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Portneuf Watershed Users Association, Inc.

BEFORE THE DEPARTMENT OF WATER RESOURCES
OF THE STATE OF IDAHO

IN THE MATTER OF APPLICATION FOR
TRANSFER NO. 76779 IN THE NAME OF
THE CITY OF POCA TELLO

**NOTICE OF COMPLIANCE RE PORTNEUF
WATERSHED USERS ASSOCIATION, INC.'S
EXPERT REPORT OF CHRISTIAN R.
PETRICH, Ph.D., P.E., P.G.**

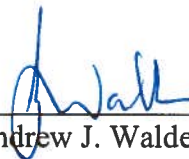
COMES NOW, Protestant Portneuf Watershed Users Association, Inc.

("Portneuf"), by and through its undersigned counsel of record, and hereby notifies the Idaho Department of Water Resources ("Department") that Portneuf has complied with the Department's April 21, 2011 *Notice of Hearing and Order Setting Pre-Hearing Deadlines* and the subsequent Stipulation of the parties to extend the expert report exchange deadline from June 3, 2011 to June 10, 2011, by serving the Report of Christian R. Petrich attached hereto.

DATED this 10th day of June, 2011.

MOFFATT, THOMAS, BARRETT, ROCK &
FIELDS, CHARTERED

By



Andrew J. Waldera – Of the Firm
Attorneys for Portneuf Watershed Users
Association, Inc.

CERTIFICATE OF SERVICE

I HEREBY CERTIFY that on this 10th day of June, 2011, I caused a true and correct copy of the foregoing **NOTICE OF COMPLIANCE RE PORTNEUF WATERSHED USERS ASSOCIATION, INC.'S EXPERT REPORT OF CHRISTIAN R. PETRICH, Ph.D., P.E., P.G.** to be served by the method indicated below, and addressed to the following:

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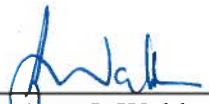
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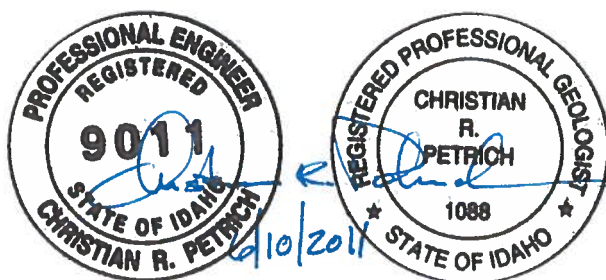
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Andrew J. Waldera

Review of Proposed Transfer 76779

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Prepared on behalf of

Portneuf Watershed Users Association

c/o

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Andrew Waldera, Moffatt Thomas Barrett Rock & Fields, Chtd.

In the Matter of

City of Pocatello Proposed Transfer 76779

June 10, 2011



SPF WATER
ENGINEERING

Executive Summary

The City of Pocatello proposes transferring 3,100 acre-feet of Chesterfield Reservoir irrigation storage authorized by water rights 29-53 and 29-589, now owned by the Portneuf-Marsh Valley Canal Company (PMVCC), for diversion and use within the City of Pocatello's municipal boundary. The transfer will (1) change the place of use, (2) add points of re-diversion, (3) change the season of use, and (4) change the nature of use.

This report summarizes my review of the application and selected supporting materials on behalf of the Portneuf Watershed Users Association (PWUA). My general conclusion is that, as written, the proposed transfer does not meet all of the requirements outlined under Idaho Code § 42-222. Specific conclusions include the following:

1. Proposed "shrink-free" (i.e., without conveyance loss) delivery of storage water under water rights 29-53 and 29-589 to the City points of re-diversion threatens injury to senior Portneuf River water rights (including those of PWUA members) to the extent that acquired storage transit losses reduce availability of natural flow for senior-priority water-right holders.
2. Shrink-free delivery of storage water is a condition in water rights 29-53 and 29-589; this condition was decreed in the Snake River Basin Adjudication (SRBA). However, there is no evidence that transit losses associated with conveyance 60 miles to the City's proposed points of re-diversion (approximately 30 miles downstream of the current points of diversion), use for non-agricultural purposes, use on a year-round basis, or the presence of a losing Portneuf River reach (in the Portneuf Valley and downstream of Portneuf Gap) was contemplated in the establishment of the shrink-free delivery condition.
3. At present, there are insufficient measurement devices installed in the Portneuf River to adequately account for water flowing into Chesterfield Reservoir, Portneuf River losses in the Portneuf Valley, reach gains (or losses) downstream of Pebble, and the tracking of acquired storage rights that are conveyed to the City place of use but that do not pass through the Sorenson Hydropower facility.
4. The proposed transfer represents an enlargement of water rights 29-53 and 29-589 because no reduction in PMVCC irrigated area is proposed. Idaho Code § 42-222 allows the enlargement of a storage right provided that the enlargement does not injure existing water rights. The City has not provided evidence showing that proposed increases and consumptive use will not injure existing water rights.
5. Localized flooding, resulting from increased growth of aquatic vegetation and river-channel maintenance constraints, and potentially exacerbated by changes under the proposed transfer, is not in the local public interest.

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A. INTRODUCTION

The City of Pocatello (City) seeks to acquire and transfer 3,100 acre-feet of Chesterfield Reservoir storage authorized under water rights 29-53 and 29-589, which are currently owned by the Portneuf-Marsh Valley Canal Company (PMVCC), for diversion and use within the City of Pocatello's municipal boundary. An Application for Transfer 76779 was submitted to the Idaho Department of Water Resources (IDWR) on August 30, 2010. If approved, the transfer will (1) change the place of use, (2) add points of re-diversion, (3) change the season of use, and (4) change the nature of use. The transfer has been protested by multiple water users, including the Portneuf Watershed Users Association (PWUA).

I reviewed the transfer application and supporting documents on behalf of the PWUA. The purpose of the review was to determine whether or not the proposed transfer meets criteria listed under Idaho Code § 42-222 and, specifically, to evaluate potential impacts of the transfer on PWUA users. The review is based on publicly-available water right information, selected information provided by the City in support of Transfer 76779, and selected publicly-available Portneuf River hydrology information.

This report provides a summary of my findings and conclusions. Section B provides an overview of the proposed transfer; a review of Portneuf-Marsh Valley Canal Company (PMVCC) water rights; a list of Portneuf Watershed Users Association (PWUA) water rights; statutory transfer evaluation criteria; and an evaluation of the proposed transfer based on statutory transfer criteria.

B. FINDINGS

This section summarizes findings from my review of Application for Transfer 76779 and a selected related data and information.

Overview of Proposed Transfer

1. The City of Pocatello (City) seeks to acquire the first 3,100 acre feet of storage yield to water rights 29-53 and 29-589 in Chesterfield Reservoir from the PMVCC.
2. The City proposes take delivery of the acquired storage water at a location near the headgate of the Portneuf Marsh Valley Canal (Figure 1), which is located approximately 3 miles east of McCammon. Water for the City would be (1) diverted into the Portneuf River at this location or (2) diverted into the Portneuf Marsh Valley Canal, run through the Sorenson Hydropower Facility, and discharged into the Portneuf River approximately 2 miles downstream from the river headgate.
3. The City proposes to re-divert the acquired storage water from the Portneuf River along a "reach of the Portneuf River generally within the proposed place of use," i.e., the City's Urban Service Boundary (USB). The City proposes that the re-diversion reach could be extended further upstream or downstream in the future if the City's water service area is modified.
4. The City proposes a maximum diversion rate (and re-diversion rate) of the acquired storage water of 50 cfs. PMVCC would release the acquired storage water on behalf of the City from Chesterfield Reservoir.
5. The City proposes that the delivery of acquired storage water from Chesterfield Reservoir be measured at an existing Parshall flume in the Portneuf-Marsh Valley Canal, downstream of the Portneuf-Marsh Valley Canal headgate, and at points of re-diversion within the City's USB.
6. The City seeks the option of diverting the acquired storage water on a year-round basis (water under rights 29-53 and 29-589 can currently be diverted from storage from April 15 through September 15 given their underlying irrigation purpose).
7. The City proposes that 3,100 acre feet of storage be delivered to the City (approximately 60 miles downstream from Chesterfield Reservoir, and approximately 30 miles downstream of the Portneuf-Marsh Valley Canal headgate) without assessment of transit losses (i.e., shrink-free).

