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

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APPLICATION FOR BENEFICIAL WATER USE PERMIT NO. 41H 30165312 BY BARNARD CONSTRUCTION	)))	**PRELIMINARY DETERMINATION TO GRANT PERMIT**

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On September 23, 2025, Barnard Construction (Applicant) submitted Application for Beneficial Water Use Permit No. 41H 30165312 to the Bozeman Regional Office of the Department of Natural Resources and Conservation (Department or DNRC) for 550 GPM (275 GPM per well) and 298.38 AF for non-consumptive geothermal use. The Department published receipt of the application on its website. The Department sent the Applicant a deficiency letter under § 85-2-302, Montana Code Annotated (MCA), dated October 15, 2025. The Applicant responded with information dated October 20, 2025. A preapplication meeting was held between the Department and the Applicant on February 11, 2025, in which the Applicant designated that the technical analyses for this application would be completed by the Department. The Applicant returned the completed Preapplication Meeting Form on May 1, 2025. The Department delivered the completed technical analysis on July 7, 2025. The application was determined to be correct and complete as of November 14, 2025. An Environmental Assessment for this application was completed on January 12, 2026.

The Draft Preliminary Determination to Grant was sent to the Applicant on January 13, 2026. The Department provided notice of opportunity to provide public comments to this application per §85-2-307(4), MCA on February 25, 2026. The Department received one public comment and this updated Preliminary Determination considers that public comment.

INFORMATION

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

Application as filed:

- Application for Beneficial Water Use Permit, Form 600
- Attachments:
    - Form 600-TAA; Question 2. Technical Analyses Addendum, Form No. 600-TAA
    - Form 600-BCA: Question 3. Basin Closure Addendum, Form No. 600-BCA

  - Form 600-TAA; Question 32. Civil and Mechanical Diagrams
  - Form 600-TAA; Question 33. Pump Curve
  - Form 600-TAA; Question 33. Dynamic Head Calculations
  - Form 600-TAA; Question 34. Pipe/Materials Specifications
- Maps:
  - Map 1- Applicant's proposed Nelson Meadows site location dated March 7, 2025
  - Map 2- Applicant's proposed POD on the source and proposed place of use by Water & Environmental Technologies dated May 5, 2025
- Department- completed technical analyses based on information provided in the Preapplication Meeting Form, dated July 7, 2025

Information Received after Application Filed

- Email chain between Consultant (Pat Thomson) and Department (Kendrew Ellis) dated October 20, 2025, RE: Deficiency letter for Beneficial Water Use Permit Application No. 30165312

Information within the Department's Possession/Knowledge

- Appendix A. Water rights in zone of influence
- Aquifer Testing Addendum Form No. 600-ATA
- Groundwater Permit Technical Analyses Report – Part A, dated July 7, 2025
- Groundwater Permit Technical Analyses Report – Part B, dated July 7, 2025
- 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 Bozeman Regional Office at 406-586-3136 to request copies of the following documents.
  - "Technical Memorandum: Physical and Legal Availability of Ground Water" (Water Sciences Bureau, 2019)
  - "Technical Memorandum: Net Surface Water Depletion from Ground Water Pumping" (Water Sciences Bureau, 2019)
  - Upper Missouri Water Availability Analysis, State of Montana Department of Natural Resources and Conservation, December 1997

Public Comments Received

- The Department received and considered the following comment for the Preliminary Determination. The Department has considered one public comment on the physical

availability analysis and adverse effect analysis. The Department has determined the information provided did not demonstrate that the physical availability and adverse effect criteria were inadequately addressed, and the Department will not reevaluate the criteria. The preliminary determination is to grant. The comment is addressed in the respective sections. The public comment received can be found in the administrative file.

  - The one public comment received included a concern regarding the physical availability analysis and two issues were raised. The issues questioned the following:
    - The effect on physical availability in hydraulically connected groundwater sources.
    - The adequacy of the physical availability analysis.
  - The one public comment received included a concern regarding the adverse effect analysis and two issues were raised. The issues questioned the following:
    - The effect on shallow and domestic groundwater wells and existing groundwater rights as a result of the proposed geothermal system.
    - The effect on groundwater levels as a result of the proposed pumping rate.

- Water quality comments are accepted during the public comment period. The one public comment received included water quality. The Department does not make changes to the draft preliminary determination based on a water quality comment. Pursuant to § 85-2-311(2), MCA, “the applicant is required to prove that the [water quality criterion has] been met only if a valid objection has been filed”. Objections may be filed pursuant to § 85-2 308, MCA.

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

For the purposes of this document, Department or DNRC means the Department of Natural Resources & Conservation; GWCT means Groundwater Certificate; CFS means cubic feet per second; GPM means gallons per minute; AF means acre-feet; AC means acres; and AF/YR means acre-feet per year.

PROPOSED APPROPRIATION

FINDINGS OF FACT

1. The Applicant proposes to divert groundwater, by means of two extraction wells at 202 ft (EX-1) and 232 ft depth (EX-2), with two points of diversion (PODs) in the SWSESE Section 22, T2S, R5E, Gallatin County. The wells will divert groundwater from January 1 to December 31 for non-consumptive geothermal use. The wells divert a total 298.38 AF at a total flow rate of 550 GPM (275 GPM per well) to provide geothermal cooling for the commercial building in the SESWSE and SWSESE Section 22 and NWNENE Section 27, T1S, R5E, all in Gallatin County, as seen in **Figure 1**. Water diverted for the non-consumptive geothermal use will be returned back to the aquifer system by injection wells. The two injection wells for the project are located in the SESWSE Section 22, T1S, R5E, Gallatin County (IN-1 and IN-2).

2. The Applicant proposes to divert 298.38 AF for non-cosumptive geothermal use. The consumtive use associated with the proposed use is 0 AF.

3. This permit will not be supplemental to any other water rights or share a place of use.

Basin Closure

4. This application is to divert groundwater for the purpose of non-consumptive geothermal use. This application is located within the Upper Missouri Basin Legislative Closure, §§ 85-2-342 and 85-2-343, MCA. The closure has an exception that allows for applications for non-consumptive uses. This permit application is to appropriate groundwater for geothermal non-consumptive use and meets the closure exception.

5. Applicant submitted a hydrogeologic assessment report per §§ 85-2-360 and -361, MCA, determined to be correct and complete by the Department.

