**BEFORE THE DEPARTMENT OF WATER RESOURCES**

**OF THE STATE OF IDAHO**

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|---|---|---|
| IN THE MATTER OF DISTRIBUTION OF WATER TO WATER RIGHTS NOS. 36-02356A, 36-07210, AND 36-07427. | ) | |
| **(Blue Lakes Delivery Call)** | ) | |
| | ) | **FINAL ORDER** |
| IN THE MATTER OF DISTRIBUTION OF WATER TO WATER RIGHTS NOS. 36-04013A, 36-04013B, AND 36-07148. | ) | |
| **(Clear Springs Delivery Call)** | ) | |

This order addresses the issue of seasonal variability and injury to Blue Lakes Trout Farm, Inc.'s ("Blue Lakes" or "BLT") water right no. 36-7210 and Clear Springs Foods, Inc.'s ("Clear Springs" or "SRF") water right no. 36-4013A. Based upon his consideration of this matter, Interim Director Gary Spackman ("Director") finds, concludes, and orders:

## FINDINGS OF FACT

### I. Procedural Background

1. This matter is before the Director as a result of the District Court's *Order on Petition for Judicial Review*, issued on June 19, 2009 and *Order on Petitions for Rehearing*, issued December 4, 2009, which remanded the question of seasonal variability back to the Department so that "the Director may apply the appropriate burdens of proof and evidentiary standards when considering seasonal variations as part of a material injury determination… ." *Order on Petition for Judicial Review* at 58.

2. In the *Order on Petition for Judicial Review* (hereafter referred to as "Order on Review"), the Court affirmed the Department's authority to take into account the inherent seasonal fluctuations in spring flows at the time the water rights were appropriated. The Court stated:

> [T]aking into account seasonal variability is not necessarily a re-adjudication of the water right despite the partial decrees not including conditions pertaining to seasonal fluctuations. Rather, taking seasonal variability into account is a consequence of administering water rights based on the effects of curtailment simulated through the ground water model, the inherent fluctuating characteristics of spring flows, and the application of the futile call doctrine. Therefore is [sic] not arbitrary or capricious or contrary to law.

*Order on Review* at 21.

3. However, the Court held the Department did not properly apply the appropriate burdens of proof and evidentiary standards regarding seasonal variation when the Director found no injury to water right no. 36-7210, held by Blue Lakes and water right no. 36-4013A, held by Clear Springs. The Court held that the junior water right holder, not the senior water right holder, should bear the burden of proving water availability, or lack thereof, during seasonal variation if there is lack of historic water measurements at the points of diversion. *Order on Review* at 24. The Court held that "[i]n making the factual determination as to what portion of a senior's deficit is attributable to seasonal variations, the Director necessarily needs to examine evidence that would show what those seasonal variations looked like before pumping by hydraulically connected juniors – i.e. what were the seasonal variations at the time of the senior's appropriation?" *Order on Review* at 22.

4. On remand, the Director must determine the extent to which water right nos. 36-7210 and 36-4013A were historically satisfied at the time of appropriation. If the rights were historically satisfied at the time of appropriation, then the current extent of material injury must be determined while also taking into account the seasonal variability.

## II. Blue Lakes' Water Right No. 36-7210

5. Blue Lakes' water right no. 36-7210 authorizes the diversion of 45 cfs from Alpheus Creek for fish propagation. The priority date is November 17, 1971.

6. Water flow must be measured frequently throughout the year. A single measurement is not sufficient to determine seasonal variability. Multiple measurements may also be insufficient to establish seasonal variability if the flows are measured repetitively in the same month or season of the year.

7. Diversion records sufficient to establish seasonal variation for BLT's water rights flow date back to 1995. *Exhibit 16.*[1] These diversion records are reflected in Figure 1 below.

[1] All references to "Exhibit" in this order refer to exhibits from the administrative hearing in this matter unless otherwise noted.

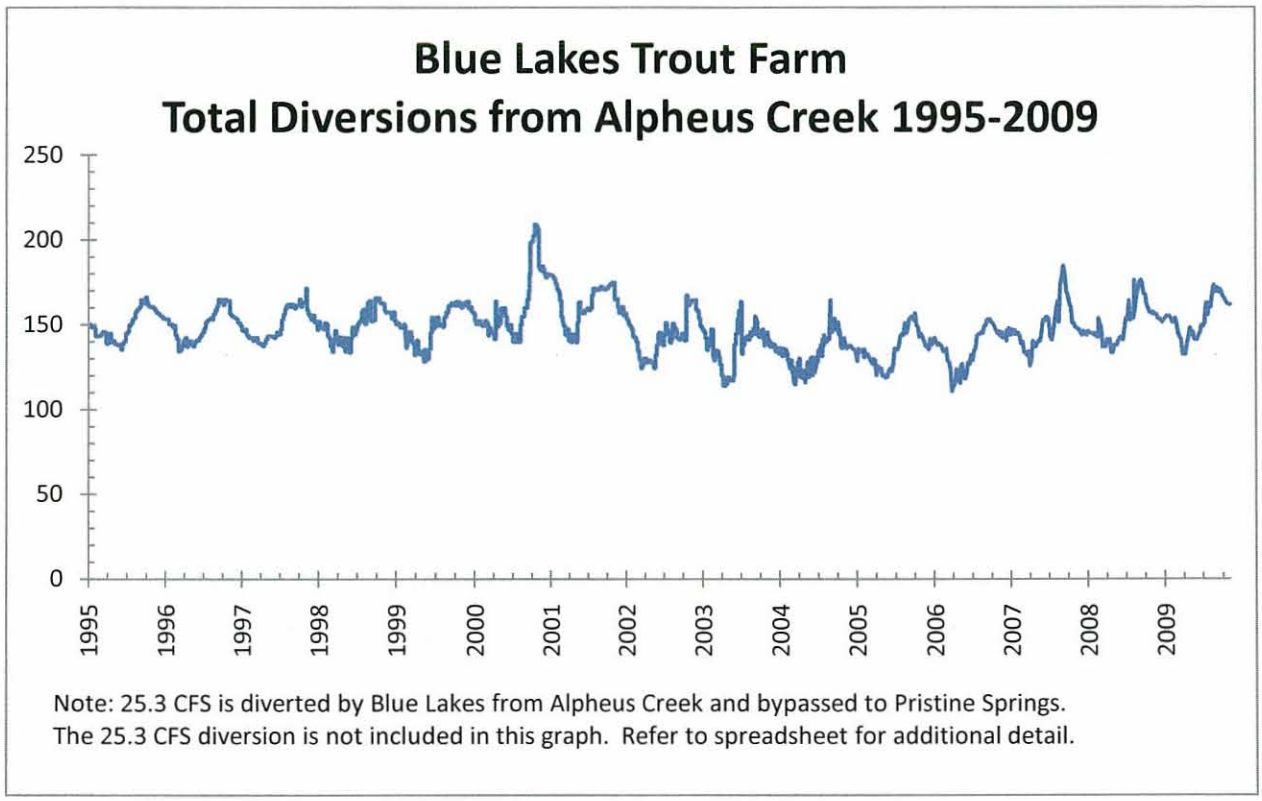


Figure 1 – Hydrograph of BLT Diversions from 1995 to 2010.

8. These diversion records do not span the early to mid-1970's, the development period for licensed water right no. 36-7210. To determine seasonal variability in the early to mid-1970's, the Department must evaluate additional data.

9. The record contains direct field measurements of BLT water flows conducted by the United States Geologic Survey ("USGS") in association with its Blue Lakes Outlet Gage #13091500 (Gage 1500) that pre-date 1995. R. Vol. I at 55-56. These measurements provide direct evidence of flow rate data from 1913 to 2010 and provide corroborating measurements during the time the water right was developed including the time of the field exam in 1977. The reported historic BLT diversions can be confirmed from USGS field notes associated with Gage 1500. However, only one or sometimes two measurements are recorded each year in the mid-1970's. Consequently, Gage 1500 data is not adequate to resolve the extent of seasonal variation.

10. The Department's records contain five miscellaneous diversion measurements[2] of combined BLT and Pristine Springs diversions prior to 1995: 165 cfs on February 15, 1977, 124 cfs on February 15, 1977, 149 cfs on February 22, 1977, 142 cfs on February 23, 1977, and 165

[2] The measurement values provided have been adjusted downward by 25.3 cfs from actual field measurements to account for water diverted on the behalf of Pristine Springs at the time of field measurements were taken. Refer to *IDWR Order of May 19, 2005, in the Matter of Distribution of Water Finding of Fact 53-55* for a detailed discussion of Pristine Springs' facility diversions and water rights. R. Vol. I at 55-56.

cfs on March 1, 1977. *Exhibit 16. Exhibit 17, pages 1-3.* J-U-B Engineering measured four of these recorded flow values for development of a rating curve for the BLT diversion[3]. The Department assumes the fluctuations observed in flow rate from these measurements are artificial and a result of operational control of the diversion works by J-U-B in establishing the rating curve and are not indicative of variation in the natural flows of the springs. The fifth measurement, associated with the Department's field exam on March 1, 1977, is assumed to be an actual representation of the natural flow rate of the springs at the time of measurement.

11. The USGS measured BLT diversions twice in 1977 for the Gage 1500 measurement data set in addition to the five 1977 miscellaneous measurements in the Department records discussed above. The four measurements associated with the development of a rating curve for BLT's diversions are not appropriate for determining seasonal variation. Of the remaining three 1977 measured BLT diversion rates, two were measured in the month of March and one was measured on October 31. These three measurements are not adequately distributed throughout the calendar year to completely capture and describe the seasonal variation in 1977. The Department is not aware of any additional direct measurement data of BLT diversions during 1977 that could provide direct evidence of the full extent of seasonal variability at the time the water right was developed.

12. If a sufficiently strong correlation can be established between BLT diversions and one or more independent[4] variables reflecting seasonal variability, and the independent variable is comprised of sufficient measurement points and dates far enough back in time (1977), then a relationship between BLT diversions and the independent variable could be used to establish seasonal variability in the BLT flow rates at the time water right 36-7210 was developed.

13. To estimate the seasonal variability associated with BLT's diversion rates prior to the start of continuous data collection by BLT in 1995, the Department considered a host of single and multiple linear regression models. Independent variables considered by the Department included the following: month; year; serial date; daily, monthly, and cumulative evapotranspiration; daily, monthly, and cumulative precipitation; daily and monthly average temperature; City of Twin Falls average daily and monthly pumping diversion rates and monthly diversion volumes; flow rate data from the USGS Gages 13090999, 13091000, and 13091500; and IDWR monitoring wells 05DAB1 and 05DAA1.

### A. Description of Independent Variables

14. USGS has monitored the daily flow rates of the Blue Lakes Springs near Twin Falls, ID, USGS Gage #13091000[5], dating back to April 1, 1950. *Exhibit 312, Figure 7.* This data is reflected in Figure 2 below.

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[3] Correspondence dated February 24, 1977 from JUB to Blue Lakes Trout Farm in water right file 36-7210.

[4] Examples of acceptable independent variables might include, but are not limited to, alternative spring flows or depth to aquifer measurements in wells within the vicinity of the Blue Lakes facility.

[5] Discharge record at this site represents combined flow for Blue Lakes Spring Pumping Plant (station 13090998), which provides water to the City of Twin Falls beginning in July 1994, and Blue Lakes Spring below the Pumping Plant near Twin Falls (station 13090999).

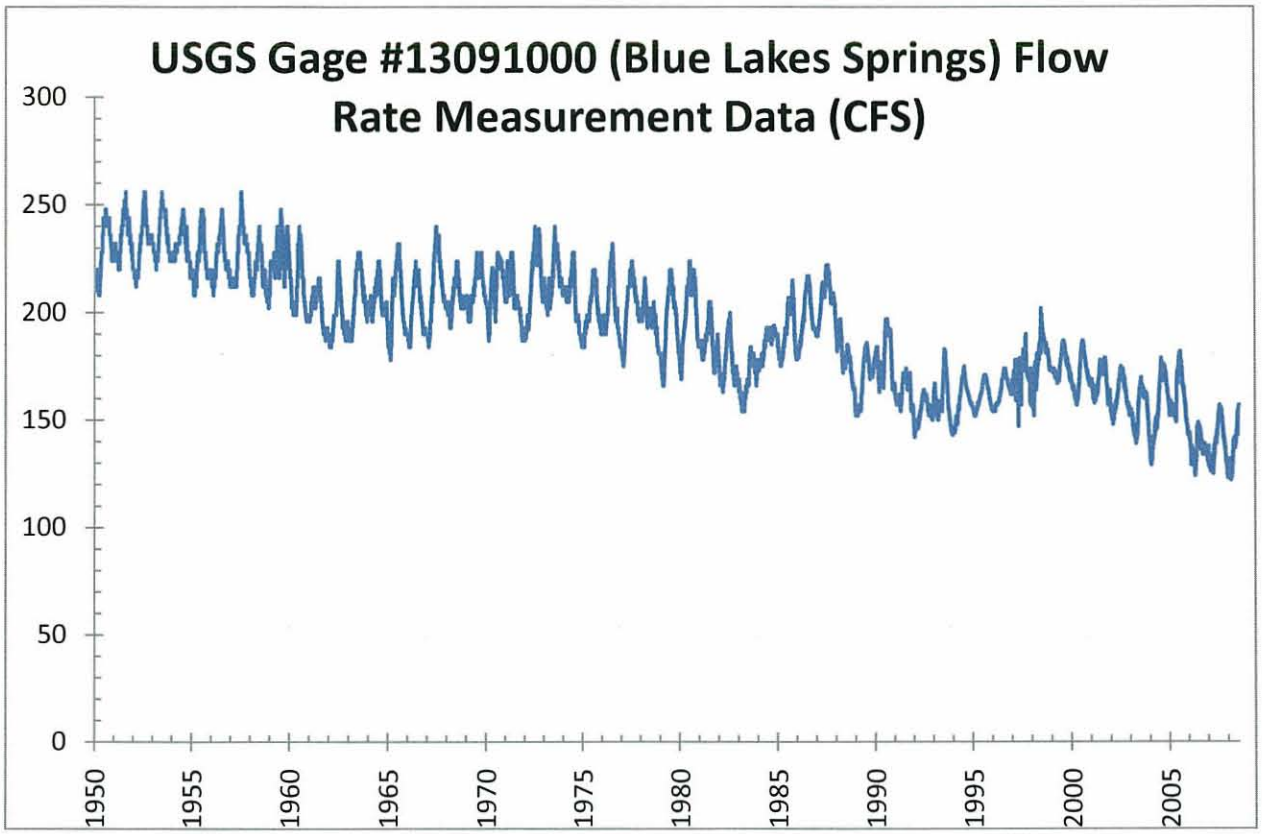


Figure 2 – Hydrograph of BLT Spring's Flow Rate 1950-2008.

