DEPARTMENT OF NATURAL RESOURCES AND CONSERVATION

Glasgow Water Resources Regional Office

GREG GIANFORTE, GOVERNOR

222 6TH ST SOUTH
PO BOX 1269

PHONE: (406) 228-2561

GLASGOW, MONTANA 59230-1269

August 9, 2024

Big Horn Leasing LLC
P.O. Box 385
Sidney, MT 59270

Subject: Correct and Complete Application for Beneficial Water Use Permit No. 42M 30163320

Dear Applicant,

The Department of Natural Resources and Conservation (Department) has determined that your application is correct and complete pursuant to ARM 36.12.1601. Please remember that correct and complete **does not mean that your application will be granted.** The purpose of this letter is to indicate that the Department has enough information to analyze your water right application.

The Department will issue a Draft Preliminary Determination within 60 days of the date of this letter per §85-2-307(2)(b), MCA.

Following issuance of the Draft Preliminary Determination, you (Applicant) will have 15 business days to request an extension of time to submit additional information, if desired pursuant to §85-2-307(3)(a), MCA.

If no extension of time is requested and the Draft Preliminary Determination decision is to grant your application or grant your application in modified form, the Department will prepare a notice of opportunity to provide public comment, per §85-2-307(4)(a), MCA.

If no extension of time is requested and the Draft Preliminary Determination decision is to deny your application, the Department will adopt the Draft Preliminary Determination as the final determination per §85-2-307(3)(d)(ii), MCA.

If you have any questions or concerns about the application process, please contact me.

Best,

Ashley Kemmis
Water Resource Specialist
Glasgow Regional Office
Ashley.kemmis@mt.gov
(406) 808-7075

Deficiency Letter Response from Big Horn Leasing LLC.

Purpose and Diversion Information Response

- 20 Response- In the 600 application I had accidentally typed the wrong flow rate for well #2. Correct flow rate for well #2 is 37 GPM. Please see breakdown below of GPM/Well for clarification.
    - Well #1=59 GPM
    - Well #2=37 GPM
    - Well #3=46 GPM
        - Total=142 GPM

Place of Use

- 23 Response-The place of use has been deemed as the storage ponds located on the property. The correct legal description for the property is NENE, Sec. 8, T22N, R58E. In the 600 application I accidentally typed an extra "NE" in the legal land description.

Adequate Means of Diversion and Operation

- 38 Response-See attached updated map (Attachment #1). The updated map reflects the fenced perimeter and reflects where the gate to access the property is located. The fence is all the way around the perimeter of the property, it is marked in yellow on Attachment 1. The fence is constructed of 5 wire barbed fence with "T" posts every 10 feet apart. The fence was put in new in 2021. There is a gate at the entrance with a chain and combination padlock on it (See attachment #3). The combination will only be given to customers who have a contract with Big Horn Leasing to utilize this freshwater facility. I have included additional photos of the manifold area with the flow meter, the flow meter is located after the manifold. (See attachment #4, #5, &#6) At this time, we do not intend to add additional above ground storage tanks for this project, the pits should hold more than enough water. All 3 pits are separate from each other, no spill ways or connecting pipes between.

- 39 Response Part 1-See details below outlining the pumps used for each well. I have also included Attachments #7 & #8 that includes pump curves and pump details.

- Well #1 utilizes a 5HP 60FA5S4-PE Franklin Electric submersible pump with a peak discharge of 60 GPM.
- Well #2 utilizes the same pump. It is also a 5HP 60FA5S4-PE Franklin Electric submersible pump with a peak discharge of 60 GPM.
- Well #3 utilizes a 3HP 60FA3S4-PE Franklin Electric submersible pump with a peak discharge of 60 GPM.

- 39 Response Part 2-Currently our security measures include a 5-wire barbed fence and a gate with a combination padlock in place. Only customers who have a contract with Big Horn Leasing LLC will be given the combination to access this freshwater facility. See attachment #3 of the gate.

- 45 Response-Water will not travel between ponds. There is no connecting pipes or valves between the ponds. In order to fill each pond, we will be extending the discharge line with additional sections on 4inch lay flat pipe, see Attachment #2. Once pond #1 is full. We will add additional 100 foot sections of lay flat pipe to reach pond #2 and continue with the filling operations. Once pond #2 is full we will proceed in the same steps to filling pond #3. At the time we produce the freshwater into the pond, that is the completion on our end since the Storage Ponds have been listed as our place of use. From there it is the customers responsibility to remove the fresh water from the storage pond. Big Horn Leasing LLC will not provide any equipment, pumps, pipe etc. for the removal of the freshwater, removing the freshwater from the storage ponds is the customers responsibility. Big Horn Leasing LLC.'s only objective is to produce freshwater into the storage ponds onsite and make it available for purchase to the customer. I have provided some pictures in Attachment #9 from previous jobs in North Dakota that show the equipment the customer has used to pump fresh water from other storage ponds. For the winter months as long as we continually maintain a steady flow of fresh water into the ponds, the water traveling into the ponds will not freeze. We do realize that once winter hits there is the potential for a few feet of ice to be on top of majority of the pit (or pits). The customer does understand that they will need to supply their own means of heated suction hose to their pumps. Customer has also discussed possibly heating the whole pond with a propane fired freshwater heater (aka frac heater) to remove the ice layer from the top of the pond. Example: If they are planning on removing freshwater from Pond #2 midwinter for a frac job, they would start heating the water in pond #2 a week or 2 prior to needing to needing to pump

freshwater from the pond. The customer has not confirmed that is exactly what they would do but it is an option they have utilized in the past.

- 46.2 Response-I accidentally responded "Yes" to this question when it should have been a "No". Correct answer here is "No"

Beneficial Use

- 49 Response- The department does not have a standard for water marketing. My original response to this question should have been "No". I misunderstood the questions. The customer plans to purchase freshwater to complete frac jobs in the oil and gas industry. Frac jobs can be highly successful at maximizing the amount of oil recovered from a single well. During a frac job several thousands of barrels of fresh water are mixed with chemical and proppant "frac sand", this makes what's called a "slurry". This slurry is then pumped down the oil well at a high rate of volume causing the targeted rocks formation to fracture and release oil that would otherwise be trapped in the less permeable rock below surface. Because frac jobs consume so much water this is why we have requested the 219 Acre Feet per year for upcoming projects in the oil and gas industry.

- 49.2 Response-We are requesting 219 Acre Feet because we have calculated that is the max volume all 3 wells could produce for the year of marketable water. All 3 wells on the property have been previously permitted with the same flow rate but less yearly volume. By staying with the same flow rate that was previously permitted we can achieve the yearly volume of 219 acre feet of marketable water. Below is the breakdown of how we achieved the calculation of 219 Acre feet/year with using the same flow rate that was previously permitted.

    - Well #1=59 GPM
    - Well #2=37 GPM
    - Well #3=46 GPM
        - Total=142 GPM
            - 142 GPM x 1,440 (minutes/day) = 204,480 Gallons/day
            - 204,480 (Gallons/day) x 365 (Days/year) = 74,635,200 gallons/year
    - 74,635,200 gallons/year ÷ 325,851 gallons (1 Acre Foot) = 229 Acre Feet - 10 Acre Feet (for Evaporation from the pits) = 219 Acre Feet/Year

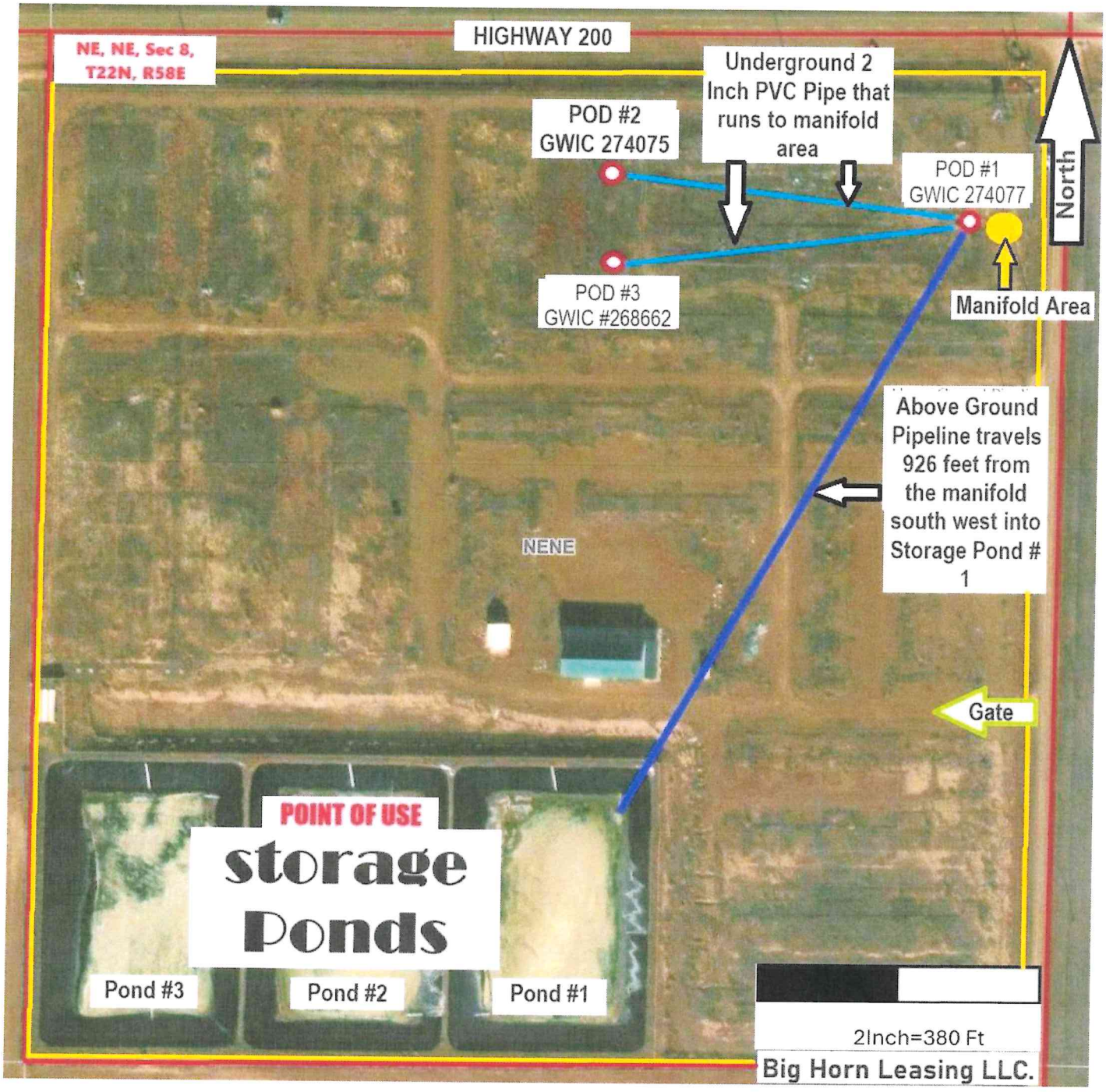
229 Acre Feet is what all 3 wells can produce for the year, we estimate we will lose 10 acre feet to evaporation for the year.

With the requested 219 Acre feet of fresh water permitted for water marketing use we would be able to help our customer with roughly 6 frac jobs per year. Customer assumes they will average between 11 and 13 million gallons of fresh water needed per frac job. The customer plans to complete 10 to 15 frac jobs per year throughout Richland County. Our freshwater facility is in a prime location to supply the customer with fresh water for their fracking operations. Since there are 3 storage pits on site, we plan to fill 1 pit at a time so that the customer can purchase water from a full pit while we work on filling the next pit. We will be continuously pumping and storing the fresh water on site so it will be available to the customer when they need it.

Proposed Completion Period

- 52 Response-We anticipate the project to take 2 years to fully perfect the water right. If we are issued a "Permit to Appropriate Water" we expect it will take 2 years to collect sales data. Once we have sales data for both years completed, we can then report those sales back to the DNRC with the Project Completion Notice (Form 617).

Attachment #1

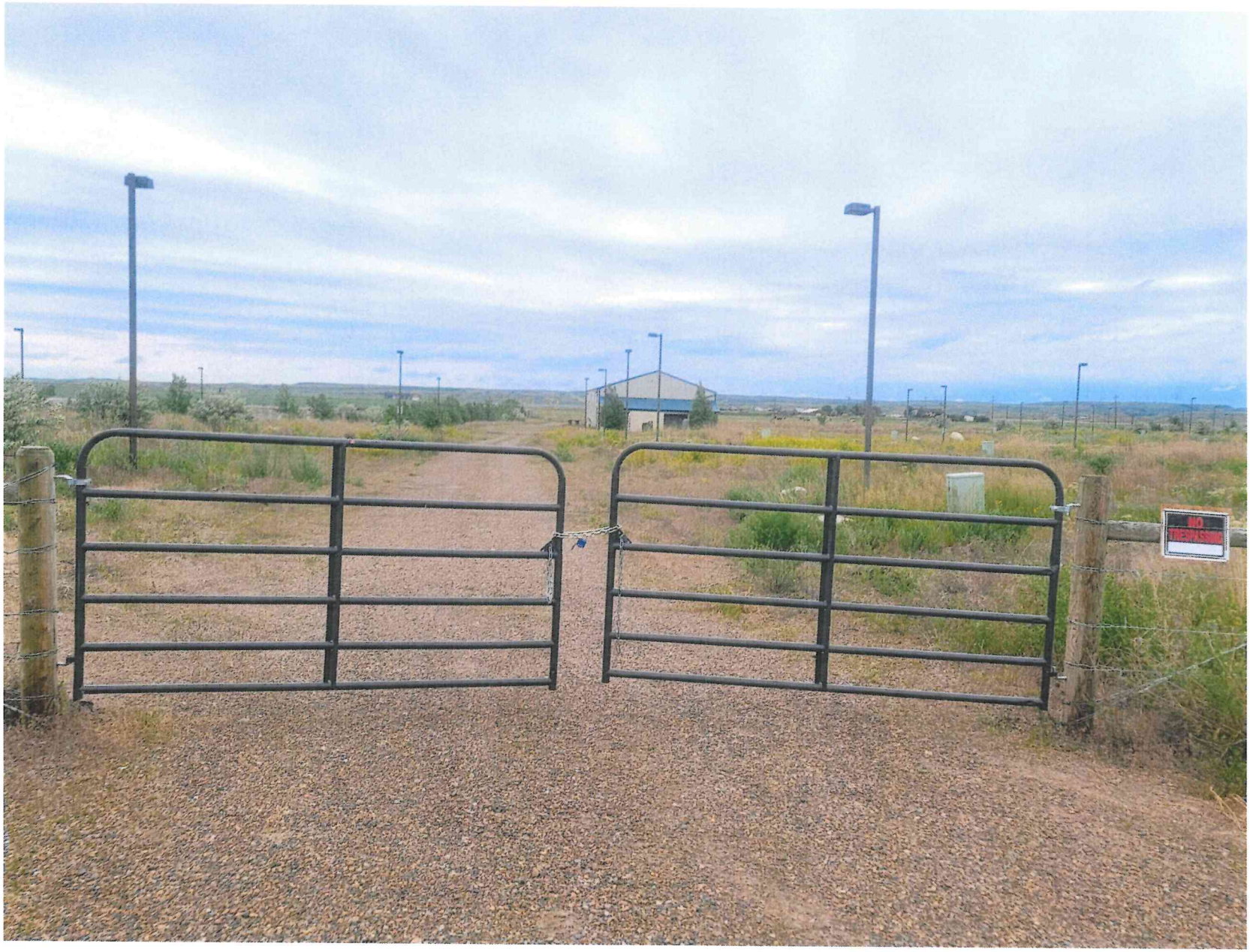


Red line reflects property boundary

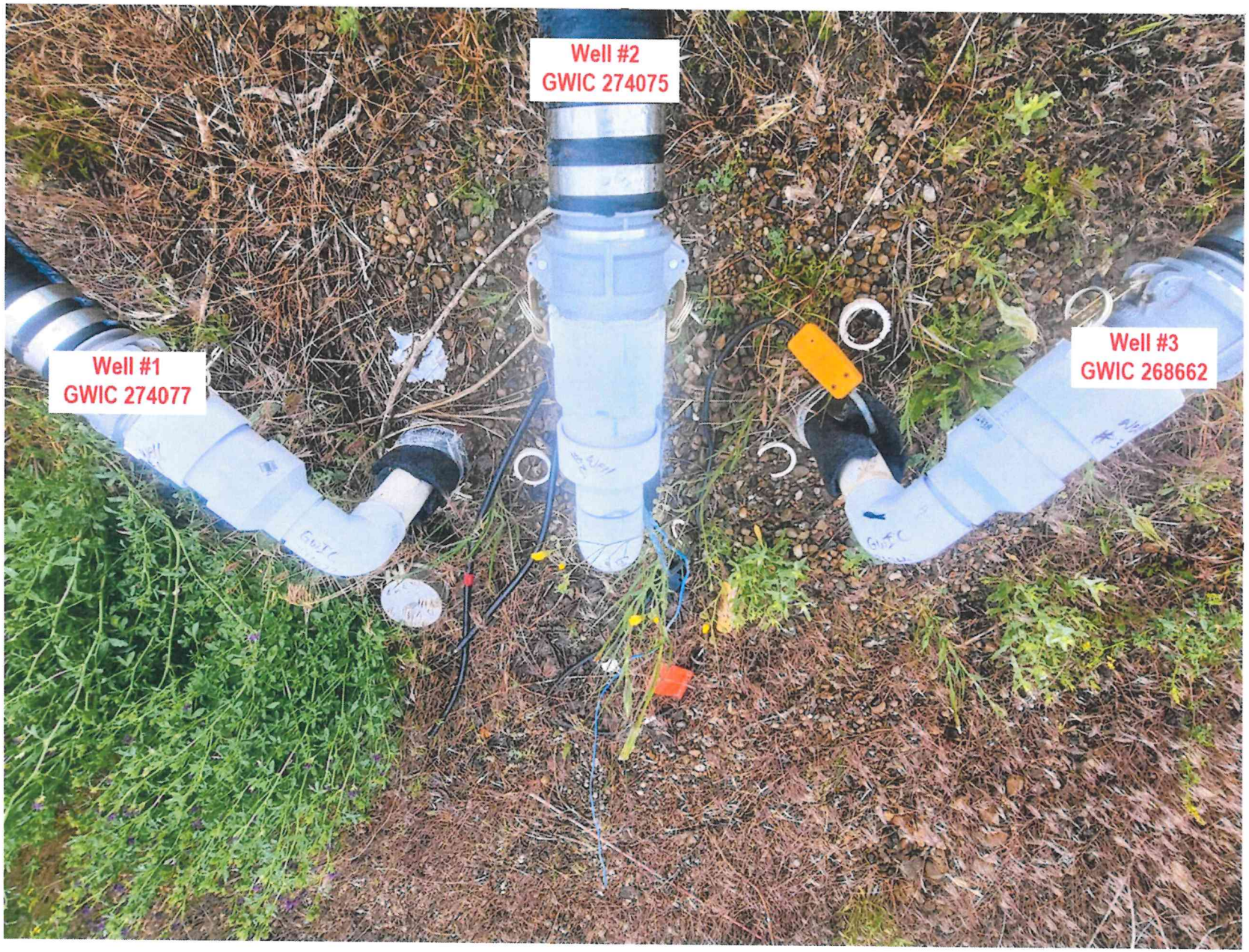
Yellow line reflects fence

Attachment #2

Attachment #3

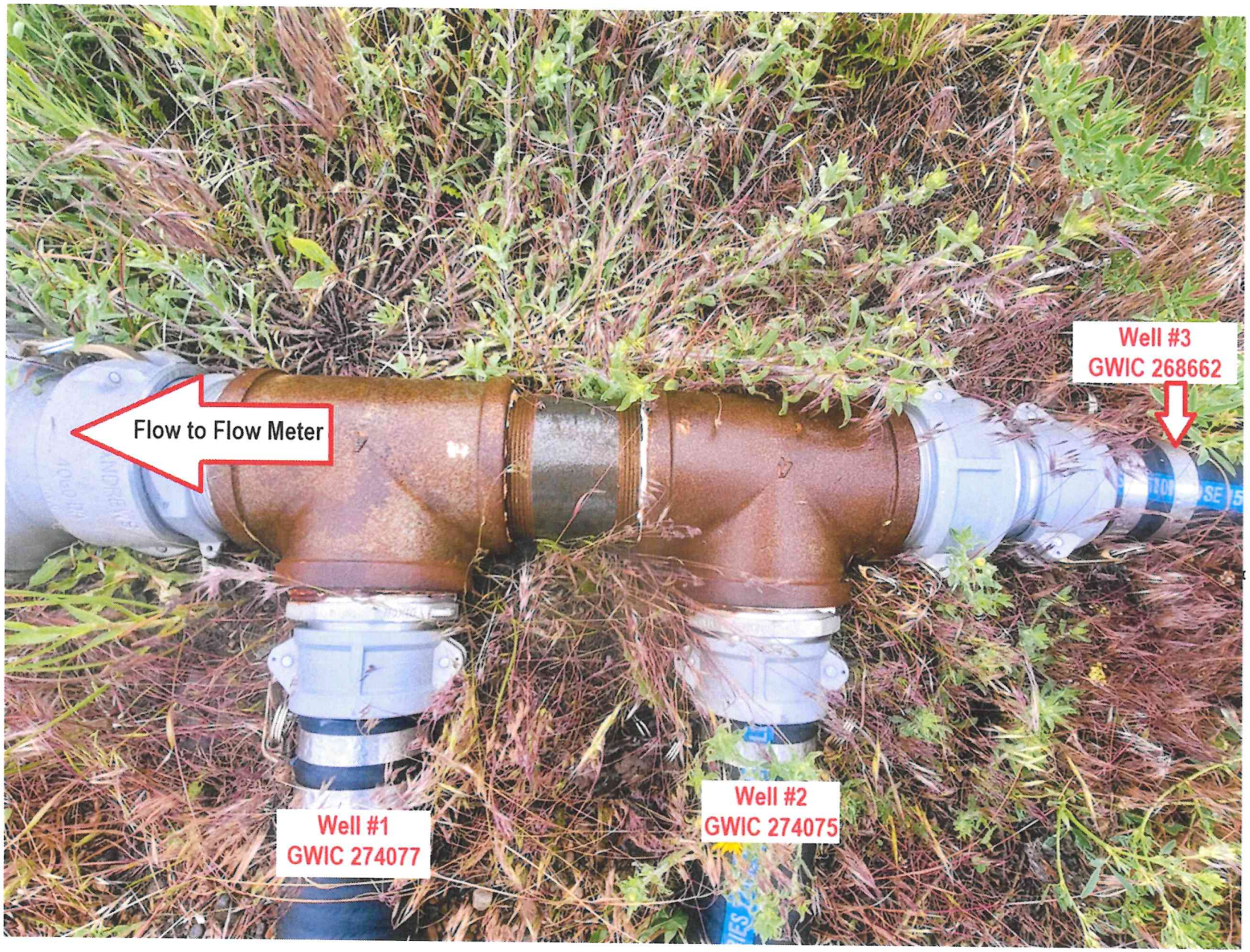


Attachment #4



This photo shows all 3 wells exposed at surface at the manifold area. From here each well is connected to the manifold by a piece of 4 inch pipe.

