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ATTORNEYS FOR THE CITY OF POCATELLO

BEFORE THE DEPARTMENT OF WATER RESOURCES

OF THE STATE OF IDAHO

IN THE MATTER OF THE PETITION FOR DELIVERY CALL OF A&B IRRIGATION DISTRICT FOR THE DELIVERY OF GROUNDWATER AND FOR THE CREATION OF A GROUND WATER MANAGEMENT AREA	)	DOCKET NO. 37-03-11-1 **CITY OF POCATELLO'S PROPOSED FINDINGS OF FACT, CONCLUSIONS OF LAW, AND ORDER**

PRELIMINARY MATTERS

A. A&B delivery call included claims of shortage because of declines in ground water levels and declines in diversions. Specific relief requested included:

1. Historical water levels;

2. Reasonable pumping levels;

3. Rate of delivery of 0.75 miner's inches/acre;

4. Rate of delivery based on the license and SRBA partial decree;

5. Costs.

B. Director's order inquired into whether there were shortages for any reason. Specifically, the Director examined:

1. Changes in historical patterns of diversion;

2. Changes in ground water levels;

3. ET crop water demands on lands allegedly short of water.

4. The Director also examined whether A&B's alleged shortages could be related to means of diversion, and so examination was also made of:

   a. Adequacy of well construction and design;

   b. Hydrogeology;

   c. Effect on diversions of drain well closures;

   d. Costs to maintain the District's well system.

For the reasons described herein, the Director's Order is affirmed.

FINDINGS OF FACT

I. BACKGROUND INFORMATION REGARDING A&B, IGWA, AND POCATELLO.

1. A&B currently operates approximately 135 well systems comprised of 177 wells (some of which are interconnected). Temple, Vol. III, 473:14-474:25. The diversions from these wells are made primarily under Water Right No. 36-2080, which is the senior water right that is the basis of A&B's delivery call. There are also a variety of junior water rights, some beneficial use and some based on enlargement claims. These junior rights were referred to collectively by the parties as "water spread" rights.

2. For the most part, each well system serves more than one farm. Water users must share the water available from their well system or systems. Temple, Vol. III, 473:14-474:25.

3. A&B delivers water based on written orders from its water users. These requests for water must be made 24 hours in advance. Eames, Vol. IV, 812:22-813:1.

4. Under Water Right No. 36-2080, the maximum rate of diversion is 1100 cfs. The decreed place of use is 62,604 acres. The license provides (and the partial decree adopts) that the ground water pumped from any of the wells in the A&B District can be used upon any of the acres in the place of use. Luke, Vol. VI, 1301:23-1302:6.

5. An additional 4082 acres are served under the water spread rights. Exhibits 349-353. These rights were licensed and decreed to allow an additional quantity of water to be used on these lands, but not an additional rate of flow. Luke, Vol. VI, 1290:3-12.

6. The B Unit well systems serve both Water Right No. 36-2080 acres and "water spread" acres.

7. Few of the witnesses, including Mr. Dan Temple, were able to specify or differentiate between 36-2080 acres and water spread acres. Stevenson, Vol. X, 2069:23-2071:14; Mohlman, Vol. V, 1041:12-24. The water spread acres are mainly on "high ground" that could not have been physically served by the District under gravity irrigation.

8. During peak demand times, some A&B well systems go "on allotment". This means that the well system capacity is less than farmer demands for water and, as a result, the deliveries from the well system are allocated to the farmers pro rata based on Water Right No. 36-2080 acreages under each well system. Temple, Vol. IV, 742:8-21.

9. The District has no mechanism to prevent farmers from irrigating water spread acres during allotment. Temple, Vol. IV, 742:8-743:6; Adams, Vol. V, 934:5-12.

10. Thus, if a water user has acres under Water Right No. 36-2080, as well as water spread acres on his farm, and if he does not take steps on his own to restrict deliveries to his 36-2080 acres, he has effectively reduced his per acre water deliveries. *Id.* Temple testimony above; Petrich, Vol. X, 2010:5-25.

11. The testimony generally showed that the District has seen a wholesale conversion from flood irrigation to sprinkler irrigation. Luke, Vol. VI, 1177:21-1178:4. Farm application efficiencies are higher because 96% of the B Unit lands are currently served by sprinklers. Luke, Vol. VI, 1178:4-21.

12. Further, A&B has made a variety of other efficiency improvements over the years. As a result, conveyance losses have gone from 5-6% between the well and the field headgate to approximately 3%. Koreny, Vol. XI, 2191:5-12.

13. A&B has an effective well rectification program. Temple, Vol. IV, 664:5-12, 667:6-19. While A&B has seen yield from some well systems decline, A&B has been able to take measures to restore or maintain deliveries to acres served by such well systems through a variety of activities including, *inter alia,* pump deepening, increasing pump capacity, well deepening, construction of supplemental wells, interconnection of well systems and conversions to surface water. Temple, Vol. IV, 702:12-703:19; Sullivan, Vol. VIII, 1668:7-14.

14. The causes of well yield declines vary, and include mechanical problems, well construction problems, etc. Ground water level declines may also lead to well yield declines although the testimony on this point was mainly qualitative.

15. The parties agree that because of poor hydrogeologic conditions, the southwest portion of the District presented the greatest challenges for maintaining well yields. Based on historical reports and Bureau documents, the southwest portion of the District has always experienced problems with well yield. *See infra* ¶¶ 73-76.

16. The Idaho Ground Water Appropriators ("IGWA") appeared in support of the Director's January 29, 2008 Order. The members of IGWA consist of groundwater districts, municipal users, industrial users, and dairies. Deeg, Vol. V, 1055:5-9. IGWA's members include many of the junior ground water users that would be impacted from a finding of injury to A&B and order curtailing junior ground water pumping.

17. The City of Pocatello ("City" or "Pocatello") also appeared in support of the Director's January 29, 2008 Order. The City relies on an interconnected well system for its culinary supplies. Hargraves, Vol. VIII, 1536:24-1537:8; Exhibit 314. While a few of Pocatello's wells are senior to A&B's Water Right No. 36-2080, many are junior. Ulrich, Vol. VIII, 1553:15-1554:5; Exhibit 325. It too would be impacted by an order curtailing junior ground water pumping to remedy injury to A&B's senior water right.

II. A&B CLAIMED SHORTAGE BUT NO EVIDENCE SUPPORTED INJURY TO WATER RIGHT NO. 36-2080.

A. Water supply and A&B historical diversions.

18. The ESPA contains a vast quantity of water. No evidence was presented that the aquifer is being mined. Average annual ESPA recharge is 8.3 MAF/year compared to average pumping of 2.3 MAF/year. Exhibit 301 at page 34. There is ample physical supply for A&B ground water users.

19. Thus, the issue in this case is not whether A&B has physically available an adequate water supply. Rather, the issue is whether the B Unit wells have sufficient capacity to withdraw available ground water.

20. Additionally, the issue is whether junior ground water pumpers are responsible for rectifying (through restoration of water levels or compensation for expenditures) declines in well pumping capacity that A&B may have experienced in recent years.

