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

*** * * * * * ***

APPLICATION FOR BENEFICIAL WATER USE PERMIT NO. 43Q 30107217 BY BILLINGS PUBLIC SCHOOLS DISTRICT #2	**)** **)** **)**	**PRELIMINARY DETERMINATION TO GRANT PERMIT**

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On June 27, 2016, Billings Public Schools District #2 (Applicant) submitted Application for Beneficial Water Use Permit No. 43Q 30107217 to the Billings Water Resources Office of the Department of Natural Resources and Conservation (Department or DNRC) for 140 GPM flow rate and 31.75 AF volume for irrigation. The Department published receipt of the Application on its website. The Applicant submitted a request for a variance from aquifer testing requirements on June 3, 2016. The variance was requested for ARM 36.12.121(3)(a) that requires pumping be maintained at a constant rate equal to or greater that the proposed pumping rate. The Applicant proposes four wells none of which could sustain the full requested flow rate. The variance was granted on July 12, 2016. The Application was determined to be correct and complete as of September 12, 2016. An Environmental Assessment for this Application was completed on September 12, 2016. An Interim Permit was issued on September 12, 2016.

INFORMATION

The Department considered the following information submitted by the Applicant.

Application as filed:

- Application for Beneficial Water Use Permit, Form 600
- Maps:
  - USGS topographic map depicting the project location
  - Site map showing place of use and points of diversion
- Form 633 Aquifer Test Data in electronic format
- Request for variance from ARM 36.12.121(3)(a) requiring pumping during the aquifer test at or above the requested flow rate.

- Letter from Kimberly Overcast, Regional Manager, dated July 12, 2016, granting the June 3, 2016, variance request

Information within the Department's Possession/Knowledge

- Aquifer Test Report by Department hydrogeologist, Attila Folnagy, dated July 25, 2016
- Depletion Report by Department hydrogeologist, Attila Folnagy, dated July 26, 2016
- Monthly flow measurements of Five Mile Creek by the Department between April and October, 2012.
- Preliminary Determination for Application 43Q 30068497

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). **NOTE:** Department of DNRC means the Department of Natural Resources & Conservation; CFS means cubic feet per second; GPM means gallons per minute; AF means acre-feet; AC means acres; AF/YR means acre-feet per year; and POD means point of diversion.

