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

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APPLICATION TO CHANGE WATER RIGHT NO. 43D 30165001 by RONALD M. HENRY	**UPDATED DRAFT PRELIMINARY DETERMINATION TO GRANT CHANGE**

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On March 3, 2025, Ronald M. Henry (Applicant) submitted Application to Change Water Right No. 43D 30165001 to change Statements of Claim 43D 30155507 and 43D 30155511 to the Billings Regional Office of the Department of Natural Resources and Conservation (Department or DNRC). The Department published receipt of the application on its website. A preapplication meeting was held between the Department and the Applicant's Representative, Andy Brummond from Montana Fish, Wildlife & Parks (Montana FWP), on December 10, 2024, in which the Applicant designated that the technical analyses for this application would be completed by the Department. Mark Elison, Veronica Corbett, Cassey Strebeck, and Evan Norman were present for the Department. The Applicant returned the completed Preapplication Checklist on December 26, 2024. The Department delivered the Department-completed Technical Analyses on February 7, 2025. The Application was determined to be correct and complete as of March 24, 2025. An Environmental Assessment for this application was completed on May 23, 2025. The Draft Preliminary Determination to Deny was sent to the Applicant on May 23, 2025. The Applicant submitted a request for extension of time per § 85-2-307(3), MCA on June 4, 2025, to which the Department granted 180 days to submit additional information. The Applicant submitted additional information on July 1, 2025. Based on this additional information, the Department has updated the analysis in this document. The Updated Draft Preliminary Determination to Grant was sent to the Applicant on August 29, 2025.

INFORMATION

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

Application as filed:

- Application for Change of Appropriation Water Right, Form 606

- Addenda:
    - Change to Instream Flow Addendum, Form 606-IFA
- Attachments:
    - Notice letter to other users of the McDonald Ditch from Ron Henry
    - Certificate of Mailing for McDonald Ditch notice letter, dated February 13, 2025
    - Memorandum of Benefits for West Fork Rock Creek and Rock Creek Instream Flow Change from Bryan Giordano, Montana FWP Area Fisheries Biologist, and Andy Brummond, Montana FWP Instream Flow & Water Rights Specialist
- Maps:
    - Undated aerial photograph overlain by the historical place of use, point of diversion, and conveyance method
    - Undated topographic map overlain with the proposed place of use and point of diversion
- Department-completed technical analyses based on information provided in the Preapplication Checklist, dated February 7, 2025 (DNRC Technical Analyses, 2025)
- Form 606-P, submitted by the Applicant December 26, 2024

Information submitted after the application

- Letter from Applicant to DNRC requesting an extension of time following the Draft Preliminary Determination to Deny, dated June 4, 2025
- Additional information, *Detailed Analysis of Willow Creek Water Rights Identified in the Area of Potential Adverse Effect,* Andy Brummond, Montana FWP, dated June 4, 2025
- Additional information, *Supplement to Detailed Analysis of Willow Creek Water Rights Identified in the Area of Potential Adverse Effect*, Andy Brummond, Montana FWP, dated June 30, 2025
- Letter from Applicant to DNRC indicating all additional information has been submitted, dated June 30, 2025, received July 1, 2025

Information within the Department's Possession/Knowledge

- DNRC Technical Analyses Errata: Diverted Volume Error in Technical Analysis – Part A (Table 7, Table 8, Table 9 and Table 10) dated March 24, 2025

- DNRC Technical Analyses Errata: Return Flow Monthly Breakdown Error in Technical Analysis Part B (Table 5 and Table 6) dated May 14, 2025
- Kuzara, S., 2024. Groundwater and surface-water interaction in Rock Creek Valley between Red Lodge and Rockvale, Carbon County, Montana: Montana Bureau of Mines and Geology Open-File Report 762, 65 p.
- Glover, R.E., 1977. Flow to Parallel Drains presented in Transient Ground Water Hydraulics, Water Resource Publications, 413 p.
- HydroSOLVE, Inc. 2024 FWD:SOLV Predictive Modeling Software v.2. written by G.M. Duffield. http://www.aqtesolv.com/fwdsolv.htm
- Lohman, S.W., 1972. Definitions of selected ground-water terms: Revisions and conceptual refinements, U.S. Geological Survey Water Supply Paper, 1988, 21 p., http://pubs.usgs.gov/wsp/wsp_1988/pdf/wsp_1988.pdf.
- Order of the Board of Natural Resources Establishing Water Reservations, dated December 15, 1978.
- Reiten, J., 2020. Hydrogeology of the Rock Creek Benches, Carbon County, Montana: Montana Bureau of Mines and Geology Open-File Report 732, 4 p., 5 sheets.
- Sando, R., Jaeger K.L., Farmer W.H., Barnhart T.B., McShane R.R., Welborn T.L., Kaiser K.E., Hafen K.C., Blasch K., York B., Shallcross A., 2022. Predictions and drivers of sub-reach-scale annual streamflow permanence for the upper Missouri River basin: 1989–2018, Journal of Hydrology X, Vol. 17. https://doi.org/10.1016/j.hydroa.2022.100138.
- Summary of Instream Water Rights, Montana Department of Fish, Wildlife and Parks, dated January 2005
- University of Wyoming Extension Irrigation Water Measurement: Irrigation Ditches and Pipelines. Bulletin 583R, June 2013.
- US Bureau of Reclamation Water Measurement Manual, 1997
- U.S. Geological Survey, 2019, The StreamStats program, online at https://streamstats.usgs.gov/ss/
- 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 Billings Regional Office at 406-247-4415 to request copies of the following documents:

- Department Standard Practice for Determining Historical Use
- Department Standard Practice to Analyze Return Flows
- DNRC Change Manual
- DNRC Technical Memorandum: Calculating Return Flow, dated April 18, 2019
- DNRC Technical Memorandum: Distributing Conveyance Loss on Multiple User Ditches, dated February 14, 2020
- Department Technical Memorandum: Physical Availability of Surface Water with Gage Data, dated November 1, 2019
- DNRC Water Rights Database
- Montana Bureau of Mines and Geology Groundwater Information Center (GWIC) Database 2025
- NRCS 2025. Soil Survey Staff, USDA. Soil Series Classification Database
- NRCS 2003. Irrigation Water Requirement (IWR) computer program

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, part 4, MCA).

For the purposes of this document, Department or DNRC means the Department of Natural Resources & Conservation; Montana FWP means Montana Department of Fish, Wildlife & Parks; USGS means United States Geological Survey; USDA means United States Department of Agriculture; NRCS means Natural Resources and Conservation Service; MBMG means Montana Bureau of Mines and Geology; GWIC means Groundwater Information Center; IWR means Irrigation Water Requirements; POD means point of diversion; POU means place of use; CFS means cubic feet per second; GPM means gallons per minute; MI means miner's inches; AF means acre-feet; AC means acres; and AF/YR means acre-feet per year.

WATER RIGHTS TO BE CHANGED

FINDINGS OF FACT

1. The Applicant proposes to temporarily change Statements of Claim 43D 30155507 and 43D 30155511. Statement of Claim 43D 30155507 historically diverted 0.87 CFS from West Fork

Rock Creek to flood irrigate 123.79 acres from April 10 to November 1 with a priority date of June 1, 1889. Statement of Claim 43D 30155511 historically diverted 1.92 CFS from West Fork Rock Creek to irrigate 123.79 acres from April 10 to November 1 with a priority date of September 1, 1888. Both water rights used the McDonald Ditch headgate in the NENWNW Sec. 7, T8S, R20E, as a POD and the McDonald Ditch as a means of conveyance. Both water rights have a POU of 23.74 AC in the SENE Sec. 28; 40.02 AC in the SWNE Sec. 28; and 60.03 AC in the SE Sec. 28, T7S, R20E, Carbon County.

Table 1: Water Rights Proposed for Change

Water Right Number	Flow Rate (CFS)	Volume	Purpose	Acres	Period Of Use	Place Of Use	Point of Diversion	Priority Date
43D 30155507	0.87	The amount historically put to beneficial use	Irrigation	123.79	April 10 to November 1	Table 2	McDonald Ditch headgate, NENWNW Sec. 7, T8S, R20E, Carbon Co.	June 1, 1889
43D 30155511	1.92	The amount historically put to beneficial use	Irrigation	123.79	April 10 to November 1	Table 2	McDonald Ditch headgate, NENWNW Sec. 7, T8S, R20E, Carbon Co.	September 1, 1888

Table 2: Historical Place of Use for Statements of Claim 43D 30155507 and 43D 30155511

POU ID	Acres	Quarter Section	Section	Township	Range	County
1	23.74	SENE	28	7S	20E	Carbon
2	40.02	SWNE	28	7S	20E	Carbon
3	60.03	SE	28	7S	20E	Carbon
Total	123.79					

2. Both water rights were split and severed from their historical parent right. Statement of Claim 43D 30155507 is a severed child right of Statement of Claim 43D 10267-00. Statement of Claim 43D 30155511 is a severed child right of Statement of Claim 43D 10268-00. Statements of Claim 43D 30155507 and 43D 30155511 retained the same 123.79 acres of the total 555 acres of the original claims, and a portion of each of the original flow rates. These are the two water rights proposed for change in this application.

3. Both Statements of Claim 43D 10267-00 and 43D 10268-00 were filed with the DNRC on February 20, 1981, for water use decreed by the District Court of the Sixth Judicial District in

Carbon County on May 5, 1903, as Civil Case number 275. Civil Case No. 275 decreed 155 MI with a priority date of June 1, 1889 (Statement of Claim 43D 10267-00), and 345 MI with a priority date of September 1, 1888 (Statement of Claim 43D 10268-00); other water use was decreed in this case which is not included in these two claims.

4. Statement of Claim 43D 30155507 and Statement of Claim 43D 30155511 are considered supplemental to each other because they provide supplemental water for the same purpose on the same POU. Statement of Claim 43D 30156068 diverted water from Willow Creek for flood irrigation of 100.03 AC, all of which overlap the historical POU for Statements of Claim 43D 30155507 and 43D 30155511. Statement of Claim 43D 30156068 is considered supplemental to Statements of Claim 43D 30155507 and 43D 30155511 because they have an overlapping POU and it provided supplemental irrigation water in some years. Statement of Claim 43D 30156068 is a severed child right of Statement of Claim 43D 10266-00. It is not included in this application because it does not share a source. Provisional Permit 43D 12350-00 is considered supplemental to Statements of Claim 43D 30155507 and 43D 30155511 because they share a purpose and POU. Provisional Permit 43D 12350-00 is an irrigation right for flood waters from West Fork Rock Creek. It is unclear if this water right was ever used as issued because no certification has been completed; the Applicant states they have no knowledge of Provisional Permit 43D 12350-00 being used to irrigate the historical acres and finds no evidence of Water Commissioner records to support its use.

Table 3: Overlapping Water Rights to Statements of Claim 43D 30155507 and 43D 30155511

Water Right	Total Flow Rate	Purpose	Overlapping Acres	Period of Use	Place of Use	Point of Diversion	Priority Date
Statement of Claim 43D 30156068	2.64 CFS	Irrigation, Flood	100.03	April 10 – November 4	NE and SE Sec. 28, T7S, R20E, Carbon Co.	NWSENW Sec. 33, T7S, R20E, Carbon Co.	May 1, 1886
Provisional Permit 43D 12350-00	5,612 GPM	Irrigation, Flood	123.79	May 1 – September 1	NE and SE Sec. 28, T7S, R20E, Carbon Co.	McDonald Ditch headgate, NWNWNW Sec. 7, T8S, R20E, Carbon Co.	April 6, 1977

5. There have been no previous change authorizations on either water right proposed for change, or on the supplemental and overlapping water rights.

CHANGE PROPOSAL

FINDINGS OF FACT

6. The Applicant proposes to temporarily change the purpose, POU, and POD for Statements of Claim 43D 30155507 and 43D 30155511. No changes are proposed to any other aspect of the water right. The proposed change is temporary for a period of ten years as described in § 85-2-408, MCA. The proposed purpose is instream flow to benefit fishery resources. The proposed place of use is a protected reach of West Fork Rock Creek from the historical point of diversion in the NENWNW Sec. 7, T8S, R20E, to the confluence with Rock Creek, then Rock Creek from the confluence with West Fork Rock Creek to a point downstream in Gov't Lot 5 (SENESE) Sec. 36, T3S, R23E, and the proposed POD is the upstream and downstream ends of this Protected Reach. The project is in Carbon County and the source is West Fork Rock Creek. The protected water for instream flow is from West Fork Rock Creek with Rock Creek used as a natural carrier to the end of the Protected Reach. The period of use will remain April 10 – November 1 annually.

7. The historical POU is now a domestic subdivision; Statements of Claim 43D 30155507 and 43D 30155511 have not been used for flood irrigation since approximately the mid-1990s when subdivision of the lots and residential development began. The Applicant proposes to temporarily retire use of the McDonald Ditch headgate as a POD, temporarily retire the historical POU, and temporarily change the purpose.

8. The Applicant proposes to leave the full flow rate of each water right instream to benefit fisheries resources instead of being diverted at the historical headgate. Under the proposed change, 0.87 CFS and 79.3 AF from Statement of Claim 43D 30155507 and 1.92 CFS and 176.2 AF from Statement of Claim 43D 30155511 will be left instream to benefit fisheries resources. A Water Commissioner manages diversions on West Fork Rock Creek and Rock Creek. Through this change, water will no longer be diverted from West Fork Rock Creek into the McDonald Ditch headgate by the Water Commissioner, but will instead remain instream. The Applicant proposes to measure streamflow at three locations: (1) at or near the US Highway 212 bridge near the confluence of West Fork Rock Creek with Rock Creek in the NWSE Sec. 4, T8S, R20E; (2) on Rock Creek, either at the Fox-East Bench Rd Bridge (Gov't Lot 7 (NESW) Sec. 25, T6S, R20E),

or the Roberts/Carbon Ave Bridge (NENW Sec. 32, T5S, R21E); and (3) near the confluence of Rock Creek and the Clarks Fork River, either the US Hwy 310 Bridge near Rockvale (SENE Sec. 3, T4S, R23E), or the Grapevine Road/Gibson Road Bridge (between Gov't Lots 3 and 4 (NW) Sec. 1, T4S, R23E, Carbon County). Staff gages and/or water level loggers will be installed at each of these sites and streamflow measurements will be taken to establish a rating curve for monthly water measurement readings. The rating table will be provided to the Water Commissioner.

9. Per § 85-2-408(7) MCA, the Applicant may protect the full diverted volume from the historical point of diversion to the place where return flows accrued to the source. While water is diverted from West Fork Rock Creek, the historical return flows return to Willow Creek. Willow Creek is a tributary to the mainstem of Rock Creek by entering Cooney Reservoir and then becoming Red Lodge Creek; Red Lodge Creek joins mainstem Rock Creek in the S2SWNE Sec. 24, T4S, R21E. West Fork Rock Creek is also a tributary to the mainstem of Rock Creek and meets Rock Creek approximately 2.7 miles downstream of the historical POD and from there is known as Rock Creek. The full diverted volume is proposed for protection from the historical point of diversion to the point downstream where the return flows eventually return to Rock Creek in the S2SWNE Sec. 24, T4S, R21E. After the point where return flows return to the mainstem source, only the consumed volume can be protected within the Protected Reach to the endpoint downstream in Gov't Lot 5 (SENESE) Sec. 36, T3S, R23E.

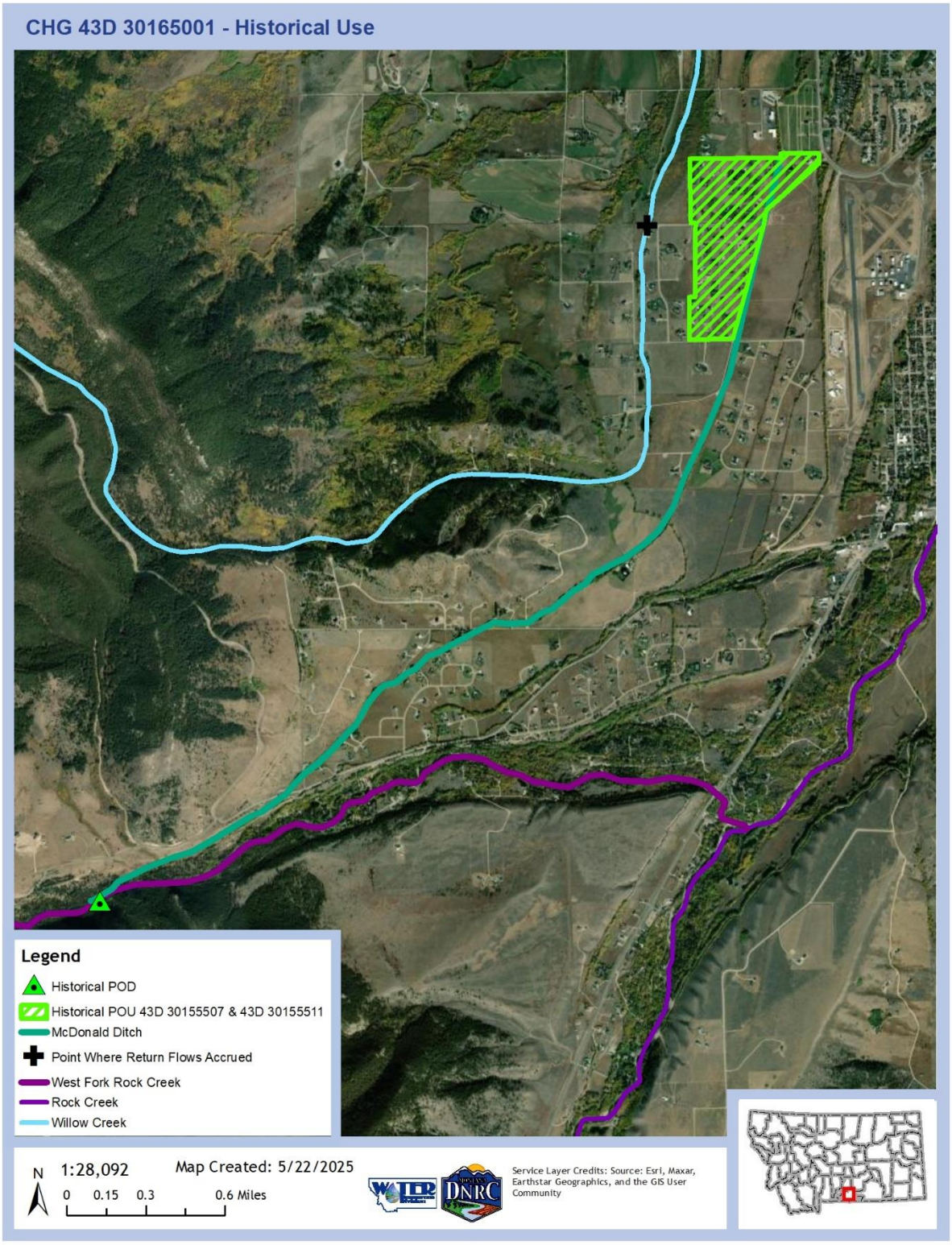

Figure 1. Historical Use Map for Statements of Claim 43D 30155507 and 43D 30155511

