

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

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APPLICATION FOR BENEFICIAL WATER USE PERMIT NO. 41P 30117451 BY THE CITY OF SHELBY	}	PRELIMINARY DETERMINATION TO GRANT PERMIT
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On July 05, 2019 the City of Shelby (Applicant) submitted Application for Beneficial Water Use Permit No. 41P 30117451 to the Havre Water Resources Office of the Department of Natural Resources and Conservation (Department or DNRC) for 205 Gallons per Minute (GPM) up to 331.6 Acre Feet (AF) for municipal use. This proposed additional volume will be supplemental to water rights being changed in concurrent applications to change before the Department. The Department published receipt of the Application on its website. The Application was amended on January 11, 2019 and again on July 05, 2019. The Department sent the Applicant a deficiency letter under § 85-2-302, Montana Code Annotated (MCA), dated December 27, 2019. The Applicant responded with information dated January 22, 2020. The Application was determined to be correct and complete as of August 03, 2020. An Environmental Assessment for this Application was completed on November 20, 2020. The Applicant submitted a waiver of the timelines in § 85-2-307, MCA on November 30, 2020.

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

- Aquifer Testing Addendum, Form 600-ATA and electronic Form 633

Attachments:

- USGS map which identified the place of use, proposed points of diversion (Well Field), township, range, and section lines.
- Shelby Well Field Pump Test - KLJ Engineering
- Water Service Area Design and Record Drawings
- The 1961 Preliminary Engineers Report on Water Supply and Distribution System for Shelby, Toole County, Montana by Stanley J. Thill, Conrad, Montana (1961 PER)
- Application for Reservation of Water for the City of Shelby by Aquoneering, Roger Perkins, Laurel Montana, August 1988 (1988 Reservation Application)
- Preliminary Engineering Report Water System Improvements prepared for City of Shelby, Montana by Kadrmas, Lee & Jackson Engineers and Surveyors Planners (KLJ), 2010 (2010 PER), and correspondence with KLJ, the Applicant's engineer
- Associated Applications to Change Water Right Nos. 41P 30114262 and 41P 30116656

Information Received after Application Filed

- Email Correspondence between Applicant and DNRC
- Applicant Request for Aquifer Testing Variances received April 11, 2018
- Department Response to Applicant Granting Variances Request dated April 12, 2018
- Point of Diversion Amendment to Application received July 5, 2019
- Response to Department's Letter from Applicant received January 22, 2019
- Measurement Condition Letter from Applicant received August 19, 2020

Information within the Department's Possession/Knowledge

- Department's Technical Report dated August 3, 2020
- Department Aquifer Test and Depletion Reports by DNRC Water Management Bureau (WMB) Groundwater Hydrologist, Attila Fohnagy dated April 2, 2020

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 Havre Regional Office at 406-265-5516 to request copies of the following documents:

- Return Flow Memo (2016)
- DNRC Consumptive Use Methodology Memo (2010)
- Water Right Legal Demand Index
- Technical Memorandum: Physical and Legal Availability of Ground Water Memo (2019)

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).