15. The Department has monitored depth to water surface in a series of designated monitoring wells throughout the state. These data are maintained in the IDWR database known as Well_Log and made available to the public on-line[6]. Data for some of these wells date back to the early 1950's. *Exhibit 312, Figure 15.* Wells 05DAB1 and 01DAA1 are located in close proximity up-gradient or parallel to Blue Lakes Springs. Ground water levels in the wells have been measured at least semi-annually or more frequently for all years beginning in 1957 and 1950 respectively, and continuing until 2010. *Exhibit 317.* This data is reflected in the following figure.

[6] Ground Water Level information is made available to the public on the Department's webpage at the following link: http://www.idwr.idaho.gov/WaterInformation/GWLevels/default.htm.

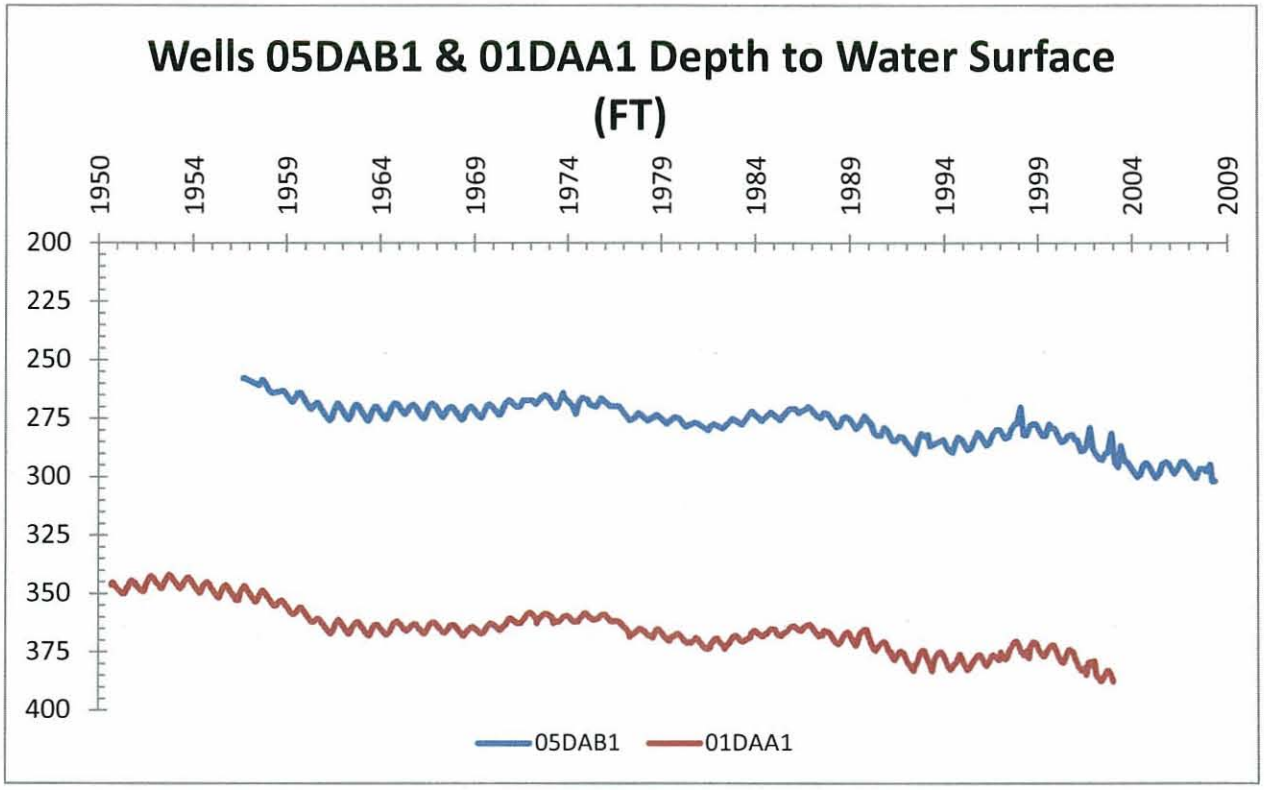


Figure 3 – Ground Water Hydrographs of IDWR Monitoring Wells from 1950-2009

16. Changes in temperature, precipitation, and evapotranspiration can influence ground water and surface water systems. Review of historic climate data can be used to understand and even estimate historic changes in ground water and surface water systems. The Department analyzed the climate variables of precipitation, temperature, and evapotranspiration[7]. Climate data considered by the Department were derived from ETIdaho data for the "Twin Falls WSO" weather station. This station (number 109303) is part of the National Weather Service cooperative network.

**B. Model Development**

17. The Department found no single independent variable that could be used to develop a single-variable linear regression model. The single variable data sets considered by the Department suffered from one or more of the following weaknesses: provided a poor correlation when modeled; were comprised of insufficient coincident data points resulting in small model sample sizes; data were not evenly distributed over the entire calendar year; or there were very few data points in the critical time period of 1971-1977.

[7] The ESPA Modeling Committee uses ET data in the ESPA Model. Temperature and precipitation are key components in the methods utilized to develop the ET values relied upon by the Model. See Exhibit 312, References page 21, Cosgrove, D. et al., 2006. Enhanced Snake Plain Aquifer Model Final Report Idaho Water Resources Research Institute, University of Idaho.

18. To estimate BLT diversions prior to the start of continuous water diversion data collection in 1995, the Department developed a multiple linear regression model that estimates average monthly diversions from the following independent variables: cumulative monthly ET; cumulative monthly precipitation; average monthly temperature; monthly depths to water surface in IDWR monitoring well 05DAB1; and the average monthly flow rate of the Blue Lakes Spring (USGS Gage # 13091000). The model was developed using data from 1995-2008 and relies upon 75 coincident data points during that time period (N = 75). The coefficient of determination or $R^2$ value of the model is 0.62.[8] The model allows for the calculation of a monthly average flow rate of water available to BLT for diversion given the corresponding monthly values for cumulative monthly ET, cumulative monthly precipitation, average monthly temperature, average monthly depth to water surface in IDWR monitoring well 05DAB1, and the average monthly flow rate of the Blues Lakes Springs. Over the modeled time period, the average residual (defined as actual BLT diversion rate less the estimated BLT diversion rate), is -0.3% of actual flows (on average 0.02 cfs), with a maximum residual of 13.6% (24.14 cfs) and a minimum residual of -14.0% (-19.32 cfs) of actual flows. Equation (1) is the numerical expression of the regression model:

(1) $Q_{BLT} = B_0 + B_1(ET) + B_2(W) + B_3(T) + B_4(D) + B_5(Q_{BLS})$ where,

Variables:
$Q_{BLT}$ = BLT Diversion Rate, cfs (dependent variable)
ET = Cumulative Monthly Evapotranspiration, Inches (independent variable)
W = Cumulative Monthly Precipitation, Inches (independent variable)
T = Average Monthly Temperature, Deg-C (independent variable)
D = Depth to Water Surface in Well 05DAB1, Feet (independent variable)
$Q_{BLS}$ = Blue Lakes Springs (Gage #13091000) Flow Rate, cfs (independent variable)

Constants:
$B_0 = 310.723$
$B_1 = 0.596$
$B_2 = -1.871$
$B_3 = -1.319$
$B_4 = -0.625$
$B_5 = 0.146$

19. The Department also used residual analysis to estimate the upper and lower bounds between which the Department would expect the historical measured flows to have occurred. These bounds were estimated by first determining the monthly average residuals, defined as the difference between the actual monthly average BLT weir flow and the monthly modeled average rate of flow available to BLT for diversion. The residuals were summarized by month to determine the maximum and minimum daily residuals for each of the 12 months. Finally, these monthly residuals were added to the modeled values (January max/min residuals

[8] Additional statistical evaluations of the model were conducted by the department including analysis of p-values, graphical analysis of residuals, and analysis of autocorrelation. From these additional evaluations, the Department found no compelling evidence to support an alternative conclusion regarding seasonal variation to the one presented in this Order.

added to January modeled data, February max/min residuals to February modeled data, and so on…) to develop month-specific upper and lower bounds of the regression model.

20. By utilizing the model developed from the regression analysis, the Department estimated the average monthly flow rate available for diversion dating back to January 1964 as a function of the independent variables previously described. Figure 4 is a graphical depiction of the average monthly BLT diversion rates as estimated by the regression model. Included in the figure are the upper and lower residual boundaries, the Gage 1500 measurements back to 1971[9], and the Field Exam measurement from March 1, 1977.

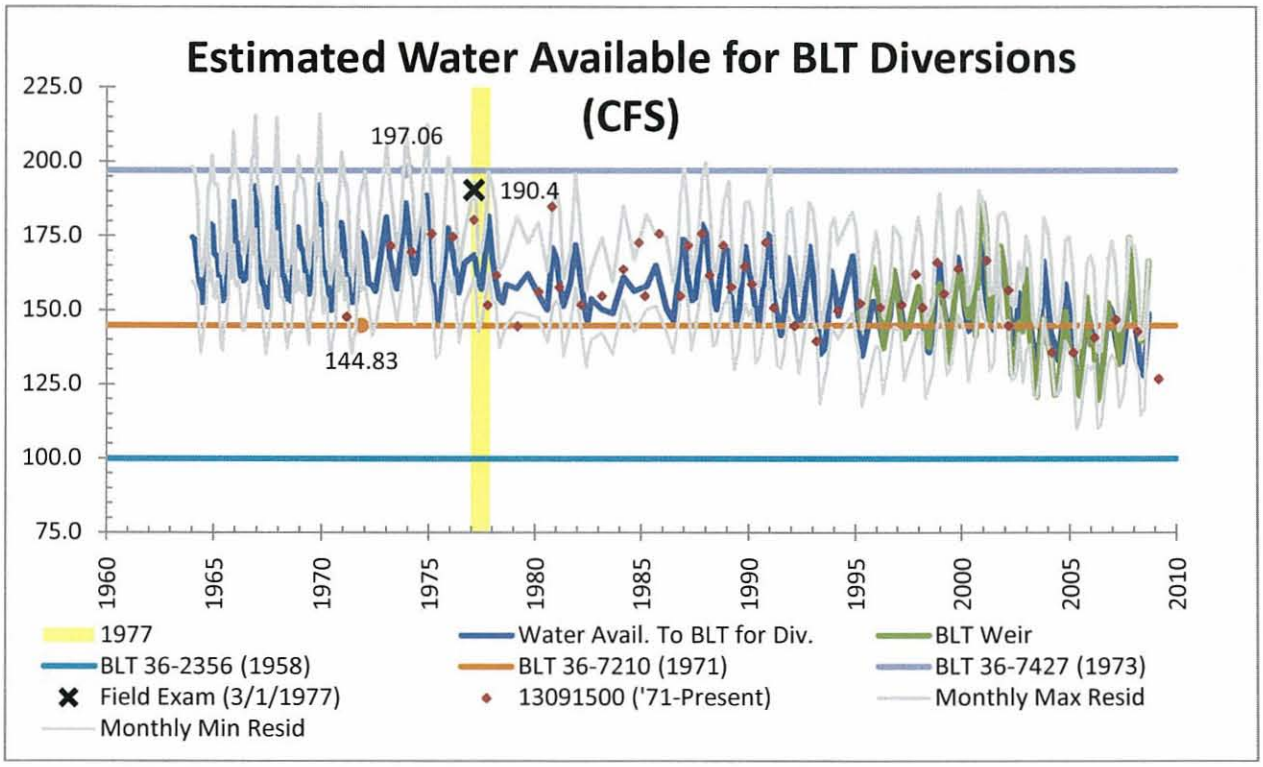


Figure 4 – Estimated Water Available to BLT for Diversion 1964-2008

21. There are three time periods during the 1964-2008 timeframe when the seasonal highs and lows were significantly dampened in comparison to the remaining period. These time periods are 1977, 1979-1980, and 1982-1985. For the latter two time periods, 1979-1980 and 1982-1985, the dampened effect in the seasonal variation can be partly attributed to a lack of sufficient data points in the independent variables in those time periods to capture the full range of seasonal variation. For those time periods, the model is not a reliable tool in analyzing seasonal variation. The estimated hydrograph for 1977 is comprised of five estimated values, including the months of March, May, July, September, and November. Both the number and distribution of the independent variable data utilized in the model to estimate diversion values for

[9] Although Gage 1500 data exists prior to 1977 they are not indicative of current or modern BLT diversion practices and therefore are not useful for comparison. In addition, as previously discussed the Gage 1500 data is not sufficient to determine seasonal variation but it can be used to validate the model.

1977 are sufficient to adequately capture the seasonal variability in that year. Therefore a lack of data does not call into question the veracity of the model's predictions for that year. In fact, the same dampened effect in seasonal variation are displayed in the underlying independent variables of 13091000 Gage flow rates and IDWR monitoring well 05DAB1 depth to water surface. Therefore the dampened effect in seasonal variation in the model's output for 1977 is a function of the physical conditions of 1977, as reflected in the seasonal variation of the underlying independent variables.

22. In the year of the field exam, 1977, the Department is aware of seven unique BLT diversion measurements; three of these measurements can be used to gage the accuracy of estimated values in the year of concern. The following table summarizes actual measured diversion data associated with the Gage 1500 and the field exam, estimated values from the regression analysis, the residual or difference between the actual and estimated values, and the percent discrepancy between the actual and estimated values.

