BEFORE THE DEPARTMENT OF WATER RESOURCES

OF THE STATE OF IDAHO

IN THE MATTER OF DESIGNATING THE EASTERN SNAKE PLAIN AQUIFER GROUND WATER MANAGEMENT AREA	**ORDER DESIGNATING THE EASTERN SNAKE PLAIN AQUIFER GROUND WATER MANAGEMENT AREA**

The Director ("Director") of the Idaho Department of Water Resources ("Department") finds, concludes and orders as follows:

FINDINGS OF FACT

Procedural Background

1. On July 7, 2016, the Director sent a letter to potentially interested water users stating that the Department "is considering creating a ground water management area for the Eastern Snake Plain Aquifer (ESPA)." Ltr. from Gary Spackman, Dir., Idaho Dept. of Water Res. to Interested Parties 1 (July 7, 2016) ("*Letter*").[1] The *Letter* invited water users to participate in public meetings scheduled by the Director. The purpose of the public meetings was to provide water users and interested persons an opportunity to learn more about the possible ground water management area and to express their views regarding the proposal.[2] *Id.* The *Letter* stated that "[a]fter hearing from water users at the public meeting and considering the issues," the Director would "decide whether a ground water management area should be created." *Id.*

2. The *Letter* discussed historic trends of declining ESPA water levels, Snake River flows, and spring discharges that had begun in the 1950s and had continued steadily, despite brief "periods of recovery." *Id.* The *Letter* also stated that "[w]ater users and the Water Resources Board are undertaking efforts to enhance recharge and reduce ground water pumping to counter the declines," but "future conditions, including climate and water use practices are unknown." *Id.* at 2.

3. The *Letter* stated that pursuant to Idaho Code § 42-233b, the Director is authorized to designate "ground water management areas," that the statute "identifies several potential tools available to the Director within a ground water management area to properly

[1] A copy of the letter is on the Department's website at: https://www.idwr.idaho.gov/files/ground_water_mgmt/20160707-Letter-to-Waters-Users-from-Gary-Spackman-Re-Proposed-ESPA-GWMA.pdf

[2] The Department also issued a news release on July 13, 2016, regarding the meetings.

manage the resource," and that "formation of a ground water management area would have distinct advantages" over administering only through conjunctive management delivery calls, because the Department can "consider the aquifer as a whole." *Id.* at 2-3. The *Letter* stated "[t]he question is whether the ESPA is approaching the conditions of a critical ground water area (not having sufficient ground water to provide a reasonably safe supply.)." *Id.* at 2.

4. The *Letter* also stated that "[o]ne of the issues needing consideration will be the areal extent of the ground water management area," and that "[t]he Department's technical information suggests that the area that impacts water stored in the ESPA and spring discharge extends into tributary basins." *Id.*at 3. The *Letter* listed twenty-two tributary basins and stated that "[w]ater users in those areas are invited to participate" in the public meetings. *Id.* at 3. The tributary basins listed in the *Letter* included the Big Wood River basin. *Id.* at 3.

5. On July 25, 2016, the date of the first public meeting (in Hailey), Sun Valley Company filed with the Department a *Petition for Declaratory Ruling Regarding Creation of ESPA Ground Water Management Area* ("*Petition*"). Sun Valley Company filed an *Amended Petition for Declaratory Ruling Regarding Creation of ESPA Ground Water Management Area*, on July 29, 2016 ("*Amended Petition*"). Sun Valley Company filed a *Second Amended Petition for Declaratory Ruling Regarding Creation of ESPA Ground Water Management Area*, on October 19, 2016 ("*Second Amended Petition*").[3] The *Petition,* the *Amended Petition*, and the *Second Amended Petition* (collectively, "*Petitions*") seek declaratory rulings pursuant to Idaho Code § 67-5232 and Rule 400 of the Department's Rules of Procedure (IDAPA 37.01.01.400).

6. As discussed in the *Order Denying Petition for Declaratory Rulings*, which is issued herewith, the *Petitions* raised a number of the same factual and legal issues that were already pending before the Department in considering whether to designate a ground water management area for the ESPA.

7. The Department conducted the public meetings referenced in the *Letter* on the scheduled dates (July 25-28) at the scheduled times and locations. Department staff in attendance at the public meetings included the Director, Special Advisor to the Director Rich Rigby, and Hydrogeologist Sean Vincent. The Director began each meeting with opening comments. Rich Rigby presented the legal, factual, and policy aspects of designating an ESPA ground water management area. Sean Vincent presented technical information in a presentation titled "Hydrologic Considerations for the Possible Establishment of a Ground Water Management Area for the Eastern Snake Plain Aquifer" ("ESPA GWMA Presentation"). After the Department presentations, the public commented and asked questions. At the conclusion of the public participation, the Director closed each meeting with remarks. The Director invited written comments, to be submitted by September 1. The Department recorded the audio presentations and public statements for all the public meetings except the Terreton meeting.[4]

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[3] The Sun Valley Company also filed with the Department on October 19, 2016, the *Declaration of Leni Patton* and the *Declaration of Maria Gamboa.*

[4] Due to a technical problem, there is no audio recording of the public meeting in Terreton.

8. At the public meetings, the Department presented hydrologic information about the possible "areal extent" of an ESPA ground water management area, including information about tributary basins. The Department also discussed possible administration of ground water in a ground water management area designated under Idaho Code § 42-233b. Comments and questions at the public meetings, and subsequent written comments, addressed many of these same matters. Some attendees and commenters opposed designation of an ESPA ground water management area or inclusion of tributary basins, while others supported one or both.[5]

9. Some of the comments and questions at the public meetings, and subsequent written comments, raise issues of the interpretation and application of the CM Rules and Idaho Code § 42-233b in specific and possibly unique factual circumstances. Some of the comments and questions seek further factual or technical information regarding the basis for designating an ESPA ground water management area, or assert that additional information is necessary before a ground water management area can be designated. Some of the comments and questions seek further factual or technical information regarding whether individual tributary basins (such as the Big Wood River basin) should be included in an ESPA ground water management area.

The Eastern Snake Plain Aquifer (ESPA)

10. The ESPA is defined as the aquifer underlying an area of the Eastern Snake River Plain. The ESPA is about 170 miles long and 60 miles wide as delineated in the report 'Hydrology and Digital Simulation of the Regional Aquifer System, Eastern Snake River Plain, Idaho,' U.S. Geological Survey Professional Paper 1408–F, 1992, excluding areas lying both south of the Snake River and west of the line separating Sections 34 and 35, Township 10 South, Range 20 East, Boise Meridian. *Final Order Regarding Rangen, Inc.'s Petition for Delivery Call; Curtailing Ground Water Rights Junior to July 13, 1962, In the Matter of Distribution of Water to Water Right Nos. 36-02551 and 36-07694* (Jan. 29, 2014) ("*Final Rangen Order*") at 15; *Rangen, Inc. v. IDWR*, 159 Idaho 798, 802, 367 P.3d 193, 197 (2015); *Clear Springs Foods, Inc. v. Spackman*, 150 Idaho 790, 793, 252 P.3d 71, 74 (2011); *Opinion Constituting Findings of Fact, Conclusions of Law and Recommendation, In the Matter of Distribution of Water to Various Water Rights Held by or for the Benefit of A&B Irrigation District, et al.* (Apr. 29, 2008) ("*SWC Delivery Call Recommendation*") at 3.

11. The ESPA is a large and highly productive aquifer composed predominantly of fractured Quaternary basalt having an aggregate thickness that in some locations may exceed several thousand feet. *Geohydrologic Framework of the Snake River Plain*, USGS Professional Paper 1408-B, Plate 3 (1992); *Final Rangen Order* at 15; *SWC Delivery Call Recommendation* at 3; William G. Graham & Linford J. Campbell, *Ground Water Resources of Idaho* (IDWR, Aug. 1981) at 16, 29; *Idaho State Water Plan* (Idaho Water Res. Bd., Nov. 2012) ("*2012 State Water Plan*") at 51; *Rangen*, 159 Idaho at 802, 367 P.3d at 197; Enhanced Snake Plain Aquifer Model Version 2.1—Final Report (IDWR 2013) ("*ESPAM 2.1 Final Report*") at 8-9, 11. The basalt generally decreases in thickness toward the margins of the aquifer. *Clear Springs Foods*, 150 Idaho at 793-94, 252 P.3d at 74-75; *ESPAM 2.1 Final Report* at 12. The fractured Quaternary

[5] Public comment letters can be viewed on the Department's website at: https://www.idwr.idaho.gov/water-rights/ground-water-management-areas/proposed.html.

basalt is generally characterized by high hydraulic conductivity. *Final Rangen Order* at 15; *Clear Springs Foods*, 150 Idaho at 793-94, 252 P.3d at 74-75. The presence of interbedded sediments, a volcanic rift zone, and less permeable basalts result in lower hydraulic conductivity in some areas of the aquifer. *Final Rangen Order* at 15; *SWC Delivery Call Recommendation* at 3. Notable areas of lower hydraulic conductivity are in the vicinity of Mud Lake and in the Great Rift zone. The Great Rift zone extends north to south across the plain from the Craters of the Moon to just west of American Falls Reservoir. *Final Rangen Order* at 15, 27; *ESPAM 2.1 Final Report* at 12. While overall ground water movement through the ESPA is from the northeast to the southwest, Aquifer Recharge Committee Minutes (May 27, 1993, App. A, C); *Hydrologic Considerations for the Possible Establishment of a Ground Water Management Area for the Eastern Snake Plain Aquifer* (IDWR, Jul. 25, 2016) ("*ESPA GWMA Presentation*") at 6; *ESPAM 2.1 Final Report* at 12, there can be local variations in the direction and rate of ground water movement. Aquifer Recharge Committee Minutes (Oct. 6, 1993 at 3); *SWC Delivery Call Recommendation* at 3. For instance, areas of lower hydraulic conductivity impede the transmission of ground water through the aquifer, and can influence the direction of ground water movement. *Idaho Ground Water Assoc. v. Idaho Dep't of Water Res.*, 160 Idaho 119, ___, 369 P.3d 897, 913 (2016); *SWC Delivery Call Recommendation* at 3.