21. A&B's claims related to water supply and diversions. Historical diversions for irrigation purposes can be characterized in two ways: first, as the total quantity of water required to grow crops over the course of an entire season; and second, by the peak rate of flow required during the irrigation season. The former is measured in acre-feet (af); the latter in cubic-feet per second (cfs), gallons per minute (gpm) or miner's inches (mi).[1] A&B has historically measured and recorded its rates of flow from the well and deliveries at the farm headgate in miner's inches/acre.

    a. Annual Delivery Requirement. There was no dispute about annual farm water deliveries necessary to raise a crop. In FOF 52 of the January 29, 2008 Order,[2] the Director determined that A&B required, on average, 2.89 af/acre of water over the course of an irrigation season at the farm headgate; A&B's experts determined that 2.77 af/acre were required at the farm headgate. Table 4.8 of A&B's July

[1] 1 miner's inch/acre=0.02 cfs; 1 cfs=50 miner's inches/acre; 1 miner's inch=9 gpm.
[2] "FOF" references the findings of fact in the January 29, 2008 Order; "COL" references the conclusions of law in the January 29, 2008 Order.

2008 Expert Report. Thus, A&B's experts actually endorsed a lower annual farm delivery requirement than the Director's Order.

b. Rate of flow. There was substantial dispute about the farm delivery rate required to meet the peak irrigation water requirement on the B Unit lands. The Director settled on a rate of 0.75 miner's inches/acre, based on review of various technical documents provided by A&B and the Bureau of Reclamation. [FOF 63-64]. A&B asserted, variously, that it required:

i. 0.89 miner's inches/acre at the well.

(1) Applying the 3% conveyance loss and assuming deliveries to only the 62,604 acres under Water Right No. 36-2080, 0.89 miner's inches/acre translates to a peak farm delivery requirement of 0.86 miner's inches/acre at the farm headgate.

ii. 1100 cfs, the licensed rate under Water Right No. 36-2080.

(1) However, A&B does not simply demand 1100 cfs across the District. Instead, A&B converts 1100 cfs to 0.88 miner's inches/acre at each well based on the 62,604 acres associated with the senior ground water right, and then concludes they are entitled to 0.88 miner's inches/acre be produced at each well system.

(2) However, A&B's water right is for 1100 cfs for 62,604 acres, and it is not a right for a particular rate of delivery at each individual well or well system. *See infra* Part II.

(3) The equivalent farm headgate delivery rate is 0.82 miner's inches/acre if the 1100 cfs water right is spread over all 66,664 acres (including water spread acres) to which the B Unit's ground water is delivered.

iii. 0.75 miner's inches/acre. This was A&B's claim in the Motion to Proceed, ¶ 7 (0.75 miner's inch is "the minimum amount necessary to irrigate lands within A&B during the peek [sic] periods when irrigation water is most needed"). However, during trial A&B's witnesses claimed more than this amount.

22. The well pump capacity is equivalent to available water supply. The well pump capacity as measured by rate of flow represents the water supply available to A&B for deliveries to the farmers. Koreny, Vol. XI, 2169:20-25.

a. The "low discharge" represents the lowest measured discharge during the peak season when the pump was operating wide open and is reported for each well system in the Annual Report in Section II (*see, e.g.*, Exhibit 477, 2007 Annual Report). The reported "low discharge" values for the B Unit well systems do not occur on the same day each year, and therefore, it is not appropriate to sum the

low discharge values to represent the low discharge of the B Unit overall. Luke, Vol. VI, 1284:23-1285:3; 1287:7-12, 18-23.

b. "High discharge" data are also reported in the Annual Report, but these data are collected (by well) in the spring when demand is lowest and ground water levels are highest. Koreny, Vol. XI, 2208:3-7; Brockway, Vol. XI, 2281:6-17. As such, these data are not meaningful for purposes of determining well capacities. Brockway, Vol. XI, 2299:8-15.

23. A&B has never had an available water supply equivalent to 1100 cfs during the peak of the season. Koreny, Vol. XI, 2196:14-2197:3, 2201:14-2203:18 (referring to Figure 3-20); Sullivan, Vol. VIII, 1670:9-1671:3, 1696:3-1697:4 (referring in part to Exhibit 319); Luke, Vol. VI, 1266:14-1267:5.

a. In FOF 61, the Director found that A&B's water supply in 2006 was 970 cfs or 0.77 miner's inches/acre. He further found that in 1963, A&B's water supply was 1007 cfs. Thus as the Director found through his own investigations of historical pumping, the predicate of A&B's claim—that prior to water level declines its wells could pump 0.89 or 0.88 miner's inches/acre on average—cannot be established from the available testimony and technical evidence.

b. Mr. Koreny testified initially that his Figure 3-13 showed a water supply of 1100 cfs in 1970, but upon further review he changed his testimony to state that Figure 3-13 was based on "high discharge" data. Even if Mr. Koreny's analysis relying on "high discharge" data showed A&B came close to 1100 cfs of pump capacity in the spring, A&B did not show that it has ever had 1100 cfs of pump capacity during the peak demand period. Like the "low discharge" data, the "high discharge" for each well system does not occur on the same day.

c. Mr. Luke confirmed the Director's FOF 61 and went on to note that he had examined the data and found no years in which the "low discharge" values ever summed to 1100 cfs.

d. Well capacities at the peak crop demand period are the most important. The "low discharge" data reflects well capacities during the peak demand period; "high discharge" data are collected in the spring and so are not meaningful for comparison to peak irrigation water demands.

e. Mr. Sullivan testified about Exhibit 319, which showed historical pump capacities on the same plot with historical diversions, and demonstrated that A&B's pumping records, which extend back to 1963, show that there was no time when 0.88 miner's inches/acre was being pumped by A&B's wells.

f. Based on the testimony and evidence submitted by the parties, there is no basis to conclude that the A&B wells could ever collectively produce 1100 cfs during the peak demand period, so A&B's claim that its capacity has fallen from an average of 0.88 miner's inches/acre since the late 1960's cannot be sustained.

g. Given the evidence and testimony, the Director properly relied on the available water supply as 970 cfs rather than on 1100 cfs in making his non-injury determinations. [FOF 61-64].

24. The annual water supply available to A&B was adequate to meet crop water demand. The question is whether A&B's water supply (well capacity) was adequate to meet crop water demands.

25. A&B maintains monthly records of historical pumping and historical farm water deliveries. Luke, Vol. VI, 1175:10-15.

26. Mr. Koreny testified about Figure 3-12, which compiled the monthly diversions for each well system since the early 1970s. The highest combined system-wide monthly average well pumping was 55,000 af in the early 1970s. During cross-examination, Mr. Koreny converted this monthly volume to miner's inches/acre to show the following in Exhibit 366:

	Figure 3-12 (1970) at the well	At the field (less 3% conveyance loss)
62,604 acres (Water Right No. 36-2080 acres)	55,000 af=0.71 miner's inches/acre	0.69 miner's inches/acre
66,686 acres (36-2080 acres + water spread)	55,000 af=0.68 miner's inches/acre	0.65 miner's inches/acre

27. Thus, based on Mr. Koreny's testimony regarding historical diversion data, maximum monthly diversions were much less than 0.88 miner's inches/acre and less than 0.75 miner's inches/acre.

28. In fact, taking into account the water spread acres, the average farm headgate deliveries were 0.65 miner's inches/acre, which is the same value that Pocatello's experts calculated would meet irrigation requirements during periods of peak demand. This figure is less than the combined average farm delivery capacity, and shows that the B Unit farmers operate to deliver what their crops need rather than what their wells could produce.