**Table 1 - Summary of Actual vs. Predicted Diversions**

| Date | BLT Measured Diversion Rate (cfs) | Estimated Average Monthly Diversion Rate (cfs) | Residual (cfs) | % Residual |
|---|---|---|---|---|
| 3/1/1977 | 190.4 | 168.6 | 21.8 | 11.4% |
| 3/3/1977 | 180.4 | 168.6 | 11.8 | 6.5% |
| 10/31/1977 | 151.7 | 181.6 | -29.9 | 19.7% |

23. Utilizing monthly estimated diversion rates from the regression analysis, the Department constructed a hydrograph of water available for diversion to BLT for the years from the priority date of water right 36-7210 (11/17/1971) to the year in which the field exam was conducted (1977). Starting on November 17, 1971 with the addition of water right 36-7210, BLT was authorized to divert a combined flow rate of 144.8 cfs.

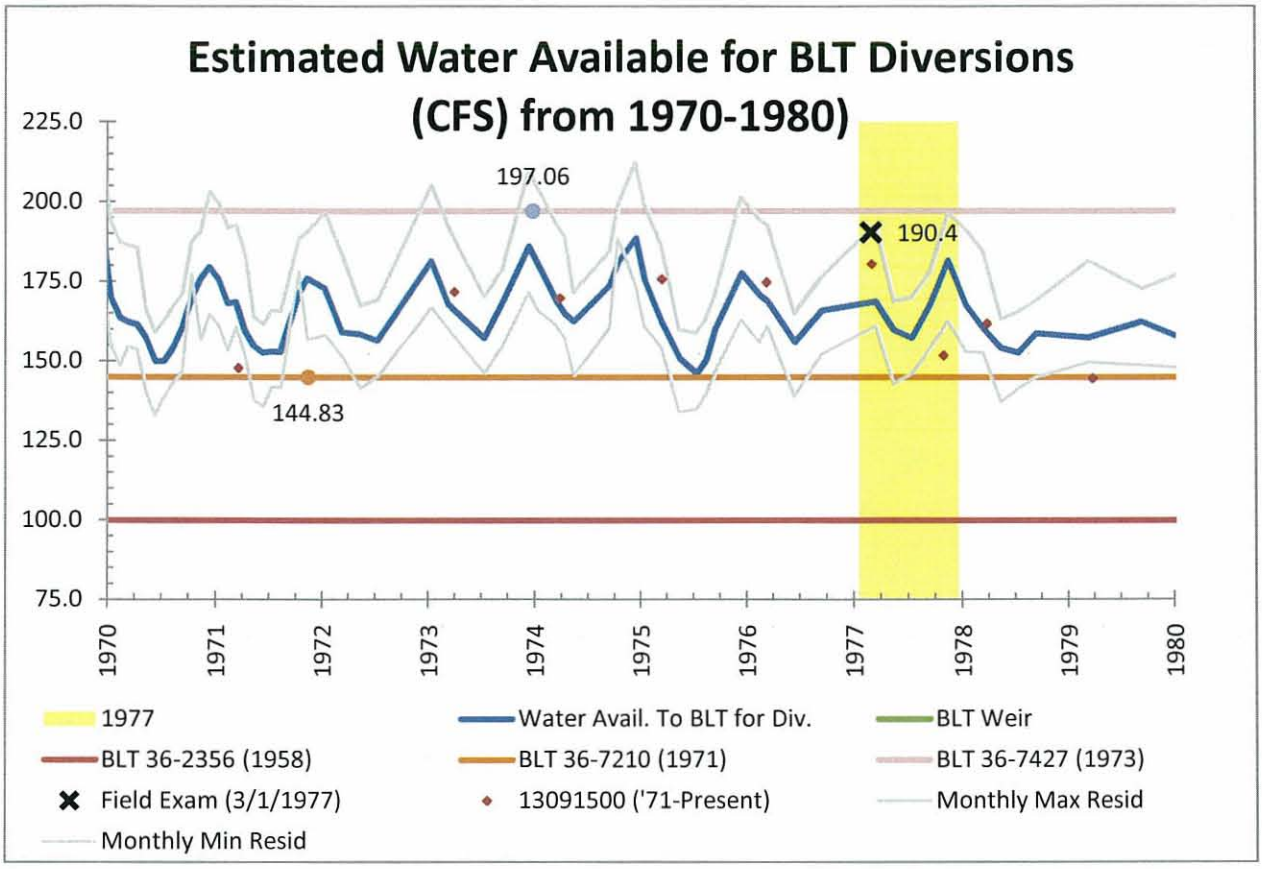


Figure 5 – Hydrograph of Estimated Water Available for Diversion to BLT from 1970-1980

24. Figure 5 depicts the estimated water available for diversion by BLT from 1970-1980 in relationship to the stacked suite of water rights developed by BLT up to and including water right 36-7210, which bears a 1971 priority date. The upper and lower residual analysis boundaries are also plotted. The estimated water available for diversion by BLT exceeds the 144.83 cfs rate of diversions authorized by BLT's 1971 priority water right at all times during 1977. The lower residual boundary for the estimated water available for diversion by BLT also exceeds the 144.83 cfs rate of diversions authorized by BLT's 1971 priority water right and all earlier priority BLT water rights at all times during 1977 except for the month of May. In the month of May the estimated water available for diversion by BLT less the monthly lower residual is equal to 142.7 cfs, 2.1 cfs less than the authorized combined diversion rate, or 98.5% of the authorized combined diversion rate. From these findings, it is likely that seasonal variation was not a factor in significantly limiting the supply of water available to BLT in the year in which the field exam was conducted.

25. Spring discharges in the Thousand Springs area have declined over time due to a combination of ground water pumping, increased drought conditions, and changes in surface water irrigation practices on the Eastern Snake River Plain. R. Vol. I at 49.

26. The hydrograph depicted in Figure 6 below shows the seasonal variation of the water supply diverted by BLT during 2005 in relation to the stacked suite of water rights

developed by BLT up to and including water right 36-7210. In 2005, the available water supply for diversion by BLT was not sufficient at times (more than ¾ of the year) to meet the diversion rate authorized by BLT's 1971 priority water right 36-7210.

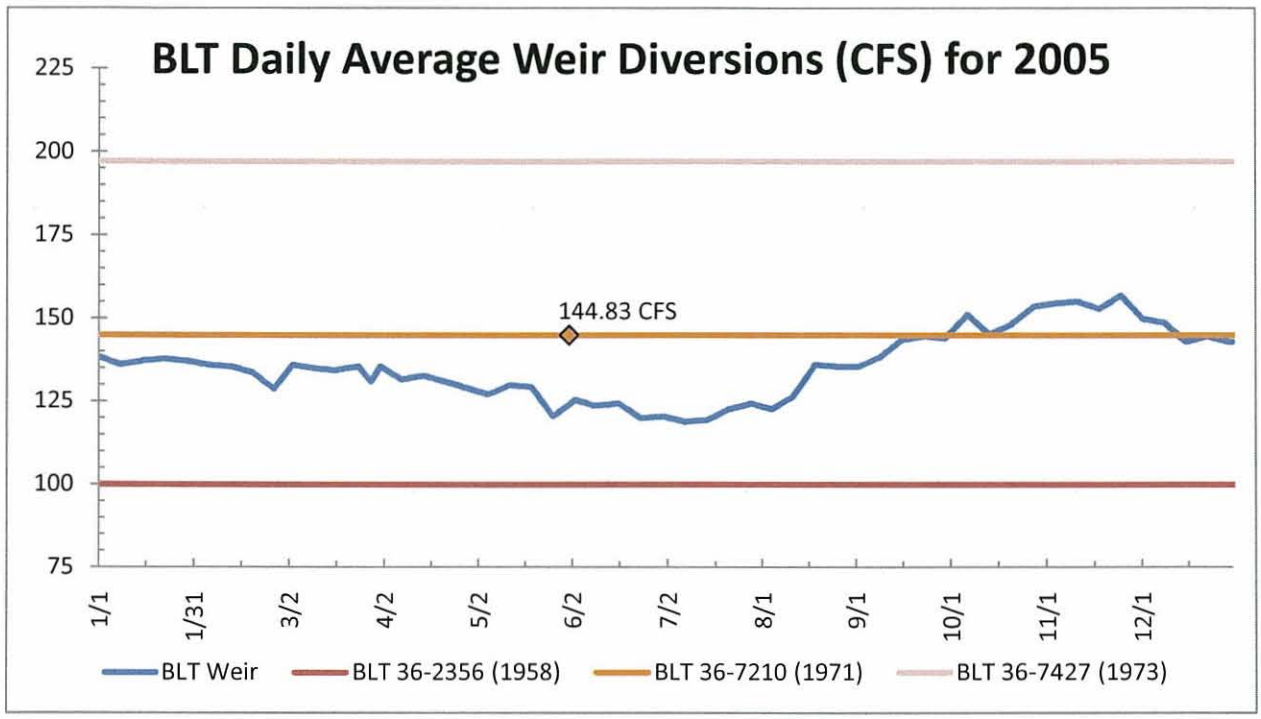


Figure 6 – Actual Hydrograph of Water Diverted by BLT in 2005.

27. Curtailment is warranted based upon the technical findings above.

### C. Simulated Curtailment Of Ground Water Rights Junior to November 17, 1971

28. Currently, junior ground water users are mitigating for injury to BLT water right no. 36-7427 with a priority date of December 28, 1973. The benefit of curtailing ground water rights junior to December 28, 1973 within the 10% trim line and within the area of common ground water supply results in curtailment of 76,000 acres and a benefit to the Devil's Washbowl to Buhl reach of 61 cfs. The expected benefit to the BLT facility is 12 cfs.

29. The benefit of curtailing ground water rights junior to November 17, 1971 within the 10% trim line and within the area of common ground water supply results in a curtailment of 99,000 acres and a benefit to the Devil's Washbowl to Buhl reach of 78 cfs. The expected benefit to the BLT facility is 16 cfs.

30. Curtailing ground water rights junior to November 17, 1971 results in an increase of 23,000 acres curtailed and an increased flow to the reach of 18 cfs.[10] The increased benefit to BLT is expected to be 3.5 cfs.[11] Attached hereto and referenced, as Attachment A, is the

[10] Rounding to two significant digits results in the calculation of the benefit to the spring of 18 cfs, not 17 cfs.
[11] Rounding to two significant digits results in the calculation of the benefit to the spring of 3.6 cfs, not 3.4 cfs.

modeling analysis.

31. The net simulated benefit of curtailing water rights in response to BLT's call for delivery of water right 36-7210 is 18 cfs to the reach and 3.5 cfs to BLT. Below, the Department analyzes the separate impact to Water District 130 and Water District 140.

### i. Water District 130

32. The benefit of curtailing ground water rights junior to December 28, 1973 that are within the 10% trim line, within the area of common ground water supply, and within the boundary of Water District 130, results in a curtailment of 56,000 acres and a benefit to the Devil's Washbowl to Buhl reach of 47 cfs. The expected benefit to the BLT facility is 9.4 cfs.

33. The benefit of curtailing ground water rights junior to November 17, 1971 that are within the 10% trim line, within the area of common ground water, and within the boundary of Water District 130, results in a curtailment of 69,000 acres and a benefit to the Devil's Washbowl to Buhl reach of 60 cfs. The expected benefit to the BLT facility is 12 cfs.

34. Curtailing ground water rights junior to November 17, 1971 results in an increase of 13,000 acres curtailed and an increased flow to the reach of 13 cfs. The increased benefit to BLT is expected to be 2.6 cfs.

### ii. Water District 140

35. The benefit of curtailing ground water rights junior to December 28, 1973 within the 10% trim line, within the area of common ground water supply, and within the boundary of Water District 140 results in a curtailment of 19,000 acres and a benefit to the Devil's Washbowl to Buhl reach of 13 cfs. The expected benefit to the BLT facility is 2.6 cfs.

36. The benefit of curtailing ground water rights junior to November 17, 1971 within the 10% trim line, within the area of common ground water, and within the boundary of Water District 140 results in a curtailment of 29,000 acres and a benefit to the Devils Washbowl - Buhl reach of 18 cfs. The expected benefit to the BLT facility is 3.7 cfs.

37. Curtailing ground water rights junior to November 17, 1971 results in an increase of 10,000 acres curtailed and an increased flow to the reach of 5.0 cfs. The increased benefit to BLT is expected to be 1.0 cfs.

## III. Clear Springs' Water Right No. 36-4013A

38. Clear Springs' water right no. 36-4013A authorizes the diversion of 15 cfs from springs for fish propagation at Clear Springs' Snake River Farms ("SRF") facilities. The priority date is September 15, 1955.

39. Diversion records sufficient to establish seasonal variation for SRF's water flow date back to 1988. *Exhibit 124.* These diversion records are reflected in Figure 7 below.