Attachment #5



This photo shows all 3 wells being manifolded together before the flow meter. Water is pumped from each well into the manifold then travels through the flow meter

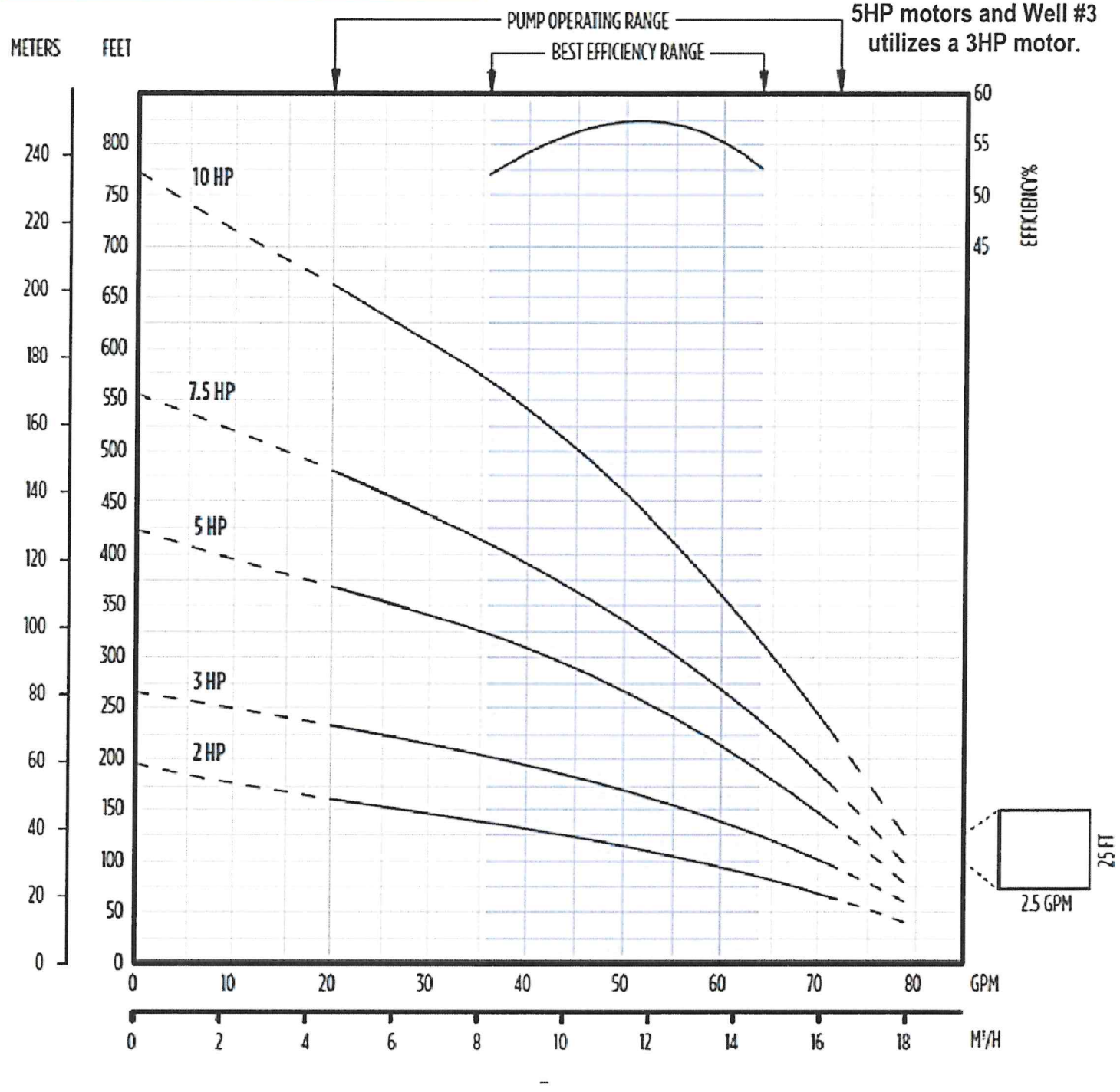
Attachment #6

This photo show that water will be entering the flow meter from the right, passing through the flow meter before discharging through the 926 feet of lay flat pipe into Storage Pond #1

Attachment #7

PERFORMANCE

NOTE: Wells #1 & #2 utilize 5HP motors and Well #3 utilizes a 3HP motor.



MENU

FPS

4" HIGH CAPACITY PUMPS - 60 GPM

PERFORMANCE

HP	PSI	Depth to Pumping Water Level (Lift) in Feet. Shaded Areas Indicate Most Efficient Performance																	
		20	40	60	80	100	120	140	160	180	200	250	300	350	400	450	500	550	Shut-Off (ft)
2	0				66	57	47	35	21										195
	10			65	56	45	33	18											
	20	71	63	54	43	30													
	30	62	52	41	28														
	40	51	40	26															
	50	38	24																
	60	22																	
Shut-off PSI		76	67	58	50	41	32	24	15										
3	0					70	66	60	53	46	37								265
	10				69	65	59	62	44	35	25								
	20		73	69	64	56	51	43	34	24									
	30	72	68	63	57	50	42	32	22										
	40	67	62	56	49	40	31	20											
	50	61	55	48	39	29													
	60	54	46	37	28														
Shut-off PSI		106	97	89	80	71	63	54	45	37	28								
5	0							71	68	65	62	54	42	27					425
	10						70	68	65	62	59	49	36						
	20					70	67	64	61	58	54	43	28						
	30			72	69	67	64	61	57	54	50	37	20						
	40		72	69	68	63	60	57	53	49	44	29							
	50	71	69	66	63	60	56	53	48	43	38	21							
	60	68	65	62	59	56	52	48	43	37	31								
	70	65	62	59	55	51	47	42	36	30	23								
	80	61	58	55	51	46	41	35	28	21									
	90	58	54	50	45	40	34	27	20										
	100	54	49	45	39	33	26												
Shut-off PSI		175	167	158	149	141	132	123	115	106	97	76	54	32					

HP	PSI	20	40	60	80	100	120	140	160	180	200	250	300	350	400	450	500	550	600	650	Shut-Off (ft)
7.5	0									71	68	63	56	48	38	27					555
	10							72	70	68	66	59	52	43	33	22					
	20						72	70	68	65	63	56	48	39	28						
	30					72	70	67	65	63	60	53	44	34	23						
	40				71	69	67	65	62	60	57	49	40	29							
	50			71	69	67	64	62	59	56	53	45	35	24							
	60		71	69	66	64	61	59	56	53	49	40	30								
	70	70	68	66	64	61	58	55	52	48	45	36	25								
	80	68	66	63	61	58	55	52	48	45	41	31									
	90	65	63	60	57	54	51	48	44	41	37	26									
	100	62	60	57	54	51	47	44	40	36	32	20									
	110	59	57	53	50	47	43	39	35	31	26										
	120	56	53	50	46	43	39	35	30	26	21										
	130	52	49	46	42	38	34	30	25	20											
	140	49	45	41	37	33	29	24	19												
	150	45	41	37	33	28	24														
	160	31	26	21																	
Shut-off PSI		232	223	214	206	197	188	180	171	162	154	132	110	89	67	45					
10	0											69	65	61	57	51	45	39	31	22	772
	10										71	67	63	59	54	49	42	35	27		
	20									72	71	69	66	61	57	52	46	39	31	23	
	30							72	71	69	68	64	59	55	49	43	36	28			
	40						72	70	69	67	66	62	57	52	46	40	32	24			
	50					72	70	69	67	66	64	60	55	50	43	36	28				
	60				72	70	68	67	65	64	62	58	53	47	40	33	24				
	70			71	70	68	67	65	64	62	60	55	50	44	37	29	20				
	80		71	70	68	66	65	63	62	60	58	53	47	41	33	25					
	90	71	69	68	66	65	63	61	60	58	56	51	44	37	29	21					
	100	69	68	66	64	63	61	59	57	56	53	48	41	34	26						
	110	67	66	64	62	61	59	57	55	53	51	45	38	30	22						
	120	65	64	62	61	59	57	55	53	51	48	42	34	26							
	130	64	62	60	58	57	55	52	51	48	45	39	31	22							
	140	62	60	58	56	54	52	50	48	45	42	35	27								
	150	60	58	56	54	52	50	47	45	42	39	31	23								
	160	53	51	48	46	43	41	38	35	31	28										
Shut-off PSI		326	317	308	300	291	282	274	265	256	248	226	204	183	161	139	118	96	74	53	

NOTES: Performance shown does not include friction loss in the drop pipe. All performance data is based on rated motor nameplate voltage. Performances for former XP models are the same as 45 gpm models. Performance shown is based on a pump without check valve.

Attachment #9

Example of Customer Supplied Discharge Pump

Example of Customer Supplied Discharge hose (12 inch layflat)

DEPARTMENT OF NATURAL RESOURCES
AND CONSERVATION
Glasgow Water Resources Regional Office

GREG GIANFORTE, GOVERNOR

222 6TH ST SOUTH
PO BOX 1269

PHONE: (406) 228-2561

GLASGOW, MONTANA 59230-1269

6/12/2024

Big Horn Leasing LLC
P.O. Box 385
Sidney, MT 59270

Subject: Deficiency letter for Beneficial Water Use Permit Application No. 42M 30163320

Dear Applicant,

The Department of Natural Resources and Conservation (DNRC or Department) has begun reviewing your application. This letter is to notify you of the deficiencies in your application as required in ARM 36.12.1501(1) and §85-2-302(5)(b), MCA. An Applicant is required to submit substantial and credible information addressing the rules and statutes that are relative to your application. You must provide the information specified below for your application to be considered correct and complete. "Correct and complete" means all of the information provided is substantial and credible and provides all of the information as required by applicable rules and statutes. The application as submitted contains deficiencies in the following section(s):

Purpose and Diversion Information

- ❑ 20. Fill out the table below. Means of diversion for surface water includes headgate, pump, dam, and others. Means of diversion for groundwater includes well, developed spring, pit, pond, and others.

  ARM 36.12.1302(6)(a) – An applicant does not qualify for a discounted filing fee and an expedited timeline if upon submittal of the application to the department, the applicant has changed any element of the proposed application after the 180-day timeline. On the 600P Preapplication Meeting Form, the flow rate provided for well #2 was 37 GPM, but on recently submitted 600 Application form, it is 38 GPM. The total flow rate also increased on the 600 Application Form from 142 GPM (as provided on the 600P) to 143 GPM. Please clarify the flow rate requested.

Place of Use

- ❑ 23. Describe the legal land description of the proposed place of use and, if an irrigation or lawn and garden purpose, list the number of irrigated acres.

  ARM 36.12.110 – The legal land description for the place of use must be listed to the nearest concise legal land description. On the 600 Application Form, the legal land

description is NENENE Sec. 8, T22N, R58E, which excludes the storage ponds as a place of use. If the storage ponds are being considered for an extraction point, NENE Sec. 8, T22N, R58E, which was provided on the 600P Preapplication form, may be a more accurate description. Please clarify the correct legal land description for the place of use.

Adequate Means of Diversion and Operation

❑ 38. Provide a diagram of how you will operate your system from all proposed points of diversion to all proposed places of use.

ARM 36.12.1707 – Preliminary design plans and specifications for the diversion, conveyance facilities, and the equipment used to put the water to beneficial use must be submitted. A diagram has been provided depicting the wells, pipeline, and storage ponds. Further depiction is needed regarding the location of any flow meters, water hook ups, potential above ground storage tanks, and further storage pond specifications (valves, spill ways, connecting pipes, dimensions). If there are/will be any security measures in place to ensure only contractual customers can access these facilities (gates, locks, etc.), please label these as well.

❑ 39. Describe specific information about the capacity of all proposed diversionary structures. This may include, where applicable: pump curves and total dynamic head calculations, headgate design specification, and dike or dam height and length.

ARM 36.12.1707 – Preliminary design plans and specifications for the diversion, conveyance facilities, and the equipment used to put the water to beneficial use must be submitted.

- No description of the pumps used to divert water has been provided. Please provide any information that could confirm the adequacy of the pumps. This information could include the brand, make, model, or pump curves.
- If any security measures to ensure only contractual customers can access these facilities, please provide a description in your design plans.

❑ 45. Describe specific information about how water is delivered within the place of use. This may include, where applicable, the range of flow rates needed for a pivot, output and configuration of sprinkler heads and pipelines within the place of use.

ARM 36.1707 – Applicants must describe how the proposed system will be operated, from point of diversion through the place of use and on through the discharge of water, if any. The description of water delivery provided in Attachment #4 specifies the conveyance of water from the well through the manifold to a storage pond but does not specify how the water travels between ponds or how/where the water is procured by customers. Please include further explanation of the complete conveyance process after the water reaches the pond. It would also be helpful if this explanation included how your system will be winterized to ensure adequacy in poor weather conditions.

- ❑ 46.2 Have the necessary permits been obtained to comply with §§75-5-410 and 85-2-364, MCA?

  MCA 75-5-410 and 85-2-364 – these requirements address aquifer recharge permitting, which does not apply to your project.

Beneficial Use

- ❑ 49. Does the Department have a standard for the purposes for which water is proposed?

  ARM 36.12.115– The flow rate and volume of water for any uses not listed in ARM 36.12.115 must be calculated, explained, and documented based on the beneficial use and operation of the project. Your application states the Department has a standard for the purpose of water marketing. No standard for this purpose is listed. Please revise your answer for this portion of the Application.

- ❑ 49.2 If no Department standard exists, or if proposed beneficial use falls outside of Department standards, explain how the use is reasonable for the purpose.

  ARM 36.12.1801 – When no Department standard exists, the Applicant must explain how the requested flow rate and volume for each purpose is reasonably needed to accomplish the purpose. No explanation was provided. Please include a brief description of how the purpose for the water benefits you as authorized by law, and how the requested flow rate and volume is reasonable for your purpose.

Proposed Completion Period

- ❑ 52. How many years will be needed to complete this project and to submit to the DNRC a Project Completion Notice (Form 617)?

  MCA 85-2-314 – Montana water law requires the holder of a "Permit to Appropriate Water" to file a certified statement (Form 617) with the Department notifying it how the project was completed. Your application states 3-4 weeks is needed to complete this project. The proposed completion period is the time needed to fully perfect the water right. If the proposed use is year-round, it would take a least a year to collect measurement readings to provide evidence for completion. Please provide a timeline in which you anticipate achieving the sale of the full contracted volume.

As stated above, the information submitted to address the rules and statutes listed in this deficiency letter must be substantial credible information to be acceptable at the correct and complete determination. §§85-2-102 (9) and (26), MCA.

Please submit the information specified above to the Glasgow Regional Office by October 10, 2024. This is the only deficiency letter that will be sent. An application not corrected or

completed within 120 days from the date of this letter is terminated per ARM 36.12.1501(2) and §85-2-302(6)(a), MCA.

Please let me know if you have any questions.

Best,

Ashley Kemmis
Water Resource Specialist
Glasgow Regional Office
Ashley.kemmis@mt.gov
(406) 808-7075

IMPORTANT NOTICE: This will be the final opportunity for you to provide the required information to the Department. If all of the requested information in this letter is not postmarked or submitted within 120 days of this letter, the application will be terminated within 30 days and the application fee will not be refunded.

APPLICATION FOR BENEFICIAL WATER USE PERMIT

§ 85-2-302

Form No. 600 *(04/2024)*

For Department Use Only

Received

MAY 29 2024

DNRC Water Resources
Glasgow Regional Office

Application # 30163320 Basin 42M

Priority Date 5/29/24 Time 11:01 AM/PM

Rec'd By Ashley Kummis

Fee Rec'd $ 700.00 Check # 2476

Deposit Receipt # GU52426265

Payor

Refund $ Date

FILING FEE

$2900/$1600 – Inside a Basin Closure Area, Controlled Groundwater Area or Compact Closure; without/with filing fee reduction.

$2500/$1200 – Outside a Basin Closure Area; Controlled Groundwater Area or Compact Closure; without/with filing fee reduction.

INFORMATION

An application will be eligible for a filing fee reduction and expedited timelines if the applicant completes a preapplication meeting with the Department (ARM 36.12.1302(1)), which includes submitting any follow-up information identified by the Department (ARM 36.12.1302(3)(c)) and receiving either Department-completed technical analyses or Department review of applicant-submitted technical analyses (ARM 36.12.1302(4) and (5)). An application for the proposed project also must be submitted within 180 days of delivery of Department technical analyses or scientific credibility review and no element on the submitted application can be changed from the completed preapplication meeting form (ARM 36.12.1302(6)).

Applicant Information: ***Add more as necessary.***

Applicant Name Big Horn Leasing LLC.

Mailing Address P.O. Box 385 City Sidne State MT Zip 59270

Phone Numbers: Home 406-489-4988 (Tim) Work 406-489-0474 (Cherise) Cell

Email Address cherisepartin@elitehotoil.com

Applicant Name

Mailing Address City State Zip

Phone Numbers: Home Work Cell

Email Address

Applicant Name

Mailing Address City State Zip

Phone Numbers: Home Work Cell

Email Address

Contact/Representative Information: ***Add more as necessary.***

Contact/Representative is: X Applicant ___ Consultant ___ Attorney ___ Other

Contact/Representative Name Tim Partin or Cherise Partin

Mailing Address P.O. Box 385 City Sidney State MT Zip 59270

Phone Numbers: Home 406-489-4988 (Tim) Work 406-489-0474 (Cherise) Cell

Email Address cherisepartin@elitehotoil.com

NOTE: *If a contact person is identified as an attorney, all communication will be sent only to the attorney unless the attorney provides written instruction to the contrary. If a contact person is identified as a consultant, employee, or lessee, the individual filing the water right form or objection form will receive all correspondence and a copy may be sent to the contact person.*

Answer every question and applicable follow-up questions. Use the checkboxes to denote yes ("Y"), no ("N"), or not applicable ("NA"). Questions that require items to be submitted to the Department have a submitted ("S") checkbox, which is checked when the required item is attached to the Application. Label all submitted items with the question number for which they were submitted. Narrative responses that are larger than the space provided can be answered in an attachment. If an attachment is used, specify "see attachment" on this form, and label the attachment with the question number. Constrain narrative responses to the specific question as is asked on the form; do not respond to multiple questions in one narrative. Label units in narrative responses. Responses in the form of a table may be entered into the table provided on this form or in an attachment. Responses in the form of a table that are larger than the table provided on this form should be placed in an attachment. If an attachment is used, the table must have the exact headings found on this form, and "see attachment" must be placed on this form. For tables on this form, circle correct unit at header of column when table has unit options. For tables in attachments, label all units.

PREAPPLICATION AND TECHNICAL ANALYSIS INFORMATION

1. ■ **Y** ☐ **N** Did you have a preapplication meeting AND complete a Form 600P Permit Preapplication Meeting Form?

IF QUESTION 1 IS YES,

2. ■ **Y** ☐ **N** Did you elect on Form 600P to have the Department conduct Technical Analysis?

3. ☐ **Y** ■ **N** Has any element of the application changed from Form 600P or the Technical Analysis conducted as part of the preapplication process? A Technical Analysis Addendum (Form 600-TAA) is required if changes have occurred.

4. Submit the following items:

4.1. ■ **S** Technical Analysis you would like the Department to use to conduct criteria assessment.

4.2. ☐ **S** ■ **NA** Scientific Credibility Review, if applicable.

4.3. ☐ **S** ■ **NA** Technical Analysis Addendum (Form 600-TAA), if applicable, per question 3.

IF QUESTION 1 IS NO,

5. ☐ **S** Submit the Technical Analysis Addendum (Form 600-TAA).

6. ■ **Y** ☐ **N** Do you elect to have the Department conduct Technical Analysis?

6.1. ☐ **S** If no, submit all the required Technical Analyses. See the Technical Analysis Guide for more information.

APPLICATION ADDENDA AND REVIEW

7. ☐ **S** ■ **NA** If your application is for groundwater and one or more of your points of diversion are in a Basin Closure Area, then submit the Basin Closure Area Addendum (Form 600-BCA).

8. ☐ **S** ■ **NA** If your application is for groundwater and one or more of your points of diversion are in a Basin Closure Area, then you must comply with the requirements of §85-2-360. If you elected to conduct Technical Analysis, you must submit the Hydrogeologic Report Addendum (Form 600-HRA). If you did not have a preapplication meeting AND complete a Form 600P Permit Preapplication Meeting Form, you must submit the Hydrogeologic Report Addendum (Form 600-HRA). If you had a preapplication

meeting, completed a Form 600P Permit Preapplication Meeting Form, and elected DNRC to conduct Technical Analysis, you do not need to submit Form 600-HRA because the Department's Technical Analysis, which you must submit along with this application, meets the requirements of §85-2-360.

9. ☐ **S** ■ **NA** If one or more of your points of diversion are in a Controlled Groundwater Area, then submit the Controlled Groundwater Area Addendum (Form 600-CGWA) and all its required attachments.

10. ☐ **S** ■ **NA** If the project involves an appropriation that is greater than 5.5 CFS and 4,000 acre-feet, then submit a Criteria Addendum Application for Beneficial Water Use Permit for Appropriations Greater than 5.5 CFS and 4,000 AC-FT (Form 600-B).

11. ☐ **S** ■ **NA** If the project involves out-of-state water use, then submit the Out-of-State Use Addendum (Form 600/606-OSA).

12. ☐ **S** ■ **NA** If you require mitigation water to meet the criteria of issuance, then submit a Mitigation Purpose Addendum (Form 600/606-MIT).

13. ■ **S** ☐ **NA** If the proposed purposes include marketing or selling water, then submit the Water Marketing Purpose Addendum (Form 600/606-WMA).

14. ☐ **S** ■ **NA** If the project is in designated sage grouse habitat, then submit a review letter from the Montana Sage Grouse Habitat Conservation Program (https://sagegrouse.mt.gov).