12. The ESPA is hydraulically connected to surface water sources, including the Snake River. Aquifer Recharge Committee Minutes (Sep. 8, 1993 App. A at 3); *Final Rangen Order* at 15; *SWC Delivery Call Recommendation* at 3; *2012 State Water Plan* at 51; *Rangen*, 159 Idaho at 798, 802, 367 P.3d at 197; *Clear Springs Foods*, 150 Idaho at 793-94, 252 P.3d at 74-75. The ESPA discharges to the Snake River at several locations, notably springs in the American Falls reach above Milner Dam, and in the Thousand Springs reach below Milner Dam. Aquifer Recharge Committee Minutes (May 27, 1993, App. A, C); *id.* (Oct. 9, 1993 at 3); *Final Rangen Order* at 15; *Rangen, Inc. v. IDWR*, 159 Idaho 798, 802, 367 P.3d 193, 197 (2015); *ESPAM 2.1 Final Report* at 13. Surface water sources hydraulically connected to the ESPA may either gain water from the ESPA or lose water to the ESPA. Aquifer Recharge Committee Minutes (Aug. 5, 1993 at 13); *id.* (Sep. 8, 1993 App. A at 3); *SWC Delivery Call Recommendation* at 3; *2012 State Water Plan* at 51; *Clear Springs Foods*, 150 Idaho at 793-94, 252 P.3d at 74-75; *ESPAM 2.1 Final Report* at 14. The existence and magnitude of surface water source gains or losses in any particular location depends primarily on local ground water elevations and hydraulic conductivity of the interconnecting geologic structure. Aquifer Recharge Committee Minutes (Aug. 5, 1993 at 4); *Final Rangen Order* at 15-16; *Rangen*, 159 Idaho at 802, 367 P.3d at 197; *Clear Springs Foods*, 150 Idaho at 793-94, 252 P.3d at 74-75; *ESPAM 2.1 Final Report* at 14. Local ground water elevations, in turn, can be influenced by natural events (e.g., precipitation or drought, seepage and underflow from tributary basins), human activities (e.g., ground water withdrawals, surface water irrigation practices, or managed recharge), and the geologic structure and hydraulic conductivity of nearby portions of the ESPA and/or tributary basins. Aquifer Recharge Committee Minutes (Aug. 5, 1993 at 4-5).

13. A "tributary basin" is a basin that contributes water to the ESPA, even in small or intermittent quantities. The water in the ESPA comes primarily from tributary basins, either groundwater underflow from tributary aquifers or water in tributary streams that infiltrates directly through the streambed and into the ESPA or indirectly when it is used for irrigation. *ESPAM 2.1 Final Report* at 99, Figure 8; ESPA GWMA Presentation.

14. Ralston and others concluded that every acre-foot of water consumptively used in the tributary basins ultimately reduces the flow of the Snake River. Ralston, D. R., Broadhead, R., and Grant, D. L., 1984, Hydrologic and Legal Assessment of Ground Water Management Alternatives for Idaho: Idaho Water Resources Research Institute, Technical completion Report WRIP/371405, University of Idaho, Moscow, Idaho, 159 p. ESPA GWMA Presentation; Aquifer Recharge Committee Minutes. Consumptive use in tributary basins generally reduces storage in the ESPA because the aquifer is hydraulically connected to the Snake River.

15. The following "tributary basins" contribute water to the ESPA:

Clover Creek	Birch Creek	Palisades Creek	Bannock Creek
Thorn Creek	Medicine Lodge Creek	Willow Creek	Rock Creek
Big Wood River	Beaver Creek	Blackfoot River	Raft River
Little Wood River	Camas Creek	Ross Fork	Goose Creek
Big Lost River	Henry's Fork	Portneuf River	Big Cottonwood Creek
Little Lost River	Teton River		

ESPA GWMA Presentation; *Letter.*

16. Often aquifers in the tributary basins differ from the ESPA in that the tributary aquifers are composed primarily of materials other than Quaternary basalt, such as alluvial sediments. While all of these tributary basins are hydraulically connected to the ESPA, the nature and extent of hydraulic connection varies. Many of these tributary basins are hydraulically connected to the ESPA by a combination of ground water underflow and seepage from tributary streams. Some are connected primarily by ground water underflow while others are connected to the ESPA primarily by seepage from tributary streams. ESPA GWMA Presentation; Graham & Campbell, Ground Water Resources of Idaho.

17. In some tributary basins there are water supply, use, and management issues that are specific or unique to the individual basin. Examples are the Big Lost River basin and the Portneuf River basin. Some water supply, use, and management issues are already being addressed through local efforts. The Director has designated ground water management areas or critical ground water areas in some of the tributary basins. Examples are the Artesian City, Cottonwood, West Oakley Fan, and Oakley Kenyon Critical Ground Water Areas in the Goose Creek basin.

18. The ESPA is a vital source of water for the State of Idaho. Approximately a million acres of land on the Snake River Plain are irrigated by ground water pumped directly from the ESPA. The ESPA is hydraulically connected to the Snake River and indirectly supports surface water irrigation of roughly another million acres. ESPA-supported agriculture is crucial to Idaho's food supply and to the economies of communities across southern Idaho.

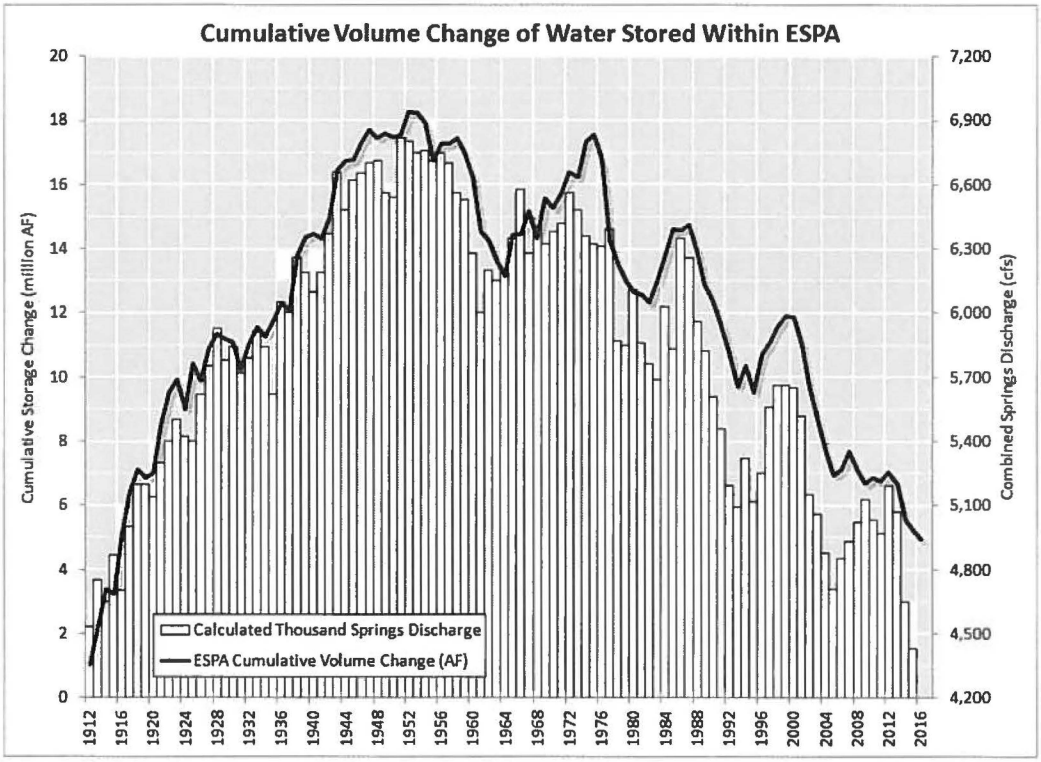
ESPA Storage & Spring Discharge Trends

19. Initial irrigation development in Idaho began in the second half of the 19th century when water was diverted from the Snake River and its tributaries by canals and ditches and delivered to crops in the field. Under this system of "gravity" or "flood" irrigation, the reliable irrigation season flow of the Snake River above Milner Dam had been fully appropriated by the early 1900s. Much of this irrigation water was not consumed by crops, however, but rather seeped into the ground. This "incidental" recharge significantly increased storage in the ESPA and spring discharges into the Snake River. Before ground water development of the ESPA began in earnest in the early 1950s, the ESPA gained an estimated 17 million acre-feet ("AF") of storage. Spring discharges into the Snake River in the canyon downstream from Milner Dam increased from their pre-irrigation era levels of approximately 4,200 cubic feet per second ("cfs") to more than 6,500 cfs. ESPA GWMA Presentation; *Letter*; 2012 State Water Plan; Aquifer Recharge Committee Minutes.

20. Large scale ground water development of the ESPA began in the late 1940s using vertical turbine pumps powered by relatively inexpensive electricity from Idaho Power Company's hydropower projects in the canyon downstream from Milner Dam. During the same period, the amount of "incidental" recharge to the ESPA began decreasing as a result of conversions from "gravity" or "flood" irrigation to more efficient systems (such as sprinklers). 2012 State Water Plan; Aquifer Recharge Committee Minutes.

21. Some individuals and entities suggest in their written comments that existing hydrologic data does not support a conclusion there is insufficient ground water to provide a reasonable safe supply for existing uses in the basin. *See* Ltr. from Rob Harris, attorney for the City of Idaho Falls, to Gary Spackman, Dir. of Idaho Dept. of Water Res. 3 (Sept. 1, 2016). Hydrologic data describing the combined ESPA Snake River system demonstrates otherwise.

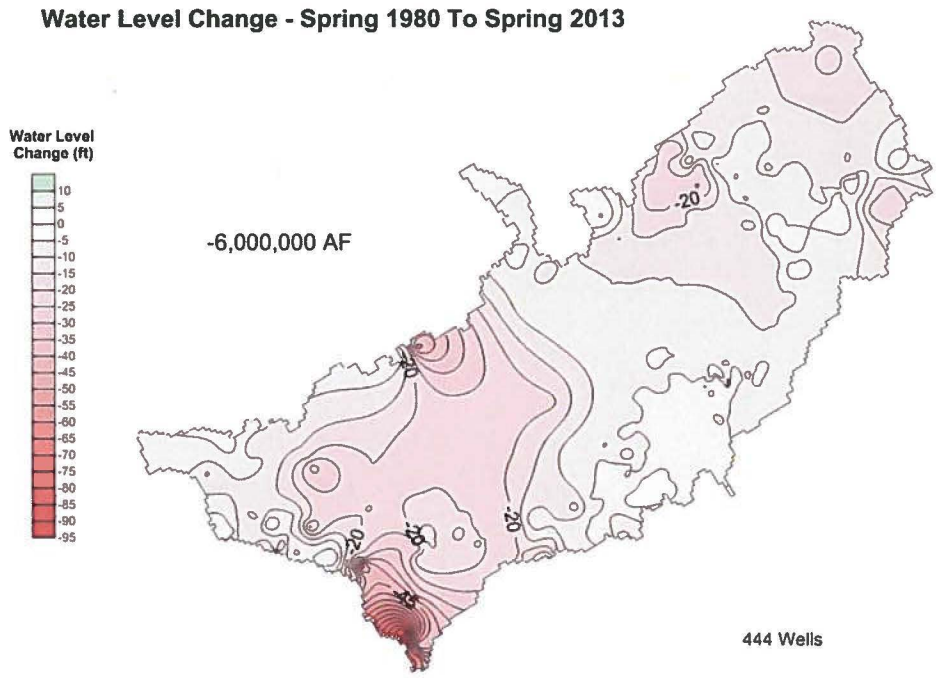
22. ESPA storage and spring discharges began to decline due in part to the increased ground water pumping and the decrease in "incidental" recharge; droughts and changes in cropping patterns also contributed to the declines. 2006 S.C.R. No. 136 (2006 Idaho Sess. Laws 1392); Aquifer Recharge Committee Minutes (May 27, 1993 & App. A, C); *id.* (Aug. 5, 1993 at 5, 13-14 & App. A at 2-3, App. C at 1, App. D at 7); *id.* (Sep. 8, 1993 App. A at 7); *Final Rangen Order* at 12 (discussing the reasons for declines in spring flows); *SWC Delivery Call Recommendation* at 5-7; *2012 State Water Plan* at 52; *ESPA GWMA Presentation* at 23; IWRB Web Page for ESPA CAMP (https://www.idwr.idaho.gov/waterboard/WaterPlanning/CAMP/ESPA/default.htm); *ESPAM 2.1 Final Report* at 13-15. The following figure illustrates the change in aquifer storage content and combined spring discharges from 1912 to 2015.



