From:	Norman Spencer
То:	Ragan, Brian
Subject:	Re: Eastern Snake Plain Aquifer Area of Common Ground Water Supply
Date:	Saturday, April 19, 2025 7:17:54 AM

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April 19, 2025

Mr. Ragan,

This is a follow-up email to the one I sent last evening.

The Idaho Department of Resource report GROUNDWATER RESOURCES IN MARSH VALLEY, BANNOCK COUNTY, IDAHO, Open File Report, Jennifer Sukow, October 20, 2021 (GWRMVBCI) does not support the IDRW conclusion that there is 25,000 acre feet of water in the Portneuf Water Shed that is used as a junior water right and adversely effecting the senior water rights in the Twin Falls Irrigation System. The GWRMVBCI, figure 7, Marsh Creek near McCammon average discharge 74.2 cfs, with "A large part of the discharge to Marsh Creek is contributed by springs and seepage from groundwater" GWRMVBCI, page 8. This is a direct result of the "Significant" recharge of the groundwater aquifer by the Marsh Valley Canal. GWRMVBCI, page 21, AQUIFER CONDITIONS "Recharge associated with diversions of Portneuf River Water to the Portneuf Marsh Valley Canal and the McCammon Ditch appears to be a "Significant component of the recharge to the Marsh Valley Aguifer System." "A Mann Kendall trend analysis of annual diversions from the Portneuf River into Marsh Valley indicates that there is not a statistically significant trend in diversion volume over the 1989 - 2020 period of record (Appendix A, Table 2)." "The fall water level is higher than the spring water level in most years, suggesting the water level at this site is influenced by aquifer recharge from Portneuf Marsh Valley Canal seepage and other incidental recharge associated with irrigation by surface water." GWRMVBCI, figure 26, Water level in Well 11S 37E 16BBB1 (spring and fall measurement). GWRMVBCI, page 30, "The majority of outflow from the Marsh Valley aquifer system occurs as a discharge to Marsh Creek, with groundwater outflow to the Portneuf Valley and Eastern Snake Plain aquifer systems comprising a relatively small portion of the aquifer discharge." GWRMVBCI, page 31, "Canal seepage and incidental recharge associated with these diversions are likely significant components of recharge to the Marsh Valley aguifer system."

The 24,000 acre feet of storage water rights that is diverted through the Marsh Valley Canal GWRMVBCI, figure 17, "Diversion of Portneuf Water to Marsh Valley Irrigation Companies, shows data from records for 1989 - 2020 and the annual acre feet of water available from the Marsh Valley Canal for recharge of the groundwater aquifer through "seepage and other incidental recharge associated with irrigation by surface water."

It appears that the conclusion of the Department of Water Resources has not adequately addressed or considered the "canal seepage and incidental recharge associated with surface water irrigation", the other data, findings and studies referenced also do not support the conclusion of the Department of Water Resources 25,000 af average impact to the Portneuf aquifer system.

Respectfully,

Norman Spencer (208) 705-5713 nspencer_5@yahoo.com 4362 E Stewart Rd On Friday, April 18, 2025 at 09:03:09 PM PDT, Norman Spencer <nspencer_5@yahoo.com> wrote:

Mr. Ragan,

Thank you for providing the information that I requested under the Freedom of Information Act. The report for the Idaho Department of Water Resources "Ground Water Resources in the Marsh Valley, Bannock County, Idaho (GWRMVBCI)." The open file report by Jennifer Sukow, October 20, 2021 is very beneficial.