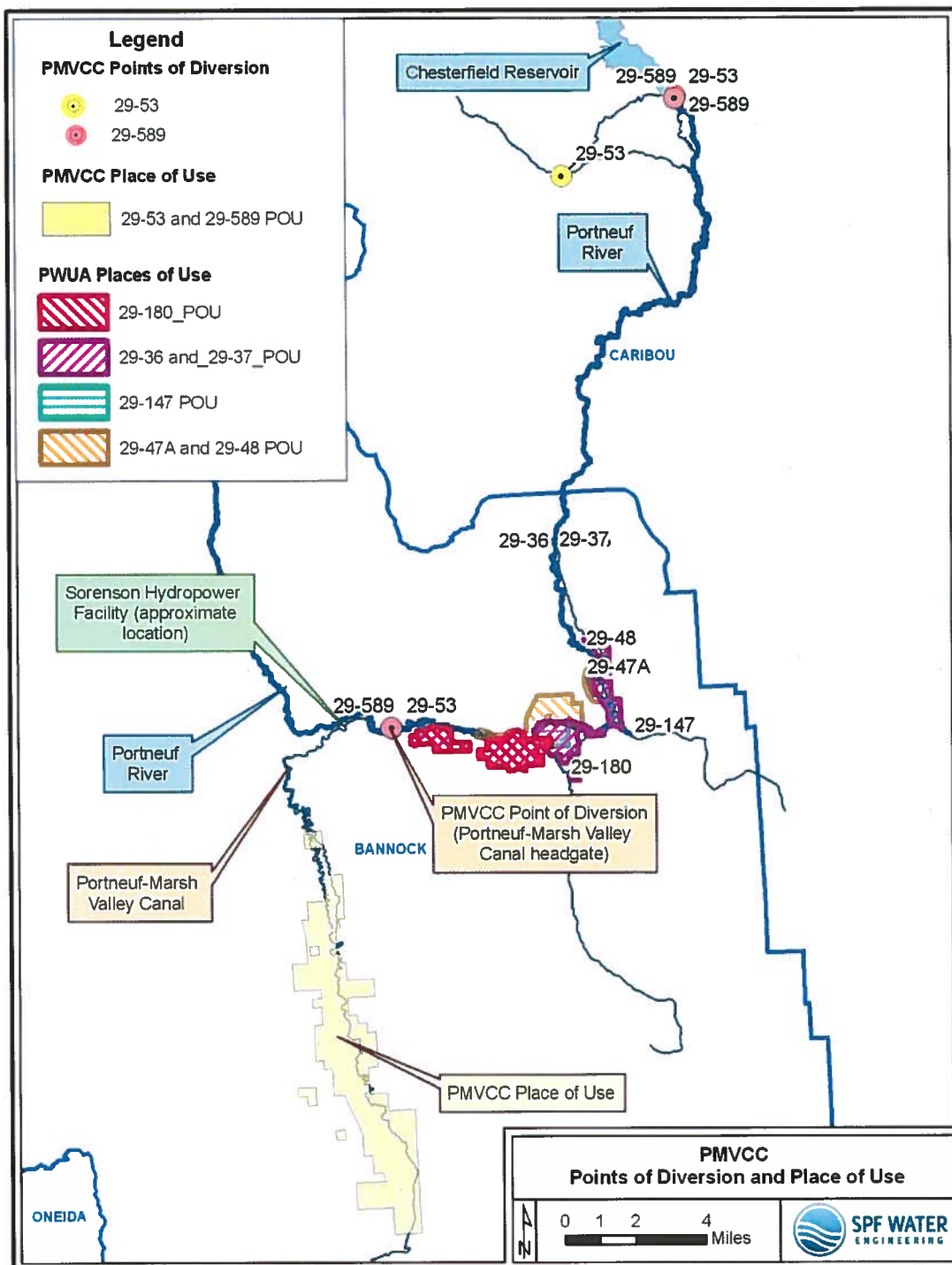


Figure 1. PMVCC points of diversion and place of use.

8. The City proposes to change the nature of use from irrigation to the following uses: municipal (including the irrigation of residential areas, commercial areas, industrial areas, parks, and open space), groundwater recharge, mitigation, recreation, aesthetic, wildlife, fish propagation, exchanges, and leases to others (Sullivan, 2010). The City also proposes that the acquired storage rights be used for the irrigation of farms as part of the City's Biosolids Program near the Airport.

Portneuf-Marsh Valley Canal Company Water Rights

9. The PMVCC owns storage water rights 29-53 and 29-589. Water right 29-53 authorizes 164.43 cfs diversion from Toponce Creek into Chesterfield Reservoir with a July 6, 1912 priority date. Water right 29-589 authorizes the storage of 16,410 acre-feet of Toponce Creek water in Chesterfield Reservoir with the same July 6, 1912 priority date. Together, these rights have a combined storage limit of 16,410 acre-feet.
10. In addition to water rights 29-53 and 29-589, the PMVCC owns water right 29-4060, which authorizes an additional 7285 acre-feet of storage in Chesterfield Reservoir of Portneuf River water (from the Portneuf River above Chesterfield Reservoir) with a priority date of April 1, 1949.
11. The PMVCC also owns two natural-flow rights (29-52 and 29-13318) authorizing diversions up to 176.85 cfs from the Portneuf River. These rights have December 18, 1907 and August 7, 1932 priority dates, respectively.
12. Use of water rights 29-53 and 29-589, in combination with 29-4060, and in combination with water rights 29-52, 29-13318, and 29-13319, are limited to the irrigation of a combined total of 5,103.2 acres in a single irrigation season.
13. Chesterfield Reservoir storage water is delivered downstream in the Portneuf River for re-diversion at the Portneuf-Marsh Valley Canal headgate between April 15 and September 15.
14. Stored Chesterfield Reservoir water is currently delivered under water rights 29-53 and 29-589 to the Portneuf-Marsh Valley Canal headgate without accounting for conveyance losses. The Snake River Basin Adjudication (SRBA) partial decrees for water rights 29-53 and 29-589 each contain the following remark:

"This storage water right is to be delivered without conveyance loss from the reservoir to the point of diversion located on the Portneuf River at T9S R37E SEC 22 SWSENW (Lot 3) for the Portneuf-Marsh Valley Canal Companys (sic) canal through said Companys (sic) drainage canal and the Portneuf River."