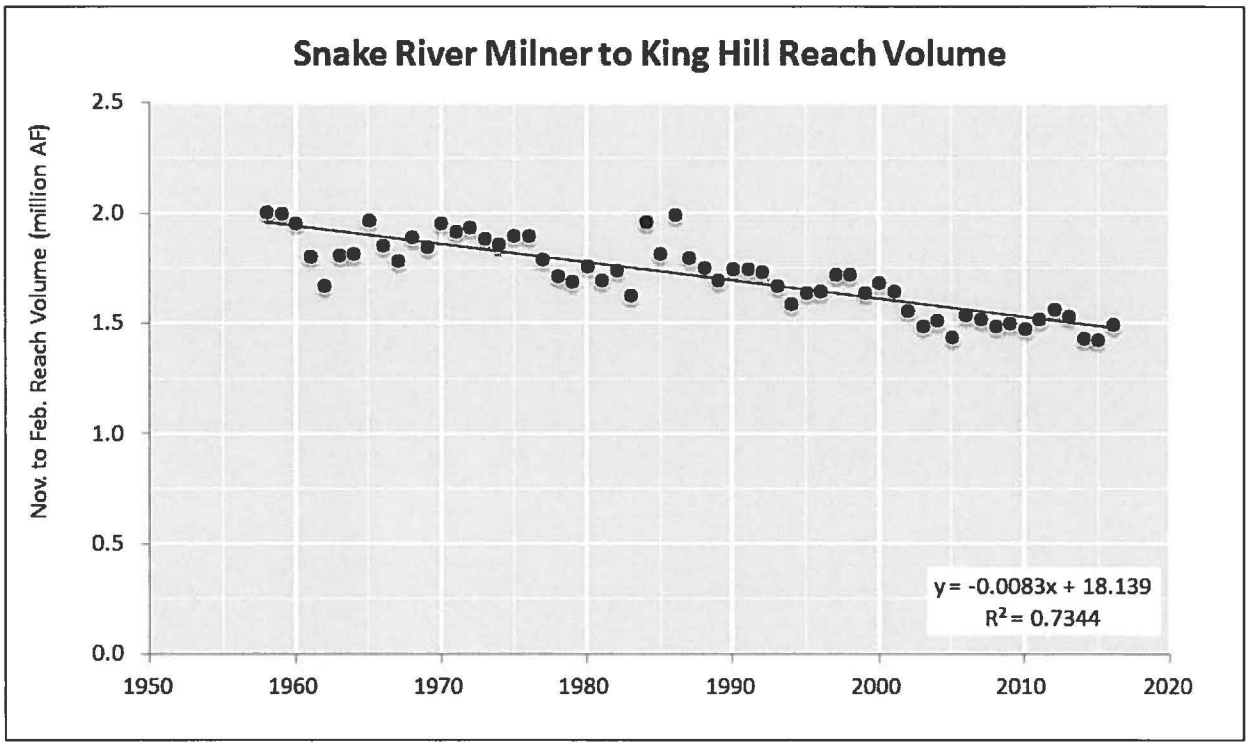
23. Between 1952 and 2013, ESPA storage decreased by an estimated 13 million AF, and spring flows at Thousand Springs dropped from a peak of approximately 6,700 cfs to 5,200 cfs. *See* Aquifer Recharge Committee Minutes (May 27, 1993, App. C) (describing declines from 1953 to 1993); *id.* (Aug. 5, 1993 App. C at 1) (describing spring discharge trends from the early 1900s to 1993); *id.* (Sep. 8, 1993 App. A at 7) (describing ESPA water levels and spring discharges); *Final Rangen Order* at 11 (stating that spring flows in the area of the Curren Tunnel "declined by over 33 cfs between 1966 and 2012"); *id.* at 16 (discussing declines in aquifer levels and spring flows from 1980 to 2008); *2012 State Water Plan* at 52; *ESPA GWMA Presentation* at 9, 10-22, 24; *Rangen*, 159 Idaho at 802, 367 P.3d at 197. From 1980 to 2013, ESPA storage declined by an even greater average of 260,000 AF annually demonstrating that declines in the aquifer are accelerating. ESPA storage and spring discharges have continued to decline since 2013. *ESPA GWMA Presentation* at 9, 10-22, 24. While there have been brief periods of recovery (increased aquifer levels and spring discharges), the overall downward trend

of decreasing ESPA storage and spring discharges has continued. 2006 S.C.R. No. 136 (2006 Idaho Sess. Laws 1392); Aquifer Recharge Committee Minutes (Sep. 8, 1993 App. A at 7) (describing ESPA water levels and spring discharges from 1900 to 1990); *ESPA GWMA Presentation* at 9, 10-22, 24. Each recovery peak is lower than the previous peak, and each declining trough is lower than the previous trough. Aquifer Recharge Committee Minutes (May 27, 1993 App. B); *ESPA GWMA Presentation* at 9, 10-22, 24.

24. The following figure illustrates spatially distributed changes in water surface elevations within ESPAM from 1980 to 2013. Changes in water surface elevations are based on mass water level measurements conducted by the IDWR and the United States Geologic Survey ("USGS") in 1980 and 2013. In that time, total aquifer content declined by approximately six million AF. Between 1980 and 2013, the average depth to water surface across the entire ESPA declined by approximately 14 feet.



25. The following figure illustrates declining discharge from the ESPA. From 1958 to present, reach gains from Milner to King Hill have been in continuous decline.[6] The gain in the Milner to King Hill reach of the Snake River is comprised primarily of ESPA spring discharge in the Thousand Springs area, but also includes contribution from sources such as surface water tributaries, irrigation return flows, and ground water discharge from sources south of the Snake River. The figure quantifies the total reach gain in acre-feet for the period November through February for years 1958 through 2016.

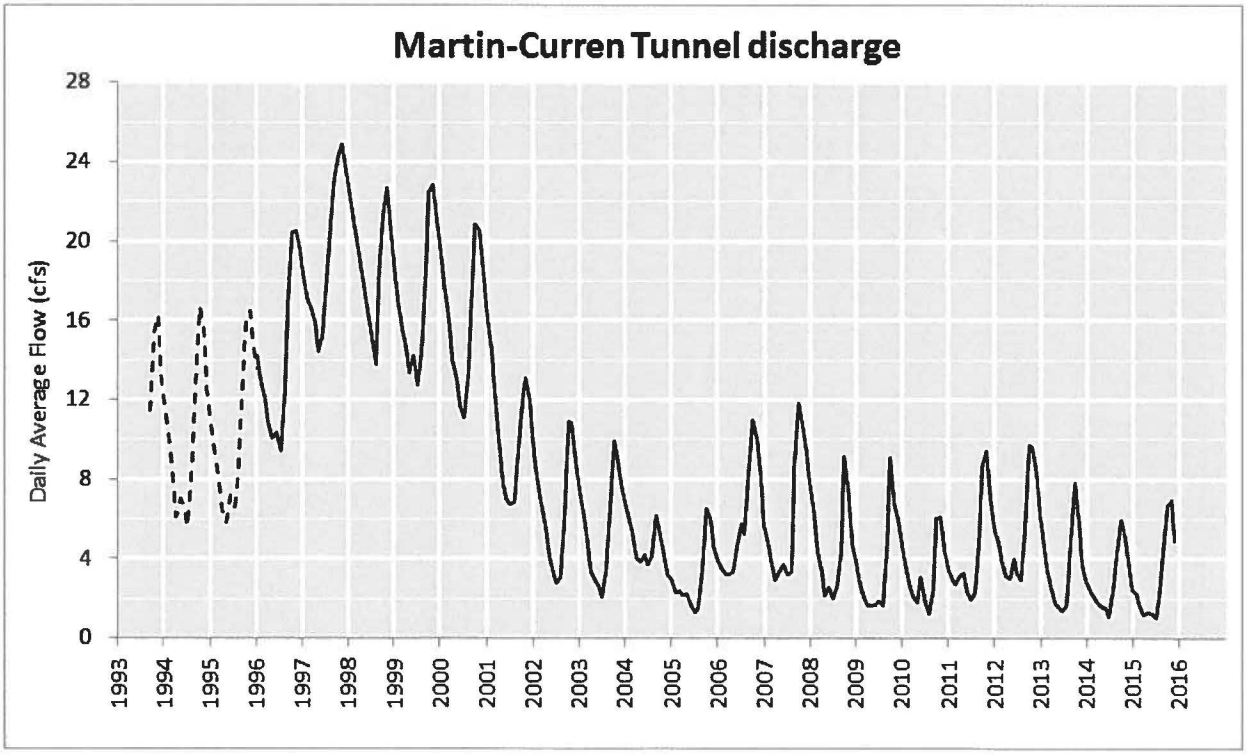


The reach gain between Milner and King Hill was calculated by subtracting flow measured at Milner from flows measured at King Hill. The total reach gain volume was quantified during the non-irrigation months when ESPA spring discharge comprises the largest contribution of the reach gains volume and minimizes the contributions from tributary inflows and impacts from irrigation practices. While there are annual fluctuations in the Milner to King Hill reach gain, the overall volume decreased at an approximate rate of 8,000 AF per year over the 59 year period. The total difference in flow from 1958 to present is approximately 500,000 AF.