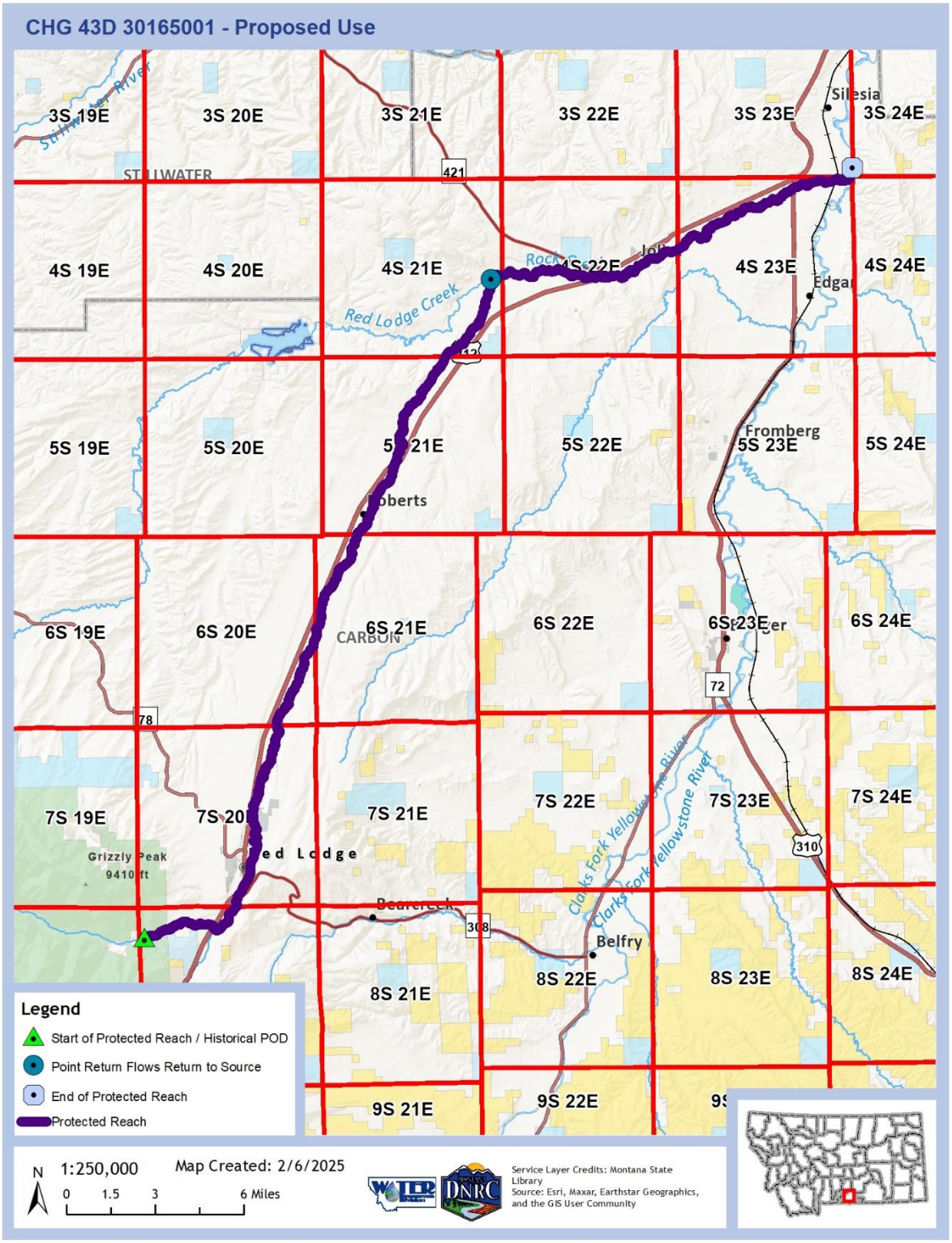

Figure 2. Proposed Use Map for Statements of Claim 43D 30155507 and 43D 30155511

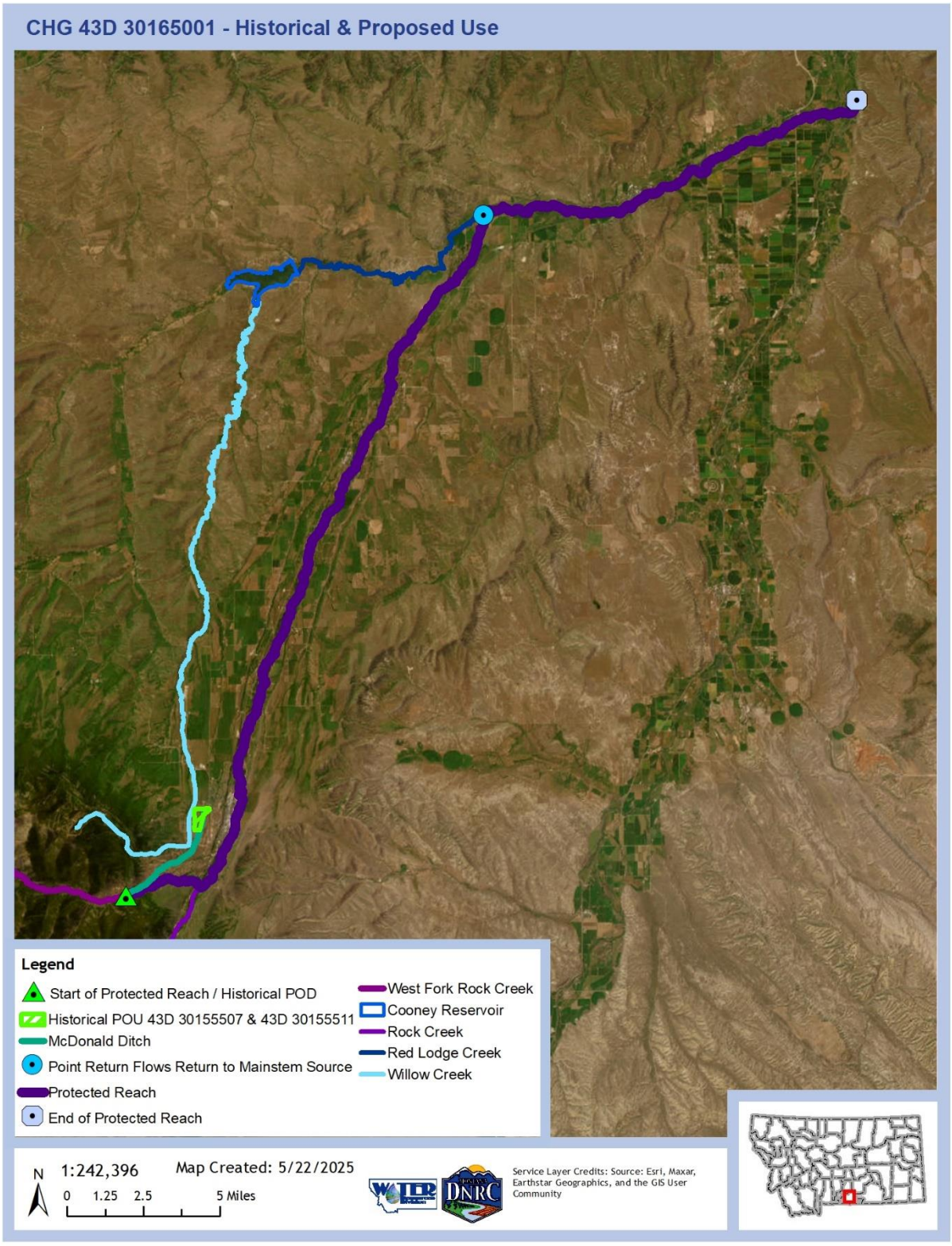

Figure 3. Historical & Proposed Use Map for Statements of Claim 43D 30155507 and 43D 30155511

CHANGE CRITERIA

10. 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 probable 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 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.
> (b) The proposed means of diversion, construction, and operation of the appropriation works are adequate, except for: (i) a change in appropriation right for instream flow pursuant to 85-2-320 or 85-2-436; (ii) a temporary change in appropriation right for instream flow pursuant to 85-2-408; or (iii) a change in appropriation right pursuant to 85-2-420 for mitigation or marketing for mitigation.
> (c) The proposed use of water is a beneficial use.
> (d) The Applicant has a possessory interest, or the written consent of the person with the possessory interest, in the property where the water is to be put to beneficial use or, if the proposed change involves a point of diversion, conveyance, or place of use on national forest system lands, the Applicant has any written special use authorization required by federal law to occupy, use, or traverse national forest system lands for the purpose of diversion, impoundment, storage, transportation, withdrawal, use, or distribution of water. This subsection (2)(d) does not apply to: (i) a change in appropriation right for instream flow pursuant to 85-2-320 or 85-2-436; (ii) a temporary change in appropriation right for instream flow pursuant to 85-2-408; or (iii) a change in appropriation right pursuant to 85-2-420 for mitigation or marketing for mitigation.

11. The evaluation of a proposed change in appropriation does not adjudicate the underlying right(s). The Department's change process only addresses the water right holder's ability to make a different use of that existing right. *E.g., Hohenlohe*, ¶¶ 29-31; *Town of Manhattan*, ¶ 8; *In the Matter of Application to Change Appropriation Water Right No.41F-31227 by T-L Irrigation Company* (DNRC Final Order 1991).

12. In addition to the § 85-2-402(2), MCA,[1] 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.
>
> (2) (a) A temporary change authorization under the provisions of this section is allowable only if the owner of the water right voluntarily agrees to:
>
> (i) change the purpose of a consumptive use water right to instream flow for the benefit of the fishery resource; or
>
> (ii) lease a consumptive use water right to another person for instream flow to benefit the fishery resource.
>
> (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.
>
> (5) 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.
>
> . . . .
>
> (8) 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.

13. Pursuant to §§ 85-2-407, and -408, MCA, a temporary change for authorization for instream flow is subject to special conditions which are identified above and addressed in the

[1] Pursuant to §§ 85-2-402 (2)(b) and -402(2)(d), MCA, the Applicant is not required to prove that the proposed means of diversion, construction, and operation of the appropriation works are adequate and is not required to prove possessory interest in the place of use because this application involves a temporary change in appropriation right for instream flow pursuant to § 85-2-408, MCA.

sections below. The evaluation of a proposed change in appropriation does not adjudicate the underlying right(s). The Department's change process only addresses the water right holder's ability to make a different use of that existing right. *E.g., Hohenlohe*, ¶¶ 29-31; *Town of Manhattan*, ¶ 8.

HISTORICAL USE AND ADVERSE EFFECT

FINDINGS OF FACT - Historical Use

14. Statement of Claim 43D 30155507 historically diverted 0.87 CFS from West Fork Rock Creek to flood irrigate 123.79 acres from April 10 to November 1 with a priority date of June 1, 1889. Statement of Claim 43D 30155511 historically diverted 1.92 CFS from West Fork Rock Creek to irrigate 123.79 acres from April 10 to November 1 with a priority date of September 1, 1888. Both water rights used the McDonald Ditch headgate in the NENWNW Sec. 7, T8S, R20E, as a POD and the McDonald Ditch as a means of conveyance. Both water rights have a POU of 23.74 AC in the SENE Sec. 28; 40.02 AC in the SWNE Sec. 28; and 60.03 AC in the SE Sec. 28, T7S, R20E, Carbon County. Both water rights were split and severed from their historical parent right. Statement of Claim 43D 30155507 is a severed child right of Statement of Claim 43D 10267-00. Statement of Claim 43D 30155511 is a severed child right of Statement of Claim 43D 10268-00. Statements of Claim 43D 30155507 and 43D 30155511 retained the same 123.79 acres of the total 555 acres of the original claims, and a portion of each of the original flow rates. These rights were split in such a way that each post-split water right could stand alone and not be reliant on the others for carriage water. Both parent rights were reexamined prior to the splits occurring, but a final decree has not yet been issued for this basin, 43D Clarks Fork Yellowstone River.

15. Both Statements of Claim 43D 10267-00 and 43D 10268-00 were filed with the DNRC on February 20, 1981, for water use decreed by the District Court of the Sixth Judicial District in Carbon County on May 5, 1903, as Civil Case number 275. Civil Case No. 275 decreed 155 MI with a priority date of June 1, 1889 (Statement of Claim 43D 10267-00), and 345 MI with a priority date of September 1, 1888 (Statement of Claim 43D 10268-00). The entire 123.79 acres irrigated by Statements of Claim 43D 30155507 and 43D 30155511 are shown in the Carbon County Water Resources Survey (WRS), published June 1966, as private irrigation. The Department finds the entire historical POU was irrigated prior to June 30, 1973.

16. Statement of Claim 43D 30156068 diverted water from Willow Creek for flood irrigation of 100.03 AC, all of which overlap the historical POU for Statements of Claim 43D 30155507 and 43D 30155511. Statement of Claim 43D 30156068 is considered supplemental to Statements of Claim 43D 30155507 and 43D 30155511 because they have an overlapping POU and it provided supplemental irrigation water in some years. Statement of Claim 43D 30156068 is a severed child right of Statement of Claim 43D 10266-00. Provisional Permit 43D 12350-00 is considered supplemental to Statements of Claim 43D 30155507 and 43D 30155511 because they share a purpose and POU. Provisional Permit 43D 12350-00 is an irrigation right for flood waters from West Fork Rock Creek. However, Provisional Permit 43D 12350-00 is not considered in the historical use analysis of Statements of Claim 43D 30155507 and 43D 30155511 because it was issued after Jun 30, 1973, and was not part of the historical irrigation practices.

17. The Applicant opted to use the Department methodology in ARM 36.12.1902(16) to calculate the historical consumed volume and historical diverted volume, including conveyance losses. The consumed volume for irrigation is based on the net irrigation requirement (NIR) from the USDA NRCS IWR at a representative weather station. The NIR is multiplied by a county-wide management factor (from ARM 36.12.1902(16)) to produce an adjusted NIR representative of actual crop yields in Montana. Crop consumption is determined by multiplying the adjusted NIR by the number of acres of irrigation. Crop consumption is then divided by the field efficiency identified from the irrigation method and ARM 36.12.115. Irrecoverable losses (IL) are 5% of the field applied volume for flood irrigation. The total consumed volume for irrigation is the crop consumption plus irrecoverable losses. The total non-consumed volume is the field applied volume minus the total consumed volume.

18. The historical consumed and field applied volumes have been calculated with the inputs shown in Table 1 following the methods described above and in ARM 36.12.1902(16). These values include all of the historical use for the acres, including the supplemental rights, and are not separated by individual water rights. Based on 123.79 AC of flood irrigation, an IWR for flood irrigation at the Red Lodge, MT weather station in Carbon County of 15.57 inches, and a county management factor of 58.3%, the historical consumptive volume (HCV) for the irrigated acres is 93.6 AF (123.79 AC x 15.57 in/12in/ft x 0.583 = 93.64 AF). The Department uses 55% field efficiency based on contour ditch irrigation with 1.5-3.0% design slope for the purpose of evaluating historical consumptive use, as provided by the Applicant. Using a 55% efficiency, the

field applied volume is 170.3 AF (93.64 AF/0.55 = 170.25 AF). The Department adds 5% of field applied volume to account for irrecoverable losses (IL) in flood irrigation systems. The irrecoverable losses are 8.5 AF (170.25 AF x 0.05 = 8.51 AF). The Department finds the total HCV including IL for the historically irrigated acres is 102.2 AF (93.64 AF + 8.51 AF = 102.15 AF).

Table 4: Historical use for irrigated acres

Irrigation Method	Historical Acres	IWR (in)[1]	Mgmt. Factor[2]	Field Efficiency	Crop Consumption (AF)	Field Applied Volume (AF)	IL (AF)	Total Consumed Volume (AF)
Flood	123.79	15.57	58.3	55%	93.6	170.3	8.5	102.2

[1]Carbon County, Red Lodge IWR Weather Station
[2]Carbon County Historical Use Management Factor (1964-1973)

19. Statement of Claim 43D 30156068 from Willow Creek has a priority date of May 1, 1886, and is a severed child right of Statement of Claim 43D 10266-00. Approximately 175 AC of the original POU for Statement of Claim 43D 10266-00 had no supplemental water right associated with them and had no additional source of irrigation water aside from Willow Creek; therefore, it is assumed that the Willow Creek right was used to provide some of the irrigation needs of the 100.03 overlapping acres when it was available, but that the West Fork Rock Creek rights were more reliable and more likely than not provided the majority of the irrigation needs for the overlapping acres. Based on this, the Applicant proposes Statement of Claim 43D 30156068 could have provided 23% of the irrigation requirement for the 100.03 overlapping acres in May, and 24% in June. Per the IWR for Red Lodge, there is no irrigation requirement in May, and 3.89 inches is required in June. 24% of 3.89 inches is 0.93 inches which Statement of Claim 43D 30156068 would have contributed to the total irrigation requirement for those acres. Using the same method found in ARM 36.12.1902 and described in FOF 18, the HCV for Statement of Claim 43D 30156068 is 4.5 AF (100.03 AC x 0.93 in /12 in/ft x 0.583 = 4.52 AF). The field applied volume with 55% efficiency is 8.2 AF (4.52 AF / 0.55 = 8.21 AF) and the 5% irrecoverable losses attributed to flood irrigation systems are 0.4 AF (8.21 AF x 0.05 = 0.41 AF). The total HCV attributed to Statement of Claim 43D 30156068 is 4.93 AF (4.52 AF + 0.41 AF = 4.93 AF). Because Statement of Claim 43D 30156068 is from a different source, the entire flow rate

necessary for this change is attributed to Statements of Claim 43D 30155507 and 43D 30155511 as shown in Table 5.

20. The apportioned HCV including IL for Statements of Claim 43D 30155507 and 43D 30155511 is the total consumed volume for the fields (102.2 AF; FOF 18, Table 4) minus the amount attributed to Statement of Claim 43D 30156068 (4.93 AF, FOF 19) (102.15 AF – 4.93 AF = 97.22 AF), multiplied proportionally by flow rate for each right (Table 5). The apportioned HCV for Statement of Claim 43D 30155507 is 30.14 (97.22 AF x 0.31 = 30.14 AF) and for Statement of Claim 43D 30155511 is 67.08 AF (97.22 AF x 0.69 = 67.08 AF). The total HCV attributed to the field (102.2 AF; Table 4) is the same as the summed total attributed to the three rights 102.2 AF (30.14 AF + 67.08 AF + 4.93 AF = 102.15 AF). The apportioned field applied volume for Statements of Claim 43D 30155507 and 43D 30155511 is the total field applied volume for the fields (170.3 AF; FOF 18, Table 4) minus the amount attributed to Statement of Claim 43D 30156068 (8.21 AF, FOF 19) (170.25 AF – 8.21 AF = 162.04 AF), multiplied proportionally by flow rate for each right (Table 5). The apportioned field applied volume for Statement of Claim 43D 30155507 is 50.23 (162.04 AF x 0.31 = 50.23 AF) and for Statement of Claim 43D 30155511 is 111.81 AF (162.04 AF x 0.69 = 111.81 AF). The total field applied volume attributed to the field (170.3 AF; Table 4) is the same as the summed total attributed to the three rights 170.3 AF (50.23 AF + 111.81 AF + 8.21 AF = 170.25 AF).

Table 5: Apportionment of historical use by water right

Water Right No.	Flow Rate (CFS)	Percentage of Flow	Apportioned HCV *(Including IL)* (AF)	Apportioned Field Applied Volume (AF)
Statement of Claim 43D 30155507	0.87	31%	30.14	50.23
Statement of Claim 43D 30155511	1.92	69%	67.08	111.81
Statement of Claim 43D 30156068	N/A*	N/A	4.93	8.21
Total	**2.79**	**100%**	**102.2**	**170.3**

* No flow rate is considered because it does not factor into HCV or field applied volume calculations

21. The historical POD for Statements of Claim 43D 30155507 and 43D 30155511 is the McDonald Ditch headgate located in the NENWNW Sec. 7, T8S, R20E, Carbon County, and the historical means of conveyance is the McDonald Ditch. The McDonald Ditch is not specifically mentioned in the Carbon County WRS. The Applicant states the McDonald Ditch headgate is steel and concrete, 7 ft wide, and can open 1.8 ft tall. The capacity of the headgate as a submerged orifice, based on the US Bureau of Reclamation Water Measurement Manual 1997, is 87.23 CFS,

as provided by the Applicant. There is a 7 ft wide, 2 ft tall Parshall flume used by the Water Commissioner on the McDonald Ditch just below the headgate. Using these dimensions, the Parshall flume indicates a measurable ditch capacity of 84.93 CFS as provided by the University of Wyoming Extension Irrigation Water Measurement booklet. The Department has record of water rights on the McDonald Ditch totaling 61.0 CFS. The Department finds the historical diversion and conveyance infrastructure capable of conveying the historical flow rate.