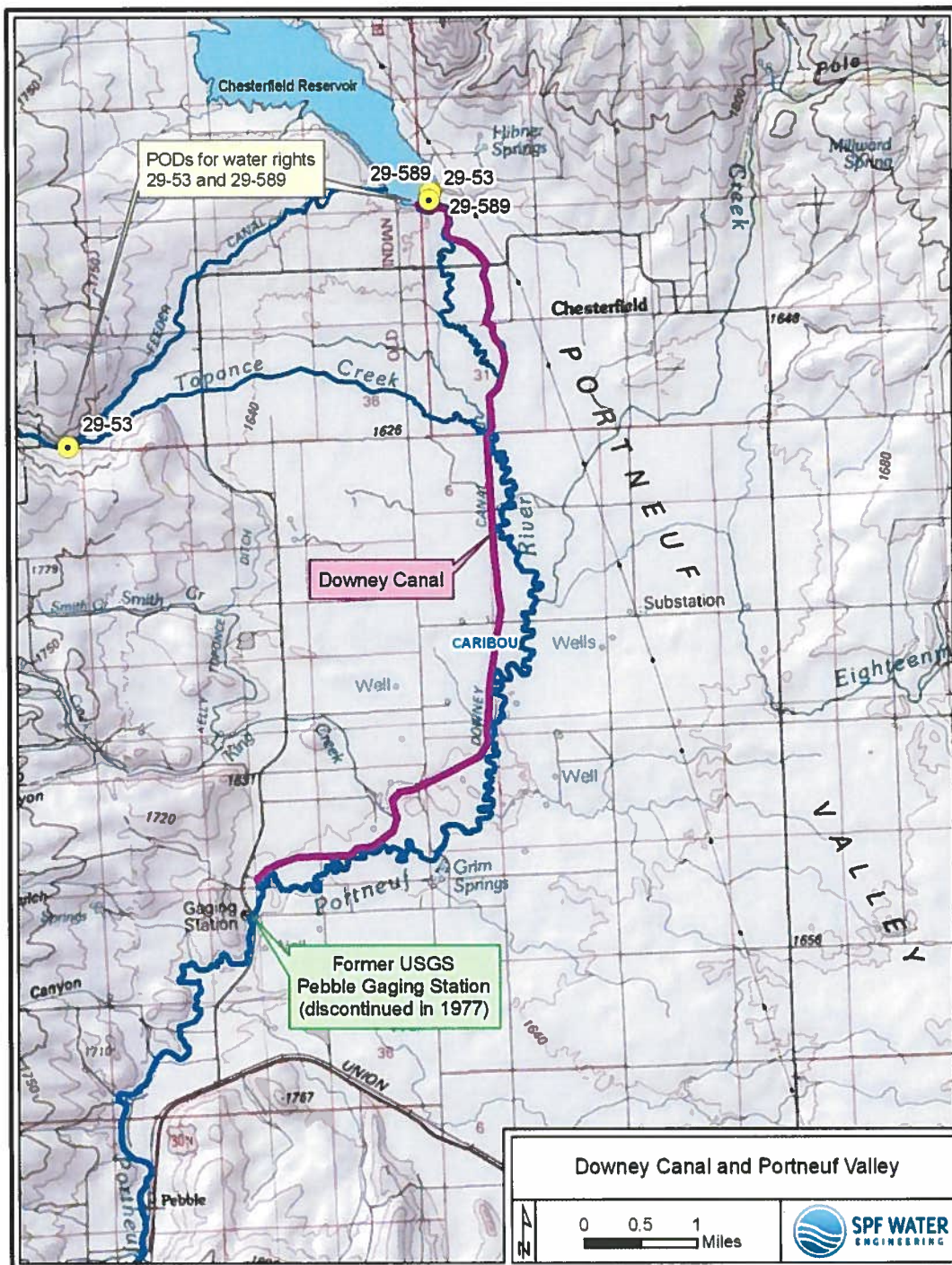
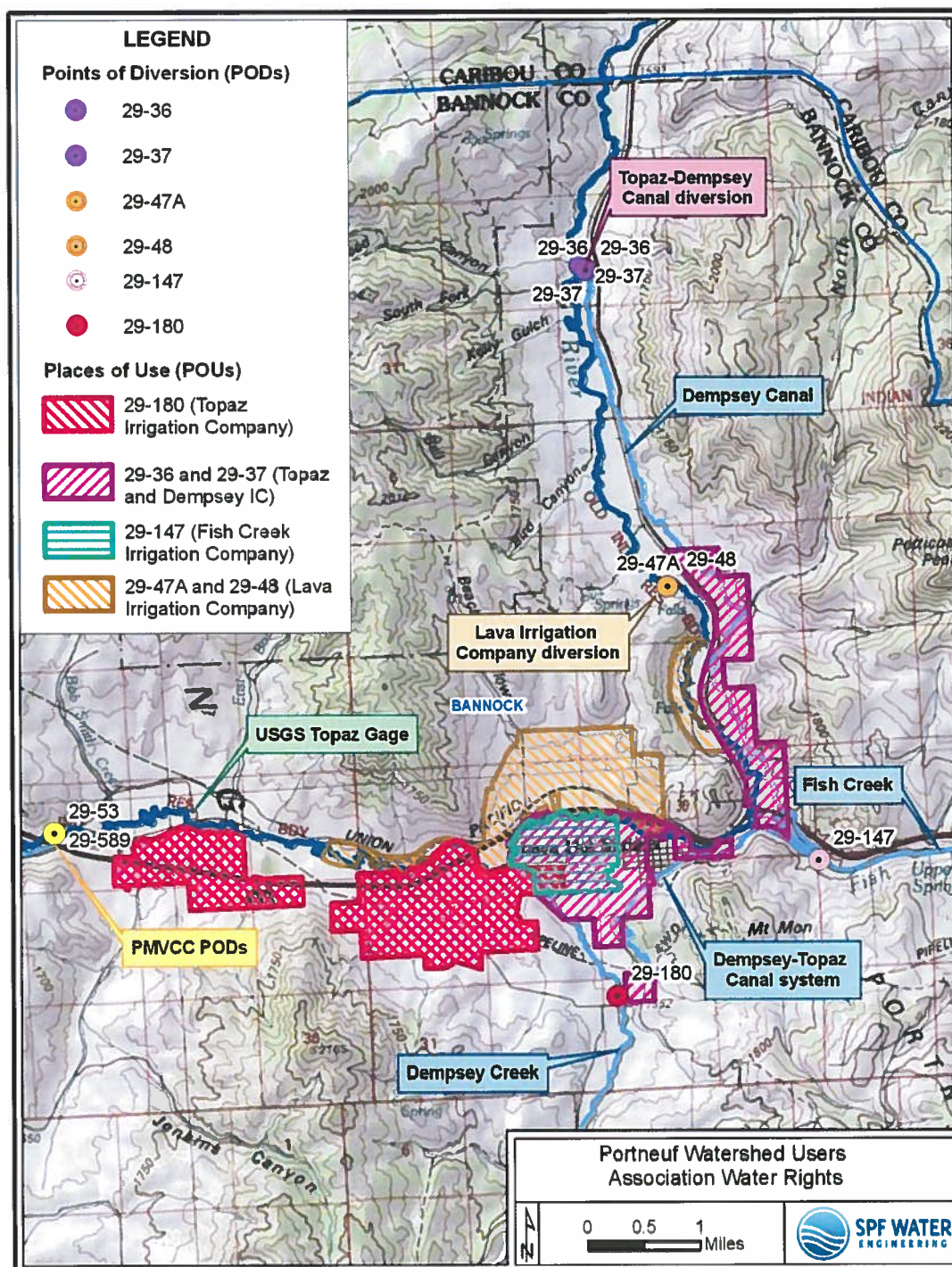


Figure 2. Downey Canal.

15. The circumstances surrounding the origin of the shrink-free delivery status of water rights 29-53 and 29-589 are unclear. Locals attribute the shrink-free delivery remarks to the construction of the PMVCC's "drainage canal" (now referred to as the Downey Canal). The Downey Canal is a 7.8-mile channelized reach of the Portneuf River beginning immediately downstream of the Chesterfield Reservoir Dam (Figure 2). The original basis for shrink-free delivery may have been that the Downey Canal below Chesterfield Reservoir was a gaining reach at the time of construction (1908-1912), and that natural gains were thought to have compensated for conveyance losses.

Portneuf Watershed Users Association Water Rights

16. The Portneuf Water Users Association (PWUA) represents land irrigated by the Topaz Irrigation Company, Fish Creek Irrigation Company, Lava Irrigation Company, and Dempsey Irrigation Company. Points of Diversion (PODs) and Places of Use (POUs) for PWUA water rights are shown in Figure 3.
17. Diversions by PWUA members are authorized under water rights 29-36, 29-37, 11773, 29-47A, 29-48, 29-4467, 29-10816, 29-147, and 29-180 (Attachment A). In aggregate, these water rights authorize a maximum diversion of 62.26 cfs of natural (i.e., non-storage) flow from the Portneuf River for the irrigation of 2,044.6 acres with priority dates ranging from April 1, 1883 to August 7, 1932.
18. PWUA water rights are among numerous rights (Table 1, page 8) authorizing the diversion of natural flow in the Portneuf River under water rights with priority dates senior to Chesterfield Reservoir storage rights. For example, PWUA's water rights 29-47A, 29-36, 29-48, and 29-37 have priority dates senior to PMVCC water rights 29-53 and 29-589. Water rights authorizing diversions in the Portneuf Valley (i.e., upstream of the former Pebble Gage site – see Figure 2) are shaded in gray (in Table 1); PWUA rights are listed with bold-face type.
19. Natural flow in the Portneuf River originates from the upper Portneuf River (above Chesterfield Reservoir), tributary inflows (e.g., Toponce Creek, Pebble Creek, King Creek, etc.), and flow from numerous springs, especially downstream of the Portneuf Valley (some of these springs are upstream of PWUA diversions).
20. PWUA members typically divert natural flow under PWUA rights during the spring and early summer. Diversions typically are curtailed in early or mid July as natural flows decline. Chesterfield Reservoir releases (under PMVCC rights 29-53 and 29-589) begin as PMVCC natural-flow rights (which are junior to PWUA natural-flow rights) are curtailed. Reservoir releases continue until the reservoir is drawn down, or September 15, whichever comes first. After September 15, PWUA members are allowed to divert water for the remaining portion of the irrigation season so as long as natural flow is available.