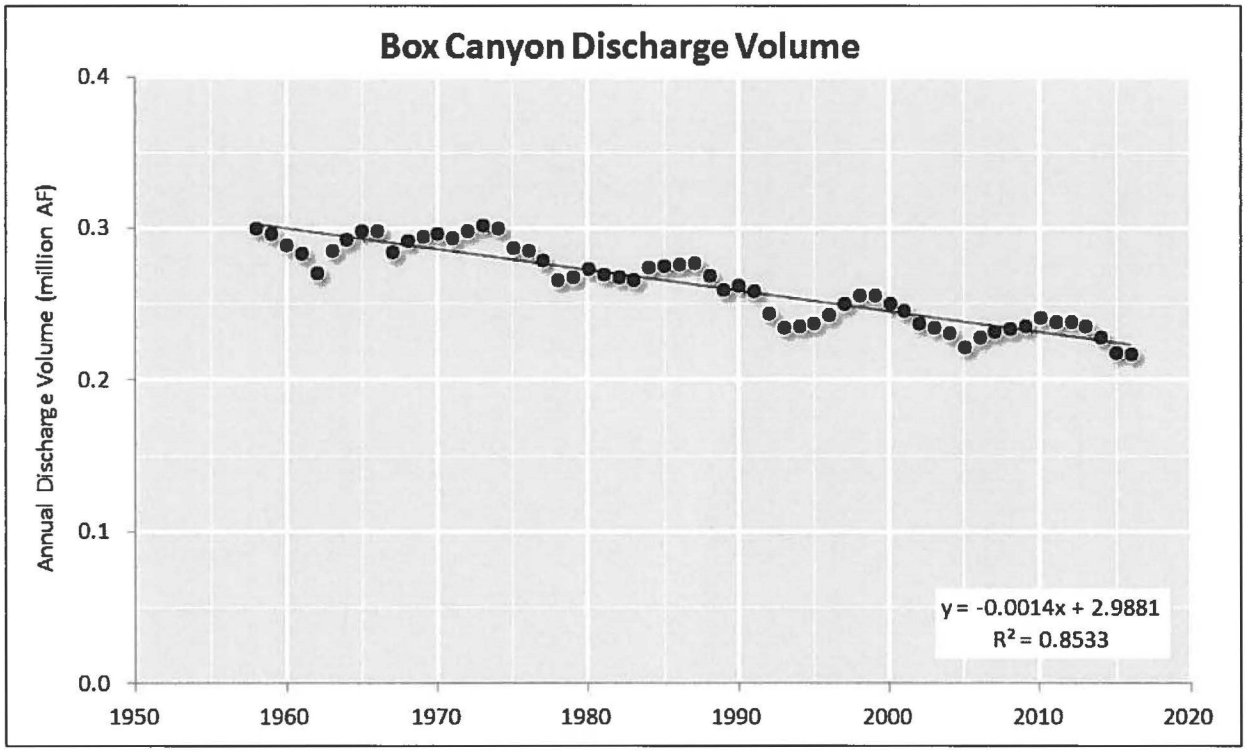
[6] 1958 to present was chosen as the period of analysis as it represents the "modern" operating conditions on the Snake River above King Hill. The "modern" designation characterizes operations as they have existed since the completion and operation of the Palisades Dam and the implementation of the Winter Water Savings agreements between the United States Bureau of Reclamation and the storage water spaceholders of American Falls, Jackson, and Palisades Reservoirs. In addition, a large number of water rights diverting ground water from the ESPA and spring water from the Thousand Springs complex were licensed and decreed after 1958 and are currently administered by the Department.

26. As part of the consideration of whether there is "sufficient ground water to provide a reasonably safe supply for irrigation of cultivated lands or other uses in the basin," other hydraulically connected sources must be considered. Hydraulically connected water sources include the Snake River and spring complexes in the American Falls and Thousand Spring areas. The aquifer discharges to the Snake River, increasing gains in the Snake River. Increased gains in the river are subsequently diverted onto the Eastern Snake River Plain for irrigation and other uses.

27. Martin-Curren Tunnel is the decreed water source for eleven irrigation water rights with a total authorized diversion rate of 11.29 cfs and three fish propagation water rights with a total authorized diversion rate of 75.99 cfs. IDWR began monitoring discharge at the Martin-Curren Tunnel in 1993, following complaints of insufficient water supply for irrigation. In 2011, tRangen, Inc., which owns and operates the Rangen Fish Hatchery, filed a delivery call against junior ground water users claiming injury from alleged reductions in discharge from the Martin-Curren Tunnel. In response to the delivery call, the Department found that Rangen, Inc. was injured in the amount of 9.1 cfs by junior ground water pumping. Tunnel discharge declined between 1993 and 2015, and tunnel discharge has continued to be insufficient to supply irrigation and fish propagation uses. In 2014 and 2015, the annual average tunnel discharge was three cfs and the monthly average flow in July was one cfs. Refer to the following figure for illustration of Martin-Curren Tunnel discharge from 1993 to 2015. Discharge measurement of the Martin-Curren Tunnel was modified in 1996 to the current practice and is illustrated in the figure by the transition from a dashed to solid line in the hydrograph.



28. Box Canyon is a large spring in the Thousand Springs complex. Flows in Box Canyon have been measured continuously beginning in 1950.[7] Box Canyon has the longest flow measurement record of any spring in the Thousand Spring complex and is an indicator spring for discharge from the Thousand Springs complex. In addition, Box Canyon discharge is a predictor variable in the Department's SWC Delivery Call Methodology Order used to compute the water supply available to the SWC for the upcoming irrigation season. Box Canyon discharge was selected as a predictor variable by a technical working group comprised of representatives from both IGWA and the SWC. Box Canyon discharge was selected by the technical working group as a predictor variable in a multi-linear regression model to represent and account for aquifer discharge to the reaches of the Snake River that supply water to the SWC. Box Canyon discharge is trending down in the period of record reviewed (1958 to present) as depicted in the figure below.

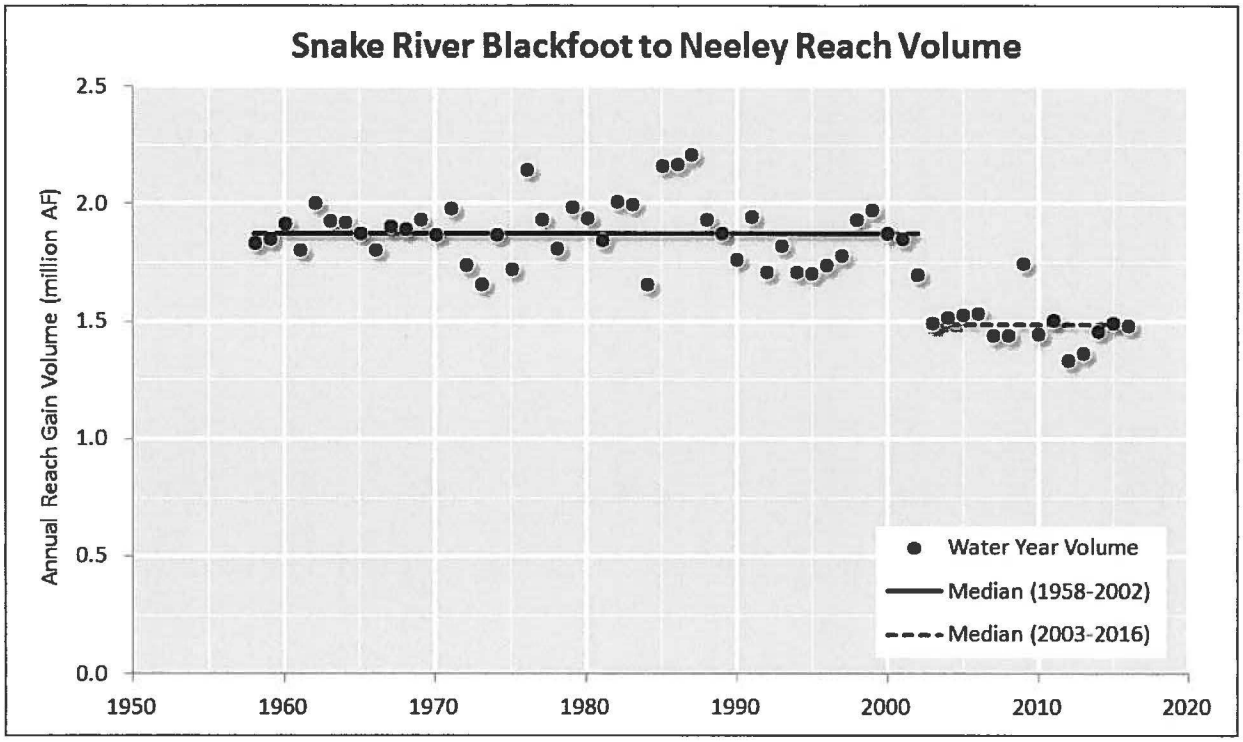


The annual Box Canyon discharge volume has decreased from approximately 301,000 AF in water year 1958 to 218,000 AF in water year 2016, a loss of 83,000 AF. The loss occurred at an average annual rate of approximately 1,370 AF.

29. In 2005 the SWC filed a delivery call against junior ground water users alleging injury to the SWC surface water rights diverted between the American Falls Reservoir Dam and the Miner Dam on the Snake River. In response to the delivery call, the Department has found that injury occurs to the SWC from junior ground water pumping during water years when the

[7] Gage 13095500 "Box Canyon Springs NR Wendell ID" is a continuous stream flow monitoring gaging station operated and maintained by the United States Geologic Survey.

SWC's reasonable in-season demand is greater than their water supply as determined by the Department SWC Delivery Call Methodology Order. The annual reach gain in the Snake River from the near Blackfoot to Neeley reach of the Snake River is commonly considered an indicator of the SWC's natural flow water supply. Reach gains from 1958 to present are illustrated in the figure below.



The annual reach gain between Blackfoot and Neeley has been calculated using the State's Reservoir Operations Planning Model[8] since the 1970s. The near Blackfoot to Neely reach gain represents the amount of flow accruing to the Snake River below the Snake River [near] Blackfoot gage[9] and above the Snake River [near] Neeley gage[10]. Inflows from the Portneuf River near Pocatello[11] are subtracted from the volume. Most of the reach gain in this estimate is discharge from the ESPA to the Snake River from a series of springs located above and within the American Falls Reservoir. Some of the reach gain is unmeasured tributary inflow. From

[8] The Department has maintained a planning model on behalf of the Idaho Water Resources Board since the 1970s to help the Board evaluate how changes in reservoir operations would impact surface water shortages in the Snake River basin. *River Operations Studies for Idaho, Idaho Water Resource Board, Boise, Id,* Idaho Water Resource Board, 1973.

[9] Gage 13069500 "Snake River nr Blackfoot, ID" is a continuous stream flow monitoring gaging station operated and maintained by the United States Geologic Survey.

[10] Gage 13077000 "Snake River at Neeley, ID" is a continuous stream flow monitoring gaging station operated and maintained by the United States Geologic Survey.

[11] Gage 13075500 "Portneuf River nr Pocatello" is a continuous stream flow monitoring gaging station operated and maintained by the United States Geologic Survey.

1958 through 2002 the total annual gains exceeded 1,600,000 AF. Since 2003, the annual reach gain has declined and in only one year, 2009, has the reach gain exceeded 1,600,000 AF.

30. As discussed below, the potential for ground water withdrawals from the ESPA to adversely affect surface water flows was recognized when large scale ground water development began. Numerous actions over the years have attempted to address the trend of declining ESPA storage and spring discharges.

31. The Idaho Legislature enacted comprehensive ground water legislation in 1951 and 1953. 1951 Idaho Sess. Laws 423-29; 1953 Idaho Sess. Laws 277-91 ("Ground Water Act."). The Ground Water Act explicitly recognized the potential for ground water use to affect stream flows and senior surface water rights, and included provisions for resolving claims that junior priority ground water rights were adversely affecting senior surface water rights. 1953 Idaho Sess. Laws 285-86, Idaho Code §§ 42-237a(g), 42-237b. The Ground Water Act authorized the Director (then the "state reclamation engineer") to designate "critical ground water areas," 1953 Idaho Sess. Laws 278, 281; Idaho Code §§ 42-226, 42-233a, and was later amended to authorize designation of "ground water management areas." 1982 Idaho Sess. Laws 165; Idaho Code § 42-233b. Subsequent amendments to the "ground water management area" provisions authorized the Director to approve ground water management plans for, among other things, managing the effects of ground water withdrawals on hydraulically connected surface waters. 2000 Idaho Sess. Laws 187; Idaho Code § 42-233b. The Department has designated a number of relatively small "critical ground water areas" and "ground water management areas" over the years.