We moved to Downey in the Marsh Valley area in 1983 and were actively involved in irrigation farming from the Portneuf Marsh Valley Canal through 2000. During that same period of time up to date, we have also utilized groundwater irrigation systems on the map in the GWRMVBCI there are 17 ground water wells identified west of the Portneuf Marsh Valley Canal and east of Marsh Creek between McCammon and Downey, ID. We have experienced in operating five (5) of those wells identified in the GWRMVBCI. The experience that we have from irrigating from the Portneuf Marsh Valley Canal and from the five (5) groundwater wells is that: 1) there is "significant" recharge to the ground water aquifer between the diversion of the Marsh Valley Canal east of McCammon through Downey, ID. The Marsh Valley Canal has 24,000 acre feet of storage water rights which is delivered through the canal system from May through October. The recharging of the groundwater aquifer from the Marsh Valley Canal results in the increase of groundwater availability from May through October, the greatest amount of groundwater recharge manifests itself at the near or end of the irrigation season. This area generally has the groundwater aquifer found in gravel and sand resulting in most wells not pumping at full water right capacity. Most of these wells are operated at or about 50% to 75% of capacity to manage and minimize the sand and small gravel being pulled through the pump and irrigating system.

With the experience that we have had, I estimate that approximately 15% to 20% of the groundwater recharged by the Portneuf Marsh Valley Canal is utilized directly by the 17 groundwater wells in production in that area.

In this same area, there are many springs and ground water source streams and ponds that begin to manifest annually after the Portneuf Marsh Valley Canal and other surface water irrigators begin the irrigation system with the high discharge and volume being at or near the end of the irrigation season. This is a direct correlation to the seepage and irrigation of those surface water irrigation systems with the Portneuf Marsh Valley Canal being a "significant" contributor to the seepage, irrigation, and groundwater aquifer recharge in this area.

In the GWRMVBCI, figure 7, Marsh Creek near McCammon average discharge 74.2 cfs, with "a large part of the discharge to Marsh Creek is contributed by springs and seepage from groundwater" GWRMVBCI, page 8. The GWRMVBCI, figure 9, Median Monthly Discharge at Marsh Creek near McCammon (1954-2020) shows an increase from August of 45 cfs through March of 97 cfs or the effect of groundwater discharge more than doubles the cfs in Marsh Creek at or near McCammon during this period of time as a direct result of the "significant" recharge of the groundwater aquifer by the Portneuf Marsh Valley Canal. The GWRMVBCI, page 14, "The Portneuf Irrigating Company, Portneuf Marsh Valley Canal Company, and the McCammon Ditch Company divert water from the Portneuf River via the Portneuf Marsh Valley Canal and the McCammon Ditch for the irrigation of lands within Marsh Valley." "These three irrigation companies provide irrigation water for approximately 11,000 acres . . . averaging approximately 43,000 acre feet (figure 17) . . . the majority of their places of use are within the Marsh Valley drainage area." GWRMVBCI, page 19, states that "Groundwater diversions in the Marsh Creek drainage area have not historically been regulated by a water district and measured diversion records are not available. Norvitch and Larson (1970) estimated that approximately 92,000 acre feet per year of groundwater was pumped to irrigate approximately 4,000 acres of land in Marsh Valley in the late 1960s,

with a net consumptive use of approximately 4,400 acre feet per year."

GWRMVBCI, page 21, AQUIFER CONDITIONS "Recharge associated with diversions of Portneuf River water to the *Portneuf Marsh Valley Canal* and McCammon Ditch appears to be a **significant component of recharge to the Marsh Valley aquifer system.** A Mann Kendall trend analysis of annual diversions from the Portneuf River into Marsh Valley indicates that there is **not a statistically significant trend** in diversion volume over the 1989 through 2020 period of record (appendix A, table 2)." GWRMVBCI, page 22, "The December, 1968 seepage survey (Norvitch and Larson, 1970) observed 80 cfs of aquifer discharge to the Marsh Creek upstream of the McCammon station."

GWRMVBCI, figure 24, Water level in Well 10S 36E 08DDD1 (spring and fall measurements) indicate the spring measurement is lower than the fall measurement. GWRMVBCI, page 27, "Well 11S 37E 16BBB1 is located in upper Marsh Valley, near the intersection of Hwy 91 and Bowman Road, approximately 0.4 miles west of the Portneuf Marsh Valley Canal and 3 miles N-NW of Downey, Idaho . . . the fall water level is higher than the spring water level in most years, suggesting the water level at this site is influenced by aquifer recharge from Portneuf Marsh Valley Canal seepage and other incidental recharge associated with irrigation by surface water." GWRMVBCI, figure 26, Water level in Well 11S 37E 16BBB1 (spring and fall measurement).

