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

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APPLICATION FOR BENEFICIAL WATER USE PERMIT NO. 43Q 30154658 BY M & J Land Co LLC	)))	**PRELIMINARY DETERMINATION TO GRANT PERMIT**

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On April 26, 2022, M & J Land Co LLC (Applicant) submitted Application for Beneficial Water Use Permit No. 43Q 30154658 to the Billings Water Resources Office of the Department of Natural Resources and Conservation (Department or DNRC) for 352 GPM (0.78 CFS) flow rate and 97.6 AF volume. The Department published receipt of the Application on its website. The Department met with the Applicant, Taj Mukadam, owner of M & J Land Co LLC, and the Applicant's consultant, Scott Worthington, on January 19, 2022, for a pre-application meeting. Mark Elison and Jill Lippard were present for the Department.

The Application was determined to be correct and complete as of August 24, 2022. An Environmental Assessment for this Application was completed on October 28, 2022.

I. 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-GW
- Attachments
- Maps: Plat map of proposed subdivision
- Aquifer Test Data Form 633 for one 8-hour pumping test
- Variance Request dated February 4, 2022
- Variance Approval Letter dated February 18, 2022

Information Received after Application Filed

- Email dated June 2, 2022, from consultant, Scott Worthington, clarifying location of the well that was used for the 8-hour pumping test

- Email and updated preliminary plat of Lackman Meadows Subdivision received on June 7, 2022, from owner of M & J Land Co LLC, Taj Mukadam (Applicant)
- Email dated July 6, 2022, from consultant, Scott Worthington, confirming that a pressure transducer was used to measure static water levels during the 8-hour pumping test
- Copy of the conditions proposed by the Department signed by Applicant, Taj Mukadam (owner of M & J Land Co LLC), received on August 30, 2022.

Information within the Department's Possession/Knowledge

- Groundwater Permit Application Technical Report by Jill Lippard, Water Resource Specialist, dated August 24, 2022
- Groundwater Permit Report by Jacob Mohrmann, Department Hydrogeologist, dated July 6, 2022
- Hydrology of the West Billings Area: Impacts of Land-Use Changes on Water Resources, John Olson & Jon Reiten (2002), Montana Bureau of Mines and Geology, Report of Investigation 10
- DNRC Form 615: Planning Guide for Water Use
- DNRC water rights database
- DNRC Canyon Creek @ ZooMontana gage 43Q 05900 (period of record: 5/5/2016-7/7/2022)
- The Department also routinely considers the following information. The following information is not included in the administrative file for this Application but is available upon request. Please contact the Billings Regional Office at 406-247-4415 to request copies of the following documents.
    - Consumptive Use Methodology Memo dated March 17, 2010
    - Variance – Yellowstone River Terrace Level 3 Aquifer Properties Memo dated March 1, 2022

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 or 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.

II. PROPOSED APPROPRIATION

1. The Applicant proposes to divert groundwater from January 1 to December 31 for multiple domestic use and from May 1 to October 31 for lawn and garden use. Groundwater will be diverted by means of 41 wells, each approximately 54.5 feet deep, from January 1 to December 31 at a combined flow rate of 352 GPM (0.78 CFS) up to 97.6 AF, from multiple points of diversion in the SE Section 18, T1S, R25E, Yellowstone County. One well for aquifer testing has been drilled. The Applicant proposes a subdivision with 39 residential homes and 2 parks. The Applicant proposes 32.18 AC of residential lawn and garden irrigation and 1.61 AC of park lawn irrigation. The proposed annual volume for the multiple domestic use is 13.1 AF. The proposed volume for the residential lawn and garden irrigation is 80.5 AF and the proposed volume for the park lawn irrigation is 4 AF. The place of use is generally located in SE Section 18, T1S, R25E, Yellowstone County, approximately three miles west of Billings in Lackman Meadows Subdivision.

2. There will be 41 individual wells; one to serve each residential lot and each park. The proposed subdivision includes 39 residential lots with domestic and lawn and garden use and 2 parks with lawn use. The residential wells will be installed by the individual homeowners. The Applicant proposes to transfer ownership of this water right to a homeowners' association when such an association is created as agreed to on the conditions proposed by the Department and signed by the Applicant on August 30, 2022.

3. The proposed appropriation lies approximately 0.3 miles north of Canyon Creek and 1.6 miles southwest of Hogans Slough.

4. The following conditions were proposed by the Department and agreed to by the Applicant on August 30, 2022:

IMPORTANT INFORMATION

NOTIFICATION REQUIREMENT: THE APPROPRIATOR SHALL RECORD A DOCUMENT IN THE COURTHOUSE THAT SHALL NOTIFY ALL CURRENT AND FUTURE LANDOWNERS IN LACKMAN MEADOWS SUBDIVISION THAT 1) A WATER RIGHT CANNOT BE OWNED BY A

PRIVATE INDIVIDUAL, BUT MUST BE HELD IN THE NAME OF THE HOME OWNERS ASSOCIATION (THE APPROPRIATOR); 2) A COPY OF THE WELL LOG MUST BE SUBMITTED TO THE APPROPRIATOR; AND 3) WATER USE MUST BE MEASURED AND RECORDED AS DESCRIBED IN THIS PERMIT. THE APPROPRIATOR SHALL PROVIDE A COPY OF THE RECORDED DOCUMENT IDENTIFYING THESE RESTRICTIONS TO EACH LANDOWNER.

WATER MEASUREMENT INFORMATION

THE APPROPRIATOR SHALL REQUIRE LANDOWNERS IN LACKMAN MEADOWS SUBDIVISION TO INSTALL A DEPARTMENT APPROVED WATER USE MEASURING DEVICE. WATER MUST NOT BE DIVERTED FROM THE WELLS UNTIL THE REQUIRED MEASURING DEVICE IS IN PLACE AND OPERATING. THE APPROPRIATOR SHALL KEEP YEARLY WRITTEN RECORD OF THE FLOW RATE AND VOLUME OF ALL WATER DIVERTED FROM JANUARY 1 THROUGH DECEMBER 31 BY ALL WELLS. THE WATER USE RECORDS SHALL BE COMPILED AND SUBMITTED TO THE DEPARTMENT BY JANUARY 31 OF EACH YEAR AND UPON REQUEST AT OTHER TIMES DURING THE YEAR.