32. In the 1960s and 70s, ground water pumping in the Cottonwood Creek, Buckhorn Creek, and Raft River areas of Cassia County resulted in disputes and litigation among ground water users. *State ex rel. Tappan v. Smith*, 92 Idaho 451, 444 P.2d 412 (1968); *Baker v. Ore-Ida Foods, Inc.*, 95 Idaho 575, 513 P.2d 627 (1973); *Briggs v. Golden Valley Land & Cattle Co.*, 97 Idaho 427, 546 P.2d 382 (1976).

33. The Idaho Power Company filed lawsuits in the late 1970s and early 1980s that sought to protect the company's hydropower water rights at Swan Falls Dam and several other projects from upstream depletions. The resulting controversy was resolved through the settlement proposed in the 1984 Swan Falls Agreement, which among other things included a proposal that the State Water Plan be amended to increase the minimum flows at the Murphy gaging station (downstream from Swan Falls) while retaining a "zero" minimum flow at Milner Dam. 2012 State Water Plan; *Clear Springs Foods, Inc. v. Spackman*, 150 Idaho 790, 252 P.3d 71 (2011); *Memorandum Decision and Order on Cross-Motions for Summary Judgment, SRBA Consolidated Subcase No. 00-92023* (Apr. 18, 2008). The Swan Falls Agreement and State Water Plan recognized that Snake River flows downstream from Milner Dam "may consist almost entirely of ground-water discharge during portions of low water years," and the ESPA "which provides this water must therefore be managed as an integral part of the river system." 1986 State Water Plan at 35.[12] The State Water Plan was amended to include the Murphy and

[12] This framework was reaffirmed in the latest revision of the State Water Plan, as will be discussed.

Milner minimum flows, and the Legislature ratified the amendments. 1985 Idaho Sess. Laws 514.[13]

34. In 1982, the Idaho Legislature enacted legislation authorizing the creation of aquifer recharge districts, and declaring the appropriation and underground storage of water by aquifer recharge districts to be a beneficial use of water. 1982 Idaho Sess. Laws 538-39. In 1986, the Legislature established an interim legislative committee on ground water resources "to undertake and complete a study of the statutory framework for controlling the allocation, development, and distribution of the State's ground water resources," and to "report findings, recommendations and recommended legislation." 1986 Idaho Sess. Laws 873. In 1993, the Legislature established an interim legislative committee on aquifer recharge "to undertake and complete a study regarding recharge of Idaho's aquifers" and "make recommendations for implementation of a recharge policy." 1993 Idaho Sess. Laws 1572.

35. In 1992, Department Director R. Keith Higginson issued a moratorium order finding, among other things, that aquifers in the Snake River basin were "being stressed by the reduction in natural recharge [due to drought], from reduced recharge due to changes in diversion and use of surface waters . . . and by the increased volume of pumping." *Moratorium Order, In the Matter of Applications for Permits for Diversion and Use of Surface and Ground Water Within the Snake River Basin Upstream From the USGS Gauge on the Snake River Near Weiser* (May 15, 1992), at 1. The order found that "lowered aquifer levels in the aquifers across much of the Snake River Basin . . . have resulted in numerous wells . . . becoming unusable," and "[l]owered ground water levels also reduce spring discharge needed to maintain stream and river flows." *Id.* The Director therefore ordered that "a moratorium is established on the processing and approval of presently-pending and new applications for permits to appropriate water from all surface and ground water sources within the Snake River Basin" upstream from the USGS gage near Weiser. *Id.* at 2.[14] The moratorium has been modified but remains in place for the ESPA, as well as much of the surrounding area. *Amended Moratorium Order, In the Matter of Applications for Permits for Diversion and Use of Surface and Ground Water Within the Eastern Snake River Plain Area and the Boise River Drainage* (Apr. 30, 1993).

36. In 1993, owners of water rights for water flowing from the Martin-Curren Tunnel filed a delivery call with the Department seeking curtailment of junior-priority ground water rights diverting from the ESPA. *Musser v. Higginson*, 125 Idaho 392, 871 P.2d 809 (1994). The *Musser* litigation ultimately led to adoption of the Department's "Rules for Conjunctive Management of Surface and Ground Water Resources." IDAPA 37.03.11.000 –.050.

37. In 1994, A&B Irrigation District filed a conjunctive management delivery call with the Department, seeking administration of junior priority ground water rights from the

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[13] The Legislature also authorized commencement of the SRBA, "'in large part to resolve the legal relationship between the rights of the ground water pumpers on the Snake River Plain and the rights of Idaho Power at its Swan Falls Dam.'" *A & B Irr. Dist. v. Idaho Conservation League*, 131 Idaho 411, 422, 958 P.2d 568, 579 (1997) (citation omitted).

[14] The order recognized certain limited exceptions to the moratorium, including applications for domestic use and non-consumptives uses. *Id.* at 2-3.

ESPA. A&B, the Department, and others entered into an agreement in 1995 that, among other things, stayed A&B's delivery call until a Motion to Proceed was filed with the Director. *A & B Irr. Dist. v. IDWR*, 153 Idaho 500, 503-04, 284 P.3d 225, 228-29 (2012).[15]

38. In the late 1990s and early 2000s, surface water users and ground water users entered into negotiations in lieu of litigation regarding disagreements over the nature and extent of interconnection between surface water and ground water sources in the Snake River Basin, and alleged injuries to senior priority surface water rights resulting from ground water diversions from the ESPA. The negotiations resulted in a series of interim stipulated agreements during the period from 2000 to 2004. *See, e.g., Interim Stipulated Agreement for Areas Within and Near IDWR Administrative Basin 36* (2001); *Interim Stipulated Agreement for Areas Within and Near IDWR Administrative Basin 35* (2001).

39. In 2004, ground water districts and spring users in the Thousand Springs reach of the Snake River entered into an aquifer mitigation, recovery, and restoration agreement that was also signed by the Governor, the Speaker of the Idaho House Of Representatives, and the President Pro Tem of the Idaho Senate. The 2004 agreement set forth a number of legislative proposals to address disputes arising from declines in ESPA storage and spring discharges. *The Eastern Snake Plain Aquifer Mitigation, Recovery and Restoration Agreement for 2004* (Mar. 20, 2004).

40. Concerns over declines in ESPA storage and spring discharges also led to efforts to create a ground water model of the ESPA suitable for conjunctive administration. Work began on the Enhanced Snake Plan Aquifer Model ("ESPAM") Version 1.0 in 2000. ESPAM 1.0 was almost immediately updated to ESPAM 1.1, which the Department used from 2005 to early 2012 in responding to conjunctive administration delivery calls. ESPAM 2.0 was calibrated in July 2012, and re-calibrated in November 2012, resulting in the release of ESPAM 2.1, which is the current version of the model. The Eastern Snake Hydrologic Modeling Committee participated in developing and refining ESPAM. It is anticipated that work on refining ESPAM will continue. ESPAM 2.1 Final Report.

41. While ESPAM was based on the U.S. Geological Survey's Regional Aquifer System Analysis (RASA) program, ESPAM was intended in large part to assist in conjunctive management of surface water and ground water resources under state law. The RASA boundaries were therefore modified in ESPAM 1.0 and 1.1 to include irrigated areas in the Kilgore, Rexburg Bench, American Falls, and Oakley Fan areas, and also the Big Lost River drainage up to Mackay Dam. The Twin Falls tract was excluded from ESPAM because the Snake River is deeply incised between Kimberly and King Hill, and there is little communication between the aquifers on the north and south sides of the Snake River. ESPAM 2.1 includes additional refinements to the model boundary in the Hagerman, Pocatello, Big Lost River basin, and Little Lost River basin, areas. ESPAM 2.1 Final Report.

42. In the last ten years, holders of water rights to divert from the Snake River and the tributary springs have filed or renewed delivery calls under the Conjunctive Management Rules.

[15] A&B filed a Motion to Proceed in 2007. *Id.*

See, e.g., American Falls Res. Dist. No. 2 v. IDWR, 143 Idaho 862, 154 P.3d 433 (2007); *Clear Springs Foods, Inc. v. Spackman*, 150 Idaho 790, 252 P.3d 71 (2011); *A&B Irr. Dist. v. IDWR*, 153 Idaho 500, 284 P.3d 225 (2012); *Rangen, Inc. v. IDWR*, 159 Idaho 798, 367 P.3d 193 (2015). The conjunctive management delivery calls have resulted in issuance of administrative curtailment orders and implementation of mitigation plans.

43. In 2006, the Idaho Legislature found that "extended drought, changes in irrigation practices, and ground water pumping have resulted in reduced spring discharges and reach gains from the [ESPA] and areas of declining aquifer levels" and "have resulted in insufficient water supplies to satisfy existing beneficial users," and "conflicts between holders of water rights diverting from surface and ground water." 2006 Idaho Sess. Laws 1392 (S.C.R. No. 136). The Legislature therefore requested that the Idaho Water Resource Board ("IWRB") pursue "development of a comprehensive aquifer management plan for the [ESPA] for submission to and approval by the Idaho Legislature." *Id.* at 1393. The IWRB developed and in 2009 submitted to the Legislature the "Eastern Snake Plain Aquifer Comprehensive Aquifer Management Plan" ("ESPA CAMP"), which the Legislature approved. 2009 Idaho Sess. Laws 703-04. The ESPA CAMP "establishes a long-term program for managing the water supply and demand in the ESPA through a phased approach to implementation, together with an adaptive management process to allow for adjustments or changes in management techniques as implementation proceeds." ESPA CAMP at 4. The ESPA CAMP program has not been fully funded, however.

44. In 2009, the State of Idaho and Idaho Power Company resolved SRBA litigation regarding the interpretation and application of the 1984 Swan Falls Agreement through the "Framework Reaffirming the Swan Falls Settlement" ("Reaffirmation Framework"). The Reaffirmation Framework proposed a number of legislative and administrative actions, including execution by the Idaho Water Resource Board and Idaho Power Company of a "Memorandum of Agreement" ("MOA") regarding aquifer recharge. The MOA recognized that the Swan Falls settlement "reconfirmed that the minimum daily flow at Milner Dam shall remain at zero," and "recognized that the establishment of a zero minimum flow at Milner Dam" meant, among other things, that Snake River flows downstream from Milner "at times may consist almost entirely of ground-water discharge" and "therefore the [ESPA] must be managed as an integral part of the Snake River." The MOA also recognized that ESPA CAMP "establishes a long-term hydrologic target for managed recharge" and that it was in the parties' mutual interest "to work cooperatively to explore and develop a managed recharge program for the Snake River Basin." Memorandum of Agreement (May 6, 2009); *A Resolution, In the Matter of a Memorandum of Agreement Regarding the Implementation of Managed Recharge Under the Eastern Snake Plain Aquifer Management Plan and State Law* (IWRB) (Apr. 30, 2009).