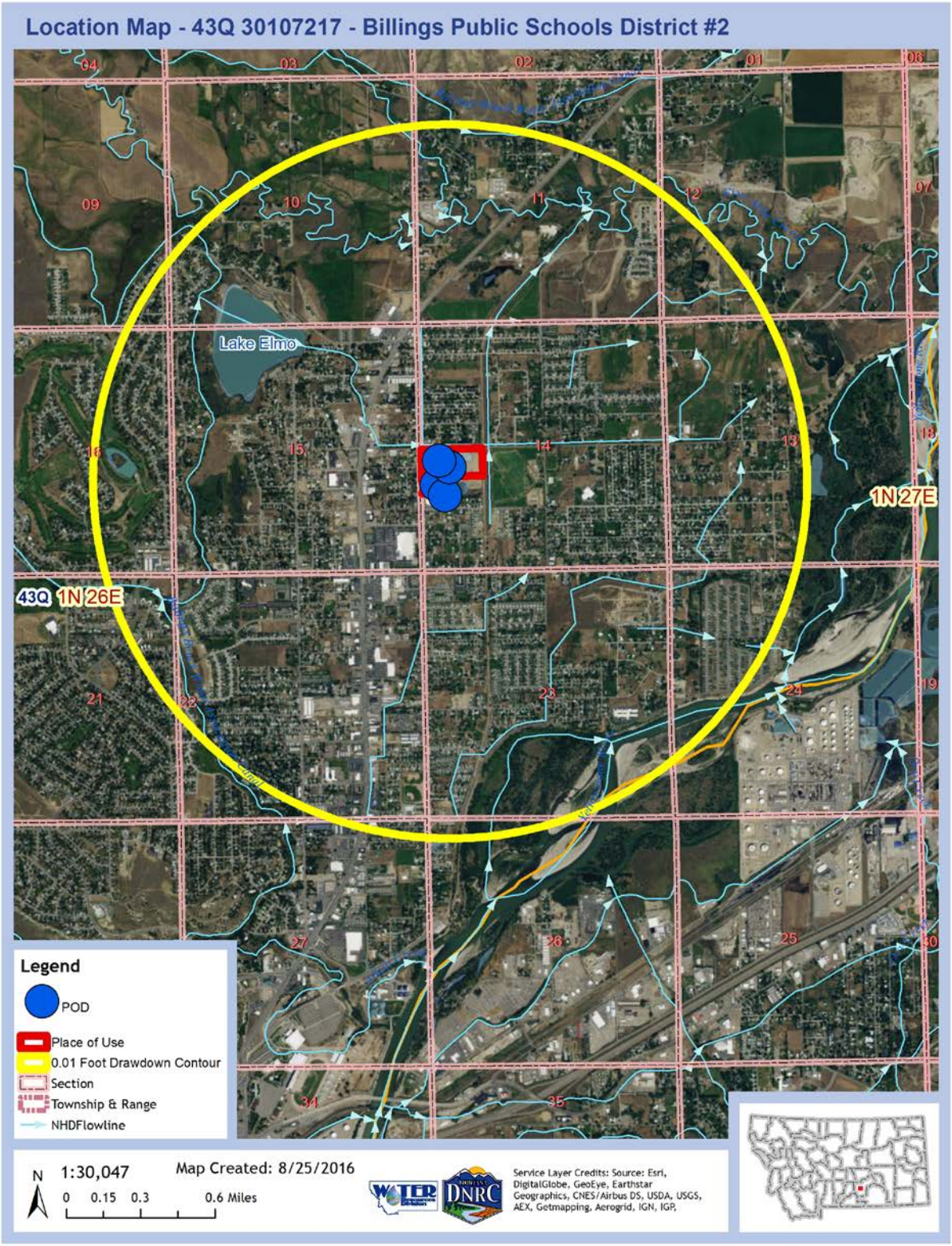
PROPOSED APPROPRIATION

FINDINGS OF FACT

1. The Applicant proposes to divert groundwater, by means of four wells, from May 1 to October 15 at 140 GPM up to 31.75 AF from two points in the SWNWSW Section 14 T1N R26E and two points in the NWNWSW Section 14 T1N R26E, Yellowstone County, for irrigation use on 12.7 AC from May 1 to October 15. The place of use is generally located in the NWSW Section 14 T1N R26E, Yellowstone County approximately 2,000 feet east of Main Street and 5,000 feet southeast of Lake Elmo in the Billings Heights at the Medicine Crow Middle School. The location of the project and the location and designation of the wells are shown in the following maps.

2. The proposed wells are located approximately 600 feet west of the Holling Drain, 5,300 feet south of Five Mile Creek and 6,500 feet west of the Yellowstone River.

3. The consumptive use of the proposed appropriation is estimated at 25.7 AF/YR.


Location Map - 43Q 30107217 - Billings Public Schools District #2
Lake Elmo
1N 27E
43Q 1N 26E
Legend
POD
Place of Use
0.01 Foot Drawdown Contour
Section
Township & Range
NHDFlowline
N
1:30,047
Map Created: 8/25/2016
0 0.15 0.3 0.6 Miles
Service Layer Credits: Source: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AEX, Getmapping, Aerogrid, IGN, IGP,

Site Map - 43Q 30107217 - Billings Public Schools District #2
MCMS #2
MCMS #1
43Q
1N 26E
14
15
BLL
BHMB
Legend
POD
Place of Use
0.01 Foot Drawdown Contour
Section
Township & Range
NHDFlowline
N
1:2,420
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Service Layer Credits: Source: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AEX, Getmapping, Aerogrid, IGN, IGP,

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

GENERAL CONCLUSIONS OF LAW

4. 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 . . .