FAILURE TO SUBMIT REPORTS MAY BE CAUSE FOR REVOCATION OF THE PERMIT. THE RECORDS MUST BE SENT TO THE BILLINGS WATER RESOURCES REGIONAL OFFICE. THE APPROPRIATOR SHALL ENSURE EACH MEASURING DEVICE IS MAINTAINED SO IT ALWAYS OPERATES PROPERLY AND MEASURES FLOW RATE AND VOLUME ACCURATELY.

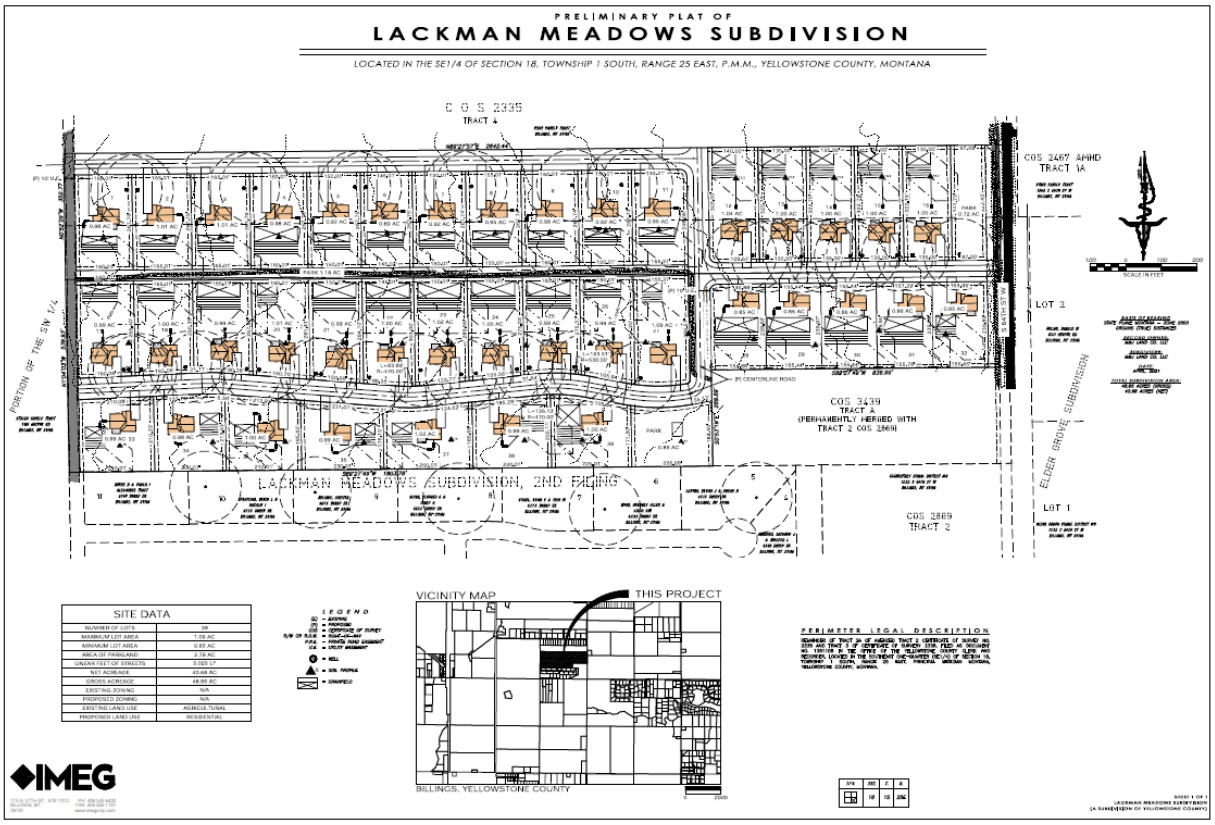
IMPORTANT INFORMATION

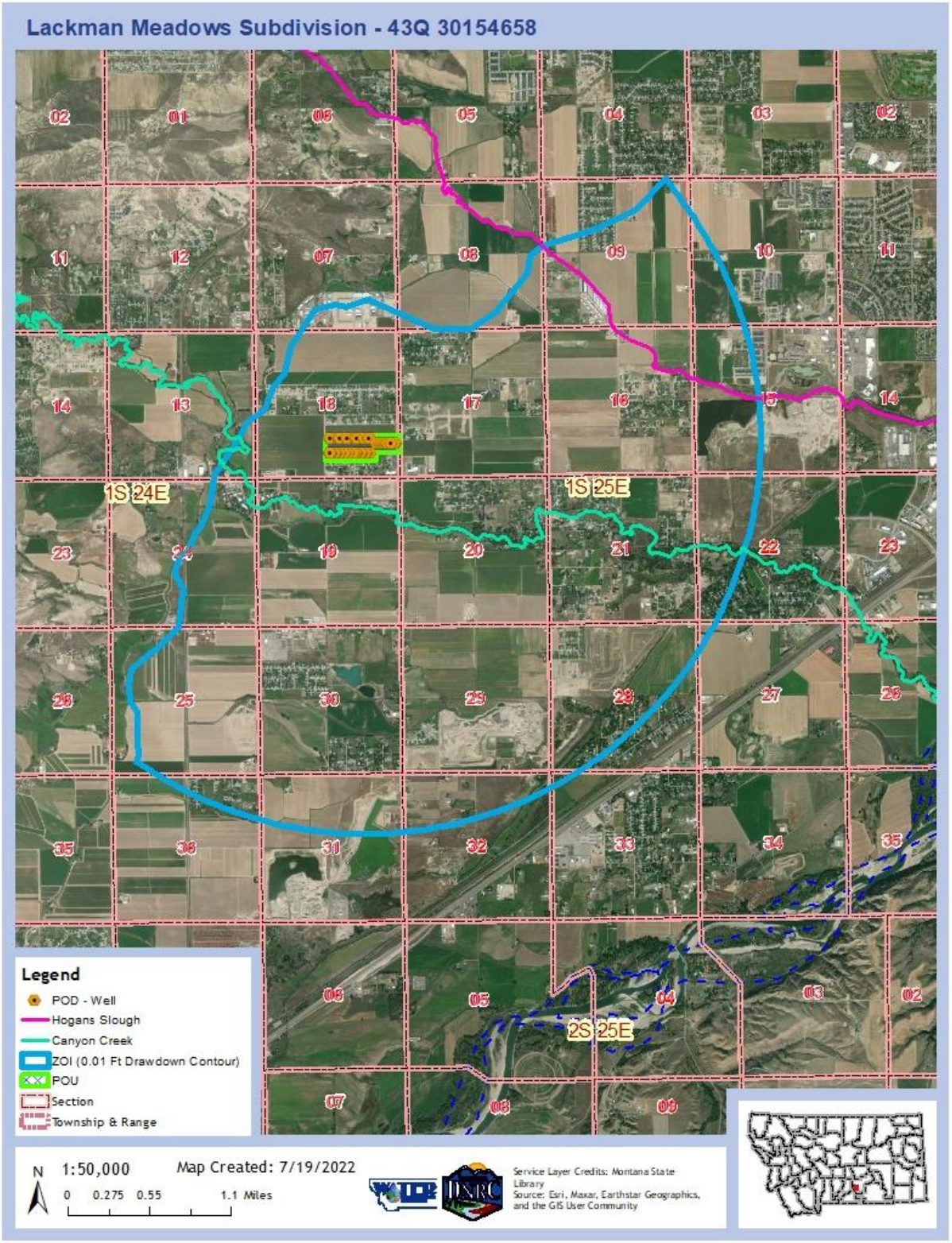
WELL LOGS: THE APPROPRIATOR SHALL REQUIRE THE LANDOWNER TO PROVIDE A COPY OF THE WELL LOG TO THE APPROPRIATOR WITHIN 90 DAYS OF COMPLETION OF THE WELL. THE APPROPRIATOR SHALL PROVIDE A COPY OF WELL LOGS FOR ALL WELLS COMPLETED DURING THAT YEAR TO THE WATER RESOURCES REGIONAL OFFICE BY JANUARY 31 OF EACH YEAR.

IMPORTANT INFORMATION

THE APPROPRIATOR MUST PERFORM 8-HOUR DRAWDOWN AND YIELD TESTS ON EACH PRODUCTION WELL UNTIL THE REQUESTED FLOW RATE OF 352 GPM HAS BEEN

ATTAINED. THE RESULTS OF THE 8-HOUR DRAWDOWN AND YIELD TESTS MUST BE SUBMITTED TO THE DEPARTMENT ON FORM 633 AS THE PRODUCTION WELLS ARE COMPLETED.




Lackman Meadows Subdivision - 43Q 30154658
1S 24E
1S 25E
2S 25E
Legend
POD - Well
Hogans Slough
Canyon Creek
ZOI (0.01 Ft Drawdown Contour)
POU
Section
Township & Range
N
1:50,000
Map Created: 7/19/2022
0 0.275 0.55 1.1 Miles
Service Layer Credits: Montana State Library
Source: Esri, Maxar, Earthstar Geographics, and the GIS User Community

III. FINDINGS OF FACT

A. Physical Availability

5. The Applicant submitted a variance request to waive aquifer testing requirements on February 4, 2022. Specifically, the Applicant requested variance from ARM 36.12.121 because of recent nearby aquifer tests and because the proposed project meets parameters defined in the Yellowstone River Terrace Level 3 Aquifer Properties Memo. The Department granted the variance on February 18, 2022.