45. In 2012, the Idaho Water Resource Board adopted the current version of the State Water Plan, which in Policy 4D states "[t]he Eastern Snake Plain Aquifer and the Snake River below Milner Dam should be managed conjunctively to provide a sustainable water supply for all existing and future beneficial uses within and downstream of the ESPA." 2012 State Water Plan at 51. The supporting discussion states that at times "the Snake River flow at the Murphy Gage consists mostly of ESPA discharge from the Thousand Springs area," that conjunctive management is "key to meeting the Murphy minimum stream flows," and that "it is in the public

interest to conjunctively manage the ESPA and the Snake River to lessen or obviate the need for broad-scale water rights administration to accomplish general water-management goals." *Id.* & n. 6. Policy 4D of the 2012 State Water Plan "embraces the conjunctive management goals and objectives of the ESPA CAMP." *Id.* at 53.

46. In 2015, the Surface Water Coalition ("SWC")[16] entered into a historic private settlement agreement ("Settlement Agreement") where members of the Idaho Ground Water Appropriators, Inc. ("IGWA"), agreed to a series of voluntary practices intended to stabilize and reverse declining ESPA water level trends in exchange for safe harbor from curtailment under the SWC Delivery Call. Only ground water users actively participating in a ground water district on the ESPA were granted safe harbor by the agreement. *Settlement Agreement Entered into June 30, 2015 Between Participating Members of the Surface Water Coalition and Participating Members of the Idaho Ground Water Appropriators, Inc.* Voluntary on-going practices described in the settlement agreement included, among other things: a 240,000 AF per year reduction of consumptive ground water use; direct delivery of 50,000 AF of storage water to the SWC; a reduction in the duration of the irrigation season; mandatory measurement device installation; and support of an annual state recharge goal of 250,000 AF. The Settlement Agreement also established a goal of returning ground water levels to the average of the ground water levels from 1991-2001 by April 2026. In addition, intermediate ground water level benchmarks were established in the Settlement Agreement occurring at April 2020 and April 2023. Finally, the Settlement Agreement calls for "adaptive management measures" to be established and implemented if the ground water level benchmarks or goal are not achieved.

47. In 2016, the SWC and IGWA entered into a stipulated mitigation plan for purposes of resolving the SWC's delivery call under the Conjunctive Management Rules. *Surface Water Coalition's and IGWA's Stipulated Mitigation Plan and Request for Order, In the Matter of the Distribution of Water to Various Water Rights Held By and for the Benefit of A&B Irrigation District, et al.* (IDWR Docket No. CM-MP-2016-001) (Mar. 9, 2016). The stipulated mitigation plan was based on the term and conditions of the Settlement Agreement, including adoption of the management practices, ground water level goal and benchmarks, and adaptive management measures. The Director approved the stipulated mitigation plan. *Final Order Approving Stipulated Mitigation Plan, In the Matter of the Distribution of Water to Various Water Rights Held By and for the Benefit of A&B Irrigation District, et al.* (IDWR Docket No. CM-MP-2016-001) (May 2, 2016).

48. The hydrologic data demonstrates that declines in ESPA storage and spring discharges have continued steadily for the last sixty years, despite long-standing recognition of the problem and repeated attempts to address it through legislation and administration. While water users and the IWRB are undertaking efforts to enhance recharge and reduce ground water pumping to counter the declines, the ESPA CAMP has yet to be fully implemented, the proposed settlement is a private agreement that pertains only to the SWC's delivery call, and future conditions, including climate and water use practices, are unknown.

[16] The Surface Water Coalition's members are: A&B Irrigation District, American Falls Reservoir District #2, Burley Irrigation District, Milner Irrigation District, Minidoka Irrigation District, North Side Canal Company, and Twin Falls Canal Company.

CONCLUSIONS OF LAW

1. Idaho Code § 42-233b authorizes the Director to designate a "ground water management area" when the Director determines a ground water basin "may be approaching the conditions of a critical ground water area." The decision of whether to designate a "ground water management area" is committed to the Director's discretion. For the reasons discussed below, the Director in an exercise of his authority and discretion under Idaho Code § 42-233b designates a "ground water management area" for the ESPA that corresponds to the boundaries of ESPAM 2.1, excluding: parts of the Big Lost River Basin; the Big Wood River ground water management area; and the Artesian City, Blue Gulch, Cottonwood, West Oakley Fan and Oakley Kenyon critical ground water areas.[17]

2. Idaho Code § 42-233b is part of the Idaho "Ground Water Act." *A&B Irr. Dist. v. IDWR*, 153 Idaho 500, 506, 284 P.3d 225, 231 (2012). The Ground Water Act as enacted and amended in the early 1950s authorized two options for addressing insufficient or decreasing ground water supplies: (1) limiting or denying new ground water applications in designated "critical ground water areas," 1953 Idaho Sess. Laws 281-82; Idaho Code § 42-233a; *State ex rel. Tappan v. Smith*, 92 Idaho 451, 444 P.2d 412 (1968); and (2) "prohibiting or limiting" withdrawals under existing ground water rights if the withdrawals adversely affected "the present or future use of any prior surface or ground water right." 1953 Idaho Sess. Laws 285; Idaho Code § 42-237a(g).

3. Subsequent amendments to the Ground Water Act authorized a third option for addressing insufficient ground water supplies: "ground water management areas." Idaho Code § 42-233b as enacted in 1982 and amended in 2000 and 2016 authorizes the Director to designate "ground water management areas," and approve "a ground water management plan for the area" that provides "for managing the effects of ground water withdrawals on the aquifer . . . and on any other hydraulically connected sources of water." Idaho Code § 42-233b; 1982 Idaho Sess. Laws 165; 2000 Idaho Sess. Laws 187; 2016 Idaho Sess. Laws 848. Ground water users complying with an approved ground water management plan "shall not be subject to administration on a time priority basis" if the Director determines the ground water supply is insufficient to meet demands within the ground water management area. Idaho Code § 42-233b.

4. A "ground water management area" is defined as "any ground water basin or designated part thereof which the director of the department of water resources has determined may be approaching the conditions of a critical ground water area." Idaho Code § 42-233b. A "critical ground water area," in turn, is defined as "any ground water basin, or designated part thereof, not having sufficient ground water to provide a reasonably safe supply for irrigation of cultivated lands, or other uses in the basin at the then current rates of withdrawal, or rates of withdrawal projected by consideration of valid and outstanding applications and permits" as determined by the Director. Idaho Code § 42-233a. A "ground water management area,"

[17] While there is overlap between the ESPA ground water management area created by this order and the Twin Falls ground water management area, the Twin Falls GWMA was created to address concerns regarding the low temperature geothermal groundwater resources in the Twin Falls area. The ESPA GWMA created by this order will regulate the non-low temperature geothermal resources within the area of overlap between both GWMAs.

therefore, is a ground water basin or part thereof that the Director determines may be approaching the condition of not having sufficient ground water to provide a reasonably safe supply for irrigation and other uses in the basin under current or projected rates of withdrawal.

Reasonably Safe Supply

5. The record establishes that ESPA storage and spring discharges have been declining for more than sixty years. Since peaking in the early 1950s, ESPA storage has declined by about 13 million AF, at an average rate of approximately 200,000 AF per year. Spring discharges have dropped from peak levels of approximately 6,700 cfs. to less than 5,000 cfs. These declines have continued despite widespread recognition of the problem and repeated attempts over the years by the Legislature, the IWRB, and water users to address the problem through various agreements, enactments, and policy initiatives, including minimum flows, aquifer recharge, and the ESPA CAMP.

6. Even though ESPA storage and spring discharges have not yet dropped to pre-irrigation era levels, the declines have resulted in many years of disputes and conflicts among water users. In some cases the disputes arose between different ground water users; in others, between surface or spring water users and ground water users. In all cases senior priority water right holders alleged injury due to withdrawals from the ESPA authorized by junior priority ground water rights. These disputes and conflicts have resulted in extensive litigation and administrative action, including delivery calls, curtailment orders, and mitigation plans.

7. The record establishes that as a result of chronic declines in ESPA storage and spring discharges, in many years the ESPA ground water supply is not sufficient to satisfy senior priority water rights diverting from the ESPA and hydraulically connected sources unless ESPA withdrawals under junior priority ground water rights are curtailed, and/or the junior water right holders mitigate. The Director concludes that the ground water basin encompassing the ESPA may be approaching a condition of not having sufficient ground water to provide a reasonably safe supply for irrigation and other uses occurring within the basin at current rates of withdrawal. Idaho Code §§ 42-233b, 42-233a.

Need For ESPA Ground Water Management Area

8. The past ten years of litigation arising out of individual delivery calls under the Conjunctive Management Rules are symptoms of a larger underlying problem, i.e., continuing declines in ESPA storage and spring discharges. Delivery calls under the Conjunctive Management Rules result in sporadic curtailment orders and mitigation plans to address particular injuries in particular years. Delivery calls are not an efficient or effective means of addressing the underlying problem of chronic declines in ESPA storage and spring discharges, which have resulted from several factors and have developed over many years.[18] While the

[18] The City of Pocatello and others correctly point out in their comments that the Department took the position in previous litigation that a ground water management area is not necessary where a water district exists. Ltr. from Sarah Klahn, attorney for the City of Pocatello, to Gary Spackman, Dir. Idaho Dept. of Water Res. 7 (Sept. 2, 2016). However, as the above paragraph explains, an important management tool that a ground water management area provides is the opportunity to create a management plan to "manag[e] the effects of ground water withdrawals on

SWC and IGWA recently reached a stipulated settlement of their delivery call dispute that envisions reversing ground water declines, the settlement encompasses only part of the ESPA, and has not been fully implemented. Future conditions including climate change and water user practices are unknown, and the settlement does not preclude delivery calls by other senior water right holders.

9. Idaho Code § 42-233b identifies several potential tools available to the Director to more effectively address the larger problem of declines in ESPA storage and spring discharges, including approval of a "ground water management plan" and requiring ground water right holders to report "withdrawals of ground water and other necessary information." Idaho Code § 42-233b also authorizes the Director to require junior ground water right holders not complying with an approved ground water management plan to cease or reduce diversions if the Director determines the ground water supply is insufficient to satisfy water rights within the ground water management area. A ground water management area designation under Idaho Code § 42-233b would support attainment of the ESPA storage and spring discharge objectives of the recent settlement, the State Water Plan, the ESPA CAMP, and various legislative enactments.

10. The Director's duty under the Ground Water Act is to "to control the appropriation and use of the ground water of this state," and "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." Idaho Code § 42-231. The Ground Water Act's "public policy" includes Idaho's "traditional policy" that the state's water resources "be devoted to beneficial use in reasonable amounts through appropriation." Idaho Code § 42-226; *see also IGWA v. IDWR*, 160 Idaho 119, ___, 369 P.3d 897, 909 (2016) ("the policy of securing the maximum use and benefit, and least wasteful use of Idaho's water resources, has long been the policy in Idaho."). The Ground Water Act further states "[i]t is the policy of this state to promote and encourage optimum development and augmentation of the water resources of this state," Idaho Code § 42-234, and refers to "the policy of this state to conserve its ground water resources." Idaho Code § 42-237a.