29. Mr. Koreny's figures reflected above are consistent with those developed by Mr. Luke and presented in Exhibit 155A. Mr. Luke examined A&B's diversion data for the peak month (which all witnesses agreed was June 15-July 15).[3] Based on his evaluation, Mr. Luke concluded that during only three years had A&B only diverted more than 0.75 miner's inches/acre during the peak monthly demand period—1963 (0.76 miner's inches/acre), 1964 (12 miner/s inches/acre) and 1967 (0.76 miner's inches/acre).

30. Mr. Sullivan made a comparison similar to Mr. Luke's Exhibit 155A in Exhibit 331. Mr. Sullivan compared total system capacity with weighted average diversions.

[3] Due to an artifact of A&B water use measurement, a "month" is calculated from mid-month to mid-month.

a. His evaluation showed that average well system capacity based on a weighted average (weighing each well system low discharge by the acres associated with the well system) during the period from 2000 - 2007 was 0.79 miner's inches/acre.

b. Average peak delivery on a monthly basis during the 2000 - 2007 period was 0.66 miner's inches acre.

c. This demonstrates that A&B does not operate their wells during the peak demand period at full capacity.

d. This is consistent with Mr. Sullivan's analysis in the Rebuttal Report, Exhibit 334, Figure 4 (page 17), which showed many well systems are not operated continuously up to their capacity.

31. The Director determined total water supply in 2006 as 970 cfs, based on examination of the "low flow discharge" values in the A&B Annual Report. Dr. Brockway compared the historical diversion rate determined by the Director with historical B Unit pumping records. Brockway, Vol. XI, 2260:22-2262:4.

a. Dr. Brockway converted the 970 cfs pumping capacity to a potential monthly volume of 59,539 af.

b. He compared the potential monthly pumping volume with the historical peak monthly pumping in 2006, shown on Figure 3-12, which was approximately 50,000 af.

c. The monthly shortage calculated by A&B's experts for 2006 from Table 4-7 was approximately 10,000 af.

d. Assuming that A&B's experts were correct, and A&B required an additional 10,000 af of water to avoid shortage in 2006, A&B could have made up the difference from the available water supply (59,539 af-50,000af=9539 af additional available water supply).

32. In sum, these evaluations (described in ¶¶ 21-29) show that the District is not pumping up to the available well capacity. There is no reason for this, unless the farmers do not need the water. To the extent that A&B claims or computes a shortage and there is unused capacity, the shortage cannot be attributed to juniors.

33. Declines in diversion over time are due to more efficient delivery systems and the addition of water spread acres.

34. Mr. Koreny's Figure 3-12 also showed a decline in diversions over time. Mr. Koreny's testimony attributes this to changes in water levels. However, the Director's Order concluded (FOF 58) that these declines in diversions were due to conversions of A&B farms from flood irrigation to sprinkler irrigation, as well as irrigation of the water spread acres.

35. In testimony about FOF 58 which noted a 7% decline in B Unit diversions during the peak month, Mr. Luke attributed this decline to two things: first, to the irrigation of approximately 4100 additional acres under the B Unit water spread rights; and second to the conversion to sprinklers which allows more efficient use of available water, resulting in less water being diverted. Luke, Vol. VI, 1200:24-1202:25.

B. A&B claims that it requires 0.88 or 0.89 miner's inches/acre are unpersuasive in light of its decades long reliance on 0.75 miner's inches/acre as its design and rectification criteria.

36. The Director concluded that 0.75 miner's inches/acre was the design criteria for the District's wells. [FOF 64].

37. In its Motion to Proceed, A&B claimed that it required delivery of 0.75 miner's inches/acre in order to avoid injury to its water right; similarly, in materials supplied to the Director in late 2007, A&B listed as "short" only those wells that were producing less than 0.75 miner's inches/acre (the so-called "Item G wells"). Despite these positions taken pre-trial, A&B maintained through its testimony that 0.75 miner's inches/acre was only a threshold rectification value, and not a design criteria, and that it was injured if its wells did not produce at a rate of 0.88 or 0.89 miner's inches/acre.

38. Although the Director's language in paragraph 64 could be interpreted as erroneously assuming that A&B's wells were physically limited to delivering 0.75 miner's inches/acre, Mr. Luke clarified the meaning of paragraph 64 during his testimony. Referring to the 1985 Hydrology Appendix, Mr. Luke said:

> A. Well, that they can't support a peak net farm delivery in excess of the three-quarters-of-an-inch, which is the current -- which is the rate at which the current project is designed to operate.
> Q. Does that sentence suggest to you there's a physical limitation on the district's
> 01304
> ability to deliver to .357 or just an operational minimum?
> A. You know, I think it's -- you know, from all that's been discussed about this, it seems clear that the .75 is the current goal, I guess, of what A & B is trying to deliver.
> Q. If they can do better, great, but .75 is what they're trying to get to?
> A. Right.

Luke, Vol. VI, 1303:19-1304:9.

39. Mr. Luke's testimony was consistent with that of Mr. Vincent. Mr. Vincent made a review of Bureau of Reclamation documents related to the A&B project, beginning with the 1954 and 1955 reports, and prepared a summary of the Bureau's decisions regarding system capacity as reflected in those documents. *See generally*, Testimony of Mr. Vincent, Vol. IX, 1807-1830 and Exhibits 165 and 166. Mr. Vincent prepared the following summaries, contained in flip chart Exhibits 165 and 166, regarding design capacity of the B Unit based on the 1954 and 1955 Bureau reports:

	Proposed Irrigated Area (acres)	Well capacity (miner's inches/acre)	Farm headgate delivery (miner's inches/acre)
1954 Supplemental Report	62,403	0.77	0.73
1955 Definite Plan Report	60,160	0.70	0.67
1955 DPR (peak demand= +10%)		0.77	0.73

40. Mr. Vincent noted that these design values were carried forward into the Bureau's 1985 Hydrology Appendix based on the Bureau's review of four pieces of information: design capacity derived from a computer model, an SCS publication regarding irrigation demand in southern Idaho, a Bureau document regarding sprinkler irrigation; and the 1984 A&B letter from Mr. Elmer McDaniel. Vincent, Vol. IX, 1818:19-1819:18.

41. Mr. Vincent also addressed A&B's contention that 0.75 miner's inches/acre is merely a rectification criteria, the threshold at which a well is eligible to have the District work to improve its capacity, and not a design criteria. He noted that initially, the rectification criteria was 0.73 miner's inches/acre, which is consistent with the peak design criteria for delivery to the farm under the 1955 Definite Plan Report (*see supra* FOF 37). In 1967, the A&B Board changed the rectification criteria to 0.75 miner's inches/acre, a change that Mr. Vincent inferred reflected the District's additional need for water to irrigate the newly developed water spread acres under beneficial use and enlargement rights.

42. Mr. Eames was one of A&B's farmer-lay witnesses. During his cross-examination he was asked about his understanding of the 0.75 miner's inches/acre standard. His deposition testimony was read into the record, and was to the effect that 0.75 miner's inches/acre was the design criteria used by the District (based on farm headgate deliveries). He also testified that his understanding was based on communications he'd received from the District over the years.