5. 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." § 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.

6. 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.

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

8. 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. § 85-2-311(6), MCA.

9. 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

10. A 25-hour aquifer test was conducted on May 10-11, 2016, at an average flow rate of 106 GPM. The pumping well was MCMS #1 and MCMS #2 acted as an observation well. The well was tested at 76% of the requested flow rate of 140 GPM. The Applicant received a variance from aquifer testing requirements (ARM 36.12.121(3)(a)) requiring that the pumping well be pumped at a constant rate equal to or greater than the proposed rate on July 12, 2016. Maximum drawdown at the end of pumping was 3.8 feet below the static water level of 12 feet below

ground surface (bgs). The observation well was 226 feet from the pumping well and experienced maximum drawdown of 0.39 feet from the static water level of 12.83 feet bgs.

11. Department Hydrogeologist, Attila Folnagy, modeled the results of the aquifer test and recommended a transmissivity of 5,339 ft^2/day based on a Cooper-Jacob (1946) solution for the observation well. This transmissivity is consistent with other aquifer test results in the sand and gravel terrace deposits in the Yellowstone River Valley. A S_y value of 0.1 and a groundwater gradient of 0.002 ft/ft were taken from the literature.

12. Using the Theis (1935) solution, a constant pumping rate of 42.8 GPM (the flow rate required to produce the requested volume over the period of diversion) for 168 days and aquifer properties from above, the modeled 0.01 foot drawdown contour occurs at 7,650 feet from the wells. Annual groundwater flux through the region is given by the equation, Q = TWi, where T is transmissivity, W is width of the zone of influence and i is the groundwater gradient. Using transmissivity of 5,339 ft^2/day, width equal to 15,300 feet and a groundwater gradient from Olson (2005) of 0.002 ft/ft, annual groundwater flux is 163,373 ft^3/day (5,339 ft^2/day x 15,300 ft x 0.002 ft/ft) or 1,369 AF/YR.

13. Department Hydrogeologist, Attila Folnagy, examined local geology and available well logs and determined that Five Mile Creek downstream of the SE quarter of Section 10 T1N R26E is hydraulically connected to the source aquifer. Information pertaining to the physical availability of water in the potentially depleted reach of Five Mile Creek is contained below under Adverse Effect (FOF 32).

CONCLUSIONS OF LAW

14. 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."

15. 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).

16. 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).

17. The Applicant has proven that water is physically available at the proposed point of diversion in the amount Applicant seeks to appropriate. § 85-2-311(1)(a)(i), MCA. (FOF 10 – 13)

Legal Availability:

FINDINGS OF FACT

18. There are 440 existing water rights within the zone of influence defined by the 0.01 foot drawdown contour. A list of these water rights is in the file. Of those, 417 are Groundwater Certificates, 76 of which have no recorded volume. The legal demand for these water rights was taken as 1.84 AF representing the average volume of the Groundwater Certificates for which volumes are recorded. Total annual legal demand on groundwater within the zone of influence is 810.69 AF/YR.

19. Below is a comparison of the calculated physical water supply and current legal demands for groundwater.

Physically Available (AF/year)	Existing Legal Demands (AF/year)	Physically Available Minus Existing Legal Demands (AF/year)
1,369	810.69	558.31

20. Five Mile Creek downstream of the SE quarter of Section 10 T1N R26E is hydraulically connected to the source aquifer. Information pertaining to the legal availability of water in the potentially depleted reach of Five Mile Creek is contained below under Adverse Effect (FOF 33 - 35).

CONCLUSIONS OF LAW

21. 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).

22. 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.

23. 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.) 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.§ 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.

24. 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 *et al.*, 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 et al., 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.