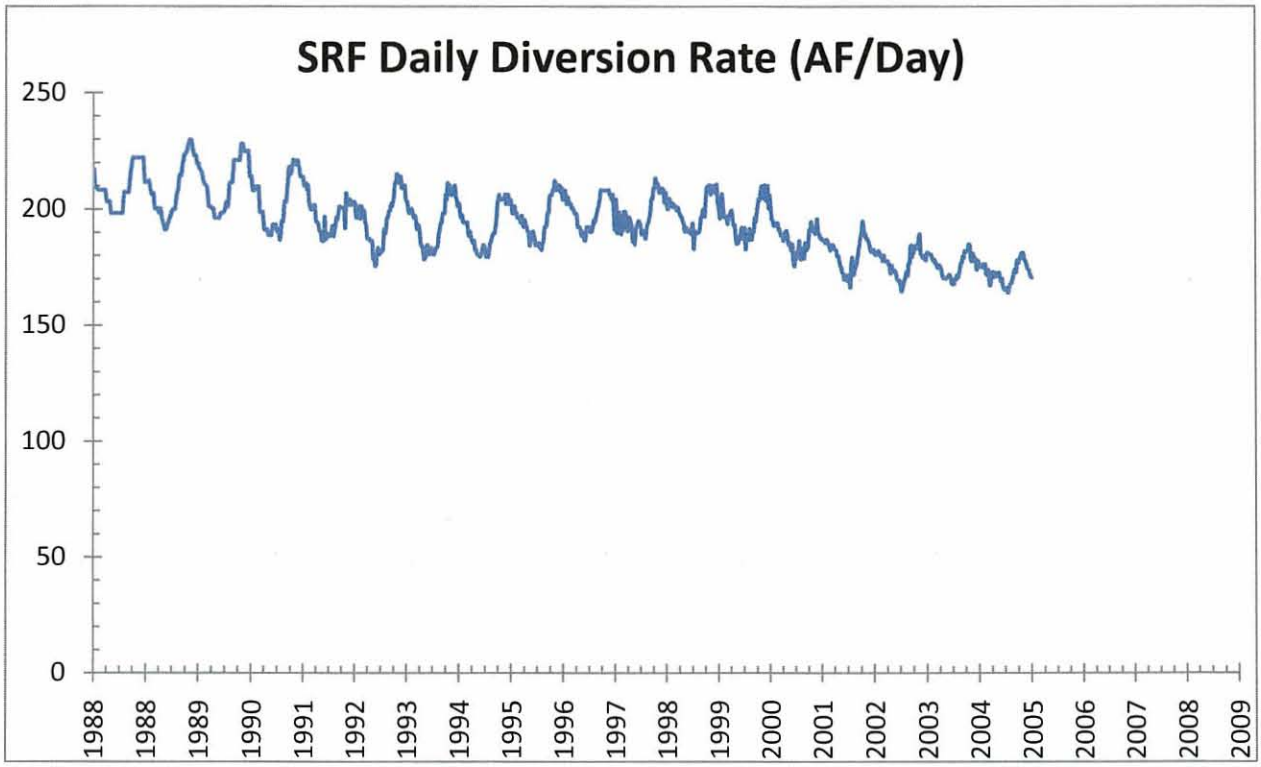


Figure 7 – Hydrograph of SRF Diversions from 1988-2005.

40. These diversion records do not coincide with the priority date of September 15, 1955, which represents the date of the establishment of beneficial use associated with water right 36-4013A. To determine seasonal variability dating back to 1955, the Department must evaluate additional data sets. The Department is not aware of any direct measurements of the SRF water flows during 1955 that would provide direct evidence of seasonal variability at the time the water right was developed.

41. However, if there is a sufficiently strong correlation between SRF's diversions and one or more independent[12] variables that reflects seasonal variability in SRF's diversions and the independent variable is comprised of sufficient measurement points, and dates far enough back in time (1955), then a relationship between SRF's diversions and the independent variable can be used to establish seasonal variability in the SRF flow rates at the time water right 36-4013A was developed.

42. The USGS has monitored daily flow rates of the Box Canyon Springs near Wendell, ID, USGS Gage #1309550, dating back to April 1, 1950. *See Exhibit 312, Figure 5.* Additional point measurements by the USGS of the flow rate of the Box Canyon Springs date as

[12] Examples of acceptable secondary metrics might include, but are not limited to, alternative spring flows or depth to aquifer measurements in wells within the vicinity of the SRF facility.

far back as 1917. *Exhibit 307; Exhibit 312, Figure 6.* These diversion records are reflected in Figure 8 below.

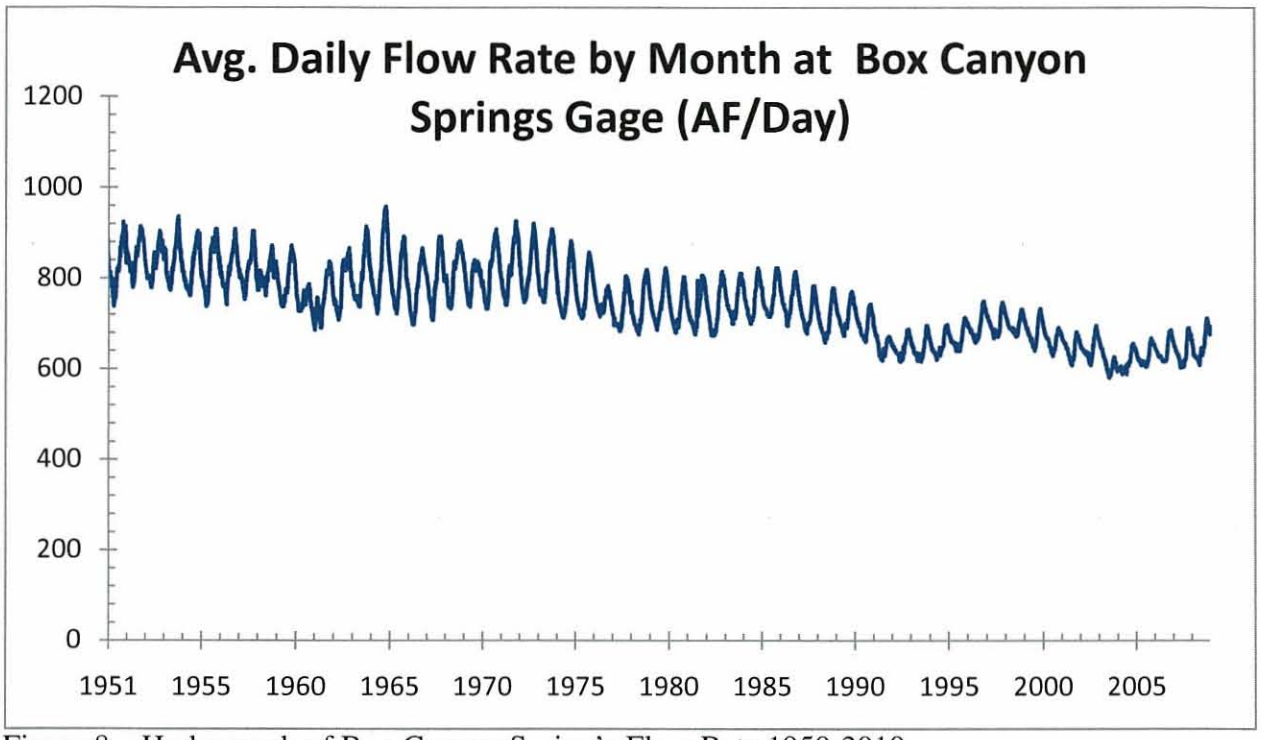


Figure 8 – Hydrograph of Box Canyon Spring's Flow Rate 1950-2010.

### A. Model Development

43. To estimate daily SRF diversion rates prior to the start of data collection, the Department developed a linear regression model of daily SRF diversions versus daily Box Canyon Springs flow rates. The model was developed from recorded data dating from 1988-2005 and relies on 876 coincident data points during that time period (N = 876). The coefficient of determination or $R^2$ value of the model is 0.75.[13] The model allows for the calculation of a daily SRF diversion flow rate given the corresponding Box Canyon Springs flow rate for that day. Over the modeled time period, the average residual (defined as the actual SRF diversion rate less the estimated SRF diversion rate) is -0.1% of actual flows (on average -0.24 cfs), with a maximum residual of 9.1% (17.6 cfs) and a minimum residual of -9.3% (-17.9 cfs) of actual flows. The figure below depicts both data sets plotted with respect to each other.

[13] Additional statistical evaluations of the model were conducted by the department including analysis of p-values, graphical analysis of residuals, and analysis of autocorrelation. From these additional evaluations, the Department found no compelling evidence to support an alternative conclusion regarding seasonal variation to the one presented in this Order.

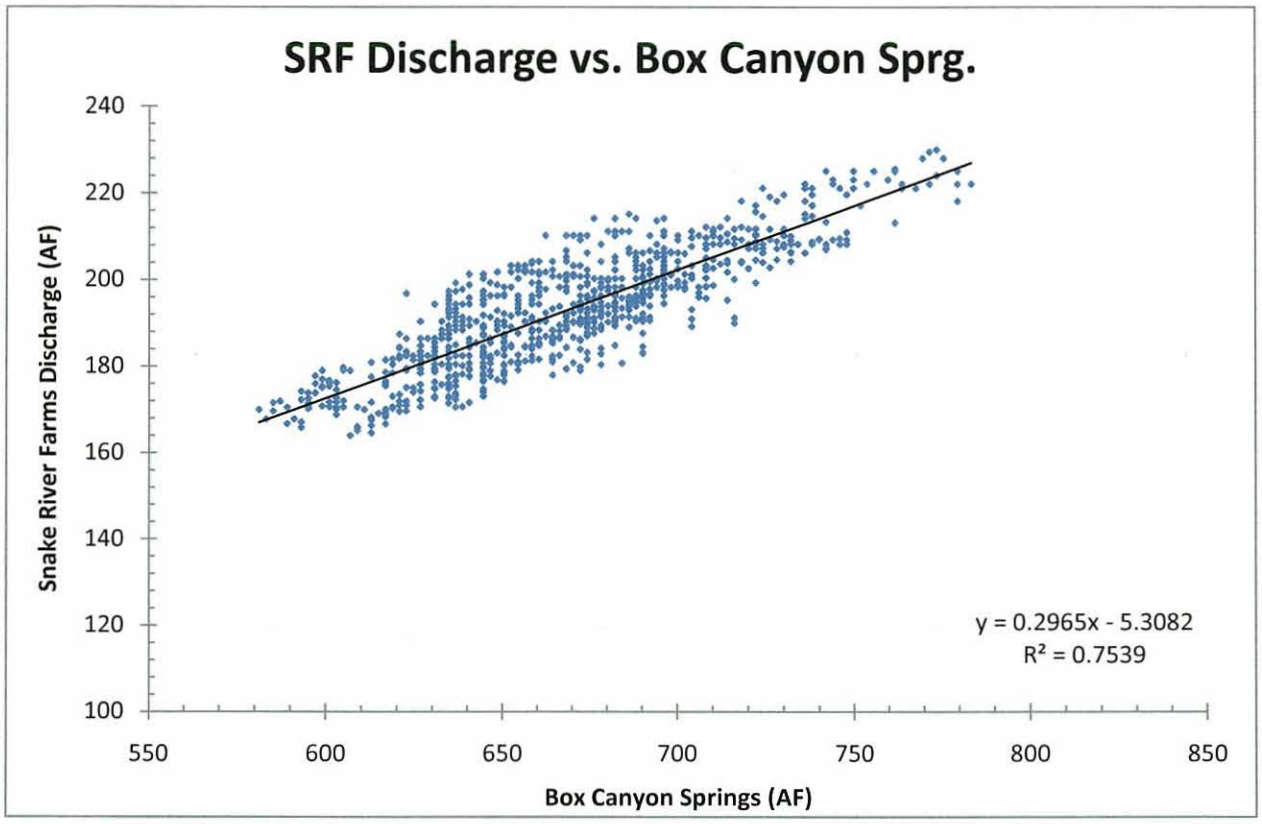


Figure 9 – XY Scatter Plot of SRF Diversions vs. Box Canyon Springs Flow Rates

44. Equation (1) summarizes the regression model in numerical form:

(1) $Q_{SRF} = 0.297*(Q_{BCS}) - 5.308$ where,
$Q_{SRF}$ = Snake River Farms diversion rate, AF/Day (Dependent Variable)
$Q_{BCS}$ = Box Canyon Springs flow rate, AF/Day (Independent Variable)

45. By utilizing the equation developed from the regression analysis, the Department was able to estimate daily SRF diversion rates as a function of daily Box Canyon Spring flow rates dating back to April 1, 1950. The Department is aware of four unique SRF diversion measurements taken prior to 1988. These measurements can be used to gage the accuracy of estimated values derived from the model. Exhibit 128A depicts average diversion rates for April-1971, May-1972, June-1972, and July-1972. The following table summarizes the actual measured diversion data from Exhibit 128A, estimated average daily flow rates available to SRF for diversion from the regression analysis, the residual or difference between the actual and estimated values, and the percent discrepancy between the actual and estimated diversion rates.

**Table 2 - Summary of Actual vs. Estimated Diversions**

| Date | SRF Measured Diversion Rate (Exhibit 128A) (AF/Day) | Estimated Avg. Daily Diversion Rate (AF/Day) | Residual (AF/Day) | % Residual |
|---|---|---|---|---|
| April-71 | 199.8 | 213.3 | -13.5 | -6.8% |
| May-72 | 201.3 | 224.7 | -23.4 | -11.6% |
| June-72 | 215.6 | 237.7 | -22.1 | -10.2% |
| July-72 | 235.8 | 235.7 | 0.1 | 0.0% |

46. Utilizing daily estimated values from the regression analysis, the Department is able to construct a hydrograph of water available for diversion to SRF in the priority year of water right 36-4013A (1955). Starting on September 15, 1955 with the addition of 36-4013A, SRF was authorized to divert a combined flow rate of 89.0 cfs (176.5 Af/Day). The hydrograph of water available to SRF in 1955 is depicted below in Figure 10.

