

Rigby Misc. Exhibit 2

Memorandum

From: Kevin Lakey

Re: Estimating Little Wood River priority cut off dates

Date: 5/29/2021

To begin the estimation of priority cut-off dates for a particular river basin early in an irrigation season, an analog year with comparable snowpack levels to the current year's snowpack levels must be chosen. In mid-March 2021, staff at the Idaho Department of Water Resources (IDWR) studied snowpack levels in the Wood River/Malad River basin and chose 2014 as the analog year for 2021 based on comparable snowpack levels.

Snowpack levels in the Wood River/Malad River Basin influence flows in the Big Wood River, Little Wood River, Camas Creek and ground water levels in the Bellevue Triangle Aquifer which in turn influence spring-fed streams from the Bellevue Triangle. Spring-fed streams erupting from the Bellevue Triangle Aquifer include Silver Creek on the East side of the Bellevue Triangle and Willow Creek on the West side of the Bellevue Triangle. Silver Creek is tributary to the Little Wood River and Willow Creek is tributary to the Big Wood River. When snowpack levels are above average, flows in the Big Wood River, Little Wood River, Camas Creek, Silver Creek, and Willow Creek will be above average. Lower than average snowpack levels result in lower-than-average flows in all the systems.

In addition to examining snowpack levels in a basin to determine an analog year and consequent water delivery predictions, reservoir storage levels in the basin must also be examined if reservoir storage is available. In the Wood River/Malad River basin, Mormon/Twin Lakes Reservoir, Little Wood Reservoir, and Magic Reservoir make up the available surface water storage in the Wood River/Malad River Basin. Mormon/Twin Lakes Reservoir and Little Wood Reservoir may have some effect in the Wood River/Malad River system in years when snowpack is well above average but have very little if any effect in the Big Wood/Malad River Basin in drier than average years. On the other hand, Magic Reservoir has a large impact in the Big Wood/Malad River basin every year.

Magic Reservoir storage water is delivered to the Big Wood Canal Company service area which includes land in the Richfield tract, Dietrich tract, and North Shoshone tract. Magic Reservoir storage water deliveries to the Richfield Tract can influence the lower Little Wood River (Little Wood River below Richfield, Idaho) when irrigation spills and/or water in excess of storage capacity at Magic Reservoir reach the lower Little Wood River. Irrigation spills from the Richfield tract bolster flows in the lower Little Wood River and consequently uphold junior decrees in the Little Wood/Silver Creek system. In drier than average years when irrigation spills from Richfield are absent, lower Little Wood River flows rely largely, if not totally, on Silver Creek flows.

Using 2014 as the snowpack analog year and 2014 Magic Reservoir storage levels, a timing estimate could be made as to when Magic Reservoir storage water would run out and consequently when decrees on the Little Wood River would be shut off. On 3/16/2014, Magic Reservoir storage level was

63,028-acre feet. Magic Reservoir stopped delivery in 2014 on July 22nd. On 3/16/2021, Magic Reservoir storage level was 28,792-acre feet. With 34,236-acre feet less in storage in 2021 than 2014, and an estimated, average daily use of 1500 acre feet per day, it was estimated in Mid-March 2021 that Magic Reservoir would cease deliveries 22 days earlier in 2021 than 2014. The Magic Reservoir shut off date in 2014 was July 20th. 22 days prior to July 20th meant that the estimated Magic Reservoir shut off date for 2021 would be June 27th.

With dry, cold conditions existing between mid-March and May 1st, projected inflows into Magic Reservoir, based on 2014 snowpack data, never materialized. By the May 3, 2021, there was 43,797-acre feet of water stored in Magic Reservoir. Around 5000-acre feet of that water cannot be utilized which means there was 38,797 of useable water in the reservoir. At an estimated daily use of 1500-acre feet and virtually no inflow predicted, it was estimated there was around 26 days of water in the reservoir. The updated, expected shut off date for Magic Reservoir in 2021 changed to sometime before June 1, 2021.

Using the available Little Wood River shut off schedule and Magic Reservoir storage data from 2014 and 2021, the following schedule of priority date shut offs for the Little Wood River was predicted on 5/17/2021:

10/5/2021	3	30	1877	3/30/1877
6/20/2021	4	1	1883	4/1/1883
6/15/2021	4	6	1883	4/6/1883
6/12/2021	6	14	1883	6/14/1883
6/10/2021	9	1	1883	9/1/1883
6/5/2021	4	1	1884	4/1/1884
6/1/2021	4	3	1884	4/3/1884
5/20/2021	5	15	1886	5/15/1886

With the benefit of rain during the third week of May, and a one week shut off by Magic Reservoir the last week of May 2021, the priority date shut offs for the Little Wood River were re-estimated to the following on May 25, 2021:

Cut Date	Month	Day	Year	Date
10/5/2021	3	30	1877	3/30/1877
6/30/2021	4	1	1883	4/1/1883
6/25/2021	4	6	1883	4/6/1883
6/22/2021	6	14	1883	6/14/1883
6/20/2021	9	1	1883	9/1/1883
6/15/2021	4	1	1884	4/1/1884
6/11/2021	4	3	1884	4/3/1884
5/27/2021	5	15	1886	5/15/1886

For the most part, these schedules were derived from the 2014 schedule with differences from 2014 to 2021 caused by 3 different circumstances. The first circumstance was mentioned earlier concerning the

earlier Magic Reservoir shut off date. An earlier Magic Reservoir shutoff date means there are no irrigation spills from the Richfield tract to bolster Little Wood flows as mentioned earlier. The second reason I predicted earlier cut off dates for Silver Creek/Little Wood River in 2021 than 2014 was the fact that 2021 priority dates on the Big Wood River Above Magic were well ahead of the 2014 schedule. Shut off dates on the Big Wood River Above Magic Reservoir were approximately 8 weeks earlier in 2021 than in 2014. This meant that supplemental wells in the Bellevue Triangle were turning on approximately 8 weeks early. This fact led to the estimation that Silver Creek/Little Wood flows would be diminished earlier in 2021 than in 2014. The third circumstance was the fact that the Big Wood River from Glendale Road to the Wood River Ranch had never reconnected during the winter of 2020/2021. This fact led to the estimation that the ground water levels were so low that the aquifer was consuming all the water from the Big Wood River and not giving water back to the above-mentioned reach as it does in wetter than average years. Because of these 3 circumstances, it was estimated that not only would priority shutoff dates come earlier, but the aquifer was low enough that the reinstatements from 2014 would not take place later in the 2021 season.

Water District 37 2014 Priority Cuts

BIG WOOD RIVER ABOVE MAGIC RESERVOIR

Date Priority Cut Made	Date of Priority Cut to and including:	Remarks
July 3, 2014	April 1, 1921	
July 7, 2014	June 2, 1890	
July 9, 2014	May 10, 1887	
July 10, 2014	October 15, 1884	
July 15, 2014	July 10, 1884	
July 17, 2014	June 1, 1884	
July 21, 2014	May 1, 1883	
July 29, 2014	March 24, 1883	Cut 50%
August 8, 2014	March 24, 1883	Reinstate
September 17, 2014	March 24, 1883	
October 1, 2014	March 24, 1883	Reinstate 50%

BIG WOOD RIVER BELOW MAGIC RESERVOIR

Date Priority Cut Made	Date of Priority Cut to and including:	Remarks
June 23, 2014	May 1, 1900	
July 1, 2014	June 15, 1890	
July 7, 2014	April 3, 1882	
August 6, 2014	August 11, 1884	Reinstate
August 11, 2014	April 27, 1896	Reinstate
August 18, 2014	April 3, 1882	

SILVER CREEK & LITTLE WOOD RIVER

Date Priority Cut Made	Date of Priority Cut to and including:	Remarks
May 20, 2014	April 1, 1887	
May 27, 2014	April 1, 1885	
June 26, 2014	April 3, 1884	
June 27, 2014	April 1, 1884	
July 2, 2014	May 27, 1899	Cottonwood Decree
July 8, 2014	September 1, 1883	Cut 50%
July 17, 2014	April 6, 1883	
August 7, 2014	April 6, 1883	Reinstate
August 11, 2014	September 1, 1883	Reinstate

Water District 37 2021 Priority Cuts

BIG WOOD RIVER ABOVE MAGIC RESERVOIR		
Date Priority Cut Made	Date of Priority Cut to and including:	Remarks
April 15, 2021	October 15, 1884	
April 16, 2021	June 20, 1884	Cut 50 %
April 19, 2021	June 20, 1884	Cut 100 %
May 1, 2021	June 20, 1884	Reinstate 100%
May 17, 2021	October 15, 1884	Reinstate 75%
May 18, 2021	May 1, 1886	Reinstate all 1886
May 20, 2021	May 21, 1890	Reinstate 100%
May 25, 2021	May 14, 1886	

BIG WOOD RIVER BELOW MAGIC RESERVOIR		
Date Priority Cut Made	Date of Priority Cut to and including:	Remarks
April 22, 2021	June 1, 1890	
April 26, 2021	February 10, 1906 + Senior	
April 30, 2021	May 1, 1897	
May 4, 2021	January 5, 1911 + Senior	Reinstate
May 14, 2021	April 30, 1886	
May 20, 2021	May 5, 1905	Reinstate

SILVER CREEK & LITTLE WOOD RIVER		
Date Priority Cut Made	Date of Priority Cut to and including:	Remarks
May 27, 2021	May 15, 1886	