

**BEFORE THE DEPARTMENT OF  
NATURAL RESOURCES AND CONSERVATION  
OF THE STATE OF MONTANA**

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<b>IN THE MATTER OF CHANGE APPLICATION NO. 76G-30106785 BY CLARK FORK COALITION</b>	) ) ) ) )	<b>ORDER ON PRELIMINARY DETERMINATION TO GRANT CHANGE IN MODIFIED FORM FOLLOWING SHOW CAUSE HEARING</b>
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Pursuant to its authority under §§2-4-601 et seq., 85-2-310(1) MCA (2017), and Mont. Admin. R. 36.12.201 et. seq, and 36.12.501 et seq., the Department of Natural Resources and Conservation (Department) conducted a show cause hearing in this matter on March 20, 2018, to allow the Clark Fork Coalition (Applicant or “CFC”) to show cause by a preponderance of the evidence why Application to Change a Water Right No. 76G-30106785 should not be granted with modifications under the terms of the “Preliminary Determination to Grant in Modified Form” dated November 30, 2017. (Preliminary Determination to Grant in Modified Form or PDG)

**APPEARANCES**

Clark Fork Coalition appeared at the hearing by and through counsel Andrew Gorder. The following witnesses testified on behalf of the Applicant: Jason Lindstrom, fisheries biologist for Montana Dept. of Fish, Wildlife and Parks, and Andy Fischer, project manager for Clark Fork Coalition.

**EXHIBITS/INFORMATION CONSIDERED**

Department File 76G 30106785 by Clark Fork Coalition is included as part of the record in this proceeding. Information in this file was available to the Regional Office in making the final “Preliminary Determination to Grant in Modified Form.”

At the hearing, Clark Fork Coalition offered and the Hearing Examiner admitted the following exhibits:

**Exhibit CFC-1**: pages 3-78 and 3-79 from “Final Clark Fork River Basin Aquatic and Terrestrial Resources Restoration Plans” prepared by State of Montana Natural Resource Damage Program dated December 2012.

**Exhibit CFC-2**: A letter of support “re: Clark Fork Coalition’s change of use application for Racetrack Lake and Creek water” from Montana Fish, Wildlife and Parks consisting of 2 pages.

**Exhibit CFC-3**: One page aerial photograph/map titled “Racetrack Creek Place of Use by Reach” showing reaches of Racetrack Creek in whether they are gaining or losing reaches.

**Exhibit CFC-4**: One page showing two photographs titled “Racetrack Creek Before and After Flow Restoration” dated August 18 and September 10, 2011.

**Exhibit CFC-5**: The General Abstract of Water Right Statement of Claim 76G 91008-00 in the name of Clark Fork Coalition.

**Exhibit CFC-6**: A September 24, 1954 aerial photograph titled “Historic Use for Water Right # 76G 91008 00.”

**Exhibit CFC-7**: An aerial photograph titled “Map 1. Historic and claimed place of use for Claims 76G-91008-00, -121094-00, -1211097-00, -121095-00, -121099-00, and -121100; claims that were not activated during the 1972 irrigation season were excluded.”

**Exhibit CFC-8**: An undated aerial photograph (untitled) that some of the old ditches in the vicinity of Section 24 and 25 at interest in this proceeding.

**Exhibit CFC-9**: A September 24, 1954 aerial photograph titled “Historic Use Comparison.”

**Exhibit CFC-10**: An August 2, 1966 aerial photograph titled “Historic Use Comparison.”

**Exhibit CFC-11**: An aerial photograph depicting “Pre- and Post-1973 Place of Use.”

**Exhibit CFC-12**: An aerial photograph depicting “Racetrack Creek – Return Flow Receiving Reach.”

**Exhibit CFC-13**: An aerial photograph comparing August 17, 2011 and October 5, 2015 “Post – 1973 Irrigation.”

**Exhibit CFC-14**: A September 24, 1954 aerial photograph titled “DNRC Claimed Irrigation Expansion.”

**Exhibit CFC-15**: An August 2, 1966 aerial photograph titled “DNRC Claimed Irrigation Expansion.”

**Exhibit CFC-16**: An August 18, 1985 aerial photograph titled “Irrigation in Section 25.”

**Exhibit CFC-17**: Tables 7 and 8 from the Technical Report created in this matter and included in the file.

**Exhibit CFC-18**: An Abstract of Claim for Water Right 76G-091008-00 generated in August 1983.

The Hearing Examiner has taken notice of the entire application file in this matter and all evidence and exhibits received at the show cause hearing. Being fully informed in the premises, the Hearing Examiner makes the following Findings of Fact, Conclusions of Law, and Order:

### **PRELIMINARY MATTERS**

On November 4, 2016, the Clark Fork Coalition (the Applicant) submitted Application to Change Water Right No. 76G 30106785 to change Water Right Statement of Claim No. 76G

91008-00 to the Missoula Regional Office of the Department of Natural Resources and Conservation (the Department or DNRC). The Department published receipt of the Application on its website. The Department sent the Applicant a deficiency letter under §85-2-302, Montana Code Annotated (MCA), dated January 30, 2017. The Applicant responded with information dated April 24, 2017. The Application was determined to be correct and complete as of August 1, 2017.

The Department met with the Applicant on February 9<sup>th</sup> to discuss application deficiencies and conducted a site visit on June 9<sup>th</sup>, and once more on August 29<sup>th</sup> to discuss the Department's Technical Report. An Environmental Assessment for this Application was completed on November 14, 2017.

The Department issued its "Preliminary Determination to Grant in Modified Form" on November 30, 2017. The PDG states:

Subject to the terms and analysis in this Preliminary Determination Order, the Department preliminarily determines that this Application to Change Water Right No. 76G 30106785 should be granted in modified form subject to the following. The Department finds a lack of adverse effect to Racetrack Creek water users located between the historic point of diversion at the Racetrack Lake Dam and the secondary point of diversion at the Cement Ditch headgate as a result of this change. However, the Applicant did not prove a lack of adverse effect to water users downstream of the secondary point of diversion at the Cement Ditch headgate resulting from the enlargement of the consumed volumes of the supplemental statements of claim. Accordingly, the Applicant may protect instream 8.33 CFS up to the historically diverted volume of 433.33 AF from the historic point of diversion at the Racetrack Lake Dam to the secondary point of diversion at the Cement Ditch headgate located in the SESWSE of Section 16, T6N R10W, Powell County (not to exceed 7.5 CFS and 390 AF at the headgate), for the benefit of the fishery resource in Racetrack Creek, subject to the following water measurement and reporting condition: [omitted].

"[I]f the department proposes to grant a permit or change in appropriation right in modified form, the applicant must be given an opportunity to be heard." § 85-2-310(7)(a), MCA.

"The department shall serve notice of a preliminary determination to grant a permit or change in appropriation right in a modified form by first-class mail upon the applicant with the notice that the applicant may obtain a hearing pursuant to 2-4-604 to show cause by a preponderance of the evidence as to why the permit or change in appropriation right should not be preliminarily determined to be granted in the modified form by filing a request within 30 days after the notice is mailed. The notice must state that the permit or change in appropriation right will be preliminarily determined to be granted as modified unless a hearing is requested." 85-2-310(7)(b), MCA.

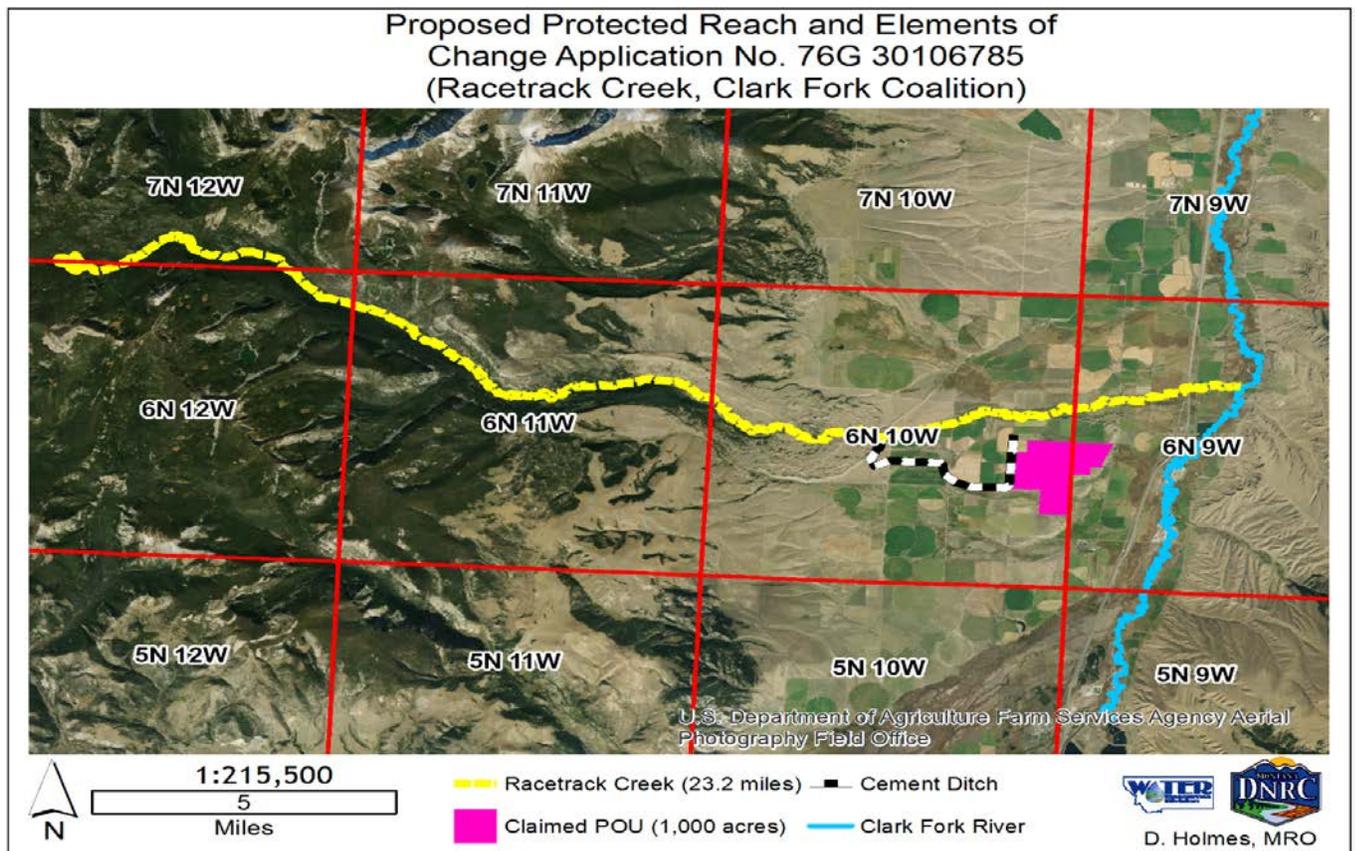
The Applicants were given the opportunity to show cause why “Preliminary Determination to Grant in Modified Form” No. 76G 30106785 should not be granted in modified form. A show cause hearing was scheduled and held on March 20, 2018 before this Hearing Examiner. At the show cause hearing, the Applicant, argued the fundamental distinction between storage waters and direct flow irrigation waters. Applicant also, in essence, argues that their water right, which has been severed from the irrigation use that it was previously used for, cannot now be used to account for the presumed increase in demand on other supplemental water rights which will continue to irrigate the lands on which their water right was beneficially used.

The Department has followed the proper procedure as provided in §§ 85-2-307, 85-2-310 and 2-4-604, MCA in this matter.

### **WATER RIGHT TO BE CHANGED AND ASSOCIATED CLAIMS**

1. The Applicant proposes to temporarily change the purpose and place of use of Statement of Claim 76G 91008-00 from irrigation to instream flow from May 1<sup>st</sup> to September 30<sup>th</sup> for the benefit of the fishery resource in Racetrack Creek, a 23-mile long tributary to the Clark Fork River, in Deer Lodge and Powell Counties. The proposed change results in a new place of use and purpose from the 1,000-acre claimed place of use to an instream appropriation of 8.33 CFS up to 433.33 AF (less conveyance losses) in Racetrack Creek. By the time the Racetrack Lake water reaches the Cement Ditch, where it was historically diverted for irrigation, there is a loss of 10%. Thus, the amount historically diverted into the Cement Ditch was 390.00 AF or 7.50 CFS. Applicant proposes to cease diversion of that 390.00 AF at a flow rate of 7.5 CFS and protect that amount of water below the Cement Ditch (taking into account gaining and losing reaches) to the confluence with the Clark Fork River, a distance of approximately six miles. The proposed new place of use will consist of the entirety of Racetrack Creek (23.2 miles) from the Racetrack Lake Dam to the confluence of the creek and the Clark Fork River (Map 1). No acres are proposed to be retired from irrigation, and the supplemental claims listed in Table 2 will continue to irrigate the current place of use. The Applicant proposes to release water for instream flow purposes in unison with the other storage water users when creek flows below the Branch Ditch decline to 7.5 CFS during the prescribed period of use – though the likeliest releases will occur in mid-July – until the lake has been drained. (PDG ¶ 1)

**Map 1. Elements of proposed change; Racetrack Creek comprises the proposed protected reach.**



2. Claim 76G 91008-00 is based on a December 4, 1896 appropriation made by Marco Vuscovich that was subsequently decreed in *Donich, et al. v. Johnson, et. al.*, Third Judicial District Court (Powell County) Case No. 2749 (May 17, 1939). Racetrack Lake is a snowmelt-fed reservoir that feeds into Racetrack Creek, and the primary point of diversion for Claim 76G 91008-00 is listed as the Racetrack Lake Dam, located in the NE of Section 5, Township 6 North Range 12 West, in Granite County. This claim lists a maximum volume of 433.33 acre-feet (AF) that may be stored in Racetrack Lake, and a flow rate of 8.33 cubic feet per second (CFS) that may be released from the lake into Racetrack Creek which acts as a natural carrier to convey water approximately 16.5 miles downstream to the second point of diversion at the Cement Ditch Headgate. The claimed place of use consists of 1,000 acres generally located in Section 24 and the NE of Section 25, T6N R10W, and the W2NE, NW, and N2SW of Section 19, T6N R9W, Deer Lodge County. The period of use for this water right is May 1<sup>st</sup> to September 30<sup>th</sup>, while the period of diversion is listed as October 15<sup>th</sup> to September 1<sup>st</sup>. In 2012, Claim 76G 91008-00 was purchased by the Applicant [from R Bar N Ranch] and subsequently severed from the historic place of use which is currently owned by the R Bar N Ranch. Table 1 summarizes the claimed elements of the water right proposed to be changed. (PDG ¶ 2)

**Table 1. Elements of Statement of Claim No. 76G 91008-00**

Claim	Purpose	Flow Rate/ Volume	Period of Use	Point of Diversion	Place of Use	Priority Date	Acres
76G 91008-00	Irrigation	8.33 CFS 433.33 AF	5/01 – 9/30	NE S. 5, T6N R12W	S. 24, NE S. 25, T6N R10W; W2NE, NW, & N2SW S. 19, T6N R9W	11/01/1895	1,000

3. Statement of Claim Nos. 76G 121094-00, 76G 121097-00, 76G 121095-00, 76G 121099-00, 76G 121100-00, 76G 121098-00, and 76G 121096-00 share the same place of use and are considered supplemental to Claim 76G 91008-00. Each of these direct flow supplemental Statements of Claim list irrigation as their purpose and a period of use spanning April 1<sup>st</sup> to November 4<sup>th</sup>. Only Claim 76G 91008-00 is proposed for change in this application. Table 2 summarizes the elements claimed by the supplemental water rights. (PDG ¶ 3)

**Table 2. Elements and provisions of supplemental Statement of Claim Nos. 76G 121094-00, 76G 121097-00, 76G 121095-00, 76G 121099-00, 76G 121100-00, 76G 121098-00, and 76G 121096-00**

Claim	Source	Flow Rate (CFS)	Point of Diversion	Place of Use	Priority Date	Acres
76G 121094-00	Little Modesty Creek	1.88	N2NE, NENW S. 25, T6N R10W	S2SE S. 24 & NE S. 25, T6N R10W	7/17/1899	180
76G 121097-00	Racetrack Creek	1.83	SESWSE S. 16, T6N R10W	S. 24, NE S. 25, T6N R10W; W2NE, NW, & N2SW S. 19, T6N R9W	4/2/1865	1000
76G 121095-00	Racetrack Creek	2.73	SESWSE S. 16, T6N R10W	S. 24, NE S. 25, T6N R10W; W2NE, NW, & N2SW S. 19, T6N R9W	4/1/1868	1000
76G 121099-00	Racetrack Creek	7.5	SESWSE S. 16, T6N R10W	S. 24, NE S. 25, T6N R10W; W2NE, NW, & N2SW S. 19, T6N R9W	4/1/1872	1000
76G 121100-00	Racetrack Creek	10	SESWSE S. 16, T6N R10W	S. 24, NE S. 25, T6N R10W; W2NE, NW, & N2SW S. 19, T6N R9W	4/1/1879	1000

Claim	Source	Flow Rate (CFS)	Point of Diversion	Place of Use	Priority Date	Acres
76G 121098-00	Racetrack Creek	3.75	SESWSE S. 16, T6N R10W	S. 24, NE S. 25, T6N R10W; W2NE, NW, & N2SW S. 19, T6N R9W	5/1/1889	1000
76G 121096-00	Racetrack Creek	7.5	SESWSE S. 16, T6N R10W	S. 24, NE S. 25, T6N R10W; W2NE, NW, & N2SW S. 19, T6N R9W	6/10/1957	1000

4. Statement of Claim 76G 91008-00 was purchased by the Clark Fork Coalition (CFC) in 2012 from R Bar N Ranch, LLC with funding provided by the State of Montana Natural Resource Damage Program and the Columbia Basin Water Transactions Program. The express purpose of the purchase of Claim 76G 91008-00 was to augment instream flow in Racetrack Creek, a chronically dewatered tributary to the Upper Clark Fork River. CFC asserts that Claim 76G 91008-00 “has been severed from the historic place of use” and that “CFC has no ownership interest in the place of use, nor does CFC have control over [R Bar N Ranch]’s current or future irrigation practices.” Claim 76G 91008-00 has been used to store a defined volume of water (433.33 acre-feet) in Racetrack Lake and has been used historically as supplemental irrigation on 1,000 acres in conjunction with the seven rights listed in Table 2. R Bar N Ranch, LLC is the owner of all seven remaining rights associated with the 1000 acre place of use. (File – Supplement to Form 606-IR, pp. 1)

5. CFC’s proposal included a measurement plan that includes coordination with the water commissioner and a proposal to take measurements at four different locations at least every two weeks. The proposed protected volume and flow rate by stream reach is included in Table 3. (PDG ¶ 5)

**Table 3. Proposed protected volume and flow rate by stream reach.**

Stream Reach	% Conveyance Loss	Diverted Volume Deduction	Remaining Protectable Volume	Flow Rate Deduction (26.3 days)	Remaining Protectable Flow Rate
Racetrack Lake Dam (RM 23.2)	-	-	433.33 AF	-	8.33 CFS
Lake to Cement Ditch Headgate	10%	43.33 AF	390 AF	0.83 CFS	7.5 CFS
Reach 3: Cement Ditch to Branch Ditch	<i>Gaining</i>	-	390 AF	-	7.5 CFS
Reach 2: Branch Ditch to Edge Lane Bridge	14.5%	56.55 AF	333.45 AF	1.09 CFS	6.41 CFS

Stream Reach	% Conveyance Loss	Diverted Volume Deduction	Remaining Protectable Volume	Flow Rate Deduction (26.3 days)	Remaining Protectable Flow Rate
Reach 1: Edge Lane to Clark Fork (RM 0)	<i>Gaining</i>	-	333.45 AF	-	6.41 CFS

### **APPLICANT’S ARGUMENTS AT HEARING**

6. Applicant makes three arguments at the Show Cause Hearing why the PDG in modified form is in error. Those arguments can be summarized as follows:

*a. Because Claim 76G 91008-00 is a storage right claim, no downstream appropriator has any interest in it and cannot interfere with the storage right owners use of the water. CFC cites Federal Land Ban v. Morris, 112 Mont. 445, 456, 116 P.2d 1007, 1011 (1941), “[A]s to artificial increase in the flow of a stream, the lower owner has not interest therein and cannot, as a matter of right, insist upon its being kept up or upon any advantages to be derived therefrom.” CFC also relies on previous Department precedent in In the Matter of Application for Beneficial Water User Permit No. 40J 27775, 727757, 27759, at 16-17, (1982) (“[I]t is well established that senior appropriators are not entitled to that quantity of water made available to the source of supply by the exertions of another appropriator. ... It is therefore apparent that Objectors [...] will under no events be entitled to that quantity of water in Applicant’s reservoir that was stored at such times that it would have otherwise gone to waste.”).*

*b. The findings and conclusions found in the PDG ignore the fact that Claim 76G 91008-00 has been severed from the historical place of use and CFC can do nothing to alter the irrigation practices of a separate individual [R Bar N Ranch and their remaining supplemental irrigation rights].*

*c. In fact, on the ground, the amount of water historically used to irrigate the 1000 acre place of use has decreased.*

7. CFC maintains that because this change is being made to a storage water right that it is not “limited to the amount of water historically ‘consumed’ because none of this water right was part of the natural flow of the stream once it was put into storage and later released,” and that based on two recent Montana Supreme Court cases, “releases of stored water are not part of the natural flow of the stream because water was put into storage much earlier in the season, and thus a consumptive use analysis does not accurately reflect changes from historic use.

Instead, the relevant inquiry is to ensure that the amount of water released from storage is not enlarged as a result of this change authorization.” (PDG ¶ 9)

## **FINDINGS OF FACT**

### **Change Criteria**

8. The Department is authorized to approve a change if the applicant meets its burden to prove the applicable § 85-2-402, MCA, criteria by a preponderance of the evidence. Matter of Royston, 249 Mont. 425, 429, 816 P.2d 1054, 1057 (1991); Hohenlohe v. DNRC, 2010 MT 203, ¶¶ 33, 35, and 75, 357 Mont. 438, 240 P.3d 628 (an applicant’s burden to prove change criteria by a preponderance of evidence is “more probably than not.”); Town of Manhattan v. DNRC, 2012 MT 81, ¶8, 364 Mont. 450, 276 P.3d 920. Under this Preliminary Determination, the relevant change criteria<sup>1</sup> in §85-2-402(2), MCA, are:

(2) Except as provided in subsections (4) through (6), (15), (16), and (18) and, if applicable, subject to subsection (17), the department shall approve a change in appropriation right if the appropriator proves by a preponderance of evidence that the following criteria are met:

(a) The proposed change in appropriation right will not adversely affect the use of the existing water rights of other persons or other perfected or planned uses or developments for which a permit or certificate has been issued or for which a state water reservation has been issued under part 3.

.....

(c) The proposed use of water is a beneficial use.

9. In addition to the applicable §85-2-402(2), MCA, criteria, an applicant for a temporary change authorization for instream flow must comply with the requirements and conditions set forth in §§ 85-2-407 and -408, MCA. Section 85-2-408, MCA provides in part:

(1) The department shall accept and process an application for a temporary change in appropriation rights to maintain or enhance instream flow to benefit the fishery resource under the provisions of 85-2-402, 85-2-407, and this section. The application must:

(a) include specific information on the length and location of the stream reach in which the streamflow is to be maintained or enhanced; and

(b) provide a detailed streamflow measuring plan that describes the point where and the manner in which the streamflow must be measured.

.....

(3) In addition to the requirements of 85-2-402 and 85-2-407, an applicant for a change authorization under this section shall prove by a preponderance of evidence that:

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1. The adequacy of diversion and possessory interest criteria set forth in 85-2-402(2)(b) and (d), MCA, do not apply to temporary changes for instream flow protection.

(a) the temporary change authorization for water to maintain and enhance instream flow to benefit the fishery resource, as measured at a specific point, will not adversely affect the water rights of other persons; and

(b) the amount of water for the proposed use is needed to maintain or enhance instream flows to benefit the fishery resource.

(4) The department shall approve the method of measurement of the water to maintain and enhance instream flow to benefit the fishery resource through a temporary change authorization as provided in this section.

....

(7) The maximum quantity of water that may be changed to maintain and enhance streamflows to benefit the fishery resource is the amount historically diverted. However, only the amount historically consumed, or a smaller amount if specified by the department in the lease authorization, may be used to maintain or enhance streamflows to benefit the fishery resource below the existing point of diversion.

10. The evaluation of a proposed change in appropriation does not adjudicate the underlying right(s). The Department's change process and conditions only address the water right holder's ability to make a different use of that existing right. Hohenlohe, at ¶¶ 29-31; Town of Manhattan, at ¶8.

#### Historic Use

11. Claims 76G 121094-00, 76G 121097-00, 76G 121095-00, 76G 121099-00, 76G 121100-00, 76G 121098-00, or 76G 121096-00 are not proposed to be changed; however, the Department must consider these supplemental claims as part of this change per ARM 36.12.1902(6) and due to the Applicant's assertion that these claims alone will be able to provide enough water to continue irrigation at the current place of use post-change. (PDG ¶ 4). The historic use of Claim 76G 91008-00 must be evaluated in conjunction with all the supplemental claims in order to make a determination as to potential adverse effect from the proposed change.

#### Historic Diverted Volume

12. The source of water for Claim 76G 91008-00 is Racetrack Lake in Granite County. Racetrack Lake Dam is listed as the point of diversion, and Racetrack Creek is used as a natural carrier of water to the secondary point of diversion. The outlet of Racetrack Lake Dam consists of a 24-inch concrete pipe that has a capacity of 50 CFS. The secondary point of diversion consists of a headgate on Racetrack Creek that diverts water into the Cement Ditch, which is used to convey water 5.5 miles to the place of use. The Cement Ditch headgate is located in the SESWSE of Section 16, T6N R10W, Powell County. The Cement Ditch has a

141.2 CFS design capacity and a maximum capacity of 235 CFS as calculated by the Applicant. (PDG ¶ 10)

13. Claim 76G 91008-00 has historically been released at its full flow rate from Racetrack Lake typically beginning in July (around the 24<sup>th</sup>) until the lake is drained in August. At a continuous flow rate of 8.33 CFS, 433.33 AF of water can be released in 26.3 days ( $433.33 \text{ AF} \div (8.33 \text{ CFS} \times 1.98 \text{ AF/day}) = 26.3 \text{ days}$ ). When Claim 76G 91008-00 was decreed in 1939, a 10% rate of loss was attributed to the claim due to conveyance down Racetrack Creek to the Cement Ditch. This 10% loss results in a decreased flow rate of 7.5 CFS (up to 390 AF) that may be delivered through the Cement Ditch. (PDG ¶ 12)

14. The Department conducted an extensive analysis of the diverted flow and volume of all the associated rights historically used to irrigate (what is now) the R Bar N Ranch. That analysis is included in this Order as Appendix A which is an excerpt from the PDG, the factual findings from which this Hearing Examiner adopts in this Order. Ultimately, the Department found that Claim 76G 91008-00 was fully active between July 24 through August 18 annually. During that time period, Claim 76G-91008-00 contributed 7.5 CFS during the 26.3-day period which results in a total contribution of 390.56 AF to the irrigated place of use. This Hearing Examiner agrees with this analysis conducted by the Department. (Appendix A – (PDG ¶ 13 – 20))

#### Historic Consumed Volume

15. The Department also conducted an extensive analysis of the consumed volume associated with all the rights historically used to irrigate the R Bar N Ranch. That analysis found that Claim 76G 91008-00 contributed 66.53 AF of consumed volume out of a total seasonal consumed volume of 769.78 AF at the place of use. This Hearing Examiner agrees with the consumed volume in the Department's analysis, which is attached with this Order as Appendix B, and the factual findings contained therein are adopted by this Hearing Examiner in this Order. Appendix B is an excerpt from the PDG. (Appendix B – (PDG ¶¶ 21 – 25))

#### Adverse Effect

16. In addition, the Department conducted an extensive and thorough analysis of potential adverse effects which may result in CFC's proposal. That analysis is attached to this Order as Appendix C. This Hearing Examiner agrees with the factual determinations made by the Department regarding adverse effect, however, he disagrees with the Department's determination of how that adverse effect is accounted for, *infra* @ Analysis/Conclusions of Law.

17. In essence, regarding Claim 76G 91008-00, the Department finds that “. . . the volume of water consumed by the *remaining* supplemental Racetrack Creek claims (76G 121097-00, 76G 121095-00, 76G 121099-00, and 76G 121100-00) will collectively increase by the consumed volume historically attributable to Claim 76G 91008-00 (66.53 AF).” (emphasis provided). (Appendix C – PDG ¶ 41). The Department finds that:

“The increase in consumed volume experienced by the supplemental Racetrack Creek claims as found by the Department results directly from the fact that the post-change burden of irrigating the same 722-acre historic place of use and *consuming* all 715.75 AF that were historically accounted for by six water rights will be collectively assumed by the remaining five supplemental claims. In this scenario, Claims 76G 121097-00, 76G 121095-00, 76G 121099-00, and 76G 121100-00 will collectively consume an additional 66.53 AF of water on top of their own historic consumed volumes . . . .”