PROPOSED APPROPRIATION

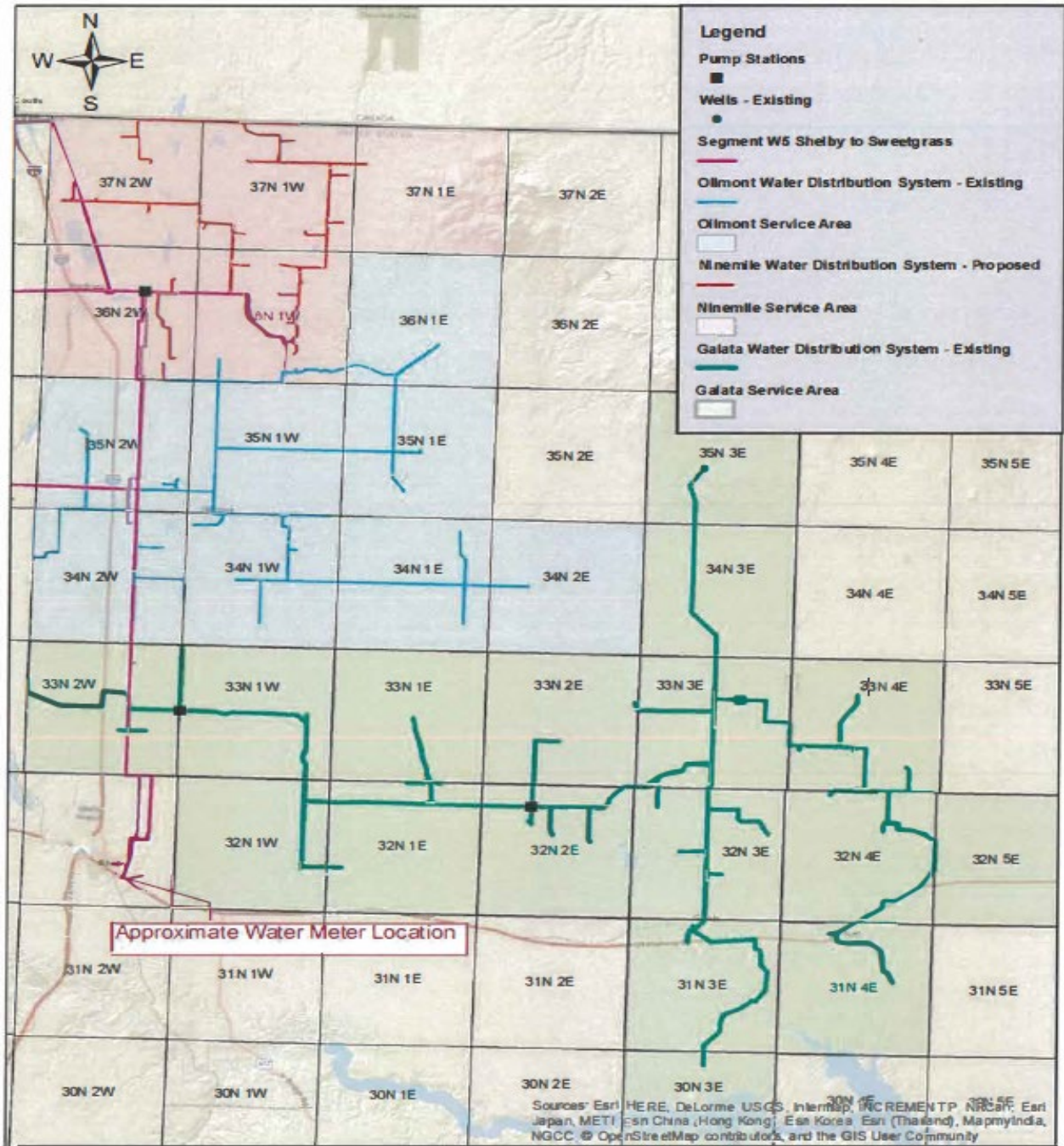
FINDINGS OF FACT

1. The applicant requests a flow rate of 205 GPM, and a volume of 331.6 acre-feet (AF) for year-round municipal use. The requested flow and volume will be diverted from three new wells which will also serve as replacement wells operating in manifold with 10 existing wells operated by the Applicant. The new wells are commonly referred to as New Wells #2, #4 and #6 respectively. The proposed amount of water will be used to supplement their existing 6 statements of claim and 3 provisional permits for a total of 2,895 GPM and 1,456.5 AF. The Applicant has one water reservation that has not been perfected to date. Applicant's place of use

for this proposed appropriation is the City of Shelby which includes Shelby South, Prison, Humic facility, in addition to the communities of Devon, Dunkirk, Ethridge, and Big Rose Colony, City of Cut Bank, Oilmont, Galata and the Nine Mile system.

2. The thirteen wells used in manifold including the three new wells are between 32 feet and 49 feet deep located in Township 31 North, Range 2 West, Section 21, 6 miles south of Shelby. The source aquifer is an unconfined aquifer consisting of gray sand and gravel of the Marias River Alluvium. The shallow alluvial sediments that fill the Marias River valley represent the most recent post-glacial deposits of the active river. These deposits consist of stratified, laterally discontinuous, but vertically and horizontally interconnected water-bearing zones that are comprised of sand and gravel lenses (DEQ, 2003). The well field is between 150 and 700 feet from the Marias River. The water levels in the source aquifer are similar to the surface elevation of Marias River and the aquifer is hydraulically connected to the river (Aquoneering, 1988). The Marias River is the potentially affected surface water based on proximity and water levels. The Marias River Basin, administratively known as Basin 41P, is not subject to a basin closure.

3. This new groundwater appropriation is associated with Applications to Change a Water Right 41P 30116656 and 41P 30114262. The change proposal includes temporarily adding places of use to include Oilmont, Nine Mile and Galata rural water systems to the Applicant's service area and adding the three new wells as replacement points of diversion serving in manifold with the ten existing wells which serves as the existing points of diversion (*See following map*).



4. The proposed Municipal use is assumed to be 100 percent consumptive.
5. Permit 41P 30117451 together with Change Authorizations 41P 30114262 and 41P 30116656 shall be subject to the following conditions, limitations or restrictions upon issuance:

1) WATER MUST NOT BE DIVERTED PURSUANT TO PERMIT 41P 30117451 AND CHANGE AUTHORIZATIONS 41P 30116656 AND 41P 30114262 TO ANY INDIVIDUAL PLACE OF USE AUTHORIZED IN SAID CHANGE AUTHORIZATIONS UNTIL A REQUIRED MEASURING DEVICE IS IN PLACE AND OPERATING AT THE SPECIFIED METER LOCATION CORRESPONDING TO THE PARTICULAR PLACE OF USE. THE APPROPRIATOR SHALL MAINTAIN THE MEASURING DEVICES IN PROPERLY FUNCTIONING CONDITION SO THAT THE VOLUMES ARE ACCURATELY MEASURED.

2) ON A FORM PROVIDED BY THE DEPARTMENT, THE APPROPRIATOR SHALL RECORD MONTHLY VOLUME OF ALL WATER INDIVIDUALLY METERED AT EACH METER LOCATION. THE VOLUME OF WATER AT EACH OF THE METER LOCATIONS SHALL NOT EXCEED THE FOLLOWING AMOUNTS EXPRESSED IN ACRE FEET:

	Shelby Master Meter	Cut Bank Meter	Prison, Humic, Ethridge, Big Rose, Devon-Dunkirk, Shelby South and Oilmont/Galata Nine Mile Meter Locations
January 1 -April 30	411.70	124.48	164.00
May 1 -October 31	839.00	261.42	318.82
November 1 -December 31	205.80	62.24	81.98
Total	1456.50	448.10	564.80

RECORDS SHALL BE SUBMITTED MONTHLY AND A SUMMARY PROVIDED BY JANUARY 31 OF EACH YEAR TO THE DEPARTMENT’S WATER RESOURCES HAVRE REGIONAL OFFICE AND UPON REQUEST AT OTHER TIMES DURING THE YEAR. FAILURE TO SUBMIT REPORTS MAY BE CAUSE FOR REVOCATION OF THIS CHANGE AUTHORIZATION.