Pre-1912 Portneuf River Diversions between Chesterfield Reservoir and McCammon Ditch POD				
Water Right	Priority Date	Decreed Date	Max. Div. Rate (cfs)	Owner
29-13400	7/06/1868	9/10/2004	1.26	CUTLER DITCH
29-10299	11/17/1879	6/15/1998	0.12	CARL L PHILLIPS
29-10173	4/15/1880	8/27/2004	6.74	CRANDALL FARMS INC
29-10313	4/15/1880	3/22/2004	1.14	C V RANCHES
29-10246	5/01/1881	8/27/2004	1.31	ERMA M BANKS
29-10314	5/01/1881	3/22/2004	3.15	C V RANCHES
29-10	4/14/1883	8/20/2004	2.32	ERMA M BANKS
29-31	5/01/1887	8/30/2005	3.43	CARL L PHILLIPS
29-26	9/01/1888	8/20/2004	1.76	FRANK A ARCHER
29-10174	9/01/1888	8/27/2004	3.72	CRANDALL FARMS INC
29-51	3/27/1889	1/6/2006	55.00	PORTNEUF IRRIGATING CO
29-44	5/01/1889	3/22/2004	1.00	ELLIS M CHRISTIANSEN
29-12078	5/01/1889	8/30/2005	1.20	INDIAN FALLS PROPERTY ASSN
29-57	6/11/1889	1/5/2006	50.00	MC CAMMON DITCH CO LTD
29-32	7/01/1889	8/30/2005	0.30	LYNDEN SYMONS
29-47A	7/01/1889	8/30/2005	2.26	LAVA IRRIGATION CO LTD
29-12079	7/01/1889	8/30/2005	2.88	INDIAN FALLS PROPERTY ASSN
29-12079	7/01/1889	8/30/2005	2.88	INDIAN FALLS WATER USERS ASSOC
29-30	10/18/1889	8/30/2005	3.84	CARL L PHILLIPS
29-13218	12/31/1889	3/22/2004	0.02	LYNDEN SYMONS
29-43	4/01/1890	3/22/2004	0.48	SHANE IRICK
29-35	4/01/1890	8/30/2005	0.10	BARBARA W KEVAN
29-13398	5/01/1896	9/10/2004	1.00	CUTLER DITCH
29-36	4/18/1898	1/5/2005	32.00	DEMPSEY & TOPAZ IRRIGATING COs
29-58	6/28/1901	1/5/2006	18.95	MC CAMMON DITCH CO LTD
29-46	7/14/1902	8/30/2005	0.40	INDIAN FALLS PROPERTY ASSN
29-11	9/26/1903	8/20/2004	1.54	NORMAN W FRANK
29-48	2/11/1904	8/30/2005	20.50	LAVA IRRIGATION CO LTD
29-37	1/14/1907	1/5/2005	7.50	DEMPSEY & TOPAZ IRRIGATING Cos
29-52	12/18/1907	2/15/2008	176.85	PORTNEUF MARSH VALLEY CANAL CO
29-54A	5/1/1909	6/28/2004	0.17	LEN BURRIS, ORAWAN LANCASTER
29-53	7/6/1912	2/15/2008	164.43 cfs diversion to storage	PORTNEUF MARSH VALLEY CANAL CO
29-589	7/6/1912	2/15/2008	16,410 AF storage	PORTNEUF MARSH VALLEY CANAL CO
Notes: Gray shading: rights with PODs upstream of Pebble Gage Bold type: PWUA water rights				

Table 1. Pre-1912 water rights authorizing diversions from the Portneuf River upstream of the McCammon Ditch.

21. Any transit losses of Chesterfield Reservoir storage water between Chesterfield Dam and the Portneuf-Marsh Valley Canal headgate are replaced with Portneuf River natural flow. As such, storage water conveyance losses diminish flow otherwise available for natural-flow diversions.

Transfer Evaluation Criteria

22. Under Idaho Code § 42-222, the Director of the Department of Water Resources (IDWR) examines evidence and information regarding proposed transfers and shall approve the transfer, in whole or in part, or with conditions, provided that:
 - a. No other water rights are injured thereby;
 - b. The change does not constitute an enlargement in the use of the original right;
 - c. The change is consistent with the conservation of water resources within the State of Idaho;
 - d. The change is in the local public interest (defined in Idaho Code § 42-202B);
 - e. The change will not adversely affect the local economy of the watershed or local area within the source of water for the proposed use;
 - f. The new use is a beneficial use, which in the case of a municipal provider shall be satisfied if the water right is necessary to serve reasonably anticipated future needs; and
 - g. The director shall not approve a change in the nature of use from agricultural use where such change would significantly affect the agricultural base of the local area.
23. Idaho Code § 42-222 does provide for the enlargement of a storage right: "the transfer of the right to the use of stored water for irrigation purposes shall not constitute an enlargement in use of the original right even though more acres may be irrigated, if no other water rights are injured thereby."

Evaluation of Proposed Transfer

24. In my opinion, the proposed transfer – as written – does not fully meet several of the above-listed criteria for transfer approval. Specifically:
 - a. Delivery of 3,100 acre feet of storage water under water rights 29-53 and 29-589 to the City's points of re-diversion without accounting for transit losses represents (depending on time of delivery, delivery rate, etc.) potential injury to PWUA water users;
 - b. At present, there are insufficient measuring devices installed in the Portneuf River to adequately manage conveyance of the acquired storage rights;

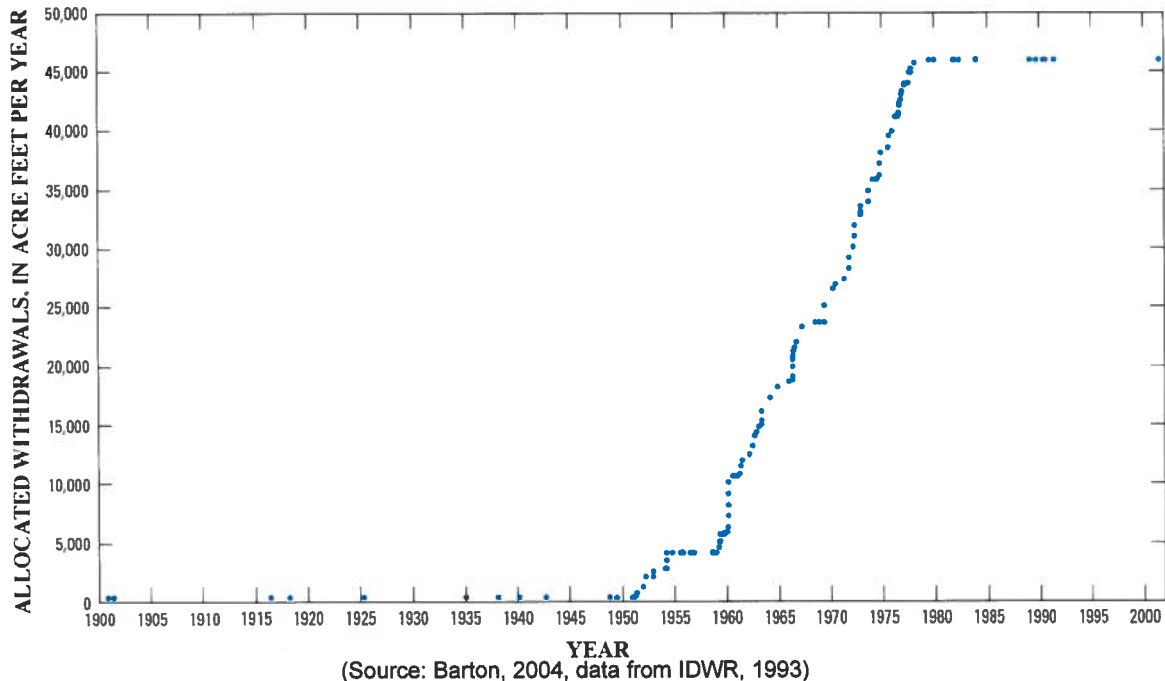
- c. The proposed transfer constitutes an enlargement of the original rights; the City has not provided evidence showing that the proposed enlargement does not injure existing water rights; and
- d. Localized flooding, potentially exacerbated by changes in the proposed transfer, is not in the public interest.