6. Department Hydrogeologist, Jacob Mohrmann, issued a Groundwater Permit Report, dated July 6, 2022. The report modeled aquifer properties based on an 8-hour aquifer yield and drawdown test at an average flow rate of 80.5 GPM. Recommended values for transmissivity and storativity are 8,700 ft^2/day derived from a nearby 72-hour aquifer test and 0.1, taken as a literature value for unconfined sand and gravel aquifers, respectively. Using a pumping rate of 60.5 GPM (flow rate to produce the requested volume over the proposed period of diversion), the modeled 0.01-foot drawdown contour occurs at 14,000 feet from the proposed wells. The drawdown contour is truncated to the west at the edge of the Yellowstone River alluvium. The volume of total aquifer flux each year within the zone of influence is given by the equation Q = TWi, where T is transmissivity, W is the width of the zone of influence (taken at 28,000 feet) and i is the groundwater gradient (0.003 ft/ft from Olson, 2005). The volume of total aquifer flux each year within the zone of influence as defined by 0.01 foot of drawdown is 730,800 ft^3/day or 6,123 AF/YR.

7. The Department finds that the amount of groundwater physically available at the proposed point of diversion is 6,123 AF/YR.

B. Legal Availability

8. Based on a 0.01-foot drawdown contour at 14,000 feet from the proposed wells, a Department Hydrogeologist determined that there are 614 existing groundwater rights within the zone of influence. A list of these water rights is in the file as an Appendix to the Groundwater Permit Report. Of those, 560 are Groundwater Certificates, 9 are Exempt Notices, 32 are Statements of Claim and 13 are Provisional Permits. There are 85 Groundwater Certificates for

which no volume is recorded in the database. The legal demand for each of these water rights was taken as 2.86 AF representing the average volume of the 475 Groundwater Certificates for which volumes are recorded. Statements of Claim with no listed volume were assigned volumes. Domestic claims were assigned 1.5 AF, stock claims were assigned 0.034 AF/AU and the irrigation claim (43Q 677-00) was assigned 4.1 AF/AC representing the Department standard for 45% efficient flood irrigation in Climatic Area 1. The total annual legal demand on groundwater within the zone of influence is 3,037.75 AF/YR. Below is a comparison of the water supply and current legal demands for groundwater.