§ 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.” § 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.

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, Starnier (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).

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. § 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. A 71-hour aquifer test that was conducted by Hydrosolutions Inc. for the City of Shelby, Toole County. The existing wells are drilled into an unconfined Marias River Valley alluvial aquifer consisting of sand and gravel.

13. A variance was granted that permitted the applicant to submit results from a 71-hour aquifer test in lieu of a 72-hour aquifer test as specified in ARM 36.12.121(3)(e). Additional variances were granted due to the applicant not collecting drawdown data and discharge measurements according to the schedule on Form 633 and pumping by the monitoring wells during collection of background groundwater data.

14. The wells that comprise the Applicant's well field are between 32 feet and 49 feet deep and are located in Township 31 North, Range 2 West, Section 21, 6 miles south of Shelby. An 8-hour drawdown and yield test or longer was conducted on Well #1 (Groundwater Information Center

(GWIC) # 87581), New Well #2, Well #3 (GWIC # 87576), New Well #4, New Well #6 and an 71-hour aquifer test was conducted on Well #13 (GWIC # 225363) (*See also Table 1 below*).

15. The water levels in the pumping well (Well #13) and observation wells (Well #5 and old Well #6) were collected using In-Situ® data loggers and pressure transducers. The raw data were converted to depth to water based on a manual measurement with an electric tape and subsequently converted to drawdown which is the difference between the water level at a specified time after pumping starts and the static water level observed at time ($t = 0$).

16. Background groundwater levels were monitored in the Well #13 and Well #5 between January 11, 2018 and January 29, 2018. The plot shows water level changes related to the Well #13 pump turning on during the collection of background groundwater level data. The background groundwater level data are not adequate to determine whether water levels followed a trend prior to the test.

17. The 71-hour aquifer test started on January 29, 2018 at 2:44 P.M. and this is considered to be time ($t=0$) for the computation of drawdown. The test continued without interruption, until 1:52 P.M on February 1, 2018 at an average flow rate of 253 GPM. The discharge was measured using a 6-inch McCrometer flow meter and was conveyed to a water treatment system storage tank.

18. According to the aquifer test data provided by the Applicant, the discharge started at 310 GPM and fluctuated between 245 GPM and 275 GPM for the remainder of the aquifer test of the new replacement wells. The maximum drawdown in the pumping well was 21.3 feet below the static water level of 19.51 feet below ground surface (bgs). Well #5 and Well #6 are 200 feet and 305 feet from the pumping well and exhibited maximum drawdowns of 0.4 feet and 0.6 feet, respectively, prior to experiencing recharge from the Marias River. Well #5 and old Well #6 are 125 feet and 300 feet from the Marias River, respectively.

19. AQTESOLV® (HydroSOLVE, Inc., 2007) was used to analyze drawdown from the aquifer test to obtain estimates of aquifer properties. AQTESOLV® is an analytical modeling software

that uses image well theory and the principle of superposition to simulate aquifer stress tests. Known well, aquifer, and aquitard characteristics from well logs and previous investigation are input into the model. Each well gets a spatial location in the AQTESOLV® model.

20. The Cooper-Jacob (1946) solution for a pumping test in an unconfined aquifer was used to analyze the pumping well (Well #13) and old Well #6. The Cooper-Jacob (1946) solution is a straight-line approximation of the Theis equation and has the same assumptions as the Theis (1935) solution.

21. The recommended transmissivity of 20,000 ft²/day is similar to what the applicant calculated from recent aquifer testing but is higher than the results of other groundwater investigations in the area. Aquoneering (1988) calculated a range of transmissivities between 2,400 ft²/day and 13,400 ft²/day based on specific capacity. The applicant's consultant calculated a range of transmissivities between 21,870 ft²/day and 23,480 ft²/day from the 8-hour drawdown and yield tests on Well #1 and Well #3. The 8-hour drawdown and yield test for Well #1 resulted in a better Cooper-Jacob (1946) fit than the other yield tests conducted by the Applicant which shows an estimated transmissivity of 35,260 ft²/day.

22. Drawdown is modeled for the period of diversion for each of the 13 wells by assigning each well an assumed constant pumping rate based on Table 2 in Appendix B of the application materials. The modeling was done using the Theis (1935) solution for an unconfined aquifer with the following inputs: $T = 20,000 \text{ ft}^2/\text{day}$, $S_y = 0.1$, and a constant head boundary representing the Marias River. The well efficiency is calculated from modeling each well's respective aquifer test and dividing the predicted drawdown by the observed drawdown to get a well efficiency. Calculated well efficiencies are as follows: Well #1 (15 %), Well #2 (45 %), Well #3 (25 %), Well #4 (11 %), Well #6 (20 %), and Well #13 (14 %). The actual drawdown with well loss is calculated by applying the well efficiency to their respective theoretical drawdown.

23. Table 1 shows results from the drawdown and yield tests conducted on six of the 13 wells and the remaining available drawdown above their respective perforations. The average pumping rate during the 71-hour aquifer test exceeded the maximum requested rate.