43. By contrast, Mr. Temple testified that the 0.75 miner's inches/acre value was merely a rectification criteria and not a design criteria (or alternatively – and that the design

criteria for the wells was actually greater than 0.75 miner's inches/acre [e.g., 0.88 miner's inches/acre]).

a. He was unable to square this position with the language of a letter written by a prior manager of A&B, Mr. Elmer McDaniel, Exhibit 586, which refers to the 0.75 miner's inches/acre as a design delivery criteria and, given the context of the letter, simply cannot be a basis for concluding that 0.75 miner's inches/acre was only a rectification criteria at the time Mr. McDaniel was manager.

b. Mr. Temple was unable to explain why the District's 2007 Motion to Proceed referred to a shortage based on deliveries below 0.75 miner's inches/acre. He was also unable to explain why, in response to the Director's November, 2008 request for information regarding, *inter alia,* which wells were allegedly short, A&B submitted a list only of wells delivering less than 0.75 miner's inches/acre.

c. Mr. Temple's position is not assisted by the deposition testimony of Mr. McDaniels, admitted by stipulation of the parties. Mr. McDaniels's testimony is not reliable because he had no independent recollection of either the letter, Exhibit 586, or the 1984 Board meeting minutes.

44. Conclusions regarding the significance of 0.75 miner's inches/acre. The Director concluded that 0.75 miner's inches/acre was the design farm delivery criteria, rather than merely a rectification criteria, for the B Unit wells. [FOF 63]. Based on substantial evidence, this determination should be affirmed.

a. There was no evidence about the Bureau's or A&B's basis for adopting its rectification criteria. However, Mr. Vincent's conclusions regarding his review of historical documents suggest that the initial rectification criteria—0.73 miner's inches/acre—was identical to the design farm delivery capacity of the system to meet peak demands. His inferences regarding the increase from 0.73 to 0.75 miner's inches/acre as reflecting a need for an additional rate to serve the water spread acres are also compelling.

b. By contrast, A&B's witnesses' position that a 0.75 miner's inches/acre rectification criteria is consistent with a design pumping capacity of 0.88 miner's inches/acre are unpersuasive.

i. First, as established in ¶ 21 above, there is no evidence that the B Unit ever had a system-wide average pumping capacity of 0.88 miner's inches/acre.

ii. Second, even if there is a basis to conclude that 0.88 miner's inches/acre was the project pumping design capacity, then allowing well capacities to decline to 0.75 miner's inches/acre—a full 15% of capacity—before being eligible for rectification is illogical.

c. Thus, even if today Mr. Temple views the 0.75 miner's inches/acre as merely a rectification standard, that cannot erase or undo the significance of the 0.75 miner's inches/acre value based on the historical record.

i. All available documentary evidence points to the fact that 0.75 miner's inches/acre (or less) was the design farm delivery criteria for the District.

ii. Mr. Luke's Exhibit 155A demonstrated, the average B Unit well delivery to the farm headgate has rarely exceeded 0.75 miner's inches/acre, and then by only fractions of a miner's inch.

iii. Mr. Vincent's documentary evidence and Mr. Luke's evidence of actual diversions is consistent with the well capacity data described *supra* at section II.A. 26, which showed that the wells collectively may have had average pumping capacities that approached 0.75 miner's inches/acre, but the system never had average pumping capacities that approached 0.88 miner's inches/acre.

iv. As Mr. Luke testified, the goal was to design the system to deliver at least 0.75 miner's inches/acre to the farm; if the system could produce more, great.

v. In 2007, there were only 5000 acres of the 66,681 served by the B Unit that were being served by well systems that delivered less than 0.75 miner's inches/acre. Temple, Vol. IV, 666:19-667:1.

45. The 1955 Definite Plan Report [Exhibit 108] identified the TFCC as an area similar to A&B in terms of water requirements. The design rate of flow for TFCC is 5/8 miner's inches/acre (0.625 miner's inches/acre). Opinion Constituting Findings of Fact, Conclusions of Law and Recommendation, § XIV.7.g, Surface Water Coalition Delivery Call (finding that 5/8 miner's inches/acre is the TFCC design flow). Based on this, 0.75 miner's inches/acre would be *more* than the design criteria to serve TFCC's 240,000 acres flood irrigated with surface diversions.

C. The Director's analysis of irrigation requirements is supported by substantial evidence.

46. The Director's determination of irrigation requirements on a district-wide basis, rather than a well system-by-well system analysis, was consistent with the decree and the available information. In addition to reviewing historical documents regarding the intentions of the Bureau and A&B in operating the District, the Director made an evaluation of A&B's available water supply based on the amounts required to satisfy irrigation requirements.

a. Mr. Luke also testified about the Bureau of Reclamation's efforts to obtain a license for Water Right No. 36-2080 that specifically allowed ground water pumped within B Unit to be used on any of the acres associated with the place of

use. Luke, Vol. VI, 153:19-156:12; Exhibit 157D and generally, Exhibit 157 at page 4398.

b. Although contemporaneous correspondence described by Mr. Luke suggests the Department initially resisted issuing the license without more specific places of use, it eventually gave way and the license was issued with the appurtenance language as requested by the Bureau. Exhibit 157B.

47. The Director's irrigation requirements evaluation assumed a district-wide average delivery, which was consistent with the decree.

a. As Mr. Luke testified, there were many problems with evaluating supplies on a well system-by-well system basis, starting with the problem of being unable to verify the acres associated with each well system for the 36-2080 right because of inconsistencies between the polygon boundaries and aerial photographs that showed pivots and other delivery systems crossing the boundaries. Luke, Vol. VI, 1328:5-1334:16; Exhibit 161.

b. Further, Mr. Luke testified he was unable to evaluate how many of the irrigated acres were water spread acres. During the peak of the irrigation season when the project is "on allotment", A&B delivers water pro rata by reference to the 36-2080 acres associated with each well system. However, many of the farmers also have water spread acres under production. As testimony showed, the allotment deliveries are based on 36-2080 acres, but no effort is made to curtail the water spread acres. This spreading of water to the junior acres has reduced deliveries under the B Unit on a per acre basis. *See supra* § I. 6-10. A well system-by-well system analysis was impossible for purposes of a delivery call under the 36-2080 water right without being able to differentiate the senior acres from the water spread acres.

48. The Director determined A&B's irrigation requirements on an average annual basis using the following inputs:

a. An overall combined irrigation application and conveyance efficiency of 75% was used in the analysis based on reported efficiencies for various types of sprinklers and a reported conveyance loss of 3%, but the Director noted that the current overall efficiency may in fact be closer to 80%. [FOF 50].

b. A mean consumptive irrigation requirements of 2.17 af/acre on average for 1990-2002, based on A&B's reported crop data. [FOF 51].

c. Using these inputs, the Director calculated a 2.89 af/acre ground water diversion requirement and concluded (based on FOF 38) that this was equivalent to the 2.88 af/acre average annual pumping between 1994-2007 for 62,604 acres in B Unit.

d. The Director noted that the Bureau of Reclamation recommended a water duty of 2.59 af/acre in its 1985 Hydrology Appendix, Exhibit 113A. [FOF 45].

e. The Director also calculated ground water diversion duties from 1960-2007 for the same acres, and found them to be greater than the diversion requirement determined by the BOR in all but three years. [FOF 53].

f. The Director compared these irrigation requirements to those reported in an IDWR measurement program for Basin 36, which reported water duties ranging from 2.26-2.86 af/acre. [FOF 55].

g. Further, the Director examined water use estimates reported by the Magic Valley Ground Water District between 2004-2006. These primary source ground water wells located near A&B were reported to have water duties between 1.75 and 2.12 af/acre with an average annual duty of 2.01 af/acre. [FOF 56].

h. Based on these evaluations, the Director concluded that A&B was not short of water. However, the Director's conclusions regarding irrigation requirements were confirmed by his analysis of the ET requirements on allegedly short lands using the METRIC model. [FOF 76-80].

i. Mr. Kramber testified about the workings of METRIC, and the Director's conclusions in FOF 76-80, and Figures 10-13. The Director called for the METRIC analysis to be applied to determine the relative actual crop evapotranspiration rates on the item G lands within the B Unit compared to the surrounding lands based on satellite measurements of actual crop ET levels.

ii. Based on the analysis presented, the highest levels of evapotranspiration—indicating water available for crop use—were in the Item G lands; the second highest levels of evapotranspiration were in the surrounding A&B lands. Figure 9. A ratio of the evapotranspiration per amount of vegetation showed that Item G lands were highest in June and August, and in the middle range for July, showing that Item G lands were not short of water.

iii. METRIC is a reliable methodology based on analysis of satellite imagery developed by Dr. Richard Allen, who is a prominent researcher in the field of evapotranspiration. METRIC has been used by other water resources departments for administration and evaluation of water supplies. Kramber, Vol. VI, 1133:4-15, Exhibit 359.