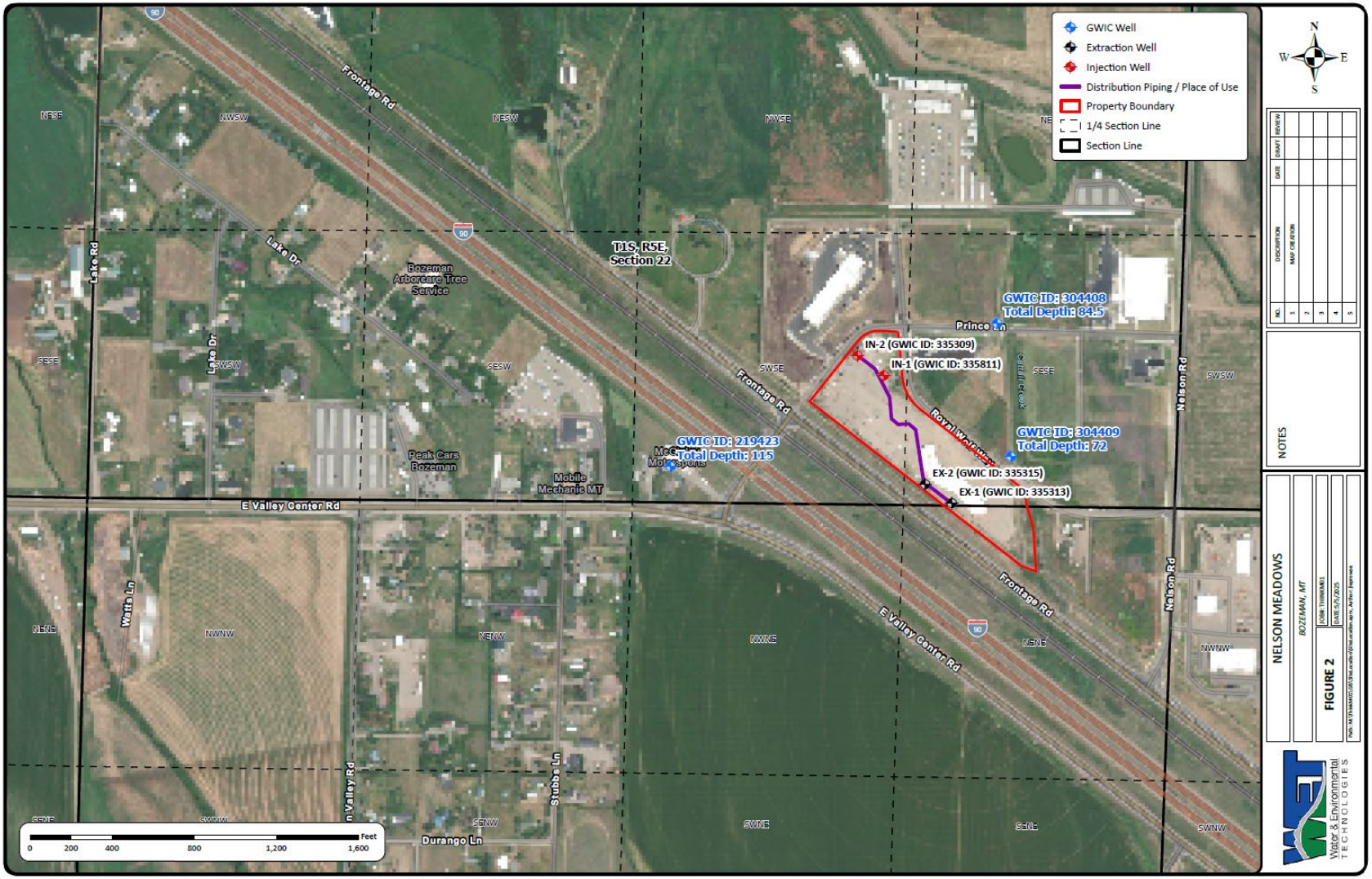

Figure 1. Map of the Applicant's proposed POD on the source and proposed POU by Water & Environmental Technologies dated 5/5/2025

§ 85-2-311, MCA, BENEFICIAL WATER USE PERMIT CRITERIA

GENERAL CONCLUSIONS OF LAW

6. The Montana Constitution expressly recognizes in relevant part that:

> (1) All existing rights to the use of any waters for any useful or beneficial purpose are hereby recognized and confirmed.
> (2) The use of all water that is now or may hereafter be appropriated for sale, rent, distribution, or other beneficial use . . . shall be held to be a public use.
> (3) All surface, underground, flood, and atmospheric waters within the boundaries of the state are the property of the state for the use of its people and are subject to appropriation for beneficial uses as provided by law.

Mont. Const. Art. IX, § 3. While the Montana Constitution recognizes the need to protect senior appropriators, it also recognizes a policy to promote the development and use of the waters of the state by the public. This policy is further expressly recognized in the water policy adopted by the Legislature codified at § 85-2-102, MCA, which states in relevant part:

> (1) Pursuant to Article IX of the Montana constitution, the legislature declares that any use of water is a public use and that the waters within the state are the property of the state for the use of its people and are subject to appropriation for beneficial uses as provided in this chapter. . . .
> (3) It is the policy of this state and a purpose of this chapter to encourage the wise use of the state's water resources by making them available for appropriation consistent with this chapter and to provide for the wise utilization, development, and conservation of the waters of the state for the maximum benefit of its people with the least possible degradation of the natural aquatic ecosystems. In pursuit of this policy, the state encourages the development of facilities that store and conserve waters for beneficial use, for the maximization of the use of those waters in Montana . . .

7. Pursuant to § 85-2-302(1), MCA, except as provided in §§ 85-2-306 and 85-2-369, MCA, a person may not appropriate water or commence construction of diversion, impoundment, withdrawal, or related distribution works except by applying for and receiving a permit from the Department. *See* § 85-2-102(1), MCA. An Applicant in a beneficial water use permit proceeding must affirmatively prove all of the applicable criteria in § 85-2-311, MCA. Section § 85-2-311(1) states in relevant part:

> … the department shall issue a permit if the Applicant proves by a preponderance of evidence that the following criteria are met:
> (a) (I) there is water physically available at the proposed point of diversion in the amount that the Applicant seeks to appropriate; and
> (ii) water can reasonably be considered legally available during the period in which the Applicant seeks to appropriate, in the amount requested, based on the records of the department and other evidence provided to the department. Legal availability is determined using an analysis involving the following factors:
> (A) identification of physical water availability;
> (B) identification of existing legal demands on the source of supply throughout

the area of potential impact by the proposed use; and

(C) analysis of the evidence on physical water availability and the existing legal demands, including but not limited to a comparison of the physical water supply at the proposed point of diversion with the existing legal demands on the supply of water.

(b) the water rights of a prior appropriator under an existing water right, a certificate, a permit, or a state water reservation will not be adversely affected. In this subsection (1)(b), adverse effect must be determined based on a consideration of an Applicant's plan for the exercise of the permit that demonstrates that the Applicant's use of the water will be controlled so the water right of a prior appropriator will be satisfied;

(c) the proposed means of diversion, construction, and operation of the appropriation works are adequate;

(d) the proposed use of water is a beneficial use;

(e) 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 use has 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 under the permit;

(f) the water quality of a prior appropriator will not be adversely affected;

(g) the proposed use will be substantially in accordance with the classification of water set for the source of supply pursuant to 75-5-301(1); and

(h) the ability of a discharge permit holder to satisfy effluent limitations of a permit issued in accordance with Title 75, chapter 5, part 4, will not be adversely affected.

(2) The Applicant is required to prove that the criteria in subsections (1)(f) through (1)(h) have been met only if a valid objection is filed. A valid objection must contain substantial credible information establishing to the satisfaction of the department that the criteria in subsection (1)(f), (1)(g), or (1)(h), as applicable, may not be met. For the criteria set forth in subsection (1)(g), only the department of environmental quality or a local water quality district established under Title 7, chapter 13, part 45, may file a valid objection.

To meet the preponderance of evidence standard, “the Applicant, in addition to other evidence demonstrating that the criteria of subsection (1) have been met, shall submit hydrologic or other evidence, including but not limited to water supply data, field reports, and other information developed by the Applicant, the department, the U.S. geological survey, or the U.S. natural resources conservation service and other specific field studies.” Section 85-2-311(5), MCA (emphasis added). The determination of whether an application has satisfied the § 85-2-311, MCA criteria is committed to the discretion of the Department. *Bostwick Properties, Inc. v. Montana Dept. of Natural Resources and Conservation*, 2009 MT 181, ¶ 21. The Department is required grant a permit only if the § 85-2-311, MCA, criteria are proven by the Applicant by a

preponderance of the evidence. Id. A preponderance of evidence is "more probably than not." *Hohenlohe v. DNRC*, 2010 MT 203, ¶¶ 33, 35, 357 Mont. 438, 240 P.3d 628.

8. Pursuant to § 85-2-312, MCA, the Department may condition permits as it deems necessary to meet the statutory criteria:

> (1) (a) The department may issue a permit for less than the amount of water requested, but may not issue a permit for more water than is requested or than can be beneficially used without waste for the purpose stated in the application. The department may require modification of plans and specifications for the appropriation or related diversion or construction. The department may issue a permit subject to terms, conditions, restrictions, and limitations it considers necessary to satisfy the criteria listed in 85-2-311 and subject to subsection (1)(b), and it may issue temporary or seasonal permits. A permit must be issued subject to existing rights and any final determination of those rights made under this chapter.

E.g., Montana Power Co. v. Carey (1984), 211 Mont. 91, 96, 685 P.2d 336, 339 (requirement to grant applications as applied for, would result in, "uncontrolled development of a valuable natural resource" which "contradicts the spirit and purpose underlying the Water Use Act."); *see also*, *In the Matter of Application for Beneficial Water Use Permit No. 65779-76M by Barbara L. Sowers* (DNRC Final Order 1988)(conditions in stipulations may be included if it further compliance with statutory criteria); *In the Matter of Application for Beneficial Water Use Permit No. 42M-80600 and Application for Change of Appropriation Water Right No. 42M-036242 by Donald H. Wyrick* (DNRC Final Order 1994); Admin. R. Mont. (ARM) 36.12.207.