(Appendix C – PDG ¶ 43)

Finally, the Department finds that:

“Though the diverted volume of water required to irrigate the current place of use is smaller than what was historically required due to the installation of seven center pivots on and around the historic place of use, the Department finds that *the Applicant* has not adequately ensured that the post-change *consumed* volumes *attributable to each supplemental statement of claim* will not be greater than what was consumed historically. As the Applicant did not provide an adequate plan to address *the increase in consumption assumed by the remaining supplemental claims that will continue to irrigate the entire historic place* of use following this change, the Department finds that the Applicant has not proven that this proposed change will not cause adverse effect to Racetrack Creek water users downstream of the secondary point of diversion.” (emphasis provided)

(Appendix C – PDG ¶ 44)

18. The Department ultimately concludes, in the Conclusions of Law from the PDG, that while the Applicant’s proposal to protect 833 CFS up to 433.33 AF from the Racetrack *Dam to the Cement ditch* will not adversely affect other water users, “. . . the evidence establishes that authorizing protection of the flow rate and volume proposed by the Applicant downstream of the secondary point of diversion would result in potential adverse effect and an *expansion of the underlying water rights* used for irrigation as the proposed change does not result in the retirement of any irrigated acreage” (emphasis provided). (PDG ¶ 65)

### **ARGUMENTS/ANALYSIS/CONCLUSIONS OF LAW**

- I.
  - b. *The findings and conclusion found in the PDG ignores the fact that Claim 76G 91008-00 has been severed from the historical place of use and CFC can do nothing to*

*alter the irrigation practices of a separate individual [R Bar N Ranch and their remaining supplemental irrigation rights].*

19. Clark Fork Coalition purchased Claim 76G 91008-00 from R Bar N Ranch in 2012. Montana law is clear that water rights can be transferred (bought and sold) independent of the land to which they were originally appurtenant. *Osnos Livestock Co. et. al. v. Warren*, 103 Mont. 284, 62 P.2d 206 (1936) (By the transfer of a water right no greater burden is placed upon the stream than that obtained prior to the transfer, for one who purchases a water right independent of the land to which it was theretofore appurtenant does not thereby enlarge or extend the right, and one who purchases such a right is entitled to do only those things which the original owner of the water right might have done.) (FOF 4)

20. Changing the place/purpose of use of a water right is a right granted by the legislature subject to statutory conditions. 85-2-402(1), 85-2-102(6), MCA. This Hearing Examiner is unaware of any Montana law that is directly on point regarding changing a water right which was previously used as a supplemental right to irrigate acreage in conjunction with other rights, and which has now been sold to a separate entity and “severed” from that supplemental use. In Oregon it has been said that “[i]t is settled beyond dispute that a water right may be sold and transferred and *its* place of use changed, when such a change does not injure the rights of others” (emphasis provided). *Haney v. Neace-Stark Co.*, 109 Ore. 93, 216 P.2d 757 (1923).

The Supreme Court of Colorado has stated that “a water right is a property right separate and apart from the land which it is used. The right to change the place of use is inherent as one of the incidents of ownership, provided only that the rights of others are not infringed.” *Nielson v Newmyer*, 123 Colo. 189, 228 P.2d 456 (1951).

21. Montana’s Water Right Claim Examination Rules define a “Supplemental Rights” as “separate water rights for the same purpose, *owned by the same claimant*, and used on overlapping places of use” (emphasis provided). CFC’s purchase of Claim 76G 91008 thus extinguished its status as a supplemental claim to the remaining seven claims retained by R Bar N Ranch and the 1000 acre place of use. (Water Right Claim Examination Rules Amended by the Montana Supreme Court, Rule 2(a)(67); ¶ 3, *supra*)

22. Claim 76G 91008-00 under its current ownership now stands alone as a separate water right which can be changed independent from other water rights including those to which it was previously used as a supplement with other irrigation water rights to irrigate a common 1000 acre place of use. (COL 19)

II. a. Because Claim 76G 91008-00 is a storage right claim, no downstream owner has any interest in and cannot interfere with the storage right owners use of the water. CFC cites Federal Land Ban v. Morris, 112 Mont, 445, 456, 116 P.2d 1007, 1011 (1941), “[A]s to artificial increase in the flow of a stream, the lower owner has not interest therein and cannot, as a matter of right, insist upon its being kept up or upon any advantages to be derived therefrom.” CFC also relies on previous Department precedent in In the Matter of Application for Beneficial Water User Permit No. 40J 27775, 727757, 27759, at 16-17, (1982) ([I]t is well established that senior appropriators are not entitled to that quantity of water made available to the source of supply by the exertions of another appropriator. ... It is therefore apparent that Objectors [...] will under no events be entitled to that quantity of water in Applicant’s reservoir that was stored at such times that it would have otherwise gone to waste.”).

23. Claim 76G 91008-00, as a Claim that now stands alone, can be changed independently from the *future* uses of those claims to which it was previously supplemental. CFC is correct in that Claim 76G 91008-00 as a *storage right*, is immune from having other water users insist on it being used for their benefit. (Federal Land Ban v. Morris, 112 Mont, 445, 456, 116 P.2d 1007, 1011 (1941), In the Matter of Application for Beneficial Water User Permit No. 40J 27775, 727757, 27759). That, however, does not end the enquiry into this matter. “The storage of water in and of itself is not a beneficial use, rather it is incidental to a beneficial use.” In the Matter of the Application for Beneficial Water Use Permit No. 53221-s40Q by John E. and Betty J. Carney, Proposal for Decision, DNRC 1984 (citing Federal Land Bank). CFC is also correct in their statement that “...the storage appropriator is protected in his storage investment *to the extent* of his investment (emphasis in original). (Brief in Support of Applicant’s Legal Arguments, pp 5).

24. CFC asserts that they can protect the full amount of water which was historically diverted into the Cement Ditch (taking into account gaining and losing reaches) in the reach of Racetrack Creek below the Cement Ditch. (Application Supplement to Form 606-IR, pp. 11). Both the law and CFC’s assertions belie that argument. While CFC purchased Claim 76G 91008-00 and it now stands alone without *future* regard to the water rights to which it was previously supplemental, CFC admits that their purchase of Claim 76G 91008-00 “is protected . . . to the extent of their investment.” Because Claim 76G 91008-00 is a storage claim which was historically used for the beneficial use of irrigation, the “extent of their investment” consists of both their rights to store, and use that water without interference, *together* with the historic beneficial use to which it was used.

25. The Department is obligated by statute to ensure that a change in appropriation right does not result in adverse effect to other water right holders. 85-2-402(2)(a), MCA

26. 85-2-408(8), MCA, provides:

The maximum quantity of water that may be changed to maintain or enhance streamflows to benefit the fishery resource is the amount historically diverted. However, only the amount historically consumed . . . may be used to maintain or enhance streamflows to benefit the fishery resource below the existing point of diversion.

Three hundred ninety (390.00) AF of claim 76G 91008-00 was historically diverted into the Cement Ditch (which represents the entirety of Claim 76G 91008-00 after release from Racetrack Lake and losses down to the Cement Ditch). Of the 390.00 AF of Claim 76G 91008-00 diverted for irrigation on the 1000 acre place of use, 66.53 AF was consumed. (¶ 1, 5, FOF 11\*). Thus, 323.47 AF of Claim 76G 91008-00 potentially returned as return flow below the point of diversion and the irrigated place of use. As defined by the Department, return flow is “that part of a diverted flow which is applied to irrigated land and is not consumed and returns underground to its original source or another source of water, and to which other water users are entitled to a continuation of, as part of their water right.” (ARM 36.12.101(64)). The record is not clear as to the exact amounts, timing, and location of return flows from the irrigated place of use. Therefore, the Hearing Examiner concludes, pursuant to § 85-2-408(8) that only 66.53 AF of water historically diverted may be protected below the Cement Ditch.

27. Applicant’s proposal to protect 833 CFS up to 433.33 AF of Claim 76G 91008-00 from the Racetrack *Dam to the Cement ditch* will not adversely affect other water users and 66.53 AF of Claim 76G 91008-00 may be protected below the Cement Ditch to the confluence with the Clark Fork River without potential adverse effect to other water users, subject to the measuring conditions proposed by CFC as limited by the 66.53 AF that may be protected.

III. c. *In fact, on the ground, the amount of water historically used to irrigate the 1000 acre place of use has decreased.*

28. Given the resolution of this matter in I. and II., *supra*, this argument need not be addressed.

#### Beneficial Use/Fishery Resource

29. This Hearing Examiner adopts the Findings of Fact and Conclusions of Law found in the PDG at ¶ 45 – 46, with the addition of 66.53 AF that can be protected from the Cement Ditch to the confluence with the Clark Fork River.

## CONCLUSION

30. This Hearing Examiner concludes that the Applicant may protect Claim 76G 91008-00 in the amount of 8.33 CFS up to 433.33 AF from the Racetrack Creek Dam to the Cement Ditch and may protect 66.53 AF of Claim 76G 91008-00 below the Cement Ditch to the confluence with the Clark Fork River.

## PRELIMINARY DETERMINATION

Application to Change an Existing Irrigation Water Right No. 76G 30106785 by Clark Fork Coalition is hereby **GRANTED IN MODIFIED FORM** as follows: Applicant may protect Claim 76G 91008-00 for purpose of instream flow to protect the fishery resource in the amount of 8.33 CFS up to the historically diverted volume of 433.33 AF from the historic point of diversion at the Racetrack Lake Dam to the secondary point of diversion at the Cement Ditch headgate located in the SESWSE of Section 16, T6N R10W, Powell County (not to exceed 7.5 CFS and 390 AF at the headgate), and may protect 66.53 AF from the historic secondary point of diversion described above to the confluence with the Clark Fork River, subject to the following water measurement and reporting condition:

THE APPROPRIATOR MAY PROTECT 8.33 CFS UP TO 433.33 AF FOR THE BENEFIT OF THE FISHERY RESOURCE IN RACETRACK CREEK FROM THE HISTORIC POINT OF DIVERSION AT THE RACETRACK LAKE DAM TO THE SECONDARY POINT OF DIVERSION AT THE CEMENT DITCH HEADGATE IN THE SESWSE OF SECTION 16, T6N R10W, POWELL COUNTY (NOT TO EXCEED 7.5 CFS AND 390 AF AT THE CEMENT DITCH), AND MAY PROTECT 66.53 AF FROM THE HISTORIC SECONDARY POINT OF DIVERSION TO THE CONFLUENCE WITH THE CLARK FORK RIVER. THE APPROPRIATOR SHALL COLLECT STREAMFLOW MEASUREMENTS ON A WEEKLY BASIS (MINIMUM) AT THE OUTLET OF RACETRACK LAKE AND AT A POINT IMMEDIATELY BELOW THE CEMENT DITCH HEADGATE ONCE LAKE RELEASES HAVE COMMENCED. THE APPROPRIATOR SHALL ENSURE THAT STORED WATER RELEASED FROM RACETRACK LAKE FOR FISHERY PURPOSES IS NOT DIVERTED INTO THE CEMENT DITCH HEADGATE AT ANY POINT DURING THE TEMPORARY CHANGE. THE APPROPRIATOR SHALL ANNUALLY COORDINATE WITH THE OTHER TWO STORAGE WATER RIGHT HOLDERS (CLAIMS 76G 214587-00 AND 76G 214588-00) TO ESTABLISH A RELEASE SCHEDULE. THE APPROPRIATOR SHALL REPORT TO THE DEPARTMENT THE STREAMFLOW DATA COLLECTED IN IMPLEMENTATION OF THE STREAMFLOW MEASUREMENT PLAN REQUIRED BY MCA 85-2-408(1)(B). DOCUMENTATION OF THE LOCATION OF THE MEASURING POINTS AND MEASUREMENT METHODOLOGY MUST BE PRESENTED WITH THE FLOW MEASUREMENT RECORDS. THE MEASUREMENT REPORT SHALL BE SUBMITTED BY NOVEMBER 30 OF EACH YEAR AND UPON REQUEST AT OTHER TIMES DURING THE YEAR. RECORDS MUST BE SENT TO THE WATER RESOURCES REGIONAL OFFICE. FAILURE TO SUBMIT RECORDS MAY BE CAUSE FOR REVOCATION OF THIS TEMPORARY CHANGE AUTHORIZATION.

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## NOTICE

This Order is the Department's final decision that this application should proceed in modified form for purposes of public notice and objections. The applicant has exhausted all administrative remedies before the Department for purposes of its determination that the application should be granted in modified form. Therefore, this Order is subject to judicial review in accordance with the Montana Administrative Procedure Act (Title 2, Chapter 4, Mont. Code Ann.) by filing a petition in the appropriate court within 30 days after service of the order.

If a petition for judicial review is filed and a party to the proceeding elects to have a written transcript prepared as part of the record of the administrative hearing for certification to the reviewing district court, the requesting party must make arrangements for preparation and payment of the written transcript. If no request is made, the Department will transmit only a copy of the audio recording of the oral proceedings to the district court.

If you do not file a petition for judicial review within 30 days, the Department will provide public notice of this Application and the Department's Preliminary Determination to Grant in Modified Form pursuant to § 85-2-307, MCA. The Department will set a deadline for objections to this Application pursuant to §§ 85-2-307, and -308, MCA. If this Application receives no valid objection or all valid objections are unconditionally withdrawn, the Department will grant this Application as herein approved. If this Application receives a valid objection, the application and objection will proceed to a contested case proceeding pursuant to Title 2 Chapter 4 Part 6, MCA, and § 85-2-309, MCA. If valid objections to an application are received and withdrawn with stipulated conditions and the department preliminarily determined to grant the permit or change in appropriation right, the department will grant the permit or change subject to conditions necessary to satisfy applicable criteria.

Dated this 26<sup>th</sup> day of June 2018.

/Original signed by David A. Vogler/

David A. Vogler, Hearing Examiner  
Department of Natural Resources  
and Conservation  
Water Resources Division  
P.O. Box 201601  
Helena, Montana 59620-1601  
(406) 444-6835

**CERTIFICATE OF SERVICE**

This certifies that a true and correct copy of the ORDER ON SHOW CAUSE; GRANT WITH MODIFICATIONS was served upon all parties listed below on this 26<sup>th</sup> day of June 2018 by first class United States mail.

ANDREW GORDER - ATTORNEY  
CLARK FORK COALITION  
PO BOX 7593  
MISSOULA, MT 59807-7593

Cc:  
DNRC, MISSOULA REGIONAL OFFICE  
PO BOX 5004  
MISSOULA, MT 59806-5004

/Original signed by Jamie Price/  
Jamie Price, Hearings Assistant  
Hearings Unit, (406) 444-6615

## **APPENDIX A (from PDG)**

*(numbering corresponds to the PDG)*

13. The Applicant submitted a Historical Water Use Addendum requesting that the Department consider historic 1972 commissioner records as evidence to calculate historic diverted volume and flow rate and deviate from the methods outlined in ARM 36.12.1902(10). The Department determined that it was appropriate to deviate from rule to calculate historic diverted volume using the commissioner records.

14. The 1972 commissioner records contain a series of four record intervals which list the total amount of water delivered in miner's inches (MI) to all Cement Ditch water users during each period: May 8<sup>th</sup> through June 14<sup>th</sup> (27,110 MI in 38 days), June 15<sup>th</sup> through July 15<sup>th</sup> (26,400 MI in 31 days), July 16<sup>th</sup> through August 31<sup>st</sup> (33,980 MI in 47 days), and September 1<sup>st</sup> through September 30<sup>th</sup> (7,580 MI in 30 days). Each water delivery sent through the Cement Ditch to the historic place of use associated with Claim 76G 91008-00 was made to Bud Jacobson, the water right owner listed at the time of record. The third record interval is of greatest interest to the Department since the water commissioner noted that a trip was made to Racetrack Lake at some point between July 16<sup>th</sup> and August 31<sup>st</sup> which corroborates the Applicant's statement that water was typically released from the lake beginning July 24<sup>th</sup>. The timeframe of this record (47 days) exceeds the number days stored water can be released at the full flow rate (26.3 days).

15. When averaged out for each day in the 1972 commissioner record, the Applicant's method for estimating daily historic diverted volumes approximates that 722.98 inches (18.07 CFS) (1/47th of 33,980 MI) were delivered through the Cement Ditch for each of the 47 days of the third record interval. Calculating a daily flow rate with this method assumes that the portions of Claim 76G 121100-00 (#15) and 76G 121099-00 (#8), which according to the Applicant were cut back due to priority sometime in the third week of July and later in the season (respectively) – thus initiating the release of water from Racetrack Lake – came back into priority roughly 26 days later when the lake was drained and Claim 76G 91008-00 was not in use for the rest of the season (Table 4). Table 4 below illustrates a slower flow rate being released from Racetrack Lake due to the Applicant's interpretation of water being released over 30 days, rather than 26.3 days at the full flow rate. The Department excluded Claims 76G 121098-00 and 76G 121096-00 from its historic use analysis based on the Applicant's narrative stating that these claims were only available during exceptionally wet years. (Note: the flow rates shown in Table 4 were calculated by adding the flow rate claimed by one water right to the flow rates of the more senior supplemental claims, i.e. 1.88 CFS with Claim 76G 121094-00 + 1.83 CFS claimed by 76G 121097-00 = 3.71 CFS + 2.73 CFS claimed by 76G 121095-00 = 6.44 CFS, etc.; in the event that all supplemental claims are available, the total flow rate for those claims would equal 23.94 CFS.)

**Table 4. Abbreviated table submitted by Applicant showing 1972 daily deliveries made to Bud Jacobson using a daily averaging method (7/16 to 8/31):**

Day	Daily Delivery (MI)	Daily Delivery (CFS)	76G 91008 (7.5 CFS)	76G 121094 (1.88 CFS)	76G 121097 (1.83 CFS)	76G 121095 (2.73 CFS)	76G 121099 (7.5 CFS)	76G 121100 (10 CFS)
7/16-7/23	722.98	20		1.88	3.71	6.44	13.9	23.94
7/24-8/24			6.14	8.02	9.85	12.58	20.08	30.08
8/25-8/31				1.88	3.71	6.44	13.9	23.94

16. The Applicant states that lake releases were historically initiated when Claim 76G 121100-00 had to be cut back, and that the claim typically fell out of priority once the lake was drained; however, as observed in FOF 15, the Applicant’s interpretation of historic daily deliveries does not accurately reflect this narrative. Table 4 implies that Racetrack Creek water is able to be diverted at a sustained flow rate before, during, and even after the lake is drained, and that the flow rate able to be diverted using Claim 76G 121100-00 ‘rebounds’ after lake releases cease.

17. Because the commissioner’s third record interval does not specify a date when stored water releases were initiated, the Department employed a different averaging method to estimate how much and at what rate water was pulled from Racetrack Creek through the Cement Ditch. This information is required to reliably determine how much water was delivered with all of Bud Jacobson’s claims via the Cement Ditch before, during, and after the 26.3-day period when lake releases were occurring. The Department’s averaging method accounts for the fact that direct flows in Racetrack Creek were naturally dropping during this period to the point that stored water had to be released, and that after the reservoir was drained natural flows in Racetrack Creek were lower than when the releases from the lake were initiated.

18. Using the 1972 Racetrack Creek commissioner records provided by the Applicant, the Department established how the 33,980 MI delivered to Bud Jacobson from Racetrack Creek via the Cement Ditch were distributed between July 16<sup>th</sup> and August 24<sup>th</sup> (i.e. the third record interval during which Claim 76G 91008-00 was activated and water was released from Racetrack Lake) in a manner that more reasonably reflects the Applicant’s historic use narrative. The Department assumed the following: the average daily water delivery rate evidenced in the previous commissioner record period spanning June 15<sup>th</sup> through July 15<sup>th</sup> (851.61 MI per day for 31 days) continued until Claim 76G 121100-00 (#15) was cut back and water was first released from Racetrack Lake on the date specified by the Applicant (July 24<sup>th</sup>); Claim 76G 91008-00 was delivered at its full flow rate until the lake was drained 26.3 days later; after the lake was drained around August 19<sup>th</sup> and Claim 76G 91008-00 was deactivated, Claim 76G 121100-00 (#15) fell out of priority and was inactive for the rest of the season; Claim 76G 121099-00 (#8) remained fully activated until the lake was drained at which point it was cut back; only Claims 76G 121097-00 (#2) and 76G 121095-00 (#4) remained in full service for the duration of the 47-day commissioner record of interest. Historic diverted volumes/flow rates calculated by the Department are

assumed to be close approximations of actual delivery amounts as the deliveries reported by the commissioner appear to be rounded.

19. The Department’s averaging method assumed that the average daily rate that water was delivered from June 15<sup>th</sup> to July 15<sup>th</sup> (851.61 MI/21.29 CFS per day) during the second record interval continued to be delivered until July 23<sup>rd</sup>. The amount remaining for delivery from July 24<sup>th</sup> when stored water was released to the end of the third record interval on August 31<sup>st</sup> was then divided by the 39 days remaining in this record interval to arrive at a mean daily delivery rate (696.59 MI or 17.41 CFS/day) for those 39 days. Next, the portion of total daily deliveries made that at this stage in calculations are shown to be attributed to Claim 76G 121100-00 (#15, and which according to the Applicant’s narrative falls out of priority after the lake is drained) between the second half of August 19<sup>th</sup> through August 31<sup>st</sup> (5.35 CFS or approximately 213.99 MI) was moved/added to the daily deliveries occurring between July 24<sup>th</sup> and August 19<sup>th</sup> (5.35 CFS + 17.41 CFS = 22.76 CFS). The amount remaining for delivery between the latter part of August 19<sup>th</sup> and August 31<sup>st</sup> (approximately 3,221 MI) was then divided by the 12.7 remaining delivery days to arrive at a total daily delivery average for the duration of that period (253.62 MI or 6.34 CFS/day). As the water rights relevant to this application list claimed flow rates in CFS rather than MI, volumes for each claim were derived from the daily CFS delivery values that were initially converted from daily MI deliveries.

20. The Department finds that for the period between July 24<sup>th</sup> and August 19<sup>th</sup>, approximately 23,948 MI (910.58 MI or 22.76 CFS per day) were delivered to the historic place of use via the Cement Ditch. Claims 76G 121097-00, 76G 121095-00, and 76G 121099-00 remained in full service during this time, while 3.2 CFS out of a claimed 10 CFS could be diverted with Claim 76G 121100-00. Once Racetrack Lake was drained and Claim 76G 91008-00 no longer provided irrigation water, Claim 76G 121100-00 was inactive for the rest of the season and only 1.78 CFS out of a claimed 7.5 CFS could be used with Claim 76G 121099-00. The Department’s interpretation of the supplemental relationship for the commissioner record covering deliveries made from July 16<sup>th</sup> to August 31<sup>st</sup> reasonably reflects the Applicant’s narrative of the 1972 water commissioner records describing how the direct flow and storage water rights fell into and out of priority around the time Claim 76G 91008-00 was in use (Tables 5 and 6).

**Table 5. Supplemental relationship between Claim 76G 91008-00 and the direct flow Racetrack Creek claims that were activated during the 1972 irrigation season, as well as delivery volumes.**

Inactive	Partially Active	Fully Active	Claims fulfilled with water delivered through Cement Ditch headgate				
			76G 91008 (Lake)	76G 121097 (#2)	76G 121095 (#4)	76G 121099 (#8)	76G 121100 (#15)
Delivery Period (Days)	Water Delivered MI/Day (Total)	CFS/Day (Total AF)	Claimed 7.5 CFS	Claimed 1.83 CFS	Claimed 2.73 CFS	Claimed 7.5 CFS	Claimed 10 CFS
<i>Total ≈ 27,110 MI (1,342.29 AF) delivered between 5/8 and 6/14 (38 days)</i>							
5/8 - 6/14	713.42	17.84		1.83	2.73	7.50	5.78
<i>Total ≈ 26,400 MI (1,306.79 AF) delivered from the beginning of 6/15 through 7/15 (31 days)</i>							
6/15 - 7/15	851.61	21.29		1.83	2.73	7.50	9.23

<i>Total ≈ 33,980 MI (1,681.31 AF) delivered between 7/16 and 8/31 (47 days)</i>								
7/16 - 7/23 (8)	851.61 (6,814)	21.29 (337.23)		1.83	2.73	7.50	9.23	
7/24 - 8/19 (26.3)	910.58 (23,943)	22.76 (1,184.65)	7.50	1.83	2.73	7.50	3.20	
8/19 - 8/31 (12.7)	253.62 (3,221)	6.34 (159.43)		1.83	2.73	1.78		
<i>Total ≈ 7,580 MI (375.4 AF) delivered between 9/1 and 9/30 (30 days)</i>								
9/1 - 9/30	252.66	6.32		1.83	2.73	1.76		
<i>Total ≈ 95,070 MI (4,705.79 AF) delivered via the Cement Ditch between 5/8/1972 and 9/30/1972 (146 days)</i>								

(Note: The total 1,184.65 AF volume diverted between 7/24 and 8/19 shown in this table excludes an additional 0.55 AF that can be diverted when 7.5 CFS flows over 26.3 days – see Table 8.)

**Table 6. 1972 supplemental relationships and deactivation schedule for all statements of claim associated with the historic place of use.**

Inactive	Partially Active	Fully Active	76G 91008	76G 121094	76G 121097	76G 121095	76G 121099	76G 121100
Period of Use (Days)	Flow Rate (CFS)	Diverted Volume (AF)	Claimed CFS 7.5	Claimed CFS 1.88	Claimed CFS 1.83	Claimed CFS 2.73	Claimed CFS 7.5	Claimed CFS 10
5/8 - 6/14 (38)	19.72	1,483.74		1.88	1.83	2.73	7.5	5.78
6/15 - 7/15 (31)	23.17	1,422.18		1.88	1.83	2.73	7.5	9.23
<i>Total ≈ 1,856.29 AF diverted between 7/16 and 8/31 (47 days)</i>								
7/16 - 7/23 (8)	23.17	367.01		1.88	1.83	2.73	7.5	9.23
7/24 - 8/19 (26.3)	24.64	1,282.55	7.5	1.88	1.83	2.73	7.5	3.20
8/19 - 8/31 (12.7)	8.22	206.7		1.88	1.83	2.73	1.78	
9/1 to 9/30 (30)	8.2	487.07		1.88	1.83	2.73	1.76	
<i>Total ≈ 5,249.25 AF diverted to the Jacobson place of use between 5/8/1972 and 9/30/1972 (146 days)</i>								

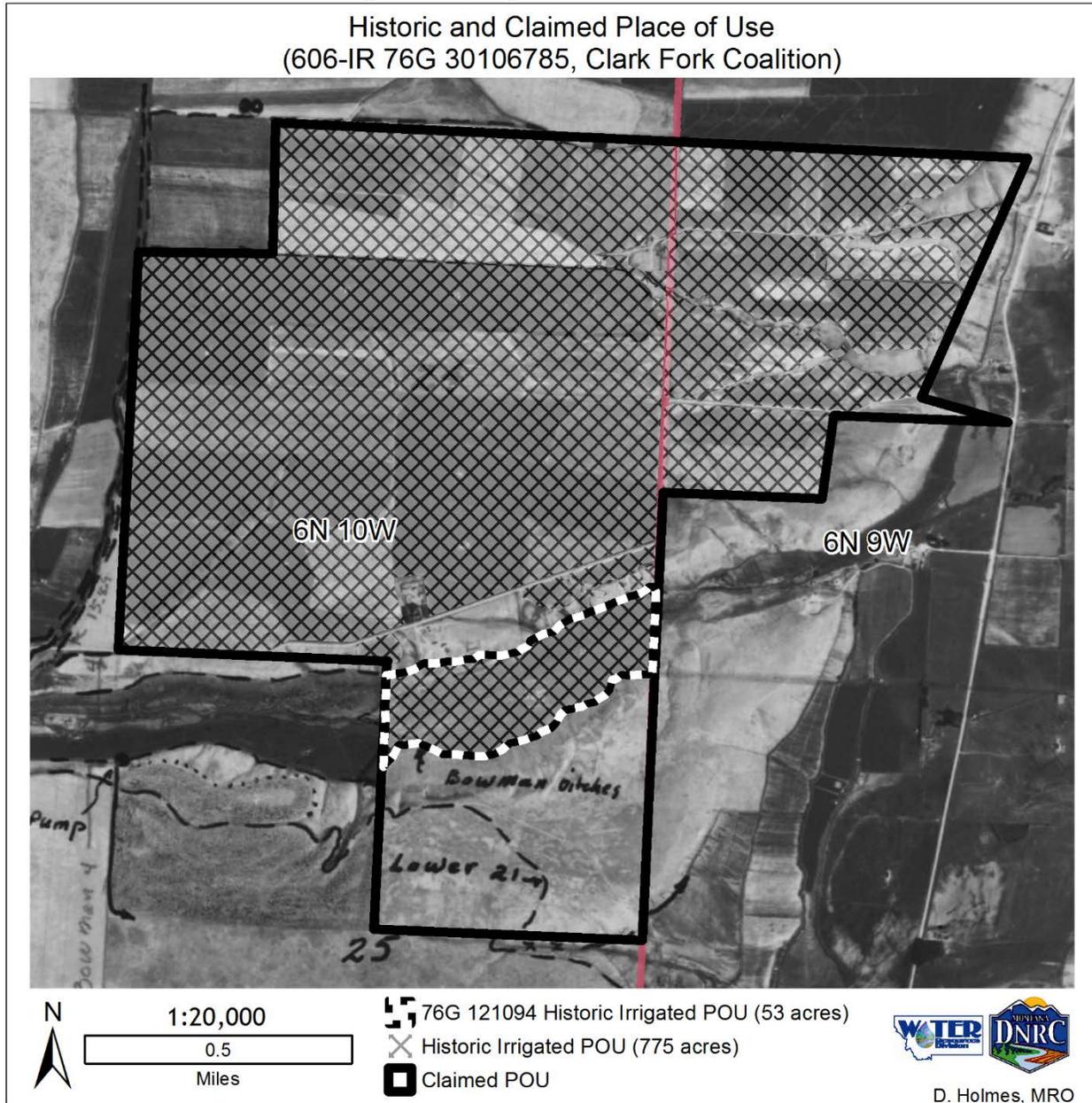
## **APPENDIX B (from PDG)**

(numbering corresponds to the PDG)

21. The Applicant states that the historic place of use consisted of 871.69 irrigated acres based on an aerial photo taken on September 24<sup>th</sup>, 1954. Upon review of the Applicant’s 1954 aerial photo and a Deer Lodge County Water Resource Survey (WRS) aerial photo taken on August 17<sup>th</sup>, 1947, the Department was unable to find sufficient evidence demonstrating that more than 775 acres were historically flood irrigated within the Applicant’s claimed place of use (Map 2). The Department identified 53 irrigated acres in the NE of Section 25 and S2SE of Section 24 which comprise the portion of the place of use that was topographically irrigable with water diverted from Little Modesty Creek via the (now retired) Bowman Ditches. The remaining 722 irrigated acres were determined to be irrigable only with water conveyed from Racetrack Creek through the Cement Ditch. The 1947 WRS aerial photo also shows

evidence of ditches in the SESE of Section 24, T6N R10W, that appear to convey Racetrack Creek water to supplement irrigation on the 53 acres that are irrigable with Little Modesty water.