11. The Director concludes that designating a ground water management area for the ESPA is consistent with, if not required by, the Director's duties under the Ground Water Act. The Director in an exercise of his authority and discretion under Idaho Code § 42-233b will therefore designate a ground water management area for the ESPA.

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the aquifer ...and on any other hydraulically connected sources of water." Idaho Code § 42-233b. In a conjunctive management delivery call, the primary focus is whether a junior is causing injury to the calling water right. *See* CM Rule 37.03.11.40.01. As learned through the recent Rangen delivery call, sometimes the solution to mitigate injury to the calling water right does not address underlying issues with the source of supply. In Rangen, IGWA mitigated the material injury by providing water from another spring source directly to Rangen. While this mitigated the injury to Rangen, it did not address the aquifer. A ground water management area and accompanying ground water management plan are the tools to address broader concerns with ground water aquifers such as the ESPA and allow for the focus to be broader than just mitigating injury to a calling water right.

Extent of ESPA Ground Water Management Area

12. Idaho Code § 42-233b authorizes the Director to designate all or part of a "ground water basin" as a "ground water management area." The term "ground water basin" is not defined in the Ground Water Act, and has not been defined by judicial decision, administrative rule, or administrative order. Statutory terms should generally be given their plain, usual, and ordinary meaning. *Wright v. Ada County*, 160 Idaho 491, 497, 376 P.3d 58, 64 (2016).

13. In the context of surface water administration and management, "basin" is a term that refers to the area drained by a particular river, stream, or creek system. Webster's II New College Dictionary 95 (3d Ed. 1995). A given "basin" can be either relatively large or relatively small, is generally understood in surface water administration to encompass all tributary surface water sources, and can itself be tributary to another surface water source. For instance, the Snake River "basin" includes the tributary Boise River "basin"; and the Boise River "basin," in turn, includes tributary basins such as the South Fork of the Boise River "basin" and the Mores Creek "basin."

14. While these surface water concepts inform the meaning of the term "ground water basin," there are significant differences between surface water and ground water. For instance, surface water flows within well-defined, easily identifiable creeks, streams, and rivers. Ground water flows through underground aquifers, which often extend over large areas and may not have well-defined or easily identified boundaries. In addition, the flow or movement of ground water through an aquifer or aquifer system is usually much slower and less easily described and quantified than the flow of surface water in creeks, streams, and rivers. There can also be separate aquifers at different depths in the same "basin."[19] Further, while surface water systems are usually delineated in terms of the area "drained," ground water systems are usually delineated by their constituent aquifer(s) and areas of "recharge" and "discharge." *See* GLOSSARY OF GEOLOGY 769 (Julia A. Jackson ed., Am. Geological Inst., 4th ed. 1997) (defining "ground water basin" as "[a]n aquifer or system of aquifers, whether basin-shaped or not, that has reasonably well-defined boundaries and more or less definite areas of recharge and discharge.")

15. In light of the foregoing, the term "ground water basin" as used in Idaho Code § 42-233b is understood as a term referring to an area in which ground water flows or moves within an aquifer or aquifers to common discharge areas, and has boundaries and areas of "recharge" that are reasonably well-defined. Like a surface water "basin," a "ground water basin" may be either relatively large or relatively small, and encompass tributary water sources (i.e. other ground water basins).

16. The ESPA and the tributary basins comprise an aquifer system within which ground water flows or moves to specific discharge areas and has reasonably well-defined boundaries. The aquifer system has reasonably well-defined areas of recharge: the "tributary

[19] For instance, the Bellevue triangle of the Big Wood River basin includes at least two aquifers: a deep confined (artesian) aquifer, and a shallow unconfined aquifer. James R. Bartolino & Candice B. Adkins, Hydrogeologic Framework of the Wood River Valley Aquifer System, South-Central Idaho: Scientific Investigations Report 2012-5053 at 46 (U.S. Geological Survey, 2012).

basins" are the primary source of natural recharge, and the irrigated land on the Eastern Snake River Plain is the primary source of "incidental" recharge from irrigation. The aquifer system also has reasonably well-defined areas of discharge: the springs in the American Falls and Thousand Springs reaches of the Snake River. Within the aquifer system, ground water discharges from the tributary basins directly to the ESPA as groundwater underflow or discharges to streams that recharge the ESPA via riverbed seepage. The aquifer system constitutes a "ground water basin" within the meaning of Idaho Code § 42-233b.

17. Idaho Code § 42-233b does not require the Director to designate the entirety of the aquifer system as a "ground water management area." Rather, the statute explicitly authorizes the Director to limit a "ground water management area" designation to "part" of a "ground water basin." Idaho Code § 42-233b.

ESPA Ground Water Management Area Boundary

18. The ESPAM is a calibrated regional ground water flow model representing the ESPA and is meant to simulate the effects of ground water pumping from the ESPA on the Snake River and tributary springs. *Idaho Ground Water Assoc.,* 160 Idaho at ___, 369 P.3d at 900. The Department and the Eastern Snake Hydrologic Modeling Committee ("ESHMC") began work on the ESPAM in 2000. The Department used ESPAM 1.1 from 2005 to early 2012 in responding to conjunctive administration delivery calls. ESPAM 2.0 was calibrated in July 2012, and re-calibrated in November 2012, resulting in the release of ESPAM 2.1, which is the current version of the model. The ESHMC participated in the updating the ESPAM to version 2.1. The ESPAM boundaries have been updated and revised to incorporate new data and reflect the best available science regarding the relationships between surface water and ground water on the eastern Snake Plain.

19. The ESPAM 2.1 boundary constitutes a reasonable starting point for the boundary of a ground water management area because the model was developed to facilitate management of ground water and hydraulically connected surface water resources on the eastern Snake Plain. ESPAM 2.1 is a thoroughly calibrated model of the ESPA. ESPAM 2.1 was calibrated to 43,165 aquifer water level measurements, 2,248 river gain and loss estimates, and 2,485 transient spring discharge measurements. *ESPAM 2.1 Final Report*, at 89. The ESPAM 2.1 model is the best available tool for defining and understanding the water budget in the model area and accurately predicts how changes in water budget parameters will affect aquifer storage content and ground water levels. The ESPAM 2.1 boundary is a reasonable administrative area because the Department currently lacks similar modeling tools and hydrologic data to administer outside the ESPAM 2.1 model boundary, except for the Big Wood River Basin. Moreover, most of the ground-water irrigated land within the upper Snake River basin is located within the model boundary or, in the case of the Big Wood River and Raft River basins, in established management areas outside the model boundary.

20. A few modifications of the boundary are necessary. Overlapping management areas should be avoided to prevent administrative redundancy and potential regulatory confusion. Existing management areas must be redrawn, repealed or excluded from an ESPA ground water management area. A very small portion of the Blue Gulch Critical Ground Water Area and the

Big Wood River Ground Water Management Area overlap the ESPAM 2.1 boundary. Because only a very small portion of these existing management areas overlap, the existing management area boundaries will remain as currently drawn and the lands will be excluded from an ESPA ground water management area. The Artesian City, Cottonwood, West Oakley Fan and Oakley Kenyon critical ground water areas will be excluded from an ESPA ground water management area because they are active management areas and have an approved ground water management plan. The American Falls Ground Water Management Area ("AFGWMA") is almost completely contained within the ESPAM 2.1 boundary. There is no ground water management plan for the AFGWMA. Because the AFGWMA is almost completely contained within the ESPAM 2.1 boundary and does not have an existing ground water management plan, the Director will, by separate order, rescind the AMGWMA. That portion of the AFGWMA currently within the ESPAM 2.1 boundary will be included in an ESPA ground water management area. Because the Department is considering designation of a ground water management area or a critical ground water area within the Big Lost River Basin,[20] irrigated lands in the Big Lost River Valley as delineated in Attachment B, should be excluded from the ESPA ground water management area. The boundary of the ESPA ground water management area will be modified in the future to include the Big Lost River Basin if a separate management area is not designated for the Big Lost River Basin.

21. Employing the ESPAM 2.1 boundary as modified in the preceding paragraph will help "manag[e] the effects of ground water withdrawals on the aquifer from which withdrawals are made and on any other hydraulically connected sources of water." Idaho Code § 42-233b. The Director therefore concludes that the ESPA ground water management area should be designated on the basis of the modified ESPAM 2.1 model boundary.[21]

Ground Water Management Plan

22. Idaho Code § 42-233b authorizes the Director to approve "a ground water management plan" for a designated ground water management area. A ground water management plan for the ESPA ground water management area would provide the framework for managing ground water in the areas within the ESPAM 2.1 model boundary to ensure a reasonably safe supply of ground water for irrigation of cultivated lands or other uses in the basin. The record confirms that such an approach is necessary if the objectives of arresting and reversing chronic declines in ESPA storage and spring discharges are to be realized.

23. Participants in the public meetings and the individuals and entities submitting written comments identified three main issues with respect to a ground water management plan: (1) whether approving a ground water management plan would add an additional layer of administration; (2) the content or substance of the ground water management plan; and (3) the

[20] On September 19, 2016, the Department received a petition to designate a critical ground water area in the Big Lost River Basin.

[21] ESPAM 2.1 is an analytical tool the Department uses regularly for various purposes, and is subject to refinement in the future. This order does not preclude future refinements of ESPAM, including refinements of the model boundary. Refinement of model boundaries in future versions of ESPAM will not automatically change the boundary of the ESPA ground water management area.

appropriate procedure for developing and adopting a ground water management plan. These issues are addressed in turn below.

24. The designation of an ESPA ground water management area and adoption of a ground water management plan would not require or result in an additional layer of administration or bureaucracy. While a ground water management plan might in some instances or locations apply new standards or requirements as a means of "managing the effects of ground water withdrawals on the aquifer . . . and on any other hydraulically connected sources of water," Idaho Code § 42-233b, administration of the ground water management area and of the ground water management plan would be accomplished through the existing water districts, by the watermasters as supervised by the Director. *See generally* chapter 6, title 42, Idaho Code.

25. With respect to the question of the substance or content of an ESPA ground water management plan, the starting point is the statutory requirement that a ground water management plan "shall provide for managing the effects of ground water withdrawals on the aquifer . . . and on any other hydraulically connected sources of water." Idaho Code § 42-233b. The recent Settlement Agreement between the SWC and IGWA must be commended because it adopts important consumptive use volume reductions and adaptive management measures to manage the effects of ground water withdrawals on the ESPA. However, the Settlement Agreement was written as an agreement between the SWC and IGWA and does not constitute a comprehensive ground water management plan. Because only IGWA and the SWC are signatories to the Settlement Agreement, it is unclear how many of the provisions would apply to those water users not part of IGWA who may desire protection of participating in the ground water management plan. Furthermore, the Settlement Agreement is primarily focused on irrigators. Irrigators are only one subset of water user on the ESPA. Involvement by other water users is necessary for the development of a comprehensive ESPA ground water management plan. As discussed in the comments provided by the Association of Idaho Cities, the City of Idaho Falls, and the City of Pocatello, municipalities may wish to find alternative ways to offset the effects of their ground water withdrawals on the aquifer. The Cities should be allowed the opportunity to participate in the development of the ground water management plan. Regardless of the process, the Settlement Agreement will be a key part of any future ground water management plan and it will be appropriate to incorporate all or part of the settlement into an ESPA ground water management plan.