15. ☐ **Y** ☐ **N** ■ **NA** You must provide a written notice of the application to each owner of an appropriation right sharing the point of diversion or means of conveyance (e.g., canal, ditch, flume, pipeline, or constructed waterway). Have you sent this notice to all applicable parties? Your application cannot be deemed correct and complete until you have sent this notice pursuant to §85-2-302(4)(c), MCA.

PURPOSE AND DIVERSION INFORMATION

16. ☐ **Y** ■ **N** Is the proposed use temporary?

16.1. If yes, when will the appropriation cease? _____

17. Is the proposed source surface water or groundwater? Groundwater

18. What is the source name? Groundwater

19. ■ **S** Attach a map utilizing an aerial photograph or topographic map that shows the following: section corners, township and range, a north arrow, all proposed points of diversion labeled with a unique POD ID number, all proposed places of use, all proposed conveyance facilities and or routes, all proposed places of storage, and places of use for all overlapping water rights.

20. Fill out the table below. Means of diversion for surface water includes headgate, pump, dam, and others. Means of diversion for groundwater includes well, developed spring, pit pond, and others.

Purpose	**Means of Diversion**	**Acres Irrigated** (if appl.)	**Period of Diversion** *(Month/Day - Month/Day)*	**Period of Use** *(Month/Day - Month/Day)*	**Flow Rate** *(GPM or CFS)*	**Volume** *(Acre-Feet)*
Water Marketing	Well #1	N/A	Jan 1st-Dec 31st	Jan 1st-Dec 31st	59 GPM	94.17
Water Marketing	Well #2	N/A	Jan 1st-Dec 31st	Jan 1st-Dec 31st	38 GPM	61.29
Water Marketing	Well #3	N/A	Jan 1st-Dec 31st	Jan 1st-Dec 31st	46 GPM	74.20
				Total Flow Rate and Volume Required	143 GPM	229 AF

POINT(S) OF DIVERSION

21. Describe the proposed location of the point(s) diversion to the nearest ¼ ¼ ¼ Section. Label each POD with the POD ID number used for the project map (question 19).

POD #	**¼**	**¼**	**¼**	**Sec.**	**Twp.**	**Rge.**	**County**	**Lot**	**Block**	**Tract**	**Subdivision**	**Gov. Lot**
1	NE	NE	NE	8	22N	58E	Richland					
2	NE	NE	NE	8	22N	58E	Richland					
3	NE	NE	NE	8	22N	58E	Richland					

PLACE OF USE

22. What are the geocodes of the place of use?

-27-3324-08-1-01-02-000-Y	-
-	-
-	-
-	-

23. Describe the legal land description of the proposed place of use and, if an irrigation or lawn and garden purpose, list the number of irrigated acres.

Acres	Gov. Lot	Block	¼	¼	¼	Sec.	Twp.	Rge.	County
39			NE	NE	NE	8	22N	58E	Richland

SUPPLEMENTAL AND OVERLAPPING WATER RIGHTS

24. ☐ **Y** ■ **N** Will other water rights supplement or overlap the place of use to contribute to the purpose(s)?

24.1. If yes, summarize how the water rights will be operated as a whole to serve the purpose(s).

25. For each supplemental or overlapping water right, please list the water right number, purpose, typical period of diversion and use (MM/DD-MM/DD), flow rate (GPM or CFS), and the volume of water (AF) contributed to the shared place of use.

Water Right #	Average Period of Diversion	Average Period of Use	Flow Rate	Volume Contributed

26. ☐ **Y** ■ **N** Will this application supplement contract water from a Federal Project, ditch company, or other source?

26.1. If yes, explain.

OWNERSHIP AND POSSESSORY INTEREST

27. ■ **Y** ☐ **N** Does the Applicant have ownership of all proposed points of diversion and places of use?

27.1. If no, explain.

28. ☐ **Y** ■ **N** Do you meet one of the exceptions to possessory interest requirements, pursuant to ARM 36.12.1802? Exceptions include cases 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.

28.1. If yes, explain.

ADVERSE EFFECT

29. ■ **Y** ☐ **N** Do you have evidence that water is physically and/or legally available in the amount required for the proposed flow rate and volume of your project?

29.1. If yes, explain.

A 72 hour aquifer test was completed after the wells were drilled. Results from the 72-hour aquifter test were submitted in the 600P. There was a Technical Analysis competed by the DNRC in May 2024 as well.

30. ■ **Y** ☐ **N** If the legal availability criteria assessment finds that water is not legally available throughout the entire proposed period of diversion, do you have a contingency plan to address this?

30.1. If yes, explain.

The amount of water being produced can be reduced or stopped completely.

31. ☐ **Y** ■ **N** Are there any factors that would limit your ability to turn off your appropriation in response to a call?

31.1. If yes, explain.

32. Explain how you can control your diversion in response to a call being made.
We can reduce production of fresh water or stop production of fresh water. In attachment #4 we outline the diversion and operation for the water being produced. In attachement #4 we discuss the shut off valves in place as well as backflow prevention valves that have been installed. Controlling the diversion if a call is made is as simple as shutting a valve and stopping the flow of the fresh water being produced.

33. ☐ **Y** ■ **N** Are you aware of any calls that have been made on the source of supply or depleted surface water source?

33.1. If yes, explain.

34. ☐ **Y** ■ **N** Does a water commissioner distribute water or oversee water distribution on your proposed source or any identified depleted surface water sources?

34.1. If yes, list the source(s).

35. Describe your plan to ensure existing water rights will be satisfied during times of water shortage.
If a call is made or there is a shortage of water available we have the ability to reduce the amount of fresh water being produced or stop production of fresh water all together if need be.

36. ☐ **Y** ■ **N** Do other water rights share any of the proposed points of diversion?

36.1. If yes, describe how the proposed project will not adversely affect these water rights.

37. ☐ **Y** ■ **N** Do other water rights share any conveyance ditch associated with the proposed project? See the list of water rights that share the conveyance ditches in either the Preapplication Meeting Form (Form 600P) or the Technical Analysis Addendum (Form 600-TAA).

37.1. If yes, describe how the proposed project will not adversely affect these water rights.

ADEQUATE MEANS OF DIVERSION AND OPERATION

38. ■ **S** Provide a diagram of how you will operate your system from all proposed points of diversion to all proposed places of use.

39. Describe specific information about the capacity of all proposed diversionary structures. This may include, where applicable: pump curves and total dynamic head calculations, headgate design specifications, and dike or dam height and length.

See attachment #4

40. ■ **Y** ☐ **N** Is the diversion capable of providing the full amount of water requested through the period of diversion?

40.1. If no, explain.

41. Describe the size and configuration of infrastructure to convey water from all proposed points of diversion to all proposed places of use. This may include, where applicable: ditch capacity and/or pipeline size and configuration.

See attachment #3 & attachment #4

42. Describe any losses related to the proposed conveyance.

We project a total loss of 10 Acre Feet per year due to evaporation

43. ■ **Y** □ **N** □ **NA** Is the proposed conveyance infrastructure capable of providing the required flow and volume, plus any conveyance losses?

43.1. If no, explain.

44. □ **Y** ■ **N** Does the proposed conveyance require easements?

44.1. If yes, explain.

45. Describe specific information about how water is delivered within the place of use. This may include, where applicable, the range of flow rates needed for a pivot, output and configuration of sprinkler heads and pipelines within the place of use.

See attachment #4 "distribution manifold & distribution pipeline"

46. ☐ **Y** ■ **N** Will your system be designed to discharge water from the project?

46.1. If yes, explain the way water will be discharged and the disposal method.

46.2. ■ **Y** ☐ **N** ☐ **Y** Have the necessary permits been obtained to comply with §§ 75-5-410 and 85-2-364, MCA?

47. ■ **Y** ☐ **N** Is the means of diversion for any proposed point of diversion a well?

IF YES,

47.1. ■ **Y** ☐ **N** Have all wells already been drilled?

47.2. For all wells that have been drilled, what is the name of the well driller and, if available, what is their license number?

Well #1: Higgins Drilling License #MWC-169

Well #2: Higgins Drilling License #MWC-169

Well #3: thermal Drill Inc. License # WWC-626

Also see Attachment #4, section 47.2

47.3. ■ **Y** ☐ **N** For all wells yet to be drilled, will a licensed well driller construct the wells?

47.4. ☐ **S** ■ **NA** Submit any additional well logs for wells drilled after submittal of Form 600P.

BENEFICIAL USE

48. Why is the requested flow rate and volume the amount needed for the purpose(s)?

Water Marketing Purposes/Oil & Gas

See attachment #2 Water Marketing Addendum & Signed Contract

49. ■ **Y** ☐ **N** Does the Department have a standard for the purposes for which water is proposed? Department standards can be found in the DNRC Water Calculation Guide, ARM 36.12.112, and ARM 36.12.115.

49.1. ■ **Y** ☐ **N** If yes, does the proposed beneficial use fall within Department standards?

49.2. If no Department standard exists, or if proposed beneficial use falls outside of Department standards, explain how the use is reasonable for the purpose.

50. ☐ **Y** ■ **N** Will your proposed project be subject to DEQ requirements for a public water supply (PWS) system or Certificate of Subdivision Approval (COSA)?

50.1. ☐ **Y** ☐ **N** If yes, have you researched or consulted with DEQ regarding those requirements?

51. ☐ **Y** ■ **N** Are you proposing to use surface water for in-house domestic use?

51.1. ☐ **Y** ☐ **N** If yes, does a COSA exist for the proposed place of use?

51.1.1. ☐ **S** ☐ **NA** If yes, please submit the COSA.

51.1.2. ☐ **Y** ☐ **N** If no, have you researched or consulted with DEQ regarding their requirements?

PROPOSED COMPLETION PERIOD

52. How many years will be needed to complete this project and to submit to the DNRC a Project Completion Notice (Form 617)? 3-4 weeks

53. Why is this amount of time needed?
Majority of the work is done. The wells have already been drilled and aquifer testing completed. These wells were previously permitted under a temporary permit that expired. So the infastructure is already in place, we just need to complete the permit process (See 600P)

AFFIDAVIT & CERTIFICATION

Read carefully before you sign and review with legal counsel if you have any questions. All owners (or trustees) must sign the form. ***If the owner is a business or trust, include the title of the representative(s) signing the form (i.e., president, trustee, managing partner, etc.) and provide documentation that establishes the authority of the representative to sign the application.*

I affirm the information provided for this application is to the best of my knowledge true and correct. I am aware that my application for this project will not qualify for a discounted filing fee and expedited timelines if upon submittal of the application to the department, I changed any element of the proposed application from the preapplication meeting form and follow-up materials (ARM 36.12.1302(6)(a)).

I affirm I have 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, unless this application meets an exception to the possessory interest requirements in ARM 36.12.1802(1)(b).

I understand that making a false statement under oath or affirmation in this application and official proceedings throughout the examination of my application may subject me to prosecution under §45-7-202, MCA, a misdemeanor punishable by a jail term not to exceed 6 months or a fine not to exceed $500, or both. I have read this Affidavit and understand the terms and conditions.

I declare under penalty of perjury and under the laws of the state of Montana that the foregoing is true and correct.

Applicant Signature _____ Date: _____

Printed Name Tim Partin

Title Owner-Big Horn Leasing LLC

Applicant Signature _____ Date: _____

Printed Name _____

Title _____

Applicant Signature _____ Date: _____

Printed Name _____

Title _____

Groundwater Permit Technical Analyses Report - Part A

Department of Natural Resources and Conservation (DNRC)
Water Resources Division
Jack Landers, Groundwater Hydrologist, Water Sciences Bureau (WSB)

Applicant No.	42M 30163320	**Point of Diversion Legal Land Description**	Section 08, Township 22 North, Range 58 East
Applicant	Big Horn Leasing LLC		

Overview

This report is Part A of a two-part publication which analyzes data submitted by the Applicant in support of the above-mentioned water right application. This report provides technical analyses as required under the Administrative Rules of Montana (ARM) 36.12.1303 in support of the water rights criteria assessment as required in §85-2-311, Montana Code Annotated (MCA). For applications in closed basins, this report fulfills the requirements of MCA 85-2-361.

This Groundwater Permit Technical Analyses Report – Part A contains the following sections:

Attachment #1

1.0 Executive Summary

Application Details

The Applicant proposes to divert water year-round from three wells at a cumulative rate of 142.0 gallons per minute (gpm) and volume of 229.0 acre-feet (AF) for water marketing purposes. All three wells would be manifolded, and water would be pumped to three storage ponds year-round. Of the total requested volume of 229.0 AF, 10 AF would be lost to evaporation from the ponds and the remaining 219.0 AF would fulfill existing leases for oil and gas development in Richland County.

The proposed points of diversion and ponds were previously authorized under Permit 42M 30068052 for multiple domestic purposes. However, the project was not completed as proposed and the permit expired.

Approved Variances from ARM 36.12.121

A variance from the aquifer test requirements found in ARM 36.12.121(3)(a) was granted from the Glasgow Regional office. Pumping in the Production Well was not maintained at a constant discharge rate. The discharge rate fluctuated by more than 5% within the first five minutes of the test before stabilizing at an average rate of 37.8 gpm for the remainder of the 72-hour test. The discharge rate also fluctuated by more than 5% at the beginning of the two 24-hour tests (up to the first 13 minutes for the Well #3 test).

WSB Technical Findings

Based on information submitted, the WSB estimated aquifer properties, evaluated the production wells' available water column, quantified the water available in the source aquifer, and evaluated potential impacts to existing groundwater and surface water rights. These technical analyses are in support of the following criteria assessment: adequacy of diversion, physical availability, and adverse effect. A summary of WSB findings described in subsequent sections are listed below.

TECHNICAL ANALYSES FINDINGS

AQUIFER TEST ANALYSIS	An aquifer Transmissivity (T) of 1,706 ft^2/day and Storativity (S) of 3.5 x 10^{-5} generated from the Cooper-Jacob (1946) solution applied to the Observation Well #3 drawdown data was estimated using submitted aquifer test data.
ADEQUACY OF DIVERSION	The proposed Well #1, Well #2, and Well #3 using the Theis (1935) solution, a T = 1,706 ft^2/day, S = 3.5 x 10^{-5}, and the monthly pumping schedule identified in **Table 4** would experience 30.7, 54.3, and 40.5 feet (ft) of drawdown after the first year, leaving approximately 17.8, 0.3, and 18.1 ft of available water column above the bottom of the perforated interval, respectively.
PHYSICAL AVAILABILITY	The model predicted the 0.01-foot drawdown contour or zone of influence (ZOI) occurs 450,000 ft from the Applicant's well and was truncated to the Tongue River Member aquifer boundary north and northwest of the proposed wells. Groundwater flux through the ZOI is equal to 36,309

	AF/year. There are 1,367 active groundwater rights completed within the ZOI and source aquifer that need to be evaluated as a legal demand.
ADVERSE EFFECT (DRAWDOWN IN EXISTING WELLS)	After five years, assuming the well is pumped according to the schedule identified in **Table 4**, 243 groundwater rights in the source aquifer are predicted to experience drawdown equal to or greater than one foot (Appendix A).
ADVERSE EFFECT (NET DEPLETION TO SURFACE WATER)	The Yellowstone River (3.8 miles east of well) is identified as being hydraulically connected to the source aquifer. Monthly net depletions resulting from the proposed use of groundwater are identified in **Table 1** and the depleted reach in **Figure 14**.

Table 1: Total consumed volume and net depletion to surface water for the production well.

Month	Total Consumed Volume (AF)	Yellowstone River Net Depletion (AF)	Yellowstone River Net Depletion (gpm)
January	19.4	19.4	142.0
February	17.6	17.6	142.0
March	19.4	19.4	142.0
April	18.8	18.8	142.0
May	19.4	19.4	142.0
June	18.8	18.8	142.0
July	19.4	19.4	142.0
August	19.4	19.4	142.0
September	18.8	18.8	142.0
October	19.4	19.4	142.0
November	18.8	18.8	142.0
December	19.4	19.4	142.0
Total	229.0	229.0	

2.0 Hydrogeologic Setting

As identified in **Figure 1**, the proposed project is located approximately six miles southwest of Sidney, MT in the northeast quarter of Section 8, Township 22 North, Range 58 East. The proposed wells are completed in a 20-40 ft thick sandstone aquifer that is located between 100-140 ft below ground surface (bgs) locally. Well #1 (GWIC ID 274077) was completed at a depth of 160 ft bgs with a screened interval between 122 and 157 bgs and a static water level of 109 ft below top of casing (btc). Well #2 (GWIC ID 274075) total depth is 160 ft bgs with a screened interval between 130 and 155 ft bgs and a static water level of 112 ft btc. Well #3 (GWIC ID 268662) total depth is 160 ft bgs with a screened interval between 150 and 160 ft bgs and a static water level of 110 ft btc (**Table 2**). All three wells are screened in the sandstone aquifer.

During the late Cretaceous and early Paleocene Epochs, much of eastern Montana was covered by an inland sea. Mud and sand were deposited during periods of sea cover, later forming the Pierre and Fox Hill formations. As the inland sea receded, eastern flowing streams subsequently deposited mud and sand which later formed the overlying Hell Creek and Fort Union Formations (Smith et al., 2000). The Fort Union Formation is exposed at the land surface across much of eastern Montana and consists of sandstone, siltstone, mudstone, coal, and clinker (Smith et al., 2000).

The Fort Union Formation consists of two aquifers at a regional scale, described as a shallow and deep hydrologic unit (Smith et al., 2000, Crowley et al., 2017, LaFave, 2021). The shallow hydrologic unit of the Fort Union Formation occurs within 200 ft of the land surface and generally consists of unconfined and semi-confined aquifers. The deep hydrologic unit is located at depths greater than 200 ft below land surface and lies on top of a confining unit in the Hell Creek Formation and the Fox Hills Formation. The proposed wells are completed in the shallow hydrologic unit consisting of the Tongue River Member of the Fort Union Formation (Vuke et al., 2003).

In the lower Yellowstone Basin, the Fort Union Formation is the shallowest and most utilized bedrock source of groundwater (MBMG, 1978; Slagle, 1983). Well yields are as much as 160 gpm, but average around 20 gpm for stock and domestic wells (Stoner and Lewis, 1980). Stoner and Lewis (1980) described the Tongue River aquifer as having many thin, discontinuous, and alternating beds that may act as local boundaries, but on a regional scale they function as one continuous aquifer.

Near Sidney, the groundwater in the Tongue River Member aquifer flow towards the Yellowstone River (Slagle, 1983; Patton et al., 1998, Smith et al., 2000). Recharge to the Tongue River aquifer system is from infiltration of precipitation, losses from streams, and irrigation water lost by percolation through fields and leakage from ditches. Places where water discharges are springs at the outcrop of the Tongue River Member and seeps along the Yellowstone River valley bottom and the subcrops beneath Yellowstone River alluvium (Smith et al., 2000).

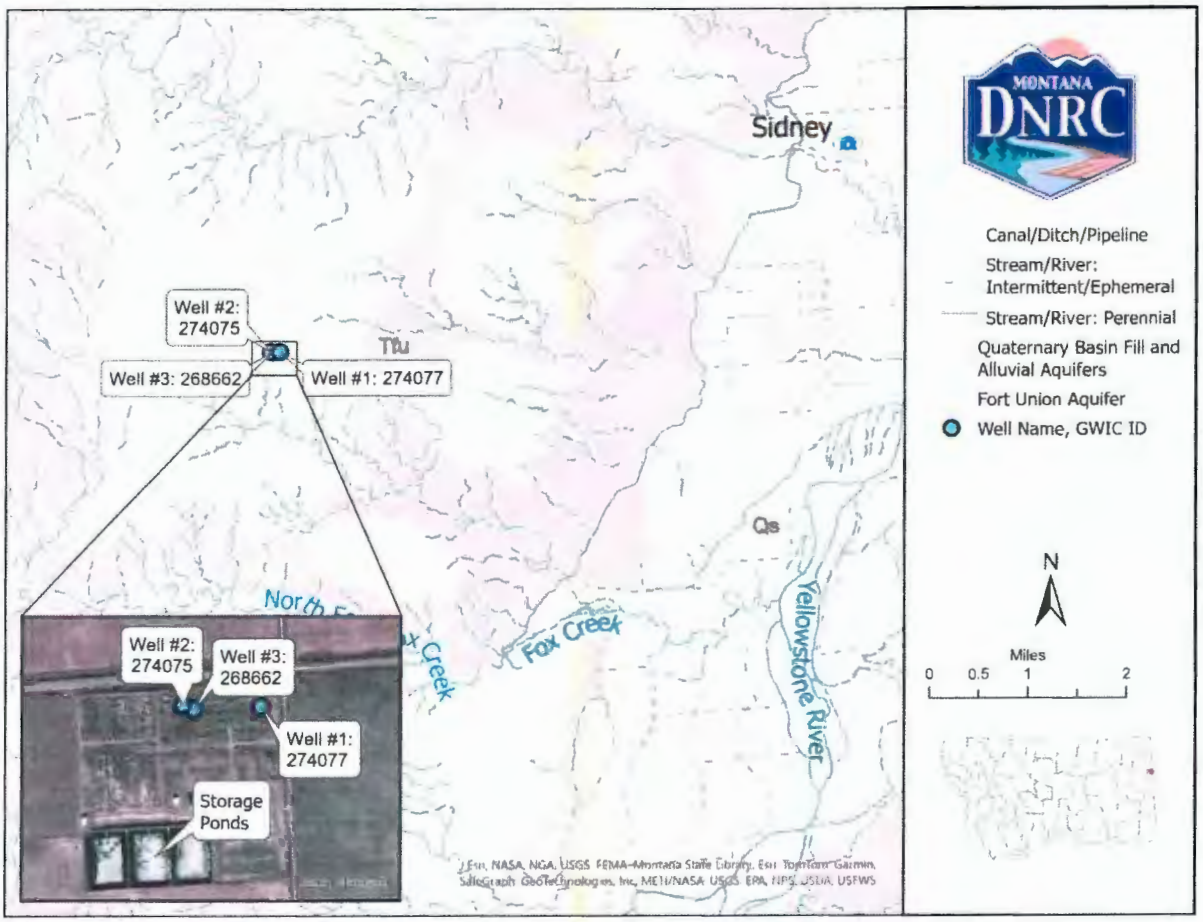


Figure 1: Map of the Applicant's aquifer test location.

3.0 Aquifer Test Summary

Field Methods and Equipment

A 72-hour aquifer test was conducted on the Production Well (Well #2, GWIC ID 274075) beginning on June 18, 2023. A 24-hour aquifer test was conducted on Well #1 and Well #3 beginning on August 12, 2023, and August 14, 2023, respectively.