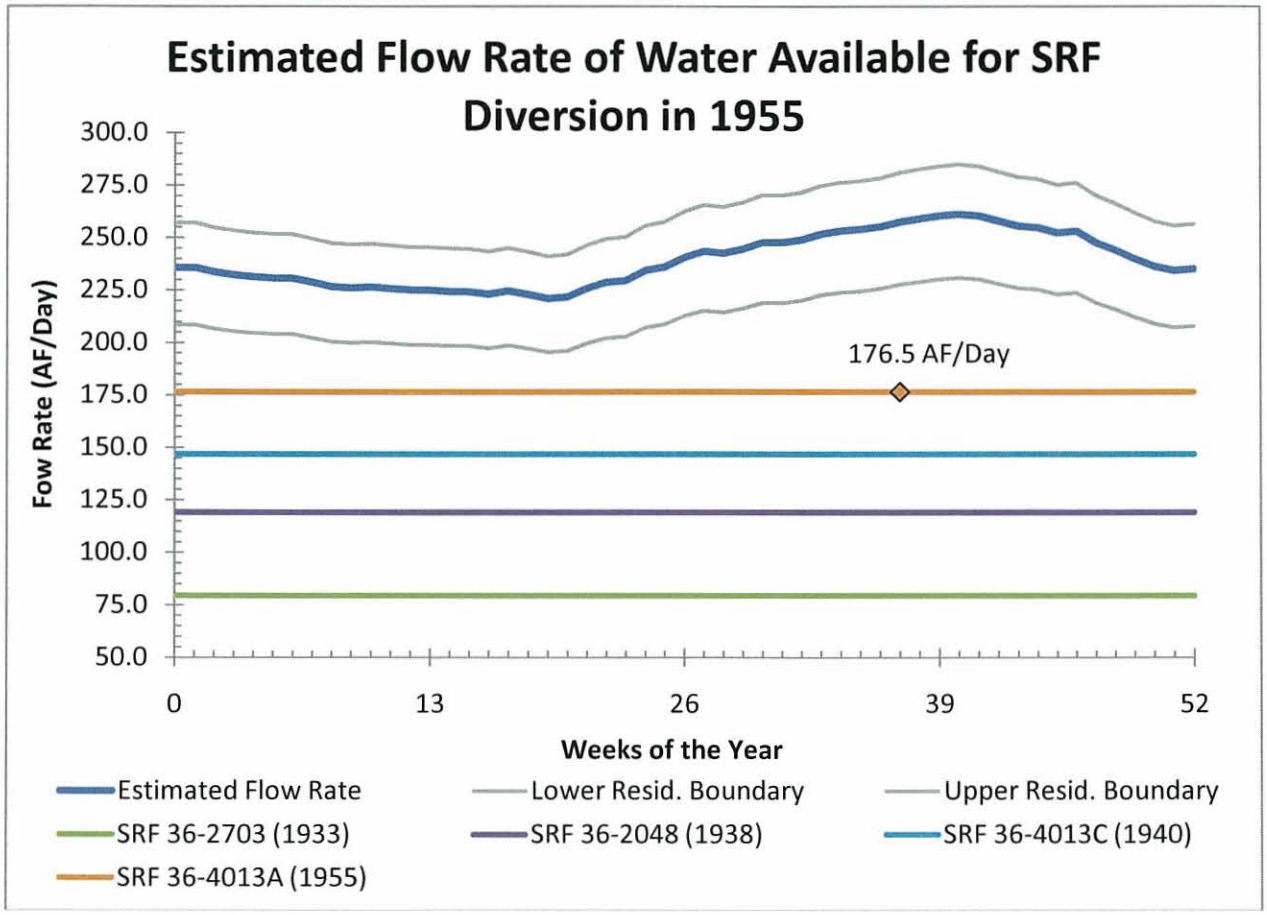


Figure 10 – Estimated Hydrograph of Water Available for Diversion to SRF in 1955

47. Figure 10 depicts the water available for diversion by SRF in 1955 in relation to the stacked suite of water rights developed by SRF up to and including water right 36-1013A, which bears a 1955 priority date. A plot of the estimated diversion values less the maximum

negative percent residual from Table 2 (-11.6%); and the estimated diversion values plus the maximum positive percent residual from Table 2 (9.1%) is also included in the figure. Both the estimated available water supply and the maximum lower residual boundary for the estimated water supply at SRF exceed the 89.0 cfs (176.5 AF/Day) rate of diversions authorized by SRF's 1955 priority water right. Therefore, seasonal variation was not a factor limiting the supply of water available to SRF at the time of appropriation.

48. Spring discharges in the Thousand Springs area have declined over time due to a combination of ground water pumping, increased drought conditions, and changes in surface water irrigation practices on the Eastern Snake River Plain. R. Vol. 3 at 492.

49. The hydrograph depicted in Figure 11 below shows the seasonal variation of the water supply diverted by SRF during 2005 in relation to the stacked suite of water rights developed by SRF up to and including water right 36-4013A. In 2005, the available water supply at Snake River Farm was not sufficient at times to meet the diversion rate authorized by SRF's 1955 priority water right 36-4013A.

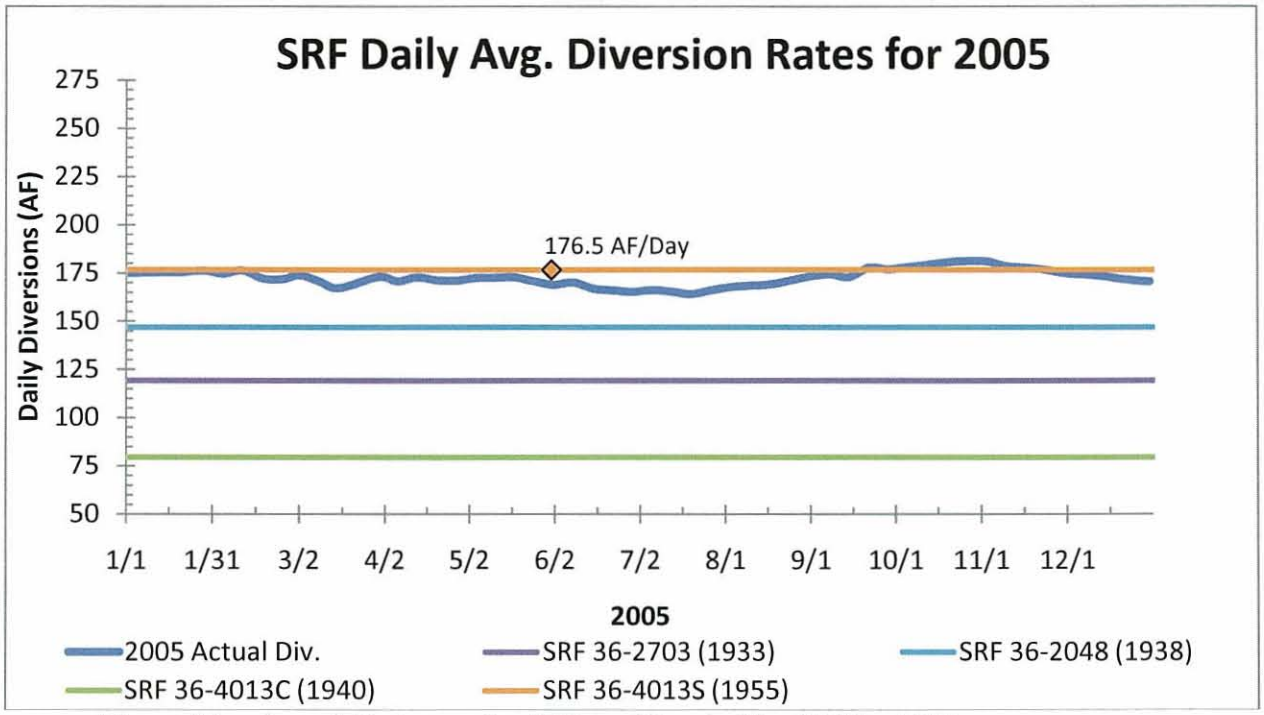


Figure 11 – Actual Hydrograph of Water Diverted by SRF in 1955

50. Curtailment is warranted based upon the technical findings above.

**B. Simulated Curtailment Of Ground Water Rights Junior to September 15, 1955**

51. Currently, junior ground water users are mitigating for injury to SRF's water right nos. 36- 4013B (priority date of February 4, 1964) and 36-7148 (priority date of January 31, 1971). The benefit of curtailing ground water rights junior to February 4, 1964 within the 10% trim line and within the area of common ground water results in a curtailment of 54,000 acres

and a benefit to the Buhl to Thousand Springs reach of 39 cfs. The expected benefit to the SRF facility is 2.7 cfs.

52. Using the ground water model to simulate the curtailment of the diversion and use of ground water to SRF's September 15, 1955 water right, the Department finds the benefit of curtailing ground water rights junior to September 15, 1955 within the 10% trim line and within the area of common ground water results in a curtailment of 86,000 acres and a benefit to the Buhl to Thousand Springs reach of 57 cfs. The expected benefit to the SRF facility is 3.9 cfs.

53. Curtailing ground water rights junior to September 15, 1955 results in an increase of 31,000 acres curtailed and an increased flow to the reach of 18 cfs. The increased benefit to Snake River Farm is expected to be 1.2 cfs. Attached hereto and referenced, as Attachment B, is the modeling analysis.

54. The net simulated benefit of curtailing water rights in response to SRF's call for delivery of water right 36-7210 is 18 cfs to the reach and 1.2 cfs to SRF. The Department has also analyzed the separate impact to Water Districts 130 and 140.

**i. Water District 130**

55. The benefit of curtailing ground water rights junior to February 4, 1964 within the 10% trim line, within the area of common ground water supply, and within the boundary of Water District 130 results in a curtailment of 51,000 acres and a benefit to the Buhl to Thousand Springs reach of 38 cfs. The expected benefit to the SRF facility is 2.6 cfs.

56. The benefit of curtailing ground water rights junior to September 15, 1955 within the 10% trim line, within the area of common ground water supply, and within the boundary of Water District 130 results in a curtailment of 78,000 acres and a benefit to the Buhl to Thousand Springs reach of 55 cfs. The expected benefit to the SRF facility is 3.8 cfs.

57. Curtailing ground water rights junior to September 15, 1955 results in an increase of 27,000 acres curtailed and an increased flow to the reach of 17 cfs. The increased benefit to Snake River Farm from curtailment in Water District 130 is expected to be 1.2 cfs.

**ii. Water District 140**

58. The benefit of curtailing ground water rights junior to February 4, 1964 within the 10% trim line, within the area of common ground water supply, and within the boundary of Water District 140 results in a curtailment of 4,000 acres and a benefit to the Buhl to Thousand Springs reach of 1.2 cfs. The expected benefit to the SRF facility is 0.082 cfs.

59. The benefit of curtailing ground water rights junior to September 15, 1955 within the 10% trim line, within the area of common ground water supply, and within the boundary of Water District 140 results in a curtailment of 8,000 acres and a benefit to the Buhl to Thousand Springs reach of 2.4 cfs. The expected benefit to the SRF facility is 0.16 cfs.

60. Curtailing ground water rights junior to September 15, 1955 results in an increase of 4,200 acres curtailed and an increased flow to the reach of 1.2 cfs.[14] The increased benefit to Snake River Farm from curtailment in Water District 140 is expected to be 0.082 cfs.[15]

## CONCLUSIONS OF LAW

1. Idaho Code § 42-602, addressing the authority of the Director over the supervision of water distribution within water districts, provides:

> The director of the department of water resources shall have direction and control of the distribution of water from all natural water sources within a water district to the canals, ditches, pumps and other facilities diverting there from. Distribution of water within water districts created pursuant to section 42-604, Idaho Code, shall be accomplished by watermasters as provided in this chapter and supervised by the director. The director of the department of water resources shall distribute water in water districts in accordance with the prior appropriation doctrine. The provisions of chapter 6, title 42, Idaho Code, shall apply only to distribution of water within a water district.

2. Idaho Code § 42-603, which grants the Director authority to adopt rules governing water distribution, provides as follows:

> The director of the department of water resources is authorized to adopt rules and regulations for the distribution of water from the streams, rivers, lakes, ground water and other natural water sources as shall be necessary to carry out the laws in accordance with the priorities of the rights of the users thereof. Promulgation of rules and regulations shall be in accordance with the procedures of chapter 52, title 67, Idaho Code.

3. In addition, Idaho Code § 42-1805(8) provides the Director with authority to "promulgate, adopt, modify, repeal and enforce rules implementing or effectuating the powers and duties of the department."

4. It is the duty of a watermaster, acting under the supervision of the Director, to distribute water from the public water supplies within a water district among those holding rights to the use of the water in accordance with the prior appropriation doctrine as implemented in Idaho law, including applicable rules promulgated pursuant to the Idaho Administrative Procedure Act. Idaho Code § 42-607.

5. In accordance with chapter 52, title 67, Idaho Code, the Department adopted rules regarding the conjunctive management of surface and ground water effective October 7, 1994. IDAPA 37.03.11 et seq. ("CM Rules"). The CM Rules prescribe procedures for responding to a delivery call made by the holder of a senior-priority surface or ground water right against junior-priority ground water rights in an area having a common ground water supply.

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[14] Rounding to two significant digits results in the calculation of the benefit to the spring of 4,200 acres not 4,000 acres.

[15] Rounding to two significant digits results in the calculation of the benefit to the spring of 0.082 cfs, not 0.078 cfs.

6. CM Rule 10 contains the following pertinent definitions:

**01. Area Having A Common Ground Water Supply.** A ground water source within which the diversion and use of ground water or changes in ground water recharge affect the flow of water in a surface water source or within which the diversion and use of water by a holder of a ground water right affects the ground water supply available to the holders of other ground water rights.
**03. Conjunctive Management.** Legal and hydrologic integration of administration of the diversion and use of water under water rights from surface and ground water sources, including areas having a common ground water supply.
**04. Delivery Call.** A request from the holder of a water right for administration of water rights under the prior appropriation doctrine.
**14. Material Injury.** Hindrance to or impact upon the exercise of a water right caused by the use of water by another person as determined in accordance with Idaho Law, as set forth in Rule 42.
**16. Person.** Any individual, partnership, corporation, association, governmental subdivision or agency, or public or private organization or entity of any character.
**17. Petitioner.** Person who asks the Department to initiate a contested case or to otherwise take action that will result in the issuance of an order or rule.
**20. Respondent.** Persons against whom complaints or petitions are filed or about whom investigations are initiated.

7. As used herein, the term "injury" means "material injury" as defined by CM Rule 10.14.

8. CM Rule 20 contains the following pertinent statements of purpose and policies for conjunctive management:

**01. Distribution Of Water Among The Holders Of Senior And Junior-Priority Rights.** The rules apply to all situations in the State where the diversion and use of water under junior-priority ground water rights either individually or collectively causes material injury to uses of water under senior-priority water rights. The rules govern the distribution of water from ground water sources and areas having a common ground water supply.
**02. Prior Appropriation Doctrine.** These rules acknowledge all elements of the prior appropriation doctrine as established by Idaho law.
**03. Reasonable Use of Surface and Ground Water**. These rules integrate the administration and use of surface and ground water in a manner consistent with the traditional policy of reasonable use of both surface and ground water. The policy of reasonable use includes the concepts of priority in time and superiority in right being subject to conditions of reasonable use as the legislature may by law prescribe as provided in Article XV, Section 5, Idaho Constitution, optimum development of water resources in the public interest prescribed in Article XV, Section 7, Idaho Constitution, and full economic development as defined by Idaho law. An appropriator is not entitled to command the entirety of large volumes of

water in a surface or ground water source to support his appropriation contrary to the public policy of reasonable use of water as described in this rule.