22. Both Statements of Claim 43D 10267-00 and 43D 10268-00 were filed with the DNRC on February 20, 1981, for water use decreed by the District Court of the Sixth Judicial District in Carbon County on May 5, 1903, as Civil Case number 275. Civil Case No. 275 decreed 155 MI (Statement of Claim 43D 10267-00), and 345 MI (Statement of Claim 43D 10268-00). The period of diversion and period of use for Statements of Claim 43D 30155507 and 43D 30155511 is April 10 to November 4 and is considered decreed. The Department finds the historical period of diversion and period of use to be April 10 to November 4 annually.

23. Per ARM 36.12.1902(10), the historical conveyance loss volume is equal to the sum of the historical seepage loss, vegetation loss, and ditch evaporation volumes. Historically, water was diverted from West Fork Rock Creek via the McDonald Ditch headgate in the NENWNW Sec. 7, T8S, R20E, Carbon County. The McDonald Ditch is a multi-user ditch, meaning multiple individual water rights are conveyed using the same structures. Water travels generally north/northeast through the McDonald Ditch to individual fields using secondary diversions and/or lateral ditches. The Department broke the McDonald Ditch into five segments from the headgate to the Applicant's field, located in the SESWSE Sec. 28, T7S, R20E, based on where other water rights had their individual diversions from the McDonald Ditch. The following water rights begin use between the POD and the beginning of the Applicant's field and are assigned a proportion of the conveyance losses in the McDonald Ditch: Statements of Claim 43D 197636-00, 43D 4922-00, 43D 17199-00, 43D 17200-00, 43D 10267-00, 43D 10268-00, 43D 30155819, and 43D 30155820, and Provisional Permit 43D 12350-00. Two water rights were not considered in the conveyance loss calculations. Statement of Claim 43D 119247-00 was not considered because it has multiple points of diversion and conveyance means, and Water Commissioner records do not indicate any use. Provisional Permit 43D 12350-00 was not considered because it does not represent historical use prior to June 30, 1973. The proportion of the total conveyance losses

attributed to each water right conveyed in the McDonald Ditch between the headgate and the Applicant's fields are shown in Table 6.

24. Ditch Segment 1 begins at the McDonald Ditch headgate and continues northeast to the field beginning in the SWSWNE Sec. 5, T8S, R20E, where Statement of Claim 43D 197636-00 begins use. Ditch Segment 2 begins at the end of Segment 1 and continues northeast to the field beginning in the S2SESE Sec. 32, T7S, R20E, where Statement of Claim 43D 4922-00 begins use. Ditch Segment 3 begins at the end of Segment 2 and continues northeast to the field beginning in the W2SWSW Sec. 33, T7S, R20E, where Statements of Claim 43D 17199-00 and 43D 17200-00 begin use. Ditch Segment 4 begins at the end of Segment 3 and continues northeast to the SESENW Sec. 22, T7S, R20E, where Statements of Claim 43D 10267-00, 43D 10268-00, 43D 12350-00, 43D 30155819, and 43D 30155820 begin use. Ditch Segment 5 begins at the end of Segment 4 and continues to the Applicant's field in the SESWSE Sec. 28, T7S, R20E, where Statements of Claim 43D 30155507 and 43D 30155511 begin use. A list of the water rights referred to in Table 6 as "Remaining Down Ditch Users" can be found in Table 7.

Table 6: Conveyance Loss Proportions per Ditch Segment and Water Right

Ditch Segment	Water Right No.	Flow Rate (CFS)	Total Flow Rate Remaining in Ditch (CFS)	Proportion of Flow
1	43D 197636-00	1.88	61.00	3.08%
	43D 4922-00	0.19		0.31%
	43D 17199-00	1.69		2.77%
	43D 17200-00	1.00		1.64%
	43D 10267-00	1.77		2.90%
	43D 10268-00	3.97		6.51%
	43D 30155819	2.48		4.07%
	43D 30155820	1.12		1.84%
	43D 30155507	0.87		1.43%
	43D 30155511	1.92		3.15%
	Remaining Down Ditch Users	44.11		72.31%
2	43D 4922-00	0.19	59.12	0.32%
	43D 17199-00	1.69		2.86%
	43D 17200-00	1.00		1.69%
	43D 10267-00	1.77		2.99%
	43D 10268-00	3.97		6.72%
	43D 30155819	2.48		4.19%
	43D 30155820	1.12		1.89%
	43D 30155507	0.87		1.47%
	43D 30155511	1.92		3.25%
	Remaining Down Ditch Users	44.11		74.61%
3	43D 17199-00	1.69	58.93	2.87%
	43D 17200-00	1.00		1.70%
	43D 10267-00	1.77		3.00%
	43D 10268-00	3.97		6.74%
	43D 30155819	2.48		4.21%
	43D 30155820	1.12		1.90%
	43D 30155507	0.87		1.48%
	43D 30155511	1.92		3.26%
	Remaining Down Ditch Users	44.11		74.85%
4	43D 10267-00	1.77	56.24	3.15%
	43D 10268-00	3.97		7.06%
	43D 30155819	2.48		4.41%
	43D 30155820	1.12		1.99%
	43D 30155507	0.87		1.55%
	43D 30155511	1.92		3.41%
	Remaining Down Ditch Users	44.11		78.43%
5	43D 30155507	0.87	46.90	1.86%
	43D 30155511	1.92		4.09%
	Remaining Down Ditch Users	44.11		94.05%

Table 7: Remaining Down Ditch Users on McDonald Ditch

Water Right No	Purpose	Flow Rate (CFS)
43D 30164675	IRRIGATION	0.12
43D 30164676	IRRIGATION	0.26
43D 10674 00	IRRIGATION	5
43D 111968 00	IRRIGATION	0.31
43D 111969 00	IRRIGATION	1
43D 111970 00	IRRIGATION	0.31
43D 12537 00	IRRIGATION	5.18
43D 12997 00	IRRIGATION	1.3
43D 13535 00	IRRIGATION	5.8
43D 13536 00	IRRIGATION	5.8
43D 197733 00	IRRIGATION	1.52
43D 197734 00	IRRIGATION	0.31
43D 200016 00	STOCK	*
43D 200055 00	IRRIGATION	0.63
43D 200056 00	IRRIGATION	1
43D 200078 00	IRRIGATION	1.9
43D 20207 00	STOCK	*
43D 20208 00	IRRIGATION	0.63
43D 206822 00	IRRIGATION	0.59
43D 206824 00	IRRIGATION	3.85
43D 206825 00	IRRIGATION	1.71
43D 206826 00	IRRIGATION	2.5
43D 25559 00	IRRIGATION	1.13
43D 30010075	IRRIGATION	0.28
43D 30010076	IRRIGATION	0.29
43D 3530 00	IRRIGATION	0.63
43D 36615 00	IRRIGATION	1.75
43D 43401 00	IRRIGATION	0.31
Total		44.11

*Flow rates are not assigned to livestock drinking directly from the ditch

25. Conveyance loss is broken into 3 parts: seepage loss, vegetative loss, and ditch evaporation. The Applicant provided three cross-section measurements of the McDonald Ditch. These were averaged to determine the following variables for conveyance loss calculations: slope = 0.037; wetted width = 11.50 ft; wetted perimeter = 12.63 ft. The loss rate was determined to be 1.2 ft3/ft2/day based on sandy loam soils and 206 days is the number of days the ditch is running based on the periods of diversion of the water rights proposed for change. The remaining variables are shown in Table 8 and Table 9.

a. Seepage loss is calculated as:

$$\text{Seepage Loss}^{A} = \frac{\text{wetted perimeter} \times \text{ditch length} \times \text{ditch loss rate} \times \text{days}}{43{,}560\ \text{ft}^2/\text{acre}}$$

In this case, the loss per segment is multiplied by the percentage attributable to the water right, as shown in Table 8 and Table 9. The seepage loss for Statement of Claim 43D 30155507 is 19.9 AF. The seepage loss for Statement of Claim 43D 30155511 is 43.9 AF.

b. Vegetation loss is calculated as:

$$\text{Vegetation Loss}^{B} = \left(\%\frac{\text{loss}}{\text{mile}}\right) \times \text{flow rate} \times \text{days} \times \text{ditch length} \times 2\ \text{(unit conversion constant)}$$

In this equation, the unit conversion constant 2 is the number of AF/Day/CFS rounded up from 1.98. In this case, the loss per segment is multiplied by the percentage attributable to the water right, as shown in Table 8 and Table 9. The vegetation loss for Statement of Claim 43D 30155507 is 9.2 AF. The vegetation loss for Statement of Claim 43D 30155511 is 20.2 AF.

c. Evaporation is calculated as:

$$\text{Ditch Evaporation}^{C} = \frac{\text{ditch surface area} \times \text{evaporation rate}}{43{,}560\ \text{ft}^2/\text{acre}}$$

In this case, the loss per segment is multiplied by the percentage attributable to the water right, as shown in Table 8 and Table 9. The evaporative loss for Statement of Claim 43D 30155507 is 0.1 AF. The evaporative loss for Statement of Claim 43D 30155511 is 0.3 AF.

d. The total conveyance loss attributed to Statement of Claim 43D 30155507 is 29.1 AF, as shown in Table 8. The total conveyance loss attributed to Statement of Claim 43D 30155511 is 64.4 AF, as shown in Table 9. The total conveyance loss attributed to the Applicant's water rights proposed for change is 93.5 AF, as shown in Table 10.

Table 8: Conveyance losses for Statement of Claim 43D 30155507

[A] Seepage Loss	Ditch Wetted Perimeter (ft)	Ditch Length (ft)	Ditch Loss Rate ($ft^3/ft^2/day$)	Days Irrigated	Percent of Loss Attributable to Water Right	*Seepage Loss (AF)*
	12.63	**Seg. 1:** 5,270.01 **Seg. 2:** 5,395.98 **Seg. 3:** 799.46 **Seg. 4:** 3,285.52 **Seg. 5:** 3,324.17	1.2	206	**Seg. 1:** 1.43% **Seg. 2:** 1.47% **Seg. 3:** 1.48% **Seg. 4:** 1.55% **Seg. 5:** 1.86%	**Seg. 1:** 5.4 **Seg. 2:** 5.7 **Seg. 3:** 0.9 **Seg. 4:** 3.6 **Seg. 5:** 4.3 **Total: 19.9**
[B] Vegetation Loss	% Loss/Mile	Historic Flow Rate (CFS)	Days Irrigated	Ditch Length (mi)	Percent of Loss Attributable to Water Right	*Vegetation Loss (×2) (AF)*
	0.0075	**Seg. 1:** 61.0 **Seg. 2:** 59.12 **Seg. 3:** 58.93 **Seg. 4:** 56.24 **Seg. 5:** 46.90	206	**Seg. 1:** 1.00 **Seg. 2:** 1.02 **Seg. 3:** 0.15 **Seg. 4:** 0.62 **Seg. 5:** 0.61	**Seg. 1:** 1.43% **Seg. 2:** 1.47% **Seg. 3:** 1.48% **Seg. 4:** 1.55% **Seg. 5:** 1.86%	**Seg. 1:** 2.7 **Seg. 2:** 2.8 **Seg. 3:** 0.4 **Seg. 4:** 1.7 **Seg. 5:** 1.6 **Total: 9.2**
[C] Ditch Evaporation	Ditch Width (ft)	Ditch Length (ft)	Ditch Evaporation Rate (ft)	Percent of Loss Attributable to Water Right	*Ditch Evaporation (AF)*	**Seasonal Conveyance Loss (AF) (A+B+C)**
	11.5	**Seg. 1:** 5,270.01 **Seg. 2:** 5,395.98 **Seg. 3:** 799.46 **Seg. 4:** 3,285.52 **Seg. 5:** 3,324.17	1.12	**Seg. 1:** 1.43% **Seg. 2:** 1.47% **Seg. 3:** 1.48% **Seg. 4:** 1.55% **Seg. 5:** 1.86%	**Seg. 1:** 0.03 **Seg. 2:** 0.03 **Seg. 3:** 0.01 **Seg. 4:** 0.02 **Seg. 5:** 0.03 **Total: 0.1**	19.9 + 9.2 + 0.1 = **29.1**

Table 9: Conveyance losses for Statement of Claim 43D 30155511

[A] Seepage Loss	Ditch Wetted Perimeter (ft)	Ditch Length (ft)	Ditch Loss Rate ($ft^3/ft^2/day$)	Days Irrigated	Percent of Loss Attributable to Water Right	*Seepage Loss (AF)*
	12.63	**Seg. 1:** 5,270.01 **Seg. 2:** 5,395.98 **Seg. 3:** 799.46 **Seg. 4:** 3,285.52 **Seg. 5:** 3,324.17	1.2	206	**Seg. 1:** 3.15% **Seg. 2:** 3.25% **Seg. 3:** 3.26% **Seg. 4:** 3.41% **Seg. 5:** 4.09%	**Seg. 1:** 11.9 **Seg. 2:** 12.6 **Seg. 3:** 1.9 **Seg. 4:** 8.0 **Seg. 5:** 9.5 **Total: 43.9**
[B] Vegetation Loss	% Loss/Mile	Historic Flow Rate (CFS)	Days Irrigated	Ditch Length (mi)	Percent of Loss Attributable to Water Right	*Vegetation Loss (×2) (AF)*
	0.0075	**Seg. 1:** 61.0 **Seg. 2:** 59.12 **Seg. 3:** 58.93 **Seg. 4:** 56.24 **Seg. 5:** 46.90	206	**Seg. 1:** 1.00 **Seg. 2:** 1.02 **Seg. 3:** 0.15 **Seg. 4:** 0.62 **Seg. 5:** 0.61	**Seg. 1:** 3.15% **Seg. 2:** 3.25% **Seg. 3:** 3.26% **Seg. 4:** 3.41% **Seg. 5:** 4.09%	**Seg. 1:** 5.9 **Seg. 2:** 6.1 **Seg. 3:** 0.9 **Seg. 4:** 3.7 **Seg. 5:** 3.6 **Total: 20.2**
[C] Ditch Evaporation	Ditch Width (ft)	Ditch Length (ft)	Ditch Evaporation Rate (ft)	Percent of Loss Attributable to Water Right	*Ditch Evaporation (AF)*	**Seasonal Conveyance Loss (AF) (A+B+C)**
	11.50	**Seg. 1:** 5,270.01 **Seg. 2:** 5,395.98 **Seg. 3:** 799.46 **Seg. 4:** 3,285.52 **Seg. 5:** 3,324.17	1.12	**Seg. 1:** 3.15% **Seg. 2:** 3.25% **Seg. 3:** 3.26% **Seg. 4:** 3.41% **Seg. 5:** 4.09%	**Seg. 1:** 0.07 **Seg. 2:** 0.07 **Seg. 3:** 0.01 **Seg. 4:** 0.05 **Seg. 5:** 0.06 **Total: 0.3**	43.9 + 20.2 + 0.3 = **64.4**

Table 10: Total Apportioned Conveyance Losses for Statements of Claim 43D 30155507 and 43D 30155511

Water Right No.	Seepage Loss (AF)	Vegetation Loss (AF)	Ditch Evaporation (AF)	Total (AF)	Percent of Total Conveyance Loss Volume
43D 30155507	19.9	9.2	0.1	29.1	1.54%
43D 30155511	43.9	20.2	0.3	64.4	3.39%
				93.5	

26. Per ARM 36.12.1902(10), the historically diverted volume is equal to the sum of the historical field applied volume and historical conveyance loss volume. The volume provided by supplemental Statement of Claim 43D 30156068 is not included in this table as it is not a water right being proposed for change. Table 11 summarizes the historical field applied, conveyance loss, and historical diverted volumes of Statements of Claim 43D 30155507 and 43D 30155511. As noted in the Errata attached to the February 7, 2025, Technical Analyses for Change Application No. 43D 30165001, an error was found in the historical diverted volume (HDV)

shown in Table 11 and 12 (Table 7, 8 of Part A of the Technical Analyses document). The values reflected in Table 11 and 12 of this document are the corrected values from the Technical Analyses.

Table 11: Historical Diverted Volume for Statements of Claim 43D 30155507 and 43D 30155511

Water Right No.	Apportioned Field Application Volume (AF)	Apportioned Conveyance Loss Volume (AF)	Apportioned HDV (AF)
43D 30155507	50.2	29.1	79.3
43D 30155511	111.8	64.4	176.2
Total	**162.0**	**93.5**	**255.5**

27. The Department finds the following historical use for Statements of Claim 43D 30155507 and 43D 30155511:

Table 12: Summary of historical use of Statements of Claim 43D 30155507 and 43D 30155511

Water Right No.	Historical Purpose	Maximum Historical Acres	Historical Place of Use	Historical Point of Diversion	Maximum Historical Flow Rate (CFS)	Historically Consumed Volume (AF)	Historically Diverted Volume (AF)
43D 30155507	Irrigation	123.79	SE and NE Sec. 28, T7S, R20E	NENWNW Sec. 7, T8S, R20E	0.87	30.14	79.3
43D 30155511	Irrigation	123.79	SE and NE Sec. 28, T7S, R20E	NENWNW Sec. 7, T8S, R20E	1.92	67.08	176.2
					TOTAL:	**97.22**	**255.50**

ADVERSE EFFECT

FINDINGS OF FACT

28. The Applicant proposes to temporarily change Statements of Claim 43D 30155507 and 43D 30155511 to instream flow to benefit fishery resources for water from West Fork Rock Creek and which uses Rock Creek as a natural carrier. The Protected Reach proposed for this purpose is from the historical headgate in the NENWNW Sec. 7, T8S, R20E, on West Fork Rock Creek to a point downstream in Gov't Lot 5 (SENESE) Sec. 36, T3S, R23E, on Rock Creek (as a natural carrier). The full diverted volume may be protected from the historical point of diversion to the place where return flows accrued to the source. The Department has determined that returns flows from the historical irrigation practices accrued to Willow Creek downstream of the NWNESW, Sec. 28, T7S, R20E, Carbon County. Return flows are evaluated by determining the volume of water that infiltrates past the root zone and identifying the likely receiving stream(s). The assumption is made that water applied for irrigation that is not consumed by a crop infiltrates to

groundwater becoming return flow and does not runoff. The amount of water not consumed is the difference between the amount of water consumed and the amount of water applied to a field. The receiving stream is determined by proximity and evidence of hydraulic connection to groundwater and generally does not depend on groundwater flow direction or land slope (DNRC Technical Analyses, 2025). Because the return flows do not directly accrue to the source of the diverted water, the full diverted volume is proposed for protection from the historical point of diversion to a point downstream where the return flows eventually return to the mainstem of the source on Rock Creek in the S2SWNE Sec. 24, T4S, R21E. After the point where return flows return to the mainstem of the source, only the consumed volume can be protected within the Protected Reach to the endpoint downstream in Gov't Lot 5 (SENESE) Sec. 36, T3S, R23E. The proposed use is shown in Table 13. For a change in purpose to instream flow, there is no proposed consumed use from the source, therefore, no new consumptive use is calculated by the Department. The proposed consumed volume by the instream flow purpose is the historical consumed volume by the irrigation purpose.

Table 13: Summary of the proposed use of Statements of Claim 43D 30155507 and 43D 30155511

Water Right No.	Proposed Purpose	Start of Proposed Protected Reach	End of Proposed Protected Reach	Proposed Flow Rate (CFS)	Proposed Volume Consumed from the Source (AF)	Proposed Volume Consumed by the Purpose (AF)	Proposed Protected Volume (AF)
43D 30155507	Instream Flow	NENWNW Sec. 7, T8S, R20E	Gov't Lot 5 (SENESE) Sec. 36, T3S, R23E	0.87	0.0	30.14	79.3
43D 30155511				1.92		67.08	176.2

Table 14: Comparison of volumes associated with historical and proposed use.