25. A flow of water on a given date does not show that water is legally available without showing that all prior appropriators were diverting all claimed water at that moment. Sitz Ranch v. DNRC, DV-10-13390, Fifth Judicial District Court, *Order Affirming DNRC Decision*, (2011) Pgs. 5-6. A flow of water past a point on a particular date or dates does not demonstrate that water is legally available. Id.

26. In analyzing legal availability for surface water, applicant was required to evaluate legal demands on the source of supply throughout the "area of potential impact" by the proposed use under §85-2-311(1)(a)(ii), MCA, not just within the "zone of influence." Sitz Ranch v. DNRC, DV-10-13390, Fifth Judicial District Court, *Order Affirming DNRC Decision*, (2011) Pg. 6.

27. *In the Matter of Beneficial Water Use Permit No. 62935-s76LJ by Crop Hail Management* (DNRC Final Order 1991)(Applicant showed water physically available for appropriation by producing evidence based on upstream diversions; however, he failed to show water legally available with information of downstream uses).

28. Applicant has proven by a preponderance of the evidence that groundwater 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.§ 85-2-311(1)(a)(ii), MCA. (FOF 18, 19)

Adverse Effect

FINDINGS OF FACT

29. The Applicant's plan to prevent adverse effect if call is made is to limit irrigation to every third day. If that is not sufficient, the Applicant will limit irrigation to athletic fields or cease irrigation entirely.

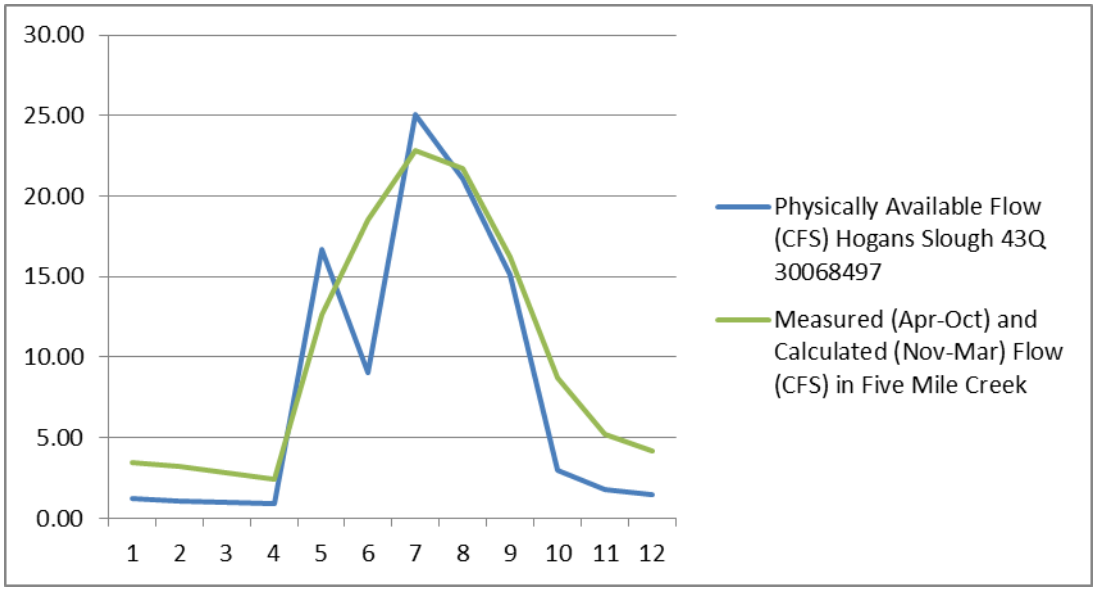
30. Using the aquifer parameters given above and a monthly pumping schedule that accounts for lawn and garden irrigation based upon the IWR for Billings, the modeled one foot drawdown contour occurs at 250 feet from the proposed well. There is one water right, owned by the Applicant (43Q 54080-00), in the source aquifer predicted to experience drawdown greater than one foot. With a well depth of 27 feet and a static water level of 10.8 feet, that well would have 15.2 feet of addition available drawdown after drawdown from this appropriation.