9. The Montana Supreme Court further recognized in *Matter of Beneficial Water Use Permit Numbers 66459-76L, Ciotti: 64988-G76L, Starner*, 278 Mont. 50, 60-61, 923 P.2d 1073, 1079, 1080 (1996), *superseded by legislation on another issue*:

> Nothing in that section [85-2-313], however, relieves an Applicant of his burden to meet the statutory requirements of § 85-2-311, MCA, before DNRC may issue that provisional permit. Instead of resolving doubts in favor of appropriation, the Montana Water Use Act requires an Applicant to make explicit statutory showings that there are unappropriated waters in the source of supply, that the water rights of a prior appropriator will not be adversely affected, and that the proposed use will not unreasonably interfere with a planned use for which water has been reserved.

See also, Wesmont Developers v. DNRC, CDV-2009-823, First Judicial District Court, *Memorandum and Order* (2011). The Supreme Court likewise explained that:

> .... unambiguous language of the legislature promotes the understanding that the Water Use Act was designed to protect senior water rights holders from encroachment by junior appropriators adversely affecting those senior rights.

Montana Power Co., 211 Mont. at 97-98, 685 P.2d at 340; *see also* Mont. Const. art. IX §3(1).

10. An appropriation, diversion, impoundment, use, restraint, or attempted appropriation, diversion, impoundment, use, or restraint contrary to the provisions of § 85-2-311, MCA is invalid. An officer, agent, agency, or employee of the state may not knowingly permit, aid, or assist in any manner an unauthorized appropriation, diversion, impoundment, use, or other restraint. A person or corporation may not, directly or indirectly, personally or through an agent, officer, or employee, attempt to appropriate, divert, impound, use, or otherwise restrain or control waters within the boundaries of this state except in accordance with this § 85-2-311, MCA. Section 85-2-311(6), MCA.

11. The Department may take notice of judicially cognizable facts and generally recognized technical or scientific facts within the Department's specialized knowledge, as specifically identified in this document. ARM 36.12.221(4).

PHYSICAL AVAILABILITY

FINDINGS OF FACT

12. The Applicant is requesting to divert water from two groundwater wells for non-consumptive geothermal use from January 1 to December 31 at a total flow rate of 550 GPM up to 298.38 AF per year. The two extraction wells, Montana Bureau of Mines and Geology (MBMG) Groundwater Information Center (GWIC) IDs 335313 (EX-1) and 335315 (EX-2), would each divert water at a flow rate of 275 GPM. The two injection wells, GWIC IDs 335309 (IN-1) and 335811 (IN-2), would each inject water at a flow rate of 275 GPM back into the aquifer via an open-loop geothermal cooling system.

13. The Applicant provided an Aquifer Testing Addendum (Form 600-ATA) and Aquifer Test Data Form (Form 633) as part of the preapplication meeting. A variance from aquifer testing requirements in ARM 36.12.121(3(a)), 36.12.121(3(e(iii))), 36.12.121(3(g)), and 36.12.121(3(h) was requested by the Applicant. The variance request was reviewed by Evan Norman, DNRC Groundwater Hydrologist, on the Aquifer Testing Review dated April 7, 2025. The variance was granted by the Bozeman Regional Manager Kerri Strasheim on April 14, 2025.

14. The extraction wells EX-1 and EX-2 were completed to 202 and 232 ft below ground surface (bgs) in the tertiary aged valley-fill sediment. The well logs for EX-1 and EX-2 lists sand and gravel, clay-bound gravels, and clay which may act as localized leaky-confining units. The injection wells, GWICC ID 335309 and 335811 (IN-1 & IN-2) were also completed in the same

source aquifer 120DMS at depths of 300 and 215 ft bgs. The wells are on the edge of the Bozeman hydrogeologic subarea (Fan) adjacent to the Upper East Gallatin and Belgrade hydrogeologic subareas mapped by Hackett et al. (1960).

15. The Department-completed Groundwater Permit Technical Analyses Report- Part A, dated July 7, 2025, evaluated the groundwater physical availability in the source aquifer by calculating groundwater flux through a zone of influence (ZOI) corresponding to the 0.01-foot drawdown contour. The 0.01-foot drawdown contour was modeled using a constant pumping rate of 240.7 gpm and -240.7 gpm for the extraction and injection wells, respectively, for one year of pumping. The 0.01-foot drawdown contour has an average width of approximately 14,000 feet perpendicular to direction of groundwater flow to the northwest and is truncated to the East Gallatin River. The calculator for groundwater flux (Q) through the delineated area is given by the following equation:

$$Q = TWi$$

Where: T = Transmissivity = 873 ft^2/day

W = Width of Zone of Influence = 14,000 ft

i = Groundwater gradient (English (2018); Sutherland (2023)) = 0.01 ft/ft

The calculated aquifer flux through ZOI is 122,220 ft^3/day or 1,024 AF/year.

16. The Department finds that the amount of groundwater physically available at the proposed point of diversion is 1,024 AF/year.

17. The Department finds that groundwater can be considered physically available for this non-consumptive proposed use and this use does not affect surface water.

ISSUES RAISED BY PUBLIC COMMENT AND DEPARTMENT RESPONSES

18. The Department received one public comment that included physical availability.

19. Issue 1: The commenter expressed concern about the effect on physical availability in hydraulically connected groundwater sources. (Commenter: Richard Reuter)

20. Response 1: The public commenter owns Certificate of Water Right No. 41H 30170704 for lawn and garden use from a well. The initial availability analysis identified the commenter's water right in the ZOI used to assess physical availability because the point of diversion and place of use legal land description was incorrect. The water right was reissued on April 17, 2026, because

the legal land description for the point of diversion and place of use were corrected. Given the corrected legal land description, the commenter's groundwater well is located approximately 3.7 miles west outside of the 0.01-ft drawdown contour as shown in **Figure 2**.

21. The Department modeled physical availability for the proposed change in the Groundwater Permit Technical Analyses Report- Part A, dated July 7, 2025. The Department identified the Tertiary aged valley-fill sediments (120 DMS) as the source aquifer for the proposed wells. The surficial geology is mapped as Quaternary braided plain alluvium deposits up to 30-feet thick. The Gallatin Valley Quaternary and Tertiary aquifer system contains shallow unconfined, semi-confined (leaky confined), confined, and possibly perched groundwater. The Department utilized aquifer test data to estimate aquifer properties. The estimation of aquifer properties for the production wells was indicative a leaky-confined aquifer system, which can be found in the Quaternary and Tertiary aquifer system. The leaky-confined aquifer solution (Coole-Case 1973) used to estimate aquifer properties considers connection to overlying aquifers. Physical availability was calculated following the Department's standard practice (DNRC, 2019). The Department estimated physical availability by calculating groundwater flux through the Zone of Influence (ZOI), which is delineated by the simulated 0.01-ft drawdown contour that would occur from pumping the proposed well for a period of one year. Groundwater flux is calculated from average groundwater gradient, width of the ZOI, and aquifer Transmissivity, which was determined utilizing aquifer test data submitted by the Applicant pursuant to ARM 36.12.121. The Department found the groundwater flux for the source aquifer to be 1,024 AF/year. The effect of the proposed project on existing water rights and hydraulically connected sources was analyzed as part of the adverse effect criterion.