Purpose	Historically Consumed Volume (AF)	Proposed Consumptive Volume (AF)	Historically Diverted Volume (AF)	Proposed Protected Volume (AF)
Instream Flow	97.2	0.0	255.5	255.5

29. The Rock Creek Basin from its headwaters to its confluence with the Clarks Fork Yellowstone River was closed to new appropriations of surface water for consumptive purposes

between June 1 and September 30 of each year as an Administrative Closure effective February 9, 1990. This closure is due to the source being over-appropriated and no water is legally available June 1 to September 30.

30. The Department considered an area of potential adverse effect (AOPAE) on the source of supply. This reach was determined by accounting for the location of the proposed and historical point(s) of diversion. This reach extends from the historical POD on West Fork Rock Creek in the NENWNW Sec. 7, T8S, R20E, downstream to Rock Creek in Gov't Lot 5 (SENESE) Sec. 36, T3S, R23E. The AOPAE on West Fork Rock Creek and Rock Creek is the proposed Protected Reach.

31. Statement of Claim 43D 30155507 has a priority date of June 1, 1889. Statement of Claim 43D 30155511 has a priority date of September 1, 1888. There are 730 water rights within the AOPAE on West Fork Rock Creek and Rock Creek, as illustrated in Appendix A. This is two fewer than noted in the Technical Analyses as the water rights proposed for change were inadvertently included in that count. These 730 water rights are considered for potential adverse effect because they are within the AOPAE. Of these 730 water rights, seven (7) are senior to both water rights proposed for change. All seven (7) of these senior rights have PODs which are downstream of the historical POD, one (1) on West Fork Rock Creek (Statement of Claim 43D 43379-00), and the remaining six (6) on Rock Creek. Because these downstream water rights are senior to the two rights proposed for change, their ability to make call as a result of the proposed change is not impacted; water must still be distributed to these senior rights before other junior rights. The only water rights in the AOPAE that are senior to only Statement of Claim 43D 30155507, which is the more junior of the two, are parent right Statement of Claim 43D 10268-00 and its two additional severed child rights, Statements of Claim 43D 30155819 and 43D 30164676, which have the identical priority date as Statement of Claim 43D 30155511. Of the remaining 723 water rights within the AOPAE, six (6) are either the parent right of the two rights proposed for change or another severed child right of the same parents. The remaining 717 junior water rights within the AOPAE on West Fork Rock Creek and Rock Creek will not experience an adverse effect as a result of this change; the water protected for instream flow was not historically available to them at their POD because it was diverted at the historical POD. Those junior water rights are not entitled to the water protected instream as proposed by the change. Only the volume of water which was consumed by the irrigation practice is proposed for protection below the point where

the historical return flows accrued to the mainstem of the source, therefore junior water users with PODs below that point will not be adversely affected by the proposed change because the consumed volume would not have been available to them historically and they are not entitled to the protected volume as proposed by the change. The Department finds the proposed change in place of use for Statements of Claim 43D 30155507 and 43D 30155511 will not have an adverse effect on junior water rights on West Fork Rock Creek and Rock Creek within the Protected Reach.

32. The Applicant states there was a period of nonuse greater than 10 years. Subdivision of the historical POU began in the 1990s with further division in 2005. Water Commissioner records indicate water was diverted for the parent rights, Statements of Claim 43D 10267-00 and 43D 10268-00, in 2015, though the POU was significantly developed at this time and aerial photography does not substantiate irrigation occurring. 1990 is an estimated start to the period of non-use during which irrigation likely ceased and water was not consistently diverted for the water rights proposed for change. Seven (7) water rights have been issued on Rock Creek since 1990 with the final issued in 2011. Of these seven (7) rights, four (4) are not considered part of the AOPAE because the POD is on Rock Creek above the confluence with West Fork Rock Creek. The three (3) water rights which were issued during the period of non-use, Provisional Permits 43D 82774-00, 43D 84405-00, and 43D 90937-00, have the condition, "THIS PERMIT IS SUBJECT TO THE CONDITION THAT THERE WILL BE NO DECREASE IN THE SOURCE OF SUPPLY, NO DISRUPTION IN THE STREAM CONDITIONS BELOW THE POINT OF RETURN, AND NO ADVERSE EFFECT TO PRIOR APPROPRIATORS WITHIN THE REACH OF THE STREAM BETWEEN THE POINT OF DIVERSION AND THE POINT OF RETURN". All three are for off-stream ponds with fish/wildlife purposes and are already junior to the Montana FWP Water Reservation on Rock Creek. Whether the period of nonuse began in 1990 as indicated by the Applicant, or whether there was periodic use until 2015 as suggested by Water Commissioner records, the water rights which have been issued were either not impacted by the historical diversion or have no right to decrease the source of supply. The Department finds it is unlikely that resumption of use of this water right will have an adverse effect after the period of nonuse.

33. The Department has also considered water rights within the source in which return flows historically accrued for adverse effect. The DNRC Technical Analyses, dated February 7, 2025, discusses the hydraulic connection of surface water and groundwater and identifies Willow Creek

as the surface water source in which the groundwater return flows from the historical irrigation practices historically accrued. Hydraulic connection of individual stream reaches to groundwater is evaluated by comparing streambed elevations to static groundwater elevations measured in wells less than 50 feet (ft) deep and within 1,000 ft of surface water or from published water table maps. Surface water within that area is considered hydraulically connected to the unconfined aquifer if static groundwater elevations are above or within 10 ft of the elevation of the stream bed. The proposed project is located on the West Bench Alluvial aquifer, composed of sand and gravel alluvial deposits that are up to 125 ft thick (well logs) and is primarily recharged by flood irrigation and ditch leakage (Kuzara, 2024). The West Bench Alluvial aquifer has water table contours and gradients unique to the Valley Alluvial aquifer which underlies the City of Red Lodge. Therefore, it is assumed that the West Bench Alluvial aquifer and Valley Alluvial aquifer are hydraulically disconnected.

34. The historical POU is on the West Bench Alluvial aquifer and the centroid of the POU is approximately 670 ft from the McDonald Ditch, 1,600 ft away from Willow Creek, 1,700 ft away from Pryde Ditch, 1,800 ft from Spring Creek, and 6,200 ft away from Rock Creek. The United States Geological Survey (USGS) National Hydrography Dataset (NHD) identifies McDonald Ditch, Pryde Ditch, and Spring Creek as canals and ditches. For return flow analyses, the DNRC considers hydraulic connection of stream reaches to groundwater (DNRC, 2019) and not means of conveyance (canals and ditches) to groundwater; therefore, McDonald Ditch, Pryde Ditch, and Spring Creek were not considered as hydraulically connected surface water bodies. Additionally, based on information regarding the connection between the West Bench Alluvial aquifer and the Valley Alluvial aquifer, Rock Creek was not considered hydrologically connected to the source aquifer at the historical POU. Synoptic discharge surveys were conducted along Willow Creek as part of the Hydrogeologic Investigation of the Rock Creek Benches (Reiten, 2020). The data, collected in 2009, show that Willow Creek primarily gains while flowing in a west-east direction in the most southern part of the West Bench Alluvial aquifer in May, June, and July; transitions to losing across all months just prior to flowing north; and begins to gain in July as it starts to flow in a north-south direction. The measured increase in July flows near the historical POU suggests that Willow Creek is fed by groundwater and is hydrologically connected to the West Bench Alluvial aquifer. Willow Creek, a spring-fed stream, may also be affected by lower water table conditions (Reiten, 2020), which may be a result of changes to irrigation recharge. The USGS

NHD and the Probability of Streamflow Permanence model for the Upper Missouri River Basin (PROSPERum) (Sando et al., 2022) identify Willow Creek as a perennial water source near the historical POU. Additional information from the Gridded National Soil Survey Geographic Database (SSURGO (NRCS, 2025)) shows areas of shallow water tables and hydric conditions near the floodplain of Willow Creek. The Department finds Willow Creek historically received return flows from the historical irrigation practices of Statements of Claim 43D 30155507 and 43D 30155511.

35. The rate and timing of return flows for historical and proposed conditions are determined by modeling accretions of return flows to the receiving surface water. The monthly timing of accretions of return flows to the identified receiving reach are modeled using analytical models as described in the DNRC Technical Analyses 2025. Return flows for this analysis were modeled in FWD:SOLV using the Theis (1941)/Glover and Balmer (1954) solution. Inputs into FWD:SOLV (HydroSOLVE, 2024) for this evaluation include a transmissivity (T) of 10,828 ft^2/day based on the average T from West Bench Alluvial aquifer tests (GWIC IDs 172599, 157949, 219340) presented in Reiten (2020). The average hydraulic conductivity of 205.5 ft/day from the aquifer tests is within the normal range of hydraulic conductivities for sand and gravel aquifers. The specific yield value of 0.1 from Lohman (1972) for unconfined sand and gravel aquifers, and monthly non-consumed values represented as a recharge well at the centroid of the historical POU are also input into the model. The location of return flows from 123.79 acres of historical irrigation is to Willow Creek beginning downstream of the northern boundary of the NWNESW, Sec. 28, T7S, R20E, Carbon County. Table 15 identifies the historical return flows from the historical irrigation practices of Statements of Claim 43D 30155507 and 43D 30155511. Table 16 identifies the historical return flows, proposed return flows, and net effect to Willow Creek because of Change Application No. 43D 30165001. As noted in the May 14, 2025, Errata, the values in Tables 15 and 16 differ from the corresponding tables in Part B of the Technical Analyses document (Tables 5 and 6) due to an error attributing the irrigation requirement (NIR) to the correct month. This error did not change the total volume or flow rates shown in these tables but adjusted the months in which the volumes and return flows are attributed. The values shown in Tables 15 and 16 of this document are the correct values.

Table 15: Return flow to Willow Creek associated with 123.79 acres of historical irrigation for Statement of Claims 43D 30155507 and 43D 30155511

Months	NIR[1] (in)	Applied Volume (AF)	Total Consumed Volume (AF)	Non-Consumed Volume (AF)	Willow Creek	
					Return Flows (AF)	Return Flows (gpm)
January	0.0	0.0	0.0	0.0	1.7	12.7
February	0.0	0.0	0.0	0.0	1.4	11.0
March	0.0	0.0	0.0	0.0	1.3	9.7
April	0.0	0.0	0.0	0.0	1.2	8.8
May	0.0	0.0	0.0	0.0	1.1	8.0
June	3.9	40.5	24.3	16.2	9.3	70.5
July	5.9	61.1	36.6	24.4	16.6	121.3
August	5.2	53.7	32.2	21.5	16.7	121.6
September	0.7	6.9	4.1	2.7	7.0	53.0
October	0.0	0.0	0.0	0.0	3.8	27.7
November	0.0	0.0	0.0	0.0	2.6	19.6
December	0.0	0.0	0.0	0.0	2.1	15.3
TOTAL	15.6	162.0	97.2	64.8	64.8	--

[1]Red Lodge IWR Weather Station

Table 16: Historical and proposed return flows to Willow Creek associated with Change Application No. 43D 301615001

Months	Historical Return Flow (AF)	Historical Return Flow (gpm)	Proposed Return Flow (AF)	Proposed Return Flow (gpm)	Net Effect (AF)	Net Effect (gpm)
January	1.7	12.7	0.0	0.0	-1.7	-12.7
February	1.4	11.0	0.0	0.0	-1.4	-11.0
March	1.3	9.7	0.0	0.0	-1.3	-9.7
April	1.2	8.8	0.0	0.0	-1.2	-8.8
May	1.1	8.0	0.0	0.0	-1.1	-8.0
June	9.3	70.5	0.0	0.0	-9.3	-70.5
July	16.6	121.3	0.0	0.0	-16.6	-121.3
August	16.7	121.6	0.0	0.0	-16.7	-121.6
September	7.0	53.0	0.0	0.0	-7.0	-53.0
October	3.8	27.7	0.0	0.0	-3.8	-27.7
November	2.6	19.6	0.0	0.0	-2.6	-19.6
December	2.1	15.3	0.0	0.0	-2.1	-15
TOTAL	64.8	---	0.0	---	-64.8	---

The Department finds the proposed change in place of use to Statements of Claim 43D 30155507 and 43D 30155511 will cause a net loss of return flows to Willow Creek.

36. An evaluation of the impacts due to projected loss of return flows is required per ARM 36.12.1303(3)(d)(iii). The AOPAE of the affected source is from the location return flows would have historically accrued on Willow Creek to a point approximately 4.5 miles downstream where several unnamed tributaries of Willow Creek join mainstem Willow Creek. The addition of those unnamed tributaries increases the drainage area size from 4.8 mi^2 to 14.4 mi^2, per modeling from USGS StreamStats, making it a significant hydrologic boundary and an acceptable end to the AOPAE. The increase in available water in Willow Creek to downstream water right holders decreases the likelihood that those water users would be adversely impacted by the proposed changes to Statements of Claim 43D 30155507 and 43D 30155511.

37. USGS Gage 06211500 Willow Creek near Boyd is approximately 27 miles downstream from the location where return flows historically accrued on Willow Creek. This gage has an 87-year record history and consistent measurements annually from April through October. However, discharge measurements in January, February, March, November, and December are largely absent for most of the record history. The Department standard on gaged sources is to use median of the mean monthly flow. However, the Department standard of adding all upstream water rights to the gage to determine the available flow rate and volume will not be used because the number of water rights, and distance between the gage and the location where return flows historically accrued creates an unreasonable estimation of available water at the top of the AOPAE (DNRC Gage Data Memo 2019). Willow Creek is known as a relatively small spring creek in the AOPAE. The Applicant has stated Willow Creek and existing supplemental rights provided by Willow Creek are unreliable, suggesting that Willow Creek could not have provided full-service irrigation to all existing water rights between the location where return flows historically accrued and the gage. The Department has determined this method is not a sufficient estimation technique for determining water availability in Willow Creek.

38. The Department will use the gage as part of the drainage area ratio method to determine the monthly volume and flow rate available at the top of the AOPAE. In this method, streamflow characteristics and contributing drainage area at a gage site and the drainage area of an ungaged site can be used in the following equation to estimate streamflow characteristics at an ungaged site:

$$Q_u = Q_g(\frac{A_u}{A_g})^{expQ,R}$$

where Q is the streamflow characteristic, A is the contributing drainage area, and subscripts u and g refer to the ungaged site (location where return flows accrue) and the gage, respectively. The exponent represents a drainage area ratio adjustment based on regression equations and varies for different streamflow characteristics (Q) and regions (R). In hydrologic regions 3, 4, 5, and 6 (northern and eastern Montana), the USGS did not create regression equations. In those regions, the exponent is taken as 1.0 for all streamflow characteristics and all months. The drainage area of Willow Creek above the Willow Creek gage is 49.0 mi^2; the drainage area of Willow Creek above the top of the AOPAE is 4.8 mi^2 given by the USGS StreamStats tool. The ratio of the drainage area above the start of the AOPAE to the drainage area above the gage is 0.098 (4.8/49.2 = 0.097959). This ratio is outside the commonly accepted range of basin area ratio therefore additional measurements and regional knowledge of source conditions were used. The flow rate at the start of the AOPAE was calculated by multiplying the median of the mean monthly flow at the gage by the ratio 0.098. The volume of water physically available at the start of the AOPAE in each month was calculated from the flow rate by multiplying by 1.98 and the number of days in the month. The results from the drainage area ratio method are consistent with measurements taken by the Montana Bureau of Mines and Geology above and below the point where return flows accrued (Reiten 2020).

Table 17: Flow rate (CFS) and volume (AF) of water at the start of the area of potential adverse effect (AOPAE) on Willow Creek

Month	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Mean Monthly Flow Rate at Willow Creek Gage (CFS)	8.27	15.4	20.2	26.85	37.0	51.9	56.3	39.4	35.5	30.7	21.15	18.6
Drainage Area Ratio	0.098	0.098	0.098	0.098	0.098	0.098	0.098	0.098	0.098	0.098	0.098	0.098
Flow at Start of AOPAE (CFS)	0.81	1.51	1.98	2.63	3.63	5.09	5.52	3.86	3.48	3.01	2.07	1.82
Volume at Start of AOPAE (AF)	49.75	83.67	121.51	156.30	222.56	302.12	338.66	237.00	206.65	184.67	123.12	111.88

39. There are 16 water rights within the AOPAE on Willow Creek, as illustrated in Table 18 (Updated). Statement of Claim 43D 30155507 has a priority date of June 1, 1889; Statement of

Claim 43D 30155511 has a priority date of September 1, 1888. All water rights within the AOPAE on Willow Creek are junior to the water rights proposed for change. Water rights which do not have a quantified flow rate were calculated by the DNRC standard practice, unless quantified based on additional information provided by the Applicant, as discussed below. Water rights for livestock drinking direct from source with no flow rate were calculated by the DNRC standard practice. The flow rate is taken as the flow rate needed to produce the volume for the period of diversion, plus 35 GPM (0.08 CFS) added to the total. Water rights which do not have a quantified volume were calculated by the DNRC standard practice, unless quantified based on additional information provided by the Applicant, as discussed below. Water rights with a purpose of irrigation were calculated as the number of acres irrigated multiplied by 2.06 AF/AC based on Department standards for the low end of 60% efficiency flood irrigation in Climatic Area 4. Water rights with a purpose of stock were calculated as the number of animal units (AU) multiplied by the DNRC adjudication standard of 0.034 AF/AU.

40. The Applicant provided additional information related to the legal availability of water in Willow Creek and potential adverse effect caused by the net loss of return flows to Willow Creek, including the quantification and use of the water rights within the AOPAE. The Department evaluated whether this additional information met a preponderance of the evidence for the arguments presented. If the arguments met the evidentiary requirements, the Department modified its analysis. If the arguments did not meet the evidentiary requirements, the Department did not update its analysis. FOF 41-56 describe the additional information provided by the Applicant, the Department's evaluation of the additional information, and the action taken by the Department. The volume and flow rate of the water rights in the AOPAE as shown in Table 18 (Updated) reflect the additional information provided to the Department which met the preponderance of the evidence, were accepted by the Department, and were updated from the Draft Preliminary Determination to Deny. Information regarding potential adverse effect and water rights within the AOPAE being able to be reasonably exercised which met the preponderance of the evidence and were accepted by the Department, are discussed in FOF 52 and 59.