**04. Delivery Calls.** These rules provide the basis and procedure for responding to delivery calls made by the holder of a senior-priority surface or ground water right against the holder of a junior-priority ground water right. The principle of the futile call applies to the distribution of water under these rules. Although a call may be denied under the futile call doctrine, these rules may require mitigation or staged or phased curtailment of a junior priority use if diversion and use of water by the holder of the junior-priority water right causes material injury, even though not immediately measurable, to the holder of a senior-priority surface or ground water right in instances where the hydrologic connection may be remote, the resource is large and no direct immediate relief would be achieved if the junior-priority water use was discontinued.

**05. Exercise of Water Rights**. These rules provide the basis for determining the reasonableness of the diversion and use of water by both the holder of a senior-priority water right who requests priority delivery and the holder of a junior-priority water right against whom the call is made.

9. Rule 40 sets forth in relevant part the following procedures to be followed for responses to calls for water delivery made by the holders of senior-priority surface or ground water rights against the holders of junior-priority ground water rights from areas having a common ground water supply in an organized water district:

**01. Responding to a Delivery Call.** When a delivery call is made by the holder of a senior priority water right (petitioner) alleging that by reason of diversion of water by the holders of one or more junior-priority ground water rights (respondents) from an area having a common ground water supply in an organized water district the petitioner is suffering material injury, and upon a finding by the Director as provided in Rule 42 that material injury is occurring, the Director, through the watermaster, shall:

a. Regulate the diversion and use of water in accordance with the priorities of rights of the various surface or ground water users whose rights are included within the district, provided, that regulation of junior-priority ground water diversion and use where the material injury is delayed or long range may, by order of the Director, be phased-in over not more than a five-year period to lessen the economic impact of immediate and complete curtailment;

10. Factors that may be considered in determining whether junior-priority ground water rights are causing injury to the senior-priority spring rights held by Blue Lakes and Clear Springs are set forth in CM Rule 42 as follows:

**01. Factors.** Factors the Director may consider in determining whether the holders of water rights are suffering material injury and using water efficiently and without waste include, but are not limited to, the following:

a. The amount of water available in the source from which the water right is diverted.

b. The effort or expense of the holder of the water right to divert water from the source.

c. Whether the exercise of junior-priority ground water rights individually or collectively affects the quantity and timing of when water is available to, and the cost of exercising, a senior-priority surface or ground water right. This may include the seasonal as well as the multi-year and cumulative impacts of all ground water withdrawals from the area having a common ground water supply.
d. If for irrigation, the rate of diversion compared to the acreage of land served, the annual volume of water diverted, the system diversion and conveyance efficiency, and the method of irrigation water application.
e. The amount of water being diverted and used compared to the water rights.
f. The existence of water measuring and recording devices.
g. The extent to which the requirements of the holder of a senior-priority water right could be met with the user's existing facilities and water supplies by employing reasonable diversion and conveyance efficiency and conservation practices; provided, however, the holder of a surface water storage right shall be entitled to maintain a reasonable amount of carry-over storage to assure water supplies for future dry years. In determining a reasonable amount of carry-over storage water, the Director shall consider the average annual rate of fill of storage reservoirs and the average annual carry-over for prior comparable water condition and the projected water supply for the system.
h. The extent to which the requirements of the senior-priority surface water right could be met using alternate reasonable means of diversion or alternate points of diversion, including the construction of wells or the use of existing wells to divert and use water from the area having a common ground water supply under the petitioner's surface water right

11. Based upon the above analysis, the Director concludes that water right nos. 36-7210 (November 17, 1971) and 36-4013A (September 15, 1955) were historically satisfied on a continuous basis at the time of appropriation and that seasonal variability did not influence the amount of water available to these water rights at the time of appropriation.

12. Based upon the above analysis, curtailing ground water rights junior to September 15, 1955 within the 10% trim line and within the area of common ground water supply results in a curtailment of an additional 31,000 acres and an increased flow to the Buhl to Thousand Springs reach of 18 cfs. The increased benefit to SRF is expected to be 1.2 cfs.

13. Based upon the above analysis, curtailing ground water rights junior to November 17, 1971 within the 10% trim line and within the area of common ground water supply results in a curtailment of an additional 23,000 acres and an increased flow to the Devil's Washbowl to Buhl reach of 17 cfs. The increased benefit to BLT is expected to be 3.6 cfs.

14. The diversion and consumptive use of ground water, under water rights junior in priority to water rights nos. 36-7210 and 36-4013A, reduces the quantity of water available to water rights nos. 36-7210 and 36-4013A, thereby causing material injury.

15. Unless mitigation is provided by ground water district(s) or irrigation district(s) through which mitigation can be provided, the Director should order the curtailment of junior

ground water rights. Curtailment shall be phased-in over a five-year period to lessen the economic impact of immediate and complete curtailment pursuant to CM Rule 40.01.a.

16. The date of this order is approximately the midpoint of the 2010 irrigation season. Curtailment in 2010 would not provide any significant water to the senior water right holders, and it would not be reasonable to order curtailment this year.

## ORDER

IT IS HEREBY ORDERED that, in response to BLT's delivery call for water right 36-7210, unless an approved mitigation plan is in place by March 1, 2011, ground water rights junior to November 17, 1971 shall be curtailed; however, such curtailment shall be phased-in over a period of 5 years (2011, 2012, 2013, 2014, 2015). Based on simulations using the ESPA model, phased curtailment must result in simulated cumulative increase over current mitigation activities to the average discharge of springs in the Devil's Washbowl to Buhl reach at steady state conditions of at least of at least 1.0 cfs, 2.0 cfs, 3.0 cfs, 4.0 cfs, and 5.0 cfs, for each year respectively. Alternatively, the junior ground water users may supply direct delivery of 0.2 cfs, 0.4 cfs, 0.6 cfs 0.8 cfs and 1.0 cfs to BLT for each year respectively. Mitigation can be a combination of reach gains and direct delivery.

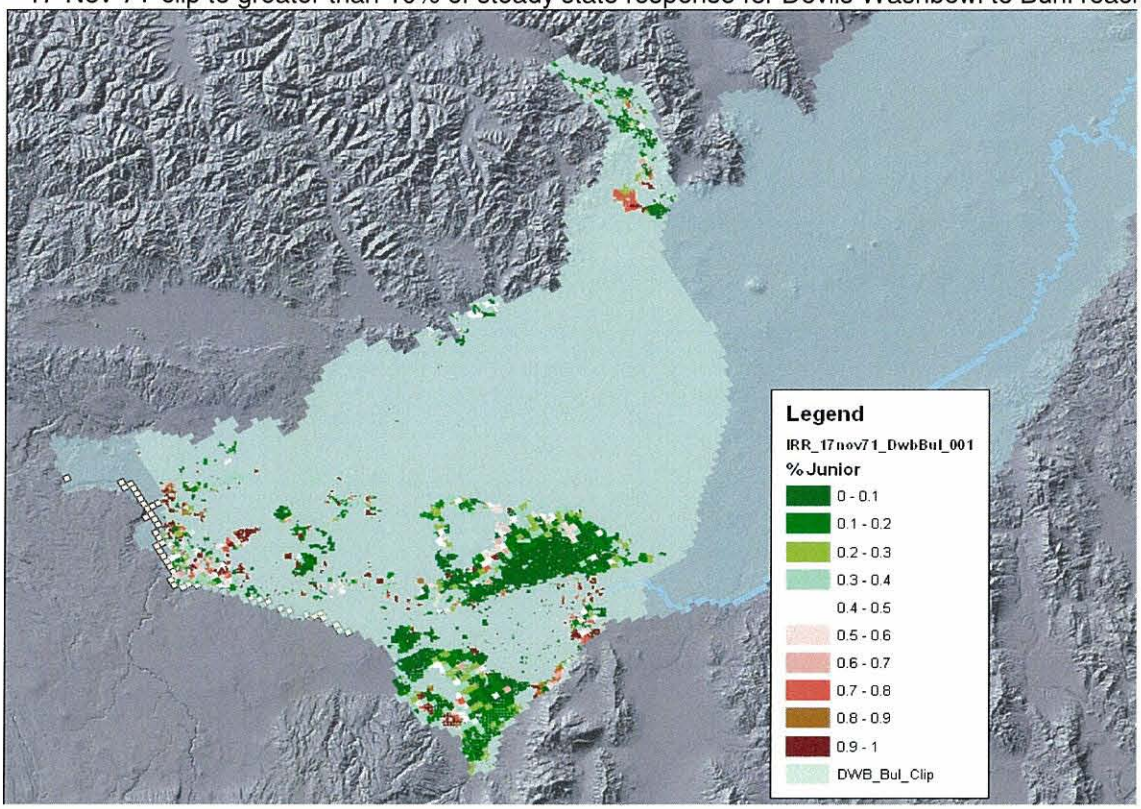
IT IS FURTHER ORDERED that, in response to SRF's delivery call for water right 36-4013A, unless an approved mitigation plan is in place by March 1, 2011, ground water rights junior to September 15, 1955 shall be curtailed; however, such curtailment shall be phased-in over a period of 5 years (2011, 2012, 2013, 2014, 2015). Based on simulations using the ESPA model, phased curtailment must result in simulated cumulative increase over current mitigation activities to the average discharge of springs in the Buhl to Thousand Springs reach at steady state conditions of at least 3.6 cfs, 7.2 cfs, 10.8 cfs, 14.4 cfs, and 18 cfs, for each year respectively. Alternatively, the junior ground water users may supply direct delivery of 0.25 cfs, 0.5 cfs, 0.74 cfs 0.99 cfs and 1.2 cfs to SRF for each year respectively. Mitigation can be a combination of reach gains and direct delivery.

DATED this 19th day of July 2010.

Gary Spackman

GARY SPACKMAN
Interim Director

17-Nov-71 clip to greater than 10% of steady state response for Devils Washbowl to Buhl reach

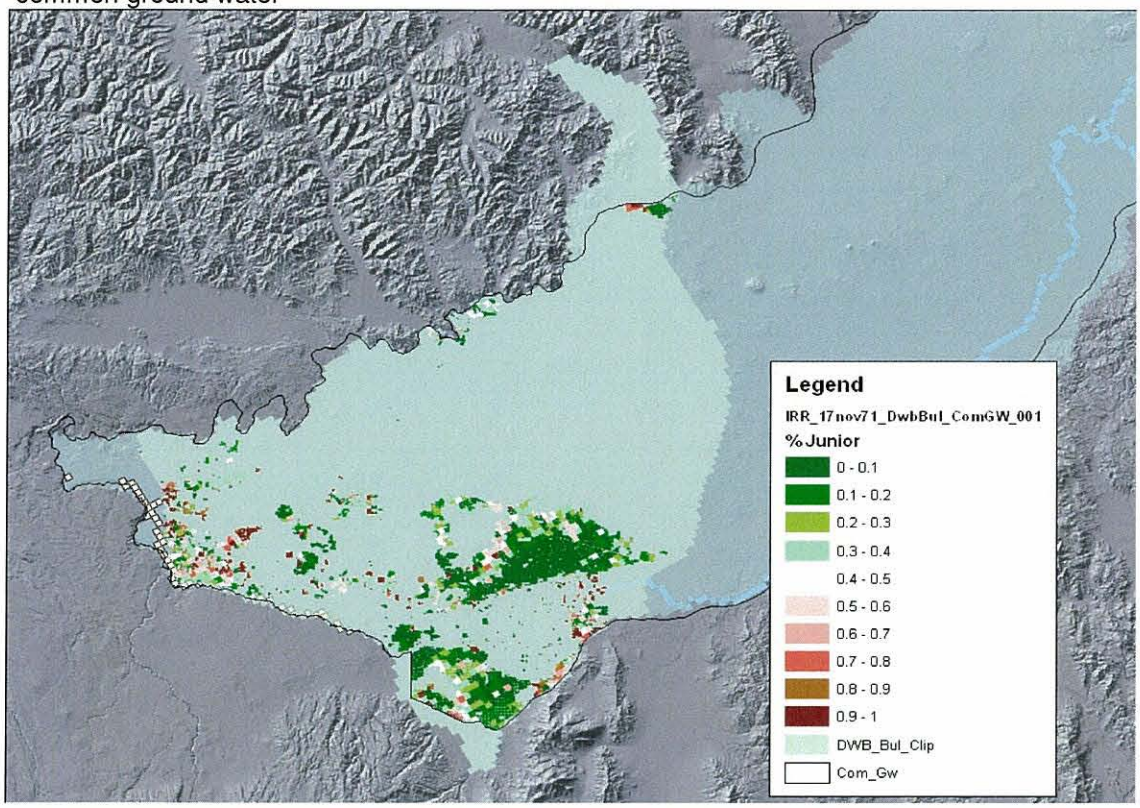



| irr_area | | Depleation | | ft/ac/yr |
|---|---|---|---|---|
| 450441063 | m^2 | 29,724,964 | ft^3/d | 2.2392548 |
| 111,306 | ac | 249,242 | ac-ft/y | |
| 23,207 | | | | |

| reach | cf/d gain | cfs gain | ac-ft/y |
|---|---|---|---|
| MLD-BAN | 103597.2 | 1.2 | 869 |
| MLD | 2290621 | 26.5 | 19,207 |
| KSP-MLD | 294931.5 | 3.4 | 2,473 |
| KSP | 2491396 | 29 | 20,890 |
| BUL-KSP | 3853242 | 45 | 32,309 |
| DWB-BUL | 7350104 | 85 | 61,630 |
| A-R | 289588.6 | 3.4 | 2,428 |
| H-S | 325308.7 | 3.8 | 2,728 |
| S-B | 2308354 | 26.7 | 19,355 |
| N-M | 2675014 | 31.0 | 22,430 |
| B-N | 7742809 | 89.6 | 64,923 |
| sum | 29,724,966 | 344 | 249,242 |