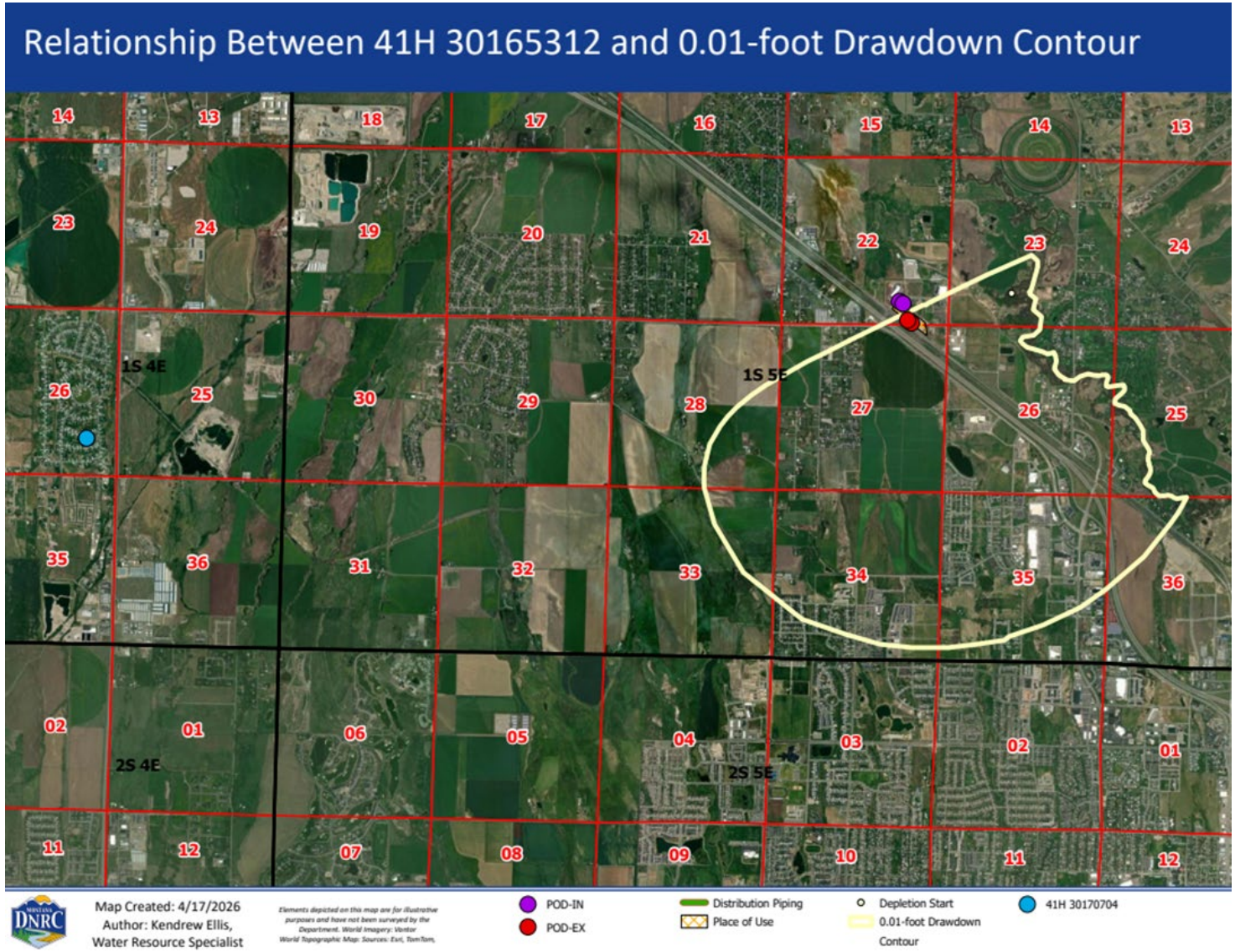

Figure 2. Relationship between public commentor's Water Right, 41H 30165312, and 0.01-foot drawdown contour dated 4/17/2026

22. Issue 2: The commenter expressed concern about the adequacy of the physical availability analysis, specifically relating to the lack of hydrogeologic analysis, aquifer testing, and groundwater modeling in the Draft Preliminary Determination supporting physical availability in the potentially connected shallow aquifer. (Commenter: Richard Reuter)

23. Response: Applicant provided Aquifer Testing Addendum (Form 600-ATA) and Aquifer Test Data Form (Form 633) as outlined in ARM 36.12.121 for the proposed wells. A 72.2-hour aquifer test was conducted on the Production Well, GWIC ID 335315. Manual water level measurements were collected using a Geotech water level meter. Recovery groundwater level data was monitored for 72-hours in the Production Well GWIC ID 335315 and Observation Well GWIC ID 335313. A variance from aquifer testing requirements in ARM 36.12.121(3(a)), 36.12.121(3(e(iii))), 36.12.121(3(g)), and 36.12.121(3(h) was granted by the Bozeman Regional Manager Kerri Strasheim on April 14, 2025, because the Department determined it had enough information to determine aquifer properties necessary to complete its technical analysis. The Department granted a variance to the constant pumping rate in ARM 36.12.121(3)(a) because pumping rates during aquifer tests often fluctuate and require adjustment, and the submitted drawdown data for Observation Well GWIC ID 335313 which was used to determine aquifer properties did not appear to be affected by the slight variations in pumping rates at the start of the aquifer test. The Department granted a variance to the 8-hour drawdown and yield test in ARM.36.12.12(3)(e)(iii) because pumping was not held at a constant rate during the start of these tests, however, this often occurs due to initial flow rate adjustments and other factors. The Department granted a variance to the two-day monitoring of background groundwater levels in ARM.36.12.121(3)(g) because the submitted drawdown and recovery data did not appear to be affected by any background level trends. The Department granted a variance to the water level reporting requirement in ARM 36.12.121(3)(h) because the submitted water level measurements during the first 60-minutes of the drawdown and recovery periods for Observation Well GWIC ID 335313 were frequent enough to show increased rates of water level change which are common at the start and end of pumping during an aquifer test. The Department modeled and analyzed aquifer testing data to determine aquifer properties in the Groundwater Permit Technical Analyses Report-Part A. The aquifer properties were used in forward modeling to evaluate the available water column in the well, quantity of water available in the source aquifer, and potential impacts to groundwater and surface water rights. The Department found extraction wells GWIC ID 335313

and 335315 (Extraction Wells 1 & 2) were completed to 202 and 232 ft below ground surface (bgs) in the Tertiary aged valley-fill sediments (120SDMS). The Injection wells, GWIC IDs 335309 and 335811 (Reinjection Wells 1 & 2) are also completed in the source aquifer 120SDMS. The surficial geology is mapped as Quaternary braided plain alluvium deposits up to 30-feet thick. The Gallatin Valley Quaternary and Tertiary aquifer system contains shallow unconfined, semi-confined (leaky confined), confined, and possibly perched groundwater. The Department utilized aquifer test data to estimate aquifer properties. The estimation of aquifer properties for the production wells was indicative a leaky-confined aquifer system, which can be found in the Quaternary and Tertiary aquifer system. The Department's report demonstrates the surficial geology and Quaternary sediments operate as one aquifer system. The physical availability of the source aquifer was found by calculating groundwater flux through the Zone of Influence (ZOI), which is delineated by the simulated 0.01-ft drawdown contour that would occur from pumping the proposed well for a period of one year. The commenter's groundwater well is located 3.7 miles west outside of the 0.01-ft drawdown contour. Groundwater flux is calculated from average groundwater gradient, width of the ZOI, and aquifer Transmissivity. The Department found 1,024 AF/yr is physically available.

24. The Department found groundwater is physically available for this non-consumptive geothermal proposed use.

25. The public comment regarding the physical availability criterion is addressed in FOF Nos. 18-24. The Department determined that the information provided did not demonstrate that the physical availability criterion was inadequately addressed and the Department will not revalue the criterion. Considering the public comment, the correction to the commenter's water right, and the original analyses conducted, the Department finds water physically available for the proposed permit.

LEGAL AVAILABILITY

FINDINGS OF FACT

26. The Department-completed Groundwater Permit Technical Analyses Report- Part A, dated July 7, 2025, determined 152 active groundwater rights are completed within the ZOI in the aquifer, seen in Appendix A.

27. The volume for each water right in the ZOI was taken from the face value on the abstract. Water rights that did not have an assigned volume required further analysis; these water rights

are denoted with an asterisk in Appendix A. Volumes were assigned based on the type of water right and purpose standards at the time of filing for the water right type. The domestic standard of 1.5 AF was used for Statement of Claim volumes. The lawn and garden standard of 2.5 AF per acre per year was used for lawn and garden water right volumes. The adjudication standard of 30 gallons per day per animal unit was used for stock water right volumes. Irrigation rights were assigned a volume of 2.07 AF per acre, which is low the range of the Department's standard for diverted volume at 60% efficiency in Climatic Area IV: Moderately Low Consumptive Use, per ARM 36.12.115. GWCTs that did not have sufficient information to quantify a volume were assigned a volume of 10 AF, which is the maximum volume they are allowed.