31. Based upon analysis of regional geology and local well logs, Department hydrogeologists have determined that Five Mile Creek downstream of the SE quarter of Section 10 T1N R26E is

the surface water source that will be depleted by the groundwater appropriation. Depletion modeling suggests that Five Mile Creek is hydraulically connected to groundwater in the area of the proposed wells. The area of potential impact for this application is Five Mile Creek downstream of the SE Section 10 T1N R26E to its confluence with the Yellowstone River. This is an appropriate area of potential impact because it includes the entire reach of Five Mile Creek downstream of the beginning of potential depletion. Flow in Five Mile Creek will experience different depletions by month ranging from 1.7 to 2.6 AF/Month and from 12.9 to 19.5 GPM. The table below shows depletions modeled by the Department for the affected reach of Five Mile Creek.

Month	**Total Consumption (AF)**	**Five Mile Creek Depletion (AF)**	**Five Mile Creek Depletion (GPM)**	**Five Mile Creek Depletion (CFS)**
January	0.0	2.3	16.9	0.04
February	0.0	2.1	17.4	0.04
March	0.0	2.0	14.6	0.03
April	0.0	1.9	14.1	0.03
May	3.1	1.8	12.9	0.03
June	5.3	1.7	13.0	0.03
July	7.2	1.8	13.4	0.03
August	6.5	2.1	15.1	0.03
September	3.3	2.4	17.7	0.04
October	0.4	2.6	18.7	0.04
November	0.0	2.6	19.5	0.04
December	0.0	2.5	18.1	0.04
Total	25.7	25.7		

32. Five Mile Creek is not gaged and there are no nearby streams of similar character that are gaged. Measurements of the flow in Five Mile Creek at a location approximately 4 creek miles (2 miles linear distance) downstream of the beginning of the depleted reach were made by the Department between April and October 2012. Five Mile Creek is unlikely to show a normal stream hydrograph because it is dominated by ditch contributions and return flow. It is expected to show a flow pattern like Hogans Slough, a stream that is similar in geography, climate and relationship to ditches and irrigation. The available measurements for Five Mile Creek and Hogans Slough are much alike tending to confirm the comparison.



33. The table below shows physically available flow in Hogans Slough from application 43Q 30068497, the percentage decrease in flow by month from November to March and the calculated physical availability of water by flow rate in Five Mile Creek. The flow rates estimated for Five Mile Creek are sensitive to the measured flow rate in October. There is a single October measurement and the estimated flows in Five Mile Creek over the winter months are higher than the flows in Hogans Slough. The uncertainties in winter flow rates, due to the reliance on a single October measurement, do not affect the legal availability of water because the winter month legal demand on Five Mile Creek is 0.16 CFS (FOF 36).

Month	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Physically Available Flow (CFS) Hogans Slough 43Q 30068497	1.20	1.10	0.97	0.90	16.70	9.00	25.10	21.10	15.10	3.00	1.80	1.43
Percent Decrease from Previous Month (Nov-Mar)	16.08	8.33	11.82	Measured flow rates are available for Apr – Oct, therefore estimations are not needed.							40.00	20.56
Measured (Apr-Oct) and Calculated (Nov-Mar) Flow (CFS) in Five Mile Creek	3.49	3.20	2.82	2.46	12.66	18.54	22.80	21.71	16.22	8.73	5.24	4.16

34. The physical availability of water in the depleted reach of Five Mile Creek was calculated by taking the monthly measurements for April through October and estimating the flow for November to March based on the monthly decrease in flow over the winter months extrapolated in 43Q 30068497 for Hogans Slough. The physically available volume was calculated as flow rate over the number of days in the month. The table below shows the resulting monthly flow and volume in Five Mile Creek.