Table 1. Comparison of physically available groundwater to legal demands.

Physically Available (AF/year)	Existing Legal Demands (AF/year)	Physically Available minus Existing Legal Demands (AF/year)
6,123	3,037.75	3,085.25

9. The amount of groundwater available is 6,123 AF/YR and existing legal demands of groundwater total 3,037.75 AF/YR. The Department finds that the comparison shows that groundwater is legally available (6,123 AF – 3037.75 AF = 3,085.25 AF).

10. The Groundwater Permit Report, by Jacob Morhmann, dated July 6, 2022, concludes that surface water depletion from the proposed wells will be to Canyon Creek. The depleted reach of Canyon Creek is generally at and downstream of the northwest corner of Section 19, T1S, R25E, Yellowstone County.

Table 2. Modeled monthly depletions in volume (AF) and flow rate (GPM & CFS) to Canyon Creek

Month	Net Depletions (AF)	Net Depletions (GPM)	Net Depletions (CFS)
January	3	22.2	0.05
February	2.7	21.6	0.05
March	2.4	17.8	0.04
April	2.5	18.9	0.04
May	4	29.4	0.07
June	7	52.6	0.12
July	10	73.3	0.16
August	11.6	84.8	0.19
September	10.3	77.9	0.17
October	7.4	53.9	0.12

November	4.9	37.1	0.08
December	3.6	26.5	0.06
Total Annual	69.4		

11. The Department has operated a gage on Canyon Creek approximately five miles downstream from the top of the depleted reach and approximately two miles upstream from the confluence with the Yellowstone River since May 2016. There are nine water rights on Canyon Creek between the gage and the top of the depleted reach.

Table 3. Water rights between the gage location and the top of the depleted reach

WATER RIGHT NUMBER	OWNER	PURPOSE	FLOW RATE (GPM)	FLOW RATE (CFS)	ACRES	VOLUME	PERIOD OF DIVERSION
43Q 180005 00	JERRY J O'DONNELL; SUSAN R O'DONNELL	IRRIGATION	30.00	0.06	3.00	12.30*	03/01 to 11/30
43Q 199830 00	YELLOWSTONE BOYS AND GIRLS RANCH INC	IRRIGATION	119.00	0.26	7.00	28.70*	05/01 to 09/30
43Q 214609 00	CATHERINE MCNALLY; JIM MCNALLY; JUDY C MCNALLY; TERESA C MCNALLY	IRRIGATION	297.50	0.66	17.50	71.75*	03/15 to 11/19
43Q 26726 00	SALLY A SAUNDERS	IRRIGATION	153.00	0.34	9.00	36.90*	06/01 to 09/30
43Q 30067817	ANNA M WILSON; ROBERT A WILSON	LAWN AND GARDEN	6.00	0.01	1.00	2.50	04/15 to 09/30
43Q 30115456	GEORDIE N STEILEN; SHERRI J STEILEN	STOCK	35.00*	0.08*	0.00	0.10	01/01 to 12/31
43Q 39516 00	RANDOLPH L LEGARE; SUSAN C LEGARE	IRRIGATION	264.00	0.58	15.00	61.50	04/15 to 11/19
43Q 8960 00	GEORGE L LAMBRECHT	IRRIGATION; STOCK	596.90	1.33	60.00	175.00	04/30 to 10/31

43Q 8965 00	DOLORES D GROVER; GEORGE S GROVER	IRRIGATION; STOCK	498.16	1.11	10.00	28.00	04/30 to 10/31

*Calculated by DNRC

12. These water rights were added to the gage measurements to determine the amount of water physically available at the top of the depleted reach. Volume is calculated as monthly flow times 1.98 times the number of days in the month. Statements of Claim for irrigation that listed no volume were assigned 4.1 AF/AC based on Department standards for 45% efficiency in Climatic Area 1. Note that a portion of the places of use associated with these water rights fall within Climatic Area 1 and a portion of the places of use fall within Climatic Area 2. The Department Standard of 4.1 AF/AC for Climatic Area 1 was applied to the water rights for this analysis because this the most conservative approach for estimating the volume associated with these water rights. Livestock direct from source rights were assigned a flow rate 35 GPM. Stock rights were assigned a volume of 0.034 AF/AU. The distribution of flow rate and volume by month for these water rights is in the file under the Processing Information and Correspondence Flag.

Table 4. Physically available flow on Canyon Creek by month (CFS).

Month	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Median of Mean Monthly Flow at Gage (CFS)	10.79	10.20	13.37	50.15	150.03	122.98	95.33	99.38	164.51	125.26	20.94	9.48
Legal Demands Between the Gage and the Top of the Depleted Reach (CFS)	0.08	0.08	0.80	1.39	4.09	4.43	4.43	4.43	4.43	3.82	1.38	0.08
Physical Availability of Water at Top of Depleted Reach (CFS)	10.86	10.28	14.17	51.53	154.11	127.41	99.76	103.81	168.94	129.08	22.32	9.55

Table 5. Physically available volume on Canyon Creek by month (AF).