**Map 2. Historic and claimed place of use for claims diverted from Racetrack and Little Modesty Creeks; claims that were not activated during the 1972 irrigation season were excluded.**



22. Per the methods outlined in ARM 36.12.1902(16) the Department quantified the field application volume required for irrigation of the 53 acres historically irrigated with Claim 76G 121094-00 during the 26.3-day period spanning July 24<sup>th</sup> to August 19<sup>th</sup>. The flood irrigation water requirements estimated for July and August at the Deer Lodge weather station are listed as 5.27 inches and 3.98 inches, respectively. Based on these values, the Department determined that the flood irrigation water requirement (IWR) for the 26.3-day period of interest is 3.71 inches. This was calculated by adding the total IWR for the 8 days

spanning July 24<sup>th</sup> and July 31<sup>st</sup> to the total irrigation water required for the 18.3 days spanning August 1<sup>st</sup> through August 19<sup>th</sup> ( $5.27 \text{ inches} \div 31 \text{ days} = 0.17 \text{ inches per day} \times 8 \text{ days} = 1.36 \text{ inches}$ ;  $3.98 \text{ inches} \div 31 \text{ days} = 0.128 \text{ inches per day} \times 18.3 \text{ days} = 2.35 \text{ inches} + 1.36 \text{ inches} = 3.71 \text{ inches}$ ). With a flood IWR of 3.71 inches, the historic management factor for the Deer Lodge weather station in Powell County (77.6%), and 25% on-farm efficiency, the Department finds a required field application volume of 50.86 AF for the 53 acres historically irrigated with Little Modesty water ( $3.71 \text{ inches} \div 12 \text{ inches/foot} \times 0.776 \times 53 \text{ acres} = 12.72 \text{ AF} \div 0.25 \text{ on-farm efficiency} = 50.86 \text{ AF}$ ). When in full service, the flow rate of 1.88 CFS listed for Claim 76G 121094-00 diverts a total of 97.9 AF of water over 26.3 days and alone can provide the volume of water required to historically flood irrigate 53 acres without being supplemented by Racetrack Creek water. When considering 5% irrecoverable losses for flooding, the total historic volume consumed from the irrigation of the 53 acres in question using Claim 76G 121094-00 equals 15.26 AF.

23. The Department attributes historic irrigation of the remaining 722 acres not irrigated with water from Little Modesty Creek to Claims 76G 91008-00, 76G 121097-00, 76G 121095-00, 76G 121099-00, and 76G 121100-00, each of which are delivered to the place of use via the Cement Ditch. To calculate the volume historically consumed for 722 flood irrigated acres between July 24<sup>th</sup> and August 19<sup>th</sup>, the Department used the Powell County flood IWR value of 3.71 inches for the 26.3-day period of interest, the 77.6% historic management factor, an on-farm efficiency of 30%, and 5% irrecoverable losses from flood irrigation. The Department found a historic consumptive volume (including irrecoverable losses) of 202.09 AF resulting from the irrigation of the 722 acres in question during the time that Claim 76G 91008-00 was in service ( $3.71 \text{ inches} \div 12 \text{ inches/foot} \times 0.776 \times 722 \text{ acres} = 173.22 \text{ AF} \div 0.3 \text{ on-farm efficiency} = 577.39 \text{ AF} \times 0.05 = 28.87 \text{ AF irrecoverable losses} + 173.22 \text{ AF} = 202.09 \text{ AF}$ ). The historic consumed volume for the entire 775-acre historic place of use during this 26.3-day period was calculated as 217.35 AF (Table 7).

**Table 7. Historic consumed volume for the historic place of use between July 24<sup>th</sup> and August 19<sup>th</sup> (26.3 days).**

Historic Acres	Powell County IWR (inches)	Powell County Management Factor	HCV (AF)	*On-Farm Efficiency	Field App. Volume (AF)	Irrecoverable Losses (IL), Flood = 5% (AF)	HCV Including IL (AF)
722	3.71	77.6%	173.22	30%	577.39	28.87	202.09
53			12.72	25%	50.86	2.54	15.26
<b>775</b>			<b>184.94</b>		<b>628.25</b>	<b>31.41</b>	<b>217.35</b>

\*A higher on-farm efficiency percentage was assigned to the 722 acres historically irrigated with water delivered through the Cement Ditch only due to the more complex system of conveyance ditches located in this portion of the historic place of use.

24. To distinguish the historic consumed volume attributable to Claim 76G 91008-00 from the total volume of 202.09 AF consumed during the historic irrigation of 722 acres between July 24<sup>th</sup> and August 19<sup>th</sup>, the Department determined the proportions of total diverted volume by water right and applied them to the total historic consumed volume. Table 8 summarizes the historic diverted and consumed volumes

for the Cement Ditch claims during the 26.3-day period during which Claim 76G 91008-00 was active. The Department finds that Claim 76G 91008-00 accounted for 66.53 AF of the total 202.09 AF historic volume consumed during the irrigation of the 722 acres that were supplied water from the Cement Ditch.

**Table 8. Historically consumed (HCV), diverted (HDV), and field application volumes for Claims 76G 91008-00, 76G 121097-00, 76G 121095-00, 76G 121099-00, and 76G 121100-00 between 7/24 and 8/19 (26.3 days).**

Claim	Source	Flow Rate (CFS)	*HDV (AF)	% of HDV/HCV	Field Application Volume (AF)	HCV (AF)
76G 91008-00	Racetrack Lake	7.5	390	32.92%	190.08	66.53
76G 121097-00	Racetrack Creek	1.83	95.3	8.04%	46.42	16.25
76G 121095-00		2.73	142.16	12%	69.29	24.25
76G 121099-00		7.5	390.55	32.97%	190.36	66.63
76G 121100-00		3.20	166.64	14.07%	81.24	28.43
		<b>22.76</b>	<b>1,184.65</b>	<b>100%</b>	<b>577.39</b>	<b>202.09</b>

\*HDV (AF) was calculated as  $\text{Flow Rate (CFS)} \times 1.98 \text{ AF/day} \times 26.3 \text{ days}$ . Though 7.5 CFS over 26.3 days delivers 390.55 AF, HDV (AF) for Claim 76G 91008-00 was limited to 390 AF.

25. Table 9 shows the total 1972 historic use volumes for all of Bud Jacobson’s claims, and is organized by commissioner periods of record. Historic consumed volumes for the entire 1972 irrigation season were calculated using the IWR values corresponding with each distinct period of record; for the 722 acres irrigated solely with water conveyed through the Cement Ditch, the historic consumed volume was calculated for each period, then proportioned out for each individual Cement Ditch claim. As the acres historically irrigated with Little Modesty Creek water and Cement Ditch water did not overlap, historic use by commissioner period for the Cement Ditch claims reveal identical % of period HDV and % of period HCV variables for each claim based on the same logic described in Table 8. To calculate the percentage of an entire commissioner period’s historic use volume that may be attributed to each individual claim during a particular period, the Department divided the volumes diverted and consumed by each claim for that period by the period’s total diverted and consumed volumes. The Department finds that water use with Claim 76G 91008-00 accounted for 30.41% of the volume diverted and 30.61% of the volume consumed during the time it was in full service. Based on the information available to the Department, water released from Racetrack Lake accounted for 7.43% of the 5,249.25 AF diverted to Bud Jacobson during the 1972 irrigation season, and 8.64% of the 769.78 AF consumed during the irrigation of the historic 775-acre place of use.

**Table 9. Historic use for the 146-day 1972 irrigation season for Claims 76G-91008-00, -121097-00, -121095-00, -121099-00, and -121100-00.**

Inactive	Partially Active	Fully Active	1972 commissioner periods of record (4 total delivery records)						Claim Totals 5/8 to 9/30
			Record 1	Record 2	Record 3		Record 4		
Claim (Pre-1973 Irrigated Acres)	Historic Use Variable	5/8 to 6/14 (38 days)	6/15 to 7/15 (31 days)	7/16 to 7/23 (8 days)	7/24 to 8/19 (26.3 days)	8/19 to 8/31 (12.7 days)	9/1 to 9/30 (30 days)		
76G-91008-00 Racetrack Lake (722)	HDV (AF)				390			<b>390</b>	
	(CFS)				7.5			<b>(7.5)</b>	
	% of period HDV				30.41%			<b>7.43%</b>	
	HCV (AF)				66.53			<b>66.53</b>	
	% of period HCV				30.61%			<b>8.64%</b>	
76G-121094-00 Little Modesty (53)	HDV (AF)	141.45	115.39	29.78	97.9	47.27	111.67	<b>543.46</b>	
	(CFS)	(1.88)	(1.88)	(1.88)	(1.88)	(1.88)	(1.88)	<b>(1.88)</b>	
	% of period HDV	9.53%	8.11%	8.11%	7.63%	22.87%	22.93%	<b>10.35%</b>	
	HCV (AF)	7.44	19.04	5.59	15.26	6.7	-	<b>54.03</b>	
	% of period HCV	7.02%	7.02%	7.02%	7.02%	7.02%	-	<b>7.02%</b>	
76G-121097-00 Racetrack Creek (722)	HDV (AF)	137.69	112.33	28.99	95.3	46.02	108.7	<b>529.03</b>	
	(CFS)	(1.83)	(1.83)	(1.83)	(1.83)	(1.83)	(1.83)	<b>(1.83)</b>	
	% of period HDV	9.28%	7.90%	7.90%	7.43%	22.26%	22.32%	<b>10.08%</b>	
	HCV (AF)	10.11	21.68	6.37	16.25	25.63	-	<b>80.04</b>	
	% of period HCV	9.54%	7.99%	7.99%	7.48%	26.84%	-	<b>10.4%</b>	
76G-121095-00 Racetrack Creek (722)	HDV (AF)	205.41	167.57	43.24	142.16	68.65	162.16	<b>789.19</b>	
	(CFS)	(2.73)	(2.73)	(2.73)	(2.73)	(2.73)	(2.73)	<b>(2.73)</b>	
	% of period HDV	13.84%	11.78%	11.78%	11.08%	33.21%	33.29%	<b>15.03%</b>	
	HCV (AF)	15.09	32.34	9.50	24.25	38.23	-	<b>119.41</b>	
	% of period HCV	14.23%	11.92%	11.92%	11.16%	40.04%	-	<b>15.51%</b>	
76G-121099-00 Racetrack Creek (722)	HDV (AF)	564.3	460.35	118.8	390.55	44.76	104.54	<b>1,683.31</b>	
	(CFS)	(7.5)	(7.5)	(7.5)	(7.5)	(1.78)	(1.76)	<b>-</b>	
	% of period HDV	38.03%	32.37%	32.37%	30.45%	21.65%	21.46%	<b>32.07%</b>	
	HCV (AF)	41.45	88.84	26.10	66.63	24.93	-	<b>247.95</b>	
	% of period HCV	39.09%	32.75%	32.76%	30.66%	26.11%	-	<b>32.12%</b>	
76G-121100-00 Racetrack Creek (722)	HDV (AF)	434.89	566.54	146.2	166.64			<b>1,314.26</b>	
	(CFS)	(5.78)	(9.23)	(9.23)	(3.2)			<b>-</b>	
	% of period HDV	29.31%	39.84%	39.84%	12.99%			<b>25.04%</b>	
	HCV (AF)	31.94	109.34	32.12	28.43			<b>201.82</b>	
	% of period HCV	30.12%	40.31%	40.31%	13.08%			<b>26.22%</b>	
<b>Period Total</b>	<b>HDV (AF)</b>	<b>1,483.74</b>	<b>1,422.18</b>	<b>367.01</b>	<b>1,282.55</b>	<b>206.7</b>	<b>487.07</b>	<b>5,249.25</b>	
	<b>(CFS)</b>	<b>(19.72)</b>	<b>(23.17)</b>	<b>(23.17)</b>	<b>(24.64)</b>	<b>(8.22)</b>	<b>(8.2)</b>	<b>-</b>	
	<b>HCV (AF)</b>	<b>106.03</b>	<b>271.24</b>	<b>79.67</b>	<b>217.35</b>	<b>95.49</b>	<b>-</b>	<b>769.78</b>	
	<b>Pre-1973 IWR</b>	<b>1.4"</b>	<b>3.59"</b>	<b>1.06"</b>	<b>2.88"</b>	<b>1.26"</b>	<b>-</b>	<b>10.19"</b>	

## APPENDIX C (from PDG)

(numbering corresponds to the PDG)

### Adverse Effect

26. To quantify post-change consumptive volume, the Department used the Applicant's (daily) 2006 Cement Ditch commissioner records to determine the proportion of post-change deliveries that are attributable to the supplemental Racetrack Creek claims (Table 10). Table 10 is organized by the four 1972 commissioner periods of record and only lists information for the dates that mark a change in delivery amounts (e.g. from 9/1 to 9/18, 232 MI were delivered daily, while 182 MI were delivered daily between 9/19 to 9/30; in total 6,360 MI were delivered between 9/1 and 9/30). (Note: no deliveries were made on May 25<sup>th</sup>, 2006.)

**Table 10. 2006 Daily diverted volumes and flow rates for claims conveyed via the Cement Ditch (5/15 to 9/30).**

Inactive Date	Partially Active		Fully Active	Claim 76G 121097-00		Claim 76G 121095-00		Claim 76G 121099-00		Claim 76G 121100-00	
	(MI)	(CFS)	(AF)	<i>1.83</i> CFS	Div. Vol.	<i>2.73</i> CFS	Div. Vol.	<i>7.5</i> CFS	Div. Vol.	<i>10</i> CFS	Div. Vol.
5/15	75	1.88	3.71	1.83	3.62	0.04	0.09	0.00	0.00	0.00	0.00
5/16	250	6.25	12.38	1.83	3.62	2.73	5.41	1.69	3.35	0.00	0.00
5/18	350	8.75	17.33	1.83	3.62	2.73	5.41	4.19	8.30	0.00	0.00
5/19	400	10.00	19.80	1.83	3.62	2.73	5.41	5.44	10.77	0.00	0.00
5/26	425	10.63	21.04	1.83	3.62	2.73	5.41	6.07	12.01	0.00	0.00
5/28	375	9.38	18.56	1.83	3.62	2.73	5.41	4.82	9.53	0.00	0.00
5/30	425	10.63	21.04	1.83	3.62	2.73	5.41	6.07	12.01	0.00	0.00
6/1	400	10.00	19.80	1.83	3.62	2.73	5.41	5.44	10.77	0.00	0.00
6/7	500	12.50	24.75	1.83	3.62	2.73	5.41	7.50	14.85	0.44	0.87
6/12	565	14.13	27.97	1.83	3.62	2.73	5.41	7.50	14.85	2.07	4.09
6/14	562	14.05	27.82	1.83	3.62	2.73	5.41	7.50	14.85	1.99	3.94
<b>Total</b>	<b>12,367</b>		<b>612.17</b>		<b>108.70</b>		<b>156.85</b>		<b>330.15</b>		<b>16.47</b>
6/15	562	14.05	27.82	1.83	3.62	2.73	5.41	7.50	14.85	1.99	3.94
6/16	560	14.00	27.72	1.83	3.62	2.73	5.41	7.50	14.85	1.94	3.84
6/17	565	14.13	27.97	1.83	3.62	2.73	5.41	7.50	14.85	2.07	4.09
6/20	500	12.50	24.75	1.83	3.62	2.73	5.41	7.50	14.85	0.44	0.87
6/23	600	15.00	29.70	1.83	3.62	2.73	5.41	7.50	14.85	2.94	5.82
7/3	500	12.50	24.75	1.83	3.62	2.73	5.41	7.50	14.85	0.44	0.87
7/4	482	12.05	23.86	1.83	3.62	2.73	5.41	7.49	14.83	0.00	0.00
<b>Total</b>	<b>16,601</b>		<b>821.75</b>		<b>112.33</b>		<b>167.57</b>		<b>460.11</b>		<b>81.74</b>
7/16	482	12.05	23.86	1.83	3.62	2.73	5.41	7.49	14.83	0.00	0.00
7/28	400	10.00	19.80	1.83	3.62	2.73	5.41	5.44	10.77	0.00	0.00
7/29	424	10.60	20.99	1.83	3.62	2.73	5.41	6.04	11.96	0.00	0.00
7/30	400	10.00	19.80	1.83	3.62	2.73	5.41	5.44	10.77	0.00	0.00
8/1	407	10.18	20.15	1.83	3.62	2.73	5.41	5.62	11.12	0.00	0.00
8/2	557	13.93	27.57	1.83	3.62	2.73	5.41	7.50	14.85	1.87	3.69
8/4	489	12.23	24.21	1.83	3.62	2.73	5.41	7.50	14.85	0.16	0.33
8/5	432	10.80	21.38	1.83	3.62	2.73	5.41	6.24	12.36	0.00	0.00
8/7	424	10.60	20.99	1.83	3.62	2.73	5.41	6.04	11.96	0.00	0.00
8/11	376	9.40	18.61	1.83	3.62	2.73	5.41	4.84	9.58	0.00	0.00
8/12	332	8.30	16.43	1.83	3.62	2.73	5.41	3.74	7.41	0.00	0.00
8/19	446	11.15	22.08	1.83	3.62	2.73	5.41	6.59	13.05	0.00	0.00
8/21	332	8.30	16.43	1.83	3.62	2.73	5.41	3.74	7.41	0.00	0.00
8/28	232	5.80	11.48	1.83	3.62	2.73	5.41	1.24	2.46	0.00	0.00
<b>Total</b>	<b>18,822</b>		<b>931.68</b>		<b>170.30</b>		<b>254.05</b>		<b>499.62</b>		<b>7.71</b>

9/1	232	5.80	11.48	1.83	3.62	2.73	5.41	1.24	2.46	0.00	0.00
9/19	182	4.55	9.01	1.83	3.62	2.72	5.39	0.00	0.00	0.00	0.00
<b>Total</b>	<b>6,360</b>		<b>314.81</b>		<b>108.70</b>		<b>161.92</b>		<b>44.19</b>		<b>0.00</b>
<b>2006 Cement Ditch deliveries = 54,150 MI (2,680.41 AF)</b>											

27. The Department determined the percentage of the post-change volume diverted during the days within each period shown in Table 10 when irrigation water is required that can be attributed to Claims 76G 121097-00, 76G 121095-00, 76G 121099-00, and 76G 121100-00 (Tables 11 and 12). Attributing volumes of water consumed on acres irrigated with water from both Racetrack and Little Modesty Creeks to each claim can reasonably be based on the proportions outlined in Tables 11 and 12 since all water diverted from Racetrack Creek is conveyed through the Cement Ditch at the same time. Absent commissioner records or post-1973 measurements for Little Modesty Creek diversions, the Department assumes that Claim 76G 121094-00 will be diverted post-change at the full claimed flow rate of 1.88 CFS.

**Table 11. Racetrack Creek water right percentages of post-change volumes diverted during center pivot IWR days (5/15/2006 to 9/30/2006).**

2006 Diversion Period (Days)	76G 121097-00 Div. Vol. (AF) (% of period total)	76G 121095-00 Div. Vol. (AF) (% of period total)	76G 121099-00 Div. Vol. (AF) (% of period total)	76G 121100-00 Div. Vol. (AF) (% of period total)	Total Diverted Volume Per Period
5/15 - 6/14 (30)	108.7 (17.76%)	156.85 (25.62%)	330.15 (53.93%)	16.47 (2.69%)	<b>612.17 (22.84%)</b>
6/15 - 7/15 (31)	112.33 (13.67%)	167.57 (20.39%)	460.11 (55.99%)	81.74 (9.95%)	<b>821.75 (30.66%)</b>
7/16 - 7/23 (8)	28.99 (15.19%)	43.24 (22.65%)	118.64 (62.16%)	0 (0%)	<b>190.87 (7.12%)</b>
7/24 - 8/19 (26.3)	95.3 (17.57%)	142.16 (26.22%)	297.14 (54.79%)	7.71 (1.42%)	<b>542.31 (20.23%)</b>
8/19 - 8/31 (12.7)	46.02 (23.18%)	68.64 (34.58%)	83.84 (42.24%)	0 (0%)	<b>198.5 (7.41%)</b>
9/1 - 9/30 (30)	108.7 (34.53%)	161.92 (51.43%)	44.19 (14.04%)	0 (0%)	<b>314.81 (11.74%)</b>
<b>Total Volume Per Claim</b>	<b>500.04 (18.66%)</b>	<b>740.38 (27.62%)</b>	<b>1,334.07 (49.77%)</b>	<b>105.92 (3.95%)</b>	<b>2,680.41* (100%)</b>

**Table 12. Racetrack Creek water right percentages of post-change volumes diverted during flood IWR days (6/1/2006 to 8/31/2006).**

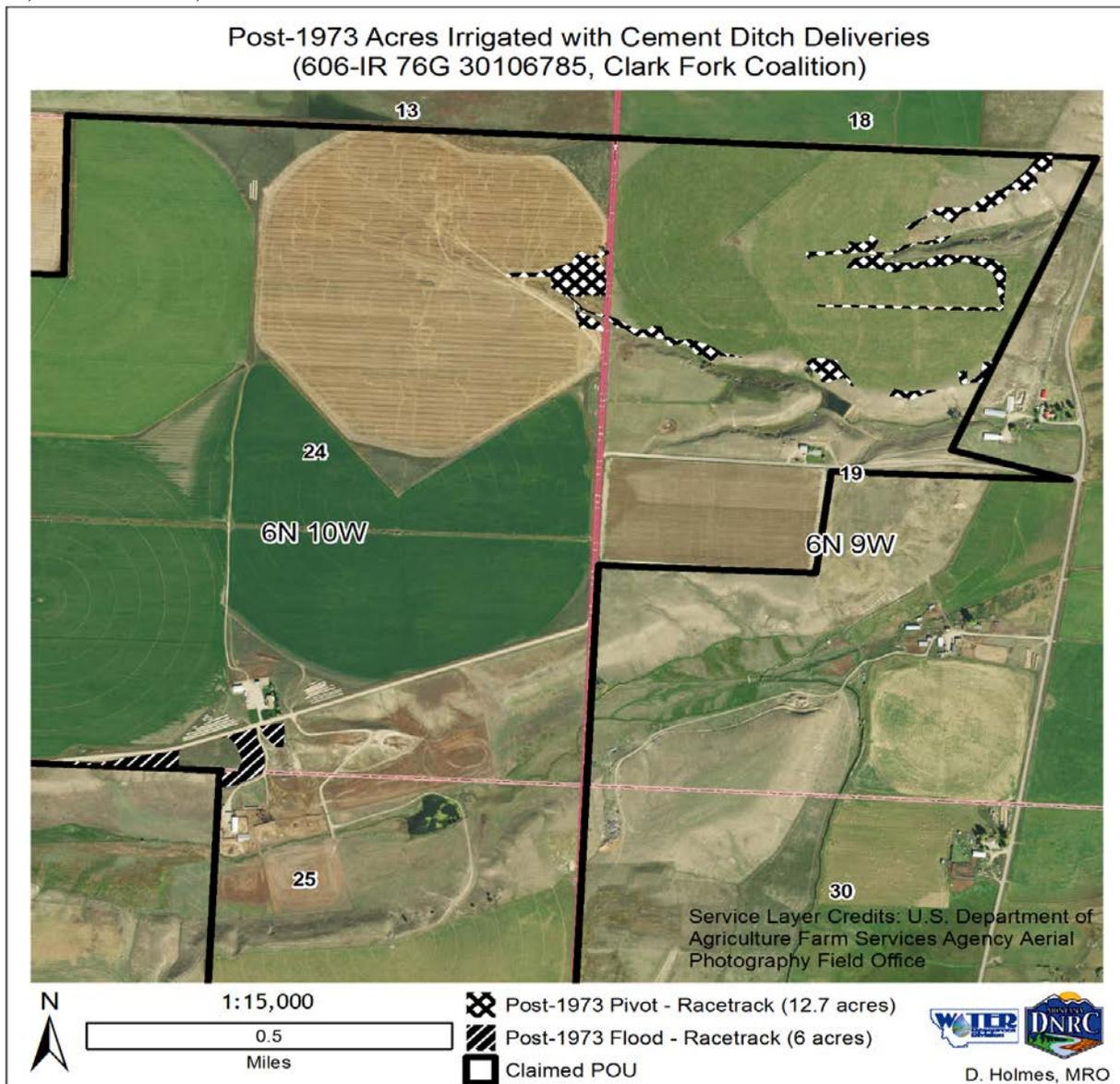
2006 Diversion Period (Days)	76G 121097-00 Div. Vol. (AF) (% of total)	76G 121095-00 Div. Vol. (AF) (% of total)	76G 121099-00 Div. Vol. (AF) (% of total)	76G 121100-00 Div. Vol. (AF) (% of total)	Total Diverted Volume Per Period
6/1 to 6/14 (14)	50.73 (15.55%)	75.68 (23.19%)	183.43 (56.21%)	16.47 (5.05%)	<b>326.31 (15.69%)</b>
6/15 to 7/15 (31)	112.33 (13.67%)	167.57 (20.39%)	460.11 (55.99%)	81.74 (9.95%)	<b>821.75 (39.51%)</b>
7/16 to 7/23 (8)	28.99 (15.19%)	43.24 (22.65%)	118.64 (62.16%)	0 (0%)	<b>190.87 (9.18%)</b>
7/24 to 8/19 (26.3)	95.3 (17.57%)	142.16 (26.22%)	297.14 (54.79%)	7.71 (1.42%)	<b>542.31 (26.08%)</b>

8/19 to 8/31 (12.7)	46.02 (23.18%)	68.64 (34.58%)	83.84 (42.24%)	0 (0%)	<b>198.5</b> <b>(9.54%)</b>
<b>Total Volume Per Claim</b>	<b>333.37</b> <b>(16.03%)</b>	<b>497.29</b> <b>(23.91%)</b>	<b>1,143.16</b> <b>(54.97%)</b>	<b>105.92</b> <b>(5.09%)</b>	<b>2,079.74*</b> <b>(100%)</b>

\*Of the total 2,680.41 AF of water diverted into the Cement Ditch during the 2006 irrigation season, 2,079.74 AF were diverted during the growing season identified in IWR for flood irrigation.

28. The Department identifies a total of 18.7 acres that were not irrigated historically but that are currently irrigated exclusively with water from Racetrack Creek (Map 3). Of these 18.7 newly irrigated acres, 12.7 acres are irrigated with center pivots and 6 acres appear to be flood-irrigated. 3.5 pivot irrigated acres are located in the E2NE of Section 24, T6N R10W, and the other 9.2 acres are located in the N2 of Section 19, T6N R9W. 5.5 newly flooded acres are in the S2SESW and SESWSE of Section 24, and 0.5 flooded acres are located in the NWNWNE of Section 25, T6N R10W.

**Map 3. Post-1973 irrigation (18.7 new acres) using only Racetrack Creek Claims 76G 121097-00, 76G 121095-00, 76G 121099-00, and 76G 121100-00.**

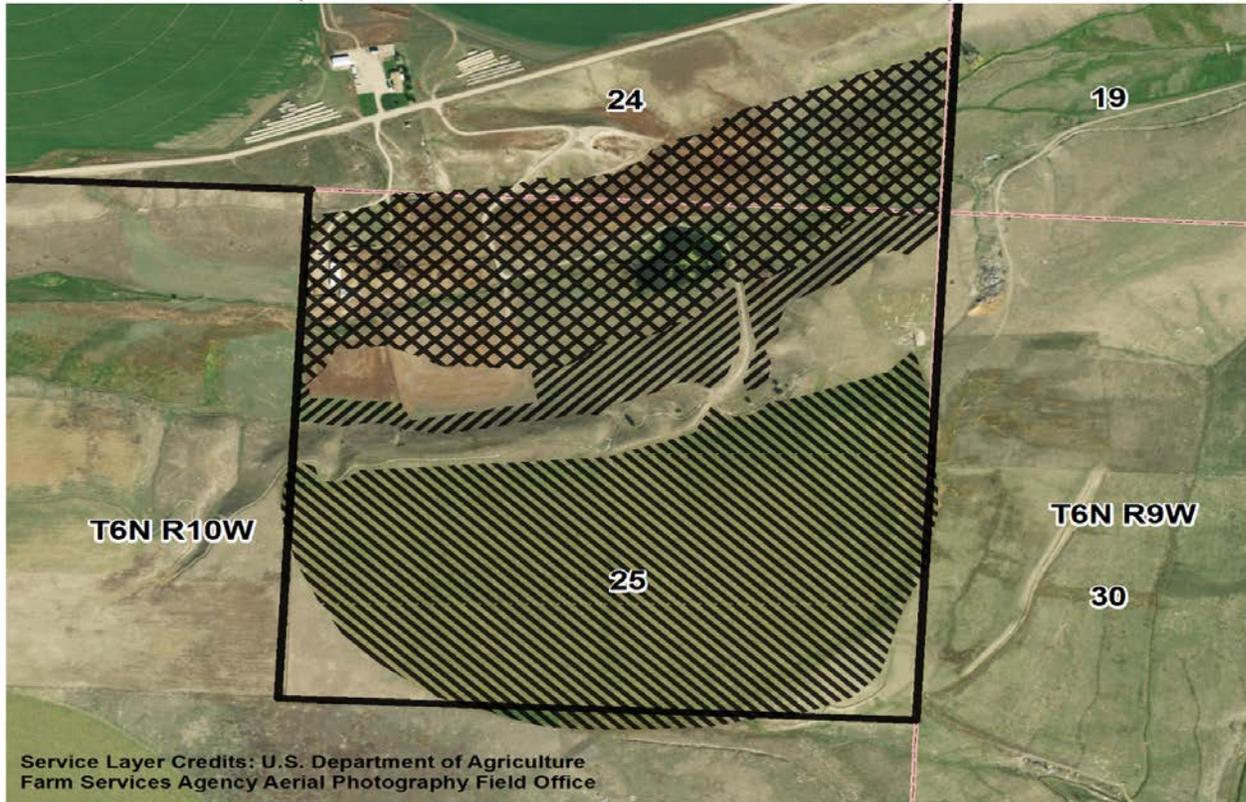


29. For the 6 new flood-irrigated acres served by Racetrack Creek water, the Department used the Powell County 1997 to 2006 100% management factor, a 13.14 inch Powell County flood IWR value (6/1 to 8/31), a 25% on-farm efficiency value, and 5% irrecoverable losses for flooding to arrive at a consumed volume of 7.88 AF for the entire irrigation season (13.14 inches  $\div$  12 inches/foot  $\times$  1  $\times$  6 acres = 6.57 AF  $\div$  0.25 on-farm efficiency = 26.28 AF applied to the field  $\times$  0.05 = 1.31 AF irrecoverable losses + 6.57 AF = 7.88 AF). The Department used the modern Powell County 100% management factor, a 15.03 inch Powell County center pivot IWR value (5/15 to 9/30), a 70% on-farm efficiency value, and 10% irrecoverable loss rate for pivot irrigation to arrive at a volume of 18.18 AF that are consumed on the 12.7 new pivot irrigated acres (15.03 inches  $\div$  12 inches/foot  $\times$  1  $\times$  12.7 acres = 15.91 AF  $\div$  0.7 on-farm efficiency = 22.72 AF applied to the field  $\times$  0.1 = 2.27 AF irrecoverable losses + 15.91 AF = 18.18 AF). In total, the Department finds an annual consumed volume of 26.06 AF resulting from the combined pivot and flood irrigation of the new 18.7 acres irrigated using only Racetrack Creek water. When added to the total annual historic consumed volume of 715.75 AF found for the 722-acre historically irrigated place of use, the volume of water consumed from the irrigation of 740.7 acres that will continue to be supplied water only from Racetrack Creek after this change equals 741.81 AF. The Department relied on the total diverted volume percentages outlined in Table 11 and applied them to the total consumed volume of 715.75 AF to determine the proposed post-change consumed volume attributable to each supplemental Racetrack Creek water right.