Month	*Jan*	*Feb*	*Mar*	*Apr*	*May*	*Jun*	*Jul*	*Aug*	*Sep*	*Oct*	*Nov*	*Dec*
Flow rate (CFS)	3.49	3.20	2.82	2.46	12.66	18.54	22.80	21.71	16.22	8.73	5.24	4.16
Volume (AF)	214.2	177.4	173.1	146.1	777.1	1101.3	1399.5	1332.6	963.5	535.8	311.3	255.3

35. There are four water rights between the top of the depleted reach and the confluence with the Yellowstone River.

Water Right #	Owners	Purpose	Means of Diversion	Flow (CFS)	Acres	Vol. (AF)	Period of Diversion
43Q 109998 00	TRACY THORESON	IRRIGATION; STOCK	PUMP	0.22	15.00	30.26	01/01 to 12/31
43Q 113921 00	KRISTINE OOSTERMEYER; TONY D OOSTERMEYER	LAWN AND GARDEN	PUMP	0.13	1.00	2.00	05/01 to 09/30
43Q 200107 00	HUDSON A HOYT; PAULA A HOYT	STOCK	LIVESTOCK DIRECT FROM SOURCE	0.08	0.00	0.12	01/01 to 12/31
43Q 200108 00	HUDSON A HOYT; PAULA A HOYT	IRRIGATION	PUMP	0.04	6.00	24.60	04/01 to 10/04

36. Below is a comparison of the physical water supply and current legal demands for Five Mile Creek by month. The legal demands in November through March when physical availability on Five Mile Creek was estimated but not measured are 0.16 CFS (71.81 GPM) and 0.03 AF.

Flow Rate (CFS)

Month	Physical Availability	Existing Legal Demands	Physical Availability Minus Legal Demands
January	3.49	0.16	3.33
February	3.20	0.16	3.04
March	2.82	0.16	2.66

April	2.46	0.34	2.12
May	12.66	0.47	12.19
June	18.54	0.47	18.07
July	22.80	0.47	22.33
August	21.71	0.47	21.24
September	16.22	0.47	15.75
October	8.73	0.30	8.43
November	5.24	0.16	5.08
December	4.16	0.16	4.00

Volume (AF)

Month	Physical Availability	Existing Legal Demands	Physical Availability Minus Legal Demands
January	214.2	0.03	214.17
February	177.4	0.03	177.37
March	173.1	0.03	173.07
April	146.1	8.40	137.70
May	777.1	8.80	768.30
June	1101.3	8.80	1092.50
July	1399.5	8.80	1390.70
August	1332.6	8.80	1323.80
September	963.5	8.80	954.70
October	535.8	4.30	531.50
November	311.1	0.03	311.07
December	255.3	0.03	255.27

37. The physically available water in Five Mile Creek minus the existing legal demands is greater than the predicted depletion in all months.

CONCLUSIONS OF LAW

38. 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. (1984), 211 Mont. 91, 685 P.2d 336 (purpose of the Water Use Act is to protect senior appropriators from encroachment by junior users); Bostwick Properties, Inc. ¶ 21.

39. 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(8).

40. 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*, (2011) Pg. 4.

41. 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 (1991), 249 Mont. 425, 816 P.2d 1054.

42. 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*, (2011) Pg. 7 (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). (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.

43. 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*, (2011) Pg. 8.

44. Simply asserting that an acknowledged reduction, however small, would not affect those with a prior right does not constitute the preponderance of the evidence necessary to sustain applicant's burden of proof. Wesmont Developers v. DNRC, CDV-2009-823, First Judicial

District Court, *Memorandum and Order*, (2011) Pgs. 11 (Court rejected applicant's argument that net depletion of .15 millimeters in the level of the Bitterroot River could not be adverse effect.); Sitz Ranch v. DNRC, DV-10-13390, Fifth Judicial District Court, *Order Affirming DNRC Decision*, (2011) Pgs. 3-4 (Court rejected applicant's arguments that its net depletion (3 and 9 gpm, respectively to Black Slough and Beaverhead River) was "not an adverse effect because it's not measureable," and that the depletion "won't change how things are administered on the source.").