28. The legal demands within the ZOI total to 3100.98 AF per year. Compared to groundwater flux of 1024 AF per year, -2076.98 AF per remain legally available to appropriate after all existing water rights have been satisfied. Table 1 compares the physical groundwater supply, current legal demands, and the Applicant's requested volume. The calculations demonstrate that groundwater is not legally available.

Table 1. Comparison of physical availability, legal availability, and requested volume

Ground Water Flux (AF)	Legal Demands (AF)	Legal Availability (AF)
1024	3100.98	-2076.98
Legal Availability (AF)	**Requested Volume (AF)**	**Net Effect (AF)**
-2076.98	298.38	-2375.36

29. The Applicant proposes to divert water for non-consumptive geothermal use. Water will be extracted from two PODs and will return to the aquifer via two injection wells. The water pumped for non-consumptive geothermal use will almost immediately return to the source of supply, resulting in no net use of groundwater. The Department finds that the proposed permit does not add a new legal demand on the source.

30. Per ARM 36.12.1704, the Department will identify and quantify existing legal demands of water rights for any surface water source that the Department determines will be depleted as a result of the proposed groundwater appropriation. The East Gallatin River was identified as the hydraulically connected perennial surface water source. This proposed project is for non-consumptive use of groundwater. Modeling shows no surface water depletion related to the proposed appropriation, so a quantification and analysis of legal demands for surface water was not completed.

31. The Department finds that groundwater can be considered legally available for this non-consumptive proposed use and that this use does not affect surface water.

ADVERSE EFFECT

FINDINGS OF FACT

32. The Applicant proposes to divert water from two extraction groundwater wells for non-consumptive goethermal use from January 1 to December 31. The non-consumptive geothermal system has water extracted and injected simultaneoulsy; all diverted flows are returned to the production formation. Diversons from the wells can be adjusted and adapted to reduce drawdown in event of a call.

33. Drawdown in nearby wells was modeled using the Applicant's proposed pumping schedule and annual volume. The drawdown in existing wells was modeled using the monthly pumping and injection schedule for five years of pumping. The drawdown is the largest at the end of July of the fifth year using the proposed pumping schedule. The 1-foot drawdown contour extends to a maximum of approximately 4,100 ft from the extraction wells at the end of July of the fifth year of pumping. The 1-foot drawdown contour includes 13 water rights that are predicted to experience drawdown equal to or greater than one foot. A comparison between the modeled drawdown and the existing static water levels is shown in Table 2, indicating that the water rights have available drawdown.

Table 2. Water rights within 1-foot drawdown contour

Water Right No.	Owner	Well Depth (ft)	Static Water Level (ft)	Drawdown (ft)	Available Water Column (ft)
41H 30161243	BRIAN LAPKA	52	17	8.8	26
41H 30103555	PETER E GARCIA; TASHA D GARCIA	63	23	1.7	38
41H 30041929	HENRY J BOUMA	60	16	2.6	41
41H 107475 00	JOHN HECHT	60	17	1.2	42
41H 30149453	BARTIMCO PROPERTIES LLC	72	5	17.2	50
41H 111644 00	JOHN D HECHT; MARY HECHT	60	6	1.4	53
41H 30065502	NATHAN S NAPRSTEK	82	25	1.2	56
41H 59783 00	VANIMAN, CECILIA R TRUST; VANIMAN, DONALD D TRUST	74	10	1.6	62
41H 30105693	MONTANA, STATE OF DEPT OF TRANSPORTATION	80	10	5	65
41H 30149451	BARTIMCO PROPERTIES LLC	88	9	6.9	72
41H 113364 00	CECILIA R VANIMAN; DONALD D VANIMAN	100	12	1.6	86
41H 30047450	CHAD MUESKE			1	
41H 100672 00	VANIMAN, CECILIA R TRUST; VANIMAN, DONALD D TRUST			1.6	

34. The proposed use in non-consumptive, and a net depletion of 0 AF was identified for the hydraulically connected surface water source. No adverse effect will occur to surface water rights as a result of the proposed use.

35. The Department finds that the proposed use appropriation of 550 GPM up to 298.40 AF for non-consumptive geothermal use will not have an adverse effect on existing water users.

ISSUES RAISED BY PUBLIC COMMENT AND DEPARTMENT RESPONSES

36. The Department received one public comment that included adverse effect.

37. Issue 1: The commenter expressed concern about the effect on shallow and domestic groundwater wells and existing groundwater rights as a result of the proposed geothermal system. (Commenter: Richard Reuter)

38. Response: The Department modeled drawdown in existing wells for the proposed change in the Groundwater Permit Technical Analyses Report- Part A, dated July 7, 2025. The Department modeled a 0.01-ft drawdown contour using aquifer properties that were estimated using aquifer testing data submitted by the Applicant pursuant to ARM 36.12.121. The 0.01-foot drawdown contour, or zone of influence (ZOI), has a width of about 14,000 feet in the direction of groundwater flow. The Department identified 152 water rights with diversions in the ZOI, including the commenter's water right. After evaluating the commenter's water right, an error was found in the legal land description of the point of diversion and place of use. The water right was corrected and given the correction, the commenter's water right is approximately 3.7 miles west outside of the 0.01-ft drawdown contour as shown in **Figure 2.** The Department also modeled a 1-foot drawdown contour using the aquifer properties. The 1-foot drawdown contour extends out approximately 4,100 ft from the extraction wells at the end of July of the fifth year of pumping. A total of 13 water rights are predicted to experience drawdown equal to or greater than 1-foot, with known depths ranging from 52-feet bgs to 100-feet bgs. The commenter's water right was not identified to experience a drawdown equal to or greater than 1-foot. Table 2 above indicates rights with known well depths in the 1-foot drawdown contour have available drawdown.

39. Issue 2: The commenter expressed concern about the adverse effect of the proposed pumping rate of the project. (Commenter: Richard Reuter)

40. Response: The Department modeled adverse effect for the proposed change in the Groundwater Permit Technical Analyses Report- Part A, dated July 7, 2025. The Applicant proposes to divert water from two extraction wells to provide water independently to the open-loop geothermal system. Each extraction well has Grundfos 300S200-6B pump, that has a maximum capacity of 317 GPM. The system is designed to have varying flows depending on operational needs but will not exceed a diverted flow rate of 275 GPM from each extraction well (550 GPM total). The Department modeled a drawdown in existing wells using the monthly pumping and injection schedule for five years of pumping. The 1-foot drawdown contour extends to a maximum of approximately 4,100 ft from the extraction wells at the end of July of the fifth year of pumping. A total of 13 water rights are predicted to experience drawdown equal to or greater than 1-foot, with known depths ranging from 52-feet bgs to 100-feet bgs. The commenter's

water right was not identified to experience a drawdown equal to or greater than 1-foot. Table 2 above indicates rights with known well depths in the 1-foot drawdown contour have available drawdown.

41. The public comment regarding the adverse effect criterion is addressed in FOF Nos. 36-40. The Department determined that the information provided did not demonstrate that the adverse effect criterion was inadequately addressed and the Department will not revalue the criterion. Considering the public comment, the correction to the commenter's water right, and the original analyses conducted, the Department finds the proposed permit will not create an adverse effect.

ADEQUATE MEANS OF DIVERSION

FINDINGS OF FACT

42. The Applicant proposes to divert water from groundwater wells EX-1 and EX-2 to provide water independently to the open-loop geothermal system. Each extraction well has a Grundfos 300S200-6B pump, which each has a maximum capacity of 317 GPM. The system is designed to have varying flows depending on operational needs, but will not exceed a diverted flow rate of 275 GPM from each extraction well (total flow of 550 GPM). The Applicant states water will be conveyed from the wells through various pipes and valves that were specifically designed by the project engineer to convey the requested volume and flow. Water diverted from the wells will travel through a series of elbow joints, a heat exchange unit, and gate valves into the building. Water will be conveyed through the building using 6-inch PVC piping to provide geothermal heating and cooling. Water then travels 530 and 660 feet via 6-inch PVC piping and in-line gate valves to the injection wells IN-1 and IN-2 respectively. An in-line gate valve is present before each well then a Spool pitless adapter.