Water levels during the 72-hr aquifer test were collected using In-Situ Level Troll Model 700 dataloggers in the Production Well and Observation Well #3 and a Solinst Levelogger Gold pressure transducer in Observation Well #1. Observation Well #1 and Observation Well #3 are 425 ft and 56 ft east of the Production Well, respectively. The discharge was measured with a SeaMetrics magnetic flow meter.

Background Data

Prior to the 72-hr aquifer test, background groundwater levels were monitored in the Production Well and Observation Well #3 for 91 hours starting on June 14, 2023, and ending on June 18, 2023. As identified in **Figure 2**, groundwater levels in the Production Well and Observation Well #3 declined during the beginning of the background monitoring period, apparently due to pumping

from the Production Well (DNRC, 2014). Water levels recovered in both wells after pumping ceased and exhibited a downward trend for the remainder of the background monitoring period. Groundwater levels at the end of the background monitoring period were within 2 ft of the static water levels at the beginning of the period for both wells and the slight downward trend did not affect analysis of the aquifer test data.

Background groundwater levels were monitored in Observation Well #1 for 24 hours beginning on June 17, 2023, and ending on June 18, 2023, and showed no apparent trend.

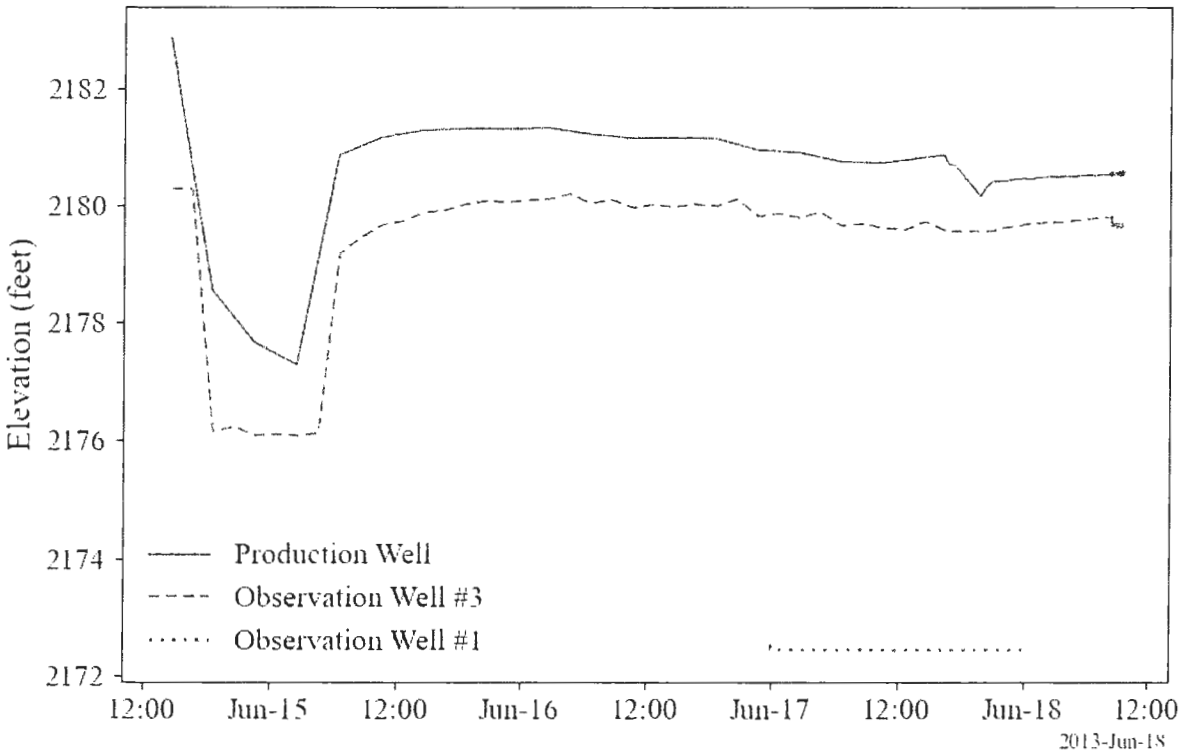


Figure 2: Background data for the Production Well (GWIC ID: 274075), Observation Well #3 (GWIC ID: 268662), and Observation Well #1 (GWIC ID: 274077) prior to the 72-hour aquifer test.

Drawdown Data

The 72-hour aquifer test started on June 18, 2013, at 9:28 AM on the Production Well and is considered (t = 0) for computation of drawdown. The test started with a discharge of 24 gpm and increased to 38 gpm two minutes after the test began. The discharge remained within 3% of the average flow rate of 37.8 gpm for the remainder of the test. As shown in **Figure 3**, the maximum drawdown in the Production Well was 27.87 ft below the static water level (swl) of 102.42 ft btc leaving 26.71 ft of available water column above the bottom of the perforated interval (based on the bottom of the screened interval at 155 ft bgs and well casing stickup of 2 ft).

Observation Well #3 experienced a maximum drawdown of 4.60 ft below the swl of 103.33 ft btc leaving 54.07 ft of available water column above the bottom of the well and perforated interval (based on the bottom of the screened interval at 160 ft bgs and well casing stickup of 2 ft).

Observation Well #1 experienced a maximum drawdown of 0.35 ft below the swl of 110.5 ft btc leaving 48.15 ft of available water column above the bottom of the perforated interval (based on the bottom of the screened interval at 157 ft bgs and well casing stickup of 2 ft).

Recovery Data

Groundwater levels were monitored during the recovery period for 72-hours in the Production and Observation Wells from June 21, 2013, through June 24, 2013. At the end of the recovery period the Production and Observation Wells were 0.11 ft and 0.49 ft from pre-test static water levels, respectively.

24-hr Drawdown and Yield Tests

A 24-hr drawdown and yield test was conducted on Well #1 on August 12, 2013, and on Well #3 on August 14, 2013. Groundwater levels during the two 24-hr tests were collected using In-Situ Level Troll Model 700 dataloggers in Well #1 and Well #3. No observation wells were monitored during the 24-hr tests. The average flow rate during the 24-test for Well #1 was 59.1 gpm and for Well #3 was 45.9 gpm. Well #1 experienced a maximum drawdown of 20.24 ft below the swl of 111.22 ft btc, leaving 27.54 ft of available water column above the perforated interval. Well #3 experienced a maximum drawdown of 22.43 ft below the swl of 103.07 ft btc, leaving 36.5 ft of available water column above the bottom of the well and perforated interval.

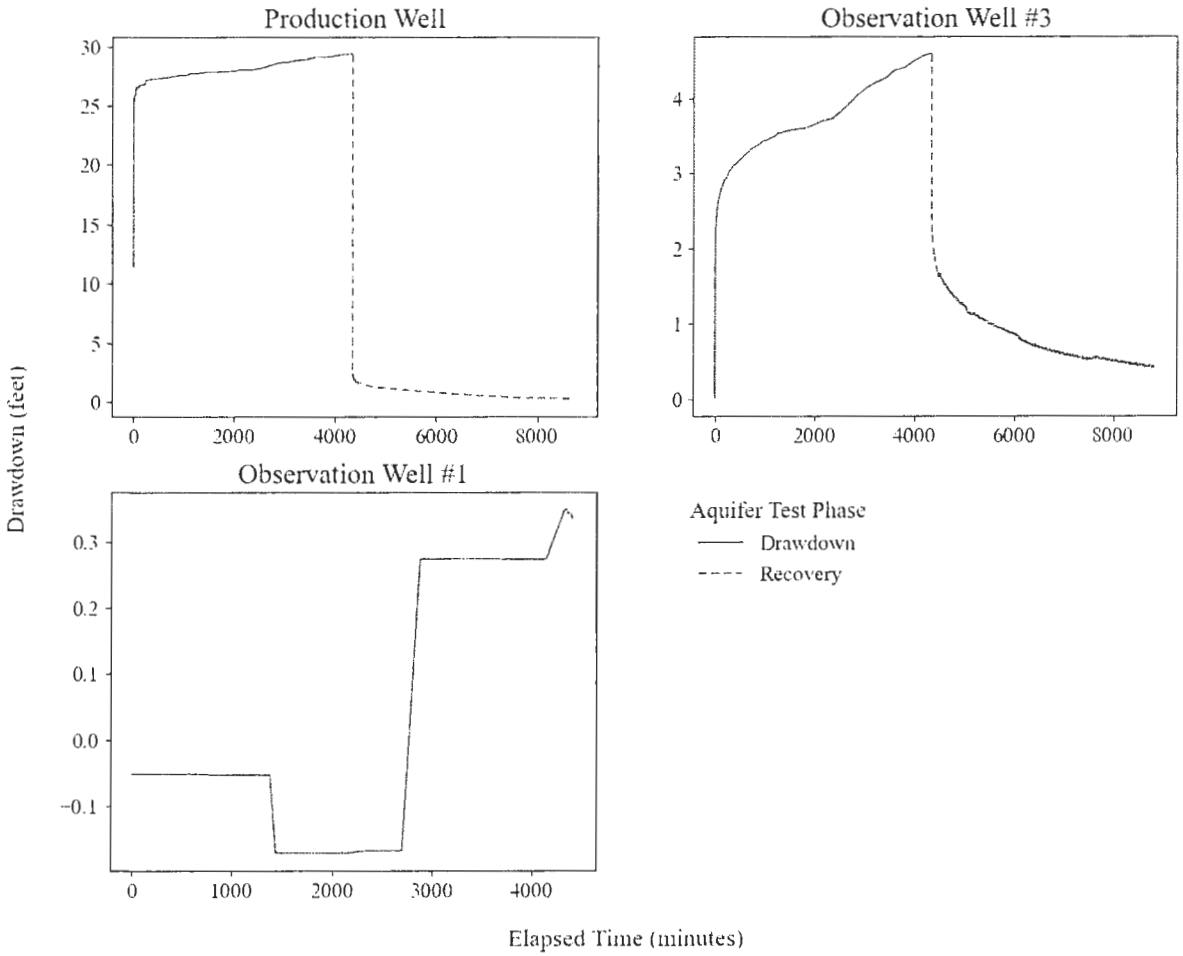


Figure 3: Drawdown and recovery data for the 72-hour aquifer test.

4.0 Aquifer Test Analysis

Methods

The DNRC utilized AQTESOLV® (HydroSOLVE, Inc., 2007) to analyze drawdown data from the aquifer test and obtain estimates of aquifer properties. Aquifer properties were used in forward modeling to evaluate the available water column in the well, quantity of water available in the source aquifer, and potential impacts to groundwater and surface water rights. AQTESOLV® is an analytical modeling software that uses image well theory and the principle of superposition to simulate aquifer stress tests. Drawdown data and measured flow rates from the aquifer test, and the spatial location of each well are input into the model. Using this compilation of data, aquifer properties including Transmissivity (T) and Storativity (S) are identified based on a best-fit visual and statistical match between the observed and theoretical drawdown data.

Analyses

Analytical groundwater solutions were matched to Observation Well drawdown data to generate estimates of aquifer properties for the source aquifer. As shown in **Figure 4**, the Cooper-Jacob

(1946) solution was fit to the Observation Well #3 drawdown data. Late-time data were ignored due to a change in rate of drawdown at the end of the test. At approximately 2,000 minutes after the test began, the rate of drawdown increased significantly until the test was finished. The change in rate of drawdown may be due to boundary conditions, such as thinning of the sandstone formation at the aquifer margin or secondary porosity of the confined bedrock aquifer material. Solutions that account for secondary porosity in bedrock aquifers were evaluated in Aqtesolv® (HydroSOLVE, Inc., 2007) but they did not adequately account for the increased rate in drawdown at the end of the test and produced a poor fit to the drawdown and residual data. The Cooper-Jacob (1946) straight line solution was fit to the drawdown data at late-time, 350 minutes after the test began and prior to the change in rate of drawdown, 2,000 minutes after the test began (**Figure 4**).

Observation Well #1 did not exhibit drawdown during the 72-hr aquifer test until 2,780 minutes after the test began and only experienced a maximum drawdown of 0.35 ft (**Figure 3**). Therefore, data collected from this well was not used to analyze aquifer properties.

The Cooper-Jacob (1946) solution was also fit to the Production Well drawdown data, as shown in **Figure 5**. The Production Well showed a similar drawdown response at late time as Observation Well #3.

Recovery data was analyzed for Observation Well #3, as shown in **Figure 6**. The Theis (1935) solution was fit to late-time data ($t/t'=1$) which is more representative of regional aquifer transmissivity (Willman et al., 2007). The ratio of S/S' is indicative of either an infinite non-leaky confined aquifer ($S/S'=1$), leaky-confined aquifer ($S/S'>1$) or no-flow boundary ($S/S'<1$) (Theis, 1935). The calculated S/S' of 0.97 supports the confined aquifer interpretation of the hydrogeologic setting.

Drawdown and recovery data was also analyzed for the two 24-hr tests. A radial flow plot for Well #1 exhibited a unit slope at early time, which is indicative of well bore storage. Therefore, the Papadopulos-Cooper (1967) solution was fit to the drawdown and recovery data as shown in **Figure 7**. The pumping rate during the 24-hr test for Well #3 fluctuated for the first 100 minutes of the test, therefore the Cooper-Jacob (1946) solution was fit to late-time data as shown in **Figure 8**. The variable flow rate and apparent lack of drawdown during the early part of the test resulted in a poor fit to the drawdown data and residuals.

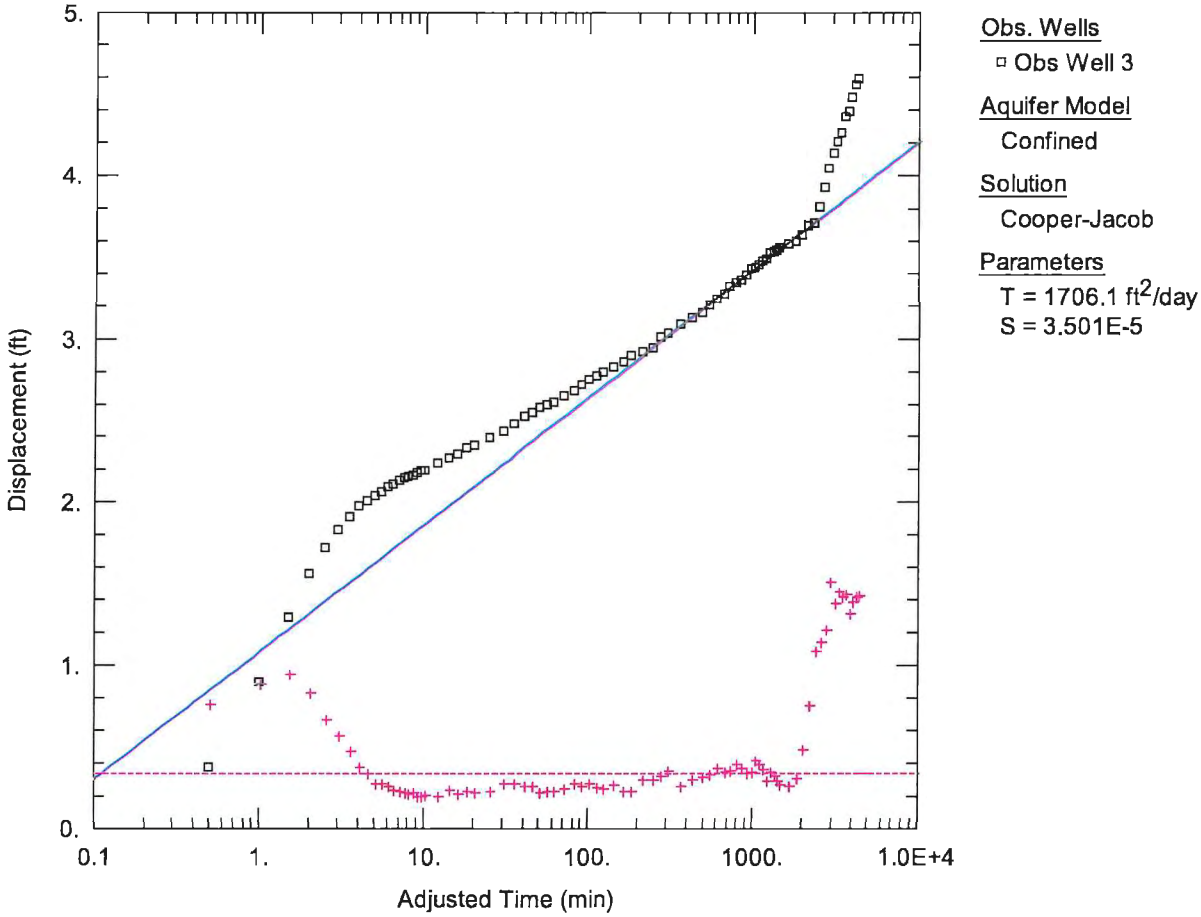


Figure 4: Cooper-Jacob (1946) drawdown and derivative analysis for the Observation Well (GWIC ID 268662).

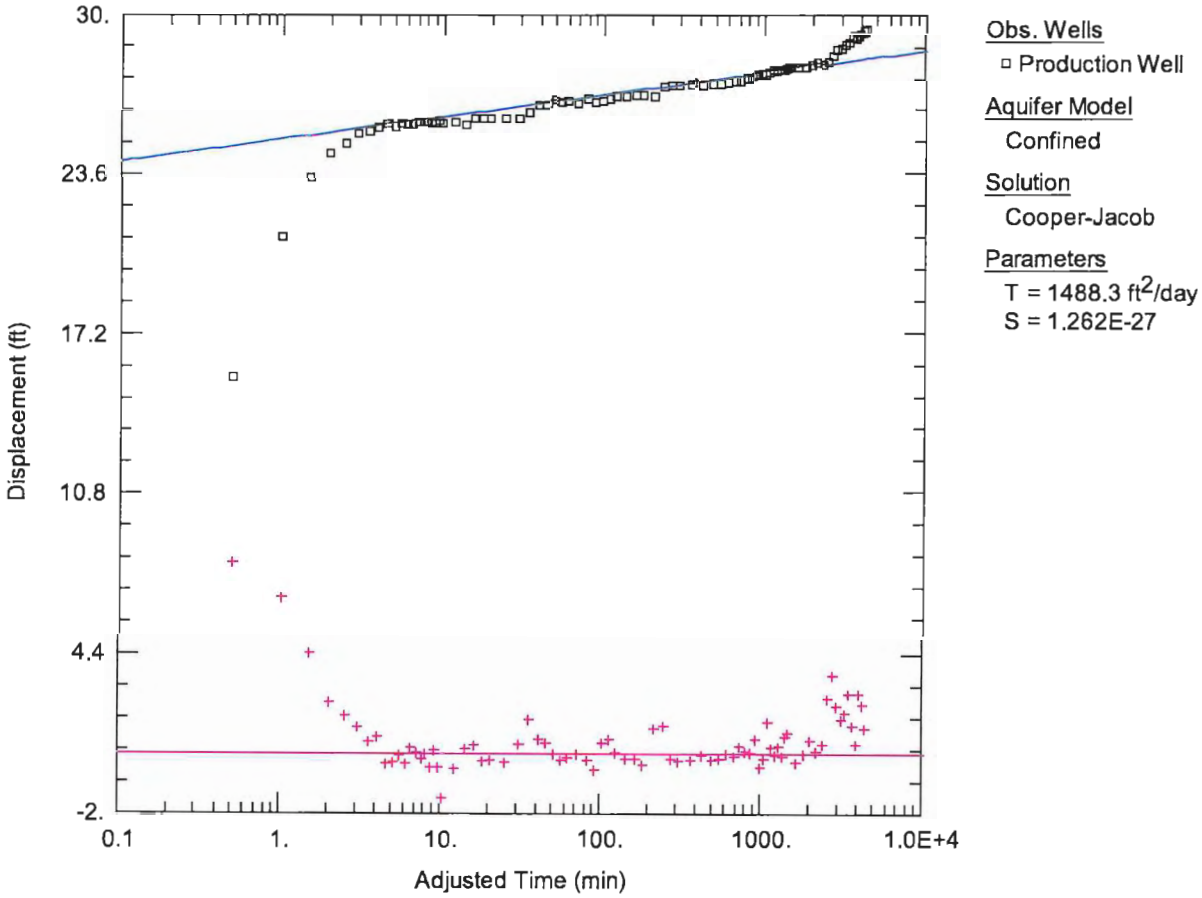


Figure 5: Cooper-Jacob (1946) drawdown and derivative analysis for the Production Well (GWIC ID 274075).

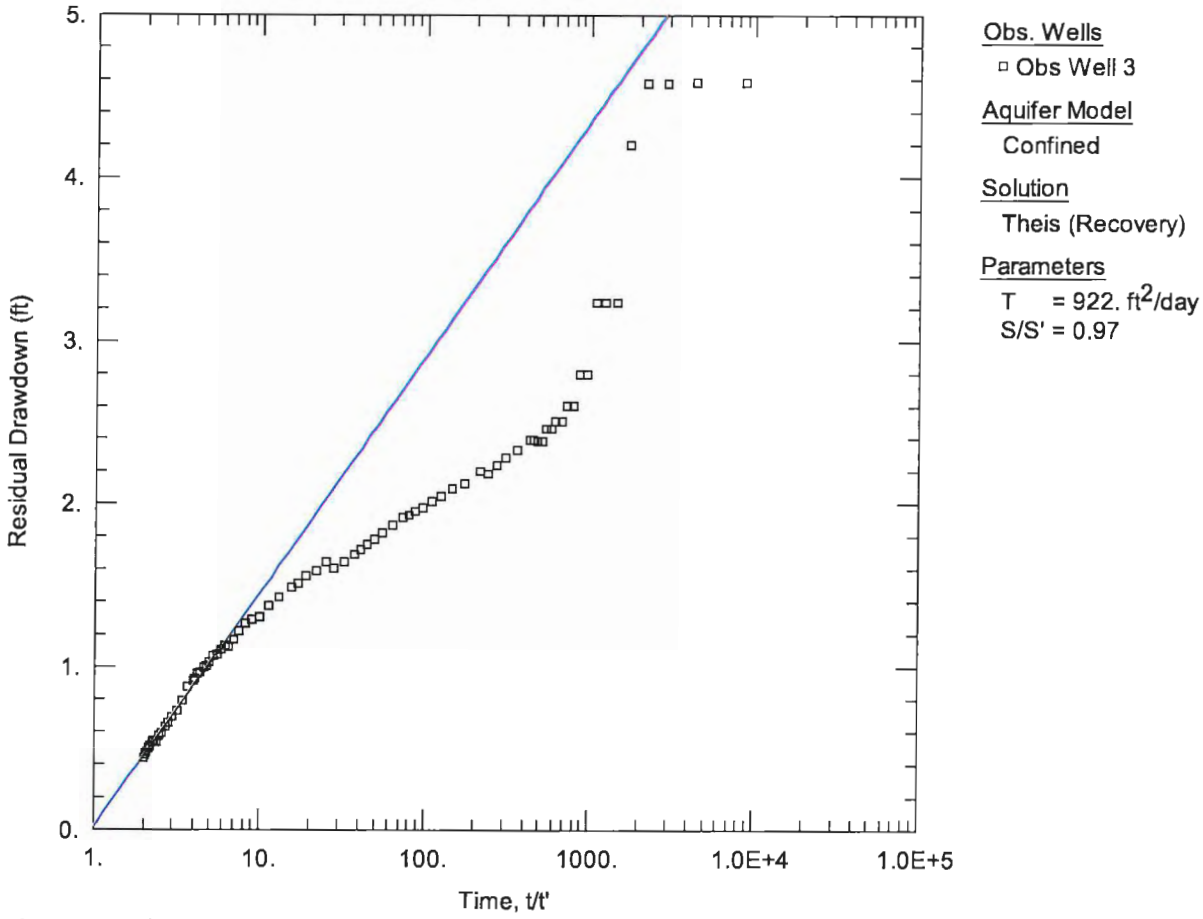


Figure 6: Theis (1935) residual drawdown and recovery analysis for Observation Well #3 (GWIC ID 268662).