Supporting information and data for these observations are provided in the following findings.

Potential Injury to PWUA Water Rights as a Result of Shrink-Free Delivery

- 25. PMVCC is entitled to "shrink-free" delivery of Chesterfield Reservoir storage water for irrigation within its current permissible place of use. However, transit losses occur, even in a gaining reach, as a result of evaporation, transpiration of aquatic and riparian vegetation, and losses to bank storage.
- 26. At the time that shrink-free delivery was established for water rights 29-53 and 29-589, the Portneuf River was presumably a gaining reach from Chesterfield Reservoir to the Portneuf-Marsh Valley Canal headgate. Reach gains likely masked historic transit losses.
- 27. Hydrologic conditions downstream of Chesterfield Reservoir have changed since the Downey Canal was constructed (and since shrink-free delivery status was established for water rights 29-53 and 29-589). The USGS has delineated a losing reach of the Portneuf River centered approximately 7.2 miles downstream from Chesterfield Reservoir (Barton, 2004). The length of the losing reach increased from 2.6 to almost 6 miles as the 2001 irrigation season progressed: "The length of the losing reach was nearly 3 times longer during July 16-17, 2001, in the middle of the irrigation season, than on May 29, 2002, early in the irrigation season" (Barton, 2004). Conveyance losses were found to be greatest (approximately 20 cfs) during mid-summer regulated flows.
- 28. The change from an assumed gaining reach in the early 1900s to a partially losing reach 100 years later is coincident with substantial increases in groundwater withdrawals by wells in the Portneuf Valley. Between 1968 and 1980 alone, water rights for groundwater withdrawals (Figure 4) grew from 23,500 acre-feet per year to 46,000 acre-feet per year (Barton, 2004). A review of water levels in 30 Portneuf Valley wells indicated a median decline of 3.4 feet between 1968 and 2001 (Barton, 2004). Groundwater pumping in the Portneuf Valley near the Portneuf River (or Downey Canal) in the Portneuf Valley likely contributes to surface-channel losses in this reach of the Portneuf River.
- 29. Water in the Portneuf River is fully allocated during the irrigation season; PWUA water rights (the most senior of which has a July 1, 1889 priority date) are curtailed every year during low-flow conditions.

30. Reach gains, such as natural spring flow into the Portneuf River below the Portneuf Valley, likely masked historical Chesterfield Reservoir storage water transit losses. Because the Portneuf River is fully allocated, compensating for transit losses with natural flow reduces the amount of water available to senior-priority water right holders.



(Source: Barton, 2004, data from IDWR, 1993)

Figure 4. Growth in allocated groundwater withdrawals in the Portneuf Valley, 1900-2000.

31. The City argues that acquired Chesterfield Reservoir storage water for municipal use should benefit from the same shrink-free delivery currently enjoyed by the PMVCC. However, the "without conveyance loss" remarks in the partial decrees of water rights 29-53 and 29-589 applies only to the irrigation use of water within the PMVCC service area between April 15 and September 15, and only to the 30-mile reach from the reservoir to the Portneuf-Marsh Valley Canal headgate. Delivery of Chesterfield Reservoir water for municipal uses in a location different from the PMVCC place of

use, and on a year-round basis, and under possibly changed hydrologic conditions¹, could not have been contemplated at the time that shrink-free delivery status for water rights 29-53 and 29-589 was originally established.

32. Shrink-free delivery status was reconfirmed in the SRBA under the terms and conditions of the Portneuf River Settlement Agreement filed with the SRBA court on April 22, 2005 (and in a subsequent addendum filed December 17, 2007). The Settlement Agreement, incorporated by reference in the partial decrees for water rights 29-53 and 29-589, provides no evidence that the changed circumstances proposed in the City's transfer were ever contemplated as part of the settlement agreement.
33. The City also requests Chesterfield Reservoir storage water be delivered shrink-free all the way to Pocatello – approximately 30 miles downstream of the Portneuf-Marsh Valley Canal headgate, and approximately 60 miles downstream from Chesterfield Reservoir – because water rights 29-53 and 29-589 are currently entitled to shrink-free delivery to the Portneuf-Marsh Valley Canal headgate. The City maintains that the Portneuf River is a gaining reach downstream of the Topaz Gage and therefore conveyance losses will be little or none:

"The results of the gain analysis indicate that the Portneuf River from the Topaz Gage to the Pocatello gauge is a gaining stream, therefore, it is expected that there will be little or no transit loss in delivering the acquired storage rights to Pocatello except for temporary bank storage" (Sullivan, 2010).

34. Transit loss resulting from seasonal channel seepage, evaporation, and transpiration by aquatic and riparian vegetation, occurs regardless of whether a reach is gaining in flow. By way of illustration, a channel that is on average 20 feet wide and 30 miles long would represent, in aggregate an approximate 73-acre area. Evaporation from this area is roughly equivalent to the consumptive use on an acre of irrigated farmland. Use of water by riparian vegetation and channel seepage losses represent additional losses. A portion of acquired storage water being conveyed to the City would experience these types of losses.
35. The reach from the Portneuf-Marsh Valley Canal headgate to the City of Pocatello is not consistently a gaining reach. In fact, the Portneuf River downstream of Portneuf Gap is a losing reach (Meehan, 2005; Welhan, 2006), with an annual loss of

¹ Seepage losses from the Portneuf River in the Portneuf Valley appear to have increased since Chesterfield Reservoir and the Downey Canal were constructed in the early 1900s, likely as the result of increased groundwater pumping in the Portneuf Valley.

approximately 900 acre-feet (Welhan, 2006). Surface water inflows (e.g., irrigation return flows, tributary inflows) may mask channel losses. The portion of acquired storage rights potentially lost as channel seepage cannot be evaluated until precise locations for re-diversion are established.

36. The City's supporting data (Attachment #9 to Application for Transfer 76779, Table 5) notes that during at least one of the 20 years between 1988 and 2007 – 1992 – the Topaz-to-Pocatello reach of the Portneuf River was a losing reach on an annual basis. Transit losses associated with shrink-free delivery of Chesterfield Reservoir water reduces water availability for other users in a year like 1992.
37. PWUA members describe summer flooding as a result of aquatic vegetation growth (see also public interest discussion on page 18). Increased summer aquatic vegetation growth increases conveyance losses. A larger wetted perimeter (as a result of local flooding) increases channel surface area, and therefore evaporative losses. Increased aquatic vegetation growth results in greater transpiration losses. Resulting increased transit losses to the Portneuf-Marsh Valley Canal headgate, to the extent that these losses are replaced with natural flow, injure senior natural-flow water users relying on that natural flow. The degree of injury depends on when, and at what rates, acquired storage water is conveyed to the City of Pocatello.

Potential Injury to PWUA Members as a Result of Inadequate Measurement

38. There are insufficient streamflow measuring devices in the Portneuf River to adequately administer the proposed transfer. Lack of streamflow measuring devices threatens injury to PWUA water rights (with or without the transfer). Moreover, the lack of adequate measuring devices violates provisions of the partial decrees for water rights 29-53 and 29-589 that require suitable measuring devices above and below Chesterfield Reservoir.
39. Streamflow is currently measured at the USGS Topaz Gage. Diversions and/or streamflow into Chesterfield Reservoir are estimated by the Portneuf River watermaster, but not physically measured. A USGS gage at Pebble (Figure 2) was in operation from 1968 through 1977, but is no longer in service. Historical data indicate that the Portneuf River between the former Pebble Gage and the Topaz Gage gains in flow (Figure 5).
40. There is currently no way to reliably quantify or verify on a regular basis flow rates into Chesterfield Reservoir, Portneuf River seepage losses in the Portneuf Valley, reach gains below Pebble, or acquired storage flow that does not pass through the Sorenson Hydropower facility. Such measurements, and associated accounting, are necessary to ensure appropriate deliveries to all users.
41. Without adequate, verifiable measurement, PWUA members are concerned that diversions by the PMVCC (for PMVCC lands and, if the transfer is successful, the

City) cannot be adequately managed. Specifically, PWUA members are concerned that inadequate measurement capacity could result in reduced PWUA diversions.

42. The transfer application does not adequately describe how reservoir storage water bound for the City will be measured when the Sorenson Hydropower Plant is not in operation (i.e., a staff gage in the Portneuf River near the Sorenson facility may not be sufficiently accurate to measure storage water being conveyed to the City).
43. The City seeks the option of conveying storage water to City points of re-diversion during the non-irrigation season. A plan for regulating – and paying for the regulation of – flow during winter months is necessary but has not yet been presented.