Table 18 (Updated): Water rights within the area of potential adverse effect on Willow Creek

Water Right No.	Owners	Purpose	Flow Rate (CFS)	Volume (AF)	Period of Diversion	Priority Date
43D 117945 00	Draper Ranch Co Inc; Schwab, Michael P & Kathryn J Kleinman 2017 Trust	Stock	0.09*	9.4*	01/01 to 12/31	4/10/1899
43D 117946 00	Draper Ranch Co Inc; Schwab, Michael P & Kathryn J Kleinman 2017 Trust	Irrigation	0#	0#	05/01 to 10/15	4/10/1899
43D 17013 00	Deborah S Bratton; Neil A Bratton; Bryan T Ebzery; Tiffany O Ebzery; Amber R Pirtz; Nathan M Pirtz; Mary B Preihs; Robert C Preihs	Stock	0.01*#	10.5*	01/01 to 12/31	5/1/1893
43D 17014 00	Amber R Pirtz; Nathan M Pirtz	Stock	0.01*#	10.5*	01/01 to 12/31	11/1/1890
43D 17016 00	Chelsea B Brajcich; Ryan P Brajcich; **ET AL****	Irrigation	3.0	226.5*#	05/01 to 11/04	11/1/1890
43D 17195 00	Ames, Vincent E Trust; Bert P Eder; Mark D Eder	Irrigation	0.75	136.0*	04/15 to 11/01	5/1/1889
43D 17196 00	Ames, Vincent E Trust; Bert P Eder; Mark D Eder	Irrigation	0.62	0#	04/15 to 11/01	5/1/1895
43D 197728 00	Mark D Eder; John D McCampbell; Shark, John C Jr & Sheryl K Family Trust	Irrigation	0.37	0#	04/30 to 10/15	5/1/1889
43D 197729 00	Mark D Eder; John D McCampbell; Shark, John C Jr & Sheryl K Family Trust	Irrigation	0.31	49.4*	04/30 to 10/15	5/1/1895
43D 23158 00	Double LP Ranch Partners	Irrigation	1.5	0#	04/01 to 08/31	8/1/1893
43D 23159 00	Double LP Ranch Partners	Irrigation	1.0	250.9*	04/01 to 08/31	7/1/1891
43D 27974 00	Deborah J Miller	Irrigation	0.31	0#	04/01 to 11/01	7/30/1893
43D 30017730	State of Montana, Dept of Fish, Wildlife & Parks	Fishery	4.0-26.0 ***	11,556.0	01/01 to 12/31	12/15/1978
43D 4925 00	James W Brien; Gadberry, Daniel & Kathy Living Trust; Hollis L Hall	Irrigation	0.62	55.6*	05/01 to 10/31	8/1/1893
43D 6010 00	Mark D Eder	Irrigation	0.31	82.4*	04/01 to 10/15	5/1/1895
43D 6011 00	Mark D Eder	Irrigation	0.37	0#	04/01 to 10/15	5/1/1889

* Calculated by DNRC

Modified by DNRC based on Applicant-provided additional information

** The additional owners of 43D 17016-00 are: Deborah S Bratton; Neil A Bratton; Burke Harrington Family Trust; Deano Unlimited Family Trust; Bryan T Ebzery; Tiffany O Ebzery; Gretchen P Gillette; Kyle L Gillette; JRK Holdings LLC; Mohl Gregory B Trust; Mohl Virginia K Trust; Debra D Nelis; Francois Nelis; Amber R Pirtz; Nathan M Pirtz; Random Enterprises LLC; Ashley E Shanander; Deane L Shanander; Sherry L Weamer; Timothy J Weamer

*** Flow rate variable by month from 4.0 CFS to 26.0 CFS

41. The Applicant provided additional information from Montana FWP regarding Water Reservation 43D 30017730, owned by Montana FWP. Water Reservation 43D 30017730 is measured at USGS gage 06211500 Willow Creek near Boyd MT on Willow Creek, approximately 27 miles downstream of the AOPAE. Montana FWP asserts that the reservation is being met at

the gage in all months, that the full volume and flow rate of this water reservation does not need to be included within the legal demands in the AOPAE, and that the proposed change will not cause an adverse effect. The Department concurs with the Applicant's assessment that the reservation is being met, based on the monthly median discharge data provided in the additional information provided by the Applicant in attachment *Detailed Analysis of Willow Creek Water Rights Identified in the Area of Potential Adverse Effect* (Figure 1). The additional information, provided by FWP staff on behalf of Applicant, asserts the proposed change will not cause an adverse effect to FWP Water Reservation 43D 30017730. The Department concurs with this assertion, as the owner of the reservation provided evidence that discharge is in excess of their reservation at the designated measurement point and that this excess is greater than the loss of return flows modeled for the proposed change in all months. Water Reservation 43D 30017730 will be included in the legal demands of the AOPAE but not considered for adverse effect.

42. The Applicant provided Water Commissioner records for West Fork Rock Creek related to supplemental rights of several of the water rights within the AOPAE. These Water Commissioner records were used by the Applicant to propose the volume and/or flow rate of the rights within the AOPAE need not be considered as legal demands in full as other, more reliable sources more likely than not provided the majority of or all of the irrigation water needs. Water Commissioner records from 1987-1999 were provided as a representative range of flow conditions from average conditions, dry years (1988, 1994) and wet years (1993, 1997). This time frame is also when development began on the historical POU for Statements of Claim 43D 30155507 and 43D 30155511 and those water rights would have ceased to be used. At that time, return flows to Willow Creek would have ceased and any appropriators dependent on them may have altered water use practices in response. Department review of the Water Commissioner records indicate no significant change in the use of water rights from West Fork Rock Creek for acres supplementally irrigated by Willow Creek within the AOPAE, and show consistent water use for water rights supplemental to those in the AOPAE. FOF 43 and 44 consider the reduced legal demands based on these Water Commissioner records.

43. Statement of Claim 43D 117946-00 from Willow Creek is supplemental to Statement of Claim 43D 3273-00. Statement of Claim 43D 3273-00 is senior to Statement of Claim 43D 117946-00 and diverts water from West Fork Rock Creek, which is the more reliable source. During the timeframe of the provided Water Commissioner records, Statement of Claim 43D

3273-00 was diverted in its entirety in most years. The Applicant provided volume per acre calculations, which the Department reviewed and agreed with, which indicate West Fork Rock Creek would have supplied all necessary water for the acres under Statement of Claim 43D 117946-00. The Department finds this information and these records meet the evidentiary bar and Statement of Claim 43D 117946-00 would not have been used from Willow Creek based on these records. The flow rate and volume attributed to Statement of Claim 43D 117946-00 will be removed from the legal demands as shown in Table 18 (Updated).

44. Statement of Claim 43D 17016-00 from Willow Creek is supplemental to Statements of Claim 43D 168-00, 169-00 and 170-00 on 196.7 ac of the 256.5 ac from shares provided by West Fork Irrigation Co., also diverted from West Fork Rock Creek. Using the same Water Commissioner records, the Applicant asserts and the Department agrees that Statements of Claim 43D 168-00, 169-00 and 170-00 were diverted in their entirety in most years, with some years being reduced in September. Irrigation demand in September is low based on the IWR for Red Lodge (NRCS, 2003), however, Statement of Claim 43D 17016-00 may have used water from Willow Creek in that month and after. The Department finds this information meets the evidentiary bar and Statement of Claim 43D 17016-00 would not have been used from Willow Creek from May to August based on these records. Because the Water Commissioner records indicate inadequate or unreliable water availability from West Fork Rock Creek in September, the Department finds Statement of Claim 43D 17016-00 may have been necessary to provide additional water for full service irrigation and therefore the volume calculated from September 1 to November 4 (the remainder of the period of diversion for this water right) will still be included as a legal demand. The flow rate and volume attributed to Statement of Claim 43D 17016-00 will be removed from May to August as shown in Table 18 (Updated).

45. The Applicant also provided a detailed analysis of irrigation demand for overlapping water rights within the AOPAE. This analysis included an assessment of water rights within the AOPAE which are supplemental to each other and both use Willow Creek as a source of water, so therefore may not need to be considered twice as a legal demand on the source within the AOPAE. FOF 46-50 consider this information. In these findings, the referenced standard volume remark states, “The total volume of this water right shall not exceed the amount put to historical and beneficial use” and the referenced supplemental use remark states, “The water rights following this statement are supplemental which means the rights have overlapping places of use. The rights can be combined

to irrigate only overlapping parcels. Each right is limited to the flow rate and place of use of that individual right. The sum total volume of these water rights shall not exceed the amount put to historical and beneficial use."

46. Statements of Claim 43D 17195-00 and 43D 17196-00 provide supplemental irrigation to the same 66 acres from Willow Creek and have the standard volume remark and a supplemental use remark. The Applicant's analysis proposes the volume attributed to these two water rights do not both need to be considered as legal demands on the source. Because these two water rights have a supplemental relationship and may not exceed the historical volume of water needed for the acres, the Department agrees with the Applicant's assertion that the volume of water attributed to these water rights does not need to be considered twice. This information meets the evidentiary bar. However, the flow rate of both water rights may be necessary to irrigate the acres and will still be considered as a legal demand on the source. The volume attributed to Statement of Claim 43D 17196-00, the more junior right, will be removed from the legal demands, as shown in Table 18 (Updated).

47. Statements of Claim 43D 197728-00 and 43D 197729-00 provide supplemental irrigation to the same 24 acres from Willow Creek and have the standard volume remark. The Applicant's analysis proposes the volume attributed to these two water rights do not both need to be considered as legal demands on the source. Because these two water rights have a supplemental relationship and may not exceed the historical volume of water needed for the acres, the Department agrees with the Applicant's assertion that the volume of water attributed to these water rights does not need to be considered twice. This information meets the evidentiary bar. However, the flow rate of both may be necessary to irrigate the acres and will still be considered as a legal demand on the source. The volume attributed to Statement of Claim 43D 197728-00, the more junior right, will be removed from the legal demands, as shown in Table 18 (Updated).

48. Statements of Claim 43D 23158-00 and 43D 23159-00 provide supplemental irrigation to the same 121.8 acres from Willow Creek and have the standard volume remark and a supplemental use remark. The Applicant's analysis proposes the volume attributed to these two water rights do not both need to be considered as legal demands on the source. Because these two water rights have a supplemental relationship and may not exceed the historical volume of water needed for the acres, the Department agrees with the Applicant's assertion that the volume of water attributed to these water rights does not need to be considered twice. This information meets the evidentiary

bar. However, the flow rate of both may be necessary to irrigate the acres and will still be considered as a legal demand on the source. The volume attributed to Statement of Claim 43D 23158-00, the more junior right, will be removed from the legal demands, as shown in Table 18 (Updated).

49. Statements of Claim 43D 27974-00 and 43D 27975-00 provide supplemental irrigation to the same nine (9) acres from Willow Creek and have the standard volume remark and a supplemental use remark. Statement of Claim 43D 27975-00 is not within the AOPAE because the point of diversion is below the impacted reach. The Applicant's analysis proposes the volume attributed to these two water rights do not both need to be considered as legal demands on the source. Because these two water rights have a supplemental relationship and may not exceed the historical volume of water needed for the acres, the Department agrees with the Applicant's assertion that the volume of water attributed to these water rights does not need to be considered twice. This information meets the evidentiary bar. However, the flow rate of both may be necessary to irrigate the acres and will still be considered as a legal demand on the source. The volume attributed to Statement of Claim 43D 27974-00, the more junior right, will be removed from the legal demands, as shown in Table 18 (Updated).

50. Statements of Claim 43D 6010-00 and 43D 6011-00 provide supplemental irrigation to the same 40 acres from Willow Creek and have the standard volume remark. The Applicant's analysis proposes the volume attributed to these two water rights do not both need to be considered as legal demands on the source. Because these two water rights have a supplemental relationship and may not exceed the historical volume of water needed for the acres, the Department agrees with the Applicant's assertion that the volume of water attributed to these water rights does not need to be considered twice. This information meets the evidentiary bar. However, the flow rate of both may be necessary to irrigate the acres and will still be considered as a legal demand on the source. The volume attributed to Statement of Claim 43D 6011-00, the more junior right, will be removed from the legal demands, as shown in Table 18 (Updated).

51. The Applicant provided additional analysis regarding livestock drinking directly from the source, Statements of Claim 43D 117945-00, 43D 17013-00, and 43D 17014-00. The Applicant suggests the Department method for calculating the flow rate of these water rights which takes the flow rate needed to produce the volume for the period of diversion and adding 35 GPM (0.08 CFS) overestimated the amount of carriage water needed to provide water for livestock to drink. The

Department agrees there was an overestimation of the flow demand by adding 35 GPM to each livestock direct right, instead of only one, and that adding 35 GPM once is sufficient to estimate livestock direct demands. The Department finds this information meets the evidentiary bar and has reduced the flow rate demand for two of the livestock direct claims, Statement of Claim 43D 17013-00, and 43D 17014-00, by 35 GPM each, as shown in Table 18 (Updated).

52. The Applicant references § 85-2-402 (1), MCA, "Priority of appropriation does not include the right to prevent changes by later appropriators in the condition of water occurrence, such as the increase or decrease of streamflow or the lowering of a water table, artesian pressure, or water level, if the prior appropriator can reasonably exercise the water right under the changed conditions." The Applicant asserts because other water rights within the AOPAE are able to achieve the monthly volume of their water need based on the legal availability analysis shown in Table 22, only minor adjustments to the timing of diversion may be necessary to reasonably exercise the water rights. 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. Based on all of the information the Applicant provided about water rights within the AOPAE discussed in FOF 40-51, the Department agrees that the following water rights would be more likely than not to be reasonably exercised despite changes available flow in Willow Creek: Statements of Claim 43D 117945-00, 43D 117946-00, 43D 17013-00, 43D 17014-00, 43D 17016-00, 43D 17195-00, 43D 17196-00, 43D 197728-00, 43D 197729-00, 43D 23158-00, 43D 23159-00, 43D 27974-00, 43D 6010-00, and 43D 6011-00. The Department finds this level of additional information and analysis from the Applicant meets the evidentiary bar. The Department will use this information in considering adverse effect to water rights within the AOPAE.

53. The Applicant also provided additional information that the Department did not find met the evidentiary requirement of a preponderance of the evidence. The Department did not use this insufficient information in updating this Updated Draft Preliminary Determination. FOF 54-56 consider this information.

54. The Applicant provided information related to supplemental water rights for Statements of Claim 43D 6010-00, 43D 6011-00, 43D 17195-00, 43D 17196-00, 43D 197728-00 & 43D 197729-00. These supplemental Statements of Claim 43D 6523-00, 43D 17194-00, and 43D 197130-00 divert water from Chaffin Creek. The Applicant suggests that while Chaffin Creek is a small source of water, return flow generated from nearby irrigation ditches and irrigation practices under these

water rights would have provided additional flow into Chaffin Creek and made this source more reliable. The Applicant provided estimations of water use but did not provide additional data regarding these water rights or information provided by the owner of the water rights. The Department did not assess physical availability of water in Chaffin Creek and does not analyze water rights not proposed for change for potential return flows and sources. The Department finds this information does not meet the evidentiary bar of a preponderance of the evidence and is not being used to update the analysis in this document.

55. The Applicant provided additional analysis regarding return flows to Willow Creek from the irrigation practices of several of the water rights within the AOPAE, including Statements of Claim 43D 117946-00, 43D 17016-00, 43D 6010-00, and 43D 197729-00. The Applicant suggests the irrigation from these acres would have also returned to Willow Creek and been available to existing appropriators within the AOPAE and downstream users. The Department does not agree with this analysis of physical availability. In the Technical Analyses, the Department determined the physical availability of water in the AOPAE using the downstream gage on Willow Creek as part of the drainage area ratio method to determine the monthly volume and flow rate available. The ratio of the drainage area above the start of the AOPAE to the drainage area above the gage was outside the commonly accepted range therefore additional measurements and regional knowledge of source conditions were used. The results from the drainage area ratio method are consistent with measurements taken by the Montana Bureau of Mines and Geology above and below the point where return flows accrued (DNRC Technical Analyses, 2025). The Department may accept Applicant-provided measurements for depleted surface water sources in order to conduct the return flow analysis during the completion of the Technical Analysis. Without additional measurements on the affected source, the Department will not consider alternative methods of estimating the physically available water in Willow Creek within the AOPAE. The Department finds this information does not meet the evidentiary bar of a preponderance of the evidence and is not being used to update the analysis in this document.

56. In addition to the reduction in flow rate necessary for livestock drinking direct from Willow Creek under Statements of Claim 43D 117945-00, 43D 17013-00, and 43D 17014-00 discussed in FOF 51, the Applicant provided additional analysis regarding the need for calculated carriage water based on the time of year. The Department calculates the flow rate necessary for livestock drinking directly from the source based on the volume and adds 35 GPM as a conservative

estimation of flow. The Applicant suggests that while calculated carriage water is necessary during the non-irrigation season to ensure adequate water flows in Willow Creek to meet the livestock demand, that carriage water is not necessary during the irrigation season when water will be flowing for other water rights. The Department does not agree with this analysis of estimating flow rate necessary for livestock. The Department practice of adding 35 GPM to the total flow rate necessary for livestock drinking directly from the source is a conservative technique to ensure adequate flow is available and to protect senior water rights. The Applicant did not provide additional data regarding these water rights or information from the water right owners. The Department finds this information does not meet the evidentiary bar of a preponderance of the evidence and is not being used to update the analysis in this document.

57. The legal demands in Table 18 (Updated) are shown compared to the physically available water at the start of the AOPAE in Table 19 (Updated) and Table 20 (Updated). Table 19 (Updated) shows the legal demands by month for all water rights subtracted from the flow rate of the physically available water available at the start of the AOPAE. Table 20 (Updated) shows the legal demands by month for all water rights subtracted from the volume of the physically available water available at the start of the AOPAE. The flow rate and volume for FWP Water Reservation 43D 30017730 was distributed by month as described in the January 2005 Summary of Instream Water Rights as granted by the Board of Natural Resources on December 15, 1978, and amended on November 21, 1980. The distribution of flow rate and volume by month for all other water rights is in Appendix B (Updated). The existing demands on Willow Creek within the AOPAE subtracted from the physically available water result in negative flow rates and volumes during all months. This analysis indicates there is inadequate flow and volume in Willow Creek to satisfy all existing demands.

Table 19 (Updated): Comparison of the flow rate of physically available water at the start of the area of potential adverse effect and the legal demands within the area of potential adverse effect

Month	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Flow at Start of AOPAE (CFS)	0.81	1.51	1.98	2.63	3.63	5.09	5.52	3.86	3.48	3.01	2.07	1.82
Legal Demands in the AOPAE (CFS)	6.11	4.11	9.11	20.97	25.27	32.27	30.27	26.27	30.77	25.77	19.61	7.61
Flow at Start of AOPAE minus Legal Demands (CFS)	**-5.3**	**-2.6**	**-7.1**	**-18.3**	**-21.6**	**-27.2**	**-24.8**	**-22.4**	**-27.3**	**-22.8**	**-17.5**	**-5.8**

Table 20 (Updated): Comparison of the volume of physically available water at the start of the area of potential adverse effect and the legal demands within the area of potential adverse effect

Month	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Volume at Start of AOPAE (AF)	49.75	83.67	121.51	156.30	222.56	302.12	338.66	237.00	206.65	184.67	123.12	111.88
Legal Demands in the AOPAE (AF)	371.5	224.5	555.5	1035.9	1269.4	1648.4	1577.4	1331.4	1554.7	1294.7	1060.0	463.5
Volume at Start of AOPAE minus Legal Demands (AF)	**-321.8**	**-140.9**	**-434.0**	**-879.6**	**-1046.8**	**-1346.3**	**-1238.8**	**-1094.4**	**-1348.1**	**-1110.1**	**-936.9**	**-351.6**

58. Based on the additional information provided by Montana FWP discussed in FOF 41, the Department accepts that based on a preponderance of the evidence, Water Reservation 43D 30017730 is being met at the measurement gage on Willow Creek. Montana FWP asserts their water reservation will not be adversely affected by this proposed change. The Department will consider the water availability within the AOPAE without the flow rate and volume attributed to Water Reservation 43D 30017730 in this adverse effect analysis. This analysis is shown in Tables 21 and 22 below. The distribution of flow rate and volume by month for these water rights without including the flow rate and volume attributed to Montana FWP Water Reservation 43D 30017730 is in Appendix C. The existing demands on Willow Creek, with Montana FWP Water Reservation 43D 30017730 removed, subtracted from the physically available water result in negative flow rates in April through November, but available flow rates January through March, and December. The existing demands on Willow Creek subtracted from the physically available water result in positive volumes in all months. While there is volume legally available in Willow Creek, there is inadequate flow to satisfy all existing legal demands in all months. The flow rate and volume available in Willow Creek within the AOPAE will be considered as the values shown in Tables 21 and 22 for the rest of this adverse effect analysis.