43. Total drawdown and the remaining available water column were determined in the Department-completed Groundwater Permit Technical Analyses Report – Part A. Shown in **Table 3**, total drawdown is the sum of interference drawdown and predicted drawdown with well loss. Two extraction and two injection wells are proposed; interference drawdown was calculated using the pumping and injection schedule for each well.

44. Predicted drawdown with well loss is calculated by dividing the predicted theoretical maximum drawdown by a well efficiency value. Well efficiency is calculated by dividing the maximum modeled drawdown for the aquifer test by the maximum observed drawdown of the aquifer test. The aquifer adjacent to extraction wells GWIC ID 335313 and GWIC ID 335315 would

experience a predicted total drawdown of 54.20 ft and 58.90 ft at the end of the first year, respectively. The remaining available water columns for GWIC ID 335313 and 335315 are approximately 134 and 159 ft, respectively. The remaining available water column is equal to the available drawdown above the bottom of the perforations minus total drawdown including interference drawdown (**Table 3**).

Table 3. Remaining available water column for EX-1 and EX-2 wells

Drawdown Estimate	GWIC ID 335313	GWIC ID 335315
Total Depth at Bottom of Perforated Interval (ft btc)[1]	204	234
Pre-Test Static Water Level (ft btc)	16.06	16.05
Available Drawdown Above Bottom of Perforations (ft)	188	218
Aquifer Test Observed Drawdown (ft)	73.69	87.86
Modeled Drawdown Using Average Aquifer Test Rate (ft)	81.00	77.00
Well Efficiency (%)	100	88
Predicted Theoretical Maximum Drawdown from assumed monthly pumping schedule (ft)	52.00	52.00
Predicted Drawdown with Well Loss (ft)	52.00	59.33
Interference Drawdown (ft)	2.20	-0.40
Total Drawdown (ft)	54.20	58.90
Remaining Available Water Column (ft)	**134**	**159**

[1]The total well depth measuring point (bgs) was adjusted to the top of well casing based on a 2-foot stickup reported on the well logs.

45. The Department finds the proposed means of diversion and conveyance are adequate.

BENEFICIAL USE

FINDINGS OF FACT

46. The Applicant proposes to divert 298.38 AF of groundwater, year-round, at a total flow rate of 550 GPM (275 GPM per well) to provide geothermal cooling for the commercial building in SESWSE and SWSESE Section 22 and NWNENE Section 27, T1S, R5E, all in Gallatin County. The commercial building is 132,00 square feet, composed of 320 offices and 494 parking spaces.

47. The purpose is to provide cooling capacity to the commercial building and is designed as a non-consumptive open-loop system. An open-loop geothermal system uses extraction wells to pump groundwater to the heat pump which efficiently heat/cools the building, and, in this case, injection wells return the water back to the same groundwater source.

48. The Department does not have a standard for this non-consumptive geothermal use. The proposed volume, 298.38 AF, is the engineered volume required to bring cool water to the system. The requested volume was based on cooling demands. No water is proposed to be consumed by the non-consumptive geothermal use.

49. The requested total flow rate of 550 GPM was based on the peak cooling day demands. The existing pump and pipeline system are capable of diverting and delivering a total of 550 GPM to the geothermal system.

50. The Department finds the proposed flow rate of 550 GPM and diverted volume of 298.38 AF for year-round, non-consumptive geothermal use a beneficial use of water.

POSSESSORY INTEREST

FINDINGS OF FACT

51. The Applicant signed the application form affirming the Applicant has 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.

CONCLUSIONS OF LAW

BASIN CLOSURE

52. DNRC cannot grant an application for a permit to appropriate water within the upper Missouri River basin until final decrees have been issued in accordance with Title 85, chapter 2, part 2, MCA, for all of the sub-basins of the upper Missouri River basin. Section 85-2-343(1), MCA. The upper Missouri River basin consists of the drainage area of the Missouri River and its tributaries above Morony Dam. (§ 85-2-342(3), MCA). The proposed well(s) are located within the upper Missouri River basin closure area.

53. This application is for non-consumptive geothermal use. The application falls under the exceptions for the basin closure, 85-2-343, MCA. 85-2-343 (2)(b), MCA, allows for a permit application for a non-consumptive use.

54. In reviewing an application for groundwater in a closed basin, the District Court in *Sitz Ranch v. DNRC* observed:

> The basin from which Applicants wish to pump water is closed to further appropriations by the legislature. The tasks before an Applicant to become eligible for an exception are daunting. The legislature set out the criteria discussed above (§85-2-311, MCA) and placed the burden of proof squarely on the Applicant. The Supreme Court has instructed that those burdens are exacting. It is inescapable

> that an Applicant to appropriate water in a closed basin must withstand strict scrutiny of each of the legislatively required factors.

Sitz Ranch v. DNRC, DV-10-13390, Fifth Judicial District Court, *Order Affirming DNRC Decision*, (2011) Pg. 7.

55. A basin closure exception does not relieve the Department of analyzing § 85-2-311, MCA criteria. Qualification under a basin closure exception allows the Department to accept an application for processing. The Applicant must still prove the requisite criteria. *E.g.*, *In the Matter of Application for Beneficial Water Use Permit No. 41K-30043385 by Marc E. Lee* (DNRC Final Order 2011); *In the Matter of Application for Beneficial Water Use Permit No. 41K-30045713 by Nicholas D. Konen*, (DNRC Final Order 2011).

PHYSICAL AVAILABILITY

56. Pursuant to § 85-2-311(1)(a)(i), MCA, an Applicant must prove by a preponderance of the evidence that "there is water physically available at the proposed point of diversion in the amount that the Applicant seeks to appropriate."

57. It is the Applicant's burden to produce the required evidence. *In the Matter of Application for Beneficial Water Use Permit No. 27665-41I by Anson* (DNRC Final Order 1987) (Applicant produced no flow measurements or any other information to show the availability of water; permit denied); *In the Matter of Application to Change Water Right No. 41H 1223599 by MGRR #1, LLC.,* (DNRC Final Order 2005).

58. An Applicant must prove that at least in some years there is water physically available at the point of diversion in the amount the Applicant seeks to appropriate. *In the Matter of Application for Beneficial Water Use Permit No. 72662s76G by John Fee and Don Carlson* (DNRC Final Order 1990); *In the Matter of Application for Beneficial Water Use Permit No. 85184s76F by Wills Cattle Co. and Ed McLean* (DNRC Final Order 1994).

59. The Applicant has proven that water is physically available at the proposed point of diversion in the amount Applicant seeks to appropriate. Section 85-2-311(1)(a)(i), MCA. (FOF 12-24).

LEGAL AVAILABILITY

60. Pursuant to § 85-2-311(1)(a), MCA, an Applicant must prove by a preponderance of the evidence that:

> (ii) water can reasonably be considered legally available during the period in which the Applicant seeks to appropriate, in the amount requested, based on the records of the department and other evidence provided to the department. Legal availability is determined using an analysis involving the following factors:

(A) identification of physical water availability;
(B) identification of existing legal demands on the source of supply throughout the area of potential impact by the proposed use; and
(C) analysis of the evidence on physical water availability and the existing legal demands, including but not limited to a comparison of the physical water supply at the proposed point of diversion with the existing legal demands on the supply of water.

E.g., ARM 36.12.101 and 36.12.120; *Montana Power Co.*, 211 Mont. 91, 685 P.2d 336 (Permit granted to include only early irrigation season because no water legally available in late irrigation season); *In the Matter of Application for Beneficial Water Use Permit No. 81705-g76F by Hanson* (DNRC Final Order 1992).

61. It is the Applicant's burden to present evidence to prove water can be reasonably considered legally available. *Sitz Ranch v. DNRC*, DV-10-13390, Fifth Judicial District Court, *Order Affirming DNRC Decision*, (2011) Pg. 7 (the legislature set out the criteria (§ 85-2-311, MCA) and placed the burden of proof squarely on the Applicant. The Supreme Court has instructed that those burdens are exacting.); *see also Matter of Application for Change of Appropriation Water Rights Nos. 101960-41S and 101967-41S by Royston* (1991), 249 Mont. 425, 816 P.2d 1054 (burden of proof on Applicant in a change proceeding to prove required criteria); *In the Matter of Application to Change Water Right No. 41H 1223599 by MGRR #1, LLC.*, (DNRC Final Order 2005))(it is the Applicant's burden to produce the required evidence.); *In the Matter of Application for Beneficial Water Use Permit No. 41H 30023457 by Utility Solutions, LLC* (DNRC Final Order 2007) (permit denied for failure to prove legal availability); *see also* ARM 36.12.1705.