49. Based on the evidence and testimony presented by the Department and the other parties, described below, the Director's determinations regarding A&B's annual average irrigation requirements are affirmed.

D. Director's conclusions regarding irrigation requirements were confirmed by testimony of A&B and IGWA farmers.

50. The farmers testified that they'd like as much water as possible because it was easier to irrigate at higher rates of flow.

a. Mr. Temple testified that at higher rates of diversion, "farmers do have more flexibility and may be able to shut off on Sunday." Temple, Vol. IV, 664:1-4.

b. Mr. Deeg testified that he was able to "take days off" from irrigating his farm that had a well delivering 0.9 miner's inches/acre. Deeg, Vol. V, 1081:19-1082:11.

c. Mr. Mohlman testified that reduced water deliveries have caused him a "lot of extra work". Mohlman, Vol. V, 1018:8-21.

d. Mr. Maughan testified that during the peak of the season he had to manage more actively by "maintain[ing] a rotation of every 12 days on our wheel lines. Our pivots continually run, so we can build-up moisture with a hand line or a wheel line, and then shut them off. And so that's what we try to do, maintain the pivot continuous run during those peak seasons." Maughan, Vol. X, 2137:13-2138:2.

e. Mr. Adams testified that during the peak season his extra efforts to manage his irrigation included "nozzling down" and that this is one of his "management techniques". He testified that if he had a higher rate of flow he wouldn't have to "nozzle down". Adams, Vol. V, 938:6-16.

f. Mr. Eames testified that he operates his wheel lines on a rotation basis when he is "on allotment" because the rates of flow are inadequate for him to run all of his wheel lines at once. Eames, Vol. IV, 814:5-19.

51. Testimony also showed that farmers can grow their crops (and do grow their crops) with rates of production between 0.65 and 0.75.

a. Mr. Kostka testified that if he had "the physical ability to get 75 hundredths of an inch to every piece of that 4000 acres, I can farm it." Kostka, Vol. V, 990:6-8.

b. This is in part due to the farmers' reliance on soil moisture as a source of irrigation water.

52. The farmers described the ways in which they rely on soil moisture as a source of water supply. For example, Mr. Deeg and Mr. Maughan testified that they fill the soil moisture in the spring in order to allow them to get through the peak of the season. Mr. Kostka and Mr. Adams (and others) described making irrigation scheduling decisions by testing soil moisture through the "feel" method in the field, several times a week. Mr. Adams also testified that he relied on the University of Idaho Extension publications to assist in his irrigation decisions, including the "checkbook method" of soil moisture evaluation. This treats soil moisture as a "deposit" in the soil bank in order to make "withdrawals" at the peak of the season. Kostka, Vol. V, 950:7-19, 979:1-980:2; Eames, Vol. IV, 812:7-21, 829:17-22; Adams, Vol. V, 877:20-879:10; Mohlman, Vol. V, 1031:23-1032:1; Maughan, Vol. X, 2136:22-2137:12; Deeg, Vol. V, 1067:9-1068:11; Stevenson, Vol. X, 2084:6-2085:14.

53. The physical evidence of impacts from water shortage was not apparent in the farmers' testimony. No farmer-lay witness produced evidence of crop loss or yield reductions.

See, e.g., Adams, Vol. V, 905:23-907:5, 919:24-920:11; Eames, Vol. IV, 827:3-23, 835:14-25, 854:3-12; Kostka, Vol. V, 993:6-25.

a. Further, three of the four A&B farmer-lay witnesses were also plaintiffs in a lawsuit filed in federal court claiming crop damage and yield reductions due to application of an herbicide called "Oust" for a period of time (approximately 2001-2005). Thus, the weight of these witnesses' allegations of crop loss or yield reductions must be judged against their claims made in the Oust litigation.

54. Crop yields have increased over time. This was confirmed by all the farmers who testified, and is illustrated in Exhibit 357 which is based on crop yield data reported by the National Agricultural Statistics Service ("NASS") and shows increasing average crop yields through time in Minidoka County. The A&B farmer-lay witnesses provided limited information on crop yield data. Exhibits 355A and 358 were developed using data provided by Mr. Eames and Mr. Mohlman. These exhibits show their crop yields are typically greater than the Minidoka County average yields.

55. The evidence showed that farmers take steps, initially through crop rotation decisions or by becoming specialists in particular crops (such as potatoes, in the case of Mr. Kostka) and renting or leasing ground that is sufficient for that purpose, to deal with the adequacy of supply from particular wells. The farmers also testified about the practice of moving water from one crop to another, depending on the nature of the demand by the crop. Mohlman, Vol. V, 1031:5-1031:18, 1035:1-1035:8; Kostka, Vol. V, 974:10-975:12; Eames, Vol. IV, 837:18-838:2.

56. While it is understandable that farmers would desire more water to make irrigation scheduling easier, this alone is not a basis for ordering curtailment of juniors.

E. Mr. Sullivan's irrigation requirements analysis confirms the Director's determinations regarding irrigation requirements, and also resolves the question of the necessary rate of water delivery required for crops during the peak of the season.

57. Mr. Sullivan testified that he refined the Director's irrigation requirement analysis. Whereas the Director looked at average annual requirements, Mr. Sullivan's analysis focused on requirements during the peak demand period in comparison to pump capacities.

58. In order to determine a district-wide peak farm delivery requirement for A&B's farmers, Mr. Sullivan performed a water balance analysis that included available soil moisture as a source of water supply. Exhibit 302. The analysis assumed, consistent with the testimony of the lay-witness farmers in this case, farmers make irrigation scheduling decisions based on available soil moisture. Sullivan, Vol. VIII, 1682:1-1692:1.

59. Mr. Sullivan's analysis showed that with careful irrigation management, 0.65 miner's inches/acre is sufficient to meet the peak irrigation demands based on the weighted average water requirements of the crops that are raised by the B Unit farmers. Sullivan, Vol. VIII, 1691:17-1692:10.

a. Consistent with the testimony of the A&B farmer-lay witnesses, Mr. Sullivan incorporated the assumption that farmers will move irrigation water around their various fields to serve the crops that need it most. Sullivan, Vol. VIII, 1650:11-1651:2.

b. Similarly, Mr. Sullivan's analysis assumed that farmers would schedule their irrigations when necessary to deal with limited well system delivery rates. Such irrigation scheduling is consistent with the practices described by A&B farmer-lay witnesses such as Mr. Adams. Sullivan, Vol. VIII, 1689:23-1690:14.