Table 21: Comparison of the flow rate of physically available water at the start of the AOPAE and the legal demands within the area of potential adverse effect, excluding Water Reservation 43D 30017730

Month	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Flow at Start of AOPAE (CFS)	0.81	1.51	1.98	2.63	3.63	5.09	5.52	3.86	3.48	3.01	2.07	1.82
Legal Demands in the AOPAE, excluding Water Reservation 43D 30017730 (CFS)	0.11	0.11	0.11	4.97	6.27	6.27	6.27	6.27	6.77	6.77	3.11	0.11
Flow at Start of AOPAE minus Legal Demands (CFS)	**0.70**	**1.40**	**1.87**	**-2.34**	**-2.64**	**-1.18**	**-0.75**	**-2.41**	**-3.29**	**-3.76**	**-1.04**	**1.71**

Table 22: Comparison of the volume of physically available water at the start of the AOPAE and the legal demands within the area of potential adverse effect, excluding Water Reservation 43D 30017730

Month	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Volume at Start of AOPAE (AF)	49.75	83.67	121.51	156.30	222.56	302.12	338.66	237.00	206.65	184.67	123.12	111.88
Legal Demands in the AOPAE, excluding Water Reservation 43D 30017730 (AF)	2.5	2.5	2.5	83.9	101.4	101.4	101.4	101.4	126.7	126.7	78.0	2.5
Volume at Start of AOPAE minus Legal Demands (AF)	**47.21**	**81.14**	**118.97**	**72.39**	**121.15**	**200.71**	**237.24**	**135.59**	**79.93**	**57.95**	**45.10**	**109.35**

59. While the Department standard method for estimating available flow in Willow Creek within the AOPAE indicates a negative legally available flow from April through November as shown in the bottom row of Table 21, measurements from MBMG indicate there is water present in Willow Creek consistent with the estimated physically available flow shown in the first row of Table 21 (Reiten, 2020). This suggests that while legal water demands exist on Willow Creek, there are additional factors regarding the use of that water. When estimating legal demand, the Department applies the full flow rate of each water right for all months as a conservative estimate, though this is unlikely to represent practical water use. Instead, water users likely divert all or a portion of their flow rate on some days based on available water, priority, call from other users, and functional crop demand and farming requirements. Table 22 shows an excess of legally available water volume in all months. This indicates that water is available to meet irrigation demands by volume. Review of current and historical aerial imagery corroborates ongoing irrigation of acres served by

water rights within the AOPAE indicating that water users can reasonably exercise their water rights to achieve adequate irrigation. The Applicant indicated they were not aware of any calls made on the depleted surface water source, Willow Creek, due to the presence of a Water Commissioner in the basin. The Department finds that while estimation techniques show negative legal flow availability, it is more likely than not that appropriators are reasonably able to exercise their water rights.

60. The proposed use of Statements of Claim 43D 30155507 and 43D 30155511 as described in this change application includes a loss of return flows to Willow Creek associated with the historical irrigation practices, as shown in Tables 15 and 16 above. Tables 23 and 24 show the comparison of the net loss of flow rate and volume of water from the loss of return flows subtracted from the legally available flow rate and volume of water at the start of the AOPAE (excluding Water Reservation 43D 30017730) as shown in Table 21 and Table 22.

Table 23: Comparison of the flow rate of legally available water at the start of the area of potential adverse effect and the net loss of return flows

Month	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Flow at Start of AOPAE minus Legal Demands (CFS)	0.70	1.40	1.87	-2.34	-2.64	-1.18	-0.75	-2.41	-3.29	-3.76	-1.04	1.71
Net loss of return flow to Willow Creek (CFS)	-0.05	-0.05	-0.04	-0.04	-0.18	-0.43	-0.54	-0.39	-0.18	-0.11	-0.08	-0.06
Flow in the AOPAE as proposed (CFS)	**0.65**	**1.35**	**1.83**	**-2.38**	**-2.82**	**-1.61**	**-1.29**	**-2.80**	**-3.47**	**-3.87**	**-1.12**	**1.65**

Table 24: Comparison of the volume of legally available water at the start of the area of potential adverse effect and the net loss of return flows

Month	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Volume at Start of AOPAE minus Legal Demands (AF)	47.21	81.14	118.97	72.39	121.15	200.71	237.24	135.59	79.93	57.95	45.10	109.35
Net loss of return volume to Willow Creek (AF)	-1.7	-1.4	-1.3	-1.2	-1.1	-9.3	-16.6	-16.7	-7.0	-3.8	-2.6	-2.1
Volume in the AOPAE as proposed (AF)	**45.51**	**79.74**	**117.67**	**71.19**	**120.05**	**191.41**	**220.64**	**118.89**	**72.93**	**54.15**	**42.50**	**107.25**

61. As shown in FOF 60 (Tables 23 and 24), the additional loss of return flows to Willow Creek proposed by this change will decrease the available flow rate and volume in Willow Creek. Table 24 shows the decrease in the volume of water based on the loss of return flows is unlikely to have an adverse effect as there is volume in excess of the modeled loss of return flows. Table 23 shows in the same months water was estimated to not be legally available in Table 21, April – November, the loss of return flows will increase the estimated negative legally available water for those months. As discussed in FOF 52, the Department agrees with the Applicant's information and assertion that because there is sufficient volume in Willow Creek, water users within the AOPAE would have been reasonably able to exercise their water rights despite the estimated lack of legally available flow. In the absence of more detailed information related to adverse effects that could be caused by lost return flows, the Department determines whether there is legally available water to account for the lost return flows. This is done under the premise that a loss of return flows, when legal availability is lacking, may cause an adverse effect for junior water rights that may have been reliant on the return flows. Per § 85-2-402(2) MCA, however, a determination that water is not legally available pursuant to 85-2-311 does not necessarily mean that an adverse effect will occur. The Applicant has provided more detailed information to support the argument that water rights within the AOPAE will not be adversely affected as discussed in FOF 41-52. The Department found that information to be credible and considered it in conjunction with the findings of legal availability, as discussed in FOF 59. Based on this information, the Department determined that the Applicant has shown that the water rights in the AOPAE can be reasonably exercised without the historical return flows. Thus, the Department concludes that the Applicant has proven by a preponderance of evidence that Statements of Claim 43D 117945-00, 43D 117946-00, 43D 17013-00, 43D 17014-00, 43D 17016-00, 43D 17195-00, 43D 17196-00, 43D 197728-00, 43D 197729-00, 43D 23158-00, 43D 23159-00, 43D 27974-00, 43D 4925-00, 43D 6010-00, and 43D 6011-00, and Water Reservation 43D 30017730 will not be adversely affected by the proposed change in place of use.

BENEFICIAL USE

FINDINGS OF FACT

62. The Applicant proposes to temporarily use water for instream flow to benefit fisheries resources. Instream flow is a recognized beneficial use under § 85-2-102, MCA.

63. The Applicant provided documentation from Montana FWP Area Fisheries Biologist Bryan Giordano, and Montana FWP Instream Flow & Water Rights Specialist Andy Brummond related to the beneficial use of water for instream flow in Rock Creek. Montana FWP considers Rock Creek to be chronically dewatered from Red Lodge to its confluence with the Clarks Fork Yellowstone River. The proposed Protected Reach extends above this stretch and ends approximately 1 mile above the confluence, encompassing nearly the entirety of the designated chronically dewatered reach. The Montana FWP Statewide Fisheries Management Plan (2023-2026) identifies minimizing dewatering of Rock Creek as a habitat need and activity. Montana FWP cited USGS stream gages on Rock Creek at Rockvale (at the lower end of the Protected Reach) and Rock Creek near Red Lodge (above the Protected Reach), and a DNRC gage on West Fork Rock Creek (above the Protected Reach) as evidence of continuously low water levels after the irrigation season begins in April annually within the areas proposed to benefit from instream flow. Montana FWP staff state that chronically low stream flow throughout the summer likely negatively impact fish populations, including the high-quality wild trout fishery supported by Rock Creek. Diminished stream habitat connectivity could be greatly improved by the additional flow through this change and the Department finds it reasonable that increased flow rate and volume could benefit fisheries resources.

64. The Rock Creek basin is closed to new appropriations of surface water from June 1 to September 30 due to a lack of available water to satisfy existing water rights. Montana FWP has an instream flow reservation in Rock Creek with a priority date of December 12, 1978, which is junior to Statements of Claim 43D 30155507 and 43D 30155511, and the majority of the existing water rights within the Protected Reach. The Montana FWP instream flow reservation is based on 15th percentile flows, however, USGS stream gage data on Rock Creek at Rockvale shows this junior water right is not met even in average conditions from May through October. The Applicant proposes to protect 2.79 CFS and up to 255.5 AF diverted volume as this water would provide fisheries and habitat protection in supplement of their very junior water reservation. The Department finds 2.79 CFS and 255.5 AF from the headgate to the place where return flows accrued and the consumed volume of 97.2 AF from that point to the downstream end of the Protected Reach is the amount reasonably required to accomplish fisheries, habitat, and streamflow connectivity improvements through the irrigation season in West Fork Rock Creek and Rock Creek.

ADEQUATE DIVERSION

FINDINGS OF FACT

65. The Applicant proposes to temporarily retire the POD at the McDonald Ditch headgate in the NENWNW Sec. 7, T8S, R20E, Carbon County. The Applicant also proposes to temporarily cease diversion to the historical POU via the McDonald Ditch. The historical POU has been developed and is now a domestic subdivision; Statements of Claim 43D 30155507 and 43D 30155511 have not been used for flood irrigation since approximately the mid-1990s when subdivision of the lots and residential development began. No diversionary structures are necessary as part of the proposed change in purpose to instream flow.

66. The proposed change of Statements of Claim 43D 30155507 and 43D 30155511 does not require a means of diversion or conveyance. Per § 85-2-402(2)(b), MCA, a change in appropriation right for instream flow pursuant to § 85-2- 408, MCA, is exempt from the adequacy of diversion criterion.

POSSESSORY INTEREST

FINDINGS OF FACT

67. Pursuant to § 85-2-402(2)(d), MCA, the Applicant is not required to prove that they have a possessory interest, or the written consent of the person with the possessory interest in the property where the water is to be put to beneficial use because this application involves a change in appropriation right for instream flow per § 85-2-408, MCA.

TEMPORARY PROTECTED REACH/ MEASUREMENT PLAN

FINDINGS OF FACT

68. The Applicant is proposing to temporarily change the purpose and place of use of Statements of Claim 43D 30155507 and 43D 30155511 to instream flow for the benefit of the fishery resource in West Fork Rock Creek and Rock Creek for a period of 10 years with the option to renew. During the term of this temporary change, the Applicant proposes to cease diversion at the historical POD using the McDonald Ditch as conveyance to the historical POU. These water rights were severed, and irrigation has not occurred on the historical POU for approximately 20 years. After this change, the Applicant will appropriate 2.79 CFS in the proposed 46.0-mile instream place of use in West Fork Rock Creek and Rock Creek, which will extend from the

historical headgate in the NENWNW Sec. 7, T8S, R20E, on West Fork Rock Creek, to a point downstream in Gov't Lot 5 (SENESE) Sec. 36, T3S, R23E, on Rock Creek (as a natural carrier). The source of water is West Fork Rock Creek. The proposed period of use is April 10 to November 1 annually. The volume available to be appropriated instream is 255.5 AF.

69. The Applicant will monitor flow rates and volumes appropriated for the instream flow purpose by measuring flow in West Fork Rock Creek and Rock Creek at three locations and providing the measurement data to the Water Commissioner in order to distribute water. The Water Commissioner manages diversions on West Fork Rock Creek and Rock Creek and will no longer divert water at the historical headgate. The Applicant proposes to measure streamflow at three locations: (1) at or near the US Highway 212 bridge near the confluence of West Fork Rock Creek with Rock Creek in the NWSE Sec. 4, T8S, R20E; (2) on Rock Creek, either at the Fox-East Bench Rd Bridge (Gov't Lot 7 (NESW) Sec. 25, T6S, R20E), or the Roberts/Carbon Ave Bridge (NENW Sec. 32, T5S, R21E); and (3) near the confluence of Rock Creek and the Clarks Fork River, either the US Hwy 310 Bridge near Rockvale (SENE Sec. 3, T4S, R23E), or the Grapevine Road/Gibson Road Bridge (between Gov't Lots 3 and 4 (NW) Sec. 1, T4S, R23E, Carbon County). Staff gages and/or water level loggers will be installed at each of these sites and streamflow measurements will be taken to establish a rating curve for monthly water measurement readings. The rating table will be provided to the Water Commissioner.

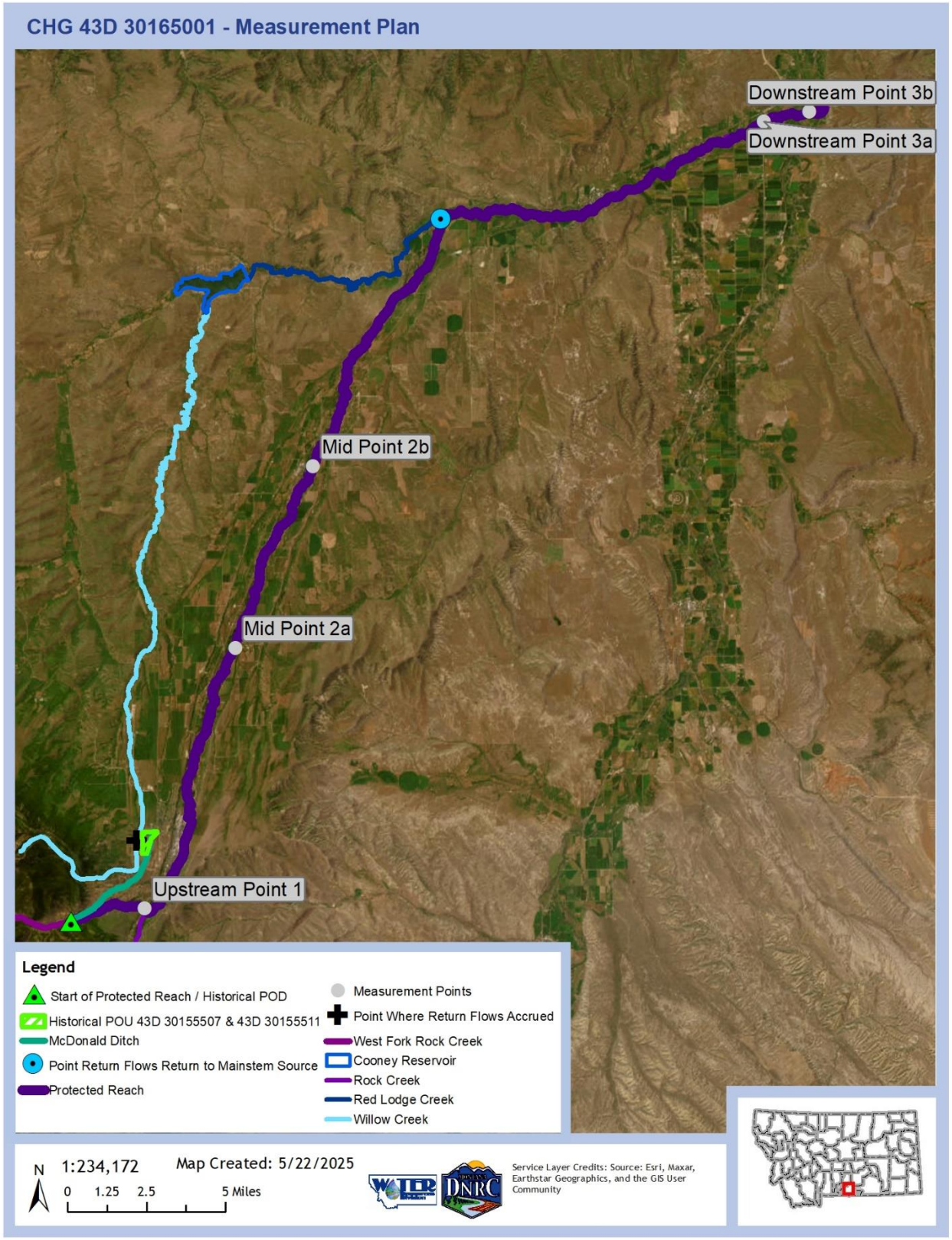

Figure 4. Proposed Measurement Locations and Protected Reach

70. The Applicant proposes to protect the full diverted volume and flow rate from the historical point of diversion to the place where return flows accrued to the source. The maximum flow rate protected would be 2.79 CFS and the maximum volume protected would be 255.5 AF. While water is diverted from West Fork Rock Creek, the historical return flows returned to Willow Creek. Because the return flows do not directly accrue to the source of the diverted water, the full diverted volume is proposed for protection from the historical point of diversion to a point downstream where the return flows eventually return to the mainstem of the source on Rock Creek in the S2SWNE Sec. 24, T4S, R21E, Carbon County. After the point where return flows return to the source, only the consumed volume can be protected within the Protected Reach to the endpoint downstream in Gov't Lot 5 (SENESE) Sec. 36, T3S, R23E, Carbon County. Below the point where the return flows returned to the mainstem of the source, the Applicant proposes protecting a maximum flow rate of 1.06 CFS and maximum volume of 97.22 AF. The maximum volume below the point where return flows returned to the mainstem of the source is the historically consumed volume and the flow rate is the proportional flow rate based on the ratio of the two volumes multiplied by the maximum flow rate (97.22 AF / 255.5 AF x 2.79 CFS = 1.06 CFS). The Applicant's use of this instream flow would most likely occur in the late summer when water is lowest and prioritizes protecting instream volumes during drier times. This operating plan suggests reducing the flow rate based on the ratio of annual volume protected during these later months. The full historical period of diversion is 206 days which would allow for a maximum 1.24 AF/day protected from the top of the Protected Reach to the point where the return flows historically accrued to the mainstem of the source, and 0.47 AF/day below that point. However, the full flow rate can produce 5.5 AF/day above the point where the return flows historically accrued to the mainstem of the source, and 2.10 AF/day below. The Applicant proposes generally implementing a shortened period of protection based on the maximum flow rate over fewer days. 5.5 AF/day will produce the maximum historical volume of 255.5 AF in 46 days (255.5 AF/5.5 AF/day); 2.10 AF/day will produce the historical consumed volume of 97.22 AF in 46 days (97.22 AF/2.1 AF/day). Thus, at the maximum flow rate in each section of the Protected Reach, the maximum number of days the instream flow right may be utilized is 46 days, distributed in the later months of the summer. The Applicant will provide these protected volumes and flow rates to the Water Commissioner during the period of days they propose to exercise their instream flow right. The Applicant may also choose to protect a lesser flow rate per day to extend the period of protection

within the historical period of diversion. This approach of using the historical volume in a compressed timeframe was authorized in Change Authorization 41H 30118754 by Spain Bridge Meadows, LLC.