GWRMVBCI, page 30, CONCLUSIONS AND RECOMMENDATIONS "The majority of outflow from the Marsh Valley aquifer system occurs as a discharge to Marsh Creek, with groundwater outflow to the lower Portneuf Valley and Eastern Snake Plain aquifer systems comprising a **relatively small portion of the aquifer discharge**." GWRMVBCI, page 31, "Data available regarding aquifer conditions in the Marsh Valley aquifer system are limited. IDWR currently monitors aquifer water level in four (4) wells. Only two (2) of these wells have significant records to evaluate long term aquifer trends. **Canal seepage and incidental recharge associated with these diversions are likely significant components of recharge to the Marsh Valley aquifer system.**"

In conclusion, the Portneuf Marsh Valley Canal has 24,000 acre feet of storage water that is diverted from the Portneuf River east of McCammon and runs through the Marsh Valley on the east side of the valley through Downey. A "significant" recharge of the Marsh Valley aquifer system comes as a direct result of seepage and surface irrigation from the Marsh Valley Canal system. The 17 wells identified in the GWRMVBCI in total comprise approximately 15% to 20% of the total 24,000 acre feet available through the Portneuf Marsh Valley Canal system recharge. "Canal seepage and incidental recharge associated with these diversions are likely significant components of recharge to the Marsh Valley aquifer system." GWRMVBCI, page 31, the total recharge by the Portneuf Marsh Valley Canal is far greater than all of the ground water well usage on the 17 wells identified by the GWRMVBCI.

The 17 groundwater wells west of the Portneuf Marsh Valley Canal and east of Marsh Creek, south of McCammon through to Downey are using water that came as seepage and surface water irrigation from the Portneuf Marsh Valley Canal and not water from the Twin Falls Irrigation Systems. In fact, the groundwater recharge from the Portneuf Valley Canal is a significant source of water being available through the Marsh Creek, Portneuf River, and Snake River systems for the benefit of the Twin Falls Irrigators.

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On Wednesday, April 9, 2025 at 05:21:40 PM PDT, Norman Spencer <nspencer_5@yahoo.com> wrote:

Sent from Yahoo Mail for iPhone

On Tuesday, April 8, 2025, 4:22 PM, Ragan, Brian <Brian.Ragan@idwr.idaho.gov> wrote:

Mr. Spencer,

As per your data requests:

- 1. Attached is a word document bibliography of various studies pertaining to several Eastern Snake Plain tributary basins, including the Portneuf River basin.
- 2. Attached is an Excell spreadsheet showing various tributary basin modeled impacts on the Snake River
- 3. Here is a link to the IDWR water level website: <u>https://idwr-groundwater-data.idaho.gov/applications/public.html?</u> publicuser=public#waterdata/stationoverview
- 4. Here is a link to a recent study on the Marsh Valley: <u>https://idwr.idaho.gov/wp-</u> <u>content/uploads/sites/2/publications/MarshValleyFinal-20211027.pdf</u>

The narrative below comes from a Departmental hydrologist who is very familiar with the ESPA modeling:

In addition to providing the Portneuf portion of the bibliography, the General portion can be provided to address questions about the Portneuf's inclusion as a tributary basin in ESPAM and prior ESPA modeling studies. You can also provide a link to IDWR's ESPA modeling website at <u>https://idwr.idaho.gov/water-data/projects/espam/</u>.