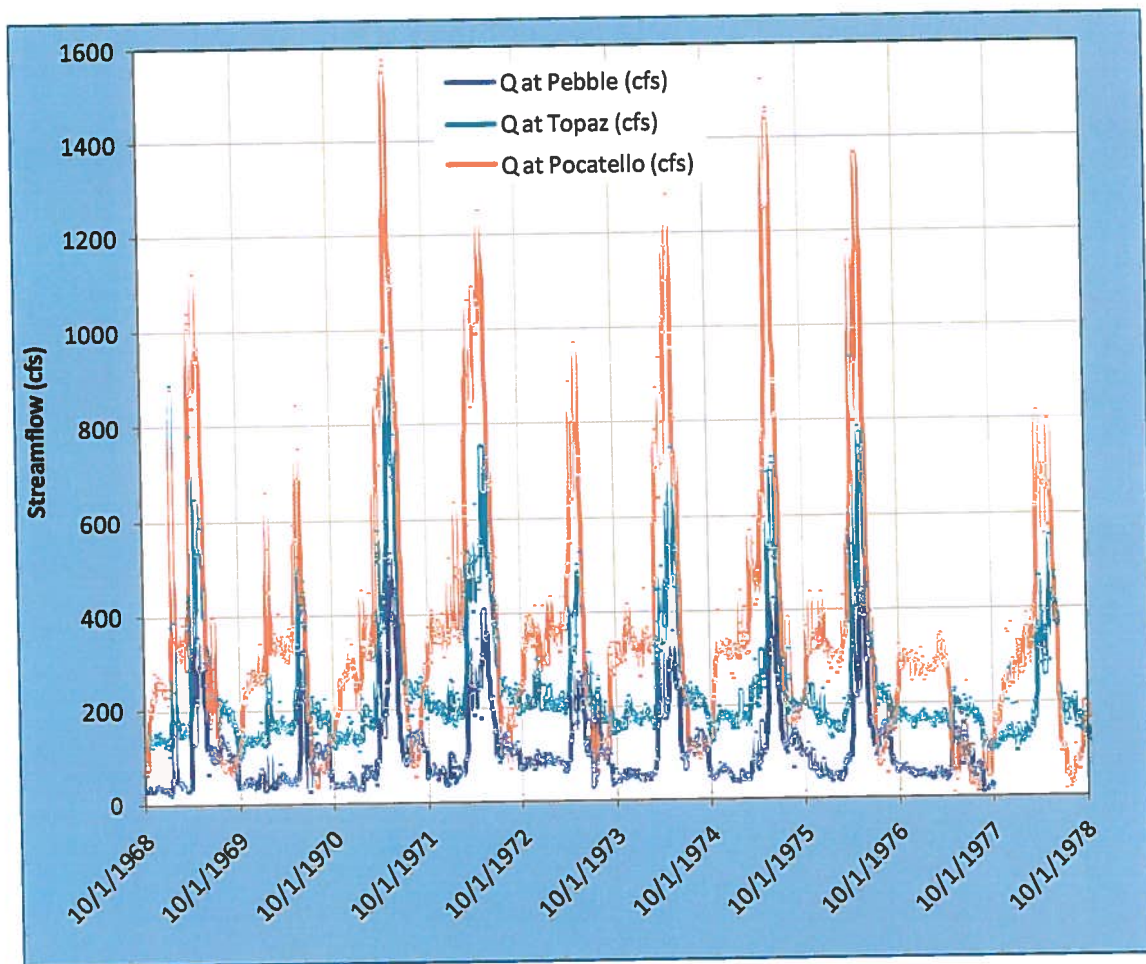


Figure 5. Portneuf River streamflow at the USGS Pebble, Topaz, and Pocatello gaging stations, 1968-1978.

44. A plan for regulating acquired-storage flows should include, among other components, a provision for ensuring that the one-time annual fill restriction under water rights 29-53 and 29-589 (16,410 acre feet) is not exceeded.

Enlargement

45. Idaho Code § 42-222 provides for the enlargement of a storage right so long as other water rights are not injured as a result of the enlargement. As proposed, transfer of the acquired storage rights to the City will result in an increase in consumptive use. The applicant has not shown that this increase in consumptive use will not injure other water rights.
46. The City has stated² that the PMVCC is able to sell a portion of water rights 29-53 and 29-589 to the City because of proposed efficiency improvements within the PMVCC delivery system.
47. The PMVCC provided NRCS estimates of water losses in the Portneuf-Marsh Valley Canal (O'Doherty, February 4, 2011) under current conditions and projected water losses following improvements. The NRCS projected "realistic water savings" of 7,000 acre-feet per year. The "savings" will accrue from decreased "geological seepage" (between 840 and 5,040 acre feet per year), decreased evaporative loss (280 acre feet per year), and decreased operational loss (a decrease of 2,240 to 5,600 acre-feet per year).
48. NRCS calculations provided subsequently (Pedone, undated) indicate that "Under present conditions, seepage from the canals recharge the regional groundwater system by 300 to 600 acre-feet/year (low estimate) depending on actual diversions from the Portneuf River." Oddly, even the "high estimates" of annual seepage loss provided by Pedone are less than the high estimate of 5,040 acre feet provided by O'Doherty (February 4, 2011).
49. Return flows resulting from "operational loss" ultimately flow into Marsh Creek (Figure 6) and the Portneuf River (unless captured by other water users). Seepage from PMVCC channels becomes tributary underflow (unless captured by wells) into the Lower Portneuf River Valley (LPRV) aquifer. The only projected reduction in consumptive use as a result of irrigation system improvements is the 280 acre-foot reduction in evaporation.
50. Approximately 15% of recharge to the Lower Portneuf River Valley (LPRV) Aquifer originates in the upper Portneuf River basin, and enters the LPRV Aquifer as underflow through the Portneuf Gap (Welhan, 2006). Water levels in the LPRV

² Pre-hearing conference, February 3, 2011

Aquifer declined by more than 10 feet between 1975 and 2006 (Welhan, 2006). The proposed Portneuf-Marsh Valley Canal improvements will lead to a reduction in LPRV Aquifer recharge (by means of reduced "geological seepage") and may thereby contribute to reduced LPRV aquifer levels.

51. Application for Transfer 76779 does not list PMVCC lands that would no longer be irrigated as a result of this transfer. In fact, Part I, Section 5(d) of the transfer application states that the transfer will have "no effect" on the PMVCC lands now irrigated by water rights 29-53 and 29-589.
52. The City proposes that acquired storage water could be used in its entirety for irrigation, a consumptive use. Thus, the proposed transfer represents an increase in consumptive use within the Portneuf River basin. At a possible diversion rate of 3 acre-feet per acre per year, 3,100 acre feet of acquired storage rights could be used to irrigate an additional 1,033 acres.
53. Thus, as proposed, the irrigated area following completion of the transfer using storage water authorized under water rights 29-53 and 29-589 could be as large as 6,137 acres (5,103.2 acres of currently authorized under rights 29-53 and 29-589 and 1,033 new acres of additional irrigation³ in Pocatello).
54. Idaho statute provides for enlargement (e.g., irrigation of additional acres) of a storage right provided that "no other water rights are injured thereby" (Idaho Code § 42-222). All but approximately 280 acre feet of the proposed 3,100 acre-feet are currently consumptively used; the balance (2,820 acre feet) is tributary to Marsh Creek, the Portneuf River, and/or underlying aquifers. The applicant has provided no evidence that full consumptive use of the 2,820 acre-feet will not injure other water rights downstream of the PMVCC place of use (e.g., lower Portneuf Valley, Eastern Snake Plain Aquifer⁴, etc.).

³ Estimated based on 3,100 acre feet of acquired storage water and an assumed application rate of 3 acre-feet per acre.

⁴ A moratorium on the processing and approval of applications for permits proposing to appropriate groundwater or surface water for consumptive uses has been in place since the early 1990s (IDWR Amended Moratorium Order, dated April 30, 1993).