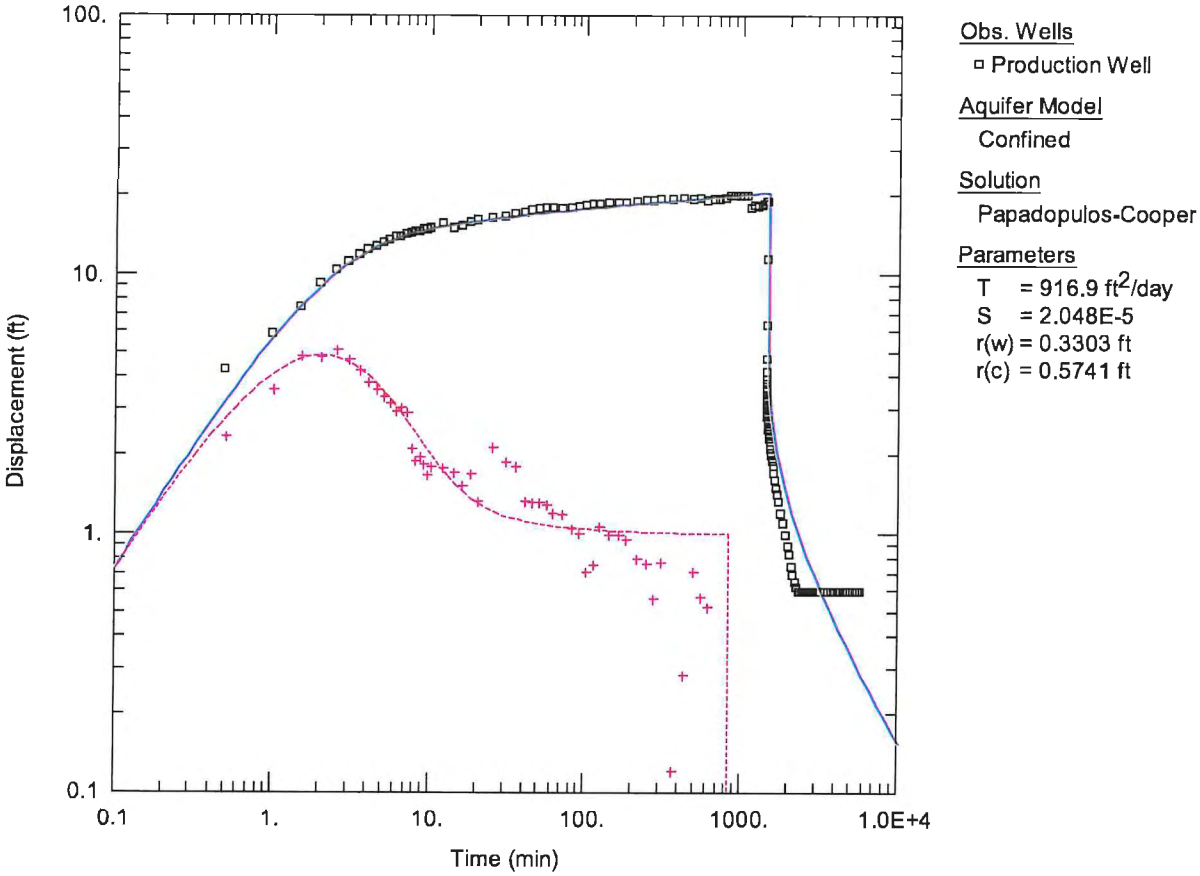


Figure 7: Papadopulos-Cooper (1967) drawdown and derivative analysis for Well #1 24-hr aquifer test.

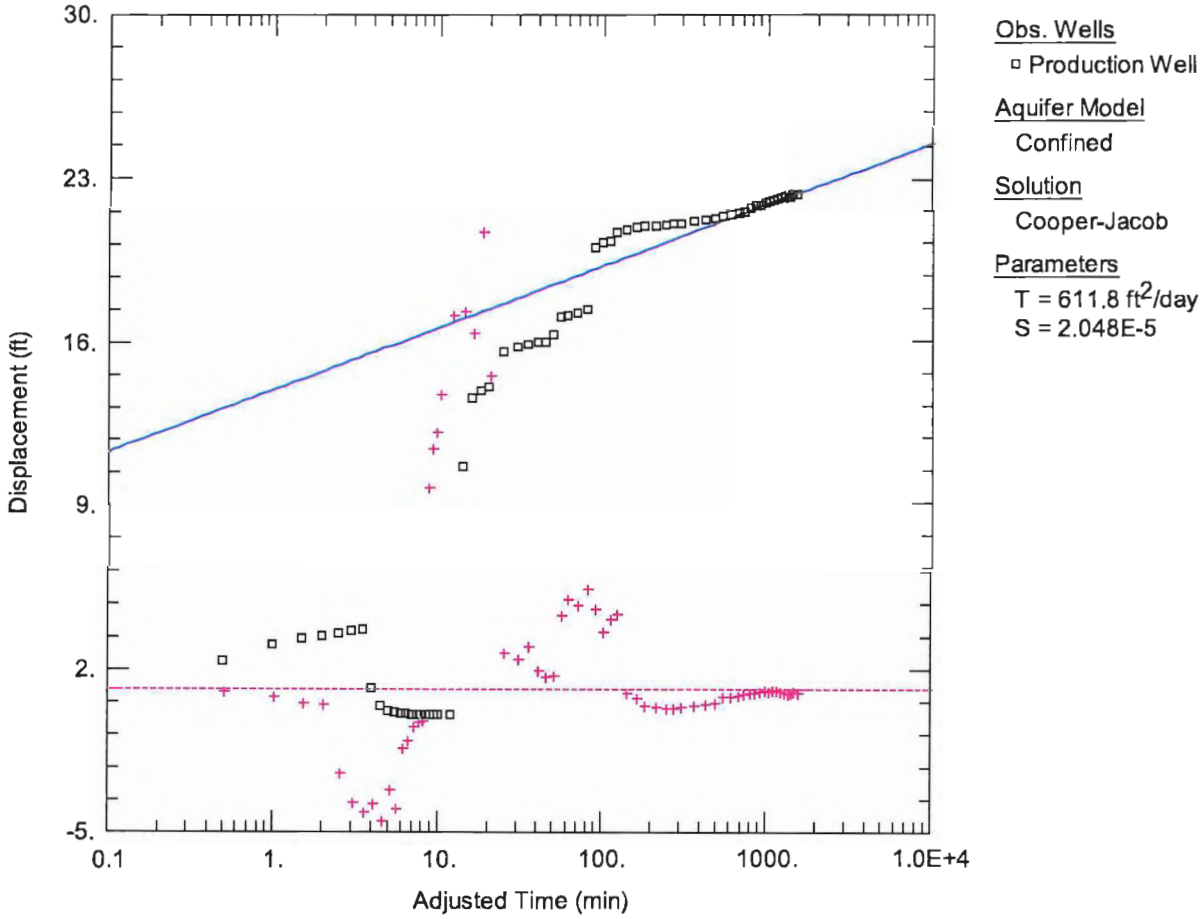


Figure 8: Cooper-Jacob (1946) drawdown and derivative analysis for Well #3 24-hr aquifer test.

Table 2: Aquifer test analyses for observation well.

Aquifer Test Phase	Test Length	Well (GWIC ID)	Analysis Solution	T (ft^2/day)	S
Production Well, Pumping	72	274075	Cooper-Jacob (1946)	1,488	N/A
Observation Well #3, Pumping	72	268662	Cooper-Jacob (1946)	1,706	$3.5x10^{-5}$
Observation Well #3, Recovery	72	268662	Theis (1935)	922	N/A
Well #1, Pumping	24	274077	Papadopulos-Cooper (1967)	917	N/A
Well #3, Pumping	24	268662	Cooper-Jacob (1946)	612	N/A

The recommended aquifer T and S value to be used in forward modeling is 1,706 ft^2/day and 3.5 x 10^{-5} from the Cooper-Jacob (1946) solution analysis of the Observation Well #3 from the 72-hr aquifer test. This solution was chosen because the longer 72-hr test is more likely to sufficiently stress the aquifer and generate accurate aquifer properties compared to the shorter 24-hr tests and use of the observation well data allows determination of a storage coefficient, as opposed to the Production Well drawdown data.

Aquifer Property Comparison

The results of aquifer tests conducted in the Fort Union Formation are shown in **Table 3**. Only one aquifer test conducted in the Tongue River Member was identified (row 1, **Table 3**). The other three aquifer tests presented in **Table 3** are from deeper hydrologic units of the Fort Union Formation, resulting in lower T values than the aquifer test analyzed for this application. The first row of **Table 3** shows the results of the previous analysis for expired Permit 42M 30068052 using the same aquifer data analyzed as part of this permit application. In the previous analysis, the Theis/Hantush (1935) solution was fit to the entire range of drawdown and recovery data, therefore resulting in a poor overall fit due to the significant increase in the rate of drawdown at late time.

Table 3: Nearby Aquifer Tests. Note: T = Transmissivity. NA = Not Available.

Water Right No.	GWIC ID	Well Depth (ft)	Distance from Applicant Well (miles)	Aquifer Test Length (hours)	Pumping Rate (gpm)	T (ft^2/day)	S
42M 30068052	274075	160	0	72	37.8	1,722	$1.5x10^{-5}$
42M 30070505	279977	375	12.5	72	362.7	580	$4.4x10^{-4}$
42M 30103504	283375	400	14.4	72	35.0	155	$2.5x10^{-3}$
42M 30152566	314524	480	7.6	48.5	150.0	107	$8.7x10^{-5}$

5.0 Adequacy of Diversion Analysis

An evaluation of the potentially available water column remaining in the production well is modeled using the Theis (1935) solution with a T = 1,706 ft^2/day and S = 3.5 x 10^{-5}. Predicted theoretical drawdown for the proposed well is modeled for the period of diversion using the monthly pumping schedule identified in **Table 4**. The Applicant requests 229.0 AF for water marketing, which was apportioned evenly year-round.

Table 4: Assumed monthly pumping schedule for the Production Well.

Month	Total Diverted Flow Rate (gpm)	Total Diverted Volume (AF)	Total Consumed Volume (AF)
January	142.0	19.4	19.4
February	142.0	17.6	17.6
March	142.0	19.4	19.4
April	142.0	18.8	18.8
May	142.0	19.4	19.4
June	142.0	18.8	18.8
July	142.0	19.4	19.4
August	142.0	19.4	19.4
September	142.0	18.8	18.8
October	142.0	19.4	19.4
November	142.0	18.8	18.8
December	142.0	19.4	19.4
Total		229.0	229.0

As identified in **Table 5,** total drawdown is the sum of interference drawdown and predicted drawdown with well loss. Well loss is calculated by dividing the predicted theoretical maximum drawdown by a well efficiency value. Well efficiency is calculated by dividing the modeled maximum drawdown for the aquifer test by the maximum observed drawdown of the aquifer test.

The mean aquifer test rate and maximum drawdown observed during the three aquifer tests conducted on each well were used to model the predicted drawdown and well efficiencies. The proposed wells would be pumped simultaneously, therefore the theoretical maximum drawdown for each well was modeled using a flow rate of 47.3 gpm. The aquifer adjacent to Well #1, Well #2, and Well #3 would experience a predicted total drawdown of 30.7, 54.3, and 40.5 ft respectively at the end of the first year. The remaining available water column for Well #1, Well #2, and Well #3 is 17.8, 0.3, and 18.1 ft and is equal to the available drawdown above the bottom of the well minus total drawdown and accounting for 2-ft of well casing stickup above ground surface.

Table 5: Remaining available water column for the proposed wells.

Drawdown Estimate	Well #1	Well #2	Well #3
Total Depth at Bottom of Perforated Interval (ft btc)[1]	159.0	157.0	162.0
Pre-Test Static Water Level (ft btc)	110.5	102.4	103.3
Available Drawdown Above Bottom of Well (ft)	48.5	54.6	58.7
Observed Drawdown of Aquifer Test (ft)	20.2	27.9	22.4
Modeled Drawdown Using Mean Aquifer Test Rate (ft)	10.6	6.8	8.2
Well Efficiency (%)	52%	24%	37%
Predicted Theoretical Maximum Drawdown (ft)	10.1	10.1	10.1
Predicted Drawdown with Well Loss (ft)	19.3	41.4	27.6
Interference Drawdown (ft)	11.4	12.9	12.9
Total Drawdown (ft)	30.7	54.3	40.5
Remaining Available Water Column (ft)	17.8	0.3	18.1

[1]Well casing stickup of 2 ft added to total depth bgs to calculate total depth btc.

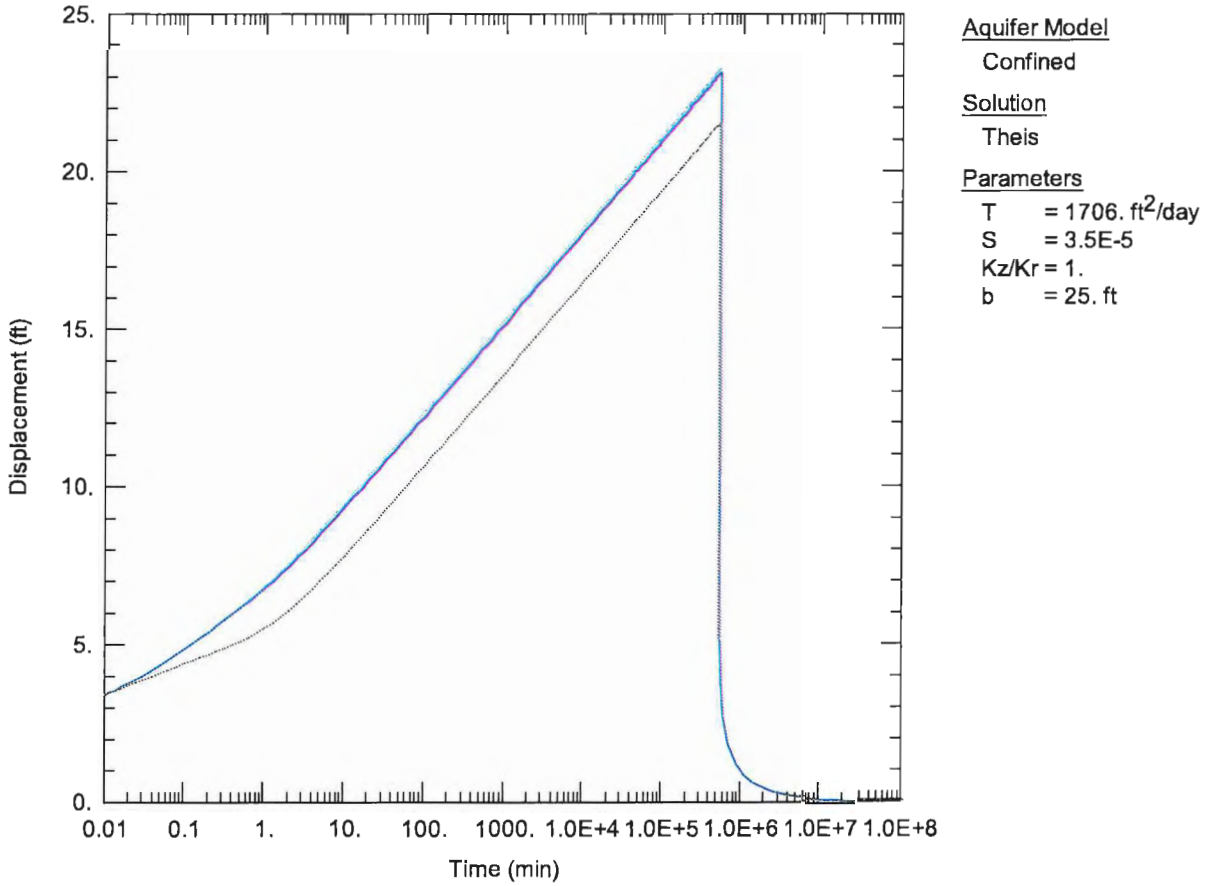


Figure 9: Theis (1935) distance-drawdown plot at the end of the first year of the assumed monthly pumping schedule. The overlapping solid blue and dashed line is Well #2 and Well #3 (56 ft away from Well #2) respectively. The dashed grey line is Well #1 (425 ft away from Well #2).

6.0 Physical Availability Analysis

An evaluation of groundwater availability in the source aquifer for the purpose of evaluating physical and legal availability was done by calculating groundwater flux through a zone of influence (ZOI) corresponding to the 0.01-foot drawdown contour (DNRC, 2019). The three proposed wells were modeled as one well at the center of the proposed points of diversion due to their close proximity to each other. A distance-drawdown plot was generated using the Theis (1935) confined solution, a constant pumping rate of 142 gpm for the period of diversion, a T = 1,706 ft^2/day, and S = 3.5 x 10^{-5}. The Yellowstone River was included as a constant head boundary at a distance of 30,000 ft from the pumping well.

According to **Figure 10** the 0.01-foot drawdown contour occurs 450,000 ft from the Applicant's well. The 0.01-ft drawdown contour extends farther to the northeast and southwest due to the effects of the Yellowstone River constant head boundary. According to the geologic map of the Fort Union Formation by Stoner and Lewis, 1980, the 0.01-ft drawdown contour extends past the Tongue River Member aquifer boundaries to the north and northwest. Therefore, the contour was truncated to the Missouri River alluvium to the north and the mapped extent of the Tongue River Member aquifer to the northwest (**Figure 11**).

The regional depth of the Tongue River Member is 200 ft below ground surface (Crowley et al., 2017). Therefore, groundwater rights with well depths less than or equal to 200 ft and located within the ZOI were identified for legal demand in the source aquifer.

Appendix A is a list of the 1,367 groundwater rights that need to be evaluated as a legal demand. Groundwater flow direction is predominantly from west to east (Slagle, 1983; Patton et al., 1998, Smith et al., 2000), therefore the width of the ZOI that is perpendicular to groundwater flow is 508,000 ft. The calculation for groundwater flux (Q) through the delineated area is given by Eq. 1 and is 4,333,240 ft^3/day or 36,309 AF/year:

$$\mathbf{Q = TWi}$$

where:

T = Transmissivity = 1,706 ft^2/day
W = Width of Zone of Influence = 508,000 ft
i = Groundwater Gradient (from Slagle, 1983, and Patton et al., 1998 water level contour map) = 0.005 ft/ft.

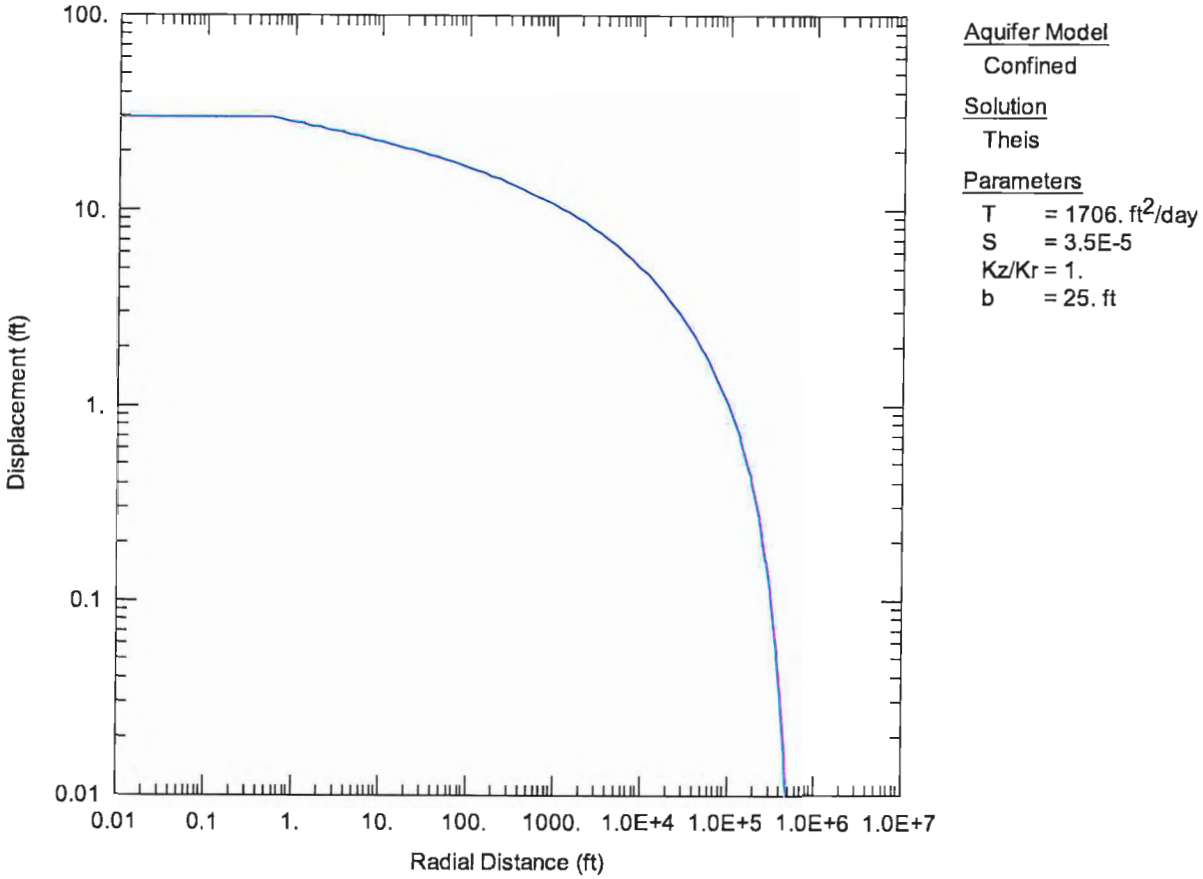


Figure 10: Theis (1935) distance-drawdown plot for one year of pumping the proposed wells at 142.0 gpm.