71. If authorized, the following conditions will be added to the water right to satisfy the additional criteria for a temporary change to instream flow:

a. THE APPROPRIATOR OR A DESIGNEE SHALL MEASURE THE PROTECTED REACH ACCORDING TO THE MEASUREMENT PLAN AUTHORIZED IN THE PRELIMINARY DETERMINATION ORDER USING DEPARTMENT-APPROVED MEASURING DEVICES. THE APPROPRIATOR SHALL MAINTAIN THE MEASURING DEVICES, SO THEY ALWAYS OPERATE PROPERLY AND MEASURE FLOW RATE ACCURATELY. THE APPROPRIATOR WILL USE DATA FROM THREE (3) MEASUREMENT LOCATIONS: (1) AT OR NEAR THE US HIGHWAY 212 BRIDGE NEAR THE CONFLUENCE OF WEST FORK ROCK CREEK WITH ROCK CREEK IN THE NWSE SEC. 4, T8S, R20E; (2) ON ROCK CREEK, EITHER AT THE FOX-EAST BENCH RD BRIDGE (GOV'T LOT 7 (NESW) SEC. 25, T6S, R20E), OR THE ROBERTS/CARBON AVE BRIDGE (NENW SEC. 32, T5S, R21E); AND (3) NEAR THE CONFLUENCE OF ROCK CREEK AND THE CLARKS FORK RIVER, EITHER THE US HWY 310 BRIDGE NEAR ROCKVALE (SENE SEC. 3, T4S, R23E), OR THE GRAPEVINE ROAD/GIBSON ROAD BRIDGE (BETWEEN GOV'T LOTS 3 AND 4 (NW) SEC. 1, T4S, R23E, CARBON COUNTY) TO MONITOR STREAM FLOWS IN WEST FORK ROCK CREEK AND ROCK CREEK. STAFF GAGES AND/OR WATER LEVEL LOGGERS WILL BE INSTALLED AT THESE LOCATIONS TO BE CORROBORATED WITH REGULAR STREAMFLOW MEASUREMENTS TO DEVELOP A RATING CURVE AND RATING TABLE. THE RATING TABLE WILL BE PROVIDED TO THE WATER COMMISSIONER ANNUALLY BEFORE THE PROPOSED PERIOD OF USE. IN THE EVENT THAT A WATER COMMISSIONER IS NOT ORDERED ON ROCK CREEK, THE MEASUREMENTS, RATING CURVE, AND RATING TABLE WILL BE PROVIDED TO DNRC ANNUALLY BY DECEMBER 31 OF EACH YEAR OR ANYTIME UPON REQUEST.

b. THE APPLICANT MAY PROTECT THE FULL DIVERTED VOLUME OF 255.5 AF FROM THE HISTORICAL POD IN THE NENWNW SECTION 7, T8S, R20E TO THE

PLACE WHERE RETURN FLOWS RETURNED TO THE MAINSTEAM OF THE SOURCE ON ROCK CREEK IN THE S2SWNE SECTION 24, T4S, R21E. FROM THAT POINT, ONLY THE CONSUMED VOLUME OF 97.22 AF MAY BE PROTECTED TO THE DOWNSTREAM END OF THE PROTECTED REACH ON ROCK CREEK IN GOVERNMENT LOT 5 (SENESE) SECTION 36, T3S, R23E.

72. The Department finds the Applicant has met the additional criteria for a temporary change in appropriation right to maintain or enhance instream flow to benefit a fishery resource under the provisions of § 85-2-408, MCA.

CONCLUSIONS OF LAW

HISTORICAL USE AND ADVERSE EFFECT

73. 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*, ¶ 10 (an

appropriator's right only attaches to the amount of water actually taken and beneficially applied).[2]

74. Sections 85-2-401(1) and -402(2)(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*, ¶¶ 43-45.[3]

75. 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*, ¶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). 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.[4] 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

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[2] DNRC decisions are available at: https://dnrc.mt.gov/Directors-Office/HearingOrders

[3] *See also Holmstrom Land Co., Inc., v. Newlan Creek Water District*,185 Mont. 409, 605 P.2d 1060 (1979); *Lokowich v. Helena*, 46 Mont. 575, 129 P. 1063 (1913); *Thompson v. Harvey*, 164 Mont. 133, 519 P.2d 963 (1974) (plaintiff could not change his diversion to a point upstream of the defendants because of the injury resulting to the defendants); *McIntosh v. Graveley*, 159 Mont. 72, 495 P.2d 186 (1972) (appropriator was entitled to move his point of diversion downstream, so long as he installed measuring devices to ensure that he took no more than would have been available at his original point of diversion); *Head v. Hale*, 38 Mont. 302, 100 P. 222 (1909) (successors of the appropriator of water appropriated for placer mining purposes cannot so change its use as to deprive lower appropriators of their rights, already acquired, in the use of it for irrigating purposes); and, *Gassert v. Noyes*, 18 Mont. 216, 44 P. 959 (1896) (change in place of use was unlawful where reduced the amount of water in the source of supply available which was subject to plaintiff's subsequent right).

[4] 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. Section 85-2-234, MCA

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*, ¶ 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).[5]

76. 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. *E.g., Hohenlohe*, ¶ 44; *Rock Creek Ditch & Flume Co. v. Miller*, 93 Mont. 248, 17 P.2d 1074, 1077 (1933); *Newton v. Weiler*, 87 Mont. 164, 286 P. 133 (1930); *Popham v. Holloron*, 84 Mont. 442, 275 P. 1099, 1102 (1929); *Galiger v. McNulty*, 80 Mont. 339, 260 P. 401 (1927); *Head v. Hale*, 38 Mont. 302, 100 P. 222 (1909); *Spokane Ranch & Water Co.*, 37 Mont. at 351-52, 96 P. at 731; *Hidden Hollow Ranch v. Fields*,

[5] 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.)

2004 MT 153, 321 Mont. 505, 92 P.3d 1185; ARM 36.12.101(56) (Return flow - that part of a diverted flow which is not consumed by the appropriator and returns underground to its original source or another source of water - is not part of a water right and is subject to appropriation by subsequent water users).[6]

77. 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 ¶¶ 45-46 and 55-6; *Spokane Ranch & Water Co.*, 37 Mont. at 351-52, 96 P. at 731.

78. In *Royston*, the Montana Supreme Court confirmed that an Applicant is required to prove lack of adverse effect through comparison of the proposed change to the historic use, historic consumption, and historic return flows of the original right. 249 Mont. at 431, 816 P.2d at 1059-60. More recently, the Montana Supreme Court explained the relationship between the fundamental principles of historic beneficial use, return flow, and the rights of subsequent appropriators as they relate to the adverse effect analysis in a change proceeding in the following manner:

> The question of adverse effect under §§ 85-2-402(2) and -408(3), MCA, implicates return flows. A change in the amount of return flow, or to the hydrogeologic pattern of return flow, has the potential to affect adversely downstream water rights. There consequently exists an inextricable link between the "amount historically consumed" and the water that re-enters the stream as return flow. . . .
>
> An appropriator historically has been entitled to the greatest quantity of water he can put to use. The requirement that the use be both beneficial and reasonable, however, proscribes this tenet. This limitation springs from a fundamental tenet of western water law-that an appropriator has a right only to that amount of water historically put to beneficial use-developed in concert with the rationale that each subsequent appropriator "is entitled to have the water flow in the same manner as when he located," and the appropriator may insist that prior appropriators do not affect adversely his rights.
>
> This fundamental rule of Montana water law has dictated the Department's determinations in numerous prior change proceedings. The Department claims that historic consumptive use, as quantified in part by return flow analysis, represents a key element of proving historic beneficial use.
>
> We do not dispute this interrelationship between historic consumptive use, return

[6] The Montana Supreme Court recently recognized the fundamental nature of return flows to Montana's water sources in addressing whether the Mitchell Slough was a perennial flowing stream, given the large amount of irrigation return flow which feeds the stream. The Court acknowledged that the Mitchell's flows are fed by irrigation return flows available for appropriation. *Bitterroot River Protective Ass'n, Inc. v. Bitterroot Conservation Dist.*, 2008 MT 377, ¶¶ 22, 31, 43, 346 Mont. 508, 198 P.3d 219,(*citing Hidden Hollow Ranch v. Fields*, 2004 MT 153, 321 Mont. 505, 92 P.3d 1185).

> flow, and the amount of water to which an appropriator is entitled as limited by his past beneficial use.

Hohenlohe, at ¶¶ 42-45 (internal citations omitted).

79. The Department's rules reflect the above fundamental principles of Montana water law and are designed to itemize the type of evidence and analysis required for an Applicant to meet its burden of proof. ARM 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. ARM 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. ARM 36.12.1901 and 1903.

80. Applicant seeks to change existing water rights represented by its Water Right Claims. The "existing water rights" in this case are those as they existed prior to July 1, 1973, because with limited exception, no changes could have been made to those rights after that date without the Department's approval. Analysis of adverse effect in a change to an "existing water right" requires evaluation of what the water right looked like and how it was exercised prior to July 1, 1973. In *McDonald v. State*, the Montana Supreme Court explained:

> The foregoing cases and many others serve to illustrate that what is preserved to owners of appropriated or decreed water rights by the provision of the 1972 Constitution is what the law has always contemplated in this state as the extent of a water right: such amount of water as, by pattern of use and means of use, the owners or their predecessors put to beneficial use. . . . the Water Use Act contemplates that all water rights, regardless of prior statements or claims as to amount, must nevertheless, to be recognized, pass the test of historical, unabandoned beneficial use. . . . To that extent only the 1972 constitutional recognition of water rights is effective and will be sustained.

220 Mont. at 529, 722 P.2d at 604; *see also Matter of Clark Fork River Drainage Area*, 254 Mont. 11, 17, 833 P.2d 1120 (1992).

81. Water Resources Surveys were authorized by the 1939 legislature. 1939 Mont. Laws Ch. 185, § 5. Since their completion, Water Resources Surveys have been invaluable evidence in water right disputes and have long been relied on by Montana courts. *In re Adjudication of Existing Rights to Use of All Water in North End Subbasin of Bitterroot River Drainage Area in Ravalli*

and Missoula Counties, 295 Mont. 447, 453, 984 P.2d 151, 155 (1999) (Water Resources Survey used as evidence in adjudicating of water rights); *Wareing v. Schreckendgust*, 280 Mont. 196, 213, 930 P.2d 37, 47 (1996) (Water Resources Survey used as evidence in a prescriptive ditch easement case); *Olsen v. McQueary*, 212 Mont. 173, 180, 687 P.2d 712, 716 (1984) (judicial notice taken of Water Resources Survey in water right dispute concerning branches of a creek).

82. 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).

83. 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. ARM 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 ARM 36.12.1902. (FOF No. 17).

84. If an Applicant seeks more than the historic consumptive use as calculated by ARM 36.12.1902(16), the Applicant bears the burden of proof to demonstrate the amount of historic consumptive use by a preponderance of the evidence. The actual historic use of water could be less than the optimum utilization represented by the calculated duty of water in any particular case. *E.g., Application for Water Rights in Rio Grande County*, 53 P.3d 1165 (Colo., 2002) (historical use must be quantified to ensure no enlargement); *In the Matter of Application to Change Water Right No. 41H 1223599 by MGRR #1, LLC.*; *Orr v. Arapahoe Water and Sanitation Dist*., 753 P.2d 1217, 1223-1224 (Colo., 1988) (historical use of a water right could very well be less than the duty of water); *Weibert v. Rothe Bros., Inc.,* 200 Colo. 310, 317, 618 P.2d 1367, 1371 - 1372 (Colo. 1980) (historical use could be less than the optimum utilization "duty of water").

85. Based upon the Applicant's evidence of historic use, the Applicant has proven by a preponderance of the evidence the historic use of Statement of Claim 43D 30155507 to be a diverted volume of 79.3 AF, a historically consumed volume of 30.14 AF, and a flow rate of 0.87 CFS. Based upon the Applicant's evidence of historic use, the Applicant has proven by a preponderance of the evidence the historic use of Statement of Claim 43D 30155511 to be a diverted volume of 176.0 AF, a historically consumed volume of 67.08 AF, and a flow rate of 1.92 CFS. (FOF Nos. 14-27)

86. Based upon the Applicant's comparative analysis of historic water use and return flows to water use and return flows under the proposed change, the Applicant has proven that 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. Section 85-2-402(2)(a), MCA. (FOF Nos. 28-61)

BENEFICIAL USE

87. A change Applicant must prove by a preponderance of the evidence the proposed use is a beneficial use. Sections 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. ARM 36.12.1801. The amount of water that may be authorized for change is limited to the amount of water necessary to sustain the beneficial use. *E.g., Bitterroot River Protective Association v. Siebel, Order on Petition for Judicial Review*, Cause No. BDV-2002-519 (Mont. 1st Jud. Dist. Ct.) (2003) (*affirmed on other grounds*, 2005 MT 60, 326 Mont. 241, 108 P.3d 518); *Worden v. Alexander*, 108 Mont. 208, 90 P.2d 160 (1939); *Allen v. Petrick*, 69 Mont. 373, 222 P. 451(1924); *Sitz Ranch v. DNRC*, DV-10-13390,, *Order Affirming DNRC Decision*, Pg. 3 (Mont. 5th Jud. Dist. Ct.) (2011) (citing *BRPA v. Siebel*, 2005 MT 60, and rejecting Applicant's argument that it be allowed to appropriate 800 acre-feet when a typical year would require 200-300 acre-feet); *Toohey v. Campbell*, 24 Mont. 13, 60 P. 396 (1900) ("The policy of the law is to prevent a person from acquiring exclusive control of a stream, or any part thereof, not for present and actual

beneficial use, but for mere future speculative profit or advantage, without regard to existing or contemplated beneficial uses. He is restricted in the amount that he can appropriate to the quantity needed for such beneficial purposes."); § 85-2-312(1)(a), MCA (DNRC is statutorily prohibited from issuing a permit for more water than can be beneficially used).

88. The Applicant proposes to use water for instream flow to benefit fisheries resources which is a recognized beneficial use. Section 85-2-102(5), MCA. The Applicant has proven by a preponderance of the evidence instream flow is a beneficial use and that 255.5 acre-feet of diverted volume and 2.79 CFS flow rate of water requested is the amount needed to sustain the beneficial use. Section 85-2-402(2)(c), MCA (FOF Nos. 62-64).

ADEQUATE MEANS OF DIVERSION

89. Pursuant to § 85-2-402 (2)(b), MCA, the Applicant is not required to prove that the proposed means of diversion, construction, and operation of the appropriation works are adequate because this application involves a temporary change in appropriation right for instream flow pursuant to § 85-2-408. (FOF Nos. 65-66)

POSSESSORY INTEREST

90. Pursuant to § 85-2-402(2)(d), MCA, the Applicant is not required to prove that it has a possessory interest, or the written consent of the person with the possessory interest, in the property where the water is to be put to beneficial use because this application involves a temporary change in appropriation right for instream flow pursuant to § 85-2-408 MCA. (FOF No. 67)

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. 43D 30165001 should be GRANTED subject to the following.

The Department determines the Applicant may temporarily change the point of diversion, place of use, and purpose of Statements of Claim 43D 30155507 and 43D 30155511. The Applicant proposes to retire the historical point of diversion and place of use. The proposed change is temporary for a period of ten years as described in § 85-2-408, MCA. The proposed purpose is

instream flow to benefit fishery resources. The proposed place of use is a protected reach of West Fork Rock Creek from the historical point of diversion in the NENWNW Sec. 7, T8S, R20E, to the confluence with Rock Creek, then Rock Creek from the confluence with West Fork Rock Creek to a point downstream in Gov't Lot 5 (SENESE) Sec. 36, T3S, R23E, and the proposed POD is the upstream and downstream ends of this Protected Reach. The project is in Carbon County and the source is West Fork Rock Creek. The protected water for instream flow is from West Fork Rock Creek with Rock Creek used as a natural carrier to the end of the Protected Reach.

If granted, the following conditions would be added to the water right to satisfy the additional criteria for a temporary change to instream flow:

a. THE APPROPRIATOR OR A DESIGNEE SHALL MEASURE THE PROTECTED REACH ACCORDING TO THE MEASUREMENT PLAN AUTHORIZED IN THE PRELIMINARY DETERMINATION ORDER USING DEPARTMENT-APPROVED MEASURING DEVICES. THE APPROPRIATOR SHALL MAINTAIN THE MEASURING DEVICES, SO THEY ALWAYS OPERATE PROPERLY AND MEASURE FLOW RATE ACCURATELY. THE APPROPRIATOR WILL USE DATA FROM THREE (3) MEASUREMENT LOCATIONS: (1) AT OR NEAR THE US HIGHWAY 212 BRIDGE NEAR THE CONFLUENCE OF WEST FORK ROCK CREEK WITH ROCK CREEK IN THE NWSE SEC. 4, T8S, R20E; (2) ON ROCK CREEK, EITHER AT THE FOX-EAST BENCH RD BRIDGE (GOV'T LOT 7 (NESW) SEC. 25, T6S, R20E), OR THE ROBERTS/CARBON AVE BRIDGE (NENW SEC. 32, T5S, R21E); AND (3) NEAR THE CONFLUENCE OF ROCK CREEK AND THE CLARKS FORK RIVER, EITHER THE US HWY 310 BRIDGE NEAR ROCKVALE (SENE SEC. 3, T4S, R23E), OR THE GRAPEVINE ROAD/GIBSON ROAD BRIDGE (BETWEEN GOV'T LOTS 3 AND 4 (NW) SEC. 1, T4S, R23E, CARBON COUNTY) TO MONITOR STREAM FLOWS IN WEST FORK ROCK CREEK AND ROCK CREEK. STAFF GAGES AND/OR WATER LEVEL LOGGERS WILL BE INSTALLED AT THESE LOCATIONS TO BE CORROBORATED WITH REGULAR STREAMFLOW MEASUREMENTS TO DEVELOP A RATING CURVE AND RATING TABLE. THE RATING TABLE WILL BE PROVIDED TO THE WATER COMMISSIONER ANNUALLY BEFORE THE PROPOSED PERIOD OF USE. IN THE EVENT THAT A WATER COMMISSIONER IS NOT ORDERED ON ROCK CREEK, THE MEASUREMENTS, RATING CURVE, AND RATING TABLE WILL BE PROVIDED TO

DNRC ANNUALLY BY DECEMBER 31 OF EACH YEAR OR ANYTIME UPON REQUEST.

b. THE APPLICANT MAY PROTECT THE FULL DIVERTED VOLUME OF 255.5 AF FROM THE HISTORICAL POD IN THE NENWNW SECTION 7, T8S, R20E TO THE PLACE WHERE RETURN FLOWS RETURNED TO THE MAINSTEAM OF THE SOURCE ON ROCK CREEK IN THE S2SWNE SECTION 24, T4S, R21E. FROM THAT POINT, ONLY THE CONSUMED VOLUME OF 97.22 AF MAY BE PROTECTED TO THE DOWNSTREAM END OF THE PROTECTED REACH ON ROCK CREEK IN GOVERNMENT LOT 5 (SENESE) SECTION 36, T3S, R23E.

NOTICE

The Department will provide a notice of opportunity for public comment on this Application and the Department's Draft Preliminary Determination to Grant pursuant to § 85-2-307, MCA. The Department will set a deadline for public comments to this Application pursuant to §§ 85-2-307, and -308, MCA. If this Application receives public comment, the Department shall consider the public comments, respond to the public comments, and issue a preliminary determination to grant the application, grant the application in modified form, or deny the application. If no public comments are received pursuant to § 85-2-307(4), MCA, the Department's preliminary determination will be adopted as the final determination.

DATED this 29th day of August 2025.

Kathy Olsen, Regional Operations Manager
Water Resources Division
Montana Department of Natural Resources and Conservation

CERTIFICATE OF SERVICE

This certifies that a true and correct copy of the UPDATED DRAFT PRELIMINARY DETERMINATION TO GRANT was served upon all parties listed below on this 30th day of August 2025, by first class United States mail.