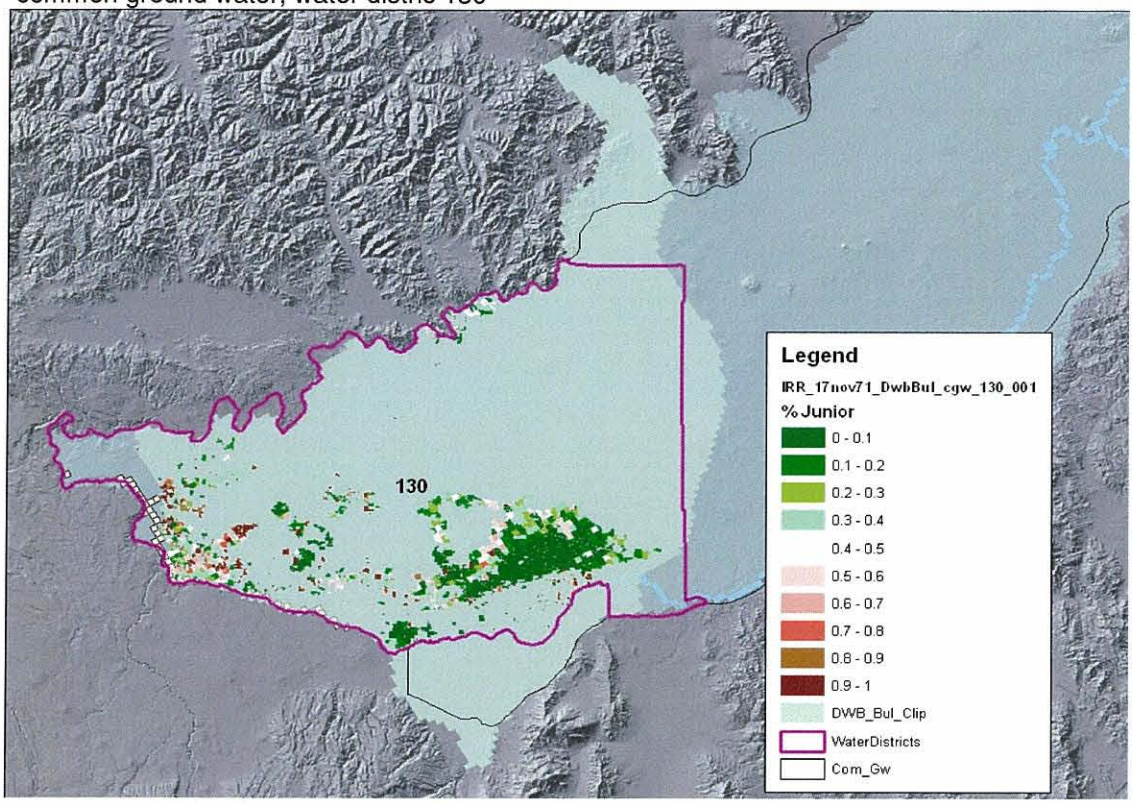
Global senior fraction = 0.682
Global junior fraction = 0.318

17-Nov-71 clip to greater than 10% of steady state response for Devils Washbowl to Buhl reach common ground water



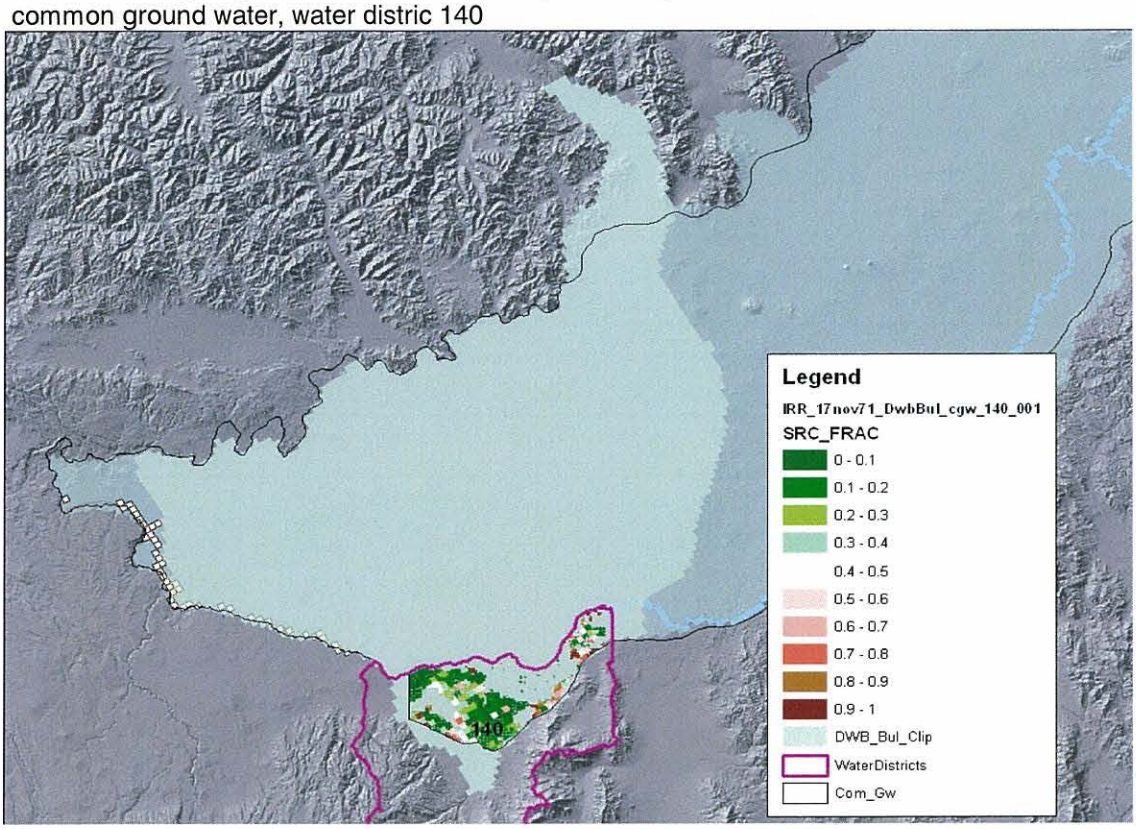

| irr_area | | Depleation | | ft/ac/yr | | |
|---|---|---|---|---|---|---|
| 401515257 | m^2 | 26,282,406 | ft^3/d | 2.2211773 | | |
| 99,216 | ac | 220,377 | ac-ft/y | | | |
| 23,024 | | | | | | |
| **reach** | **cf/d gain** | **cfs gain** | **ac-ft/y** | | | |
| MLD-BAN | 99047 | 1.1 | 831 | | | |
| MLD | 2171263 | 25.1 | 18,206 | | | |
| KSP-MLD | 280791.7 | 3.2 | 2,354 | | | facility |
| KSP | 2361095 | 27 | 19,798 | difference | to facility | difference |
| BUL-KSP | 3645841 | 42 | 30,570 | | | |
| DWB-BUL | 6774418 | 78 | 56,803 | 18 | 16 | 3.5 |
| A-R | 216991 | 2.5 | 1,819 | | | |
| H-S | 247710.6 | 2.9 | 2,077 | | | |
| S-B | 1827755 | 21.2 | 15,326 | | | |
| N-M | 2318980 | 26.8 | 19,445 | | | |
| B-N | 6338516 | 73.4 | 53,148 | | | |
| sum | 26,282,408 | 304 | 220,377 | | | |

17-Nov-71 clip to greater than 10% of steady state response for Devils Washbowl to Buhl reach common ground water, water distric 130



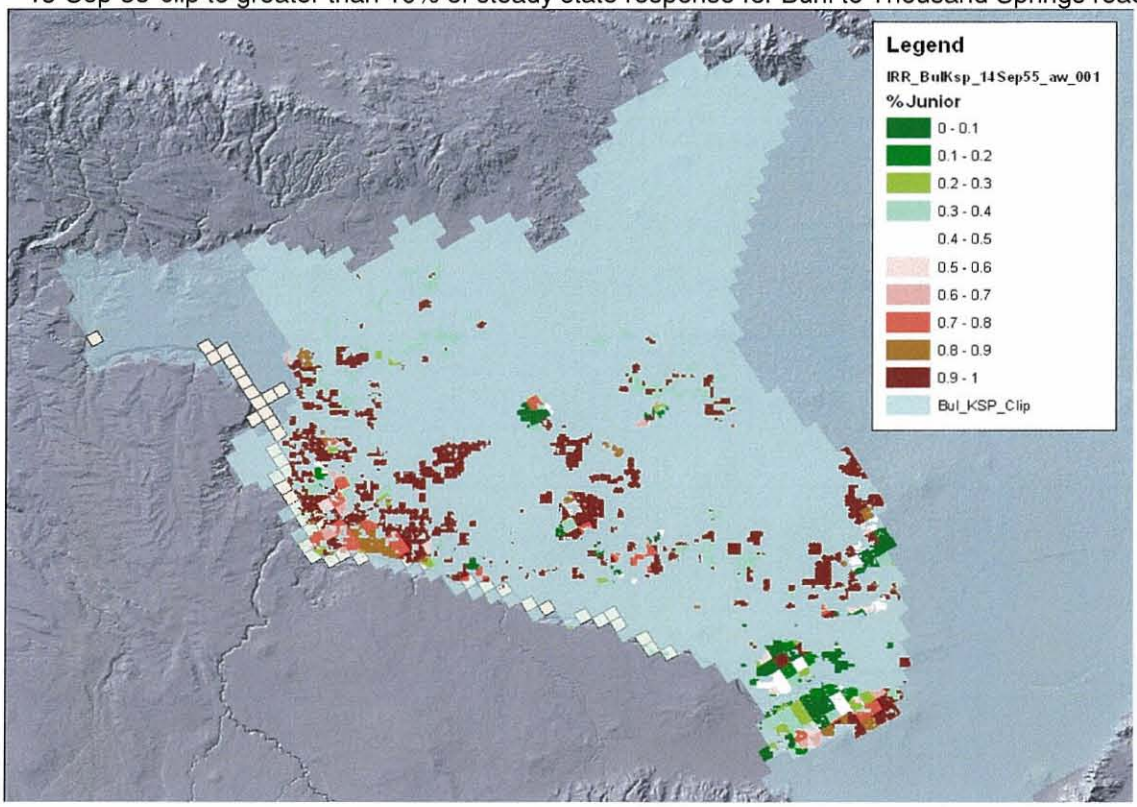

| irr_area | | Depleation | | ft/ac/yr | | |
|---|---|---|---|---|---|---|
| 278478208 | m^2 | 19,045,350 | ft^3/d | 2.3206941 | | |
| 68,813 | ac | 159,694 | ac-ft/y | | | |
| 13,172 | | | | | | |
| **reach** | **cf/d gain** | **cfs gain** | **ac-ft/y** | | | |
| MLD-BAN | 86862.8 | 1.0 | 728 | | | |
| MLD | 1851264 | 21.4 | 15,523 | | | |
| KSP-MLD | 242432.4 | 2.8 | 2,033 | | | |
| KSP | 2004964 | 23 | 16,812 | | | facility |
| BUL-KSP | 3076232 | 36 | 25,794 | difference | to facility | difference |
| DWB-BUL | 5141638 | 60 | 43,112 | 13 | 12 | 2.6 |
| A-R | 132782.4 | 1.5 | 1,113 | | | |
| H-S | 152243.2 | 1.8 | 1,277 | | | |
| S-B | 1134828 | 13.1 | 9,515 | | | |
| N-M | 1258727 | 14.6 | 10,554 | | | |
| B-N | 3963377 | 45.9 | 33,233 | | | |
| sum | 19,045,351 | 220 | 159,694 | | | |

17-Nov-71 clip to greater than 10% of steady state response for Devils Washbowl to Buhl reach common ground water, water distric 140




| irr_area | | Depleation | | ft/ac/yr | | |
|---|---|---|---|---|---|---|
| 115857676 | m^2 | 6,855,823 | ft^3/d | 2.0079593 | | |
| 28,629 | ac | 57,486 | ac-ft/y | | | |
| 9,878 | | | | | | |
| **reach** | **cf/d gain** | **cfs gain** | **ac-ft/y** | | | |
| MLD-BAN | 11812 | 0.1 | 99 | | | |
| MLD | 310256.1 | 3.6 | 2,601 | | | |
| KSP-MLD | 37228.77 | 0.4 | 312 | | | |
| KSP | 345853.7 | 4 | 2,900 | | | facility |
| BUL-KSP | 553402.4 | 6 | 4,640 | difference | to facility | difference |
| DWB-BUL | 1590760 | 18 | 13,338 | 5.0 | 3.7 | 1.0 |
| A-R | 72823.58 | 0.8 | 611 | | | |
| H-S | 83543.9 | 1.0 | 701 | | | |
| S-B | 623795.9 | 7.2 | 5,230 | | | |
| N-M | 1036336 | 12.0 | 8,690 | | | |
| B-N | 2190011 | 25.3 | 18,363 | | | |
| sum | 6,855,823 | 79 | 57,486 | | | |

15-Sep-55 clip to greater than 10% of steady state response for Buhl to Thousand Springs reach