62. Pursuant to *Montana Trout Unlimited v. DNRC*, 2006 MT 72, 331 Mont. 483, 133 P.3d 224, the Department recognizes the connectivity between surface water and ground water and the effect of pre-stream capture on surface water. *E.g., Wesmont Developers v. DNRC*, CDV-2009-823, Montana First Judicial District Court, *Memorandum and Order*, (2011) Pgs. 7-8; *In the Matter of Beneficial Water Use Permit Nos. 41H 30012025 and 41H 30013629 by Utility Solutions LLC* (DNRC Final Order 2006) (mitigation of depletion required), *affirmed*, *Faust v. DNRC et al.*, Cause No. CDV-2006-886, Montana First Judicial District (2008); *see also Robert and Marlene Takle v. DNRC et al.*, Cause No. DV-92-323, Montana Fourth Judicial District for Ravalli County, *Opinion and Order* (June 23, 1994) (affirming DNRC denial of Applications for Beneficial Water Use Permit Nos. 76691-76H, 72842-76H, 76692-76H and 76070-76H; underground tributary flow cannot be taken to the detriment of other appropriators including surface appropriators and ground water appropriators must prove unappropriated surface water, *citing Smith v. Duff*, 39 Mont. 382, 102

P. 984 (1909), and *Perkins v. Kramer*, 148 Mont. 355, 423 P.2d 587 (1966)); *In the Matter of Beneficial Water Use Permit No. 80175-s76H by Tintzman* (DNRC Final Order 1993)(prior appropriators on a stream gain right to natural flows of all tributaries in so far as may be necessary to afford the amount of water to which they are entitled, *citing Loyning v. Rankin* (1946), 118 Mont. 235, 165 P.2d 1006; *Granite Ditch Co. v. Anderson* (1983), 204 Mont. 10, 662 P.2d 1312; *Beaverhead Canal Co. v. Dillon Electric Light & Power Co.* (1906), 34 Mont. 135, 85 P. 880); *In the Matter of Beneficial Water Use Permit No.* 63997*-42M by Joseph F. Crisafulli* (DNRC Final Order 1990) (since there is a relationship between surface flows and the ground water source proposed for appropriation, and since diversion by Applicant's well appears to influence surface flows, the ranking of the proposed appropriation in priority must be as against all rights to surface water as well as against all groundwater rights in the drainage).

63. Because the Applicant bears the burden of proof as to legal availability, the Applicant must prove that the proposed appropriation will not result in prestream capture or induced infiltration and cannot limit its analysis to ground water. Section 85-2-311(a)(ii), MCA. Absent such proof, the Applicant must analyze the legal availability of surface water in light of the proposed ground water appropriation. *In the Matter of Application for Beneficial Water Use Permit No. 41H 30023457 By Utility Solutions LLC* (DNRC Final Order 2007) (permit denied); *In the Matter of Application for Beneficial Water Use Permit No. 76H-30028713 by Patricia Skergan and Jim Helmer* (DNRC Final Order 2009); *Sitz Ranch v. DNRC*, DV-10-13390, Fifth Judicial District Court, *Order Affirming DNRC Decision*, (2011) Pg. 5 ; *Wesmont Developers v. DNRC*, CDV-2009-823, First Judicial District Court, *Memorandum and Order*, (2011) Pgs. 11-12.

64. Where a proposed ground water appropriation depletes surface water, Applicant must prove legal availability of amount of depletion of surface water throughout the period of diversion either through a mitigation /aquifer recharge plan to offset depletions or by analysis of the legal demands on, and availability of, water in the surface water source. *Robert and Marlene Takle v. DNRC*, Cause No. DV-92-323, Montana Fourth Judicial District for Ravalli County, *Opinion and Order* (June 23, 1994); *In the Matter of Beneficial Water Use Permit Nos. 41H 30012025 and 41H 30013629 by Utility Solutions LLC* (DNRC Final Order 2006) (permits granted), *affirmed*, *Faust v. DNRC et al.*, Cause No. CDV-2006-886, Montana First Judicial District (2008); *In the Matter of Application for Beneficial Water Use Permit 41H 30019215 by Utility Solutions LLC* (DNRC Final Order 2007 *)*(permit granted*), affirmed*, *Montana River Action Network et al. v. DNRC*, Cause No. CDV-2007-602, Montana First Judicial District (2008); *In the Matter of Application for Beneficial*

Water Use Permit No. 41H 30023457 by Utility Solutions LLC (DNRC Final Order 2007) (permit denied for failure to analyze legal availability outside of irrigation season (where mitigation applied)); *In the Matter of Application for Beneficial Water Use Permit No. 41H 30026244 by Utility Solutions LLC* (DNRC Final Order 2008); *In the Matter of Application for Beneficial Water Use Permit No. 76H-30028713 by Patricia Skergan and Jim Helmer* (DNRC Final Order 2009)(permit denied in part for failure to analyze legal availability for surface water depletion); *Sitz Ranch v. DNRC*, DV-10-13390, Fifth Judicial District Court, *Order Affirming DNRC Decision*, (2011) Pg. 5 (Court affirmed denial of permit in part for failure to prove legal availability of stream depletion to slough and Beaverhead River); *Wesmont Developers v. DNRC*, CDV-2009-823, First Judicial District Court, *Memorandum and Order*, (2011) Pgs. 11-12 ("DNRC properly determined that Wesmont cannot be authorized to divert, either directly or indirectly, 205.09 acre-feet from the Bitterroot River without establishing that the water does not belong to a senior appropriator"; Applicant failed to analyze legal availability of surface water where projected surface water depletion from groundwater pumping); *In the Matter of Application for Beneficial Water Use Permit No. 76D-30045578 by GBCI Other Real Estate, LLC* (DNRC Final Order 2011) (in an open basin, Applicant for a new water right can show legal availability by using a mitigation/aquifer recharge plan or by showing that any depletion to surface water by groundwater pumping will not take water already appropriated; development next to Lake Koocanusa will not take previously appropriated water). Applicant may use water right claims of potentially affected appropriators as a substitute for "historic beneficial use" in analyzing legal availability of surface water under § 85-2-360(5), MCA*. Royston, supra*.

65. Applicant has proven by a preponderance of the evidence that water can reasonably be considered legally available during the period in which the Applicant seeks to appropriate, in the amount requested, based on the records of the Department and other evidence provided to the Department. Section 85-2-311(1)(a)(ii), MCA. (FOF 25-30).

ADVERSE EFFECT

66. Pursuant to § 85-2-311(1)(b), MCA, the Applicant bears the affirmative burden of proving by a preponderance of the evidence that the water rights of a prior appropriator under an existing water right, a certificate, a permit, or a state water reservation will not be adversely affected. Analysis of adverse effect must be determined based on a consideration of an Applicant's plan for the exercise of the permit that demonstrates that the Applicant's use of the water will be controlled so the water right of a prior appropriator will be satisfied. *See Montana Power Co.*, 211

Mont. 91, 685 P.2d 336 (1984) (purpose of the Water Use Act is to protect senior appropriators from encroachment by junior users); *Bostwick Properties, Inc.*, ¶ 21.

67. An Applicant must analyze the full area of potential impact under the § 85-2-311, MCA criteria. *In the Matter of Beneficial Water Use Permit No. 76N-30010429 by Thompson River Lumber Company* (DNRC Final Order 2006). While § 85-2-361, MCA, limits the boundaries expressly required for compliance with the hydrogeologic assessment requirement, an Applicant is required to analyze the full area of potential impact for adverse effect in addition to the requirement of a hydrogeologic assessment. *Id.* ARM 36.12.120(5).

68. Applicant must prove that no prior appropriator will be adversely affected, not just the objectors. *Sitz Ranch v. DNRC*, DV-10-13390, Fifth Judicial District Court, *Order Affirming DNRC Decision*, 4 (2011).