60. Initially, Mr. Sullivan's analysis (in the opening and rebuttal reports, Exhibits 301 and 334) was performed on a monthly timestep, like the A&B experts. However, in surrebuttal he performed a daily analysis to confirm the results of the monthly analysis. Exhibit 342.

a. The daily analysis was designed to track soil moisture use by the crops, incorporating weighted average root depths during the time of peak demand, based on a district-wide crop distribution. Exhibit 342.

b. During cross-examination, Mr. Sullivan testified about his reliance on a 3.4 feet weighted average root depth. He agreed that certain crops grown on A&B, including potatoes, might not have a root depth of 3.4 feet; however, he defended this input value as a means to calculate a system-wide average and noted that the depths were based on accepted values from literature. Sullivan, Vol. VIII, 1642:5-17.

61. Table 1 of Exhibit 342, showed the relationship between soil moisture and crop requirements during the peak of the season. This graph showed an overall decline in soil moisture—withdrawals from the soil moisture bank—for several weeks in the peak of the season until the highest crop demands were met. It was this relationship that the analysis in Exhibit 342 modeled.

62. By contrast, during his examination Dr. Brockway drew a graph showing a different relationship showing more of a "sawtooth" relationship of soil moisture levels over time. Exhibit 251.

a. While both graphs show the fluctuation between soil moisture over time, they assume different rates of irrigation.

i. Dr. Brockway's assumes rates of water delivery that would allow the soil moisture to be refilled to capacity after each irrigation. In effect, Dr. Brockway assumed that the soil is a reservoir into which irrigation water should be delivered and stored. At the end of the period of peak demand, Dr. Brockway's soil moisture levels were indistinguishable from other times during the irrigation season.

ii. By contrast, Mr. Sullivan's Table 1 showing soil moisture levels declining during the peak of the season reflects the ability of farmers to manage net

withdrawals of soil moisture through the peak demand period when their wells are not quite able to deliver at the peak rate of the crop demand. The use and management of soil moisture allows farmers to successfully raise a crop during dry years and to get the most out of their irrigation supply.

iii. Based on the testimony of the farmers, it appears that Mr. Sullivan's graph better portrays the methods by which A&B farmers rely on a combination of pump deliveries and soil moisture during the peak of the season.

63. While the maintenance of soil moisture over the season as described by Dr. Brockway's graph is not objectionable in the absence of a delivery call or if a well is capable of a high rate of delivery, the Director should not curtail juniors to effectively allow A&B to run a soil moisture bank *with no withdrawals*. Mr. Sullivan's approach reflects the proper assumptions regarding reliance on soil moisture for purposes of the Director's response to the delivery call.

64. As described in section II.B. 36-45 above, the Director concluded, based on review of the Bureau of Reclamation and A&B historical documents, that the project was designed to deliver 0.75 miner's inches/acre.

65. Thus, the Director determined that 0.75 miner's inches/acre is an adequate average annual rate of delivery which is conservatively high based on Mr. Sullivan's analysis that shows that farmers can adequately irrigate the mix of crops grown under the B Unit with as little 0.65 miner's inches/acre with careful irrigation water management.

F. A&B's irrigation requirement analysis is unreliable, and thus provides no basis to reject the Director's average annual rate or Mr. Sullivan's peak demand rate.

66. While A&B's experts provided testimony that purported to show irrigation requirements could be met only by 0.86 miner's inches/acre at the field headgate, their testimony was not persuasive.

a. First of all, the A&B analysis was conducted on a well system-by-well system basis.[4]

i. Although described as a well system-by-well system analysis, A&B's analysis instead involved application of district-wide average data to the acres asserted to be associated with each well system.

(1) As detailed in Exhibit 367, the A&B irrigation requirements analysis included district-wide average data for:

(a) ET;

[4] As noted at the outset, the Director's system-wide analysis was the proper analysis given the terms of the partial decree for 36-2080, consistent with the Bureau's analysis of the irrigation requirements in the 1955 Definite Plan Report. Exhibit 585.

(b) Crop distribution;

(c) Farm application efficiency;

(d) Conveyance loss.

(2) These district-wide inputs were then used to compute the irrigation requirements for each well system, based on the acreage associated with each well system. Thus, the only well-system specific data was the irrigated area.

ii. This disconnect on the scale of the data (district-wide averages applied to calculate well-system specific irrigation requirements) leads to certain faulty conclusions. The problems with mixing these district-wide and well-specific assumptions were illustrated by the cross-examination testimony of Dr. Brockway regarding certain of the graphs in Appendix M of the July 16, 2008 A&B Expert Report.

(1) Appendix M was a collection of B Unit well system graphs containing two lines—the water requirements in acre-feet and the actual diversions over various periods of time. In the case of the well system 8A823 relied upon by Mr. Maughan, an IGWA member and A&B farmer, A&B showed a shortage to Mr. Maughan's lands during July and August of 2007.

(2) However, during Mr. Maughan's testimony in this matter he stated that he grew barley on the lands served by well system 8A823 and was done irrigating in early July. There was little or no pumping in July and August because Mr. Maughan had no irrigation demand.

iii. Dr. Brockway admitted these logical disconnects were due to the use of district-wide weighted average cropping information applied it to specific well systems. He went on to say that the calculated shortages could be erroneous:

> 14 [T]hat doesn't tell you for the individual
> 15 well, because you don't know what his crop was,
> 16 what his shortage actually was.
> 17 Q. The shortage could have been zero;
> 18 correct?
> 19 A. It might have been in some months.

Brockway, Vol. XI, 2264:14-19.

67. A&B's analysis also failed to incorporate soil moisture into the irrigation requirements analysis. Brockway, Vol. XI, 2277:8-2279:4. This was the primary difference between Mr. Sullivan's irrigation requirement analysis and the A&B experts'.

a. Dr. Brockway testified that it was "risky" to assume a farmer could rely on soil moisture as a water supply to meet irrigation requirements. Brockway, Vol. XI, 2289-90.

b. However, as discussed *infra,* whether it is "risky" or not, the farmer-lay witnesses testified about their reliance on soil moisture. Dr. Brockway's failure to consider soil moisture was inconsistent with the farmer-lay witness testimony.

c. Further it is inconsistent with the conjunctive management rules ("CMR") because it failed to consider soil moisture as a source of water. The CMR require the Director to consider all sources of water in evaluating a delivery call.

d. It is also inconsistent with the April 29, 2008, ruling in the Surface Water Coalition matter in which the Hearing Officer found that soil moisture should be taken into account in any irrigation requirements analysis. *See* § XIV. 3.d.

68. A&B shortages were also unreasonable for the following reasons:

a. The shortages were based on the wrong comparison—calculated irrigation requirements versus historical pumping deliveries. As set forth at the beginning of these findings, the operative inquiry is the system-wide well capacity.

b. Shortages were computed in every month of the irrigation season, even at the beginning and end of the season when demand is low. Brockway, Vol. XI, 2262:5-22.

c. Shortages during the shoulder months are inconsistent with pumping records that show the well pumped more than in the shoulder months during other times of the year. If the well was able to pump a certain amount in July, then there is no reason that amount couldn't be pumped in May if the demand existed. Sullivan, Direct Testimony, July 16, 2008, 8:3-6; Brockway, Vol. XI, 2253:20-2254:3.

d. A&B computed shortages for wells that have been converted to surface water. Irrigation requirements were compared to well pumping, which was zero because of the conversion. In this analysis, A&B ignores the source of supply—surface water—in contravention of the CMR.

e. Table 4 of Mr. Sullivan's Rebuttal Report, Exhibit 334, summarized the erroneous nature of A&B's shortage calculations.

i. A&B calculated 29,284 af shortage as an annual average.

ii. Of this, over 51% was associated with shortages calculated during the shoulder months.

iii. Another 21% was due to actual pumping that was less than reported well capacity. As discussed in greater detail elsewhere in these findings (section II.A. 31), to the extent farmers desire greater rates of production,

the evidence showed that on a monthly average basis, A&B had the capacity to make up the difference for the "shortages" computed by their experts. Dr. Brockway testified that the shortages he computed for 2005 and 2007 could have been made up by using the entire capacity of the B Unit wells. Brockway, Vol. XI, 2269:24-2270:8, 2299:8-2301:10.

iv. Another 15% was related to well systems converted to sprinklers.

v. This leaves 13%, or 3915 af/year of shortage, which is overstated primarily because the A&B experts failed to consider soil moisture in their analysis.

