFICATE OF SERVICE

The undersigned, a resident attorney of the State of Idaho, hereby certifies that on the 10th day of September, 2014 he caused a true and correct copy of the foregoing document to be served by the method indicated upon the following:

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for J. Justin May

APPENDIX A

Predicted average benefit to Curren Tunnel from IGWA and SWID aquifer enhancement projects during the first five years following the curtailment order.

Mitigation project	Volume (AF/yr)[9]										Predicted average benefit to Curren Tunnel (cfs)[11]				
	2005	2006	2007	2008	2009	2010	2011	2012	2013	Future years[10]	Year 1 (4/2014-3/2015)	Year 2 (4/2015-3/2016)	Year 3 (4/2016-3/2017)	Year 4 (4/2017-3/2018)	Year 5 (4/2018-3/2019)
IGWA Conversions[1]	29,161	35,250	36,915	35,967	13,562	17,210	23,307	30,144	24,335	24,335	0.51	0.53	0.54	0.56	0.56
SWID Conversions[2]	0	0	0	0	0	47,138	47,189	58,909	47,350	47,350	0.44	0.51	0.56	0.60	0.64
SWID Voluntary Curtailment[3,4]	0	0	0	0	0	4,211	4,015	4,015	3,946	3,946	0.04	0.04	0.05	0.05	0.05
IGWA CREP[5,6]	0	0	11,624	16,443	19,390	14,017	14,017	12,025	11,997	11,997	0.16	0.16	0.17	0.17	0.17
SWID CREP[5,6]	0	0	0	0	0	1,588	1,588	1,588	1,588	1,588	0.01	0.02	0.02	0.02	0.02
IGWA Recharge[7]	0	0	27,360	0	13,687	0	0	0	0	0	0.02	0.02	0.01	0.01	0.01
SWID Recharge[8]	0	0	0	0	0	0	0	1,195	1,169	0	0.01	0.01	0.01	0.00	0.00
IGWA	29,161	35,250	48,539	52,410	32,952	31,227	37,324	42,168	36,332	36,332	0.7	0.7	0.7	0.7	0.7
SWID/GCID	0	0	0	0	0	52,936	52,792	65,706	54,053	52,884	0.5	0.6	0.6	0.7	0.7
Total	29,161	35,250	75,899	52,410	46,639	84,163	90,115	107,875	90,385	89,216	1.2	1.3	1.4	1.4	1.5

Notes:

1. IGWA conversion volume includes water delivered to conversion projects, excess water delivered to conversion projects, canal seepage within NSCC (30%) and AFRD2 (42%) delivery systems, and voluntary idle projects.
2. SWID conversion volume includes water delivered to conversion projects and canal seepage of 38% within the J Canal delivery system.
3. SWID voluntary curtailments on mixed source lands where groundwater irrigation is supplemental to surface water irrigation were assigned a groundwater fraction of 0.88 for calculation of idled acres and volume of benefit to the aquifer.
4. SWID voluntary curtailments for 2012 have not been reviewed by IDWR Compliance Bureau staff. 2011 values were carried forward to 2012.
5. 2007-2009 IGWA CREP may include land located within SWID/GCID. CREP projects located within ABID are included in ABID's mitigation plan and are excluded from this analysis.
6. 2013 CREP benefits were calculated using the August 2013 CREP shapefile. Because of time constraints, Chuck Pentzer of ISWCC was not contacted regarding irrigation to establish a cover crop. It was assumed that no CREP acres were watered during the 2013 irrigation season. CREP lands located within SWID or GCID were credited to SWID. Other CREP lands located within the trim line and area of common groundwater supply were credited to IGWA.
7. IGWA recharge does not include recharge sponsored by IWRB.
8. SWID recharge is not intended to include recharge sponsored by IWRB. Unable to verify whether or not SWID recharge claimed for 2012 and 2013 was sponsored by IWRB. It may not be appropriate is provide mitigation credit for recharge modeled in 2013.
9. Mitigation volumes were modeled at an average constant rate distributed over a one-year period.
10. Predicted average benefit assumes that conversions, voluntary curtailment, and CREP in 2014-2018 will be identical to 2013 mitigation activities. Non-IWRB sponsored recharge in 2014-2018 was assumed to be zero.
11. Predicted benefits to the Rangen spring model cell were calculated using the transient, superposition version of ESPAM2.1. Predicted benefits to Curren tunnel were calculated as 63% of the benefits to the Rangen spring model cell using a linear regression model adopted by the Director in the Rangen proceeding.