Table 1 Drawdown and Yield

Well Name	GWIC #	Test Length (hours)	Test Pumping Rate (GPM)	Well Depth (ft)	Draw down (ft)	Static Water Level (ft)	Available drawdown above bottom (ft)
New Well #2	NA	72	217	34.5	6.2	12.1	16.2
New Well #4	NA	44	141	36	17.7	12.8	5.5
New Well #6	NA	21	195	35	10.9	9.8	14.3

24. Calculated well efficiencies are as follows: Well #1 (15 %), Well #2 (45 %), Well #3 (25 %), Well #4 (11 %), Well #6 (20 %), and Well #13 (14 %). The actual drawdown with well loss is calculated by applying the well efficiency to their respective theoretical drawdown. The total maximum drawdown is the sum of the actual drawdown and modeled well interference drawdown. The last column in Table 2 below gives the remaining available water column for each well which is equal to the available drawdown above their respective bottom minus total drawdown. Similar available drawdown is expected for the other 7 wells as they are all completed in the same source aquifer to a comparable depth.

Table 2 Drawdown and Available Remaining Above Well Bottom

Wells	Well #1	Well #2	Well #3	Well #4	Well #6	Well #13
Well Total Depth (feet)	49.0	34.5	48.0	36.0	35.0	42.0
Pre-Test Static Water Level (feet btc)	15.0	12.1	14.3	12.8	9.8	19.5
Available Drawdown above bottom (feet)	34.0	22.4	33.7	23.2	25.2	22.5
Well Efficiency (%)	15	45	25	11	20	14
Predicted Drawdown theoretical (feet)	1.4	1.8	2.1	1.7	1.6	1.8
Predicted Drawdown including well loss (feet)	9.3	4.0	8.4	15.5	8.0	12.9
Predicted Additional Drawdown from Interference (feet)	0.8	1.0	0.9	0.7	1.0	0.8
Total Drawdown (feet)	10.1	5.0	9.3	16.2	9.0	13.7
Remaining Available Water Column (feet)	23.9	17.4	24.4	7.0	16.2	8.8

25. Physical groundwater availability for comparison with legal demands was evaluated by calculating groundwater flux through a zone of influence (ZOI) corresponding to the 0.01- foot drawdown contour. Using the Theis (1935) solution, a constant pumping rate of 205.6 GPM for one-year (equivalent to the requested volume of 331.6 AF), $T = 20,000 \text{ ft}^2/\text{day}$, $S_y = 0.1$, and constant head at the Marias River generated a 0.01- foot drawdown contour. The 0.01-foot drawdown contour extends to the river boundaries and the bedrock boundary to the north. The calculation for groundwater flux (Q) through the delineated area is given by the equation below and is 21,600 ft^3/day or 181 AF/year:

$$Q = TWi$$

where:

T = Transmissivity = 20,000 ft²/day

W = Width of Zone of Influence = 1,800 ft

i = Groundwater gradient (from Hydrosolutions, 2018) = 0.0006 ft/ft.

26. The calculated groundwater flux through the ZOI indicates water is not physically available on the local scale; however, the drawdown and yield tests show that a river boundary is encountered suggesting a hydraulic connection with the Marias River. The baseflow index (BFI) method described in the DNRC Technical Memorandum: Physical and Legal Availability of Ground Water, April 22, 2019. is used to calculate the contribution of groundwater to surface water. The BFI is determined at the HUC8 level and uses the BFI from a representative gage (Wolock, D., 2003. Flow characteristics at U.S. Geological Survey stream gages in the conterminous United States. USGS Open-File Report: 2003-146). The BFI for the Marias River gage near Shelby, Montana of 0.702 is used to calculate baseflow and evaluate physical availability of groundwater at the watershed scale. The calculation for physical supply is given below.

- Mean annual streamflow = 852.6 cubic feet per second (~614,908 AF/year).
- BFI for Marias River gage near Shelby = 0.702.
- Physical supply = 0.702 x 614,908 acre-feet/year = 431,665 AF/year.

27. The model predicted a 0.01-foot zone of influence to occur at the aquifer boundaries of the source aquifer and the groundwater flux is equal to 181 AF per annum. This showed that groundwater was not physically available; however, the evidence of hydraulic connection of the source aquifer to the Marias River provides contrary information that groundwater is physically available at the City of Shelby wellfield.

28. To determine physical availability of the Marias River, the USGS 06099500 gage near Shelby, located approximately one mile upstream of the well field was used to quantify monthly

amounts. The 97 year period of record from April 1902 to June 2020 and the method outlined below were utilized to quantify median of the mean monthly flows and volumes during the proposed period of diversion

29. For analysis of reaches where the gaging station used is above the depleted reach, the Department practice is to subtract the flow rates and volumes of existing rights within the reach to the gage values to determine physical availability. This is done to account for existing user withdrawals on the source. There is one water right of record (41P 30114814) that is for the irrigation of 22 acres from April 1 to October 31. This water right is for 0.83 CFS of diverted flow rate. The volume was calculated by converting monthly flows using the monthly flow (CFS) $\times 1.98 \times$ days per month = AF/month. There is also one in-stream water reservation for 200 CFS which is owned by Montana Fish Wildlife and Parks (41P 30017506). This water right is included as a legal demand as it does not diminish the water physically available at the Applicant’s wellfield.