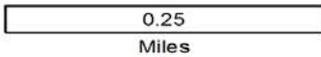
30. The Department identifies a total of 93 acres currently irrigated with Little Modesty Creek water (13 flood acres and 80 pivot acres) that were not historically irrigated (13 acres = 13.98% of 93, 80 acres = 86.02% of 93 acres) (Map 4). 162.31 AF of Little Modesty water remain after accounting for the field application volume required for the continued irrigation of 53 acres historically irrigated with only Claim 76G 121094-00 during the 92 days between June 1<sup>st</sup> and August 31<sup>st</sup> when irrigation water was required and consumed on the field (1.88 CFS diverted Little Modesty water  $\times$  1.98 AF/day  $\times$  92 days = 342.45 AF - 180.14 AF applied to 53 historically irrigated acres = 162.31 AF). The Department proportionally attributed the remaining applicable volume of 162.31 AF to the post-1973 flood and pivot irrigated acres (162.31 AF  $\times$  0.1398 = 22.69 AF for flood, 162.31 AF  $\times$  0.8602 = 139.62 AF for pivot). It is assumed that water currently diverted from Racetrack Creek can supplement the remaining field application volume not covered by Claim 76G 121094-00 that is required for the irrigation of the current place of use.

**Map 4. Claim 76G 121094-00 pre- and post-1973 irrigated acres supplied water from Racetrack Creek and Little Modesty Creek (RT+LM) or Little Modesty Creek only (LM).**

76G-121094-00 Pre- and Post-1973 Irrigated Acres  
(606-IR 76G 30106785, Clark Fork Coalition)



1:10,000



Miles



Post-1973 Flood - RT+LM (13 acres)  
Post-1973 Pivot - RT+LM (80 acres)  
Pre-1973 Flood - LM (53 acres)  
Claimed POU



D. Holmes, MRO

31. Per the standards outlined in ARM 36.12.1902, the required field application volumes calculated for the new 13 flood irrigated acres and 80 pivot irrigated acres are 56.94 AF and 143.14 AF, respectively. For the 13 newly flooded acres, the Department used the Powell County 1997 to 2006 100% management factor, a 13.14 inch Powell County flood IWR value, and assumed 25% on-farm efficiency to arrive at the 56.94 AF field application volume ( $13.14 \text{ inches} \div 12 \text{ inches/foot} \times 1 \times 13 \text{ acres} = 14.24 \text{ AF} \div 0.25 \text{ on-farm efficiency} = 56.94 \text{ AF}$ ). For the 80 additional pivot irrigated acres, the Department used the same Powell County 100% modern management factor, a 15.03 inch Powell County pivot IWR value, and assumed 70% on-farm efficiency to arrive at the required 143.14 AF field application volume ( $15.03 \text{ inches} \div 12 \text{ inches/foot} \times 80 \text{ acres} = 100.2 \text{ AF} \div 0.7 \text{ on-farm efficiency} = 143.14 \text{ AF}$ ).

32. The total field application volume required for and the total volume consumed during irrigation of the new 13 flood irrigated acres shown in Map 4 equals 56.94 AF and 17.08 AF, respectively. Claim 76G 121094-00 can account for up to 39.85% of the volume applied (22.69 AF) and consumed on (6.81 AF) the 13 flooded acres. The remaining 60.15% of the volume applied on (34.25 AF) and consumed during

(10.27 AF) irrigation of the additional 13 flooded acres is assumed to be proportionally accounted for by Claims 76G 121097-00, 76G 121095-00, 76G 121099-00, and 76G 121100-00.

33. The total field application volume required for the irrigation of the 80 pivot irrigated acres shown in Map 4 equals 143.14 AF, while the volume consumed during irrigation of these acres equals 114.51 AF. Claim 76G 121094-00 can account for up to 97.54% of the volume applied to (139.62 AF) and consumed on (111.69 AF) the 80 new pivot acres. The remaining 2.46% of the volume applied on (3.52 AF) and consumed during (2.82 AF) irrigation of the 80 pivot acres is assumed to be proportionally accounted for by Claims 76G 121097-00, 76G 121095-00, 76G 121099-00, and 76G 121100-00.

34. Table 13 shows the post-change distribution of the historic volume consumed on the 722 acres historically flood irrigated exclusively with Racetrack Creek water to the remaining Racetrack Creek supplemental rights that will continue to irrigate the historic place of use. The reconfiguration of the historic consumed volume attributions to these claims is based on the Table 12 water right percentages of post-change volumes diverted during the IWR flood growing season.

**Table 13. Proposed consumed volumes (PCV) for the 722-acre historic place of use irrigated with Racetrack Creek water only.**

Claim	Variable	1972 Commissioner periods of record					Claim Totals (AF)
		Record 1	Record 2	Record 3			
		6/1 - 6/14	6/15 - 7/15	7/16 - 7/23	7/24 - 8/19	8/19 to 8/31	
76G 121097	PCV (AF)	15.33	34.48	11.25	35.51	20.58	<b>117.15</b>
	% DV	15.55%	13.67%	15.19%	17.57%	23.18%	
76G 121095	PCV (AF)	22.86	51.42	16.78	52.97	30.70	<b>174.74</b>
	% DV	23.19%	20.39%	22.65%	26.21%	34.58%	
76G 121099	PCV (AF)	55.42	141.21	46.05	110.73	37.50	<b>390.91</b>
	% DV	56.21%	55.99%	62.16%	54.79%	42.24%	
76G 121100	PCV (AF)	4.98	25.09	0	2.88	0	<b>32.95</b>
	% DV	5.05%	9.95%	0%	1.42%	0%	
<b>Period Total</b>	<b>PCV (AF)</b>	<b>98.59</b>	<b>252.2</b>	<b>74.08</b>	<b>202.09</b>	<b>88.79</b>	<b>715.75</b>

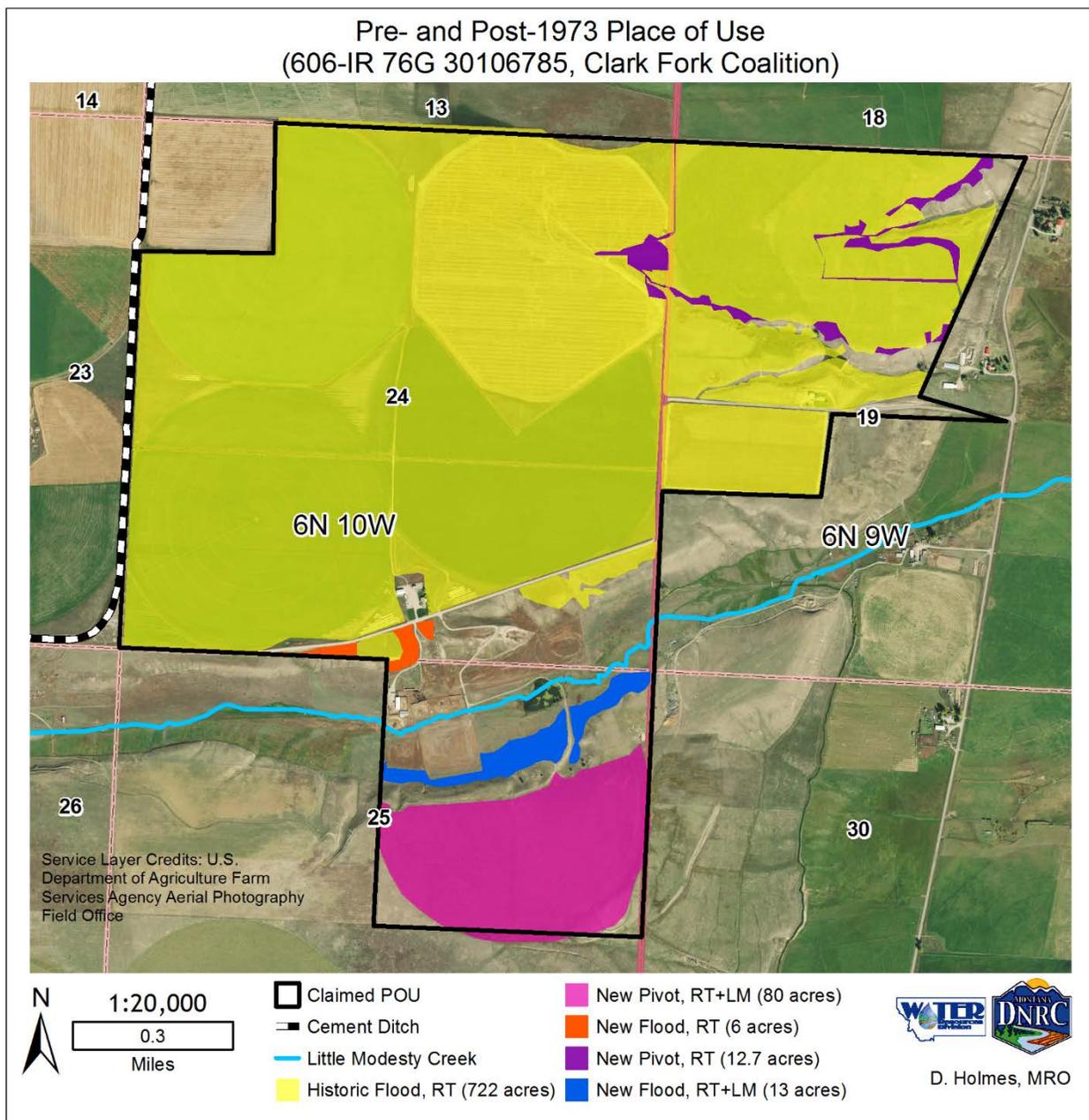
35. Table 14 provides a summary of the proposed consumed volumes attributable to the remaining supplemental claims that will continue to irrigate the 111.7 acres that were not found to be irrigated historically. The Department determines that the volume of water consumed from irrigation of the current 833.7-acre place of use that is irrigated with Racetrack Creek water totals 873.4 AF. Including the 54.03 AF consumed during irrigation of the 53-acre historic place of use that will continue to be irrigated exclusively with Little Modesty Creek water, the total consumed volume for the entire 886.7-acre irrigated place of use equals 927.43 AF. Map 5 shows the pre- and post-1973 irrigated place of use as identified by the Department.

**Table 14. Proposed post-change consumed volumes for Claims 76G-121094-00, -121097-00, -121095-00, -121099-00, and -121100-00 for the 111.7 acres irrigated with Little Modesty Creek and/or Racetrack Creek water that were not irrigation prior to July 1, 1973.**

Claim (Source)	*Irrigated Acres	Consumed Volume (AF)	1972 Commissioner periods of record						Claim Totals 5/15 to 9/30
			Record 1	Record 2	Record 3		Record 4		
			5/15 to 6/14	6/15 to 7/15	7/16 to 7/23	7/24 to 8/19	8/19 to 8/31	9/1 to 9/30	
76G-121094-00 Little Modesty	80 Pivot (RT+LM)	Pivot CV	17.24	36.78	10.48	31.07	14.27	1.85	<b>111.69</b>
	13 Flood (RT+LM)	Flood CV	0.94	2.4	0.71	1.92	0.84	-	<b>6.81</b>
	Total CV		18.18	39.18	11.19	32.99	15.11	1.85	<b>118.5</b>
76G-121097-00 Racetrack Creek	80 Pivot (RT+LM)	Pivot CV	0.08	0.13	0.04	0.14	0.08	0.02	<b>0.48</b>
	12.7 Pivot (RT)	Pivot CV	0.50	0.82	0.26	0.89	0.54	0.10	<b>3.11</b>
	13 Flood (RT+LM)	Flood CV	0.22	0.49	0.16	0.51	0.30	-	<b>1.68</b>
	6 Flood (RT)	Flood CV	0.17	0.38	0.12	0.39	0.23	-	<b>1.29</b>
Total CV		0.96	1.82	0.58	1.93	1.15	0.12	<b>6.56</b>	
76G-121095-00 Racetrack Creek	80 Pivot (RT+LM)	Pivot CV	0.11	0.19	0.06	0.20	0.12	0.03	<b>0.72</b>
	12.7 Pivot (RT)	Pivot CV	0.72	1.22	0.39	1.33	0.80	0.15	<b>4.61</b>
	13 Flood (RT+LM)	Flood CV	0.33	0.74	0.24	0.76	0.44	-	<b>2.51</b>
	6 Flood (RT)	Flood CV	0.25	0.57	0.18	0.58	0.34	-	<b>1.92</b>
Total CV		1.41	2.72	0.87	2.88	1.71	0.18	<b>9.76</b>	
76G-121099-00 Racetrack Creek	80 Pivot (RT+LM)	Pivot CV	0.24	0.52	0.16	0.43	0.15	0.01	<b>1.51</b>
	12.7 Pivot (RT)	Pivot CV	1.52	3.35	1.06	2.77	0.98	0.04	<b>9.72</b>
	13 Flood (RT+LM)	Flood CV	0.79	2.03	0.66	1.59	0.54	-	<b>5.61</b>
	6 Flood (RT)	Flood CV	0.61	1.56	0.50	1.22	0.41	-	<b>4.30</b>
Total CV		3.15	7.46	2.38	6.01	2.09	0.05	<b>21.14</b>	
76G-121100-00 Racetrack Creek	80 Pivot (RT+LM)	Pivot CV	0.01	0.09	0.00	0.01	0.00	0.00	<b>0.12</b>
	12.7 Pivot (RT)	Pivot CV	0.08	0.60	0.00	0.07	0.00	0.00	<b>0.74</b>
	13 Flood (RT+LM)	Flood CV	0.07	0.36	0.00	0.04	0.00	-	<b>0.47</b>
	6 Flood (RT)	Flood CV	0.05	0.28	0.00	0.03	0.00	-	<b>0.36</b>
Total CV		0.21	1.33	0.00	0.16	0.00	0.00	<b>1.69</b>	
<i>Period Totals</i>	80 Pivot (RT+LM)	Pivot CV	17.68	37.71	10.74	31.85	14.63	1.90	<b>114.51</b>
	12.7 Pivot (RT)	Pivot CV	2.81	5.99	1.70	5.06	2.32	0.30	<b>18.18</b>
	13 Flood (RT+LM)	Flood CV	2.35	6.02	1.77	4.82	2.12	-	<b>17.08</b>
	6 Flood (RT)	Flood CV	1.08	2.78	0.81	2.23	0.98	-	<b>7.88</b>
<b>Total CV</b>		<b>23.92</b>	<b>52.50</b>	<b>15.02</b>	<b>43.96</b>	<b>20.05</b>	<b>2.20</b>	<b>157.65</b>	

\*Irrigated acres denoted by (RT+LM) are those acres currently irrigated with water from both Racetrack Creek and Little Modesty Creek. Irrigated acres denoted by (RT) are acres that are currently irrigated with water from Racetrack Creek only.

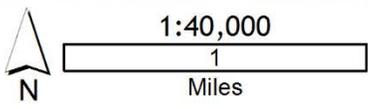
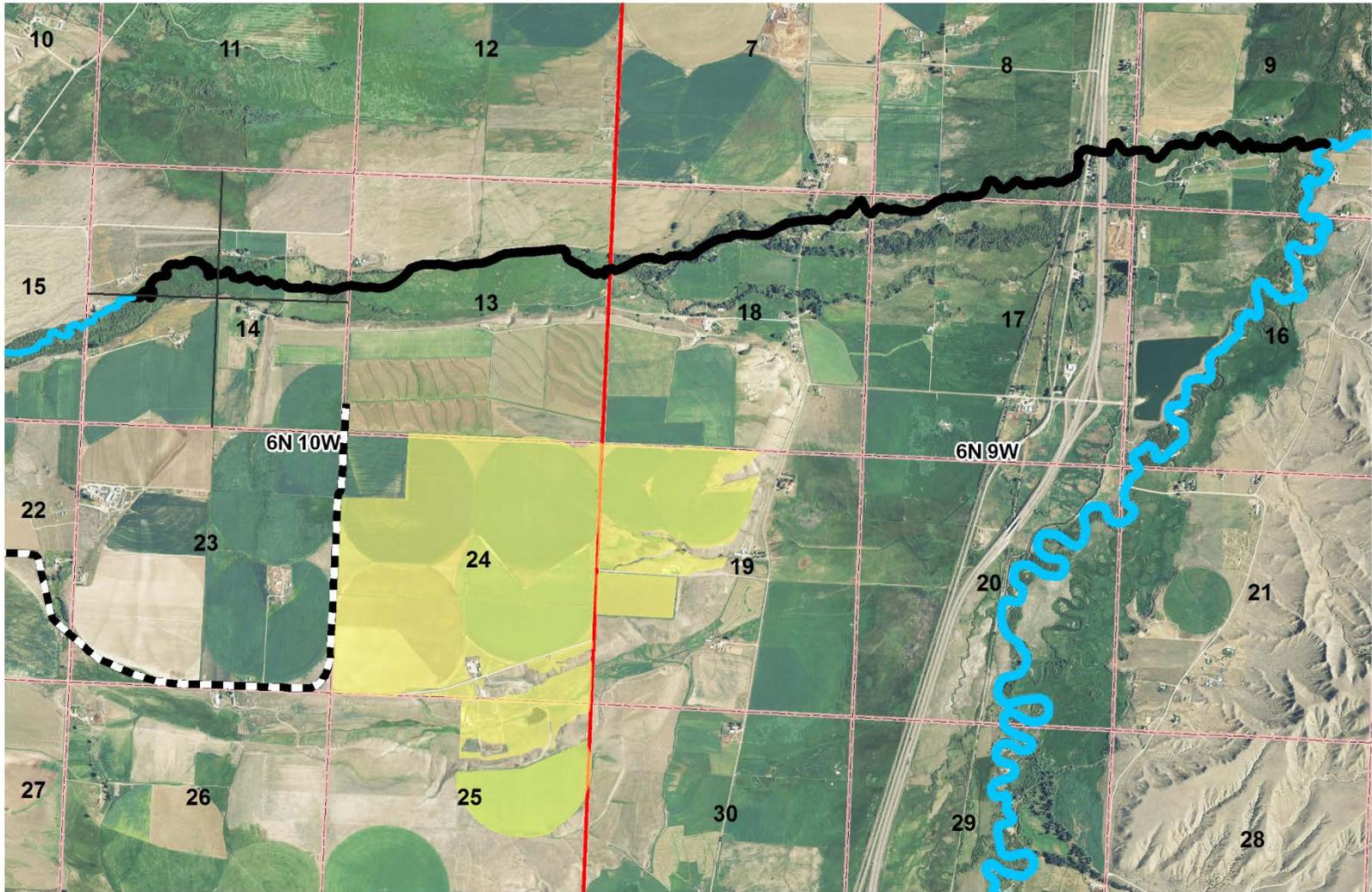
**Map 5. Extent of pre- and post-1973 acres irrigated with water from Racetrack Creek only (RT), or both Racetrack and Little Modesty Creeks (RT+LM). Acres irrigated only with Little Modesty Creek water were excluded.**



*Return Flows*

36. Little Modesty Creek, Modesty Creek, Racetrack Creek, and the Clark Fork River between Racetrack and Modesty Creeks are all potential receiving streams for return flows. The receiving reach for return flows in Racetrack Creek begins approximately 5.5 river miles upstream of the confluence of Racetrack Creek and the Clark Fork River in the NENSW of Section 14, T6N R10W, Powell County (Map 6).

Racetrack Creek - Return Flow Receiving Reach  
(606-IR 76G 30106785, Clark Fork Coalition)



- Receiving Reach
- Cement Ditch
- Current POU (886.7 acres)
- Clark Fork River

WV DEP WV DNR  
D. Holmes, MRO

Map 6. Location of return flow accretion in Racetrack Creek.

37. The entire historic place of use will continue to be irrigated post-change with the supplemental claims. With no acres being retired from irrigation and per the Department's *Change in Method of Irrigation policy memorandum* dated December 2<sup>nd</sup>, 2015 (hereafter, the Efficiency Memo), the historic place of use will be treated as though it is still flood-irrigated, and therefore the Department's analysis does not show any loss of return flows to receiving streams that result from the proposed change to instream flow or conversion to center pivot irrigation on the historic place of use.

38. The Applicant proposes to protect 8.33 CFS up to 433.33 AF less conveyance losses in Racetrack Creek for instream flow to benefit the fisheries resource. The proposed place of use for instream flow includes a reach of stream from the point of diversion at the dam downstream to a secondary point of diversion used to divert stored water for irrigation, and then downstream of the secondary point of diversion to the Clark Fork River. The Department finds that there is no potential for adverse effect to other water users located within the portion of the proposed protected reach that stretches from the outlet of Racetrack Lake to the secondary point of diversion at the Cement Ditch headgate. However, per FOF Nos. 39 – 43, the Department identifies the potential for adverse effect to water users downstream of the secondary point of diversion on Racetrack Creek due to the fact that the remaining five direct flow statements of claim will continue to irrigate the entirety of the historic and post July 1, 1973 expanded place of use after this change. The Department finds that without retiring any consumptive use there is no water available for instream flow protection below the secondary point of diversion, and the only amount of water that can be changed to instream flow is the historically diverted volume from the reservoir outlet to the secondary point of diversion.

#### *Post Change Consumed Volume*

39. Center pivots were installed on the historic place of use in 2006. The Applicant provided 2006 commissioner records to demonstrate that, with center pivots, a total volume of 3,194.17 AF of water was diverted from Racetrack and Little Modesty Creeks to the place of use which is approximately 1,763.04 AF less than what was diverted in 1972. The Applicant claims that this proposed change will not cause adverse effect since they are proposing to protect a portion of the water that is no longer being diverted as a result of the increase in irrigation efficiency, and that the water being left instream in addition to what is being proposed for instream flow protection will offset any potential adverse effect from changes in return flow patterns.

40. After this change, the 775-acre place of use that was historically irrigated with water from Racetrack Lake and Racetrack Creek, or Little Modesty Creek water (FOF 21) will continue to be irrigated in its entirety with Claims 76G 121094-00, 76G 121097-00, 76G 121095-00, 76G 121099-00, and 76G 121100-00. The Applicant asserts that some acres on the historic place of use are no longer being irrigated as some historic acres (e.g. field corners) are not accessible to pivots; however, those

irrigated acres are not proposed to be removed from the place of use/officially retired from irrigation in this change, and if so desired, the current property owner (R Bar N Ranch) may resume irrigation of those acres post-change. Therefore, *all* acres historically irrigated must be considered in the Department's historic use and adverse effect analysis.

41. With no proposed reduction in historically irrigated acres, the Department finds that the volume of water consumed by the remaining supplemental Racetrack Creek claims (76G 121097-00, 76G 121095-00, 76G 121099-00, and 76G 121100-00) will collectively increase by the consumed volume historically attributable to Claim 76G 91008-00 (66.53 AF). In order to negate the increase in consumed volume assumed by the supplemental claims that is proposed to exist after this change, post-change consumed volumes must decrease by 224.18 AF (the sum of the 157.65 AF consumed during irrigation of the expanded 111.7 acres and the 66.53 AF historically consumed during irrigation of the 722-acre historic place of use using Claim 76G 91008-00).

42. In the Applicant's response to the Department's Deficiency Letter dated April 24<sup>th</sup>, 2017, the Applicant maintains that R Bar N Ranch "lawfully changed their irrigation method and increased consumptive use per acre prior to the sale of [Claim 76G 91008-00] without the need to obtain a change authorization," and that the sale of Claim 76G 91008-00 "did not increase total consumptive use on the place of use and occurred after their method switch from flood to pivot irrigation." This is further reiterated when the Applicant states that "the quantity of consumptive use associated with some of the senior [supplemental claims] ...may have increased due to lawful changes in the method of irrigation," but per the DNRC's Efficiency Memo, "the Department cannot consider the increase in efficiency resulting from a change in method." While hydrologically more consumptive irrigation methods have been installed, the Applicant is correct in asserting that the Department cannot calculate post-change consumptive use volumes using higher consumptive use variables for some of the irrigated acres that have undergone conversions to more efficient irrigation methods as those pivots are located within the historically irrigated place of use. Per the Efficiency Memo, the entire historic place of use – which has almost completely changed from flood to center pivot irrigation – must be treated as though it will continue to be flood irrigated post change. Proposed consumptive use for all irrigated acres that fall outside of the historic 775-acre place of use, however, must be calculated using modern variables and inputs.

43. The increase in consumed volume experienced by the supplemental Racetrack Creek claims as found by the Department results directly from the fact that the post-change burden of irrigating the same 722-acre historic place of use and *consuming* all 715.75 AF that were historically accounted for by six water rights will be collectively assumed by the remaining five supplemental claims. In this scenario, Claims 76G 121097-00, 76G 121095-00, 76G 121099-00, and 76G 121100-00 will collectively consume

an additional 66.53 AF of water on top of their own historic consumed volumes *and* the water consumed during irrigation of 111.7 expanded acres (Table 15). When considering the additional 118.5 AF volume of Little Modesty Creek water that is consumed during the irrigation of 93 expanded acres (see Table 14), Claim 76G 121094-00 is also found to be currently consuming more water (172.53 AF) than it did when it was only used to irrigate 53 acres with 54.03 AF of water (see Table 8).

**Table 15. Proposed consumed (PCV) vs. historic consumed (HCV) volumes for the remaining Racetrack Creek supplemental claims.**

Claim	HCV (722 acres)	PCV (722 acres)	PCV – HCV	PCV (111.7 expanded acres)	Total PCV (833.7 acres)
76G 121097-00	80.04 AF	117.15 AF	+37.11 AF	6.56 AF	123.71 AF
76G 121095-00	119.41 AF	174.74 AF	+55.33 AF	9.76 AF	184.5 AF
76G 121099-00	247.95 AF	390.91 AF	+142.96 AF	21.14 AF	412.05 AF
76G 121100-00	201.82 AF	32.95 AF	-168.87 AF	1.69 AF	34.64 AF
<i>Total</i>	<i>649.22 AF</i>	<i>715.75 AF</i>	<i>66.53 AF</i>	<i>39.15 AF</i>	<i>754.9 AF</i>

44. Though the diverted volume of water required to irrigate the current place of use is smaller than what was historically required due to the installation of seven center pivots on and around the historic place of use, the Department finds that the Applicant has not adequately ensured that the post-change *consumed* volumes attributable to each supplemental statement of claim will not be greater than what was consumed historically. As the Applicant did not provide an adequate plan to address the increase in consumption assumed by the remaining supplemental claims that will continue to irrigate the entire historic place of use following this change, the Department finds that the Applicant has not proven that this proposed change will not cause adverse effect to Racetrack Creek water users downstream of the secondary point of diversion. The Department has determined that 8.33 CFS up to 433.33 AF may be protected from the Racetrack Lake Dam to the Cement Ditch headgate (not to exceed 7.5 CFS up to 390 AF at the Cement Ditch). The Applicant may not protect any water stored in Racetrack Lake using Claim 76G 91008-00 beyond the secondary point of diversion as the Department would otherwise consider this to be a new appropriation of water in the absence of a proposal to reduce the volume of water historically and currently consumed as a result of the continued irrigation of the entire historic place of use, and the post July 1, 1973 expanded place of use.

**BEFORE THE DEPARTMENT OF  
NATURAL RESOURCES AND CONSERVATION  
OF THE STATE OF MONTANA**

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<b>APPLICATION TO CHANGE WATER RIGHT ) NO. 76G 30106785 BY CLARK FORK ) COALITION )</b>	<b>PRELIMINARY DETERMINATION TO GRANT IN MODIFIED FORM</b>
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On November 4<sup>th</sup>, 2016, the Clark Fork Coalition (the Applicant) submitted Application to Change Water Right No. 76G 30106785 to change Water Right Statement of Claim No. 76G 91008-00 to the Missoula Regional Office of the Department of Natural Resources and Conservation (the Department or DNRC). The Department published receipt of the Application on its website. The Department sent the Applicant a deficiency letter under §85-2-302, Montana Code Annotated (MCA), dated January 30<sup>th</sup>, 2017. The Applicant responded with information dated April 24<sup>th</sup>, 2017. The Application was determined to be correct and complete as of August 1<sup>st</sup>, 2017.

The Department met with the Applicant on February 9<sup>th</sup> to discuss application deficiencies and conducted a site visit on June 9<sup>th</sup>, and once more on August 29<sup>th</sup> to discuss the Department’s Technical Report. An Environmental Assessment for this Application was completed on November 14<sup>th</sup>, 2017.

**I. SUMMARY OF APPLICATION**

**Information**

The Department considered the following information submitted by the Applicant, which is contained in the administrative record.