Month	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Median of Mean Monthly Flow at Gage (AF)	662.0	565.4	820.4	2,978.7	9,208.5	7,304.8	5,851.3	6,100.2	9,772.0	7,688.4	1,243.77	581.6
Legal Demands Between the Gage and the Top of the Depleted Reach (AF)	0.01	0.01	6.27	15.79	59.29	66.45	68.66	68.66	66.45	53.01	12.14	0.01
Physical Availability of Water at Top of Depleted Reach (AF)	662.0	565.4	826.7	2,994.4	9,267.8	7,371.3	5,920.0	6,168.9	9,838.4	7,741.4	1,255.9	581.6

13. The area of potential impact is the entire reach of Canyon Creek from the top of the depleted reach in the northwest corner of Section 19, T1S, R25E, Yellowstone County to the confluence with the Yellowstone River. There are ten water rights on Canyon Creek between the top of the depleted reach and the confluence with the Yellowstone River. The volume for irrigation rights with no specified volume was taken as the number of acres times the low end of the range for 45% efficiency flood irrigation in Climatic Area 1 (4.1 AF/AC). Again, a portion of the places of use associated with these water rights fall within Climatic Area 1 and a portion of the places of use fall within Climatic Area 2. The Department Standard of 4.1 AF/AC for Climatic Area 1 was applied to the water rights for this analysis because this the most conservative approach for estimating the volume associated with these water rights. Livestock direct from source rights were assigned a flow rate 35 GPM. Stock water rights were assigned 0.034 AF/AU. The distribution of flow rate and volume by month for these water rights is in the file.

Table 6. Water rights between the top of the depleted reach and the Yellowstone River.

WATER RIGHT NUMBER	OWNER	PURPOSE	FLOW RATE (GPM)	FLOW RATE (CFS)	ACRES	VOLUME	PERIOD OF DIVERSION
43Q 180005 00	JERRY J O'DONNELL; SUSAN R O'DONNELL	IRRIGATION	30.00	0.06	3.00	12.30*	03/01 to 11/30
43Q 199830 00	YELLOWSTONE BOYS AND GIRLS RANCH INC	IRRIGATION	119.00	0.26	7.00	28.70*	05/01 to 09/30
43Q 206480 00	CONNIE M HANSON; JEROME D HANSON	IRRIGATION	350.00	0.77	20.00	82.00*	04/15 to 11/04
43Q 214609 00	CATHERINE MCNALLY; JIM MCNALLY; JUDY C MCNALLY; TERESA C MCNALLY	IRRIGATION	297.50	0.66	17.50	71.75*	03/15 to 11/19
43Q 26726 00	SALLY A SAUNDERS	IRRIGATION	153.00	0.34	9.00	36.90*	06/01 to 09/30
43Q 30067817	ANNA M WILSON; ROBERT A WILSON	LAWN AND GARDEN	6.00	0.01	1.00	2.50	04/15 to 09/30
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43Q 8965 00	DOLORES D GROVER; GEORGE S GROVER	IRRIGATION; STOCK	498.16	1.11	10.00	28.00	04/30 to 10/31

*Calculated by DNRC

14. The legal demands between the top of the depleted reach and the confluence of Canyon Creek with the Yellowstone River were subtracted from the physically available water at the top of the depleted reach to determine if water was legally available.

Table 7. Legally available flow on Canyon Creek by month (CFS).

Month	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Physical Availability of Water at the Top of the Depleted Reach (CFS)	10.86	10.28	14.17	51.53	154.11	127.41	99.76	103.81	168.94	129.08	22.32	9.55
Legal Demands on the Depleted Reach (CFS)	0.08	0.08	0.80	2.16	4.86	5.20	5.20	5.20	5.20	4.59	1.38	0.08
Physical Availability of Water Minus Legal Demands (CFS)	10.79	10.20	13.37	49.38	149.26	122.21	94.56	98.61	163.74	124.49	20.94	9.48

Table 8. Legally available volume on Canyon Creek by month (AF).

Month	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Physical Availability of Water at the Top of the Depleted Reach (AF)	662.0	565.4	826.7	2,994.4	9,267.8	7,371.3	5,920.0	6,168.9	9,838.4	7,741.4	1,255.9	581.6
Legal Demands on the Depleted Reach (AF)	0.01	0.01	6.27	22.22	71.75	78.51	81.12	81.12	78.51	65.47	13.75	0.01
Physical Availability of Water Minus Legal Demands (AF)	662.0	565.4	820.4	2,972.2	9,196.1	7,292.8	5,838.8	6,087.7	9,759.9	7,676.0	1,242.1	581.6

15. There are five major irrigation ditches that cross Canyon Creek in the area west of Billings. The Cove, Big, Italian and High Ditches cross upstream of the depleted reach. The Billings Bench Water Association Ditch crosses Canyon Creek above the DNRC gage and below the top of the depleted reach. These ditches and return flows from several smaller ditches draining fields add water to Canyon Creek during the irrigation season, generally April through October. The base flow in Canyon Creek, however, in November through March, when the ditches are not in operation is a minimum of 9.48 CFS which exceeds legal demands and modeled depletions. Physically available water minus legal demands within the depleted reach of Canyon Creek exceeds modeled depletions resulting from Applicant's request. The Department finds that water is legally available in excess of modeled depletions.

C. Adverse Effect

16. The Applicant proposes to restrict irrigation watering in the event a call is made. Restrictions could include alternate day watering, watering restricted to specific days, or restricting users to domestic use only.

17. Jacob Mohrmann, Department Hydrogeologist, modeled drawdown in nearby wells using the aquifer properties above and a monthly pumping schedule accounting for domestic and lawn and garden uses. Modeled drawdown was greatest at the end of July of the fifth year of pumping. Drawdown in excess of 1 foot occurs in wells within 1,550 feet of the proposed wells. There are 34 wells associated with 31 water rights in the source aquifer predicted to experience drawdown greater than 1 foot. Note that the Groundwater Permit Report by Department Hydrogeologist Jacob Mohrmann dated July 6, 2022, and the Technical Report by Water Resource Specialist Jill Lippard dated August 24, 2022, both incorrectly indicated that there were 34 water rights predicted to experience drawdown greater than 1 foot. Water rights 43Q 30106062 and 43Q 30147261 are each listed twice on Appendix A of the Groundwater Permit Report because they each have two wells predicted to experience drawdown greater than 1 foot. Two of the water right numbers listed on Appendix A of the Groundwater Permit Report, 43Q 30148809 and 43Q 30150635, are terminated Groundwater Certificates. The use of these wells is covered under Provisional Permit 43Q 30115108, which is included in the Appendix A list. After accounting for these discrepancies, there are only 31 water rights associated with 34 wells that are predicted

to experience drawdown greater than 1 foot. For wells that have available depth and static water level data and are predicted to experience between 1 foot to 2.5 feet drawdown, the remaining available water column after drawdown is a minimum of 19 feet.