26. Idaho Code § 42-233b does not establish or require a specific procedure for developing a ground water management plan. The Director has previously approved ground water management plans developed by, or with the assistance of, interested water users. As discussed above, input and assistance from interested water users is important in developing a comprehensive ground water management plan. Because of the physical size of the ESPA and the number of potentially interested water users, it will be necessary for the Director to define a procedure for seeking water user input and developing a ground water management plan. The Director will address these matters in a separate order.

ORDER

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

1. Pursuant to Idaho Code § 42-233b, a ground water management area is hereby designated for the Eastern Snake Plain Aquifer ("ESPA Ground Water Management Area"); and

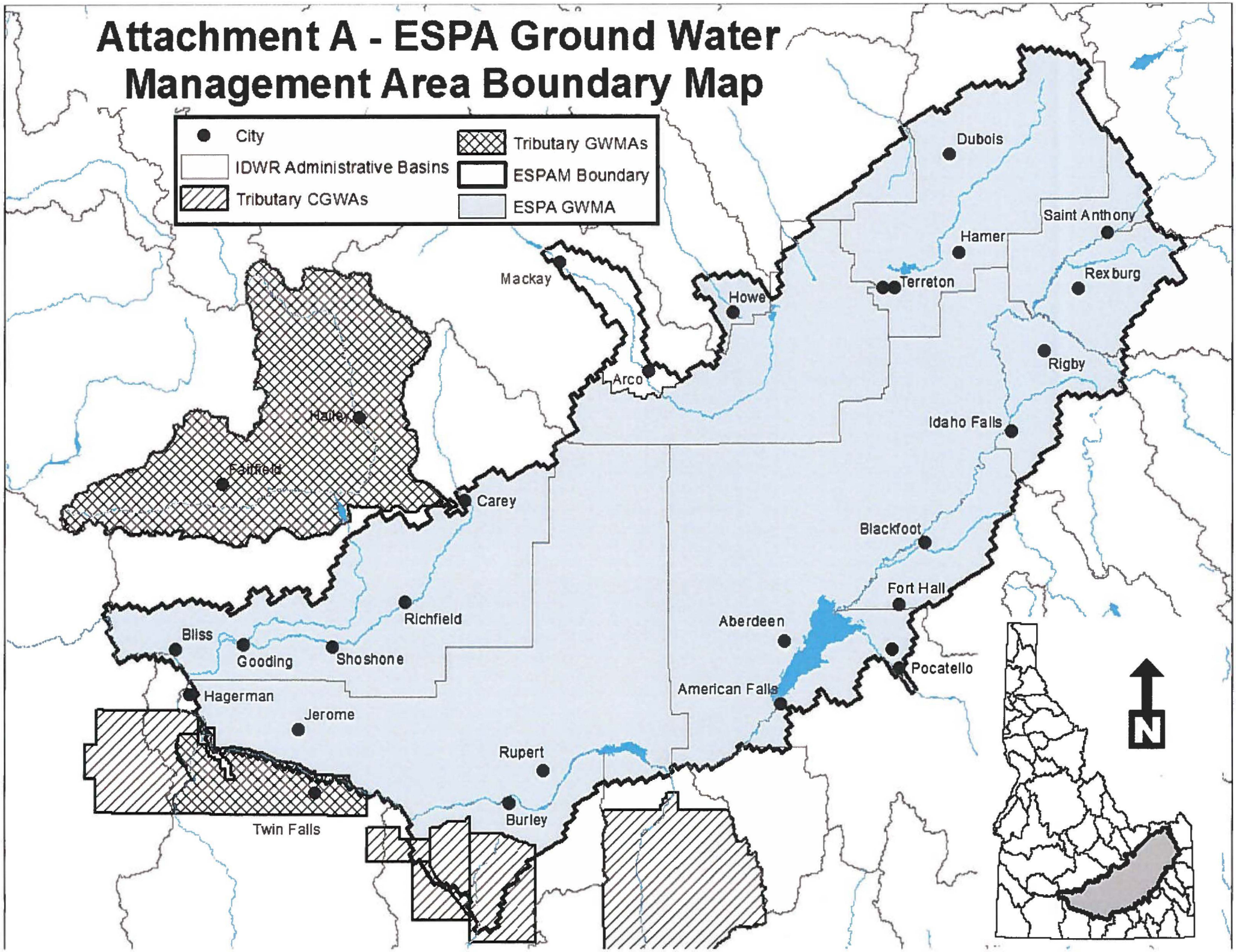
2. The boundary of the ESPA Ground Water Management Area is set forth in Attachment A. The boundary is the same boundary used in the Enhanced Snake Plan Aquifer Model Version 2.1 excluding: (1) lands in the Big Lost River Valley as delineated in Attachment B; (2) the portion of the Big Wood River ground water management area overlapping the model boundary; and (3) the portions of the Artesian City, Blue Gulch, Cottonwood, West Oakley Fan and Oakley Kenyon critical ground water areas overlapping the model boundary; and

3. The Director will issue a separate order addressing the procedure for developing pursuant to Idaho Code § 42-233b a ground water management plan for the ESPA Ground Water Management Area.

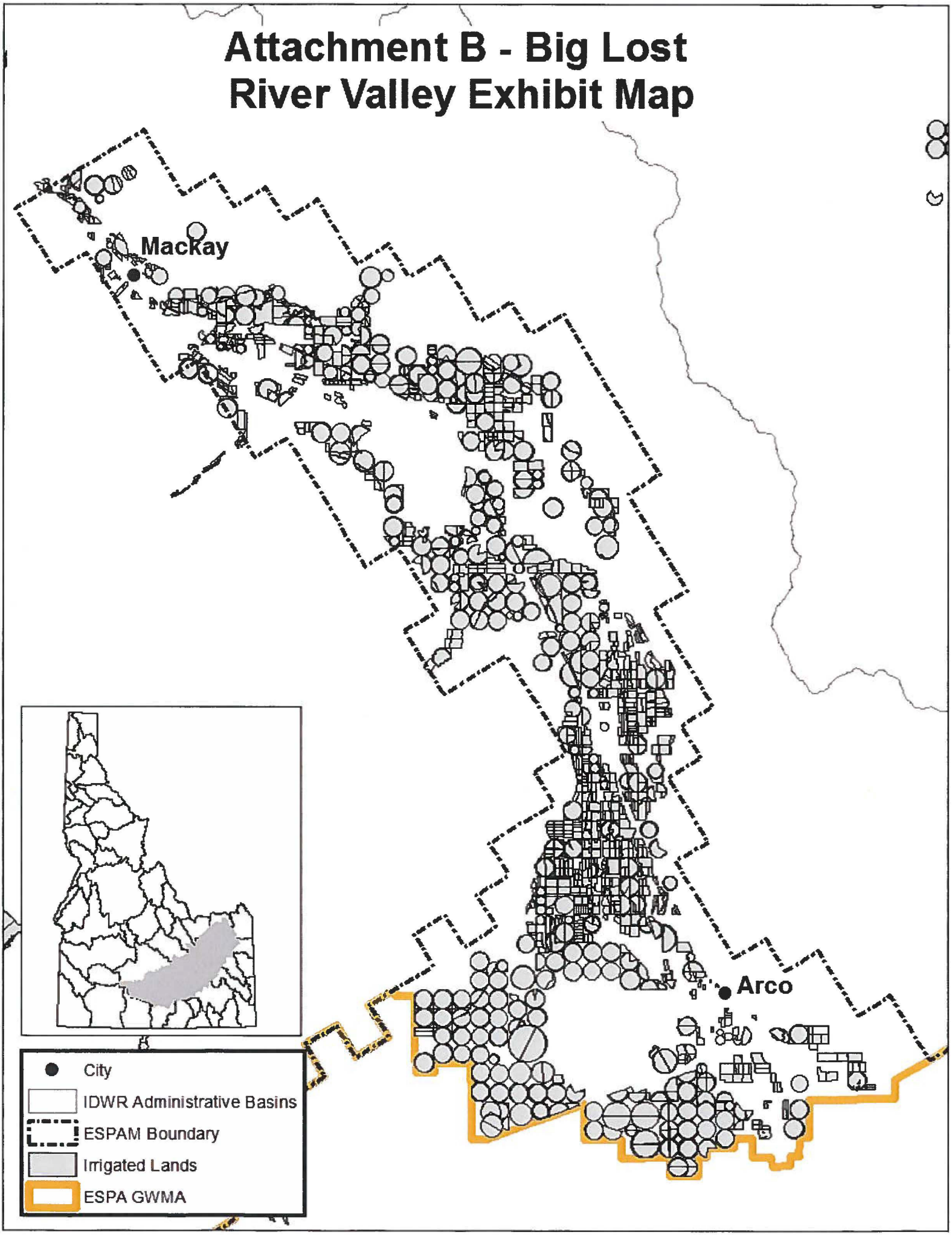
DATED this 2nd day of November, 2016.

Gary Spackman
Director

Attachment A - ESPA Ground Water Management Area Boundary Map



Attachment B - Big Lost River Valley Exhibit Map



EXPLANATORY INFORMATION TO ACCOMPANY A FINAL ORDER

(To be used in connection with actions when a hearing was **not** held)

(Required by Rule of Procedure 740.02)

The accompanying order is a "**Final Order**" issued by the department pursuant to section 67-5246, Idaho Code.

PETITION FOR RECONSIDERATION

Any party may file a petition for reconsideration of a final order within fourteen (14) days of the service date of this order as shown on the certificate of service. **Note: The petition must be received by the Department within this fourteen (14) day period.** The department will act on a petition for reconsideration within twenty-one (21) days of its receipt, or the petition will be considered denied by operation of law. See section 67-5246(4), Idaho Code.

REQUEST FOR HEARING

Unless the right to a hearing before the director or the water resource board is otherwise provided by statute, any person who is aggrieved by the action of the director, and who has not previously been afforded an opportunity for a hearing on the matter shall be entitled to a hearing before the director to contest the action. The person shall file with the director, within fifteen (15) days after receipt of written notice of the action issued by the director, or receipt of actual notice, a written petition stating the grounds for contesting the action by the director and requesting a hearing. See section 42-1701A(3), Idaho Code. **Note: The request must be received by the Department within this fifteen (15) day period.**

APPEAL OF FINAL ORDER TO DISTRICT COURT

Pursuant to sections 67-5270 and 67-5272, Idaho Code, any party aggrieved by a final order or orders previously issued in a matter before the department may appeal the final order and all previously issued orders in the matter to district court by filing a petition in the district court of the county in which:

i. A hearing was held,
ii. The final agency action was taken,
iii. The party seeking review of the order resides, or
iv. The real property or personal property that was the subject of the agency action is located.

The appeal must be filed within twenty-eight (28) days of: a) the service date of the final order, b) the service date of an order denying petition for reconsideration, or c) the failure within twenty-one (21) days to grant or deny a petition for reconsideration, whichever is later. See section 67-5273, Idaho Code. The filing of an appeal to district court does not in itself stay the effectiveness or enforcement of the order under appeal.