**Application as filed:**

- Application to Change an Existing Irrigation Water Right, Form 606-IR
- Historical Water Use Addendum, Form 606-HUA
  - 1972 Racetrack Creek commissioner delivery records (Exhibit 1)
  - Spreadsheet of diverted volumes before (1972) and after (2006) pivot installation (Exhibit 2)
  - 2006 Racetrack Creek daily commissioner delivery records (Exhibit 3)
- Change to Instream Flow Addendum, Form 606-IFA
- Change in Purpose Addendum, Form 606-PA
- Temporary Change Addendum, Form 606-TCA
- Photograph of Racetrack Lake (Exhibit A)
- Final Upper Clark Fork River Basin Aquatic and Terrestrial Resources Restoration Plans, *December 2012* (Exhibit B)
- Maps: 1:126,720 scale map of NRD restoration priority areas & Racetrack Creek project components

(Exhibit B); 1:123,630 scale historic use overview map (Exhibit C); 1:32,440 scale map of claimed points of diversion, historic conveyance, and historic place of use (Exhibit D); 1:17,890 scale historic use map (Exhibit E); 1:121,650 scale proposed use overview map (Exhibit F); USDA engineering drawing of the Cement Ditch conveyance system (Exhibit H)

- Manning's ditch capacity calculator for Cement Ditch (Exhibit I)
- One-point velocity discharge measurement spreadsheet, 2011 (Exhibit J)
- Racetrack Creek synoptic flow analysis, 2012 (Exhibit K)

#### Information Received after Application Filed

- Responses to deficiency letter dated April 24<sup>th</sup>, 2017
- Graph and table of supplemental water right pattern of activation, 1972 and 2006
- Affidavit of Ted Beck dated April 2<sup>nd</sup>, 2012
- Affidavit of Will Pauley dated April 2<sup>nd</sup>, 2012
- Notice of Filing of Master's Report (Case 76G A8) dated August 12<sup>th</sup>, 2014

#### Information within the Department's Possession/Knowledge

- Deer Lodge County 1955 Water Resources Survey – aerial photos and field notes
- Water Right Claim File No. 76G 91008-00
- DNRC Irrigation Change Application Technical Report dated August 1<sup>st</sup>, 2017
- DNRC groundwater hydrology return flow report dated July 31<sup>st</sup>, 2017
- Montana Cadastral parcel and property information
- Deer Lodge County and Racetrack Creek surface water right information
- Terminated Change Application No. 76G 30063037
- Environmental Assessment dated November 14<sup>th</sup>, 2017

The Department also routinely considers the following information. The following information is not included in the administrative file for this Application, but is available upon request. Please contact the Missoula Regional Office at 406-721-4284 to request copies of the following documents.

- DNRC Return Flow Policy Memo, dated April 1<sup>st</sup>, 2016
- DNRC Change in Method of Irrigation Policy Memo, dated December 2<sup>nd</sup>, 2015
- DNRC Policy Memo on Assessment of New Consumptive Use and Irrecoverable Losses Associated with Change Applications, dated April 15<sup>th</sup>, 2013
- DNRC Consumptive Use Methodology Policy Memo, dated March 17<sup>th</sup>, 2010
- DNRC Changes for Instream Flow Rights Policy Memo, dated January 23<sup>rd</sup>, 2008

The Department has fully reviewed and considered the evidence and argument submitted in this Application and preliminarily determines the following pursuant to the Montana Water Use Act (Title 85, chapter 2, part 3, MCA).

## Change Proposal

1. The Applicant proposes to temporarily change the purpose and place of use of Statement of Claim 76G 91008-00 from irrigation to instream flow from May 1<sup>st</sup> to September 30<sup>th</sup> for the benefit of the fishery resource in Racetrack Creek, a 23-mile long tributary to the Clark Fork River, in Deer Lodge and Powell Counties. The proposed change results in a new place of use and purpose from the 1,000-acre claimed place of use to an instream appropriation of 8.33 CFS up to 433.33 AF (less conveyance losses) in Racetrack Creek. The proposed new place of use will consist of the entirety of Racetrack Creek (23.2 miles) from the Racetrack Lake Dam to the confluence of the creek and the Clark Fork River (Map 1). No acres are proposed to be retired from irrigation, and the supplemental claims listed in Table 2 will continue to irrigate the current place of use. The Applicant proposes to release water for instream flow purposes in unison with the other storage water users when creek flows below the Branch Ditch decline to 7.5 CFS during the prescribed period of use – though the likeliest releases will occur in mid-July – until the lake has been drained.

2. Claim 76G 91008-00 is based on a December 4, 1896 appropriation made by Marco Vusovich that was subsequently decreed in *Donich, et al. v. Johnson, et al.*, Third Judicial District Court (Powell County) Case No. 2749 (May 17<sup>th</sup>, 1939). Racetrack Lake is a snowmelt-fed reservoir that feeds into Racetrack Creek, and the primary point of diversion for Claim 76G 91008-00 is listed as the Racetrack Lake Dam, located in the NE of Section 5, Township 6 North Range 12 West, in Granite County. This claim lists a maximum volume of 433.33 acre-feet (AF) that may be stored in Racetrack Lake, and a flow rate of 8.33 cubic feet per second (CFS) that may be released from the lake into Racetrack Creek which acts as a natural carrier to convey water approximately 16.5 miles downstream to the second point of diversion at the Cement Ditch Headgate. The claimed place of use consists of 1,000 acres generally located in Section 24 and the NE of Section 25, T6N R10W, and the W2NE, NW, and N2SW of Section 19, T6N R9W, Deer Lodge County. The period of use for this water right is May 1<sup>st</sup> to September 30<sup>th</sup>, while the period of diversion is listed as October 15<sup>th</sup> to September 1<sup>st</sup>. In 2012, Claim 76G 91008-00 was purchased by the Applicant and subsequently severed from the historic place of use which is currently owned by the R Bar N Ranch. Table 1 summarizes the claimed elements of the water right proposed to be changed.

**Table 1. Elements of Statement of Claim No. 76G 91008-00**

Claim	Purpose	Flow Rate	Period of Use	Point of Diversion	Place of Use	Priority Date	Acres
76G 91008-00	Irrigation	8.33 CFS	5/01 – 9/30	NE S. 5, T6N R12W	S. 24, NE S. 25, T6N R10W; W2NE, NW, & N2SW S. 19, T6N R9W	11/01/1895	1,000

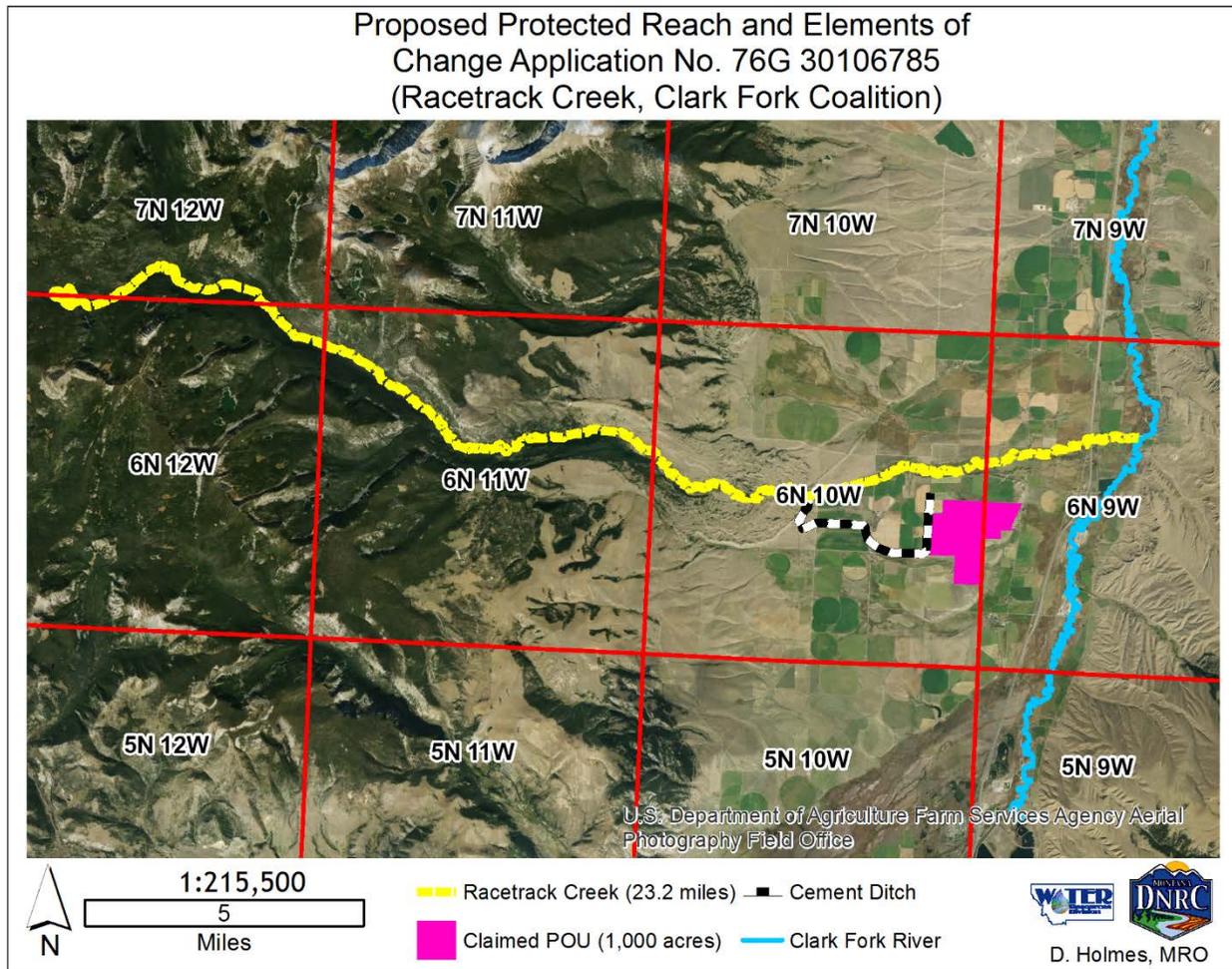
3. Statement of Claim Nos. 76G 121094-00, 76G 121097-00, 76G 121095-00, 76G 121099-00, 76G 121100-00, 76G 121098-00, and 76G 121096-00 share the same place of use and are considered supplemental to Claim 76G 91008-00. Each of these direct flow supplemental statements of claim list irrigation as their purpose and a period of use spanning April 1<sup>st</sup> to November 4<sup>th</sup>. Only Claim 76G 91008-

00 is proposed for change in this application. Table 2 summarizes the elements claimed by the supplemental water rights.

**Table 2. Elements and provisions of supplemental Statement of Claim Nos. 76G 121094-00, 76G 121097-00, 76G 121095-00, 76G 121099-00, 76G 121100-00, 76G 121098-00, and 76G 121096-00**

Claim	Source	Flow Rate (CFS)	Point of Diversion	Place of Use	Priority Date	Acres
76G 121094-00	Little Modesty Creek	1.88	N2NE, NENW S. 25, T6N R10W	S2SE S. 24 & NE S. 25, T6N R10W	7/17/1899	180
76G 121097-00	Racetrack Creek	1.83	SESWSE S. 16, T6N R10W	S. 24, NE S. 25, T6N R10W; W2NE, NW, & N2SW S. 19, T6N R9W	4/2/1865	1000
76G 121095-00	Racetrack Creek	2.73	SESWSE S. 16, T6N R10W	S. 24, NE S. 25, T6N R10W; W2NE, NW, & N2SW S. 19, T6N R9W	4/1/1868	1000
76G 121099-00	Racetrack Creek	7.5	SESWSE S. 16, T6N R10W	S. 24, NE S. 25, T6N R10W; W2NE, NW, & N2SW S. 19, T6N R9W	4/1/1872	1000
76G 121100-00	Racetrack Creek	10	SESWSE S. 16, T6N R10W	S. 24, NE S. 25, T6N R10W; W2NE, NW, & N2SW S. 19, T6N R9W	4/1/1879	1000
76G 121098-00	Racetrack Creek	3.75	SESWSE S. 16, T6N R10W	S. 24, NE S. 25, T6N R10W; W2NE, NW, & N2SW S. 19, T6N R9W	5/1/1889	1000
76G 121096-00	Racetrack Creek	7.5	SESWSE S. 16, T6N R10W	S. 24, NE S. 25, T6N R10W; W2NE, NW, & N2SW S. 19, T6N R9W	6/10/1957	1000

**Map 1. Elements of proposed change; Racetrack Creek comprises the proposed protected reach.**



4. Claims 76G 121094-00, 76G 121097-00, 76G 121095-00, 76G 121099-00, 76G 121100-00, 76G 121098-00, or 76G 121096-00 are not proposed to be changed; however, the Department must consider these supplemental claims as part of this change per ARM 36.12.1902(6) and due to the Applicant’s assertion that these claims alone will be able to provide enough water to continue irrigation at the current place of use post-change.

5. The Applicant included a measurement plan that includes coordination with the water commissioner and a proposal to take measurements at four different locations at least every two weeks, which is discussed in greater detail below.

**Table 3. Proposed protected volume and flow rate by stream reach.**

Stream Reach	% Conveyance Loss	Diverted Volume Deduction	Remaining Protectable Volume	Flow Rate Deduction (26.3 days)	Remaining Protectable Flow Rate
Racetrack Lake Dam (RM 23.2)	-	-	433.33 AF	-	8.33 CFS
Lake to Cement Ditch Headgate	10%	43.33 AF	390 AF	0.83 CFS	7.5 CFS
Reach 3: Cement Ditch to Branch Ditch	<i>Gaining</i>	-	390 AF	-	7.5 CFS
Reach 2: Branch Ditch to Edge Lane Bridge	14.5%	56.55 AF	333.45 AF	1.09 CFS	6.41 CFS
Reach 1: Edge Lane to Clark Fork (RM 0)	<i>Gaining</i>	-	333.45 AF	-	6.41 CFS

## Change Criteria

6. The Department is authorized to approve a change if the applicant meets its burden to prove the applicable § 85-2-402, MCA, criteria by a preponderance of the evidence. Matter of Royston, 249 Mont. 425, 429, 816 P.2d 1054, 1057 (1991); Hohenlohe v. DNRC, 2010 MT 203, ¶¶ 33, 35, and 75, 357 Mont. 438, 240 P.3d 628 (an applicant's burden to prove change criteria by a preponderance of evidence is "more probably than not."); Town of Manhattan v. DNRC, 2012 MT 81, ¶8, 364 Mont. 450, 276 P.3d 920. Under this Preliminary Determination, the relevant change criteria<sup>1</sup> in §85-2-402(2), MCA, are:

(2) Except as provided in subsections (4) through (6), (15), (16), and (18) and, if applicable, subject to subsection (17), the department shall approve a change in appropriation right if the appropriator proves by a preponderance of evidence that the following criteria are met:

(a) The proposed change in appropriation right will not adversely affect the use of the existing water rights of other persons or other perfected or planned uses or developments for which a permit or certificate has been issued or for which a state water reservation has been issued under part 3.

....

(c) The proposed use of water is a beneficial use.

7. In addition to the applicable §85-2-402(2), MCA, criteria, an applicant for a temporary change authorization for instream flow must comply with the requirements and conditions set forth in §§ 85-2-407 and -408, MCA. Section 85-2-408, MCA provides in part:

(1) The department shall accept and process an application for a temporary change in appropriation rights to maintain or enhance instream flow to benefit the fishery resource under the provisions of 85-2-402, 85-2-407, and this section. The application must:

(a) include specific information on the length and location of the stream reach in which the streamflow is to be maintained or enhanced; and

(b) provide a detailed streamflow measuring plan that describes the point where and the manner in which the streamflow must be measured.

....

(3) In addition to the requirements of 85-2-402 and 85-2-407, an applicant for a change authorization under this section shall prove by a preponderance of evidence that:

(a) the temporary change authorization for water to maintain and enhance instream flow to benefit the fishery resource, as measured at a specific point, will not adversely affect the water rights of other persons; and

(b) the amount of water for the proposed use is needed to maintain or enhance instream flows to benefit the fishery resource.

(4) The department shall approve the method of measurement of the water to maintain and enhance instream flow to benefit the fishery resource through a temporary change authorization as provided in this section.

....

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<sup>1</sup> The adequacy of diversion and possessory interest criteria set forth in 85-2-402(2)(b) and (d), MCA, do not apply to temporary changes for instream flow protection.

(7) The maximum quantity of water that may be changed to maintain and enhance streamflows to benefit the fishery resource is the amount historically diverted. However, only the amount historically consumed, or a smaller amount if specified by the department in the lease authorization, may be used to maintain or enhance streamflows to benefit the fishery resource below the existing point of diversion.

8. Pursuant to §85-2-407, and 408, MCA, a temporary change for authorization for instream flow is subject to special conditions which are addressed below. The evaluation of a proposed change in appropriation does not adjudicate the underlying right(s). The Department's change process and conditions only address the water right holder's ability to make a different use of that existing right. Hohenlohe, at ¶¶ 29-31; Town of Manhattan, at ¶8.

## II. FINDINGS OF FACT

### Historic Use

9. In the Applicant's response to DNRC's Deficiency Letter received April 24<sup>th</sup>, 2017, the Applicant maintains that because this change is being made to a storage water right that it is not "limited to the amount of water historically 'consumed' because none of this water right was part of the natural flow of the stream once it was put into storage and later released," and that based on two recent Montana Supreme Court cases, "releases of stored water are not part of the natural flow of the stream because water was put into storage much earlier in the season, and thus a consumptive use analysis does not accurately reflect changes from historic use. Instead, the relevant inquiry is to ensure that the amount of water released from storage is not enlarged as a result of this change authorization." The Department rejects this unsupported argument for the reasons explained in Conclusions of Law (COL's) 60 through 63. The Applicant's proposed change of its irrigation water right is subject to the same analysis as other irrigation water rights under Montana law.

### *Historic Diverted Volume*

10. The source of water for Claim 76G 91008-00 is Racetrack Lake in Granite County. Racetrack Lake Dam is listed as the point of diversion, and Racetrack Creek is used as a natural carrier of water to the secondary point of diversion. The secondary point of diversion consists of a headgate that diverts water into the Cement Ditch, which is used to convey water 5.5 miles to the place of use. The Cement Ditch headgate is located in the SESWSE of Section 16, T6N R10W, Powell County. The outlet of Racetrack Lake Dam consists of a 24-inch concrete pipe that has a capacity of 50 CFS. The Cement Ditch has a 141.2 CFS design capacity and a maximum capacity of 235 CFS as calculated by the Applicant.

11. With a storage volume listed as 433.33 AF and a flow rate of 8.33 CFS, Claim 76G 91008-00 makes up 2/3 of the 650 AF of water stored in Racetrack Lake; the remaining 1/3 of storage water is divided between Claims 76G 214588-00 (144.44 AF, 2.78 CFS) and 76G 214587-00 (72.22 AF, 1.39 CFS). The three storage claims each have period of use information remarks stating that they are used in unison and are released from the lake at the same time at a continual flow rate until the lake is depleted of stored water. While Claims 76G 214588-00 and 76G 214587-00 are released in unison with Claim 76G 91008-00, they

are not used supplementally to irrigate the same acreage. In their response to the Department's Deficiency Letter received April 24<sup>th</sup>, 2017, the Applicant references Racetrack Creek water commissioner records from 1990, 1991, and 1995 when stating that in the past the three Racetrack Lake claims were sometimes operated independently based upon the needs of each claim owner; however, the referenced commissioner records were not included in the response and the Department has no way to verify this statement. In contrast, findings are included in the Water Master's Report for Case 76G-A8 that was filed on August 12<sup>th</sup>, 2014, in which the claimants site a testimony made by Lee Jacobson stating that all three Racetrack Lake storage claims have always been used in conjunction, or within the same time period during the period of use, and to Mr. Jacobson's knowledge, nobody had ever deviated from this use pattern. The Department finds that the sworn testimony referenced in the Water Master's Report is more reliable under the circumstances.

12. The Applicant's historic use narrative states that Claim 76G 91008-00 is diverted at its full flow rate from Racetrack Lake typically beginning in July (around the 24<sup>th</sup>) until the lake is drained in August. At a continuous flow rate of 8.33 CFS, 433.33 AF of water can be released in 26.3 days ( $433.33 \text{ AF} \div (8.33 \text{ CFS} \times 1.98 \text{ AF/day}) = 26.3 \text{ days}$ ). When Claim 76G 91008-00 was decreed in 1939, a 10% rate of loss was attributed to the claim due to conveyance down Racetrack Creek to the Cement Ditch. This 10% loss results in a decreased flow rate of 7.5 CFS (up to 390 AF) that may be delivered through the Cement Ditch.

13. The Applicant submitted a Historical Water Use Addendum requesting that the Department consider historic 1972 commissioner records as evidence to calculate historic diverted volume and flow rate and deviate from the methods outlined in ARM 36.12.1902(10). The Department determined that it was appropriate to deviate from rule to calculate historic diverted volume using the commissioner records.

14. The 1972 commissioner records contain a series of four record intervals which list the total amount of water delivered in miner's inches (MI) to all Cement Ditch water users during each period: May 8<sup>th</sup> through June 14<sup>th</sup> (27,110 MI in 38 days), June 15<sup>th</sup> through July 15<sup>th</sup> (26,400 MI in 31 days), July 16<sup>th</sup> through August 31<sup>st</sup> (33,980 MI in 47 days), and September 1<sup>st</sup> through September 30<sup>th</sup> (7,580 MI in 30 days). Each water delivery sent through the Cement Ditch to the historic place of use associated with Claim 76G 91008-00 was made to Bud Jacobson, the water right owner listed at the time of record. The third record interval is of greatest interest to the Department since the water commissioner noted that a trip was made to Racetrack Lake at some point between July 16<sup>th</sup> and August 31<sup>st</sup> which corroborates the Applicant's statement that water was typically released from the lake beginning July 24<sup>th</sup>. The timeframe of this record (47 days) exceeds the number days stored water can be released at the full flow rate (26.3 days).

15. When averaged out for each day in the 1972 commissioner record, the Applicant's method for estimating daily historic diverted volumes approximates that 722.98 inches (18.07 CFS) (1/47th of 33,980 MI) were delivered through the Cement Ditch for each of the 47 days of the third record interval. Calculating a daily flow rate with this method assumes that the portions of Claim 76G 121100-00 (#15) and

76G 121099-00 (#8), which according to the Applicant were cut back due to priority sometime in the third week of July and later in the season (respectively) – thus initiating the release of water from Racetrack Lake – came back into priority roughly 26 days later when the lake was drained and Claim 76G 91008-00 was not in use for the rest of the season (Table 4). Table 4 below illustrates a slower flow rate being released from Racetrack Lake due to the Applicant’s interpretation of water being released over 30 days, rather than 26.3 days at the full flow rate. The Department excluded Claims 76G 121098-00 and 76G 121096-00 from its historic use analysis based on the Applicant’s narrative stating that these claims were only available during exceptionally wet years. (Note: the flow rates shown in Table 4 were calculated by adding the flow rate claimed by one water right to the flow rates of the more senior supplemental claims, i.e. 1.88 CFS with Claim 76G 121094-00 + 1.83 CFS claimed by 76G 121097-00 = 3.71 CFS + 2.73 CFS claimed by 76G 121095-00 = 6.44 CFS, etc.; in the event that all supplemental claims are available, the total flow rate for those claims would equal 23.94 CFS.)

**Table 4. Abbreviated table submitted by Applicant showing 1972 daily deliveries made to Bud Jacobson using a daily averaging method (7/16 to 8/31):**

Day	Daily Delivery (MI)	Daily Delivery (CFS)	76G 91008 (7.5 CFS)	76G 121094 (1.88 CFS)	76G 121097 (1.83 CFS)	76G 121095 (2.73 CFS)	76G 121099 (7.5 CFS)	76G 121100 (10 CFS)
7/16-7/23	722.98	20		1.88	3.71	6.44	13.9	23.94
7/24-8/24			6.14	8.02	9.85	12.58	20.08	30.08
8/25-8/31				1.88	3.71	6.44	13.9	23.94

16. The Applicant states that lake releases were historically initiated when Claim 76G 121100-00 had to be cut back, and that the claim typically fell out of priority once the lake was drained; however, as observed in FOF 15, the Applicant’s interpretation of historic daily deliveries does not accurately reflect this narrative. Table 4 implies that Racetrack Creek water is able to be diverted at a sustained flow rate before, during, and even after the lake is drained, and that the flow rate able to be diverted using Claim 76G 121100-00 ‘rebounds’ after lake releases cease.

17. Because the commissioner’s third record interval does not specify a date when stored water releases were initiated, the Department employed a different averaging method to estimate how much and at what rate water was pulled from Racetrack Creek through the Cement Ditch. This information is required to reliably determine how much water was delivered with all of Bud Jacobson’s claims via the Cement Ditch before, during, and after the 26.3-day period when lake releases were occurring. The Department’s averaging method accounts for the fact that direct flows in Racetrack Creek were naturally dropping during this period to the point that stored water had to be released, and that after the reservoir was drained natural flows in Racetrack Creek were lower than when the releases from the lake were initiated.

18. Using the 1972 Racetrack Creek commissioner records provided by the Applicant, the Department established how the 33,980 MI delivered to Bud Jacobson from Racetrack Creek via the Cement Ditch were distributed between July 16<sup>th</sup> and August 24<sup>th</sup> (i.e. the third record interval during which Claim 76G 91008-

00 was activated and water was released from Racetrack Lake) in a manner that more reasonably reflects the Applicant's historic use narrative. The Department assumed the following: the average daily water delivery rate evidenced in the previous commissioner record period spanning June 15<sup>th</sup> through July 15<sup>th</sup> (851.61 MI per day for 31 days) continued until Claim 76G 121100-00 (#15) was cut back and water was first released from Racetrack Lake on the date specified by the Applicant (July 24<sup>th</sup>); Claim 76G 91008-00 was delivered at its full flow rate until the lake was drained 26.3 days later; after the lake was drained around August 19<sup>th</sup> and Claim 76G 91008-00 was deactivated, Claim 76G 121100-00 (#15) fell out of priority and was inactive for the rest of the season; Claim 76G 121099-00 (#8) remained fully activated until the lake was drained at which point it was cut back; only Claims 76G 121097-00 (#2) and 76G 121095-00 (#4) remained in full service for the duration of the 47-day commissioner record of interest. Historic diverted volumes/flow rates calculated by the Department are assumed to be close approximations of actual delivery amounts as the deliveries reported by the commissioner appear to be rounded.

19. The Department's averaging method assumed that the average daily rate that water was delivered from June 15<sup>th</sup> to July 15<sup>th</sup> (851.61 MI/21.29 CFS per day) during the second record interval continued to be delivered until July 23<sup>rd</sup>. The amount remaining for delivery from July 24<sup>th</sup> when stored water was released to the end of the third record interval on August 31<sup>st</sup> was then divided by the 39 days remaining in this record interval to arrive at a mean daily delivery rate (696.59 MI or 17.41 CFS/day) for those 39 days. Next, the portion of total daily deliveries made that at this stage in calculations are shown to be attributed to Claim 76G 121100-00 (#15, and which according to the Applicant's narrative falls out of priority after the lake is drained) between the second half of August 19<sup>th</sup> through August 31<sup>st</sup> (5.35 CFS or approximately 213.99 MI) was moved/added to the daily deliveries occurring between July 24<sup>th</sup> and August 19<sup>th</sup> (5.35 CFS + 17.41 CFS = 22.76 CFS). The amount remaining for delivery between the latter part of August 19<sup>th</sup> and August 31<sup>st</sup> (approximately 3,221 MI) was then divided by the 12.7 remaining delivery days to arrive at a total daily delivery average for the duration of that period (253.62 MI or 6.34 CFS/day). As the water rights relevant to this application list claimed flow rates in CFS rather than MI, volumes for each claim were derived from the daily CFS delivery values that were initially converted from daily MI deliveries.

20. The Department finds that for the period between July 24<sup>th</sup> and August 19<sup>th</sup>, approximately 23,948 MI (910.58 MI or 22.76 CFS per day) were delivered to the historic place of use via the Cement Ditch. Claims 76G 121097-00, 76G 121095-00, and 76G 121099-00 remained in full service during this time, while 3.2 CFS out of a claimed 10 CFS could be diverted with Claim 76G 121100-00. Once Racetrack Lake was drained and Claim 76G 91008-00 no longer provided irrigation water, Claim 76G 121100-00 was inactive for the rest of the season and only 1.78 CFS out of a claimed 7.5 CFS could be used with Claim 76G 121099-00. The Department's interpretation of the supplemental relationship for the commissioner record covering deliveries made from July 16<sup>th</sup> to August 31<sup>st</sup> reasonably reflects the Applicant's narrative

of the 1972 water commissioner records describing how the direct flow and storage water rights fell into and out of priority around the time Claim 76G 91008-00 was in use (Tables 5 and 6).

**Table 5. Supplemental relationship between Claim 76G 91008-00 and the direct flow Racetrack Creek claims that were activated during the 1972 irrigation season, as well as delivery volumes.**

Inactive	Partially Active	Fully Active	Claims fulfilled with water delivered through Cement Ditch headgate				
			76G 91008	76G 121097	76G 121095	76G 121099	76G 121100
			(Lake)	(#2)	(#4)	(#8)	(#15)
Delivery Period (Days)	Water Delivered (MI/Day (Total))	CFS/Day (Total AF)	Claimed 7.5 CFS	Claimed 1.83 CFS	Claimed 2.73 CFS	Claimed 7.5 CFS	Claimed 10 CFS
<i>Total ≈ 27,110 MI (1,342.29 AF) delivered between 5/8 and 6/14 (38 days)</i>							
5/8 - 6/14	713.42	17.84		1.83	2.73	7.50	5.78
<i>Total ≈ 26,400 MI (1,306.79 AF) delivered from the beginning of 6/15 through 7/15 (31 days)</i>							
6/15 - 7/15	851.61	21.29		1.83	2.73	7.50	9.23
<i>Total ≈ 33,980 MI (1,681.31 AF) delivered between 7/16 and 8/31 (47 days)</i>							
7/16 - 7/23 (8)	851.61 (6,814)	21.29 (337.23)		1.83	2.73	7.50	9.23
7/24 - 8/19 (26.3)	910.58 (23,943)	22.76 (1,184.65)	7.50	1.83	2.73	7.50	3.20
8/19 - 8/31 (12.7)	253.62 (3,221)	6.34 (159.43)		1.83	2.73	1.78	
<i>Total ≈ 7,580 MI (375.4 AF) delivered between 9/1 and 9/30 (30 days)</i>							
9/1 - 9/30	252.66	6.32		1.83	2.73	1.76	
<b><i>Total ≈ 95,070 MI (4,705.79 AF) delivered via the Cement Ditch between 5/8/1972 and 9/30/1972 (146 days)</i></b>							

(Note: The total 1,184.65 AF volume diverted between 7/24 and 8/19 shown in this table excludes an additional 0.55 AF that can be diverted when 7.5 CFS flows over 26.3 days – see Table 8.)