Table 9. Distributed monthly pumping schedule for all domestic and irrigation diversions.

Month	All Domestic and Irrigation Diversion Wells (AF)	All Domestic and Irrigation Diversion Wells (GPM)
January	1.1	8.1
February	1	8.1
March	1.1	8.1
April	2.4	18.4
May	10.7	77.8
June	17.9	135.1
July	24.1	176
August	21.8	159.5
September	11.3	85.2
October	3.9	28.5
November	1.1	8.1
December	1.1	8.1
Total	97.6	

18. The volume of groundwater legally available is greater than the Applicant's proposed use. Since 41 separate wells will be serving the individual residences and parks, the Department will add the following conditions agreed to by the Applicant on August 30, 2022.

IMPORTANT INFORMATION

NOTIFICATION REQUIREMENT: THE APPROPRIATOR SHALL RECORD A DOCUMENT IN THE COURTHOUSE THAT SHALL NOTIFY ALL CURRENT AND FUTURE LANDOWNERS IN LACKMAN MEADOWS SUBDIVISION THAT 1) A WATER RIGHT CANNOT BE OWNED BY A PRIVATE INDIVIDUAL, BUT MUST BE HELD IN THE NAME OF THE HOME OWNERS ASSOCIATION (THE APPROPRIATOR); 2) A COPY OF THE WELL LOG MUST BE SUBMITTED TO THE APPROPRIATOR; AND 3) WATER USE MUST BE MEASURED AND RECORDED AS DESCRIBED IN THIS PERMIT. THE APPROPRIATOR SHALL PROVIDE A COPY OF THE RECORDED DOCUMENT IDENTIFYING THESE RESTRICTIONS TO EACH LANDOWNER.

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FAILURE TO SUBMIT REPORTS MAY BE CAUSE FOR REVOCATION OF THE PERMIT. THE RECORDS MUST BE SENT TO THE BILLINGS WATER RESOURCES REGIONAL OFFICE. THE APPROPRIATOR SHALL ENSURE EACH MEASURING DEVICE IS MAINTAINED SO IT ALWAYS OPERATES PROPERLY AND MEASURES FLOW RATE AND VOLUME ACCURATELY.

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IMPORTANT INFORMATION

THE APPROPRIATOR MUST PERFORM 8-HOUR DRAWDOWN AND YIELD TESTS ON EACH PRODUCTION WELL UNTIL THE REQUESTED FLOW RATE OF 352 GPM HAS BEEN ATTAINED. THE RESULTS OF THE 8-HOUR DRAWDOWN AND YIELD TESTS MUST BE SUBMITTED TO THE DEPARTMENT ON FORM 633 AS THE PRODUCTION WELLS ARE COMPLETED.

19. The flow rate and volume of water physically available minus all legal demands within the area of impact for Canyon Creek exceeds the modeled depletion in all months.

20. Based on available water in excess of legal demands on depleted surface water sources, the substantial available water column after predicted drawdown in water rights that would

experience one foot of drawdown, and the Applicant's plan to prevent adverse effect from the groundwater appropriation, the Department finds that the proposed appropriation will not cause adverse effect to existing water rights or reservations.

D. Adequate Diversion

21. The 8-hour drawdown and yield test at 80.5 GPM for the well on lot 17 showed a maximum drawdown of 2.62 feet below the static water level. Modeling by Department Hydrogeologist, Jacob Mohrmann, indicates the tested well is predicted to experience 2.2 feet of drawdown giving a well efficiency of 84 percent. Aquifer drawdown was modeled for the 41 proposed wells by assigning one well the entirety of the full system pumping schedule. Modeling indicates a predicted theoretical drawdown of up to 5.5 feet, and a predicted drawdown including well loss of 6.5 feet, leaving 30.11 feet of remaining available water column. Total maximum drawdown was modeled as the sum of actual drawdown and modeled well interference drawdown. Similar available water columns are predicted for the other 40 wells assuming that all wells are drilled to a comparable depth. The Department finds that the Applicant has demonstrated adequacy of diversion. Because a single well was tested at 80.5 GPM and the Applicant is requesting 352 GPM, the Department will add the following condition, agreed to by the Applicant on August 30, 2022.

IMPORTANT INFORMATION

THE APPROPRIATOR MUST PERFORM 8-HOUR DRAWDOWN AND YIELD TESTS ON EACH PRODUCTION WELL UNTIL THE REQUESTED FLOW RATE OF 352 GPM HAS BEEN ATTAINED. THE RESULTS OF THE 8-HOUR DRAWDOWN AND YIELD TESTS MUST BE SUBMITTED TO THE DEPARTMENT ON FORM 633 AS THE PRODUCTION WELLS ARE COMPLETED.

22. All wells will be drilled by a licensed well contractor and will be placed as designated on the subdivision plat.

23. Each well is anticipated to have a 6-inch diameter steel casing, to be approximately 54.5 feet deep with a screened section approximately 5 feet in height near the bottom based on the first well drilled for Lot 17. Water will be extracted from each well with a submersible pump with a 1.25 to 1.5-inch discharge line through a pitless adapter. Each pump will be operated by a

variable frequency drive. The pitless adapter and water service line will be buried to a minimum depth of 6.5 feet for frost protection and plumbed to the home. The service line will run through a sleeve under the home footings and into the house where a ball valve and air-filled surge tank will be installed to regulate system pressures. Water lines will be plumbed through the home for domestic uses and have a branch off the service line stubbed out of the house to provide water for the lawn and garden use for that lot. The two wells for the parks will have the same setup with the water line running from the pitless adapter to manifolds of sprinkler zone valves wired to a controller.