30. The following Table 3 is an analysis of median flows the Department finds physically available from the Marias River:

Table 3 Median of the Mean Monthly Flow and Volume

	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
Median Monthly (CFS)	250	314	595	1090	2770	3225	921	364	349.5	411	374	288
Intervening Rights Flow (CFS)	0	0	0	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0	0
Median Flow at POD (CFS)	250	314	595	1089.17	2769.17	3224.17	920.17	363.17	348.67	410.17	374	288
Median Monthly Volume (AF)	15368.25	18057.20	36576.44	64844.10	170280.21	191855.25	56616.63	22376.17	20791.76	25265.40	22249.26	17704.22
Intervening Rights Volume (AF)	0.00	0.00	0.00	49.38	51.02	49.38	51.02	51.02	49.38	51.02	0.00	0.00
Median Volume at POD (AF)	15368.25	18057.20	36576.44	64794.72	170229.19	191805.87	56565.61	22325.15	20742.38	25214.38	22249.26	17704.22

31. Based on this information water is physically available within the Marias River Alluvium Aquifer and surface water from the Marias River to supply the proposed 205 GPM and a volume of 331.6 AF.

CONCLUSIONS OF LAW

32. 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.”

33. *In the Matter of Application for Beneficial Water Use Permit No. 27665-411 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).

34. 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)

35. 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. Finding of Fact (FOF) 11-31.

Legal Availability:

FINDINGS OF FACT

36. The following analysis of net depletion was used in evaluating legal availability and adverse effects to surface water required under §85-2-311, MCA. Net depletion is the calculated volume, rate, timing, and location of reductions to surface water flow resulting from a groundwater appropriation. Net depletion is evaluated in three steps: identification of potentially affected surface waters, calculation of consumption, and calculation of the rate and timing of depletions to the identified affected surface waters.

37. The water levels in the source aquifer are similar to the surface elevation of Marias River and the aquifer is hydraulically connected to the river (Aquoneering, 1988). The Marias River is the potentially affected surface water based on proximity and water levels.

38. Municipal use is assumed to be 100 percent consumptive.

39. Use from the well field is assumed to be constant year-round for municipal use; therefore, depletions are expected to be constant year-round and equal to the requested volume of 331.6 AF (*Table 3 below*). Depletion by pumping in the source aquifer primarily occurs through propagation of drawdown through the source aquifer to the Marias River.

Table 3 Net depletion by proposed groundwater pumping of the existing wells for application 41P 30117451

Month	Consumption (AF)	Depletion (AF)	Depletion (GPM)
January	28.2	28.2	205
February	25.4	25.4	205
March	28.2	28.2	205
April	27.3	27.3	205
May	28.2	28.2	205
June	27.3	27.3	205
July	28.2	28.2	205
August	28.2	28.2	205
September	27.3	27.3	205
October	28.2	28.2	205
November	27.3	27.3	205.6
December	28.2	28.2	205.6
Total	331.6	331.6	

40. When evaluating criteria for legal availability (36.12.1704 & 36.12.1705), existing legal demands are subtracted from physically available water. A list of existing water rights on the Marias River near the Applicant’s wellfield inlet 8 miles downstream to the confluence of the Dry Fork of the Marias River was compiled. This is the area the Department determined to be the area of potential adverse effect. A copy of this list can be found in the water right file or provided upon request.

41. When calculating legal demand volumes, irrigation and lawn/garden uses were delegated as occurring from April 1 to October 31. All other water uses were analyzed as year-round uses. In order to account for livestock direct from source rights, Department practice is to assign one flow rate (0.08 CFS) for all stock rights without a designated flow rate. Due to the difficulty of differentiating the distribution of appropriated volume over the period of diversion, it was assumed that the flow rate of each legal demand is continuously diverted throughout each month of the period of diversion. This assumption leads to a conservative estimation of legal demands on volume of water. The Department finds this an appropriate measure of legal demands as it protects existing water users. Volumes were calculated by converting monthly flows using the monthly flow (CFS) × 1.98 × days per month = AF/month.

42. Table 4 is a comparison of existing legal demands subtracted from the amounts of water the Department found to be found physically available:

Table 4 Legal Availability Analysis

Median Flow at POD (CFS)	250	314	595	1089.17	2769.17	3224.17	920.17	363.17	348.67	410.17	374	288
Legal Demand Flowrate (CFS)	200.14	200.14	240.35	270.93	270.93	270.93	281.17	281.17	281.17	281.17	281.17	200.14
Available Flowrate (CFS)	49.86	113.86	354.65	818.24	2498.24	2953.24	639.00	82.00	67.50	129.00	92.83	87.86
New Depletion (CFS)	0.46	0.46	0.46	0.46	0.46	0.46	0.46	0.46	0.46	0.46	0.46	0.46
Remaining (CFS)	49.40	113.40	354.19	817.79	2497.79	2952.79	638.55	81.55	67.05	128.55	92.38	87.40
Median Volume at POD (AF)	15368.25	18057.20	36576.44	64794.72	170229.19	191805.87	56565.61	22325.15	20742.38	25214.38	22249.26	17704.22
Legal Demand Volume (AF)	12073.61	12073.61	12406.54	12571.11	12571.11	12571.11	12633.82	12633.82	12633.82	12633.82	12633.82	12073.61
Available (AF)	3294.64	5983.59	24169.90	52223.62	157658.08	179234.77	43931.79	9691.33	8108.56	12580.56	9615.44	5630.61
New Depletion (AF)	28.20	25.40	28.20	27.30	28.20	27.30	28.20	28.20	27.30	28.20	27.30	28.20
Remaining (AF)	3266.44	5958.19	24141.70	52196.32	157629.88	179207.47	43903.59	9663.13	8081.26	12552.36	9588.14	5602.41

43. The Department finds that that the amount of groundwater the Applicant seeks to appropriate (205 GPM, 331.6 AF) is legally available because the calculated depletions of 205

GPM (0.46 CFS) up to 331.6 AF per year to the Marias River are legally available. This finding is based on the information and on the records of the Department and other evidence provided to the Department.