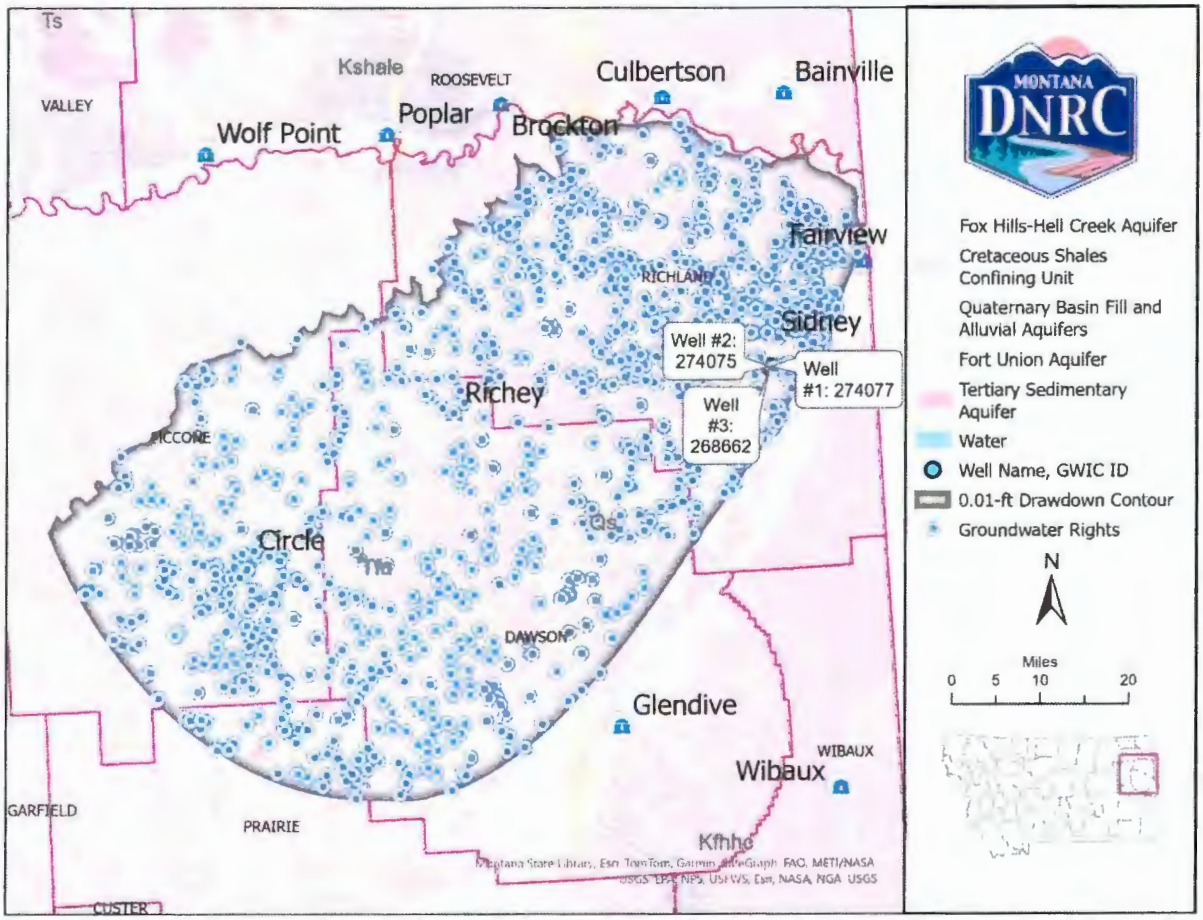


Figure 11: Groundwater rights within the 0.01-foot drawdown contour to analyze for legal demand within the source aquifer. The ZOI was truncated to the mapped extent of the Tongue River Member to the northwest (Stoner and Lewis, 1980) and the Missouri River alluvium to the north.

7.0 Adverse Effect Analysis

Using the Applicant's proposed pump schedule and associated annual volume, potential impacts to existing water rights is evaluated by modeling drawdown in nearby wells and net depletions to surface water(s).

7.1 Groundwater - Drawdown in Existing Wells

The drawdown in existing wells was modeled for proposed conditions using the following inputs: Theis (1935) solution, a T value equal to 1,706 ft^2/day, S value of 3.5 x 10^{-5}, the monthly pumping schedule identified in **Table 4** for a period of five years, and a constant head boundary at the Yellowstone River 30,000 ft from the proposed wells. The drawdown is the largest at the end of the fifth year using the proposed pumping schedule. The 1-foot drawdown contour would occur 100,000 ft from the Applicant's wells (**Figure 13**). Appendix B lists 243 groundwater rights that would experience drawdown greater than or equal to 1-ft from the proposed use.

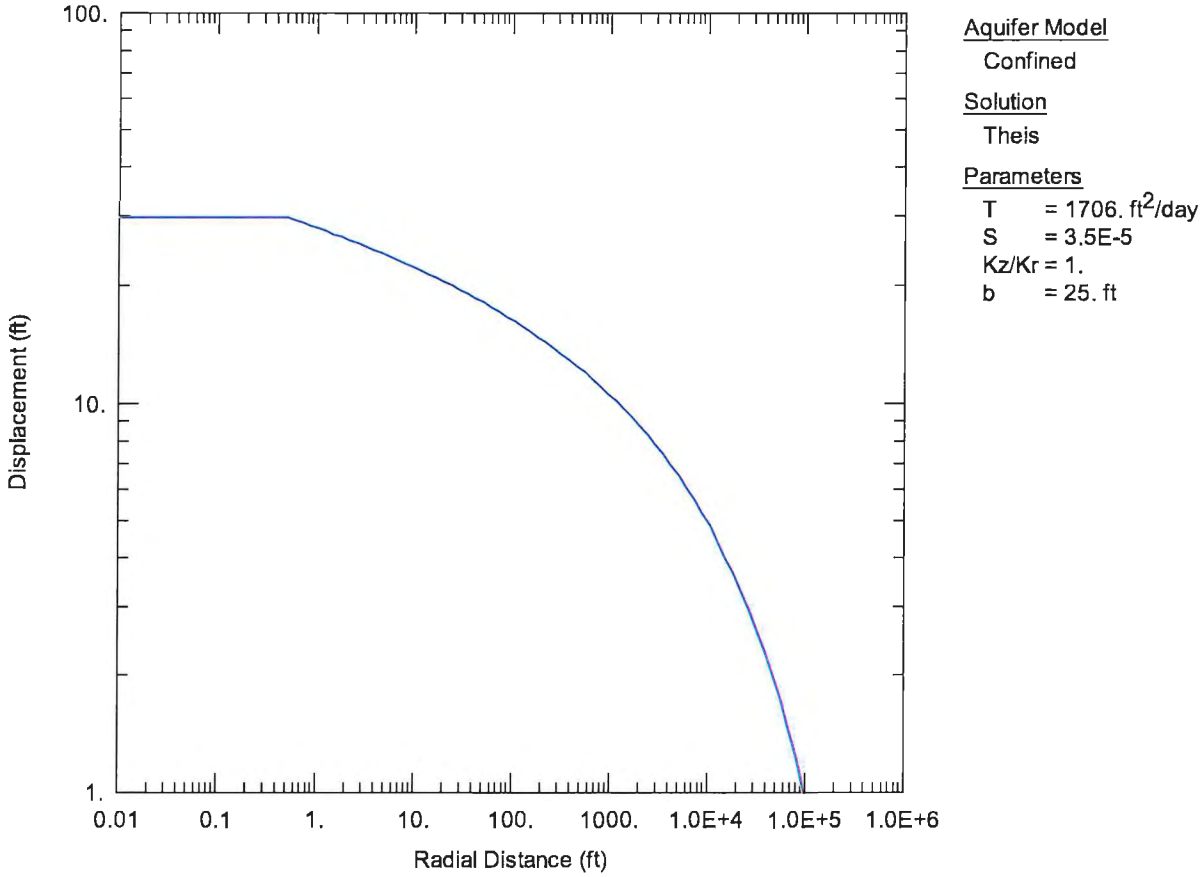


Figure 12: Theis (1935) distance-drawdown plot at the end of the fifth year of the assumed monthly pumping schedule.

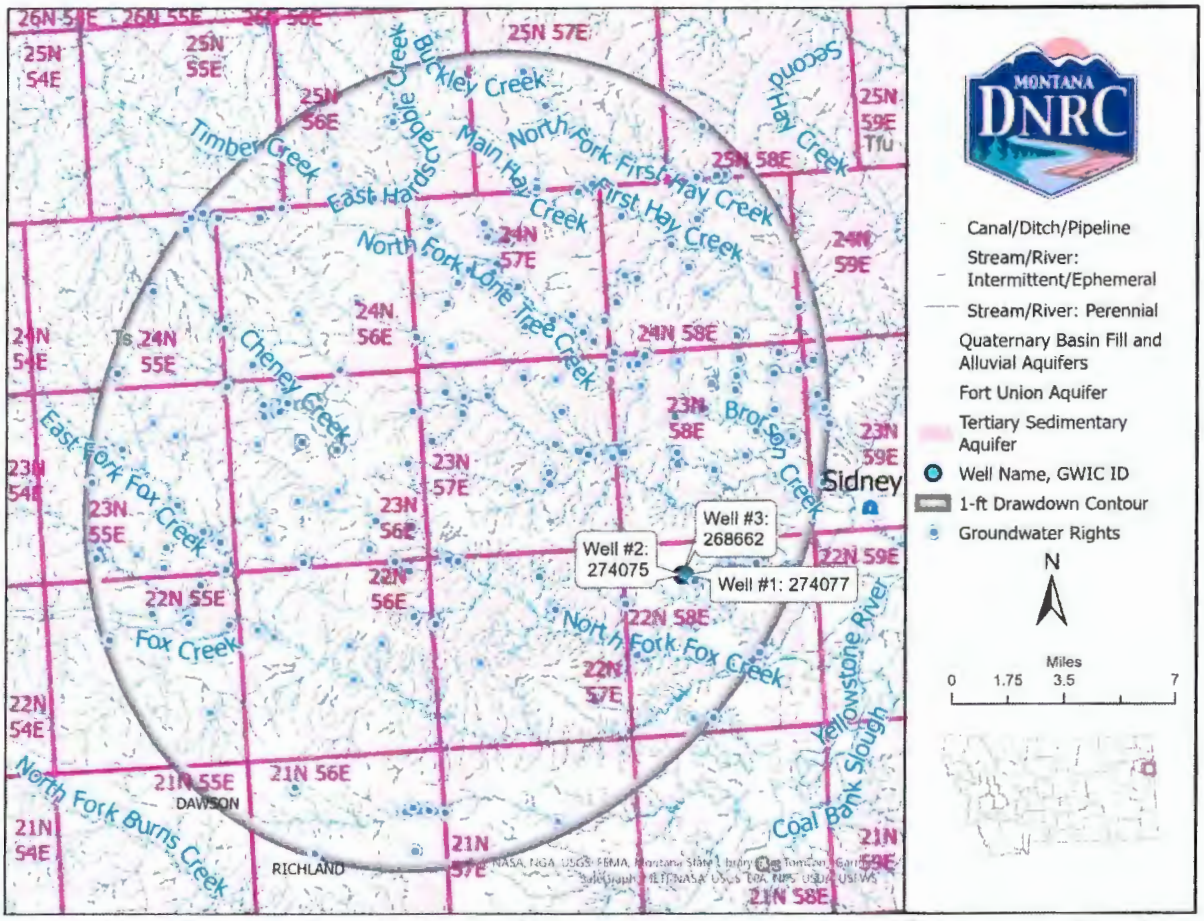


Figure 13: 1-foot drawdown contour and groundwater rights that would experience drawdown greater than or equal to one foot from the proposed use.

7.2 Surface Water - Net Depletion

Net depletion is equal to the consumed volume for a proposed groundwater use and is described as the calculated volume, rate, timing, and location of reductions to surface water that are offset by return flows (non-consumed water). Net depletion is evaluated by 1.) quantifying the consumed volume associated with the proposed use; 2.) identifying hydraulically connected surface waters; and 3.) calculating the monthly rate and timing of net depletions to affected surface water(s).

1. Consumed Volume

Consumed groundwater does not return to the source aquifer. Consumed volume depends on the proposed use and its associated percentage of known consumption. Depletion is assumed to be equivalent to consumption on an annual basis unless return flows do not accrete to the potentially affected surface water.

For the subject application, the proposed use is water marketing and is considered 100% consumptive. A total volume of 229.0 AF would be diverted and consumed at a constant year-round rate with the monthly breakdown shown in **Table 4.**

2. Hydraulically Connected Surface Water(s)

Net depletions to surface water depend on propagation of drawdown to locations where surface water is hydraulically connected to groundwater, the hydraulic properties of an aquifer, and is not a function of groundwater flow rate or direction (Theis, 1938; Leake, 2011). Hydraulic connection depends on the depth to groundwater beneath the beds of surface waters and can vary along a reach and with time of year. Drawdown from pumping can propagate through the entire thickness of the confining layer to overlying aquifers or surface waters (Konikow and Neuzil, 2007).

Hydraulic connection of individual stream reaches to groundwater is evaluated by comparing streambed elevations to static groundwater elevations measured in wells less than 50 ft deep and within 1,000 ft of surface water or from published water table maps (DNRC, 2018). Surface water within that area is considered hydraulically connected to the unconfined aquifer if static ground water elevations are above or within 10 ft of the elevation of the stream bed.

The source aquifer is a 20-40 ft thick sandstone unit of the Tongue River Member of the Fort Union Formation and is interpreted to be confined. Surface water bodies that are located in the vicinity of the proposed project include North Fork Fox Creek, Fox Creek, Lone Tree Creek, and the Yellowstone River. Several shallow wells (GWIC IDs: 35686, 35687, 35689, and 700577) are located adjacent to North Fork Fox Creek, but do not report static water levels on the well logs. Shallow wells near Lone Tree Creek are located primarily near the confluence with the Yellowstone River as the stream flows over the alluvial sediments. These shallow wells are likely indicative of the surficial alluvial aquifer in the Yellowstone River valley bottom rather than hydraulic connection of the Tongue River Member aquifer.

The National Hydrography Dataset (NHD) and USGS Probability of Streamflow Permanence (PROSPER) web application were also used to evaluate perennial classification of nearby surface water bodies. North Fork Fox Creek, Fox Creek, and Lone Tree Creek exhibit alternating reaches of perennial and ephemeral classification in the NHD. In addition, these water bodies have a probability of streamflow permanence of 0.2 aggregated by a HUC 12 basin for the years 1989 through 2018 in PROSPER. The alternating perennial and ephemeral classification are likely areas where the Fort Union Formation outcrops and gains or loses water to the shallow hydrologic unit.

The lack of continuous perennial stream classification identified from the NHD and PROSPER indicate that locally, these streams are not continuously connected to the shallow hydrologic unit of the Fort Union Formation. Therefore, the proposed use will result in constant year-round depletions to the Yellowstone River near areas where the Tongue River Member outcrops and where seeps exist along the Yellowstone River valley alluvium.

As identified in **Figure 14**, the depleted reach of the Yellowstone River starts at the southern boundary of Section 17, Township 22 North, Range 59 East, Richland County.

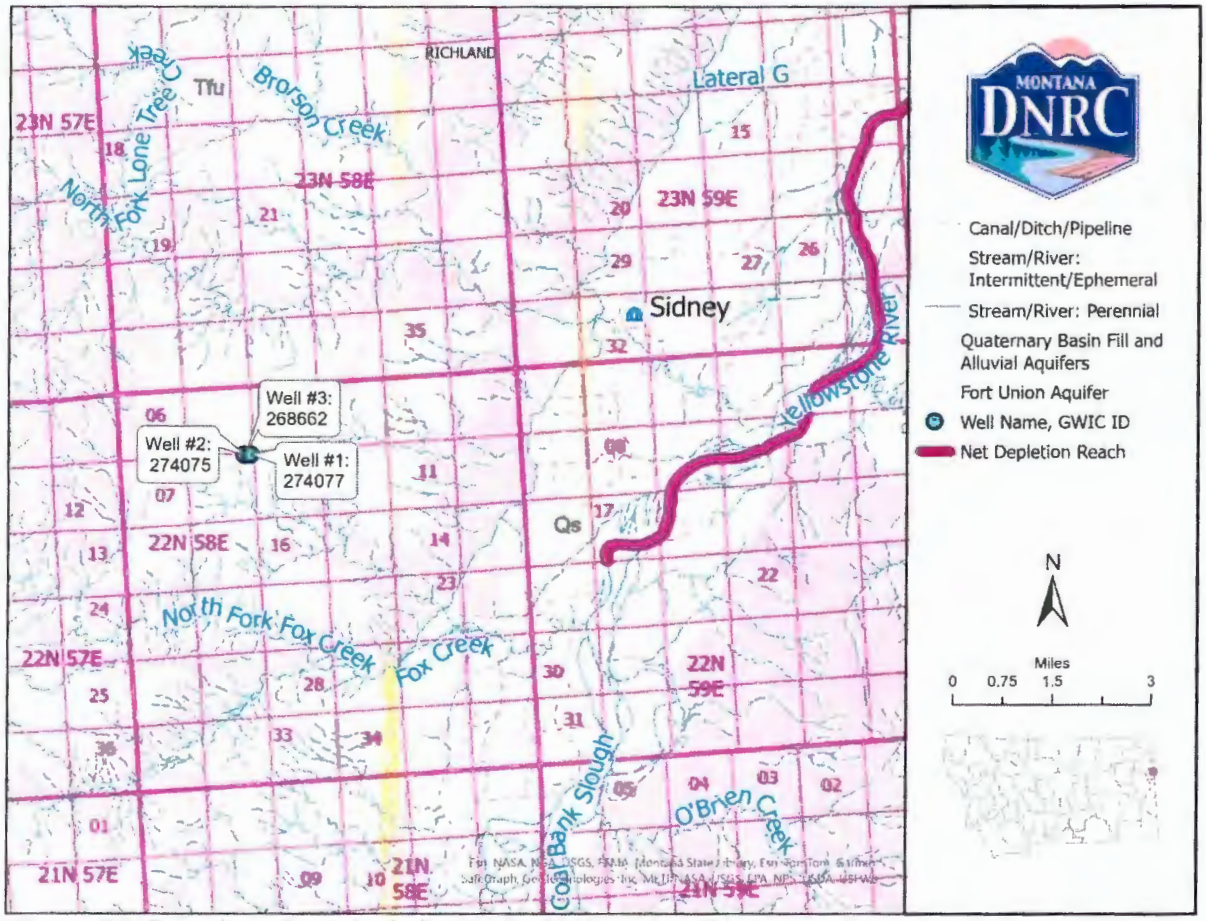


Figure 14: Location of net depletion to the Yellowstone River.

3. Rate and Timing of Depletions

Evaluations of the rate and timing of depletions caused by pumping are based on the basic concept that groundwater pumping eventually is offset by an equivalent increase in recharge or decrease in discharge (Theis, 1940; Leake et al., 2008), a process defined as capture by Lohman (1972). Capture occurs as drawdown propagates to surface water and areas of phreatophyte vegetation (areas of groundwater discharge) that takes water directly from groundwater. In the absence of credible evidence to the contrary, capture of ET by phreatophytes is neglected and net depletion is assumed to equal total capture. This assumption is justified because published estimates for conditions common in Montana alluvial valleys indicate capture of ET generally is less than 10 percent of total capture (Xunhong, 2006). Capture of ET in ephemeral drainages may be significant and will be evaluated on an application-by-application basis.

The rate and timing of net depletion caused by pumping may be modeled using a variety of analytical and numerical models selected to fit site-specific conditions and needs. Simple models including the Alluvial Water Accounting System (AWAS) and the Well Pumping Depletion Model (WPDM) typically are used by DNRC to model depletions to one source with simple aquifer boundaries. Adjustments may be made for more complex conditions or multiple sources using

methods like those described by Contor (2011), analytical models by Hunt (2003) and Butler et al. (2001) or a superposition numerical groundwater flow model.

Modeling is not necessary in some situations such as where a proposed use is constant year-round because of the depth to the source aquifer and the distance to potentially affected stream reaches. Modeling of depletions can be simplified if the proposed place of use is located the same relative distance from the potentially affected surface water as the proposed wells and all non-consumed water infiltrates the source aquifer and returns to the potentially affected surface water as return flows. Under those simplifying assumptions, depletion can be modeled based on withdrawal of the monthly consumed amounts. Otherwise, depletion by the full withdrawals and return flows need to be modeled separately with net depletion calculated as depletion minus return flows.

The proposed water marketing use is constant year-round and is considered 100% consumptive. Due to the distance of 3.8 miles to the Yellowstone River, depletions would accrue at a constant rate equal to the diverted flow rate and volume shown in **Table 1**.

Review

This document has been reviewed on May 16, 2024, in accordance with Category 7 of DNRC's Water Sciences Bureau Minimum Standards of Review, Version 2, February 2024.