24. The entire system will be designed by a professional engineer. The current consultant is InSite Engineering of Billings, MT.

E. Beneficial Use

25. The Applicant requests 352 GPM (0.78 CFS) flow rate and 97.6 AF volume for multiple domestic and lawn and garden uses. Multiple domestic and lawn and garden are recognized beneficial uses under the Montana Water Use Act.

26. The Applicant proposes 39 residential homes, for which 300 gallons per day (GPD) per home is requested (100 GPD/person). Over one year, this amounts to 13.11 AF (39 x 300 x 365 = 4,270,500 gallons = 13.11 AF). The Department Planning Guide for Water Use (Form 615) gives 75 GPD per person for single family homes and 100 to 150 GPD/person for luxury dwellings which is consistent with the requested volume. The Applicant proposes 32.18 AC of residential lawn and garden irrigation. The Department standard for lawn and garden irrigation is 2.5 AF/AC and 32.18 AC requires 80.45 AF of water (32.18 x 2.5 = 80.45). The Applicant proposes 1.61 AC of park lawn irrigation. Using the Department standard for lawn and garden irrigation 1.61 AC requires 4.03 AF of water (1.61 x 2.5 = 4.03 AF). The total proposed volume rounded to the nearest tenth is 97.6 AF (13.11 + 80.45 + 4.03 = 97.6 AF).

27. The Applicant requests maximum flow rate of 352 GPM for 41 individual wells. The maximum flow rate of 352 GPM is based upon predicted peak flows associated with residential uses and lawn and garden uses. Based on domestic peaking factors and calculated watering intervals for lawn and garden over a period of 8 hours per day during the 180 day watering

season, the peak flow is 34 GPM for domestic use, 303 GPM for residential lawn and garden use, and 15 GPM for park use.

F. Possessory Interest

28. Taj Mukadam, owner of M & J Land Co LLC, the current landowner of the portion of the proposed place of use described as COS 2335 Parcel 2, signed the application form affirming the Applicant has possessory interest, or the written consent of the person with the possessory interest, in the property where the water is to be put to beneficial use. Written consent was provided by Allan L. Dahle, representative of the Allan L. Dahl Revocable Trust, the current landowner of the portion of the proposed place of use described as COS 2335 Parcel 3.

IV. CONCLUSIONS OF LAW

29. The Montana Constitution and Montana Water Use Act recognize the protection of senior appropriations while at the same time providing for the development and use of the waters of the state by the public. Mont. Const. Art. IX, §3; Mont. Code Ann. § 85-2-102; Montana Power Co. v. Carey, 211 Mont. 91, 96, 685 P.2d 336, 339 (1984)(the MWUA provides for the regulated development of water use in Montana through allowing for the new appropriation of water and protecting senior water rights from encroachment by junior appropriators).

30. 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 the applicable criteria in § 85-2-311, MCA, by a preponderance of the evidence. Bostwick Properties, Inc. v. Montana Dept. of Natural Resources and Conservation, 2009 MT 181, ¶ 21, 351 Mont. 26, 208 P.3d 868 (Bostwick I).

31. Under this Preliminary Determination, the relevant permit criteria in Mont. Code Ann § 85-2-311 are:

> … 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. [The applicant is not required to prove a lack of adverse effect for any water right identified in a written consent to approval filed pursuant to subsection (9) in connection with a permit application.]

(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 . . . ;

The determination of whether an application has satisfied the § 85-2-311, MCA criteria is committed to the discretion of the Department. Bostwick I at ¶ 21. Pursuant to § 85-2-312, MCA, the Department may condition permits as it deems necessary to meet the statutory criteria.

32. 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).

A. Physical Availability

33. 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." See also ARM 36.12.1702.

34. The Applicant has proven that groundwater is physically available at the proposed point of diversion in the amount Applicant seeks to appropriate. § 85-2-311(1)(a)(i), MCA. (FOF 5-7)

B. Legal Availability

35. Pursuant to § 85-2-311(1)(a), MCA, an applicant must prove by a preponderance of the evidence that water is legally available during the period in which the applicant seeks to appropriate, in the amount requested based upon a comparative analysis of physical availability of water to the legal demands on the sources impacted by the proposed use. See also ARM 36.12.1704 and 36.12.1705; Montana Power Co., 211 Mont. at 99, 685 P.2d at 340 (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).

36. Montana water law recognizes the that due to the connectivity between surface water and ground water, except for in unique circumstances, the appropriation of groundwater results in the depletion of surface water through induced infiltration and/or pre-stream capture. Accordingly, an application for applicant groundwater appropriation must prove that the proposed appropriation will not result in surface water depletions, or analyze the legal availability of surface water in light of the proposed ground water appropriation. Montana Trout Unlimited v. DNRC, 2006 MT 72, 331 Mont. 483, 133 P.3d 224; 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); 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 Perkins v. Kramer, 148 Mont. 355, 423 P.2d 587 (1966)).

37. 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 8-15)

C. Adverse Effect

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., 211 Mont. at 96, 685 P.2d at 331 (purpose of the Water Use Act is to protect senior appropriators from encroachment by junior users); Bostwick I. ¶ 21; Bostwick Properties Inc. v DNRC, 2013 MT 48, ¶¶ 25, 38, 43, 369 Mont. 150, 296 P.3d 1154 (Bostwick II). An applicant is not required to analyze, and the Department may not consider, the potential adverse effect to a water right for which a written consent to approval of the permit has been filed. § 85-2-311(1) and (9), MCA.

39. Based upon its analysis of potentially impacted water rights, 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 16-20)

D. Adequacy of Diversion

40. 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. The adequate means of diversion statutory test merely codifies and encapsulates the notion 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.

41. 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 21-24).