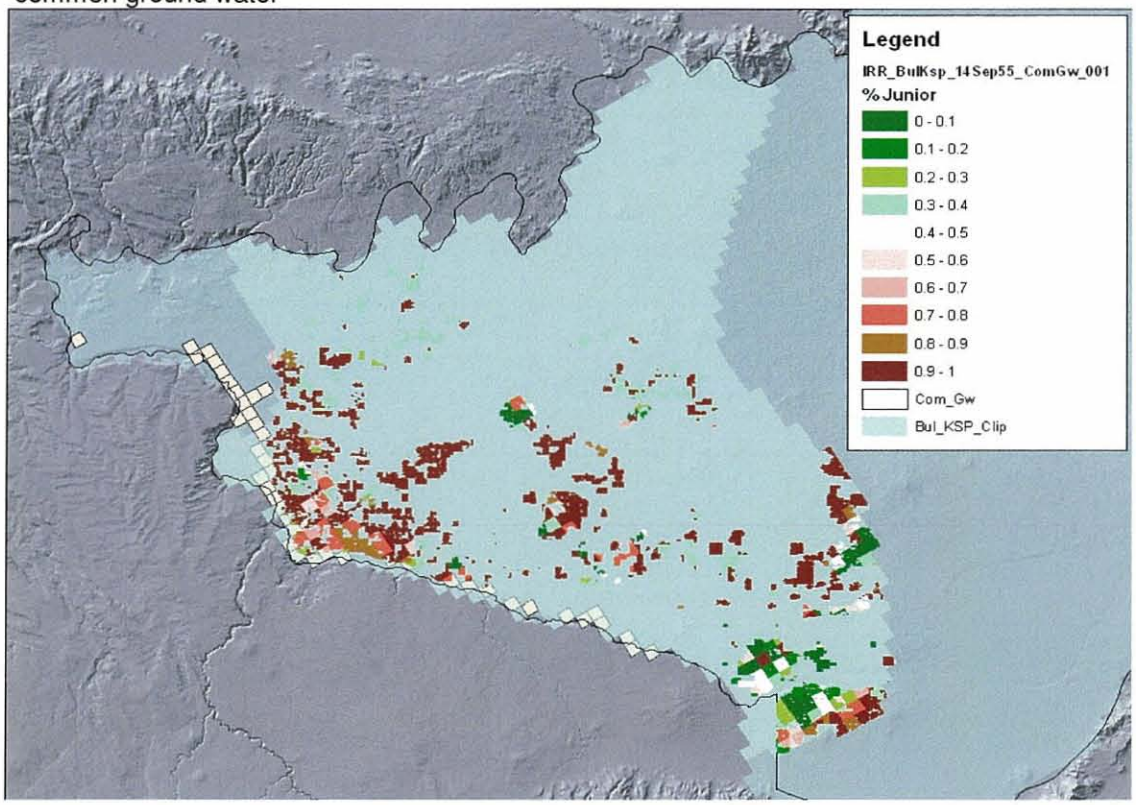



| irr_area | | Depleation | | ft/ac/yr |
|---|---|---|---|---|
| 348561823 | m^2 | 24,463,160 | ft^3/d | 2.381513 |
| 86,131 | ac | 205,122 | ac-ft/y | |

| reach | cf/d gain | cfs gain | ac-ft/y |
|---|---|---|---|
| MLD-BAN | 93508.97 | 1.1 | 784 |
| MLD | 2481748 | 28.7 | 20,809 |
| KSP-MLD | 393235.1 | 4.6 | 3,297 |
| KSP | 3331445 | 38.6 | 27,934 |
| BUL-KSP | 4955757 | 57.4 | 41,554 |
| DWB-BUL | 7847453 | 90.8 | 65,801 |
| A-R | 109410.3 | 1.3 | 917 |
| H-S | 125442.3 | 1.5 | 1,052 |
| S-B | 934857.3 | 10.8 | 7,839 |
| N-M | 931573.3 | 10.8 | 7,811 |
| B-N | 3258730 | 37.7 | 27,324 |
| sum | 24,463,160 | 283 | 205,122 |

Global senior fraction = 0.185
Global junior fraction = 0.815

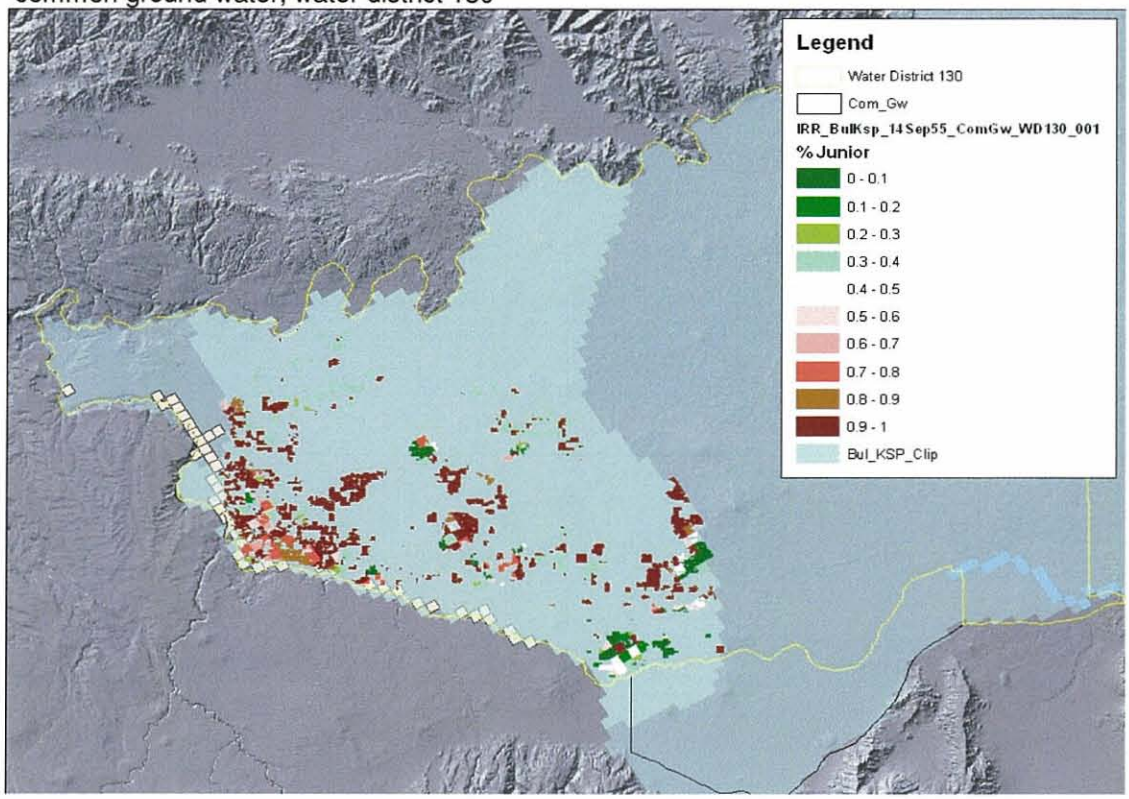
15-Sep-55 clip to greater than 10% of steady state response for Buhl to Thousand Springs reach, common ground water




| irr_area | | Depleation | | ft/ac/yr |
|---|---|---|---|---|
| 346207821 | m^2 | 24,195,924 | ft^3/d | 2.371513 |
| 85,549 | ac | 202,882 | ac-ft/y | |

| reach | cf/d gain | cfs gain | ac-ft/y |
|---|---|---|---|
| MLD-BAN | 92955.27 | 1.1 | 779 |
| MLD | 2467114 | 28.6 | 20,687 |
| KSP-MLD | 391366.5 | 4.5 | 3,282 |
| KSP | 3313354 | 38 | 27,782 |
| BUL-KSP | 4924697 | 57 | 41,293 |
| DWB-BUL | 7748905 | 90 | 64,974 |
| A-R | 107358.5 | 1.2 | 900 |
| H-S | 123089.6 | 1.4 | 1,032 |
| S-B | 917318 | 10.6 | 7,692 |
| N-M | 912248.7 | 10.6 | 7,649 |
| B-N | 3197516 | 37.0 | 26,811 |
| sum | 24,195,923 | 280 | 202,882 |

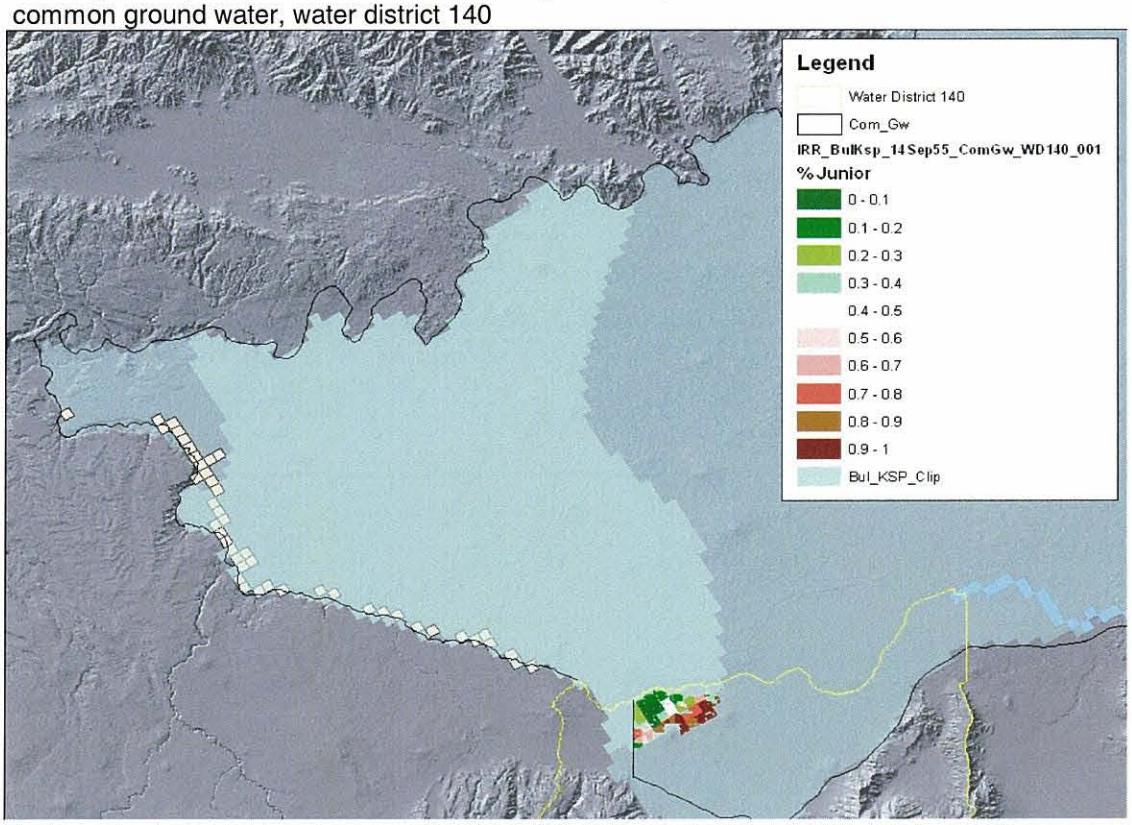
15-Sep-55 clip to greater than 10% of steady state response for Buhl to Thousand Springs reach, common ground water, water district 130




| irr_area | | Depleation | | ft/ac/yr |
|---|---|---|---|---|
| 313851013 | m^2 | 22,210,324 | ft^3/d | 2.401328 |
| 77,554 | ac | 186,233 | ac-ft/y | |

| reach | cf/d gain | cfs reach | ac-ft/y |
|---|---|---|---|
| MLD-BAN | 88913.77 | 1.0 | 746 |
| MLD | 2360510 | 27.3 | 19,793 |
| KSP-MLD | 378045 | 4.4 | 3,170 |
| KSP | 3186512 | 37 | 26,719 |
| BUL-KSP | 4718463 | 55 | 39,564 |
| DWB-BUL | 7091632 | 82 | 59,463 |
| A-R | 90182.77 | 1.0 | 756 |
| H-S | 103393.4 | 1.2 | 867 |
| S-B | 770443 | 8.9 | 6,460 |
| N-M | 737845.1 | 8.5 | 6,187 |
| B-N | 2684382 | 31.1 | 22,508 |
| sum | 22,210,322 | 257 | 186,233 |

15-Sep-55 clip to greater than 10% of steady state response for Buhl to Thousand Springs reach, common ground water, water district 140




| irr_area | | Depleation | | ft/ac/yr |
|---|---|---|---|---|
| 32356808 | m^2 | 1,985,600 | ft^3/d | 2.082315 |
| 7,996 | ac | 16,649 | ac-ft/y | |

| reach | cf/d gain | cfs reach | ac-ft/y |
|---|---|---|---|
| MLD-BAN | 4041.499 | 0.0 | 34 |
| MLD | 106605 | 1.2 | 894 |
| KSP-MLD | 13321.56 | 0.2 | 112 |
| KSP | 126842.7 | 1.5 | 1,064 |
| BUL-KSP | 206233.9 | 2.4 | 1,729 |
| DWB-BUL | 657272.1 | 7.6 | 5,511 |
| A-R | 17175.71 | 0.2 | 144 |
| H-S | 19696.2 | 0.2 | 165 |
| S-B | 146875 | 1.7 | 1,232 |
| N-M | 174403.5 | 2.0 | 1,462 |
| B-N | 513133.3 | 5.9 | 4,303 |
| sum | 1,985,600 | 23 | 16,649 |

## CERTIFICATE OF SERVICE

I HEREBY CERTIFY that on this 19th day of July 2010, the above and foregoing, was served by the method indicated below, and addressed to the following:

| | |
|---|---|
| RANDY BUDGE<br>CANDICE M. MCHUGH<br>RACINE OLSON<br>PO BOX 1391<br>POCATELLO ID 83204-1391<br>rcb@racinelaw.net<br>cmm@racinelaw.net | (x) U.S. Mail, Postage Prepaid<br>( ) Facsimile<br>(x) E-mail |
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| DANIEL V. STEENSON<br>CHARLES L. HONSINGER<br>RINGERT CLARK<br>PO BOX 2773<br>BOISE ID 83701-2773<br>(208) 342-4657<br>dvs@ringertclark.com<br>clh@ringertclark.com | (x) U.S. Mail, Postage Prepaid<br>( ) Facsimile<br>(x) E-mail |
| MIKE CREAMER<br>JEFF FEREDAY<br>GIVENS PURSLEY<br>PO BOX 2720<br>BOISE ID 83701-2720<br>(208) 388-1300<br>mcc@givenspursley.com<br>jeffferedayy@givenspursley.com | (x) U.S. Mail, Postage Prepaid<br>( ) Facsimile<br>(x) E-mail |
| MICHAEL S. GILMORE<br>ATTORNEY GENERAL'S OFFICE<br>PO BOX 83720<br>BOISE ID 83720-0010<br>(208) 334-2830<br>mike.gilmore@ag.idaho.gov | (x) U.S. Mail, Postage Prepaid<br>( ) Facsimile<br>(x) E-mail |

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for Deborah J. Gibson
Victoria Wigle
Administrative Assistant to the Director
Idaho Department of Water Resources