69. A&B has an effective well rectification program. *See supra* ¶ 13. To the extent that farmers want more water, they need to persuade A&B to raise the well rectification criteria. But even such a theoretical change in well rectification criteria cannot support relief in a delivery call absent a showing of shortage.

III. THE DIRECTOR PROPERLY REJECTED A&B'S CLAIMS RELATED TO GROUND WATER LEVELS.

A. Ground water levels have declined as a result of conversions from flood to sprinkler irrigation by surface water users, drought, and ground water pumping.

70. Testimony from a variety of witnesses, including Dr. Brockway, concluded that water levels have declined as a result of conversions, drought, and ground water pumping. Ralston, Vol. 1, 87:16-89:6.

71. Exhibit 356 showed that, for the A&B farmer-lay witnesses' wells, over the last 15 years well production has remained relatively steady despite changes in the water table. *See also* Order, Figure 3 at page 10.

72. It was undisputed that water is available in the aquifer. The parties had a significant dispute over whether A&B is obligated to chase the water through its well rectification program. As discussed in further detail, the Director properly declined to assign well maintenance and rectification to the junior ground water pumpers.

B. As a factual matter, the Director's limitation on the scope of the Order was appropriate because there was no evidence presented that demonstrated diversions had declined as a result of water level declines.

73. The Director concluded that he need not decide issues related to the Ground Water Act because he'd found no injury to A&B's Water Right No. 36-2080 from junior ground water pumping. [COL 38]. The legitimacy of this conclusion as a matter of law is discussed below in Conclusions of Law, but as a matter of fact, the Director did not err in declining to award relief to A&B on the basis of water level declines.

74. Dr. Ralston's testimony established that there were no declines in diversions as a result of water level declines with the exception of three wells he examined in the southwestern portion of the District. Ralston, Vol. I, 194:20-195:14 (referring to Figures 11A-C in his report).

75. The southwestern portion of the District is interbedded with sedimentary layers which reduce the flow contact zones and, accordingly, well production. Ralston, Vol. I, 78:6-21. Dr. Ralston pointed out that this problem was known prior to the construction of the District's wells. Ralston, Vol. I, 79:1-14.

76. This opinion related to the lower productivity of the southwestern portion as compared with the remainder of the District, is consistent with the results of District's well deepening efforts, carried out for the first time prior to 1963. In the southwestern portion of the District, deepening was not a successful means to increase well production. Ralston, Vol. I, 84:1-24.

77. Mr. Koreny's opinion regarding water level declines was unsupported by the evidence.

a. In paragraph 12 of his revised written testimony, Mr. Koreny opined that water level declines had lead to declines in diversions from the B Unit wells from an average of 0.89 miner's inches/acre in 1966.

i. However, during cross-examination he was unable to establish through any of his figures or other analyses that this had indeed been an average well capacity during this period of time. Koreny, Vol. XI, 2207:22-2208:12.

ii. With regard to Figure 3-20, which portrayed well capacities in 1970 when little in the way of water level declines had been experienced by the District, he agreed Figure 3-20 showed that approximately 2/3 of the well systems in the A&B District could not produce 0.9 miner's inches/acre.

b. Neither of these provides a basis to conclude that changes in A&B's water levels have led to the changes in diversions asserted by Mr. Koreny.

78. Mr. Temple's testimony that water level declines lead to reduced diversions was contradicted by testimony regarding historical well capacities and patterns of diversion.

a. Mr. Temple had no direct evidence that water level declines caused reductions in well capacities. He relied, instead, on the inference that declines in water levels explained A&B's well maintenance, deepening, and other improvement under its rectification program. Temple, Vol. IV, 679:3-680:11.

b. However, Mr. Temple also testified that other problems, unrelated to water level declines, including mechanical problems or well construction deficiencies, could result in reduced well capacities requiring well rectification efforts. Temple, Vol. IV, 679:13-680:11.

c. Dr. Ralston concluded in his expert report that there was no pattern of reduced well capacities that could be tied to water level declines. Ralston, Vol. I, 188:2-189:7. By the same token, he also concluded that the reasons for well rectification were unique to each well. Ralston, Vol. 1, 189:25-190:6.

C. The Director properly declined to evaluate A&B's cost information.

79. A&B claimed costs as a basis to recoup their expenses associated with deepening, improving and maintaining their well systems. Mr. Temple claimed costs were both evidence of injury to the 36-2080 water right as well as claims for damages associated with the effect of junior pumping. Temple, Vol. IV, 757:19-758:2.

80. In FOF 123-133, the Director found that the District was required to close the drain wells due to water quality concerns arising from the federal Environmental Protection Agency designating the ESPA as a "sole source" aquifer. The Director also noted that there were some windfalls to A&B from the drain well closures, including increased delivery system efficiencies.

81. The Director also found that the costs claimed by A&B were about what the Bureau expected in terms of operation, maintenance, and replacement when it built the project.

a. The Director's findings were supported by the testimony of Mr. Vincent. Mr. Vincent agreed that the drain well closure program, which was a 60-40 cost-sharing program with the Bureau of Reclamation, could not be appropriately considered as evidence of "injury" to A&B from monies expended to maintain the system. Vincent, Vol. IX, 1800:6-22.

b. More generally, Mr. Vincent testified about the Bureau's expectation that A&B's delivery system (including wells and conveyance structures) would need maintenance, upkeep, and replacement, as reflected in the 1955 Definite Plan Report. No evidence was presented that suggested A&B's costs were in any way inconsistent with the expectations of the Bureau of Reclamation's planning efforts. Vincent, Vol. IX, 1801:5-1803:4.

82. Mr. Temple testified in general about A&B's costs associated with maintaining and improving the B Unit well system. He described several types of expenditures: "routine" maintenance (associated with Account #443), "extraordinary" maintenance, including well deepening and other rectification measures (Account #445), and work done to close the drain wells (account #472).

a. Mr. Temple's testimony, although offered for the contrary conclusion, described his efforts to "crowd in" to the Bureau cost-share project additional work to obtain additional operational efficiency to increase system yield. A&B provided no factual basis to obtain compensation for monies expended under the Bureau's drain well closure cost-share program. Temple, Vol. IV, 769:18-770:5.

b. Mr. Temple testified that the average annual cost for A&B's well rectification program under Accounts #445 and #472 was about $572k. Temple, Vol. IV,

776:24-777:13. This cost included labor, well maintenance, deepening, pump replacement, and other items. Breaking that total down by the annual average volume of water pumped, the cost was $3.21/acre foot of water. Temple, Vol. IV, 777:14-23.

c. Adding the "routine" and "extraordinary" expenditures together, the cost was $11/af, of which A&B believes juniors should be 80% or $9/af. Temple, Vol. IV, 780:6-21.