CONCLUSIONS OF LAW

44. 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).

45. 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.

46. 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.

47. 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.

48. 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. § 85-2-311(1)(a)(ii), MCA. (FOF 36-43)

49.

Adverse Effect

FINDINGS OF FACT

50. The evaluation of drawdown in other wells was completed by the Department’s groundwater hydrologist using the Theis (1935) solution with the following inputs: T = 20,000 ft²/day, Sy =0.1, and constant head at the Marias River. The 13 existing wells were modeled as one well near the center of the cluster of existing wells due to their close proximity. A constant head representing the Marias River was modeled at a distance of 500 feet to the south and 1,000 feet to the east of this well. After the fifth year of pumping at the constant rate of 205 GPM, the 1-foot drawdown contour extends 35 feet from the applicant’s well. There are 0 water rights that are predicted to experience drawdown greater than 1 foot.

51. Currently the City of Shelby has a master water meter that measures all water diverted from the well field, which is located near the storage tank on the south side of Shelby. Other water meters maintained by the Applicant measure the water entering the service areas. Table 2 - Water Meters contain a list of the current operating water meters in the Shelby area. The Applicant’s proposed meter use shall account for the total water diverted from the wells in combination.

Table 2 – Water Meters

Meter Location/Service Area	Meter Type
Transmission Main Master Meter	Seametrics EX 215, Insertion Electromagnetic Meter
Big Rose	4-inch Badger Meter
Ethridge	4-inch Neptune T10
Cut Bank	6-inch Badger Meter
Prison	4-inch Neptune T10
Devon-Dunkirk	4-inch Neptune T10

52. The Department finds that the proposed appropriation in addition to being found physically and legally available will not create an adverse effect to other water users and that the Applicant’s plan to prevent adverse effect is sufficient when the following measurement condition is applied:

1) WATER MUST NOT BE DIVERTED PURSUANT TO PERMIT 41P 30117451 AND CHANGE AUTHORIZATIONS 41P 30116656 AND 41P 30114262 TO ANY INDIVIDUAL PLACE OF USE AUTHORIZED IN SAID CHANGE AUTHORIZATIONS UNTIL A REQUIRED MEASURING DEVICE IS IN PLACE AND OPERATING AT THE SPECIFIED METER LOCATION CORRESPONDING TO THE PARTICULAR PLACE OF USE. THE APPROPRIATOR SHALL MAINTAIN THE MEASURING DEVICES IN PROPERLY FUNCTIONING CONDITION SO THAT THE VOLUMES ARE ACCURATELY MEASURED.

2) ON A FORM PROVIDED BY THE DEPARTMENT, THE APPROPRIATOR SHALL RECORD MONTHLY VOLUME OF ALL WATER INDIVIDUALLY METERED AT EACH METER LOCATION. THE VOLUME OF WATER AT EACH OF THE METER LOCATIONS SHALL NOT EXCEED THE FOLLOWING AMOUNTS EXPRESSED IN ACRE FEET:

	Shelby Master Meter	Cut Bank Meter	Prison, Humic, Ethridge, Big Rose, Devon-Dunkirk, Shelby South and Oilmont/Galata Nine Mile Meter Locations
January 1 -April 30	411.70	124.48	164.00
May 1 -October 31	839.00	261.42	318.82
November 1 -December 31	205.80	62.24	81.98
Total	1456.50	448.10	564.80

RECORDS SHALL BE SUBMITTED MONTHLY AND A SUMMARY PROVIDED BY JANUARY 31 OF EACH YEAR TO THE DEPARTMENT’S WATER RESOURCES HAVRE REGIONAL OFFICE AND UPON REQUEST AT OTHER TIMES DURING THE YEAR. FAILURE TO SUBMIT REPORTS MAY BE CAUSE FOR REVOCATION OF THIS CHANGE AUTHORIZATION.

CONCLUSIONS OF LAW

53. 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.

54. 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).

55. 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.

56. 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.

57. 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.

58. 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.

59. 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 49-51)

Adequate Diversion

FINDINGS OF FACT

60. The proposed appropriation will utilize the following new wells: New Well #2 (Groundwater Information Center (GWIC) # 87581, New Well #4 (GWIC # 87576) and New Well #6 (GWIC # 225363) which will be utilized in manifold with ten existing wells located in the wellfield. The wells were drilled by multiple licensed well drillers in accordance with MCA Title 37, Chapter 43 and ARM Title 36, Chapter 21.

61. The Department's groundwater hydrologist evaluated the adequacy of diversion with a constant pumping rate for 1 year that is necessary to achieve the existing volume of 331.6 AF. A maximum drawdown for the wells is generated by applying a calculated well efficiency to the theoretical drawdown and adding interference drawdown. Modeling showed that the existing wells could experience between 5.0 feet and 16.2 feet of drawdown.

62. The Applicant provided a copy of an engineering report from KLJ Engineering which summarized the existing water system in addition to descriptions of upgrades to the UV Treatment Plant that has the ability to treat from 1,750 GPM up to 3,820 GPM.