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Appendix A: Groundwater Rights within Area of Potential Impact

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WR Number	All Owners
42M 3392 00	SIR RANCH TRUST
42M 163248 00	MELROSES DOUBLE U INC
42M 163346 00	DOANE INC
42M 163249 00	MELROSES DOUBLE U INC
42M 163351 00	DOANE INC
42M 163352 00	DOANE INC
42M 11949 00	GUDRUN K UNDEM; MARGO G UNDEM; SAM K UNDEM
42M 163350 00	DOANE INC
42M 30127431	KATHY M OBERGFELL; ROCKY L OBERGFELL
42M 30012283	KATHY M OBERGFELL; ROCKY L OBERGFELL
42M 165315 00	EATON, FRANK & SONS
42M 41842 00	DIAMOND V CORP
40P 31541 00	KEYSORS LLC
42M 27577 00	KATHY W THORNTON; RUSSELL D THORNTON
42M 11379 00	PREWITT TRUST
42M 165321 00	EATON, FRANK & SONS
42M 100109 00	KUEHN RANCH CO
42M 3729 00	DON A PIRRIE; MARY H PIRRIE
42M 44159 00	KUEHN RANCH CO
42M 3731 00	DON A PIRRIE; MARY H PIRRIE
40P 4773 00	LORRAINE WHITEMAN; WHITEMAN, FLOYD JR TESTAMENTARY TRUST
42M 109947 00	DIEDE, EMIL INC
42M 30012287	KATHY M OBERGFELL; ROCKY L OBERGFELL
40S 59534 00	KELLY FINK; RONALD J FINK
42M 30127489	KATHY M OBERGFELL; ROCKY L OBERGFELL
42M 30012285	KATHY M OBERGFELL; ROCKY L OBERGFELL
40P 41336 00	JEFFREY CARDA; MICHELLE CARDA
42M 163668 00	EDWARDS, LYLE INC
42M 164450 00	DAVID R MCMILLEN; MARGARET P MCMILLEN
42M 17552 00	FIFTY TWO RANCH INC; GEORGE LEWIS
40P 30673 00	LARRY SCHIPMAN; PATTI SCHIPMAN
40S 46534 00	ANDREW C HOLLOM; ORRIN W HOLLOM
40S 46535 00	ANDREW C HOLLOM; ORRIN W HOLLOM
40P 16840 00	LISA LOCKHART
42M 71698 00	JENNIFER H LOVEGREN; WILLIAM C LOVEGREN
42M 4623 00	DONALD J PREVOST
40P 13980 00	ERVIN E GOSS; JAMES D GOSS; MARVIN F GOSS; PATTI A MCGINNIS
42M 46661 00	STORTZ RANCH INC
40P 64051 00	TODD VERSCHOOT
42M 32902 00	RAYMOND J BASTA
42M 27622 00	LARS E KALBERG
42M 30024600	AFTON DALIMATA; FRANCIS DALIMATA
42M 33468 00	MONTANA STATE BOARD OF LAND COMMISSIONERS
42M 47041 00	JAMES A NAGLE; MARY C NAGLE; MARJORIE A SELL
42M 165316 00	EATON, FRANK & SONS
42M 29454 00	MONTANA STATE BOARD OF LAND COMMISSIONERS

Appendix A: Groundwater Rights within Area of Potential Impact

WR Number	All Owners
40P 875 00	SWITZER, L J RANCH INC
40P 2120 00	PAWLOWSKI BROTHERS INC
42M 101379 00	OAK RANCH FAMILY TRUST
42M 16325 00	AUDREY A HILL
42M 89103 00	DAVID R MCMILLEN
42M 20495 00	PREVOST RANCH INC
42M 101387 00	JEANNE SMALIS
42M 16326 00	AUDREY A HILL
42M 30029577	ANITA MULLIN; RICK MULLIN
40S 30163038	GLADOWSKI RANCH INC
42M 9521 00	ANITA MULLIN; RICK MULLIN
42M 16327 00	AUDREY A HILL
42M 46342 00	FOUR J RANCH INC
42M 30044795	MONTANA STATE BOARD OF LAND COMMISSIONERS
40P 30048207	MONTANA STATE BOARD OF LAND COMMISSIONERS
42M 16328 00	AUDREY A HILL; MELVIN R HILL
40S 30153600	DOUBLE J FARMS INC
42M 30128010	HENNING SKOV
42M 99125 00	ELIZABETH VERHASSELT; TREVOR VERHASSELT
40P 30021665	LARRY SCHIPMAN; PATTI SCHIPMAN
40S 15770 00	KRIS CARDA; TARA CARDA
40P 30018125	KEYSORS LLC
42M 64108 00	DEBRA SCHILLINGER; SCHILLINGER FAMILY LEGACY TRUST DTD 9/16/2023
42M 30127430	KATHY M OBERGFELL; ROCKY L OBERGFELL
40P 97825 00	LESLIE D CARLSEN
40P 61795 00	KEITH R GROH
40P 11351 00	DAVID N MCCLOY
42M 30012288	KATHY M OBERGFELL; ROCKY L OBERGFELL
42M 30014017	JANICE DIGE; RUSSELL DIGE
40S 171271 00	HARDY INVESTMENTS LP
40S 30536 00	MULLIN LIVING TRUST DTD 11/30/2007
42M 5213 00	AUDREY A HILL
42M 30044138	ROGER W MEYER
40S 22306 00	WAYNE BROWN; DIANA ELI
40S 20354 00	KELLY FINK; RONALD J FINK
42M 33061 00	MERLYN D LARSON; ROSEMARY LARSON
42M 30066848	SHANDON W ERICKSON
42M 109939 00	DIEDE, EMIL INC
42M 101381 00	OAK RANCH FAMILY TRUST
40S 6570 00	PHILLIP A FINK
40P 30044091	MONTANA STATE BOARD OF LAND COMMISSIONERS
40S 66292 00	COY D MARTIN; SARA E MARTIN
40S 28354 00	SCHLENZ, LEVON P TRUST
42M 164370 00	ANGIE R HAGEN; BETTY HAGEN; DARREN HAGEN; JUSTUS HAGEN
40S 12470 00	BARBEE K HEKKEL; DUANE D HEKKEL; PENNIE M MUTH; SONJA R SMART
42M 102528 00	WOLFF & SONS INC

Appendix A: Groundwater Rights within Area of Potential Impact

WR Number	All Owners
42M 109940 00	DIEDE, EMIL INC
42M 7317 00	PREWITT TRUST
42M 101494 00	DCLW CORP
40P 55598 00	ORLAN OLSON
42M 10832 00	KRISTAN E BASTA
42M 30050023	KUBESH INC
42M 48435 00	DAVID A MULLIN; MERLE A MULLIN
40P 36678 00	MONTANA STATE BOARD OF LAND COMMISSIONERS
42M 4099 00	EATON, FRANK & SONS
40P 83018 00	ORLAN OLSON
	ERVIN E GOSS; GOSS, JANET R TRUST; GOSS, MARVIN F TRUST; GOSS, VICKY L FAMILY
42M 57290 00	SHARE TRUST UNDER WILL
42M 30064106	CAROLYN G STURGIS
40S 29266 00	CYNTHIA SUNDHEIM; SCOTT SUNDHEIM
42M 69226 00	CRYSTAL STRAIT; MACKENZIE STRAIT
42M 37565 00	FRANZ RANCH LAND TRUST
42M 1363 00	EATON, FRANK & SONS
40P 109558 00	RENETTE WALDO; SHAD O WALDO
40P 91887 00	DEBORAH C THOMAS
40S 29919 00	BUD & JOE LLC
42M 6396 00	GARY KING
40P 37019 00	JEFFREY CARDA; MICHELLE CARDA
42M 111274 00	ULLMAN HOLDINGS LLC
42M 1477 00	DIAMOND V CORP
40S 16185 00	J HARRY JOHNSON LIMITED PARTNERSHIP
40P 30031194	ALLEN EVENSON
40P 71740 00	DALE E HEIDE
40S 79872 00	MARY STEPPLER
40S 15698 00	MICHAEL A IRIGOIN
42M 43924 00	O BAR X RANCH INC
42M 163486 00	GARY WHITMER
42M 23573 00	MERLYN D LARSON
42M 9424 00	ANITA MULLIN; RICK MULLIN
42M 104477 00	KRISTINA K HENSON
40S 63943 00	AMESTOY, CHARLES A & ELAINE A MINERAL TRUST
40S 72924 00	DEVILS ELBOW RANCH LLC
42M 30016838	MELODY K DAHLE; WILLIAM J DAHLE
42M 30133828	JEANNE SMALIS
42M 30063213	RICHLAND VENTURES LLC
40S 7235 00	PENNIE M MUTH
42M 101495 00	DCLW CORP
42M 108389 00	MONDALIN INC
40P 6039 00	JOHN A GEER
42M 17549 00	FIFTY TWO RANCH INC; GEORGE LEWIS
42M 56583 00	FULFORD, JAMES M REVOCABLE TRUST 3-3-1976
42M 1839 00	EDWARDS, LYLE INC

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WR Number	All Owners
42M 1476 00	DIAMOND V CORP
42M 59514 00	CYNTHIA C BLOOMFIELD; SCOT A BLOOMFIELD
42M 30070220	5S PARTNERSHIP
42M 5375 00	DAVID R MCMILLEN; MARGARET P MCMILLEN
40P 25011 00	VICKI VAIRA
	LESUEUR FAMILY; JANA MINIFIE; BETTE KAY NELSON; JOHN T VOLDEN; VOLDEN,
42M 59538 00	DONALD T & ROSEMARIE FAMILY TRUST
42M 73775 00	DAVID R STEINBEISSER; DAWN STEINBEISSER
42M 1642 00	KITTLESON FAMILY PARTNERSHIP LP
42M 30010531	MONDALIN INC
42M 28783 00	KENNETH MICHAEL BACKES
42M 97728 00	MICHAEL G DENOWH; PAUL J DENOWH
42M 89088 00	ULLMAN HOLDINGS LLC
42M 53307 00	KOPP FARMS INC
42M 17232 00	MARIAN BERGSTEDT
42M 30023202	FRED BARKLEY
42M 30112705	ERIN C SIEBENALER; KENNETH C SIEBENALER
40P 96360 00	MILNE, DEBORAH L REVOCABLE LIVING TRUST 11/29/2023
40S 7065 00	SCHMITZ JOE & ANNA AND BURKE PAT & ANNA TRUST
	JOHNSON, JUDITH A REVOCABLE LIVING TRUST; JOHNSON, WARREN E REVOCABLE
42M 35711 00	LIVING TRUST
42M 21086 00	RUSSELL DIGE
42M 108412 00	JESSICA J RAHN; RANDALL D RAHN
42M 30016639	JOSEPHINE K FINNICUM
42M 31821 00	WILLIAM J REHBEIN
42M 59541 00	DYNNESON LAND LLC
42M 103694 00	SHERMAN L DYNNESON
42M 28846 00	JOSHUA T ODONNELL
42M 99126 00	JOHANNA R LEPEL
40P 13634 00	AMANDA HOVE; BRYCE A HOVE
40S 22430 00	LISA M STEPPLER; WESLEY D STEPPLER
42M 30052275	PHILIP HAFEMANN
40P 1206 00	KENNETH V YOUNGQUIST
40S 22308 00	WAYNE BROWN; DIANA ELI
42M 101527 00	EATON, FRANK & SONS
42M 12197 00	CARLA J ASPENLIEDER; DOUGLAS D KAUFMAN; SUSAN R MURDOCK; VICKIE L POTTER
42M 7394 00	WOLFF & SONS INC
40P 30043412	PATRICK E GIBBS
42M 30063554	DIEDE, EMIL INC
42M 16974 00	RAY A ZIMDARS
42M 51905 00	CHERYL L HANSEN; GREGORY R HANSEN
42M 30045645	GENE TRUDELL; NANCY TRUDELL
42M 163762 00	JULIE LEWIS
40S 63936 00	CALVIN I STEPPLER; CODY J STEPPLER; VERLIN R STEPPLER
40S 130588 00	KIM A KLASNA; TIMOTHY J KLASNA

Appendix A: Groundwater Rights within Area of Potential Impact

WR Number	All Owners
42M 36516 00	BERTRAND J SAWYER
40P 30127271	QUICK RANCH LLC
40S 59575 00	CODY J STEPPLER; VERLIN R STEPPLER
42M 6376 00	EUGENE ANDERSEN
40S 6879 00	DANIEL B BIDEGARAY
40P 42052 00	BURL J BELEY; VICKI L BELEY
42M 30106488	RICHARD A ALBIN
40P 7849 00	DEAN SCHILLINGER
40S 2400 00	HAROLD J FINK
42M 109926 00	BERRY HOMESTEAD LLC
40P 30014922	EISSINGER LAND & CATTLE CO
42M 99102 00	WILLIAM C STEINBEISSER
40P 31480 00	DUANE W WHITE
40S 30028766	LISA M STEPPLER; WESLEY D STEPPLER
40P 13408 00	DONALD R HABER
42M 3582 00	OAK RANCH FAMILY TRUST
42M 20107 00	DARRELL G HYSTAD; DEBRA J HYSTAD
42M 2025 00	KITTLESON FAMILY PARTNERSHIP LP
42M 30008523	PENNIE K THORNTON; WILLIAM D THORNTON
40P 9288 00	JOHN A GEER; JUNE F GEER
40P 102760 00	ALAYNA J HAYNIE; MICHAEL L HAYNIE; RUDY HAYNIE; RUTH HAYNIE
42M 8141 00	ORVILLE WIKE
42M 14841 00	MONTANA STATE BOARD OF LAND COMMISSIONERS
40S 4585 00	BUD & JOE LLC
40P 12885 00	ANN GROH
42M 9010 00	JOSEPH J WALKER
42M 29467 00	THIESSEN, DWIGHT & DIANA FAMILY TRUST
40P 74077 00	IDLAND, ODDVAR & PATRICIA REVOCABLE TRUST
40P 30043467	TODD VERSCHOOT
42M 15883 00	ARTHUR R OLMSTEAD; BARBARA D OLMSTEAD
40P 50385 00	ROBERT E LOKKEN
40P 22480 00	STORTZ RANCH INC
42M 55523 00	GARTNER DENOWH ANGUS RANCH
42M 38666 00	JULIE A BRODHEAD; MARK BRODHEAD
40P 41494 00	COLLIN VAIRA; VAIRA, COLLIN R ESTATE OF
40P 30003627	ANDREW M BELUS
42M 18703 00	BOESE, ROSE M REVOCABLE TRUST
42M 30472 00	RICHLAND VENTURES LLC
40P 86180 00	CAROL L SWITZER; DONALD W SWITZER
42M 23534 00	L 7 RANCH INC
42M 30161254	LARAMIE (LARRY) J WYMAN
42M 66237 00	GREGORY KOZMA; MELISSA KOZMA
40P 7058 00	RHINES FARMING CORP
40P 7848 00	SCHILLINGER, DAVE CONSTRUCTION INC
42M 102552 00	WOLFF & SONS INC
42M 10065 00	KENNETH KILEN; MARLON J KILEN; PAMELA K KILEN

Appendix A: Groundwater Rights within Area of Potential Impact

WR Number	All Owners
42M 30063387	DOTTIE SHEEHAN
42M 114729 00	BRETT R BENNION; DANIELA J BENNION
40S 10757 00	KATHERINE M IRIGOIN; THOMAS J IRIGOIN
42M 30030189	STORM HOMESTEAD LLC
42M 154318 00	JO ANNE ROOS; JOHN P ROOS
42M 5118 00	SENNER GRAIN INC
42M 30068013	CLAYTON S ZILER; LISA ZILER
42M 17551 00	FIFTY TWO RANCH INC; GEORGE LEWIS
42M 51915 00	DAVID G LINDE
40P 24779 00	EISSINGER LAND & CATTLE CO
42M 74093 00	TIM LARSON
42M 15290 00	JILL NORBY; KELLI NORBY
42M 163221 00	BEAR GULCH RANCH INC
42M 103447 00	BAD ROUTE CATTLE LLC; MAT MACIOROSKI
40P 64096 00	JOHN A GEER
42M 73798 00	THIESSEN INC
42M 94621 00	HEART PLUS LLC; VAIRA, SUSIE TRUST
42M 101085 00	BRANDON C BATTY; JULIE A BATTY
42M 29452 00	RENEE J SUNDHEIM; ROBERT E SUNDHEIM
42M 101491 00	DCLW CORP
42M 46152 00	JON KLEINKE; COREY WIELAND
42M 19610 00	ELDON EVANS
42M 51906 00	RAUSCHENDORFER, ROBERT FAMILY TRUST
42M 15824 00	SIDNEY CEMETERY ASSN
42M 30026150	DONALD A FRANZ
42M 109925 00	BERRY HOMESTEAD LLC
42M 1840 00	EDWARDS, LYLE INC
40P 31481 00	DUANE W WHITE
42M 8583 00	DARLA HILL
40P 2119 00	PAWLOWSKI BROTHERS INC
42M 30113845	CHRISTOBEL STEINBEISSER; LARRY STEINBEISSER
40S 6832 00	WAYNE BROWN; DIANA ELI
42M 1342 00	DAVID ROBSON
42M 20823 00	SHAWN FASCHING
42M 86195 00	PREWITT TRUST
40P 52 00	ERVIN E GOSS; JAMES D GOSS; MARVIN F GOSS; PATTI A MCGINNIS
42M 33054 00	JAMES W HUNTER; RHONDA H HUNTER
40P 39241 00	PAWLOWSKI BROTHERS INC
42M 30120002	BARBARA J REIDLE
40P 10181 00	BROOKE MACGILLIVRAY; SHERRY L MACGILLIVRAY
42M 30016652	JOSEPHINE K FINNICUM
42M 10385 00	PARK PLAZA MOTEL INC
42M 30113468	MELISSA BUCKLEY
40S 30991 00	PENNIE K THORNTON; WILLIAM D THORNTON
40S 3124 00	EVERETT A BAXTER; RED WING CORP
42M 104499 00	RICHLAND COUNTY SCHOOL DIST #2

Appendix A: Groundwater Rights within Area of Potential Impact

WR Number	All Owners
40S 22916 00	B KAY CARDA; HAROLD E CARDA
42M 30011257	STRUCKMAN CORP
40S 30042424	JAMES A CARDA; THERESA M CARDA
42M 64070 00	PAULA STEINBEISSER; RUSSEL STEINBEISSER
40S 130589 00	KIM A KLASNA; TIMOTHY J KLASNA
42M 37563 00	FRANZ RANCH LAND TRUST
42M 70242 00	SCHMITZ JOE & ANNA AND BURKE PAT & ANNA TRUST
42M 30069029	RICHLAND VENTURES LLC
40P 30112097	LORRAINE WHITEMAN
42M 30051786	CRAIG STEINBEISSER; KAREN STEINBEISSER
42M 37567 00	FRANZ RANCH LAND TRUST
42M 430 00	DAVID R STEINBEISSER
42M 5214 00	AUDREY A HILL
40P 57313 00	JENSEN BROTHERS OF CIRCLE INC
42M 113760 00	HERBERT F ALLARD; RALPH W ALLARD
40P 548 00	SWITZER, L J RANCH INC
40S 44879 00	GORDON LEWIS PETRIK; JUNE E PETRIK
42M 46783 00	SIMONSEN, KENNETH FAMILY REVOCABLE LIVING TRUST
42M 42862 00	GENE A ROTH; ILENE M ROTH
40P 81352 00	MILNE, DEBORAH L REVOCABLE LIVING TRUST 11/29/2023
42M 113756 00	HERBERT F ALLARD; RALPH W ALLARD
42M 66193 00	LARRY D DREVECKY; BRYAN P GARTNER
42M 165334 00	EATON, FRANK & SONS
42M 165338 00	EATON, FRANK & SONS
40P 30163029	MONTANA STATE BOARD OF LAND COMMISSIONERS
40P 30120338	CLINT KIRCHNER; SHAWN KIRCHNER
40P 63927 00	CLINT KIRCHNER; SHAWN KIRCHNER
42M 716 00	CAROL M DEMPEWOLF; DEXTER A DEMPEWOLF
42M 17546 00	BEVERLY R EDAM; DALE W EDAM
42M 1272 00	HOWARD MARTINI; MARION MARTINI
40P 32687 00	MONTANA STATE BOARD OF LAND COMMISSIONERS
40P 36015 00	HABER INC
42M 1453 00	DENNIS D BASTA; JAMIE L BASTA; JOEL J BASTA; MARGARET A BASTA
42M 30161664	DONALD A FRANZ; VALERIE E FRANZ
40P 101068 00	MARILYN BUECHLER
40S 70246 00	JOSEPH F IRIGOIN
40P 2939 00	STEVEN EGGEBRECHT
40P 72902 00	BURL J BELEY; VICKI L BELEY
40P 69289 00	DUANE W WHITE
40S 28353 00	SCHLENZ, LEVON P TRUST
40P 13337 00	BECKER-ZAHN INC
42M 22430 00	BARBARA J REIDLE
42M 17267 00	MARY E CRESS
42M 30068525	ELAINE L HILL; WILBUR W HILL
40P 30000137	AMANDA HOVE; BRYCE A HOVE
40S 89107 00	MILES G PANASUK

Appendix A: Groundwater Rights within Area of Potential Impact

WR Number	All Owners
42M 30161666	DONALD A FRANZ; VALERIE E FRANZ
42M 33469 00	PREWITT TRUST
40P 50280 00	CHANTEL M VERSCHOOT; THOMAS VERSCHOOT
42M 30021930	SIMONSEN, KENNETH FAMILY REVOCABLE LIVING TRUST
42M 114708 00	WOLFF & SONS INC
42M 30125433	BILLIE J WELTY
42M 109879 00	LEWIS INC
40P 111444 00	MILNE, DEBORAH L REVOCABLE LIVING TRUST 11/29/2023
40S 16904 00	KITTLESON FAMILY PARTNERSHIP LP
42M 19396 00	DOUBLEDA, LLC
40S 55484 00	JAMES A CARDA; THERESA M CARDA
42M 30027753	STICKVILLE REVOCABLE TRUST
40S 4347 00	COY D MARTIN
40P 30071790	ARNOLD J WALLER
42M 71713 00	ANITA MULLIN; RICK MULLIN
40P 30015689	MONTANA STATE BOARD OF LAND COMMISSIONERS
42M 15825 00	DCLW CORP
42M 30121934	PETERSEN, J K INC
42M 29453 00	JOSHUA R JOHNSON; WENDY S JOHNSON
42M 30121933	PETERSEN, J K INC
40P 30052015	DILLON LAND & LIVESTOCK LLC; K N INC
42M 30070638	SHADWELL RESOURCES GROUP LLC
42M 8429 00	THIESSEN INC
40S 16402 00	FINNICUM, BAKER & ANNE LAURIE FAMILY TRUST; FINNICUM, BOBBY J LIVING TRUST
42M 30153810	JOHN K DYNNESON; NANCY K DYNNESON
42M 96324 00	KITTLESON FAMILY PARTNERSHIP LP
42M 30011743	JIMMY L MULLIN
42M 99030 00	DONALD A FRANZ
42M 34902 00	PREWITT TRUST
42M 59486 00	SCHMITZ JOE & ANNA AND BURKE PAT & ANNA TRUST
40P 66280 00	HAROLD K MOOS; SUSAN M MOOS
42M 38652 00	KENNETH MICHAEL BACKES
42M 173672 00	REILLY, JIM AND NORMA FAMILY TRUST
42M 69259 00	PREVOST RANCH INC; MONTE TORGERSON; VERNETTE TORGERSON
42M 173671 00	REILLY, JIM AND NORMA FAMILY TRUST
42M 28742 00	CASSIDY KLIND; CODY L STENSLAND
40S 99078 00	B KAY CARDA; HAROLD E CARDA; USA (DEPT OF INTERIOR BUREAU OF LAND MGMT)
40S 3119 00	EVERETT A BAXTER; RED WING CORP
40P 37041 00	GOTTLIEB G SCHOCK
40P 39245 00	HAY CREEK INC; HOWARD L KOCH
40P 38637 00	YARGER INC
42M 30104125	SUNNY SLOPE RANCH INC
42M 111348 00	ANDREW D DOWNS
40S 114662 00	DANIEL B BIDEGARAY