Tributary basin groundwater use was estimated using the "PDtrib" tool development by Allan Wylie. The tool uses water rights groundwater right diversion rates with the assumption that an authorized diversion rate of 0.02 cfs indicates irrigation of one acre. The estimated acreage is then multiplied by an estimated consumptive use rate derived from ETIdaho precipitation deficit (Pdef) and USDA cropland data layer crop mix. For the Portneuf basin outside of the ESPA model boundary, a cumulative water right diversion rate of 428.33 cfs was used to estimate groundwater irrigation of 21,416 acres. With an estimated consumptive use rate of 1.2 AF/acre, the calculated groundwater consumptive use is approximately 25,700 AF/yr. I don't think we have formally documented the PDtrib tool in any reports. The attached spreadsheet can be provided to show how the estimated consumptive use was calculated. The values are preliminary estimates, and additional review would be appropriate

prior to any administrative action.

IDWR is, of course, aware that water diverted into the Portneuf Marsh Valley Canal is a significant source of recharge to the Marsh Valley aquifer system. This is discussed in the Sukow (2021) open-file report listed in the bibliography. Sukow (2021) also provided an estimate of average consumptive groundwater use within the Marsh Valley aquifer system of 11,000 AF/yr. Note that the 25,700 AF/yr estimate of consumptive groundwater use is the entire Portneuf basin upstream of the Portneuf Gap, and includes a larger area than just Marsh Valley.

Please let me know if the information contained and linked in this email satisfies your request.

Regards,

Brian Ragan

IDWR Water Distribution Section

208.287.4934

From: Norman Spencer <nspencer_5@yahoo.com>
Sent: Friday, April 4, 2025 5:26 PM
To: Ragan, Brian <Brian.Ragan@idwr.idaho.gov>
Subject: Eastern Snake Plain Aquifer Area of Common Ground Water Supply

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Mr. Ragan,

After attending the Public Hearing for the Portneuf Basin held at the Marsh Valley High School Performing Art Center, 12655 S Old Hwy 91, Arimo, Idaho 83214 on March 25, 2025, it is evident that the Idaho Department of Water Resource has already made a decision regarding the Portneuf Basin Aquifer. I am hereby requesting, under the Freedom of Information Act, all studies completed by the Idaho Department of Water Resources regarding the Portneuf Basin Aquifer Ground Water Supply. I am also requesting, under the Freedom of Information Act, any and all studies that the Idaho Department of Water Resources relied upon in their computer model, any and all variables relied upon, and the scientific data supporting the same.

In the public hearing it was stated that the ground water users in the Portneuf Basin were using 25,000 acre feet of ground water that adversely impacted the waters available to senior priority rights. I am hereby requesting all scientific studies that have been completed by the Idaho Department of Water Resources that prove this statement to be true. I am also requesting the detailed scientific method of measuring ground water flow in the Portneuf Basin that has been done by the Idaho Department of Water Resources and any, and all other studies that prove this statement to be true.

During this public hearing there were several individuals that provided oral comments that were directly contrary to the position regarding the Portneuf Basin Ground Water Supply as presented by the Idaho Department of Water Resources.

We moved to Downey in the Marsh Valley area in 1983. We irrigated out of the Portneuf Marsh Valley Canal Company Canal up through 2000. The Portneuf Marsh Valley Canal has the storage rights for irrigation water in the Chesterfield Reservoir of 24,000 acre feet. When the irrigation water is released from the Chesterfield Reservoir, it's general direction of travel is north to south. The canal is diverted from the Portneuf River into the canal above McCammon, Idaho and continues north to south through Downey, Idaho. There is more than a 50% loss in the canal system from McCammon, Idaho to Downey, Idaho. This water loss plus the flood irrigation from the canal and ditches of the Portneuf Marsh Valley Canal Company Canal recharges the Portneuf Basin Aquifer from McCammon through Downey. We have seen that the lowest point in the aquifer in that area we have farmed in is early spring, March and April, the highest point in the aquifer in that area, from May through September, the Portneuf Marsh Valley Canal is recharging the aquifer at a rate greater than the water being pulled from the aquifer in the Portneuf Basin.

I have installed a meter on our well. I will measure our ground water flow and use beginning in April and will continue the same day of each month through September to prove and verify my claims.

Respectfully,

Norman Spencer

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