63. Water will be measured at multiple points throughout the City's transmission and pipeline systems. Water use to each community served in the proposed service area will be metered. A master water meter that meters all diverted flow is located on the south end of Shelby.

64. The Applicant will record daily water use, peak flow rates, and totalized monthly and annual volumes for the total diverted flow. The total monthly volume will be metered and recorded to each community in the proposed service area and for residential use in the City of Shelby. Service area water is tracked for water use agreement purchases.

65. Water is pumped into the clear well from all points of diversion according to their individual pumping schedules. From the clear well, four booster pumps pump the water through the water treatment system where it is disinfected. From the treatment plant, water is pumped to the south side of Shelby and the volume is recorded at the location of the master water meter. From here, water is pumped through the aid of several booster pumps to the south tank, airport tank, shop tank, and prison tank. Check valves are located along the lines at selected locations to prevent backflow. Water meters are located at selected locations and will record the amount of water distributed the Prison, Ethridge, Big Rose Colony, Cut Bank, Shelby South, Devon, Oilmont, Galata and Nine Mile.

66. The system serving the Prison includes three booster pumps that deliver water from the City's water tank on the south side of Shelby to the prison via a 12-inch PVC line. A 500,000 gallon water tank stores water at the prison. A water meter exists at the prison near the water tank. A 12-inch PVC line extends north from the prison to serve Ethridge and Cut Bank.

67. The Ethridge service area is served from a 4-inch main line that is connected to the 12-inch waterline extending north from the prison. Water distribution lines within the Ethridge service area also include 1, 2, and 3-inch lines. An existing water pipeline extends north of Shelby to Big Rose Colony. The pipeline was constructed in 2004 and water use is metered by the Applicant. The water meter is located where the system connects to the Applicant's pipeline on the north side of Shelby.

68. Segment WS, Shelby to Sweetgrass will be the pipeline used to convey water from Shelby to Nine Mile, Galata, and Oilmont. Segment WS will start in Shelby and will be installed north

using 12-inch pipe. As the pipe heads north, it will connect to a proposed standpipe and continue north until reaching the proposed pump station near Sunburst. At the Sunburst pump station, the water supply will be split between an 8-inch water main heading to the west and an 8-inch water main the East that will connect to the Nine Mile and Oilmont systems. This segment will include two booster stations and two storage tanks.

69. The current Nine Mile system will consist of approximately 63 miles of HDPE pipe that will feed the local area.

70. The Galata system consists of four pressure zones and three booster stations. The distribution system consists of approximately 171 miles of pipe varying in size from 1-inch to 12-inch. Much of the system consists of 1.25-inch pipe to 6-inch pipe. The segment W-5 will provide direct water into the distribution system.

71. The Oilmont system is approximately 132 miles of pipe varying in sizes from 2 to 6 inches. The system consists of three pressure zones with two pressure reducing valves.

72. The system is being designed by a professional engineer from KLJ Engineering and shall be approved by the Department of Environmental Quality as a public water supply system prior to operation.

CONCLUSIONS OF LAW

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. 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).

76. 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 59-71).

Beneficial Use

FINDINGS OF FACT

77. The Applicant proposes to use water for municipal use, which is defined as a beneficial use of water pursuant to §85-2-102(5)(a), MCA.

78. The purposed use is to provide additional water to the City's municipal water service area which includes nearby communities which need a reliable source of good quality water. The need exists to provide a critical and reliable water source to multiple communities until the North Central Montana Regional Water Authority (NCMRWA) is operational.

79. The Department determined through previous change authorizations (41P 30072725 and 41P 3007276) that the Applicant may temporarily change the place of use so that water historically used within the City of Shelby could serve the City of Shelby including Shelby South, Prison, Humic facility along with the communities of Devon, Dunkirk, Ethridge, and Big Rose Colony and the City of Cut Bank.

80. The additional demands for the Oilmont, Galata and Nine Mile systems were determined based from existing flow demands and estimated future demands. Estimated average daily use was determined by participating water systems to be purchased from the NCMRWA daily.

81. The calculations provided by the Applicant of water demands assumes that household and animal units will remain the same as proposed in previous water right change authorizations issued by the Department for the areas. Household use was calculated based on 100 gallons per

capita and 2.5 persons per homes. As a result, Oilmont will service approximately 532 Homes (133,000 gpd), Nine Mile 42 homes (60,000 gpd), and Galata 60 homes (14,800 gpd).

82. Based on the PER prepared by KLJ, the average daily demand for Shelby is about 176 gallons per capita per day (GPCD), and the peaking factor between the average daily demand and the maximum daily demand is about 2.70 GPCD. The 2016 estimated population of Shelby was 3,437. These values yield an average daily demand of about 0.6 MGD and a peak daily demand of about 1.63 MGD. The system will also supply supplemental water to the City of Cut Bank when Segment W3 is completed, which was anticipated in the summer of 2017. The City of Cut Bank is contracted to receive up to 0.75 MGD peak daily demand. There is no minimum amount of water that is required to be supplied to Cut Bank. Segment W5-A is intended to provide water to the Oilmont CWD and the Nine Mile CWD in the near term with the ability to increase capacity in the future. Segment W5-A is anticipated to be operated year-round. The maximum capacity of the proposed interim system is approximately 0.15 MGD. The Oilmont District has requested to receive up to 108,000 gallons per day (GPD) peak daily demand and Nine Mile District has requested to receive up to 40,000 GPD.