E. Beneficial Use

42. Under § 85-2-311(1)(d), MCA, an Applicant must prove by a preponderance of the evidence the proposed use is a beneficial use. It is a fundamental premise of Montana water law that beneficial use is the basis, measure, and limit of a water right. E.g., McDonald, supra;

Toohey v. Campbell, 24 Mont. 13, 60 P. 396(1900). Accordingly, the amount of water under a permit is limited to the amount of water necessary to sustain the beneficial use. Sitz Ranch v. DNRC, at Pg. 3 (rejecting applicant's argument that it be allowed to appropriate 800 acre-feet when a typical year would require 200-300 acre-feet).

43. Applicant proposes to use water for multiple domestic and lawn and garden irrigation uses which are recognized beneficial uses. § 85-2-102(54), MCA. Applicant has proven by a preponderance of the evidence multiple domestic and lawn and garden uses are beneficial uses and that 352 GPM (0.78 CFS) flow rate and 97.6 AF of diverted volume of water requested is the amount needed to sustain the beneficial use. § 85-2-311(1)(d), MCA, (FOF 25-27)

F. Possessory Interest/Place of Use

44. 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. See ARM 36.12.1802.

45. The Applicant has proven by a preponderance of the evidence that it 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. § 85-2-311(1)(e), MCA. (FOF 28)

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 30154658 should be GRANTED

The Department determines the Applicant may divert groundwater, by means of 41 wells approximately 54.5 feet deep, from January 1 through December 31 at 352 GPM (0.78 CFS) up to 97.6 AF, from points in the SE Section 18, T1S, R25E, Yellowstone County for multiple domestic use from January 1 to December 31 and lawn and garden use from May 1 through October 31. The Applicant may use water for 39 residences and may irrigate 32.18 AC of residential lawn and garden and 1.61 AC of park lawn. The volume for multiple domestic purpose is 13.11 AF, the volume for residential lawn and garden irrigation purpose is 80.45 AF, and the volume for park lawn irrigation purpose is 4.03 AF. The place of use is located in the SE Section 18, T1S, R25E, Yellowstone County.

The application will be subject to the following conditions:

IMPORTANT INFORMATION

NOTIFICATION REQUIREMENT: THE APPROPRIATOR SHALL RECORD A DOCUMENT IN THE COURTHOUSE THAT SHALL NOTIFY ALL CURRENT AND FUTURE LANDOWNERS IN LACKMAN MEADOWS SUBDIVISION THAT 1) A WATER RIGHT CANNOT BE OWNED BY A PRIVATE INDIVIDUAL, BUT MUST BE HELD IN THE NAME OF THE HOME OWNERS ASSOCIATION (THE APPROPRIATOR); 2) A COPY OF THE WELL LOG MUST BE SUBMITTED TO THE APPROPRIATOR; AND 3) WATER USE MUST BE MEASURED AND RECORDED AS DESCRIBED IN THIS PERMIT. THE APPROPRIATOR SHALL PROVIDE A COPY OF THE RECORDED DOCUMENT IDENTIFYING THESE RESTRICTIONS TO EACH LANDOWNER.

WATER MEASUREMENT INFORMATION

THE APPROPRIATOR SHALL REQUIRE LANDOWNERS IN LACKMAN MEADOWS SUBDIVISION TO INSTALL A DEPARTMENT APPROVED WATER USE MEASURING DEVICE. WATER MUST NOT BE DIVERTED FROM THE WELLS UNTIL THE REQUIRED MEASURING DEVICE IS IN PLACE AND OPERATING. THE APPROPRIATOR SHALL KEEP YEARLY WRITTEN RECORD OF THE FLOW RATE AND VOLUME OF ALL WATER DIVERTED FROM JANUARY 1 THROUGH DECEMBER 31 BY ALL WELLS. THE WATER USE RECORDS SHALL BE COMPILED AND SUBMITTED TO THE DEPARTMENT BY JANUARY 31 OF EACH YEAR AND UPON REQUEST AT OTHER TIMES DURING THE YEAR.

FAILURE TO SUBMIT REPORTS MAY BE CAUSE FOR REVOCATION OF THE PERMIT. THE RECORDS MUST BE SENT TO THE BILLINGS WATER RESOURCES REGIONAL OFFICE. THE APPROPRIATOR SHALL ENSURE EACH MEASURING DEVICE IS MAINTAINED SO IT ALWAYS OPERATES PROPERLY AND MEASURES FLOW RATE AND VOLUME ACCURATELY.

IMPORTANT INFORMATION

WELL LOGS: THE APPROPRIATOR SHALL REQUIRE THE LANDOWNER TO PROVIDE A COPY OF THE WELL LOG TO THE APPROPRIATOR WITHIN 90 DAYS OF COMPLETION OF THE WELL. THE APPROPRIATOR SHALL PROVIDE A COPY OF WELL LOGS FOR ALL WELLS

COMPLETED DURING THAT YEAR TO THE WATER RESOURCES REGIONAL OFFICE BY JANUARY 31 OF EACH YEAR.

IMPORTANT INFORMATION

THE APPROPRIATOR MUST PERFORM 8-HOUR DRAWDOWN AND YIELD TESTS ON EACH PRODUCTION WELL UNTIL THE REQUESTED FLOW RATE OF 352 GPM HAS BEEN ATTAINED. THE RESULTS OF THE 8-HOUR DRAWDOWN AND YIELD TESTS MUST BE SUBMITTED TO THE DEPARTMENT ON FORM 633 AS THE PRODUCTION WELLS ARE COMPLETED.

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 31st day of October 2022.

/Original signed by Mark Elison/
Mark Elison, Regional Manager
Billings 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 _____day of _____20__, by first class United States mail.

M & J LAND CO LLC
5233 BLUE HERON DR
BILLINGS, MT 59106
tajmukadam@gmail.com

SCOTT WORTHINGTON
4231 CREEKWOOD DR
BILLINGS, MT 59106
siteproscott@gmail.com

_____

BILLINGS REGIONAL OFFICE