After calculating the projected depletion for the irrigation season, the District Court in Sitz Ranch v. DNRC explained:

> Section 85-2-363(3)(d) MCA requires analysis whether net depletion will adversely affect prior appropriators. Many appropriators are those who use surface water. Thus, surface water must be analyzed to determine if there is a net depletion to that resource. Sitz's own evidence demonstrates that about 8 acre feet of water will be consumed each irrigation season. Both Sitz and any other irrigator would claim harm if a third party were allowed to remove 8 acre feet of water each season from the source upon which they rely.

Sitz Ranch v. DNRC, DV-10-13390, Fifth Judicial District Court, *Order Affirming DNRC Decision*, (2011) Pgs. 3-4.

45. Constant call is adverse effect. *In the Matter of Application for Beneficial Water Use Permit Nos. 56782-76H and 5830-76H by Bobby D. Cutler (*DNRC Final Order 1987); *In the Matter of Application for Beneficial Water Use Permit No. 80175-s76H by Tintzmen (*DNRC Final Order 1993); *In the Matter of Application for Beneficial Water Use Permit No. 81705-g76F by Hanson (*DNRC Final Order 1992)(applicant must show that at least in some years no legitimate call will be made): *In the Matter of Application for Beneficial Water Use Permit No. 76N 30010429 by Thompson River Lumber Company (*DNRC 2006).

46. Adverse effect not required to be measurable but must be calculable. Sitz Ranch v. DNRC, DV-10-13390, Fifth Judicial District Court, *Order Affirming DNRC Decision*, (2011) Pg. 7 (DNRC permit denial affirmed; 3 gpm and 9 gpm depletion to surface water not addressed in legal availability or mitigation plan.); Wesmont Developers v. DNRC, CDV-2009-823, First Judicial District Court, *Memorandum and Order*, (2011) Pg. 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 depletion from groundwater pumping); *In the Matter of Beneficial Water Use Permit No. 76N-30010429 by Thompson River Lumber Company* (DNRC Final Order 2006); see also Robert and Marlene Tackle v. DNRC *et al.*, Cause No. DV-92-323, Montana Fourth Judicial District for Ravalli County, *Opinion and Order* (June 23, 1994). Artesian pressure is not protectable and a reduction by a junior appropriator is not considered an adverse effect. See *In re Application No. 72948-G76L by Cross*, (DNRC Final Order 1991); see also *In re Application No. 75997-G76L by Carr*, (DNRC Final Order 1991).

47. 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. § 85-2-311(1)(b) , MCA. (FOF 29 - 35)

Adequate Diversion

FINDINGS OF FACT

48. Water will be diverted from the wells for irrigation of the middle school campus. Wells BHMB and BLL operate independently and each irrigates two baseball fields. MCMS #1 and MCMS #2 are connected by a common irrigation main line. These wells will irrigate the football field and building landscaping.

49. The baseball field wells (BHMB and BLL) are currently fitted with Franklin Electric 35 GPM pumps and the same pumps are proposed for the other wells (MCMS #1 and MCMS #2). The system was designed by Sanderson Stewart, a Billings engineering firm.

50. MCMS #1 was evaluated with a 25-hour test at 106 GPM with a maximum drawdown of 3.8 feet below the static water level of 12 feet below ground surface (bgs) leaving 10.2 feet of available drawdown above the bottom of the well. MCMS #2 was evaluated with an 8.5-hour test at 71 GPM with a maximum drawdown of 2.4 feet below the static water level of 12.6 feet bgs leaving 10 feet of available drawdown above the bottom of the well. BLL was evaluated with an 8-hour test at 54 GPM with a maximum drawdown of 2.5 feet below the static water level of 8.8 feet bgs leaving 18.7 feet of available drawdown above the bottom of the well. BHMB was evaluated with an 8.5-hour test at 52 GPM with a maximum drawdown of 2.3 feet below the

static water level of 12 feet bgs leaving 10.7 feet of available drawdown above the bottom of the well.