**Table 6. 1972 supplemental relationships and deactivation schedule for all statements of claim associated with the historic place of use.**

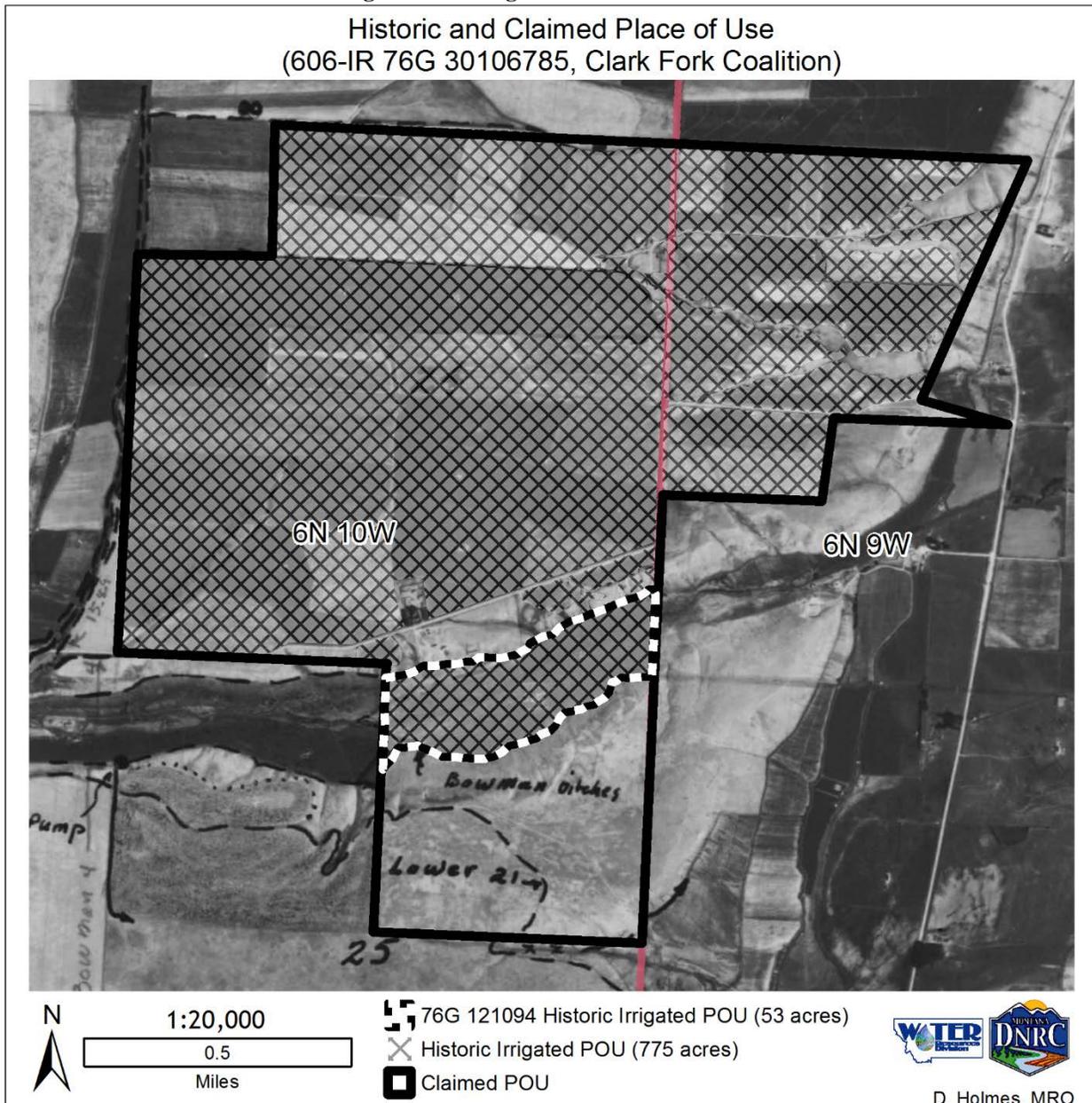
Inactive	Partially Active	Fully Active	76G 91008	76G 121094	76G 121097	76G 121095	76G 121099	76G 121100
Period of Use (Days)	Flow Rate (CFS)	Diverted Volume (AF)	Claimed CFS 7.5	Claimed CFS 1.88	Claimed CFS 1.83	Claimed CFS 2.73	Claimed CFS 7.5	Claimed CFS 10
5/8 - 6/14 (38)	19.72	1,483.74		1.88	1.83	2.73	7.5	5.78
6/15 - 7/15 (31)	23.17	1,422.18		1.88	1.83	2.73	7.5	9.23
<i>Total ≈ 1,856.29 AF diverted between 7/16 and 8/31 (47 days)</i>								
7/16 - 7/23 (8)	23.17	367.01		1.88	1.83	2.73	7.5	9.23
7/24 - 8/19 (26.3)	24.64	1,282.55	7.5	1.88	1.83	2.73	7.5	3.20
8/19 - 8/31 (12.7)	8.22	206.7		1.88	1.83	2.73	1.78	
9/1 to 9/30 (30)	8.2	487.07		1.88	1.83	2.73	1.76	
<b><i>Total ≈ 5,249.25 AF diverted to the Jacobson place of use between 5/8/1972 and 9/30/1972 (146 days)</i></b>								

### Historic Consumed Volume

21. The Applicant states that the historic place of use consisted of 871.69 irrigated acres based on an aerial photo taken on September 24<sup>th</sup>, 1954. Upon review of the Applicant’s 1954 aerial photo and a Deer Lodge County Water Resource Survey (WRS) aerial photo taken on August 17<sup>th</sup>, 1947, the Department was

unable to find sufficient evidence demonstrating that more than 775 acres were historically flood irrigated within the Applicant's claimed place of use (Map 2). The Department identified 53 irrigated acres in the NE of Section 25 and S2SE of Section 24 which comprise the portion of the place of use that was topographically irrigable with water diverted from Little Modesty Creek via the (now retired) Bowman Ditches. The remaining 722 irrigated acres were determined to be irrigable only with water conveyed from Racetrack Creek through the Cement Ditch. The 1947 WRS aerial photo also shows evidence of ditches in the SESE of Section 24, T6N R10W, that appear to convey Racetrack Creek water to supplement irrigation on the 53 acres that are irrigable with Little Modesty water.

**Map 2. Historic and claimed place of use for claims diverted from Racetrack and Little Modesty Creeks; claims that were not activated during the 1972 irrigation season were excluded.**



22. Per the methods outlined in ARM 36.12.1902(16) the Department quantified the field application volume required for irrigation of the 53 acres historically irrigated with Claim 76G 121094-00 during the 26.3-day period spanning July 24<sup>th</sup> to August 19<sup>th</sup>. The flood irrigation water requirements estimated for July and August at the Deer Lodge weather station are listed as 5.27 inches and 3.98 inches, respectively. Based on these values, the Department determined that the flood irrigation water requirement (IWR) for the 26.3-day period of interest is 3.71 inches. This was calculated by adding the total IWR for the 8 days spanning July 24<sup>th</sup> and July 31<sup>st</sup> to the total irrigation water required for the 18.3 days spanning August 1<sup>st</sup> through August 19<sup>th</sup> ( $5.27 \text{ inches} \div 31 \text{ days} = 0.17 \text{ inches per day} \times 8 \text{ days} = 1.36 \text{ inches}$ ;  $3.98 \text{ inches} \div 31 \text{ days} = 0.128 \text{ inches per day} \times 18.3 \text{ days} = 2.35 \text{ inches} + 1.36 \text{ inches} = 3.71 \text{ inches}$ ). With a flood IWR of 3.71 inches, the historic management factor for the Deer Lodge weather station in Powell County (77.6%), and 25% on-farm efficiency, the Department finds a required field application volume of 50.86 AF for the 53 acres historically irrigated with Little Modesty water ( $3.71 \text{ inches} \div 12 \text{ inches/foot} \times 0.776 \times 53 \text{ acres} = 12.72 \text{ AF} \div 0.25 \text{ on-farm efficiency} = 50.86 \text{ AF}$ ). When in full service, the flow rate of 1.88 CFS listed for Claim 76G 121094-00 diverts a total of 97.9 AF of water over 26.3 days and alone can provide the volume of water required to historically flood irrigate 53 acres without being supplemented by Racetrack Creek water. When considering 5% irrecoverable losses for flooding, the total historic volume consumed from the irrigation of the 53 acres in question using Claim 76G 121094-00 equals 15.26 AF.

23. The Department attributes historic irrigation of the remaining 722 acres not irrigated with water from Little Modesty Creek to Claims 76G 91008-00, 76G 121097-00, 76G 121095-00, 76G 121099-00, and 76G 121100-00, each of which are delivered to the place of use via the Cement Ditch. To calculate the volume historically consumed for 722 flood irrigated acres between July 24<sup>th</sup> and August 19<sup>th</sup>, the Department used the Powell County flood IWR value of 3.71 inches for the 26.3-day period of interest, the 77.6% historic management factor, an on-farm efficiency of 30%, and 5% irrecoverable losses from flood irrigation. The Department found a historic consumptive volume (including irrecoverable losses) of 202.09 AF resulting from the irrigation of the 722 acres in question during the time that Claim 76G 91008-00 was in service ( $3.71 \text{ inches} \div 12 \text{ inches/foot} \times 0.776 \times 722 \text{ acres} = 173.22 \text{ AF} \div 0.3 \text{ on-farm efficiency} = 577.39 \text{ AF} \times 0.05 = 28.87 \text{ AF irrecoverable losses} + 173.22 \text{ AF} = 202.09 \text{ AF}$ ). The historic consumed volume for the entire 775-acre historic place of use during this 26.3-day period was calculated as 217.35 AF (Table 7).

**Table 7. Historic consumed volume for the historic place of use between July 24<sup>th</sup> and August 19<sup>th</sup> (26.3 days).**

Historic Acres	Powell County IWR (inches)	Powell County Management Factor	HCV (AF)	*On-Farm Efficiency	Field App. Volume (AF)	Irrecoverable Losses (IL), Flood = 5% (AF)	HCV Including IL (AF)
722	3.71	77.6%	173.22	30%	577.39	28.87	202.09
53			12.72	25%	50.86	2.54	15.26
<b>775</b>			<b>184.94</b>		<b>628.25</b>	<b>31.41</b>	<b>217.35</b>

\*A higher on-farm efficiency percentage was assigned to the 722 acres historically irrigated with water delivered through the Cement Ditch only due to the more complex system of conveyance ditches located in this portion of the historic place of use.

24. To distinguish the historic consumed volume attributable to Claim 76G 91008-00 from the total volume of 202.09 AF consumed during the historic irrigation of 722 acres between July 24<sup>th</sup> and August 19<sup>th</sup>, the Department determined the proportions of total diverted volume by water right and applied them to the total historic consumed volume. Table 8 summarizes the historic diverted and consumed volumes for the Cement Ditch claims during the 26.3-day period during which Claim 76G 91008-00 was active. The Department finds that Claim 76G 91008-00 accounted for 66.53 AF of the total 202.09 AF historic volume consumed during the irrigation of the 722 acres that were supplied water from the Cement Ditch.

**Table 8. Historically consumed (HCV), diverted (HDV), and field application volumes for Claims 76G 91008-00, 76G 121097-00, 76G 121095-00, 76G 121099-00, and 76G 121100-00 between 7/24 and 8/19 (26.3 days).**

Claim	Source	Flow Rate (CFS)	*HDV (AF)	% of HDV/HCV	Field Application Volume (AF)	HCV (AF)
76G 91008-00	Racetrack Lake	7.5	390	32.92%	190.08	66.53
76G 121097-00	Racetrack Creek	1.83	95.3	8.04%	46.42	16.25
76G 121095-00		2.73	142.16	12%	69.29	24.25
76G 121099-00		7.5	390.55	32.97%	190.36	66.63
76G 121100-00		3.20	166.64	14.07%	81.24	28.43
		<b>22.76</b>	<b>1,184.65</b>	<b>100%</b>	<b>577.39</b>	<b>202.09</b>

\*HDV (AF) was calculated as  $\text{Flow Rate (CFS)} \times 1.98 \text{ AF/day} \times 26.3 \text{ days}$ . Though 7.5 CFS over 26.3 days delivers 390.55 AF, HDV (AF) for Claim 76G 91008-00 was limited to 390 AF.

25. Table 9 shows the total 1972 historic use volumes for all of Bud Jacobson’s claims, and is organized by commissioner periods of record. Historic consumed volumes for the entire 1972 irrigation season were calculated using the IWR values corresponding with each distinct period of record; for the 722 acres irrigated solely with water conveyed through the Cement Ditch, the historic consumed volume was calculated for each period, then proportioned out for each individual Cement Ditch claim. As the acres historically irrigated with Little Modesty Creek water and Cement Ditch water did not overlap, historic use by commissioner period for the Cement Ditch claims reveal identical % of period HDV and % of period HCV variables for each claim based on the same logic described in Table 8. To calculate the percentage of an entire commissioner period’s historic use volume that may be attributed to each individual claim during a particular period, the Department divided the volumes diverted and consumed by each claim for that period by the period’s total diverted and consumed volumes. The Department finds that water use with Claim 76G 91008-00 accounted for 30.41% of the volume diverted and 30.61% of the volume consumed during the time it was in full service. Based on the information available to the Department, water released from Racetrack Lake accounted for 7.43% of the 5,249.25 AF diverted to Bud Jacobson during the 1972 irrigation season, and 8.64% of the 769.78 AF consumed during the irrigation of the historic 775-acre place of use.

**Table 9. Historic use for the 146-day 1972 irrigation season for Claims 76G-91008-00, -121097-00, -121095-00, -121099-00, and -121100-00.**

Inactive	Partially Active	Fully Active	1972 commissioner periods of record (4 total delivery records)						Claim Totals 5/8 to 9/30
			Record 1	Record 2	Record 3		Record 4		
Claim (Pre-1973 Irrigated Acres)	Historic Use Variable	5/8 to 6/14 (38 days)	6/15 to 7/15 (31 days)	7/16 to 7/23 (8 days)	7/24 to 8/19 (26.3 days)	8/19 to 8/31 (12.7 days)	9/1 to 9/30 (30 days)		
76G-91008-00 Racetrack Lake (722)	HDV (AF) (CFS) % of period HDV HCV (AF) % of period HCV				390 7.5 30.41%			<b>390</b> <b>(7.5)</b> <b>7.43%</b> <b>66.53</b> <b>8.64%</b>	
76G-121094-00 Little Modesty (53)	HDV (AF) (CFS) % of period HDV HCV (AF) % of period HCV	141.45 (1.88) 9.53%	115.39 (1.88) 8.11%	29.78 (1.88) 8.11%	97.9 (1.88) 7.63%	47.27 (1.88) 22.87%	111.67 (1.88) 22.93%	<b>543.46</b> <b>(1.88)</b> <b>10.35%</b> <b>54.03</b> <b>7.02%</b>	
76G-121097-00 Racetrack Creek (722)	HDV (AF) (CFS) % of period HDV HCV (AF) % of period HCV	137.69 (1.83) 9.28%	112.33 (1.83) 7.90%	28.99 (1.83) 7.90%	95.3 (1.83) 7.43%	46.02 (1.83) 22.26%	108.7 (1.83) 22.32%	<b>529.03</b> <b>(1.83)</b> <b>10.08%</b> <b>80.04</b> <b>10.4%</b>	
76G-121095-00 Racetrack Creek (722)	HDV (AF) (CFS) % of period HDV HCV (AF) % of period HCV	205.41 (2.73) 13.84%	167.57 (2.73) 11.78%	43.24 (2.73) 11.78%	142.16 (2.73) 11.08%	68.65 (2.73) 33.21%	162.16 (2.73) 33.29%	<b>789.19</b> <b>(2.73)</b> <b>15.03%</b> <b>119.41</b> <b>15.51%</b>	
76G-121099-00 Racetrack Creek (722)	HDV (AF) (CFS) % of period HDV HCV (AF) % of period HCV	564.3 (7.5) 38.03%	460.35 (7.5) 32.37%	118.8 (7.5) 32.37%	390.55 (7.5) 30.45%	44.76 (1.78) 21.65%	104.54 (1.76) 21.46%	<b>1,683.31</b> <b>-</b> <b>32.07%</b> <b>247.95</b> <b>32.12%</b>	
76G-121100-00 Racetrack Creek (722)	HDV (AF) (CFS) % of period HDV HCV (AF) % of period HCV	434.89 (5.78) 29.31%	566.54 (9.23) 39.84%	146.2 (9.23) 39.84%	166.64 (3.2) 12.99%			<b>1,314.26</b> <b>-</b> <b>25.04%</b> <b>201.82</b> <b>26.22%</b>	
<b>Period Total</b>	<b>HDV (AF)</b> <b>(CFS)</b> <b>HCV (AF)</b> <b>Pre-1973 IWR</b>	<b>1,483.74</b> <b>(19.72)</b> <b>106.03</b> <b>1.4"</b>	<b>1,422.18</b> <b>(23.17)</b> <b>271.24</b> <b>3.59"</b>	<b>367.01</b> <b>(23.17)</b> <b>79.67</b> <b>1.06"</b>	<b>1,282.55</b> <b>(24.64)</b> <b>217.35</b> <b>2.88"</b>	<b>206.7</b> <b>(8.22)</b> <b>95.49</b> <b>1.26"</b>	<b>487.07</b> <b>(8.2)</b> <b>-</b> <b>-</b>	<b>5,249.25</b> <b>-</b> <b>769.78</b> <b>10.19"</b>	

## Adverse Effect

26. To quantify post-change consumptive volume, the Department used the Applicant's (daily) 2006 Cement Ditch commissioner records to determine the proportion of post-change deliveries that are attributable to the supplemental Racetrack Creek claims (Table 10). Table 10 is organized by the four 1972 commissioner periods of record and only lists information for the dates that mark a change in delivery amounts (e.g. from 9/1 to 9/18, 232 MI were delivered daily, while 182 MI were delivered daily between 9/19 to 9/30; in total 6,360 MI were delivered between 9/1 and 9/30). (Note: no deliveries were made on May 25<sup>th</sup>, 2006.)

**Table 10. 2006 Daily diverted volumes and flow rates for claims conveyed via the Cement Ditch (5/15 to 9/30).**

Inactive	Partially Active	Fully Active	Claim 76G 121097-00		Claim 76G 121095-00		Claim 76G 121099-00		Claim 76G 121100-00		
			1.83 CFS	Div. Vol.	2.73 CFS	Div. Vol.	7.5 CFS	Div. Vol.	10 CFS	Div. Vol.	
2006 Date	Daily Delivery										
	(MI)	(CFS)	(AF)								
5/15	75	1.88	3.71	1.83	3.62	0.04	0.09	0.00	0.00	0.00	0.00
5/16	250	6.25	12.38	1.83	3.62	2.73	5.41	1.69	3.35	0.00	0.00
5/18	350	8.75	17.33	1.83	3.62	2.73	5.41	4.19	8.30	0.00	0.00
5/19	400	10.00	19.80	1.83	3.62	2.73	5.41	5.44	10.77	0.00	0.00
5/26	425	10.63	21.04	1.83	3.62	2.73	5.41	6.07	12.01	0.00	0.00
5/28	375	9.38	18.56	1.83	3.62	2.73	5.41	4.82	9.53	0.00	0.00
5/30	425	10.63	21.04	1.83	3.62	2.73	5.41	6.07	12.01	0.00	0.00
6/1	400	10.00	19.80	1.83	3.62	2.73	5.41	5.44	10.77	0.00	0.00
6/7	500	12.50	24.75	1.83	3.62	2.73	5.41	7.50	14.85	0.44	0.87
6/12	565	14.13	27.97	1.83	3.62	2.73	5.41	7.50	14.85	2.07	4.09
6/14	562	14.05	27.82	1.83	3.62	2.73	5.41	7.50	14.85	1.99	3.94
<b>Total</b>	<b>12,367</b>		<b>612.17</b>		<b>108.70</b>		<b>156.85</b>		<b>330.15</b>		<b>16.47</b>
6/15	562	14.05	27.82	1.83	3.62	2.73	5.41	7.50	14.85	1.99	3.94
6/16	560	14.00	27.72	1.83	3.62	2.73	5.41	7.50	14.85	1.94	3.84
6/17	565	14.13	27.97	1.83	3.62	2.73	5.41	7.50	14.85	2.07	4.09
6/20	500	12.50	24.75	1.83	3.62	2.73	5.41	7.50	14.85	0.44	0.87
6/23	600	15.00	29.70	1.83	3.62	2.73	5.41	7.50	14.85	2.94	5.82
7/3	500	12.50	24.75	1.83	3.62	2.73	5.41	7.50	14.85	0.44	0.87
7/4	482	12.05	23.86	1.83	3.62	2.73	5.41	7.49	14.83	0.00	0.00
<b>Total</b>	<b>16,601</b>		<b>821.75</b>		<b>112.33</b>		<b>167.57</b>		<b>460.11</b>		<b>81.74</b>
7/16	482	12.05	23.86	1.83	3.62	2.73	5.41	7.49	14.83	0.00	0.00
7/28	400	10.00	19.80	1.83	3.62	2.73	5.41	5.44	10.77	0.00	0.00
7/29	424	10.60	20.99	1.83	3.62	2.73	5.41	6.04	11.96	0.00	0.00
7/30	400	10.00	19.80	1.83	3.62	2.73	5.41	5.44	10.77	0.00	0.00
8/1	407	10.18	20.15	1.83	3.62	2.73	5.41	5.62	11.12	0.00	0.00
8/2	557	13.93	27.57	1.83	3.62	2.73	5.41	7.50	14.85	1.87	3.69
8/4	489	12.23	24.21	1.83	3.62	2.73	5.41	7.50	14.85	0.16	0.33
8/5	432	10.80	21.38	1.83	3.62	2.73	5.41	6.24	12.36	0.00	0.00
8/7	424	10.60	20.99	1.83	3.62	2.73	5.41	6.04	11.96	0.00	0.00
8/11	376	9.40	18.61	1.83	3.62	2.73	5.41	4.84	9.58	0.00	0.00
8/12	332	8.30	16.43	1.83	3.62	2.73	5.41	3.74	7.41	0.00	0.00
8/19	446	11.15	22.08	1.83	3.62	2.73	5.41	6.59	13.05	0.00	0.00
8/21	332	8.30	16.43	1.83	3.62	2.73	5.41	3.74	7.41	0.00	0.00
8/28	232	5.80	11.48	1.83	3.62	2.73	5.41	1.24	2.46	0.00	0.00
<b>Total</b>	<b>18,822</b>		<b>931.68</b>		<b>170.30</b>		<b>254.05</b>		<b>499.62</b>		<b>7.71</b>
9/1	232	5.80	11.48	1.83	3.62	2.73	5.41	1.24	2.46	0.00	0.00
9/19	182	4.55	9.01	1.83	3.62	2.72	5.39	0.00	0.00	0.00	0.00
<b>Total</b>	<b>6,360</b>		<b>314.81</b>		<b>108.70</b>		<b>161.92</b>		<b>44.19</b>		<b>0.00</b>
<b>2006 Cement Ditch deliveries = 54,150 MI (2,680.41 AF)</b>											

27. The Department determined the percentage of the post-change volume diverted during the days within each period shown in Table 10 when irrigation water is required that can be attributed to Claims 76G 121097-00, 76G 121095-00, 76G 121099-00, and 76G 121100-00 (Tables 11 and 12). Attributing volumes of water consumed on acres irrigated with water from both Racetrack and Little Modesty Creeks to each claim can reasonably be based on the proportions outlined in Tables 11 and 12 since all water diverted from Racetrack Creek is conveyed through the Cement Ditch at the same time. Absent commissioner records or post-1973 measurements for Little Modesty Creek diversions, the Department assumes that Claim 76G 121094-00 will be diverted post-change at the full claimed flow rate of 1.88 CFS.

**Table 11. Racetrack Creek water right percentages of post-change volumes diverted during center pivot IWR days (5/15/2006 to 9/30/2006).**

2006 Diversion Period (Days)	<b>76G 121097-00</b> Div. Vol. (AF) (% of period total)	<b>76G 121095-00</b> Div. Vol. (AF) (% of period total)	<b>76G 121099-00</b> Div. Vol. (AF) (% of period total)	<b>76G 121100-00</b> Div. Vol. (AF) (% of period total)	<i>Total Diverted Volume Per Period</i>
5/15 - 6/14 (30)	108.7 (17.76%)	156.85 (25.62%)	330.15 (53.93%)	16.47 (2.69%)	<b>612.17</b> <b>(22.84%)</b>
6/15 - 7/15 (31)	112.33 (13.67%)	167.57 (20.39%)	460.11 (55.99%)	81.74 (9.95%)	<b>821.75</b> <b>(30.66%)</b>
7/16 - 7/23 (8)	28.99 (15.19%)	43.24 (22.65%)	118.64 (62.16%)	0 (0%)	<b>190.87</b> <b>(7.12%)</b>
7/24 - 8/19 (26.3)	95.3 (17.57%)	142.16 (26.22%)	297.14 (54.79%)	7.71 (1.42%)	<b>542.31</b> <b>(20.23%)</b>
8/19 - 8/31 (12.7)	46.02 (23.18%)	68.64 (34.58%)	83.84 (42.24%)	0 (0%)	<b>198.5</b> <b>(7.41%)</b>
9/1 - 9/30 (30)	108.7 (34.53%)	161.92 (51.43%)	44.19 (14.04%)	0 (0%)	<b>314.81</b> <b>(11.74%)</b>
<b>Total Volume Per Claim</b>	<b>500.04</b> <b>(18.66%)</b>	<b>740.38</b> <b>(27.62%)</b>	<b>1,334.07</b> <b>(49.77%)</b>	<b>105.92</b> <b>(3.95%)</b>	<b>2,680.41*</b> <b>(100%)</b>

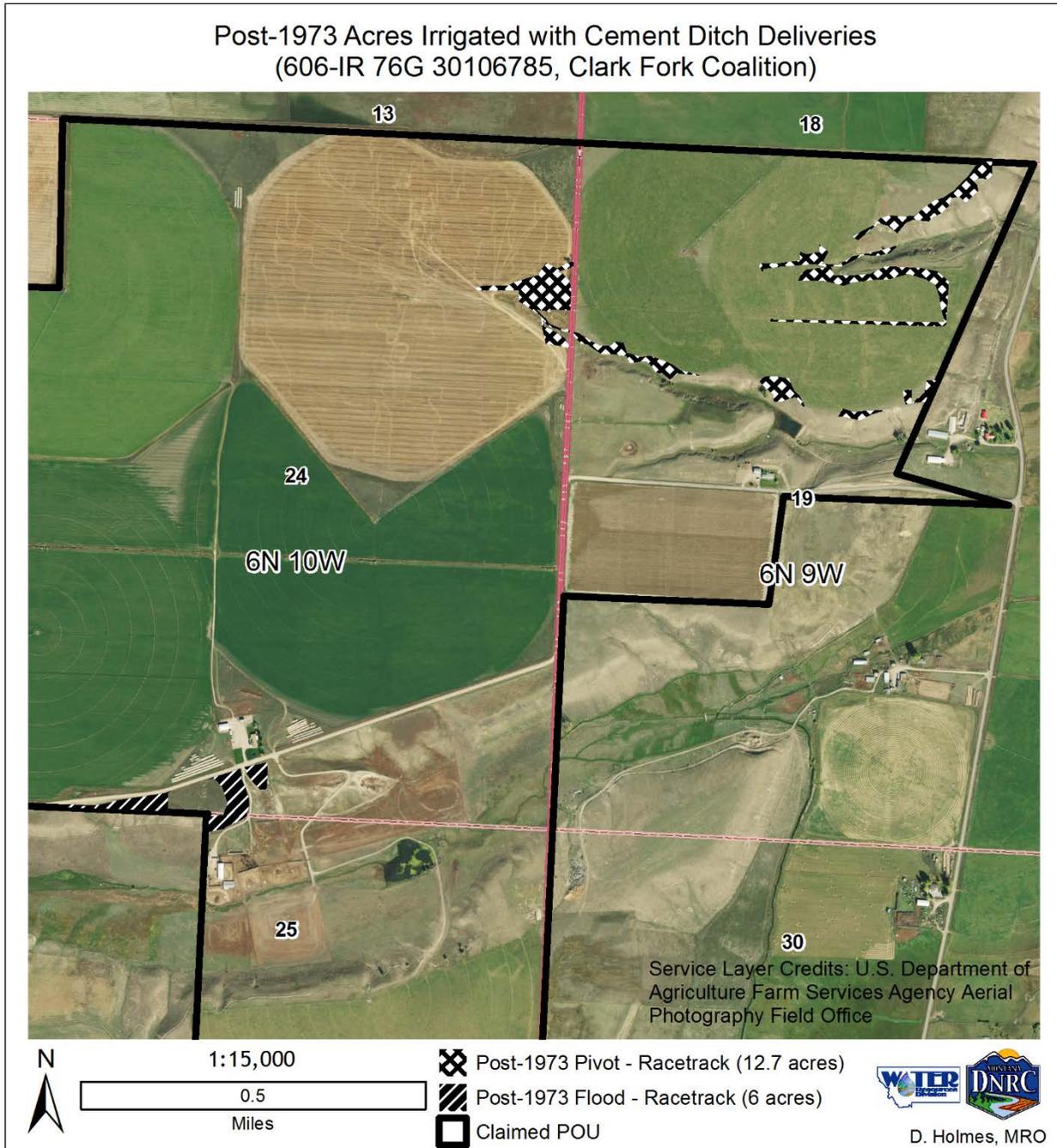
**Table 12. Racetrack Creek water right percentages of post-change volumes diverted during flood IWR days (6/1/2006 to 8/31/2006).**

2006 Diversion Period (Days)	<b>76G 121097-00</b> Div. Vol. (AF) (% of total)	<b>76G 121095-00</b> Div. Vol. (AF) (% of total)	<b>76G 121099-00</b> Div. Vol. (AF) (% of total)	<b>76G 121100-00</b> Div. Vol. (AF) (% of total)	<i>Total Diverted Volume Per Period</i>
6/1 to 6/14 (14)	50.73 (15.55%)	75.68 (23.19%)	183.43 (56.21%)	16.47 (5.05%)	<b>326.31</b> <b>(15.69%)</b>
6/15 to 7/15 (31)	112.33 (13.67%)	167.57 (20.39%)	460.11 (55.99%)	81.74 (9.95%)	<b>821.75</b> <b>(39.51%)</b>
7/16 to 7/23 (8)	28.99 (15.19%)	43.24 (22.65%)	118.64 (62.16%)	0 (0%)	<b>190.87</b> <b>(9.18%)</b>
7/24 to 8/19 (26.3)	95.3 (17.57%)	142.16 (26.22%)	297.14 (54.79%)	7.71 (1.42%)	<b>542.31</b> <b>(26.08%)</b>
8/19 to 8/31 (12.7)	46.02 (23.18%)	68.64 (34.58%)	83.84 (42.24%)	0 (0%)	<b>198.5</b> <b>(9.54%)</b>
<b>Total Volume Per Claim</b>	<b>333.37</b> <b>(16.03%)</b>	<b>497.29</b> <b>(23.91%)</b>	<b>1,143.16</b> <b>(54.97%)</b>	<b>105.92</b> <b>(5.09%)</b>	<b>2,079.74*</b> <b>(100%)</b>

\*Of the total 2,680.41 AF of water diverted into the Cement Ditch during the 2006 irrigation season, 2,079.74 AF were diverted during the growing season identified in IWR for flood irrigation.