69. In analyzing adverse effect to other appropriators, an Applicant may use the water rights claims of potentially affected appropriators as evidence of their "historic beneficial use." *See Matter of Application for Change of Appropriation Water Rights Nos. 101960-41S and 101967-41S by Royston*, 249 Mont. 425, 816 P.2d 1054 (1991).

70. It is the Applicant's burden to produce the required evidence. *E.g., Sitz Ranch v. DNRC*, DV-10-13390, Fifth Judicial District Court, *Order Affirming DNRC Decision*, 7 (2011) (legislature has placed the burden of proof squarely on the Applicant); *In the Matter of Application to Change Water Right No. 41H 1223599 by MGRR #1, LLC.*, (DNRC Final Order 2005). The Department is required to grant a permit only if the § 85-2-311, MCA, criteria are proven by the Applicant by a preponderance of the evidence. *Bostwick Properties, Inc.*, ¶ 21.

71. Section 85-2-311 (1)(b) of the Water Use Act does not contemplate a de minimis level of adverse effect on prior appropriators. *Wesmont Developers v. DNRC*, CDV-2009-823, First Judicial District Court, *Memorandum and Order*, 8 (2011).

72. The Applicant has proven by a preponderance of the evidence that the water rights of a prior appropriator under an existing water right, a certificate, a permit, or a state water reservation will not be adversely affected. Section 85-2-311(1)(b), MCA. (FOF 31-41).

ADEQUATE DIVERSION

73. Pursuant to § 85-2-311(1)(c), MCA, an Applicant must demonstrate that the proposed means of diversion, construction, and operation of the appropriation works are adequate.

74. The adequate means of diversion statutory test merely codifies and encapsulates the case law notion of appropriation to the effect that the means of diversion must be reasonably effective, i.e., must not result in a waste of the resource*. In the Matter of Application for Beneficial Water Use Permit No. 33983s41Q by Hoyt* (DNRC Final Order 1981); § 85-2-312(1)(a), MCA.

75. Applicant has proven by a preponderance of the evidence that the proposed means of diversion, construction, and operation of the appropriation works are adequate for the proposed beneficial use. Section 85-2-311(1)(c), MCA (FOF 42-45).

BENEFICIAL USE

76. Under § 85-2-311(1)(d), MCA, an Applicant must prove by a preponderance of the evidence the proposed use is a beneficial use.

77. An appropriator may appropriate water only for a beneficial use. See also, § 85-2-301 MCA. It is a fundamental premise of Montana water law that beneficial use is the basis, measure, and limit of the use. *E.g.*, *McDonald*; *Toohey v. Campbell* (1900), 24 Mont. 13, 60 P. 396. The amount of water under a water right 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, Montana First Judicial District Court, Lewis and Clark County (2003), *affirmed on other grounds*, 2005 MT 60, 326 Mont. 241, 108 P.3d 518; *In The Matter Of Application For Beneficial Water Use Permit No. 43C 30007297 by Dee Deaterly* (DNRC Final Order), *affirmed other grounds*, *Dee Deaterly v. DNRC* , Cause No. 2007-186, Montana First Judicial District, *Order Nunc Pro Tunc on Petition for Judicial Review* (2009); *Worden v. Alexander* (1939), 108 Mont. 208, 90 P.2d 160; *Allen v. Petrick* (1924), 69 Mont. 373, 222 P. 451; *In the Matter of Application for Beneficial Water Use Permit No. 41S-105823 by French* (DNRC Final Order 2000).

78. Amount of water to be diverted must be shown precisely. *Sitz Ranch v. DNRC*, DV-10-13390, Fifth Judicial District Court, *Order Affirming DNRC Decision*, 3 (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).

79. It is the Applicant's burden to produce the required evidence. *Bostwick Properties, Inc. v. DNRC*, 2013 MT 48, ¶ 22, 369 Mont. 150, 296 P.3d 1154 ("issuance of the water permit itself does not become a clear, legal duty until [the applicant] proves, by a preponderance of the evidence, that the required criteria have been satisfied"); *Sitz Ranch v. DNRC*, DV-10-13390, Fifth

Judicial District Court, *Order Affirming DNRC Decision*, (2011) Pg. 7; *In the Matter of Application to Change Water Right No. 41H 1223599 by MGRR #1, LLC.*, (DNRC Final Order 2005); *see also Royston; Ciotti*.

80. Applicant proposes to use water for non-consumptive geothermal use which is a recognized beneficial use. Section 85-2-102(5), MCA. Applicant has proven by a preponderance of the evidence non-consumptive geothermal is a beneficial use and that 298.38 AF of diverted volume and total flow rate of 550 GPM is the amount needed to sustain the beneficial use. Section 85-2-311(1)(d), MCA. (FOF 46-50).

POSSESSORY INTEREST

81. Pursuant to § 85-2-311(1)(e), MCA, an Applicant must prove by a preponderance of the evidence 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, or if the proposed use has 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 under the permit.

82. Pursuant to ARM 36.12.1802:

> (1) An Applicant or a representative shall sign the application affidavit to affirm the following:
> (a) the statements on the application and all information submitted with the application are true and correct and
> (b) except in cases of an instream flow application, or where the application is for sale, rental, distribution, or is a municipal use, or in any other context in which water is being supplied to another and it is clear that the ultimate user will not accept the supply without consenting to the use of water on the user's place of use, the Applicant has possessory interest in the property where the water is to be put to beneficial use or has the written consent of the person having the possessory interest.
> (2) If a representative of the Applicant signs the application form affidavit, the representative shall state the relationship of the representative to the Applicant on the form, such as president of the corporation, and provide documentation that establishes the authority of the representative to sign the application, such as a copy of a power of attorney.
> (3) The department may require a copy of the written consent of the person having the possessory interest.

83. The Applicant has proven by a preponderance of the evidence 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. Section 85-2-311(1)(e), MCA. (FOF 51).

PRELIMINARY DETERMINATION

Subject to the terms, analysis, and conditions in this Order, the Department preliminarily determines that this Application for Beneficial Water Use Permit No. 41H 30165312 should be granted.

The Department determines the Applicant may divert water from groundwater, by means of two extraction wells at depths 202 ft and 232 ft. The two extraction wells are located in SWSESE Section 22, T1S, R5E, Gallatin County (EX-1 and EX-2). The two injection wells depths are 300 ft and 215 ft. The two injection wells are located in SESWSE Section 22, T1S, R5E, Gallatin County (IN-1 and IN-2). The Applicant is authorized to divert at a total flow rate of 550 GPM up to 298.38 AF from January 1 to December 31 for year-round, non-consumptive geothermal use. The authorized place of use is in SESWSE and SWSESE Section 22 and NWNENE Section 27, T1S, R5E, all in Gallatin County. The maximum flow rate and volume that will be diverted from groundwater under the new appropriation cannot exceed 550 GPM and 298.38 AF.

REVISED 12-2023

NOTICE

The Department will provide public notice of this application and the Department's Preliminary Determination to Grant pursuant to § 85-2-307, MCA. The Department will set a deadline for objections to this application pursuant to §§ 85-2-307, and -308, MCA. If this application receives a valid objection, it will proceed to a contested case proceeding pursuant to Title 2 Chapter 4 Part 6, MCA, and § 85-2-309, MCA. If this application receives no valid objection or all valid objections are unconditionally withdrawn, the Department will grant this application as herein approved. If this application receives a valid objection(s) and the valid objection(s) are conditionally withdrawn, the Department will consider the proposed condition(s) and grant the application with such conditions as the Department decides necessary to satisfy the applicable criteria. Sections 85-2-310, -312, MCA.

Dated this 24 day of April, 2026.

Kerri Strasheim, Manager
Bozeman Regional Office
Montana Department of Natural Resources and Conservation

REVISED 12-2023

CERTIFICATE OF SERVICE

This certifies that a true and correct copy of the PRELIMINARY DETERMINATION TO GRANT was served upon all parties listed below on this 24 day April ,2026, by first class United States mail.

BARNARD CONSTRUCTION
3520 ROYAL WOLF WAY
BOZEMAN, MT 59718

AND

PAT THOMSON, WET (CONSULTANT)
VIA EMAIL: PTHOMSON@WATERENVTECH.COM

BOZEMAN Regional Office, (406) 586-3136