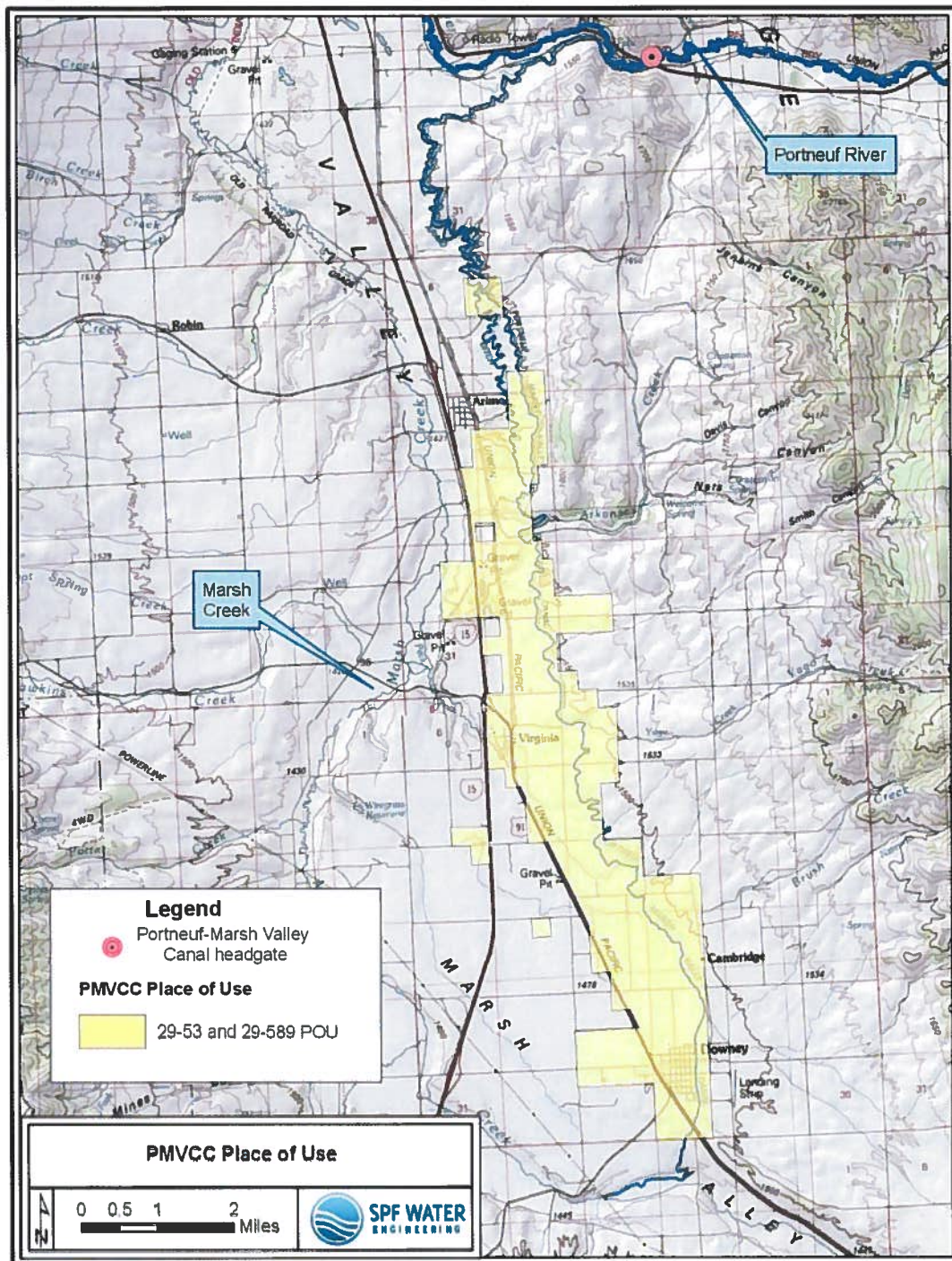


Figure 6. PMVCC place of use, with surface drainage tributary to Marsh Creek and the Portneuf River.

55. If the acquired storage water is not initially fully consumed, the City proposes using acquired storage rights "to extinction," even after discharging treated effluent to the Portneuf River.

"The treated effluent return flows from the Acquired Storage Water Right may be exchanged to storage in the City's Palisades Reservoir account, exchanged up the Portneuf River to the City's point(s) of re-diversion, or may be left in the river for mitigation use,... or recreation wildlife and aesthetic uses" (Sullivan, 2010).

This proposed use of water (to extinction) suggests that this transfer should be evaluated under the premise that the City's use of the acquired storage rights (3,100 acre feet) will be wholly (100%) consumptive.

56. Typically, without approved mitigation or an exchange, an Idaho water-right holder generally loses the permission to re-divert water once the user no longer controls the water (such as when treated wastewater has been discharged to a natural channel).
57. Idaho Code § 42-222 might provide for the full consumptive use of a transferred storage right so long as other water rights are not injured. Again, the City has not provided evidence that the proposed enlargement will not injure existing water rights (see also Finding # 55).

Public Interest Concerns

58. PWUA members describe increased growth of aquatic vegetation (e.g., moss) within the Portneuf River's wetted perimeter in recent years. The primary area affected by aquatic vegetation growth is between the Topaz-Dempsey Canal diversion and the Lava Irrigation Company diversion (Figure 3).
59. Examples of flooded conditions are shown in Figure 7 and Figure 8. Figure 7 contains photographs provided by PWUA members from 1988. Figure 8 shows photographs taken during springtime flooding conditions (not moss-related) on May 19, 2011. The property owner at this location (Glenn Christiansen) indicates that summer flooding is approximately 1/3 of that which is shown in Figure 8.
60. PWUA members assert that summer aquatic vegetation could be reduced with channel maintenance (e.g., chemical treatment), and that the cost of maintenance should be borne by all that benefit from summer flow (including PMVCC and the City, if Transfer 76779 is approved).
61. Lacking maintenance and a reduction in aquatic growth, continued flooding (which may or may not be exacerbated by the release of acquired storage water, depending on when the acquired storage water is released) reduces the productivity of land along the Portneuf River, and is therefore not in the local public interest.