83. By comparison, Pocatello presented costs associated with maintaining its interconnected well systems.

a. Mr. Ulrich, Pocatello's water superintendent, presented summary costs related to well maintenance, including labor, as presented in Exhibits 360, 363 and 364.

b. Exhibit 360 included the same types of information as Exhibit 307. However, Exhibit 360 also contained a "miscellaneous" category of costs. Testimony indicated these expenditures might include costs related to water quality, because Pocatello must delivery treated water to its customers. A&B has no analogous costs.

c. However, excluding the "miscellaneous" category of expenditures, the city's costs reflected on Exhibits 360, 363, and 364 can be compared to those claimed by A&B on Exhibit 307. Looking only at Pocatello's well maintenance and labor costs, these were $20/acre-foot, nearly seven-times as much as the cost to A&B under its accounts #445 and 472.

d. Pocatello's evidence provides an independent basis to find that the Director's conclusion that A&B's costs were not unreasonable was appropriate.

84. Costs information was not objective or transparent. Mr. Temple admitted that the A&B accounting is not transparent. Temple, Vol. IV, 781:15-784:4. As Mr. Vincent testified, were the State of Idaho to assign blame to the junior ground-water pumpers for the costs associated maintaining the B Unit wells and delivery systems, at a minimum the claims made would need to be objectively based and transparent.

IV. DIRECTOR'S FINDINGS REGARDING HYDROGEOLOGY AND WELL DESIGN ARE ADEQUATE BUT NOT NECESSARY TO THE DECISION.

85. Because of the conclusions above related to the adequacy of the water supply, the Director's findings regarding the effect of hydrogeology and well design are not essential to the decision. There is no injury, so there is no reason to inquire into the reasonableness of the means of diversion.

CONCLUSIONS OF LAW

86. The foregoing findings of fact are incorporated herein.

I. NEITHER FACTS NOR LAW SUPPORT A&B'S REQUEST FOR RELIEF IN THE FORM OF GROUND WATER LEVELS

87. A&B moved for a declaratory ruling that it was entitled to historic water levels. A&B has also requested reasonable pumping levels and compensation for costs associated with rectification, maintenance, and improvement of its well systems.

88. The Hearing Officer rejected the request for historic water levels, finding, *inter alia*, "[t]he Idaho Ground Water Act is applicable to the administration of the water rights involved in this case, including those rights that pre-existed the adoption of the Ground Water Act in 1951, and are subject to administration consistent with the subsequent amendments to the Act." Order Regarding Motion for Declaratory Ruling, May 26, 2008 at 7.

89. The Hearing Officer found that A&B is subject to the Ground Water Act, including "reasonable pumping levels". However, there is no independent entitlement to water levels. A water right is for a quantity of water, not a water level—whether that water level is measured under the ground or on the bank of a stream next to a surface water headgate. *Schodde v. Twin Falls Land & Water Co.*, 224 U.S. 107, 120 (1912).

90. There must be a factual predicate to trigger the Director's discretion to establish reasonable pumping levels. As a practical matter, if the Director had to establish reasonable pumping levels whenever any ground water user experienced a change in water levels, his efforts in this regard would be never-ending.

91. A showing of shortage under a licensed or decreed water right is an appropriate factual predicate to the Director's discretion to establish reasonable pumping levels.

92. Without a right to water levels *per se*, A&B is without basis to claim costs for its efforts to maintain and improve its well systems. Costs are simply another way to claim water levels. Put another way, if there were a basis to claim water levels, compensation for costs to "chase water" is a form of relief that is equivalent to a particular water level.

93. In addition, testimony showed that the cost claims proffered were insufficient to support a decision in favor of A&B.

    a. Mr. Temple admitted that the cost claims were not transparent. Evidence further showed that the costs as claimed might include activities not directly related to water level declines, if such a delineation in costs could even be made.

    b. Because this would require the Director to order juniors to compensate A&B, as a matter of due process the cost claims are wholly insufficient to support relief of this sort.

II. A&B'S CLAIMS OF SHORTAGE MUST BE JUDGED UNDER THE STANDARD OF *AFRD #2.*

94. Under *American Falls Reservoir Dist. #2 v. Idaho Dept. of Water Resources* ("*IDWR#2*"), 143 Idaho 862, 154 P.3d 433 (2007), the decreed amount is maximum amount of flow that can be diverted, but is not necessarily the measure of an entitlement under a delivery call.

95. A&B is only entitled to the amount it can beneficially use, the 1100 cfs decreed rate under Water Right No. 36-2080 notwithstanding.

96. A&B has a decree which incorporates maximum flexibility as far as delivering water from well systems that have more than adequate supplies to well systems that might be marginal during the peak season. The evidence showed that of the 135 well systems, A&B has taken advantage of this and interconnected some; in other cases it has drilled supplemental wells or obtained surface supplies. A&B clearly recognizes the appurtenance provisions of its partial decree, and has relied upon them.

97. The Director's beneficial use analysis by reference to a system-wide water supply was appropriate in light of the terms of the partial decree and A&B's reliance upon them.

III. THE EVIDENCE SHOWED THAT A&B HAS ADEQUATE WATER TO GROW CROPS.

98. The evidence showed that when the rate of water delivery was between 0.65 and 0.75 miner's inches/acre, farmers had an adequate water supply.

99. The evidence also showed that farmers preferred a higher rate of delivery because irrigation scheduling is easier at higher rates of delivery. While this preference is understandable, it is not a basis to find injury or to order curtailment of juniors.

100. Under Idaho law, a delivery call is subject to the doctrine of maximum utilization and the public interest. Indeed, the Director's authority to administer ground water rights is conditioned on these constitutional concepts:

> [t]he duty...to control the appropriation and use of the ground water of this state as in this act provided and to do all things reasonably necessary or appropriate to protect the people of the state from depletion of ground water resources contrary to the public policy expressed in this act.

I.C. § 42-231 (emphasis added).

101. This provision apparently refers back to the policy statement in I.C. 42-226, which affirms the "traditional policy" of the state requiring the "beneficial use [of ground water] in reasonable amounts" with the following qualifier:

> while the doctrine of 'first in time is first in right' is recognized, *a reasonable exercise of this right shall not block full economic development* of underground water resources."

Id. (emphasis added).

102. Thus, the Director's discretion under the Ground Water Act is modified by an obligation to protect "the people of the state" from depletion of ground water resources contrary to public policy; put another way, under I.C. § 42-231, the Director's authority is expressly *not* limited to protecting senior water rights to the exclusion of other interests. As the Hearing Officer noted in the Order Regarding Motion for Declaratory Ruling, "the sum of administration of water law is not encapsulated in I.C. sec. 42-602." Order at 7.

103. Because the evidence shows that A&B has had adequate water supplies, and because the evidence shows that A&B has not even used its entire water supply, A&B has adequate water to grow crops. A&B is not injured.

JUDGMENT AND DECREE

104. The foregoing findings of fact and conclusions of law are incorporated herein.

105. The Director's Order is affirmed.

For the reasons identified in these Proposed Findings and based on the legal and factual arguments in Pocatello's Closing Brief, the City respectfully requests that these findings of fact and conclusions of law be adopted by the Hearing Officer in this matter.

Dated this 23rd day of January, 2009.

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