28. The Department identifies a total of 18.7 acres that were not irrigated historically but that are currently irrigated exclusively with water from Racetrack Creek (Map 3). Of these 18.7 newly irrigated acres, 12.7 acres are irrigated with center pivots and 6 acres appear to be flood-irrigated. 3.5 pivot irrigated acres are located in the E2NE of Section 24, T6N R10W, and the other 9.2 acres are located in the N2 of Section 19, T6N R9W. 5.5 newly flooded acres are in the S2SESW and SESWSE of Section 24, and 0.5 flooded acres are located in the NWNWNE of Section 25, T6N R10W.

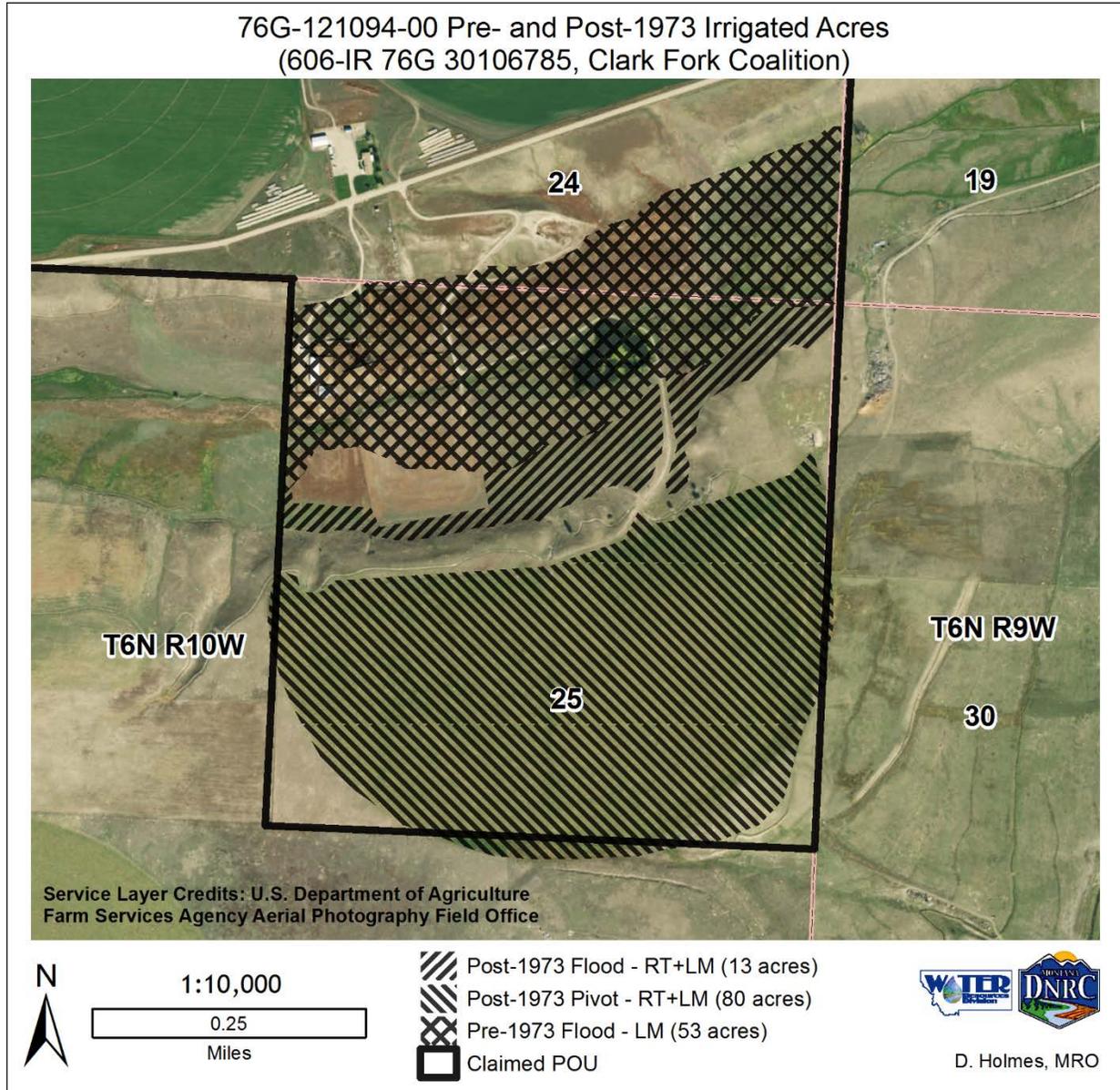
**Map 3. Post-1973 irrigation (18.7 new acres) using only Racetrack Creek Claims 76G 121097-00, 76G 121095-00, 76G 121099-00, and 76G 121100-00.**



29. For the 6 new flood-irrigated acres served by Racetrack Creek water, the Department used the Powell County 1997 to 2006 100% management factor, a 13.14 inch Powell County flood IWR value (6/1 to 8/31), a 25% on-farm efficiency value, and 5% irrecoverable losses for flooding to arrive at a consumed volume of 7.88 AF for the entire irrigation season ( $13.14 \text{ inches} \div 12 \text{ inches/foot} \times 1 \times 6 \text{ acres} = 6.57 \text{ AF} \div 0.25 \text{ on-farm efficiency} = 26.28 \text{ AF applied to the field} \times 0.05 = 1.31 \text{ AF irrecoverable losses} + 6.57 \text{ AF} = 7.88 \text{ AF}$ ). The Department used the modern Powell County 100% management factor, a 15.03 inch Powell County center pivot IWR value (5/15 to 9/30), a 70% on-farm efficiency value, and 10% irrecoverable loss rate for pivot irrigation to arrive at a volume of 18.18 AF that are consumed on the 12.7 new pivot irrigated acres ( $15.03 \text{ inches} \div 12 \text{ inches/foot} \times 1 \times 12.7 \text{ acres} = 15.91 \text{ AF} \div 0.7 \text{ on-farm efficiency} = 22.72 \text{ AF applied to the field} \times 0.1 = 2.27 \text{ AF irrecoverable losses} + 15.91 \text{ AF} = 18.18 \text{ AF}$ ). In total, the Department finds an annual consumed volume of 26.06 AF resulting from the combined pivot and flood irrigation of the new 18.7 acres irrigated using only Racetrack Creek water. When added to the total annual historic consumed volume of 715.75 AF found for the 722-acre historically irrigated place of use, the volume of water consumed from the irrigation of 740.7 acres that will continue to be supplied water only from Racetrack Creek after this change equals 741.81 AF. The Department relied on the total diverted volume percentages outlined in Table 11 and applied them to the total consumed volume of 715.75 AF to determine the proposed post-change consumed volume attributable to each supplemental Racetrack Creek water right.

30. The Department identifies a total of 93 acres currently irrigated with Little Modesty Creek water (13 flood acres and 80 pivot acres) that were not historically irrigated (13 acres = 13.98% of 93, 80 acres = 86.02% of 93 acres) (Map 4). 162.31 AF of Little Modesty water remain after accounting for the field application volume required for the continued irrigation of 53 acres historically irrigated with only Claim 76G 121094-00 during the 92 days between June 1<sup>st</sup> and August 31<sup>st</sup> when irrigation water was required and consumed on the field ( $1.88 \text{ CFS diverted Little Modesty water} \times 1.98 \text{ AF/day} \times 92 \text{ days} = 342.45 \text{ AF} - 180.14 \text{ AF applied to 53 historically irrigated acres} = 162.31 \text{ AF}$ ). The Department proportionally attributed the remaining applicable volume of 162.31 AF to the post-1973 flood and pivot irrigated acres ( $162.31 \text{ AF} \times 0.1398 = 22.69 \text{ AF for flood}$ ,  $162.31 \text{ AF} \times 0.8602 = 139.62 \text{ AF for pivot}$ ). It is assumed that water currently diverted from Racetrack Creek can supplement the remaining field application volume not covered by Claim 76G 121094-00 that is required for the irrigation of the current place of use.

**Map 4. Claim 76G 121094-00 pre- and post-1973 irrigated acres supplied water from Racetrack Creek and Little Modesty Creek (RT+LM) or Little Modesty Creek only (LM).**



31. Per the standards outlined in ARM 36.12.1902, the required field application volumes calculated for the new 13 flood irrigated acres and 80 pivot irrigated acres are 56.94 AF and 143.14 AF, respectively. For the 13 newly flooded acres, the Department used the Powell County 1997 to 2006 100% management factor, a 13.14 inch Powell County flood IWR value, and assumed 25% on-farm efficiency to arrive at the 56.94 AF field application volume ( $13.14 \text{ inches} \div 12 \text{ inches/foot} \times 1 \times 13 \text{ acres} = 14.24 \text{ AF} \div 0.25 \text{ on-farm efficiency} = 56.94 \text{ AF}$ ). For the 80 additional pivot irrigated acres, the Department used the same Powell County 100% modern management factor, a 15.03 inch Powell County pivot IWR value, and assumed 70% on-farm efficiency to arrive at the required 143.14 AF field application volume ( $15.03 \text{ inches} \div 12 \text{ inches/foot} \times 80 \text{ acres} = 100.2 \text{ AF} \div 0.7 \text{ on-farm efficiency} = 143.14 \text{ AF}$ ).

32. The total field application volume required for and the total volume consumed during irrigation of the new 13 flood irrigated acres shown in Map 4 equals 56.94 AF and 17.08 AF, respectively. Claim 76G 121094-00 can account for up to 39.85% of the volume applied (22.69 AF) and consumed on (6.81 AF) the 13 flooded acres. The remaining 60.15% of the volume applied on (34.25 AF) and consumed during (10.27 AF) irrigation of the additional 13 flooded acres is assumed to be proportionally accounted for by Claims 76G 121097-00, 76G 121095-00, 76G 121099-00, and 76G 121100-00.

33. The total field application volume required for the irrigation of the 80 pivot irrigated acres shown in Map 4 equals 143.14 AF, while the volume consumed during irrigation of these acres equals 114.51 AF. Claim 76G 121094-00 can account for up to 97.54% of the volume applied to (139.62 AF) and consumed on (111.69 AF) the 80 new pivot acres. The remaining 2.46% of the volume applied on (3.52 AF) and consumed during (2.82 AF) irrigation of the 80 pivot acres is assumed to be proportionally accounted for by Claims 76G 121097-00, 76G 121095-00, 76G 121099-00, and 76G 121100-00.

34. Table 13 shows the post-change distribution of the historic volume consumed on the 722 acres historically flood irrigated exclusively with Racetrack Creek water to the remaining Racetrack Creek supplemental rights that will continue to irrigate the historic place of use. The reconfiguration of the historic consumed volume attributions to these claims is based on the Table 12 water right percentages of post-change volumes diverted during the IWR flood growing season.

**Table 13. Proposed consumed volumes (PCV) for the 722-acre historic place of use irrigated with Racetrack Creek water only.**

Claim		1972 Commissioner periods of record					Claim Totals (AF)
		Record 1		Record 2		Record 3	
		6/1 - 6/14	6/15 - 7/15	7/16 - 7/23	7/24 - 8/19	8/19 to 8/31	
76G 121097	PCV (AF)	15.33	34.48	11.25	35.51	20.58	<b>117.15</b>
	% DV	15.55%	13.67%	15.19%	17.57%	23.18%	
76G 121095	PCV (AF)	22.86	51.42	16.78	52.97	30.70	<b>174.74</b>
	% DV	23.19%	20.39%	22.65%	26.21%	34.58%	
76G 121099	PCV (AF)	55.42	141.21	46.05	110.73	37.50	<b>390.91</b>
	% DV	56.21%	55.99%	62.16%	54.79%	42.24%	
76G 121100	PCV (AF)	4.98	25.09	0	2.88	0	<b>32.95</b>
	% DV	5.05%	9.95%	0%	1.42%	0%	
<b>Period Total</b>	<b>PCV (AF)</b>	<b>98.59</b>	<b>252.2</b>	<b>74.08</b>	<b>202.09</b>	<b>88.79</b>	<b>715.75</b>

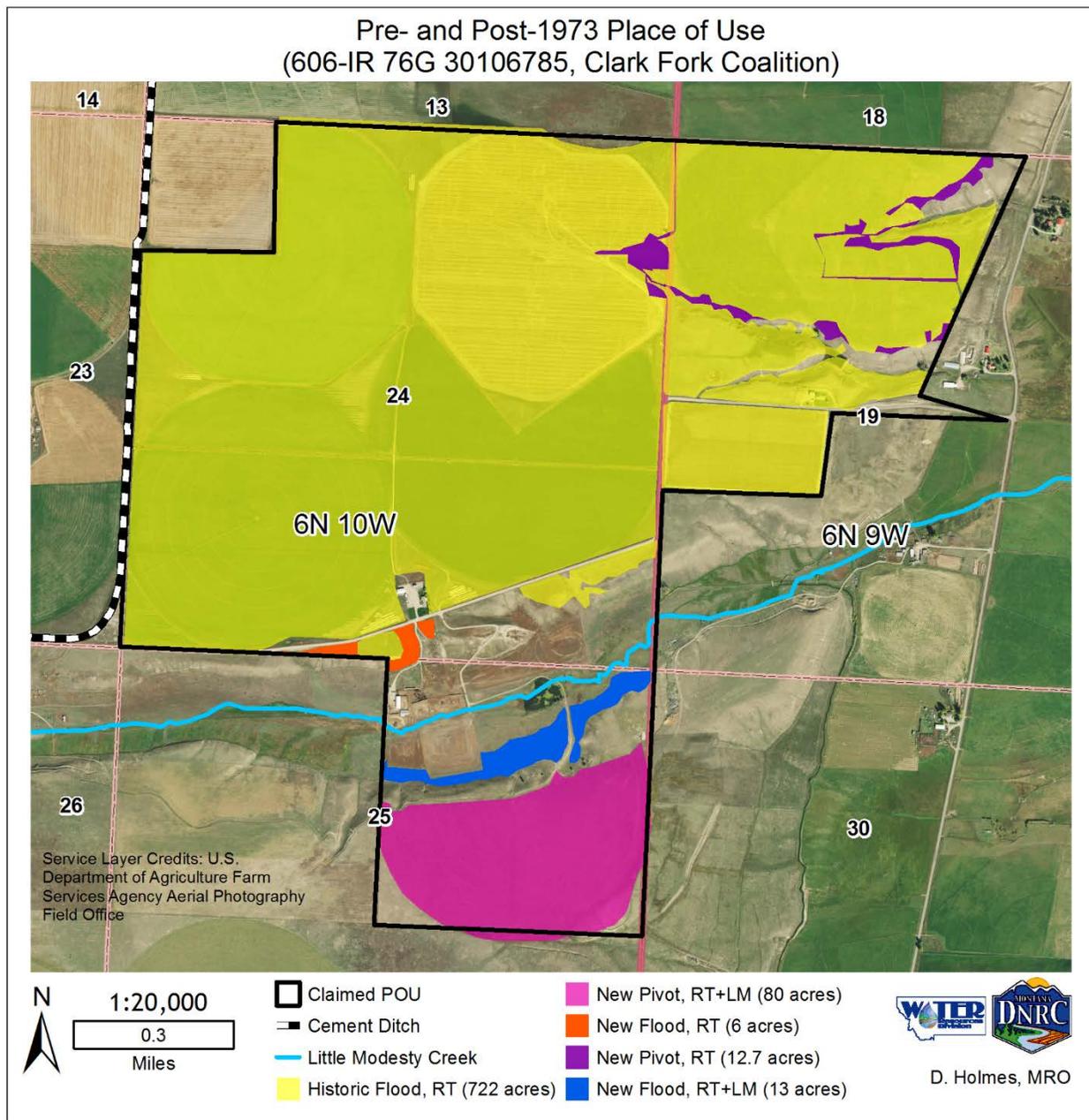
35. Table 14 provides a summary of the proposed consumed volumes attributable to the remaining supplemental claims that will continue to irrigate the 111.7 acres that were not found to be irrigated historically. The Department determines that the volume of water consumed from irrigation of the current 833.7-acre place of use that is irrigated with Racetrack Creek water totals 873.4 AF. Including the 54.03 AF consumed during irrigation of the 53-acre historic place of use that will continue to be irrigated exclusively with Little Modesty Creek water, the total consumed volume for the entire 886.7-acre irrigated place of use equals 927.43 AF. Map 5 shows the pre- and post-1973 irrigated place of use as identified by the Department.

**Table 14. Proposed post-change consumed volumes for Claims 76G-121094-00, -121097-00, -121095-00, -121099-00, and -121100-00 for the 111.7 acres irrigated with Little Modesty Creek and/or Racetrack Creek water that were not irrigation prior to July 1, 1973.**

Claim (Source)	*Irrigated Acres	Consumed Volume (AF)	1972 Commissioner periods of record						Claim Totals 5/15 to 9/30
			Record 1	Record 2	Record 3		Record 4		
			5/15 to 6/14	6/15 to 7/15	7/16 to 7/23	7/24 to 8/19	8/19 to 8/31	9/1 to 9/30	
76G-121094-00 Little Modesty	80 Pivot (RT+LM)	Pivot CV	17.24	36.78	10.48	31.07	14.27	1.85	<b>111.69</b>
	13 Flood (RT+LM)	Flood CV	0.94	2.4	0.71	1.92	0.84	-	<b>6.81</b>
	Total CV		18.18	39.18	11.19	32.99	15.11	1.85	<b>118.5</b>
76G-121097-00 Racetrack Creek	80 Pivot (RT+LM)	Pivot CV	0.08	0.13	0.04	0.14	0.08	0.02	<b>0.48</b>
	12.7 Pivot (RT)	Pivot CV	0.50	0.82	0.26	0.89	0.54	0.10	<b>3.11</b>
	13 Flood (RT+LM)	Flood CV	0.22	0.49	0.16	0.51	0.30	-	<b>1.68</b>
	6 Flood (RT)	Flood CV	0.17	0.38	0.12	0.39	0.23	-	<b>1.29</b>
	Total CV		0.96	1.82	0.58	1.93	1.15	0.12	<b>6.56</b>
76G-121095-00 Racetrack Creek	80 Pivot (RT+LM)	Pivot CV	0.11	0.19	0.06	0.20	0.12	0.03	<b>0.72</b>
	12.7 Pivot (RT)	Pivot CV	0.72	1.22	0.39	1.33	0.80	0.15	<b>4.61</b>
	13 Flood (RT+LM)	Flood CV	0.33	0.74	0.24	0.76	0.44	-	<b>2.51</b>
	6 Flood (RT)	Flood CV	0.25	0.57	0.18	0.58	0.34	-	<b>1.92</b>
	Total CV		1.41	2.72	0.87	2.88	1.71	0.18	<b>9.76</b>
76G-121099-00 Racetrack Creek	80 Pivot (RT+LM)	Pivot CV	0.24	0.52	0.16	0.43	0.15	0.01	<b>1.51</b>
	12.7 Pivot (RT)	Pivot CV	1.52	3.35	1.06	2.77	0.98	0.04	<b>9.72</b>
	13 Flood (RT+LM)	Flood CV	0.79	2.03	0.66	1.59	0.54	-	<b>5.61</b>
	6 Flood (RT)	Flood CV	0.61	1.56	0.50	1.22	0.41	-	<b>4.30</b>
	Total CV		3.15	7.46	2.38	6.01	2.09	0.05	<b>21.14</b>
76G-121100-00 Racetrack Creek	80 Pivot (RT+LM)	Pivot CV	0.01	0.09	0.00	0.01	0.00	0.00	<b>0.12</b>
	12.7 Pivot (RT)	Pivot CV	0.08	0.60	0.00	0.07	0.00	0.00	<b>0.74</b>
	13 Flood (RT+LM)	Flood CV	0.07	0.36	0.00	0.04	0.00	-	<b>0.47</b>
	6 Flood (RT)	Flood CV	0.05	0.28	0.00	0.03	0.00	-	<b>0.36</b>
	Total CV		0.21	1.33	0.00	0.16	0.00	0.00	<b>1.69</b>
<i>Period Totals</i>	80 Pivot (RT+LM)	Pivot CV	17.68	37.71	10.74	31.85	14.63	1.90	<b>114.51</b>
	12.7 Pivot (RT)	Pivot CV	2.81	5.99	1.70	5.06	2.32	0.30	<b>18.18</b>
	13 Flood (RT+LM)	Flood CV	2.35	6.02	1.77	4.82	2.12	-	<b>17.08</b>
	6 Flood (RT)	Flood CV	1.08	2.78	0.81	2.23	0.98	-	<b>7.88</b>
	<b>Total CV</b>		<b>23.92</b>	<b>52.50</b>	<b>15.02</b>	<b>43.96</b>	<b>20.05</b>	<b>2.20</b>	<b>157.65</b>

\*Irrigated acres denoted by (RT+LM) are those acres currently irrigated with water from both Racetrack Creek and Little Modesty Creek. Irrigated acres denoted by (RT) are acres that are currently irrigated with water from Racetrack Creek only.

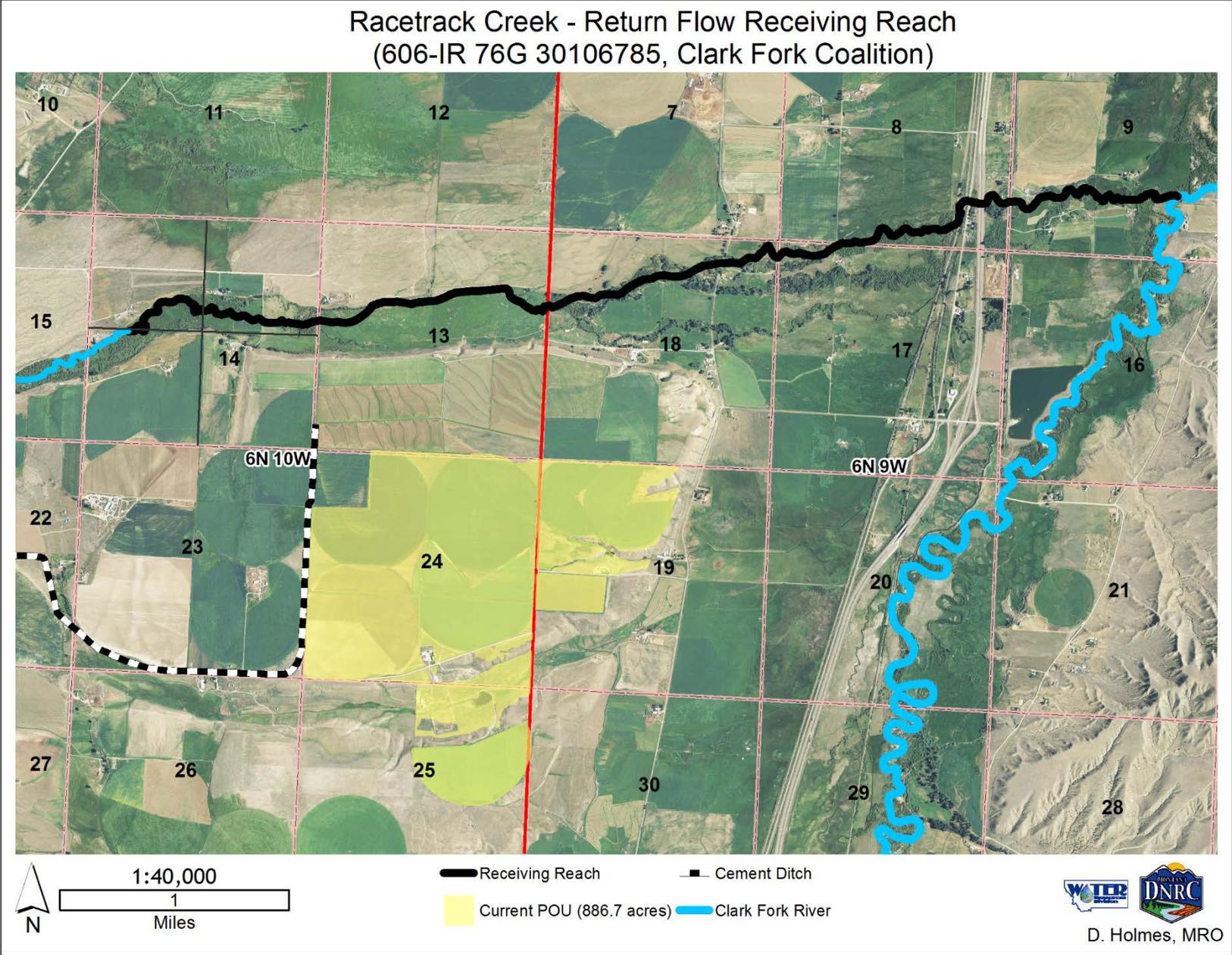
**Map 5. Extent of pre- and post-1973 acres irrigated with water from Racetrack Creek only (RT), or both Racetrack and Little Modesty Creeks (RT+LM). Acres irrigated only with Little Modesty Creek water were excluded.**



*Return Flows*

36. Little Modesty Creek, Modesty Creek, Racetrack Creek, and the Clark Fork River between Racetrack and Modesty Creeks are all potential receiving streams for return flows. The receiving reach for return flows in Racetrack Creek begins approximately 5.5 river miles upstream of the confluence of Racetrack Creek and the Clark Fork River in the NENSW of Section 14, T6N R10W, Powell County (Map 6).

Map 6. Location of return flow accretion in Racetrack Creek.



37. The entire historic place of use will continue to be irrigated post-change with the supplemental claims. With no acres being retired from irrigation and per the Department's *Change in Method of Irrigation policy memorandum* dated December 2<sup>nd</sup>, 2015 (hereafter, the Efficiency Memo), the historic place of use will be treated as though it is still flood-irrigated, and therefore the Department's analysis does not show any loss of return flows to receiving streams that result from the proposed change to instream flow or conversion to center pivot irrigation on the historic place of use.

38. The Applicant proposes to protect 8.33 CFS up to 433.33 AF less conveyance losses in Racetrack Creek for instream flow to benefit the fisheries resource. The proposed place of use for instream flow includes a reach of stream from the point of diversion at the dam downstream to a secondary point of diversion used to divert stored water for irrigation, and then downstream of the secondary point of diversion to the Clark Fork River. The Department finds that there is no potential for adverse effect to other water users located within the portion of the proposed protected reach that stretches from the outlet of Racetrack Lake to the secondary point of diversion at the Cement Ditch headgate. However, per FOF Nos. 39 – 43, the Department identifies the potential for adverse effect to water users downstream of the secondary point of diversion on Racetrack Creek due to the fact that the remaining five direct flow statements of claim will continue to irrigate the entirety of the historic and post July 1, 1973 expanded place of use after this change. The Department finds that without retiring any consumptive use there is no water available for instream flow protection below the secondary point of diversion, and the only amount of water that can be changed to instream flow is the historically diverted volume from the reservoir outlet to the secondary point of diversion.

#### *Post Change Consumed Volume*

39. Center pivots were installed on the historic place of use in 2006. The Applicant provided 2006 commissioner records to demonstrate that, with center pivots, a total volume of 3,194.17 AF of water was diverted from Racetrack and Little Modesty Creeks to the place of use which is approximately 1,763.04 AF less than what was diverted in 1972. The Applicant claims that this proposed change will not cause adverse effect since they are proposing to protect a portion of the water that is no longer being diverted as a result of the increase in irrigation efficiency, and that the water being left instream in addition to what is being proposed for instream flow protection will offset any potential adverse effect from changes in return flow patterns.

40. After this change, the 775-acre place of use that was historically irrigated with water from Racetrack Lake and Racetrack Creek, or Little Modesty Creek water (FOF 21) will continue to be irrigated in its entirety with Claims 76G 121094-00, 76G 121097-00, 76G 121095-00, 76G 121099-00, and 76G 121100-00. The Applicant asserts that some acres on the historic place of use are no longer being irrigated as some historic acres (e.g. field corners) are not accessible to pivots; however, those irrigated acres are not proposed to be removed from the place of use/officially retired from irrigation in this change, and if so

desired, the current property owner (R Bar N Ranch) may resume irrigation of those acres post-change. Therefore, *all* acres historically irrigated must be considered in the Department’s historic use and adverse effect analysis.

41. With no proposed reduction in historically irrigated acres, the Department finds that the volume of water consumed by the remaining supplemental Racetrack Creek claims (76G 121097-00, 76G 121095-00, 76G 121099-00, and 76G 121100-00) will collectively increase by the consumed volume historically attributable to Claim 76G 91008-00 (66.53 AF). In order to negate the increase in consumed volume assumed by the supplemental claims that is proposed to exist after this change, post-change consumed volumes must decrease by 224.18 AF (the sum of the 157.65 AF consumed during irrigation of the expanded 111.7 acres and the 66.53 AF historically consumed during irrigation of the 722-acre historic place of use using Claim 76G 91008-00).