51. Modeling the drawdown in the wells over the proposed period of diversion uses the assumed monthly pumping schedule based upon the IWR for Billings and shows that the aquifer will experience the largest drawdown of 1.5 feet at the end of July. The sum of the aquifer drawdown and the drawdown at 328 minutes (the time it takes to pump ¼ of July's daily volume) is 4.6 feet, 3.8 feet, 4.0 feet and 3.7 feet for MCMS #1, MCMS #2, BLL, and BHMB leaving 9.4 feet, 8.6 feet, 17.2 feet and 9.3 feet above the bottom of the wells, respectively.

CONCLUSIONS OF LAW

52. 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.

53. 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.

54. Water wells must be constructed according to the laws, rules, and standards of the Board of Water Well Contractors to prevent contamination of the aquifer. *In the Matter of Application for Beneficial Water Use Permit No.* 41I-105511 *by Flying J Inc.* (DNRC Final Order 1999).

55. Information needed to prove that proposed means of diversion, construction, and operation of the appropriation works are adequate varies, based upon project complexity design by licensed engineer adequate. *In the Matter of Application for Beneficial Water Use Permit No. 41C-11339900 by Three Creeks Ranch of Wyoming LLC* (DNRC Final Order 2002).

56. 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. § 85-2-311(1)(c), MCA (FOF 46 - 49).

Beneficial Use

FINDINGS OF FACT

57. The Applicant proposes to use water for irrigation which is a recognized beneficial use under the Montana Water Use Act.

58. The Applicant proposes to divert 140 GPM up to 31.75 AF for irrigation on 12.7 AC. The requested flow rate was based upon the maximum flow if all four wells were operational simultaneously each pumping 35 GPM. This flow rate equates to 11.0 GPM/AC. The volume is based upon Department standards for lawn and garden irrigation of 2.5 AF/AC.

CONCLUSIONS OF LAW

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

60. 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, supra; 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 *et al*, 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).

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*, (2011) Pg. 3 (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).

61. It is the applicant's burden to produce the required evidence. 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.

62. Applicant proposes to use water for lawn and garden irrigation. This is a recognized beneficial use under the Montana Water Use Act. Applicant has proven by a preponderance of the evidence irrigation is a beneficial use and that 140 GPM flow rate and 31.75 AF of diverted volume of water requested is the amount needed to sustain the beneficial use. § 85-2-311(1)(d), MCA, (FOF 55, 56)

Possessory Interest

FINDINGS OF FACT

63. Scott Reiter signed the affidavit on the application form for the Applicant 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

64. 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.

65. 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.

66. 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. § 85-2-311(1)(e), MCA. (FOF 61)

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. 43Q 30106065 should be GRANTED.

The Department determines the Applicant may divert groundwater, by means of four wells, from May 1 to October 15 at 140 GPM up to 31.75 AF, from points in the SWNWSW and NWNWSW Section 14 T1N R26E, Yellowstone County, for lawn and garden irrigation use from May 1 to October 15. The place of use is 12.7 AC at the Medicine Crow Middle School located in NWSW Section 14 T1N R26E, Yellowstone County.

NOTICE

This 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 no valid objection or all valid objections are unconditionally withdrawn, the Department will grant this Application as herein approved. If this Application receives a valid objection, the application and objection will proceed to a contested case proceeding pursuant to Title 2 Chapter 4 Part 6, MCA, and § 85-2-309, MCA. If valid objections to an application are received and withdrawn with stipulated conditions and the department preliminarily determined to grant the permit or change in appropriation right, the department will grant the permit or change subject to conditions necessary to satisfy applicable criteria.

DATED this 30th day of September 2016.

/Original signed by Kimberly Overcast/
Kimberly Overcast, Manager
Billings Office
Department of Natural Resources and Conservation