RONALD M HENRY
930 BLACKBERRY WAY
BILLINGS, MT 59106
RHENRY@WESTERNINVESTMENTS.NET

and:

MONTANA FWP; LAND & WATER PROGRAM
C/O ANDY BRUMMOND
PO BOX 938
LEWISTOWN, MT 59457-0938
ABRUMMOND@MT.GOV

Billings Regional Office, (406) 247-4415

Appendix A: Water Rights Within the Area of Potential Adverse Effect on West Fork Rock Creek and Rock Creek

43D 100782 00	43D 111365 00	43D 12128 00	43D 13876 00	43D 14992 00
43D 100882 00	43D 111897 00	43D 12129 00	43D 13884 00	43D 14993 00
43D 100883 00	43D 111901 00	43D 12130 00	43D 13885 00	43D 150 00
43D 10222 00	43D 111968 00	43D 12297 00	43D 13897 00	43D 15000 00
43D 10223 00	43D 111969 00	43D 12341 00	43D 139 00	43D 15004 00
43D 10224 00	43D 111970 00	43D 12342 00	43D 13910 00	43D 15034 00
43D 10225 00	43D 112017 00	43D 12348 00	43D 13911 00	43D 151 00
43D 10226 00	43D 112018 00	43D 12349 00	43D 13912 00	43D 153 00
43D 10227 00	43D 112023 00	43D 12350 00	43D 140 00	43D 15651 00
43D 10233 00	43D 114638 00	43D 12351 00	43D 141 00	43D 15656 00
43D 10234 00	43D 114639 00	43D 12352 00	43D 14116 00	43D 15659 00
43D 10235 00	43D 114641 00	43D 12355 00	43D 14124 00	43D 157 00
43D 10236 00	43D 114642 00	43D 12369 00	43D 14125 00	43D 15703 00
43D 10237 00	43D 114643 00	43D 123916 00	43D 14133 00	43D 15704 00
43D 10238 00	43D 114644 00	43D 12444 00	43D 142 00	43D 15705 00
43D 10239 00	43D 114645 00	43D 12465 00	43D 143 00	43D 15706 00
43D 10246 00	43D 114648 00	43D 12537 00	43D 144 00	43D 15707 00
43D 102577 00	43D 114652 00	43D 125722 00	43D 14567 00	43D 15708 00
43D 10265 00	43D 114653 00	43D 125725 00	43D 148 00	43D 15709 00
43D 10267 00	43D 114654 00	43D 125726 00	43D 149 00	43D 15710 00
43D 102673 00	43D 114655 00	43D 125735 00	43D 14928 00	43D 15862 00
43D 10268 00	43D 114656 00	43D 12623 00	43D 14929 00	43D 15969 00
43D 102680 00	43D 114657 00	43D 12785 00	43D 14930 00	43D 161 00
43D 10270 00	43D 114658 00	43D 12996 00	43D 14944 00	43D 162 00
43D 10285 00	43D 114659 00	43D 12997 00	43D 14945 00	43D 16346 00
43D 10287 00	43D 114723 00	43D 130342 00	43D 14946 00	43D 16350 00
43D 10288 00	43D 114737 00	43D 13228 00	43D 14954 00	43D 16351 00
43D 10289 00	43D 11564 00	43D 13357 00	43D 14957 00	43D 16376 00
43D 10290 00	43D 11580 00	43D 13531 00	43D 14958 00	43D 168 00
43D 10291 00	43D 11767 00	43D 13535 00	43D 14963 00	43D 16830 00
43D 10307 00	43D 11785 00	43D 13536 00	43D 14964 00	43D 169 00
43D 10334 00	43D 11807 00	43D 13541 00	43D 14977 00	43D 170 00
43D 10341 00	43D 11816 00	43D 13544 00	43D 14978 00	43D 17034 00
43D 10342 00	43D 11885 00	43D 137 00	43D 14979 00	43D 17177 00
43D 10343 00	43D 119247 00	43D 13721 00	43D 14982 00	43D 17178 00
43D 106338 00	43D 11951 00	43D 13755 00	43D 14983 00	43D 17193 00
43D 10673 00	43D 11963 00	43D 13756 00	43D 14986 00	43D 17198 00
43D 10674 00	43D 11964 00	43D 138 00	43D 14987 00	43D 17199 00
43D 106779 00	43D 11966 00	43D 13861 00	43D 14989 00	43D 172 00
43D 106848 00	43D 11974 00	43D 13862 00	43D 14990 00	43D 17200 00
43D 110819 00	43D 12108 00	43D 13868 00	43D 14991 00	43D 17201 00

43D 17202 00	43D 195954 00	43D 197521 00	43D 198590 00	43D 200059 00
43D 17208 00	43D 195955 00	43D 197529 00	43D 198608 00	43D 200078 00
43D 173 00	43D 195956 00	43D 197535 00	43D 198612 00	43D 200079 00
43D 17397 00	43D 195957 00	43D 197540 00	43D 198617 00	43D 200080 00
43D 17619 00	43D 195958 00	43D 197542 00	43D 198620 00	43D 200081 00
43D 179752 00	43D 195959 00	43D 197543 00	43D 198630 00	43D 200082 00
43D 179925 00	43D 195960 00	43D 197551 00	43D 198633 00	43D 200083 00
43D 17996 00	43D 195961 00	43D 197552 00	43D 198635 00	43D 200084 00
43D 180007 00	43D 195962 00	43D 197554 00	43D 198637 00	43D 200085 00
43D 180105 00	43D 195963 00	43D 197555 00	43D 198651 00	43D 200092 00
43D 182407 00	43D 195964 00	43D 197616 00	43D 198652 00	43D 200099 00
43D 1860 00	43D 195971 00	43D 197620 00	43D 198653 00	43D 200100 00
43D 1871 00	43D 195972 00	43D 197621 00	43D 198656 00	43D 201025 00
43D 1872 00	43D 195990 00	43D 197625 00	43D 198657 00	43D 20178 00
43D 18723 00	43D 195991 00	43D 197628 00	43D 198658 00	43D 20179 00
43D 18724 00	43D 196013 00	43D 197629 00	43D 198659 00	43D 20180 00
43D 1881 00	43D 196014 00	43D 197631 00*	43D 198681 00	43D 20207 00
43D 18836 00	43D 196015 00	43D 197635 00	43D 198686 00	43D 20208 00
43D 18837 00	43D 196016 00	43D 197636 00	43D 19916 00	43D 20214 00
43D 189396 00	43D 196017 00	43D 197646 00	43D 200008 00	43D 20215 00
43D 19105 00	43D 196018 00	43D 197683 00	43D 200009 00	43D 20230 00
43D 19108 00	43D 196019 00	43D 197684 00	43D 200015 00	43D 20231 00
43D 19109 00	43D 196020 00	43D 197705 00	43D 200016 00	43D 20234 00
43D 19110 00	43D 196021 00	43D 197706 00	43D 200018 00	43D 20235 00
43D 19111 00	43D 196022 00	43D 197707 00	43D 200020 00	43D 20236 00
43D 19112 00	43D 196023 00	43D 197709 00	43D 200031 00	43D 20237 00
43D 19113 00	43D 196024 00	43D 197717 00	43D 200032 00	43D 206404 00
43D 19152 00	43D 196025 00	43D 197718 00	43D 200033 00	43D 206813 00
43D 19164 00	43D 196026 00	43D 197719 00	43D 200034 00	43D 206821 00*
43D 19165 00	43D 196027 00	43D 197720 00	43D 200035 00	43D 206822 00
43D 19166 00	43D 196028 00	43D 197721 00	43D 200036 00	43D 206823 00
43D 19167 00	43D 197381 00	43D 197733 00	43D 200041 00	43D 206824 00
43D 19169 00	43D 197510 00	43D 197734 00	43D 200042 00	43D 206825 00
43D 195749 00	43D 197511 00	43D 197735 00	43D 200043 00	43D 206826 00
43D 195928 00	43D 197514 00	43D 197736 00	43D 200044 00	43D 206827 00
43D 195936 00	43D 197515 00	43D 197746 00	43D 200045 00	43D 206851 00
43D 195942 00	43D 197516 00	43D 197747 00	43D 200046 00	43D 206852 00
43D 195944 00	43D 197517 00	43D 197749 00	43D 200047 00	43D 208798 00
43D 195951 00	43D 197518 00	43D 197750 00	43D 200055 00	43D 208804 00
43D 195952 00	43D 197519 00	43D 197759 00	43D 200056 00	43D 208805 00
43D 195953 00	43D 197520 00	43D 198589 00	43D 200057 00	43D 208966 00

43D 210690 00	43D 25569 00	43D 30010089	43D 30063605	43D 33273 00
43D 21106 00	43D 25570 00	43D 30017746	43D 30063606	43D 33342 00
43D 21109 00	43D 25571 00	43D 30027193	43D 30063607	43D 33343 00
43D 21118 00	43D 25572 00	43D 30027194	43D 30063625	43D 33344 00
43D 21119 00	43D 25573 00	43D 30027195	43D 30107390*	43D 33345 00
43D 211393 00	43D 26634 00*	43D 30027196	43D 30112315	43D 3522 00
43D 211521 00	43D 26730 00	43D 30029026	43D 30113402	43D 3524 00
43D 211748 00	43D 26731 00	43D 30029027	43D 30114370	43D 3525 00
43D 211749 00	43D 27186 00	43D 30043234	43D 30115382	43D 3529 00
43D 211937 00	43D 27191 00	43D 30043248	43D 30118107	43D 3530 00
43D 212510 00	43D 27193 00	43D 30051430	43D 30120530	43D 3531 00
43D 212566 00	43D 27984 00	43D 30051431	43D 30122588	43D 3537 00
43D 213710 00	43D 27985 00	43D 30051432	43D 30134441	43D 3538 00
43D 214199 00	43D 27987 00	43D 30051433	43D 30134442	43D 3539 00
43D 214319 00	43D 27989 00	43D 30051434	43D 30139287	43D 3540 00
43D 214455 00	43D 27990 00	43D 30051435	43D 30143456	43D 36367 00
43D 214957 00	43D 27991 00	43D 30051436	43D 30143616	43D 36368 00
43D 215068 00	43D 28121 00	43D 30051437	43D 30144334	43D 36371 00
43D 215097 00	43D 29254 00	43D 30051438	43D 30152599	43D 36377 00
43D 215831 00	43D 29255 00	43D 30051439	43D 30152778	43D 36379 00
43D 216237 00	43D 29269 00	43D 30051440	43D 30155819	43D 36384 00
43D 216276 00	43D 29301 00	43D 30051441	43D 30155820	43D 36387 00
43D 216285 00	43D 29307 00	43D 30051442	43D 30163082	43D 36391 00
43D 216306 00	43D 29308 00	43D 30051443	43D 30164675	43D 36392 00
43D 216328 00	43D 29309 00	43D 30051444	43D 30164676	43D 36393 00
43D 216329 00	43D 29350 00	43D 30051445	43D 31096 00	43D 36533 00
43D 216330 00	43D 29351 00	43D 30051816	43D 31097 00	43D 36540 00
43D 216331 00	43D 29352 00	43D 30051817	43D 31102 00	43D 36615 00
43D 216523 00	43D 29361 00	43D 30051818	43D 31103 00	43D 36642 00
43D 2305 00	43D 29362 00	43D 30051819	43D 31104 00	43D 38197 00
43D 23263 00	43D 29363 00	43D 30051820	43D 31106 00	43D 39236 00
43D 23525 00	43D 29364 00	43D 30051821	43D 31107 00	43D 39245 00
43D 23526 00	43D 29365 00	43D 30051822	43D 31133 00	43D 39289 00
43D 24118 00	43D 29366 00	43D 30051824	43D 31147 00	43D 39533 00
43D 24125 00	43D 29368 00	43D 30051825	43D 31150 00*	43D 39536 00
43D 24146 00	43D 30007158	43D 30051826	43D 31152 00*	43D 39564 00
43D 24748 00	43D 30010069	43D 30051827	43D 31244 00	43D 3992 00
43D 25556 00	43D 30010070	43D 30051828	43D 32299 00	43D 3993 00
43D 25557 00	43D 30010072	43D 30051829	43D 3272 00	43D 3994 00
43D 25558 00	43D 30010075	43D 30051830	43D 3273 00	43D 4003 00
43D 25559 00	43D 30010076	43D 30063604	43D 33272 00	43D 40384 00

43D 40385 00	43D 43377 00	43D 4659 00	43D 5612 01	43D 68356 00
43D 40386 00	43D 43378 00*	43D 4787 00	43D 5612 02	43D 6903 00
43D 41654 00	43D 43385 00	43D 4788 00	43D 5613 00	43D 6922 00
43D 41655 00	43D 43386 00	43D 4789 00	43D 5614 00	43D 6923 00
43D 41660 00	43D 43387 00	43D 4790 00	43D 5709 00	43D 72563 00
43D 41661 00	43D 43388 00	43D 48653 00	43D 578 00	43D 7340 00
43D 41662 00	43D 43401 00	43D 4922 00	43D 579 00	43D 7342 00
43D 41663 00	43D 43408 00	43D 4943 00	43D 580 00	43D 7343 00
43D 4173 00	43D 44510 00	43D 4944 00	43D 582 00	43D 7344 00
43D 41835 00	43D 4460 00	43D 4945 00	43D 586 00	43D 7488 00
43D 41836 00	43D 4463 00	43D 4946 00	43D 5940 00	43D 7489 00
43D 430 00	43D 4464 00	43D 4947 00	43D 5941 00	43D 82774 00
43D 431 00	43D 4466 00	43D 4948 00	43D 6008 00	43D 84405 00
43D 43124 00	43D 447 00	43D 4950 00	43D 6184 00	43D 8447 00
43D 432 00	43D 45560 00	43D 5255 00	43D 6283 00	43D 8449 00
43D 433 00	43D 45683 00	43D 5260 00	43D 64461 00	43D 8450 00
43D 43316 00	43D 45689 00	43D 5329 00	43D 6518 00	43D 8451 00
43D 43317 00	43D 45737 00	43D 5331 00	43D 6520 00	43D 8452 00
43D 43318 00	43D 45767 00	43D 5333 00	43D 679 00	43D 8453 00
43D 43319 00	43D 45801 00	43D 5336 00	43D 680 00	43D 8456 00
43D 43365 00	43D 45803 00	43D 5339 00	43D 681 00	43D 857 00
43D 43367 00	43D 45804 00	43D 5438 00	43D 682 00	43D 90937 00
43D 43374 00	43D 46435 00	43D 5612 00	43D 683 00	43D 9960 00

*Water rights marked by an asterisk are the seven (7) water rights which are senior to Statements of Claim 43D 30155507 and 43D 30155511

Appendix B (Updated): Distribution of Flow Rate and Volume by Month for Water Rights Within the Area of Potential Adverse Effect on Willow Creek Based on Updated Analysis

Table B-1 (Updated): Distribution of Flow Rate (CFS) by Month for Water Rights Within the Area of Potential Adverse Effect on Willow Creek Based on Updated Analysis

Water Right No.	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
43D 117945 00	0.09	0.09	0.09	0.09	0.09	0.09	0.09	0.09	0.09	0.09	0.09	0.09
43D 117946 00					0	0	0	0	0	0		
43D 17013 00	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01
43D 17014 00	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01
43D 17016 00					0	0	0	0	3.0	3.0	3.0	
43D 17195 00				0.75	0.75	0.75	0.75	0.75	0.75	0.75		
43D 17196 00				0.62	0.62	0.62	0.62	0.62	0.62	0.62		
43D 197728 00					0.37	0.37	0.37	0.37	0.37	0.37		
43D 197729 00					0.31	0.31	0.31	0.31	0.31	0.31		
43D 23158 00				1.5	1.5	1.5	1.5	1.5				
43D 23159 00				1.0	1.0	1.0	1.0	1.0				
43D 27974 00				0.31	0.31	0.31	0.31	0.31	0.31	0.31		
43D 30017730	6.0	4.0	9.0	16.0	19.0	26.0	24.0	20.0	24.0	19.0	16.5	7.5
43D 4925 00					0.62	0.62	0.62	0.62	0.62	0.62		
43D 6010 00				0.31	0.31	0.31	0.31	0.31	0.31	0.31		
43D 6011 00				0.37	0.37	0.37	0.37	0.37	0.37	0.37		
TOTAL (CFS)	6.11	4.11	9.11	20.97	25.27	32.27	30.27	26.27	30.77	25.77	19.61	7.61

Table B-2 (Updated): Distribution of Volume (AF) by Month for Water Rights Within the Area of Potential Adverse Effect on Willow Creek Based on Updated Analysis

Water Right No.	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
43D 117945 00	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8
43D 117946 00					0.0	0.0	0.0	0.0	0.0	0.0		
43D 17013 00	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9
43D 17014 00	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9
43D 17016 00					0.0	0.0	0.0	0.0	75.5	75.5	75.5	
43D 17195 00				19.4	19.4	19.4	19.4	19.4	19.4	19.4		
43D 17196 00				0.0	0.0	0.0	0.0	0.0	0.0	0.0		
43D 197728 00					0.0	0.0	0.0	0.0	0.0	0.0		
43D 197729 00					8.2	8.2	8.2	8.2	8.2	8.2		
43D 23158 00				0.0	0.0	0.0	0.0	0.0				
43D 23159 00				50.2	50.2	50.2	50.2	50.2				
43D 27974 00				0.0	0.0	0.0	0.0	0.0	0.0	0.0		
43D 30017730	369.0	222.0	553.0	952.0	1168.0	1547.0	1476.0	1230.0	1428.0	1168.0	982.0	461.0
43D 4925 00					9.3	9.3	9.3	9.3	9.3	9.3		
43D 6010 00				11.8	11.8	11.8	11.8	11.8	11.8	11.8		
43D 6011 00				0.0	0.0	0.0	0.0	0.0	0.0	0.0		
TOTAL (AF)	371.53	224.53	555.53	1035.91	1269.41	1648.41	1577.41	1331.41	1554.72	1294.72	1060.02	463.53

Appendix C: Distribution of Flow Rate and Volume by Month for Water Rights Within the Area of Potential Adverse Effect on Willow Creek Based on Updated Analysis and Excluding Montana FWP Water Reservation 43D 30017730

Table C-1: Distribution of Flow Rate (CFS) by Month for Water Rights Within the Area of Potential Adverse Effect on Willow Creek Based on Updated Analysis and Excluding Montana FWP Water Reservation 43D 30017730

Water Right No.	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
43D 117945 00	0.09	0.09	0.09	0.09	0.09	0.09	0.09	0.09	0.09	0.09	0.09	0.09
43D 117946 00					0	0	0	0	0	0		
43D 17013 00	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01
43D 17014 00	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01
43D 17016 00					0	0	0	0	3	3	3	
43D 17195 00				0.75	0.75	0.75	0.75	0.75	0.75	0.75		
43D 17196 00				0.62	0.62	0.62	0.62	0.62	0.62	0.62		
43D 197728 00					0.37	0.37	0.37	0.37	0.37	0.37		
43D 197729 00					0.31	0.31	0.31	0.31	0.31	0.31		
43D 23158 00				1.5	1.5	1.5	1.5	1.50				
43D 23159 00				1	1	1	1	1.00				
43D 27974 00				0.31	0.31	0.31	0.31	0.31	0.31	0.31		
43D 30017730	0	0	0	0	0	0	0	0	0	0	0	0
43D 4925 00					0.62	0.62	0.62	0.62	0.62	0.62		
43D 6010 00				0.31	0.31	0.31	0.31	0.31	0.31	0.31		
43D 6011 00				0.37	0.37	0.37	0.37	0.37	0.37	0.37		
TOTAL (CFS)	0.11	0.11	0.11	4.97	6.27	6.27	6.27	6.27	6.77	6.77	3.11	0.11

Table C-2: Distribution of Volume (AF) by Month for Water Rights Within the Area of Potential Adverse Effect on Willow Creek Based on Updated Analysis and Excluding Montana FWP Water Reservation 43D 30017730

Water Right No.	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
43D 117945 00	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8
43D 117946 00					0.0	0.0	0.0	0.0	0.0	0.0		
43D 17013 00	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9
43D 17014 00	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9
43D 17016 00					0.0	0.0	0.0	0.0	75.5	75.5	75.5	
43D 17195 00				19.4	19.4	19.4	19.4	19.4	19.4	19.4		
43D 17196 00				0.0	0.0	0.0	0.0	0.0	0.0	0.0		
43D 197728 00					0.0	0.0	0.0	0.0	0.0	0.0		
43D 197729 00					8.2	8.2	8.2	8.2	8.2	8.2		
43D 23158 00				0.0	0.0	0.0	0.0	0.0				
43D 23159 00				50.2	50.2	50.2	50.2	50.2				
43D 27974 00				0.0	0.0	0.0	0.0	0.0	0.0	0.0		
43D 30017730	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
43D 4925 00					9.3	9.3	9.3	9.3	9.3	9.3		
43D 6010 00				11.8	11.8	11.8	11.8	11.8	11.8	11.8		
43D 6011 00				0.0	0.0	0.0	0.0	0.0	0.0	0.0		
TOTAL (AF)	2.5	2.5	2.5	83.9	101.4	101.4	101.4	101.4	126.7	126.7	78.0	2.5