42. In the Applicant’s response to the Department’s Deficiency Letter dated April 24<sup>th</sup>, 2017, the Applicant maintains that R Bar N Ranch “lawfully changed their irrigation method and increased consumptive use per acre prior to the sale of [Claim 76G 91008-00] without the need to obtain a change authorization,” and that the sale of Claim 76G 91008-00 “did not increase total consumptive use on the place of use and occurred after their method switch from flood to pivot irrigation.” This is further reiterated when the Applicant states that “the quantity of consumptive use associated with some of the senior [supplemental claims] ...may have increased due to lawful changes in the method of irrigation,” but per the DNRC’s Efficiency Memo, “the Department cannot consider the increase in efficiency resulting from a change in method.” While hydrologically more consumptive irrigation methods have been installed, the Applicant is correct in asserting that the Department cannot calculate post-change consumptive use volumes using higher consumptive use variables for some of the irrigated acres that have undergone conversions to more efficient irrigation methods as those pivots are located within the historically irrigated place of use. Per the Efficiency Memo, the entire historic place of use – which has almost completely changed from flood to center pivot irrigation – must be treated as though it will continue to be flood irrigated post change. Proposed consumptive use for all irrigated acres that fall outside of the historic 775-acre place of use, however, must be calculated using modern variables and inputs.

43. The increase in consumed volume experienced by the supplemental Racetrack Creek claims as found by the Department results directly from the fact that the post-change burden of irrigating the same 722-acre historic place of use and *consuming* all 715.75 AF that were historically accounted for by six water rights will be collectively assumed by the remaining five supplemental claims. In this scenario, Claims 76G 121097-00, 76G 121095-00, 76G 121099-00, and 76G 121100-00 will collectively consume an additional 66.53 AF of water on top of their own historic consumed volumes *and* the water consumed during irrigation of 111.7 expanded acres (Table 15). When considering the additional 118.5 AF volume of Little Modesty Creek water that is consumed during the irrigation of 93 expanded acres (see Table 14), Claim 76G 121094-

00 is also found to be currently consuming more water (172.53 AF) than it did when it was only used to irrigate 53 acres with 54.03 AF of water (see Table 8).

**Table 15. Proposed consumed (PCV) vs. historic consumed (HCV) volumes for the remaining Racetrack Creek supplemental claims.**

Claim	HCV (722 acres)	PCV (722 acres)	PCV – HCV	PCV (111.7 expanded acres)	Total PCV (833.7 acres)
76G 121097-00	80.04 AF	117.15 AF	+37.11 AF	6.56 AF	123.71 AF
76G 121095-00	119.41 AF	174.74 AF	+55.33 AF	9.76 AF	184.5 AF
76G 121099-00	247.95 AF	390.91 AF	+142.96 AF	21.14 AF	412.05 AF
76G 121100-00	201.82 AF	32.95 AF	-168.87 AF	1.69 AF	34.64 AF
<i>Total</i>	<i>649.22 AF</i>	<i>715.75 AF</i>	<i>66.53 AF</i>	<i>39.15 AF</i>	<i>754.9 AF</i>

44. Though the diverted volume of water required to irrigate the current place of use is smaller than what was historically required due to the installation of seven center pivots on and around the historic place of use, the Department finds that the Applicant has not adequately ensured that the post-change *consumed* volumes attributable to each supplemental statement of claim will not be greater than what was consumed historically. As the Applicant did not provide an adequate plan to address the increase in consumption assumed by the remaining supplemental claims that will continue to irrigate the entire historic place of use following this change, the Department finds that the Applicant has not proven that this proposed change will not cause adverse effect to Racetrack Creek water users downstream of the secondary point of diversion. The Department has determined that 8.33 CFS up to 433.33 AF may be protected from the Racetrack Lake Dam to the Cement Ditch headgate (not to exceed 7.5 CFS up to 390 AF at the Cement Ditch). The Applicant may not protect any water stored in Racetrack Lake using Claim 76G 91008-00 beyond the secondary point of diversion as the Department would otherwise consider this to be a new appropriation of water in the absence of a proposal to reduce the volume of water historically and currently consumed as a result of the continued irrigation of the entire historic place of use, and the post July 1, 1973 expanded place of use.

**Beneficial Use/Fishery Resource**

45. The Applicant proposes to temporarily protect 8.33 CFS (up to 433.33 AF less conveyance losses) instream to enhance the fishery resource in Racetrack Creek, which is considered a Priority I tributary of the Clark Fork River by the Montana Natural Resource Damage Program (NRDP) (see the NRDP’s December 2012 report titled *Final Upper Clark Fork River Basin Aquatic and Terrestrial Resources Restoration Plans*). NRDP’s 2012 report recommends enhanced flow augmentation (such as instream flow protection) on Racetrack Creek as an effort that will improve fishery health in Racetrack Creek as well as the mainstem of the Clark Fork River. The NRDP identifies flow augmentation as a limiting factor for the Upper Clark Fork watershed that will be considered prior to addressing any other restoration components. As per §85-2-102(4)(d), MCA, a use of water through a temporary change in appropriation right or lease

to enhance instream flow to benefit the fishery resource in accordance with §85-2-408, is considered a beneficial use of water.

46. The Department calculated 66.53 AF of historic consumptive use and 433.33 AF of water historically diverted from Racetrack Lake Dam, and 390 AF historic diverted volume at the Cement Ditch Headgate for Claim 76G-91008-00. Instream protection of a flow rate of 7.5 CFS up to a volume of 390 AF from the historic point of diversion to the secondary point of diversion at the Cement Ditch headgate as measured at a location immediately downstream of the Cement Ditch headgate for the enhancement of the fishery resource in Racetrack Creek is considered a beneficial use. The flow rate and volume permissible for this beneficial use cannot exceed 7.5 CFS and 390 AF at the downstream end of the protected reach, respectively.

### **Protected Reach and Measurement Plan**

47. The Applicant proposes to temporarily protect 8.33 CFS up to 433.33 AF (less conveyance losses per Table 3) instream in Racetrack Creek. The proposed 23-mile protected reach comprises the entirety of Racetrack Creek from the outlet of the Racetrack Lake Dam in Granite County to the confluence of Racetrack Creek and the Clark Fork River in Powell County.

48. The Applicant proposes to collect streamflow measurements at least every two weeks and more frequently as needed in four locations: 1) the outlet of Racetrack Lake, 2) below the Cement Ditch headgate, 3) the Edge Lane Bridge crossing, and 4) at the confluence of Racetrack Creek and the Clark Fork River. Additional measurement points may be added if instream flows are not met at the above locations based on the conveyance loss information outlined in Table 3. Rating curves will also be developed at the above locations. The Applicant plans to coordinate with the Racetrack Creek water commissioner to manage protected instream flows and with the Montana Department of Fish, Wildlife, and Parks (DFWP) to time releases in order to maximize the benefit to the fishery resource. The Applicant may install a telemetry station at the outlet of Racetrack Lake as a means of providing assistance to the water commissioner. The Applicant plans to coordinate with the other two storage water right holders (Claims 76G 214587-00 and 76G 214588-00) to establish a release schedule that has typically coincided with the timeframes during which irrigation water needs necessitate the release of lake water after the first cutting of hay, which tends to align with the reduction of flows to 7.5 CFS at the Edge Lane Bridge.

49. The Department determines that the Applicant's measurement plan, as conditioned, is adequate. The Applicant may not protect water instream beyond or divert stored water into the secondary point of diversion at the Cement Ditch headgate (FOF Nos. 39 – 44). The Applicant will measure streamflows in Racetrack Creek immediately below the Cement Ditch headgate on a weekly basis (minimum) for the duration that lake water is being released in order to ensure that water from Racetrack Lake is not diverted in to the Cement Ditch.

## CONCLUSIONS OF LAW

### Historic Use and Adverse Effect

50. Montana's change statute codifies the fundamental principles of the Prior Appropriation Doctrine. Sections 85-2-401 and -402(1)(a), MCA, authorize changes to existing water rights, permits, and water reservations subject to the fundamental tenet of Montana water law that one may change only that to which he or she has the right based upon beneficial use. A change to an existing water right may not expand the consumptive use of the underlying right or remove the well-established limit of the appropriator's right to water actually taken and beneficially used. An increase in consumptive use constitutes a new appropriation and is subject to the new water use permit requirements of the MWUA. McDonald v. State, 220 Mont. 519, 530, 722 P.2d 598, 605 (1986)(beneficial use constitutes the basis, measure, and limit of a water right); Featherman v. Hennessy, 43 Mont. 310, 316-17, 115 P. 983, 986 (1911)(increased consumption associated with expanded use of underlying right amounted to new appropriation rather than change in use); Quigley v. McIntosh, 110 Mont. 495, 103 P.2d 1067, 1072-74 (1940)(appropriator may not expand a water right through the guise of a change – expanded use constitutes a new use with a new priority date junior to intervening water uses); Allen v. Petrick, 69 Mont. 373, 222 P. 451(1924)(“quantity of water which may be claimed lawfully under a prior appropriation is limited to that quantity within the amount claimed which the appropriator has needed, and which within a reasonable time he has actually and economically applied to a beneficial use. . . . it may be said that the principle of beneficial use is the one of paramount importance . . . . The appropriator does not own the water. He has a right of ownership in its use only”); Town of Manhattan, at ¶ 10 (an appropriator's right only attaches to the amount of water actually taken and beneficially applied).

51. Sections 85-2-401(1) , -402(2)(a) and -408(3)(a), MCA, codify the prior appropriation principles that Montana appropriators have a vested right to maintain surface and ground water conditions substantially as they existed at the time of their appropriation; subsequent appropriators may insist that prior appropriators confine their use to what was actually appropriated or necessary for their originally intended purpose of use; and, an appropriator may not change or alter its use in a manner that adversely affects another water user. Spokane Ranch & Water Co. v. Beatty, 37 Mont. 342, 96 P. 727, 731 (1908); Quigley, 110 Mont. at 505-11, 103 P.2d at 1072-74; Matter of Royston, 249 Mont. at 429, 816 P.2d at 1057; Hohenlohe, at ¶¶43-45.

52. The cornerstone of evaluating potential adverse effect to other appropriators is the determination of the “historic use” of the water right being changed. Town of Manhattan, at ¶10 (recognizing that the Department's obligation to ensure that change will not adversely affect other water rights requires analysis of the actual historic amount, pattern, and means of water use). In this case, the Applicant seeks to change existing water rights represented by its Water Right Claim. Therefore, analysis of historic use and adverse effect in requires evaluation of what the water right looked like and how it was exercised prior to July 1, 1973.

53. A change applicant must prove the extent and pattern of use for the underlying right proposed for change through evidence of the historic diverted amount, consumed amount, place of use, pattern of use, and return flow because a statement of claim, permit, or decree may not include the beneficial use information necessary to evaluate the amount of water available for change or potential for adverse effect.<sup>2</sup> A comparative analysis of the historic use of the water right to the proposed change in use is necessary to prove the change will not result in expansion of the original right, or adversely affect water users who are entitled to rely upon maintenance of conditions on the source of supply for their water rights. Quigley, 103 P.2d at 1072-75 (it is necessary to ascertain historic use of a decreed water right to determine whether a change in use expands the underlying right to the detriment of other water user because a decree only provides a limited description of the right); Royston, 249 Mont. at 431-32, 816 P.2d at 1059-60 (record could not sustain a conclusion of no adverse effect because the applicant failed to provide the Department with evidence of the historic diverted volume, consumption, and return flow); Hohenlohe, at ¶44-45; Town of Manhattan v. DNRC, Cause No. DV-09-872C, Montana Eighteenth Judicial District Court, *Order Re Petition for Judicial Review*, Pgs. 11-12 (proof of historic use is required even when the right has been decreed because the decreed flow rate or volume establishes the maximum appropriation that may be diverted, and may exceed the historical pattern of use, amount diverted or amount consumed through actual use); Matter of Application For Beneficial Water Use Permit By City of Bozeman, *Memorandum*, Pgs. 8-22 (Adopted by DNRC *Final Order* January 9,1985)(evidence of historic use must be compared to the proposed change in use to give effect to the implied limitations read into every decreed right that an appropriator has no right to expand his appropriation or change his use to the detriment of juniors).<sup>3</sup>

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<sup>2</sup>A claim only constitutes *prima facie* evidence for the purposes of the adjudication under § 85-2-221, MCA. The claim does not constitute *prima facie* evidence of historical use in a change proceeding under §85-2-402, MCA. For example, most water rights decreed for irrigation are not decreed with a volume and provide limited evidence of actual historic beneficial use. §85-2-234, MCA

<sup>3</sup> Other western states likewise rely upon the doctrine of historic use as a critical component in evaluating changes in appropriation rights for expansion and adverse effect: Pueblo West Metropolitan District v. Southeastern Colorado Water Conservancy District, 717 P.2d 955, 959 (Colo. 1986)(“[O]nce an appropriator exercises his or her privilege to change a water right ... the appropriator runs a real risk of requantification of the water right based on actual historical consumptive use. In such a change proceeding a junior water right ... which had been strictly administered throughout its existence would, in all probability, be reduced to a lesser quantity because of the relatively limited actual historic use of the right.”); Santa Fe Trail Ranches Property Owners Ass'n v. Simpson, 990 P.2d 46, 55 -57 (Colo.,1999); Farmers Reservoir and Irr. Co. v. City of Golden, 44 P.3d 241, 245 (Colo. 2002)(“We [Colorado Supreme Court] have stated time and again that the need for security and predictability in the prior appropriation system dictates that holders of vested water rights are entitled to the continuation of stream conditions as they existed at the time they first made their appropriation); Application for Water Rights in Rio Grande County, 53 P.3d 1165, 1170 (Colo. 2002); Wyo. Stat. § 41-3-104 (When an owner of a water right wishes to change a water right ... he shall file a petition requesting permission to make such a change .... The change ... may be allowed provided that the quantity of water transferred ... shall not exceed the amount of water historically diverted under the existing use, nor increase the historic rate of diversion under the existing use, nor increase the historic amount consumptively used under the existing use, nor decrease the historic amount of return flow, nor in any manner injure other existing lawful appropriators.); Basin Elec. Power Co-op. v. State Bd. of Control, 578 P.2d 557, 564 -566 (Wyo,1978) (a water right holder may not effect a change of use transferring more water than he had historically consumptively used; regardless of the lack of injury to other appropriators, the amount of water historically diverted under the existing use, the historic rate of diversion under the existing use, the historic amount consumptively used under the existing use, and the historic amount of return flow must be considered.)

54. An applicant must also analyze the extent to which a proposed change may alter historic return flows for purposes of establishing that the proposed change will not result in adverse effect. The requisite return flow analysis reflects the fundamental tenant of Montana water law that once water leaves the control of the original appropriator, the original appropriator has no right to its use and the water is subject to appropriation by others. Although the level of analysis may vary, analysis of the extent to which a proposed change may alter the amount, location, or timing return flows is critical in order to prove that the proposed change will not adversely affect other appropriators who rely on those return flows as part of the source of supply for their water rights. Royston, 249 Mont. at 431, 816 P.2d at 1059-60; Hohenlohe, at ¶¶ 42-6 and 55-6; Spokane Ranch & Water Co., 37 Mont. at 351-52, 96 P. at 731.

55. The Department's rules and policies reflect the above fundamental principles of Montana water law and are designed to itemize the type evidence and analysis required for an applicant to meet its burden of proof. Admin.R.M. 36.12.1901 through 1903. These rules forth specific evidence and analysis required to establish the parameters of historic use of the water right being changed. Admin.R.M. 36.12.1901 and 1902. The rules also outline the analysis required to establish a lack of adverse effect based upon a comparison of historic use of the water rights being changed to the proposed use under the changed conditions along with evaluation of the potential impacts of the change on other water users caused by changes in the amount, timing, or location of historic diversions and return flows. Admin.R.M. 36.12.1901 and 1903.

56. While evidence may be provided that a particular parcel was irrigated, the actual amount of water historically diverted and consumed is critical. E.g., In the Matter of Application to Change Water Right No. 41H 1223599 by MGRR #1, LLC., DNRC Proposal for Decision adopted by Final Order (2005). The Department cannot assume that a parcel received the full duty of water or that it received sufficient water to constitute full service irrigation for optimum plant growth. Even when it seems clear that no other rights could be affected solely by a particular change in the location of diversion, it is essential that the change also not enlarge an existing right. See MacDonald, 220 Mont. at 529, 722 P.2d at 604; Featherman, 43 Mont. at 316-17, 115 P. at 986; Trail's End Ranch, L.L.C. v. Colorado Div. of Water Resources 91 P.3d 1058, 1063 (Colo., 2004).

57. The Department has adopted a rule providing for the calculation of historic consumptive use where the applicant proves by a preponderance of the evidence that the acreage was historically irrigated. Admin. R. M. 36.12.1902 (16). In the alternative an applicant may present its own evidence of historic beneficial use. In this case Applicant has elected to proceed under Admin. R.M. 36.12.1902. (FOF Nos. 21 – 25).

58. In order to prove lack of adverse effect for an instream flow change in use, the applicant must demonstrate that the operation of the instream flow change, as measured at a specific point, will not

adversely affect other water users. § 85-2-408(3)(a), MCA. This requires consideration of the protected reach, the location and timing of historic return flows, and measurement plan in order to insure an applicant's plan for operation of its change will not adversely affect other water users. § 85-2-408(1), MCA. An applicant in a change in appropriation right proceeding for instream flow can protect the full historic diverted flow rate and volume in certain circumstances. The full historic diverted amount (flow and volume) can be protected to the extent it does not return to the watercourse within the protected reach and it returns to those appropriators who rely on the return flow in accordance with the adverse effect criterion §85-2-402(2)(a), MCA. Hohenlohe, ¶¶42, 67 - 70. The determination under §85-2-408(7), MCA, as to the amount protected is within the Department's discretion. Id. at ¶¶37, 39. The Department has the discretion under appropriate circumstances to limit or reduce that portion suitable for instream flow from the amount historically diverted to the amount historically consumed, or a smaller amount, (§85-2-408(7), MCA) and to approve the change under such conditions as the Department considers necessary (§85-2-402(8), MCA). Id. at ¶¶67-69.

59. Under the current proposal and in consideration of the hydrology, the Department has determined that it is appropriate to apply the DNRC Return Flow Policy Memo, dated April 1<sup>st</sup>, 2016.

60. The Applicant's deficiency response asserts that its proposed change is not limited by historic consumptive use because none of the water right being changed was part of the natural flow once it was put into storage. Accordingly, it maintains that the only limit on its proposed change is that it cannot increase the amount of water released from storage. While its deficiency response includes a passing reference to "Granite County v. McDonald and the Barthelmess Ranch case" it provides no legal analysis in support of its position.

61. The storage of water for beneficial use is recognized as a valid component of an appropriation in both Montana case law and statute. As a general rule, storage in and of itself is not considered a beneficial use of water under Montana law. A reservoir is merely a means of collecting and delivering water to a beneficial use: "A reservoir is just a wide, deep, slow place in the system of diverting water to a beneficial use." Montana Water Law, Albert Stone, Pg. 64 (State Bar of Montana 1994). Water stored in a reservoir must ultimately be put to some beneficial use such as irrigation, power generation, or mining within a reasonable period of time. Id.; Montana Water Law Handbook, Ted Doney, Pg. 37 (State Bar of Montana 1981); Donich v. Johnson, 77 Mont. 229, 250 P. 963, 965-66 (1926). No Montana case law directly addresses the question of the extent to which a water right with a storage component can be changed.

62. However, Colorado has addressed this question on numerous occasions. In Southeastern Colorado Water Conservancy Dist. v. Fort Lyon Canal Co., the Colorado Supreme Court concluded that where a water user seeks to change a water right that involves stored water "diminished return flows, whether due to change in direct-flow or storage rights, must be considered when calculating the amount of injury to

other appropriators." 720 P.2d 133, 146-47 (Colo. 1986). In Burlington Ditch Reservoir and Land Co. v. Metro Wastewater Reclamation Dist., the Colorado Court explained: "Storage itself is not a beneficial use; the subsequent use of stored water, such as irrigation of lands, is the beneficial use for which water is stored." 256 P.3d 645, 663 (Colo. 2011). Therefore, the actual beneficial use made of the stored water must be ascertained and assigned its proper consumptive use in a change proceeding to prevent an enlargement of historical use or diminution of return flow to the detriment of other appropriators. Id.

63. Absent any Montana case law on point or persuasive argument from Applicant, the Department concludes that historic use and historic return flows are properly analyzed in a change application of an irrigation water right with a storage component.

64. The applicant in a change in appropriation right proceeding for instream may be authorized to protect the full historic diverted flow rate and volume to the historic point of diversion. § 85-2-408(7), MCA. The determination under 85-2-408(7) as to the amount protected instream below the historic point of diversion depends upon the potential for adverse effect to other water users. §§ 85-2-402(2)(a) and 408(3)(a), MCA. The Department has the discretion under appropriate circumstances to limit or reduce that portion suitable for instream flow from the amount historically diverted to the amount historically consumed, or a smaller amount and to approve the change under such conditions as the Department considers necessary. §§85-2-402(8), and 408(7), MCA; Hohenlohe, ¶¶ 37, 39, 42, 67 - 70.

65. In the present case, the Applicant did not establish that the change authorization as proposed can be operated in a manner that ensures the amount of water protected instream will not adversely affect other water users on Racetrack Creek or the Clark Fork River. The evidence establishes that the Applicants proposal to protect 8.33 CFS up to 433.33 AF from the Racetrack Dam to the Cement Ditch will not adversely affect other water users. However, the evidence establishes that authorizing protection of the flow rate and volume proposed by the Applicant downstream of the secondary point of diversion would result in potential adverse effect and an expansion of the underlying water rights used for irrigation as the proposed change does not result in the retirement of any irrigated acreage.

66. Accordingly, the Department proposes to grant the change to instream flow in a modified form, allowing for protection of historical diverted volume for instream flow from the outlet of Racetrack Dam to the secondary point of diversion at the headgate for the Cement Ditch. The Department has identified the reach in which instream flows will be protected and proposed a detailed measurement plan to ensure that, as conditioned, the change authorization is operated in compliance with §85-2-408(1) and (7), MCA. (FOF No. 49)

67. The Department concludes that the modified plan for operation and measurement of instream flow protection for the subject water right is sufficient to ensure that use of the existing water rights of other persons or other perfected or planned uses or developments for which a permit or certificate has been issued

or for which a state water reservation has been issued will not be adversely affected. §85-2-402(2)(a) and -408(3)(a)MCA. (FOF Nos. 47 – 49)

### **Beneficial Use/Fishery Resource**

68. A change applicant must prove by a preponderance of the evidence the proposed use is a beneficial use. §§85-2-102(4) and -402(2)(c), MCA. Beneficial use is and has always been the hallmark of a valid Montana water right: “[T]he amount actually needed for beneficial use within the appropriation will be the basis, measure, and the limit of all water rights in Montana . . .” McDonald, 220 Mont. at 532, 722 P.2d at 606. The analysis of the beneficial use criterion is the same for change authorizations under §85-2-402, MCA, and new beneficial permits under §85-2-311, MCA. Admin.R.M. 36.12.1801. Where the proposed beneficial use is instream flow to enhance the fishery resource, an applicant must prove that that amount of water proposed for change is needed to maintain or enhance instream flows to benefit the fishery resource. § 85-2-408(3)(b), MCA.

69. Applicant proposes to use water for instream flow protection which is a recognized beneficial use. §85-2-102(4), MCA. Applicant has proven by a preponderance of the evidence that instream flow protection of 433.33 AF of diverted volume and 8.33 CFS is the amount needed to maintain and enhance the fishery resource and sustain the beneficial use. §85-2-402(2)(c), MCA (FOF Nos. 45 – 46)

### **Protected Reach/Measurement Plan**

70. The Department has determined that the Applicant may protect the historic diverted flow rate and volume, 8.33 CFS up to 433 AF less conveyance loss, only to the secondary point of diversion at the Cement Ditch headgate (not to exceed 390 AF at the Cement Ditch) and that no water may be protected downstream of the Cement Ditch headgate because the historical consumptive use will continue at the historical place of use. As modified, the Department concludes the length and location of the stream reach in which instream flows will be maintained and enhanced along with the measurement plan satisfy the requirements of 85-2-408(1), MCA.

## **PRELIMINARY DETERMINATION**

Subject to the terms and analysis in this Preliminary Determination Order, the Department preliminarily determines that this Application to Change Water Right No. 76G 30106785 should be granted in modified form subject to the following. The Department finds a lack of adverse effect to Racetrack Creek water users located between the historic point of diversion at the Racetrack Lake Dam and the secondary point of diversion at the Cement Ditch headgate as a result of this change. However, the Applicant did not prove a lack of adverse effect to water users downstream of the secondary point of diversion at the Cement Ditch headgate resulting from the enlargement of the consumed volumes of the supplemental statements of claim. Accordingly, the Applicant may protect instream 8.33 CFS up to the historically diverted volume of

433.33 AF from the historic point of diversion at the Racetrack Lake Dam to the secondary point of diversion at the Cement Ditch headgate located in the SESWSE of Section 16, T6N R10W, Powell County (not to exceed 7.5 CFS and 390 AF at the headgate), for the benefit of the fishery resource in Racetrack Creek, subject to the following water measurement and reporting condition:

THE APPROPRIATOR MAY PROTECT 8.33 CFS UP TO 433.33 AF FOR THE BENEFIT OF THE FISHERY RESOURCE IN RACETRACK CREEK FROM THE HISTORIC POINT OF DIVERSION AT THE RACETRACK LAKE DAM TO THE SECONDARY POINT OF DIVERSION AT THE CEMENT DITCH HEADGATE IN THE SESWSE OF SECTION 16, T6N R10W, POWELL COUNTY (NOT TO EXCEED 7.5 CFS AND 390 AF AT THE CEMENT DITCH). THE APPROPRIATOR SHALL COLLECT STREAMFLOW MEASUREMENTS ON A WEEKLY BASIS (MINIMUM) AT THE OUTLET OF RACETRACK LAKE AND AT A POINT IMMEDIATELY BELOW THE CEMENT DITCH HEADGATE ONCE LAKE RELEASES HAVE COMMENCED. THE APPROPRIATOR SHALL ENSURE THAT STORED WATER RELEASED FROM RACETRACK LAKE FOR FISHERY PURPOSES IS NOT DIVERTED INTO THE CEMENT DITCH HEADGATE AT ANY POINT DURING THE TEMPORARY CHANGE. THE APPROPRIATOR SHALL ANNUALLY COORDINATE WITH THE OTHER TWO STORAGE WATER RIGHT HOLDERS (CLAIMS 76G 214587-00 AND 76G 214588-00) TO ESTABLISH A RELEASE SCHEDULE. THE APPROPRIATOR SHALL REPORT TO THE DEPARTMENT THE STREAMFLOW DATA COLLECTED IN IMPLEMENTATION OF THE STREAMFLOW MEASUREMENT PLAN REQUIRED BY MCA 85-2-408(1)(B). DOCUMENTATION OF THE LOCATION OF THE MEASURING POINTS AND MEASUREMENT METHODOLOGY MUST BE PRESENTED WITH THE FLOW MEASUREMENT RECORDS. THE MEASUREMENT REPORT SHALL BE SUBMITTED BY NOVEMBER 30 OF EACH YEAR AND UPON REQUEST AT OTHER TIMES DURING THE YEAR. RECORDS MUST BE SENT TO THE WATER RESOURCES REGIONAL OFFICE. FAILURE TO SUBMIT RECORDS MAY BE CAUSE FOR REVOCATION OF THIS TEMPORARY CHANGE AUTHORIZATION.

### **NOTICE**

This Department has determined your application should be granted in modified form based upon findings specified in the above Preliminary Determination to Grant Change in Modified Form. When an application is granted in modified form the applicant may obtain a hearing pursuant to § 2-4-604, MCA, to show cause by a preponderance of the evidence as to why the change in appropriation right should not be granted in modified form by filing a written request for a hearing with the Department within 30-days of service of the preliminary determination. §85-2-310(7), MCA.

This constitutes notice of your opportunity for a hearing to show cause by a preponderance of the evidence as to why your change should not be granted in modified form. If you want to have a hearing, you must file a written request within 30-days of service of the notice of this Preliminary Determination to Grant Change in Modified Form.

In order to exhaust your administrative remedies under the Montana Administrative Procedure Act (Title 2, Chapter 4, MCA) on a preliminary determination to grant an application in modified form, you must proceed to the show cause hearing and complete the show cause hearing process. Only a person who has exhausted his or her administrative remedies available within the agency and is aggrieved by a final

written decision of the Department is entitled to judicial review under Montana Administrative Procedure Act (§2-4-702, MCA). If you file a written request for a hearing, your application will be forwarded to the DNRC Hearings Unit to schedule a hearing to show cause why your application should not be granted in modified form. A hearing date will be set within 45 days of the date of your written hearing request is filed with the Department and a notice of hearing and appointment of Hearing Examiner will be forwarded to you.

If you do not file a written request for a hearing within 30 days the Department will provide public notice of this Application and the Department's Preliminary Determination to Grant in Modified Form pursuant to §§ 85-2-307, MCA. The Department will set a deadline for objections to this Application pursuant to §§ 85-2-307, and -308, MCA. If this Application receives no valid objection or all valid objections are unconditionally withdrawn, the Department will grant this Application as herein approved. If this Application receives a valid objection, the application and objection will proceed to a contested case proceeding pursuant to Title 2 Chapter 4 Part 6, MCA, and § 85-2-309, MCA. If valid objections to an application are received and withdrawn with stipulated conditions and the department preliminarily determined to grant Preliminary Determination to Grant in Modified form 26 Application to Change Water Right No. 76G 30072331

DATED this 30<sup>th</sup> day of November 2017.

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Jim Nave, Manager  
Missoula Regional Office  
Department of Natural Resources  
and Conservation

**CERTIFICATE OF SERVICE**

This certifies that a true and correct copy of the PRELIMINARY DETERMINATION TO GRANT IN MODIFIED FORM was served upon all parties listed below on this 30<sup>th</sup> day of November 2017, by first class United States mail.

ANDREW GORDER  
CLARK FORK COALITION  
P.O. BOX 7593  
MISSOULA, MONTANA 59807

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Regional Office, (406) 721 - 4284