83. The table below shows the demands as stated in the Interim Solution Development Agreement between the North Central Montana Regional Water Authority and the corresponding water district:

Place of Use	Current Demands GPD (GPM)	Future Demands GPD (GPM)	Total GPD (GPM)
Oilmont CWD	100,000 {69.4}	75,000 (52.1)	175,000 {121.5}
Nine Mile CWSD	50,000 {34.7}	50,000 (34.7)	100,000 {69.4}
Galata CWSD	20,000 (13.9)	-	20,000 {13.9}
Total	170,000 (118.05)	125,000 {86.8}	295,000 {204.8}
Volume (ACFT per Year)	191.1	140.5	331.6

CONCLUSIONS OF LAW

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

85. 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).

86. 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).

87. The Applicant proposes to use water for municipal use which is a recognized beneficial use. §85-2-102(5), MCA. The Applicant has proven by a preponderance of the evidence municipal is a beneficial use and this new groundwater appropriation in association with Applications to Change a Water Right 41P 30116656 and 41P 30114262 which is up to 2,895.00

gallons per minute (GPM) for a total volume up to 1456.5 acre-feet (AF) is the amount needed to sustain the beneficial use. § 85-2-311(1)(d), MCA, (FOF 76-82)

Possessory Interest

FINDINGS OF FACT

88. This application is for supply of water to the City of Shelby including Shelby South, Prison, Humic facility along with the communities of Devon, Dunkirk, Ethridge, and Big Rose Colony, City of Cut Bank, Oilmont, Galata and the Nine Mile system. The Applicant has established water service agreements through contracts and have provided copies to the Department. It is clear that the ultimate user will not accept the supply without consenting to the use of water. ARM 36.12.1802.

CONCLUSIONS OF LAW

89. 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.

90. 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.

91. 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 87)

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. 41P 30117451 should be GRANTED.

The Department determines the Applicant may divert groundwater, by means of three new wells (new well # 2,4, and 6), up to a flow rate of 205 GPM and volume of 331.6 AF to supplement their existing 6 statements of claim, and 3 provisional permits, for 13 points of diversion (wells), and a total of 2,895 GPM and up to 1,456.5 AF. The points of diversion including the new wells proposed in this Application are thirteen wells that are between 32 feet and 49 feet deep in SW ¼ of Section 21, Township 31 North, Range 2 West for municipal use from January 1 through December 31. The place of use is the City of Shelby including Shelby South, Prison, Humic facility along with the communities of Devon, Dunkirk, Ethridge, and Big

Rose Colony, the City of Cut Bank, Oilmont, Nine Mile and Galata (See application file for more specific legal land descriptions).

Permit 41P 30117451 together with Change Authorizations 41P 30114262 and 41P 30116656 shall be subject to the following conditions, limitations or restrictions upon issuance:

1) WATER MUST NOT BE DIVERTED PURSUANT TO PERMIT 41P 30117451 AND CHANGE AUTHORIZATIONS 41P 30116656 AND 41P 30114262 TO ANY INDIVIDUAL PLACE OF USE AUTHORIZED IN SAID CHANGE AUTHORIZATIONS UNTIL A REQUIRED MEASURING DEVICE IS IN PLACE AND OPERATING AT THE SPECIFIED METER LOCATION CORRESPONDING TO THE PARTICULAR PLACE OF USE. THE APPROPRIATOR SHALL MAINTAIN THE MEASURING DEVICES IN PROPERLY FUNCTIONING CONDITION SO THAT THE VOLUMES ARE ACCURATELY MEASURED.

2) ON A FORM PROVIDED BY THE DEPARTMENT, THE APPROPRIATOR SHALL RECORD MONTHLY VOLUME OF ALL WATER INDIVIDUALLY METERED AT EACH METER LOCATION. THE VOLUME OF WATER AT EACH OF THE METER LOCATIONS SHALL NOT EXCEED THE FOLLOWING AMOUNTS EXPRESSED IN ACRE FEET:

	Shelby Master Meter	Cut Bank Meter	Prison, Humic, Ethridge, Big Rose, Devon-Dunkirk, Shelby South and Oilmont/Galata Nine Mile Meter Locations
January 1 -April 30	411.70	124.48	164.00
May 1 -October 31	839.00	261.42	318.82
November 1 -December 31	205.80	62.24	81.98
Total	1456.50	448.10	564.80

RECORDS SHALL BE SUBMITTED MONTHLY AND A SUMMARY PROVIDED BY JANUARY 31 OF EACH YEAR TO THE DEPARTMENT’S WATER RESOURCES HAVRE REGIONAL

OFFICE AND UPON REQUEST AT OTHER TIMES DURING THE YEAR. FAILURE TO SUBMIT REPORTS MAY BE CAUSE FOR REVOCATION OF THIS CHANGE AUTHORIZATION.

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 21st day of December 2020.

Matt Miles, Manager
Havre Regional Office
Department of Natural Resources and Conservation

CERTIFICATE OF SERVICE

This certifies that a true and correct copy of the PRELIMINARY DETERMINATION TO GRANT was served upon all parties listed below on this 21st day of December 2020, by electronic mail.

ABIGAIL ST. LAWRENCE
ATTORNEY AT LAW
(406) 797-7220
PO BOX 2019
HELENA, MT 59624
ABIGAIL@STLAWRENCELAWFIRM.COM

Havre Regional Office, (406) 265-5516