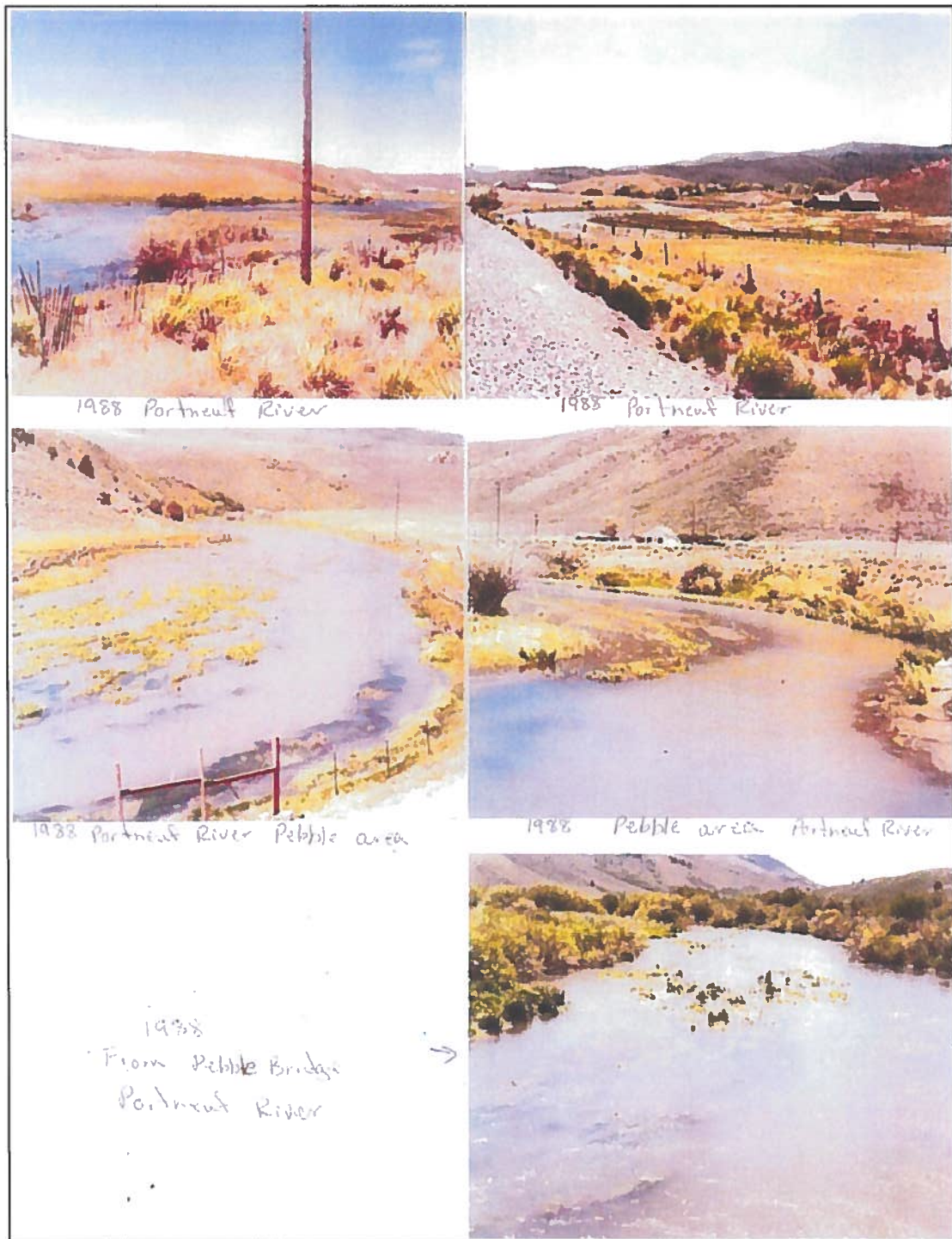


Figure 7. PWUA photographs showing flooded conditions, 1988.

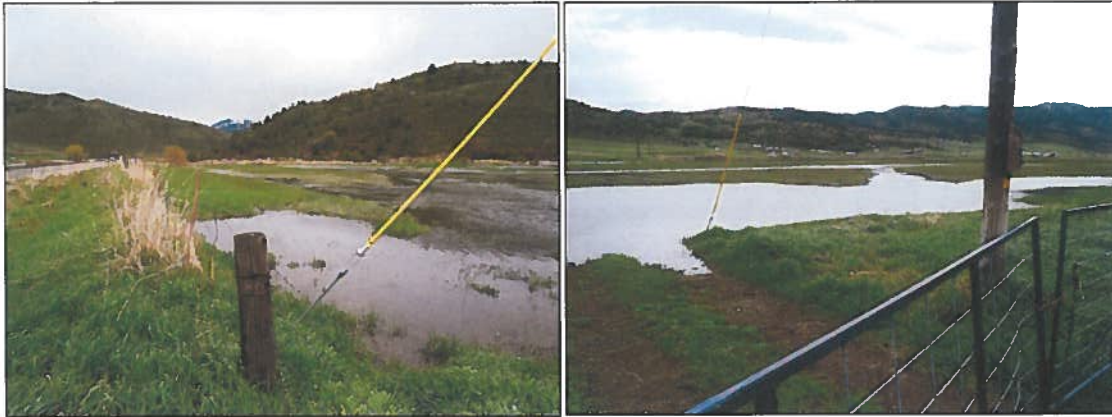


Figure 8. Flooding conditions in the Portneuf River on May 19, 2011 near the Lava Irrigation Company diversion.

62. It is unclear from the transfer application whether PMVCC is willing to reduce (i.e., subordinate) its diversions whenever the City wishes to convey acquired storage. Similarly, it is unclear whether the City is willing to subordinate its diversions to those of the PMVCC to avoid Chesterfield Reservoir releases in excess of historical rates. Such provisions would be necessary to ensure that historical release rates from Chesterfield Reservoir (and Portneuf River channel capacity) are not exceeded. Absent such conditions, releases on behalf of the City in combination with PMVCC diversions could exceed historical channel flow rates, which could exacerbate channel flooding.

C. REFERENCES

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**D. ATTACHMENT A: SUMMARY OF PORTNEUF WATERSHED USERS
ASSOCIATION WATER RIGHTS**

Primary Portneuf Water Users Association Water Rights						
No.	Name	Priority Date	Source	Max Div (cfs)	Season	Comments
29-36	Dempsey Irrigation Company	4/18/1898	Portneuf River	32 cfs	4/15 - 9/15	- Topaz Irrigation Company owns 51% of Dempsey-Topaz Canal system - Fish Creek Irrigated Company water is also carried in this same canal system from Fish Creek POD - Use of water before and after season dates is subordinate to other water rights having no subordinated early or late irrigation use and a priority date earlier than the date that a PD is entered for this right - Use is limited to a diversion rate of 39.5 cfs when combined with 29-37, and 29-11773 - Use of this right is limited to a total of 1429.8 acres when combined with 29-37, 29-180, and 29-11773
29-37	Dempsey Irrigation Company & Topaz Irrigation Company	1/14/1907	Portneuf River	7.5 cfs	4/15 - 9/15	- Maximum diversion rate of 39.5 cfs when combined with 29-36 and 29-11773 - Use of this right is limited to a total of 1429.8 acres when combined with 29-36, 29-180 and 29-11773 - Use of water before and after season dates is subordinate to other water rights having no subordinated early or late irrigation use and a priority date earlier than the date that a PD is entered for this right - Topaz Irrigation Company owns 51% of Dempsey-Topaz Canal system - Fish Creek Irrigation Company water is also carried in same canal from Fish Creek POD
29-11773	Dempsey Irrigation Company & Topaz Irrigation Company	8/7/1932	Portneuf River	32.0 cfs	9/16-10/31	- Topaz Irrigation Company owns 51% of Dempsey-Topaz Canal system - Fish Creek Irrigated Company water is also carried in this same canal system from Fish Creek POD - Use is limited to a diversion rate of 39.5 cfs when combined with 29-36 and 29-37 - Use of this right is limited to a total of 1429.8 acres when combined with 29-36, 29-37 and 29-180
29-47A	Lava Irrigation Company	7/1/1889	Portneuf River	2.26 cfs	4/15 - 9/15	Water delivered through Lava Irrigation Canal; total combined diversion limit of 22.76 cfs when combined with 29-48, 29-4467, and 29-10816; use of this right limited to 113 acres; use of this right limited to a combined total of 614.8 acres combined with twin 29-48,, 29-4467, and 29-10816.
29-48	Lava Irrigation Company	2/11/1904	Portneuf River	20.5 cfs	4/15 - 9/15	Water delivered through Lava Irrigation Canal; total combined diversion limit of 22.76 cfs when combined with 29-47A, 29-4467, and 29-10816; use of this right limited to a combined total of 614.8 acres combined with twin 9-47A,, 29-4467, and 29-10816
29-4467	Lava Irrigation Company	8/7/1932	Portneuf River	20.5 cfs	4/1-10/31	Water delivered through Lava Irrigation Canal; total combined diversion limit of 22.76 cfs when combined with 29-47A, 29-48 and 29-10816; use of this right limited to a combined total of 614.8 acres combined with twin 9-47A, 29-48 and 29-10816. This right also allows diversion of 0.12 cfs for year round stockwater use.

Primary Portneuf Water Users Association Water Rights						
No.	Name	Priority Date	Source	Max Div (cfs)	Season	Comments
29-10816	Lava Irrigation Company	8/7/1932	Portneuf River	2.26 cfs	4/1-10/31	Water delivered through Lava Irrigation Canal; total combined diversion limit of 22.76 cfs when combined with 29-47A, 29-48 and 29-4467; use of this right limited to a combined total of 614.8 acres combined with twin 9-47A, 29-48 and 29-4467. This right also allows diversion of 0.12 cfs for year round stockwater use.
29-147	Fish Creek Irrigation Company	3/1/1893	Fish Creek (trib to Portneuf and River)	4.9 cfs of irrigation (6 cfs total diversion)	4/15 - 9/15	Water is delivered through Fish Creek Irrigating Company Canal, which is shared with Dempsey-Topaz Canal and private rights - Use of water before and after season dates is subordinate to other water rights having no subordinated early or late irrigation use and a priority date earlier than the date that a PD is entered for this right
29-180	Topaz Irrigation Co	4/1/1883	Dempsey Creek (trib to Portneuf River)	13.44	4/15 - 9/15	- Topaz owns 51% of Dempsey-Topaz canal system - Canal also carries water for Fish Creek Irrigating Co. - Use of water before and after season dates is subordinate to other water rights having no subordinated early or late irrigation use and a priority date earlier than the date that a PD is entered for this right - Limited to a combined total of 861.3 acres when combined with 29-36, 29-37 and 29-11773