Appendix A: Groundwater Rights within Area of Potential Impact

WR Number	All Owners
40S 53367 00	MONTANA STATE BOARD OF LAND COMMISSIONERS
40P 111443 00	MILNE, DEBORAH L REVOCABLE LIVING TRUST 11/29/2023
40P 46974 00	MARILYN K REINEMER; R PHILIP REINEMER
40P 30116543	GULDBORG BROTHERS INC
40S 30103340	COY D MARTIN; SARA E MARTIN
42M 61879 00	MARVELLE J FINK
42M 165346 00	EATON, FRANK & SONS
42M 7353 00	STEVE VITT
42M 70229 00	EATON, FRANK & SONS
42M 86145 00	WILLIAM D SORTEBERG
40P 45377 00	LORRAINE F BENES; MERRICK V BENES
42M 30063147	CANDEE ANGUS FARM INC
40P 91926 00	JEFFREY CARDA; MICHELLE CARDA
40P 30070852	JAMES D GOSS; JULIE M GOSS
40P 53285 00	DAVID D NELSON
42M 71772 00	KENNETH KITTLESON
42M 86160 00	MONTANA STATE BOARD OF LAND COMMISSIONERS
42M 30063321	SKYLINE DREDGING & EXCAVATING
40P 39713 00	HEIDI BEERY; JASON BEERY
40P 81348 00	HAROLD K MOOS; SUSAN M MOOS
42M 2081 00	MELODY K DAHLE
42M 10862 00	HAROLD SATHER
42M 165320 00	EATON, FRANK & SONS
40S 171317 00	BENSCH, FREIDA E REVOCABLE TRUST
40P 86172 00	JAMES H CROCKETT
40P 2891 00	HANZ H HAYNIE
42M 165319 00	EATON, FRANK & SONS
40P 99074 00	ROBERT G CANDEE
42M 91877 00	PREWITT TRUST
42M 6394 00	TESS R HURLEY; TRAVIS D STURGIS
42M 109609 00	MELODY K DAHLE
40P 41119 00	MARILYN K REINEMER; R PHILIP REINEMER
40P 86209 00	BALDWIN, P T RANCH
42M 30042536	THIESSEN, DWIGHT & DIANA FAMILY TRUST
40S 30021956	FINNICUM, BAKER & ANNE LAURIE FAMILY TRUST; FINNICUM, BOBBY J LIVING TRUST PENNY C KRUGLER; BRUCE R MCMORRIS; COY E MCMORRIS; PATRICIA MCMORRIS;
40S 86201 00	SHERRY L MCMORRIS; THOMPSON FARM
40P 99117 00	OLSON, DALE TRUST
40P 30009399	DALE W HUBING; PHYLLIS L HUBING
40P 30119944	DONALD W SWITZER
40S 6960 00	DEAN M STEPPLER; DORIS M STEPPLER
40S 30051665	FINK FARMS INC
42M 6916 00	CLIFFORD BERGSTEDT; LINDA BERGSTEDT
40P 9756 00	JEFFREY S MOOS
42M 3682 00	VEVERKA INC

Appendix A: Groundwater Rights within Area of Potential Impact

WR Number	All Owners
42M 17229 00	CLIFFORD BERGSTEDT; LINDA BERGSTEDT
42M 165267 00	EATON, FRANK & SONS
42M 30070138	PREVOST RANCH INC
42M 1071 00	BAD ROUTE CATTLE LLC
40S 10692 00	COY D MARTIN
40P 30069044	MONTANA STATE BOARD OF LAND COMMISSIONERS
42M 40726 00	SUNNY SLOPE RANCH INC
42M 165266 00	EATON, FRANK & SONS
40P 83027 00	T & V SENNER INC
42M 4271 00	GUDRUN K UNDEM
40P 81330 00	LONGRASS FARMS
42M 17230 00	CLIFFORD BERGSTEDT; LINDA BERGSTEDT
40S 101049 00	KITTLESON FAMILY PARTNERSHIP LP
42M 30017221	DAVID L REIDLE; REBBECA L REIDLE
42M 96385 00	JULIE A BRODHEAD; MARK BRODHEAD
42M 25505 00	GARTNER DENOWH ANGUS RANCH
42M 25507 00	GARTNER DENOWH ANGUS RANCH
40P 3672 00	JOSEPH THURBY; JOSEPH THURBY
40P 74075 00	MASSAR RANCH INC
40P 30120339	KIRCHNER BROTHERS LLC
40S 171260 00	DOUBLE BAR M LLC
40S 171276 00	F & M RANCH LLC
42M 99053 00	SUNNY SLOPE RANCH INC
42M 101520 00	RENEE E LEHMAN
40P 9777 00	FRANK KASTEN; JEANNE R KASTEN
42M 30050448	GARTNER, COLIN & SUSAN FAMILY TRUST
42M 263 00	FOUR MILE FARMS
42M 1866 00	VIOLA MITCHELL
42M 30115257	JO ANN HUDSON
42M 14442 00	LARRY WILKEN
42M 83034 00	BERRY HOMESTEAD LLC
40P 91895 00	ANITA J HEIDE; JAMES E HEIDE
42M 101521 00	EATON, FRANK & SONS
42M 83023 00	PREWITT TRUST
42M 30044327	JESSICA J RAHN; RANDALL D RAHN
40S 44871 00	GORDON LEWIS PETRIK; JUNE E PETRIK
40S 171277 00	TERRIL L RAAUM
42M 26670 00	GALE A GEISER; MARY F NORGARD
42M 30063224	GARTNER, COLIN & SUSAN FAMILY TRUST
40P 55582 00	THOMAS, COLETTE LIVING TRUST
42M 66145 00	PATRICIA M CARLSEN
40S 25148 00	KELLY, SHIRLEY TRUSTEE; CHERYL UNRUH
42M 52588 00	L 7 RANCH INC; MAT MACIOROSKI
40P 81287 00	ERICKSON, DENNIS FARMS INC
42M 30116349	JARED D ROSAAEN
40P 55479 00	SCOTT HEIDE

Appendix A: Groundwater Rights within Area of Potential Impact

WR Number	All Owners
42M 46995 00	STONEWALL PROPERTY HOLDINGS LLC
40S 30014827	RED WING RANCH INC
42M 81349 00	GREEN, EARL INC
42M 69223 00	PREVOST RANCH INC
42M 50390 00	GARTNER DENOWH ANGUS RANCH
42M 30012220	E 4 RANCH INC
42M 47011 00	ANGIE R HAGEN; BETTY HAGEN; DARREN HAGEN; JUSTUS HAGEN
40S 5102 00	DEAN M STEPPLER; DORIS M STEPPLER
42M 154326 00	JO ANNE ROOS; JOHN P ROOS
40P 30133724	PATRICIA ANN WHITE
42M 33071 00	MICHAEL F HIER; RICHARD T HIER
40P 10180 00	BROOKE MACGILLIVRAY; SHERRY L MACGILLIVRAY
42M 30029299	MICHAEL STEFFAN; NANCY M STEFFAN
40S 6554 00	CAROLYN CASTERLINE
40P 4281 00	VICKI VAIRA
42M 101524 00	RENEE E LEHMAN
40P 44963 00	LAZY D BAR SEVEN RANCH INC
42M 163751 00	MARTHEA A JOHNSON
42M 50236 00	MARTHEA A JOHNSON
40P 44880 00	GORDON LEWIS PETRIK; JUNE E PETRIK
42M 27623 00	LARS E KALBERG
40P 50250 00	DUCO FARMS INC
42M 99090 00	LARRY D DREVECKY; BRYAN P GARTNER
40P 78242 00	VOSS RANCH INC
42M 59670 00	BRYHN INC
42M 43669 00	ASHLEA J ANDERSON; RYAN R ANDERSON
42M 40888 00	NAGLE FAMILY LLLP
42M 20456 00	LACIE L LABRIE; TODD F LABRIE; LABRIE, WENDY L LIVING TRUST
40P 9603 00	WITTKOPP INC
42M 80550 00	THIESSEN, DWIGHT & DIANA FAMILY TRUST
42M 40886 00	NAGLE FAMILY LLLP
40P 101043 00	ORLAN OLSON
42M 30008736	AUDREY A HILL
42M 32130 00	PREVOST RANCH INC
42M 69266 00	RENEE J SUNDHEIM; ROBERT E SUNDHEIM
42M 20463 00	LACIE L LABRIE; TODD F LABRIE; LABRIE, WENDY L LIVING TRUST
42M 30051628	GARTNER, COLIN & SUSAN FAMILY TRUST
40P 64059 00	ASH CREEK FARMS INC
40S 29823 00	WILLIAM BUCKLEY; SHARON L MCCOY; BARBARA NELSON; CINDY SUNDHEIM
42M 99110 00	ERIK E SCARPHOLT
42M 20454 00	LACIE L LABRIE; TODD F LABRIE; LABRIE, WENDY L LIVING TRUST
42M 3125 00	VICKIE BARBOT; LARRY POFF
42M 30044998	MONTANA STATE BOARD OF LAND COMMISSIONERS
42M 11262 00	OMNI COMMUNICATIONS INC
42M 30127052	BRIEN PANASUK; TOBY A PANASUK; ZANE R PANASUK
40P 57337 00	DANIEL R UNDEM; DAWN L UNDEM

Appendix A: Groundwater Rights within Area of Potential Impact

WR Number	All Owners
40P 16905 00	TRIOP FARMS INC
40P 30047141	GORDON LEWIS PETRIK; JUNE E PETRIK
42M 30021330	DONALD S FRANKLIN
42M 30042595	HARL OLAND; JANICE OLAND
42M 28413 00	GREG ANDERSON
40S 171258 00	DOUBLE BAR M LLC
40S 171259 00	DOUBLE BAR M LLC
42M 111451 00	SKILLESTAD RANCH
42M 30067255	DALE ROBERTS; KIM I ROBERTS
40S 30067579	ROLLAND R RAAUM
40P 73777 00	DANIEL R UNDEM; DAWN L UNDEM
42M 57447 00	ANITA A SCHEETZ; THOMAS H SCHEETZ
42M 40743 00	D M C NEVINS TRUST
42M 30001603	DYNNESON RANCH INC
42M 91925 00	JENNA L MCCORMICK; TREVOR J MCCORMICK
42M 163520 00	EATON, FRANK & SONS
42M 69240 00	KATHLEEN PUST; PUST, DUANE FAMILY TRUST
42M 30068877	DALICE DOWNS
40S 30030164	CLG LIVING TRUST DTD 11/25/2008; PATRICK N VAIRA
40P 83076 00	NICK MOTHERSHEAD; VALERIE J MOTHERSHEAD
40P 30108326	KASTEN DAVID K REVOCABLE TRUST; KASTEN ELIZABETH K REVOCABLE TRUST
42M 43759 00	KENNETH GOSS
40S 59539 00	DOUGLAS J JOHNSON; JEFFEREY D JOHNSON; MARY S JOHNSON
42M 89844 00	LISA M VERSCHOOT; TONY J VERSCHOOT
42M 30161427	DJM TRUST
40P 12610 00	ALBERT HOWARD
42M 29817 00	ARDIS M PAUL; CARL M PAUL
42M 49059 00	SUNNY SLOPE RANCH INC
42M 30162577	TOBY A PANASUK
42M 30050163	CARMEN J ROBERTS
42M 30134353	MELROSES DOUBLE U INC
40S 17548 00	CAVANAUGH INVESTMENTS LLC
40S 114661 00	DANIEL B BIDEGARAY
40P 30018863	COUNTRY CROSS RANCH LLC
42M 111427 00	JANETTE GRANMOE; LYNN GRANMOE; RAYMOND C GRANMOE; RONNIE G GRANMOE
42M 44889 00	KITTLESON FAMILY PARTNERSHIP LP
42M 83600 00	JO ANNE ROOS; JOHN P ROOS
42M 91863 00	BRENDA BEVERLY; MARK Q GOLDEN; KIMBERLY J MANGELS
40P 1488 00	MONTANA STATE BOARD OF LAND COMMISSIONERS
42M 30045479	PHILIP JOHNSON; ROBYN JOHNSON
42M 53353 00	RICHLAND AVIATION
42M 164367 00	ANGIE R HAGEN; BETTY HAGEN; DARREN HAGEN; JUSTUS HAGEN
42M 86219 00	BRYAN J PREVOST
40S 30045467	ORRIN W HOLLOM
40P 30043765	PEASE RANCH INC

Appendix A: Groundwater Rights within Area of Potential Impact

WR Number	All Owners
40S 59576 00	CODY J STEPPLER; VERLIN R STEPPLER
42M 30154874	ANGELA R KREIMAN; GARY L KREIMAN
42M 14818 00	EATON, FRANK & SONS
42M 5918 00	RUSS S GOMKE; MELISSA F WILLIAMS
42M 176995 00	STEVEN PHIPPS; TENEIL PHIPPS
42M 12788 00	MARGARET F DANIELS; BRYAN A PETERSON; RICHARD W PETERSON
	ILA K HARDY; JOYCE HERNANDEZ; JODI KORDONOWY; JEFFREY L PARTIN; RICHARD I
42M 61875 00	PARTIN; TIMOTHY T PARTIN; NADINE M SWISSE
40P 30042347	MONTANA STATE BOARD OF LAND COMMISSIONERS
40S 6251 00	ALVIN WILHELM; LORI A WILHELM
40P 69235 00	BRIAN D LEWIS
40P 30043316	JAMES D GOSS; JULIE M GOSS
42M 86159 00	HEART PLUS LLC; VAIRA, SUSIE TRUST
40P 47453 00	JUDITH A JAMES
42M 37716 00	RUSSELL H JOHNSON; SANDRA S JOHNSON; TARA MATHERN
42M 49253 00	LEON J SELENSKY
42M 46971 00	DONNA R SUNDSTED
40P 30151774	GARY S KLIND; BRENDA K ST PIERRE
40P 30022658	KOUNTZ RANCH INC
42M 66241 00	BEVERLY K HELLESVIG; COLLEEN HELLESVIG
40P 30112963	MASSAR RANCH INC
42M 101526 00	MONTANA STATE BOARD OF LAND COMMISSIONERS
40S 73783 00	ROCKING R CORP
40P 13123 00	BRADLEY T SENNER; PAULETTE SENNER
40P 94644 00	LAVONNE M SANDERS; SANDERS, LYNN & JULIE REVOCABLE FAMILY TRUST
42M 46185 00	KOLBERG INC
42M 74589 00	SUNNY SLOPE RANCH INC
40P 96388 00	KIRK WINHOFER
40S 72919 00	FINK FARMS INC
42M 165348 00	EATON, FRANK & SONS
42M 165347 00	EATON, FRANK & SONS
42M 4985 00	JAMES R BUCKLEY; STACY RAE BUCKLEY
42M 81282 00	GARTNER DENOWH ANGUS RANCH
42M 15595 00	JAMES M EDINGER; TAMMY L EDINGER
42M 114748 00	STONEWALL PROPERTY HOLDINGS LLC
40P 13170 00	KENNETH R LUCKOW; KENNETH R LUCKOW; MARY C LUCKOW
40P 43442 00	KEYSTONE USA CORP
42M 50237 00	FOUR J RANCH INC
40P 59658 00	NICK MOTHERSHEAD; VALERIE J MOTHERSHEAD
40P 53329 00	MARY A ROSAAEN; NEWELL S ROSAAEN
42M 114669 00	G NELL SUNDHEIM
42M 101380 00	OAK RANCH FAMILY TRUST
42M 4312 00	DOWNS INC
42M 30030094	JOHN K DYNNESON; NANCY K DYNNESON
40P 42267 00	GREGG W HEIDE; SCOTT HEIDE
42M 163551 00	DALE L EDAM; LADEAN EDAM

WR Number	All Owners
40S 3578 00	DANIEL B BIDEGARAY
42M 79009 00	MICHAEL F HIER; RICHARD T HIER
42M 5162 00	HARVEY OLMSTEAD LLC
40P 66211 00	DAVE I HARRIS; JOANNE E HARRIS
40S 88318 00	MINDY NELSON; REBEL E NELSON
42M 117164 00	DAVID R SMITH; KATHIE L SMITH
42M 55457 00	GABRIEL F ZEILER
40E 8639 00	MURPHY RANCH INC
40S 18099 00	RAUSCHYS REAL ESTATE LLC
42M 46647 00	EDWARDS, DAVE INC
42M 102775 00	BRIAN T LUNDERBY
40P 16708 00	MASSAR RANCH INC
42M 25063 00	KLEMPEL FRANK INC
42M 12562 00	JEFFREY ERICKSON; JILL NEZWORSKI
42M 37562 00	FRANZ RANCH LAND TRUST
40S 69258 00	DAYTON FOUNDATION
42M 50290 00	RICHARD A CHRISTENSEN; RHONDA LAWHEAD
42M 17269 00	KENT A CRESS; LAUREL R CRESS
42M 30012282	KATHY M OBERGFELL; ROCKY L OBERGFELL
40P 28115 00	PARK RICE
42M 30122462	DEBI K BASTA; TODD J BASTA
42M 30011518	MICHAEL T ANVIK
42M 30127433	KATHY M OBERGFELL; ROCKY L OBERGFELL
40S 6075 00	JIM VITT
42M 66291 00	JODI KORDONOWY; RAY W KORDONOWY
42M 77543 00	FRANZ RANCH LAND TRUST
40P 36116 00	BRODY, J RANCH INC
40P 101109 00	KEITH R GROH; SHARLENE G GROH
40S 164392 00	MONTANA STATE BOARD OF LAND COMMISSIONERS
40S 51796 00	MONTANA STATE BOARD OF LAND COMMISSIONERS
40S 89870 00	SCHLENZ, LEVON P TRUST
42M 46632 00	SUNNY SLOPE RANCH INC
40P 76553 00	KEITH R GROH; SHARLENE G GROH
42M 30127040	BRIEN PANASUK; TOBY A PANASUK
42M 4966 00	MICHAEL W SUNDHEIM
42M 165291 00	EATON, FRANK & SONS
40S 30010191	FINNICUM, BAKER & ANNE LAURIE FAMILY TRUST; FINNICUM, BOBBY J LIVING TRUST
42M 4459 00	HEART PLUS LLC; VAIRA, SUSIE TRUST
42M 30003080	BRUCE A DOWNS; JOANNE C DOWNS
42M 51888 00	DAVID G LINDE
40P 97818 00	MARJORIE J MOORE; ROBERT C MOORE
40S 30573 00	DAVID IVERSON
42M 37564 00	FRANZ RANCH LAND TRUST
42M 8319 00	JIM SUNDHEIM
40S 8197 00	HERNESS BROTHERS

Appendix A: Groundwater Rights within Area of Potential Impact

WR Number	All Owners
40S 49260 00	HACKLEY IRREVOCABLE TRUST; DIANE L SPOKLIE
42M 71759 00	DANIELS FAMILY PRTNRSHP
42M 154325 00	JO ANNE ROOS; JOHN P ROOS
40S 41376 00	AMESTOY, CHARLES A & ELAINE A MINERAL TRUST
40P 30047142	GORDON LEWIS PETRIK; JUNE E PETRIK
40P 30042594	RICK BALDWIN
42M 32789 00	LILES, KENNETH INC
40P 41149 00	WALLER, GLENN INC
40P 114710 00	WALLER, GLENN INC
40P 41150 00	WALLER, GLENN INC
40S 88300 00	JAMES A CARDA; THERESA M CARDA
42M 30025541	KLOSE LANDS LLLP
40P 9691 00	DANIEL F FEIST
42M 89085 00	THIESSEN, DWIGHT & DIANA FAMILY TRUST
42M 4222 00	LOUISE A REHBEIN
40P 30071930	GARRETT R HERDEN
40P 111441 00	KEITH K GROH
40P 81355 00	WAGNER, ROY BENEFICIARY TRUST
40S 83010 00	WILLIAM BUCKLEY; SHARON L MCCOY; BARBARA NELSON; CINDY SUNDHEIM
42M 26946 00	NORTANA GRAIN CO
42M 109888 00	DARREN HAGEN
42M 48977 00	SIDNEY RICHLAND REGIONAL AIRPORT AUTHORITY
42M 84860 00	PATRICIA M CARLSEN
42M 30127074	BRIEN PANASUK; TOBY A PANASUK; ZANE R PANASUK
42M 39412 00	LOUISE A REHBEIN
42M 3519 00	CHRISTOPHER J RAISL; WILLIAM P RAISL
40P 30021655	LORRAINE WHITEMAN; WHITEMAN, FLOYD JR TESTAMENTARY TRUST
42M 1362 00	EATON, FRANK & SONS
40P 89029 00	MARGARET SCHARA; ROGER SCHARA
42M 48711 00	COUNTRY CROSS RANCH LLC
40P 27575 00	CARLA J BALDWIN
40S 37327 00	DEAN M STEPPLER; DORIS M STEPPLER
40P 93505 00	WINE GLASS RANCH LLC
42M 29455 00	PREWITT TRUST
40P 42268 00	GREGG W HEIDE; SCOTT HEIDE
40S 30103567	P & E HERNESS LAND LLC
42M 20430 00	OSTERMAN LIVING TRUST
42M 163521 00	EATON, FRANK & SONS
40S 74607 00	RICHARD J IVERSEN
42M 109596 00	AMANDA J ERHART; PAT ERHART
42M 69241 00	HEART PLUS LLC; VAIRA, SUSIE TRUST
40P 103647 00	LANETTE M BEERY; RONDEL AC BEERY
42M 52593 00	ANN R POPPER; MICHAEL K POPPER
42M 89861 00	HEART PLUS LLC; VAIRA, SUSIE TRUST
42M 89863 00	STONEY BUTTE FARMS INC
40P 33661 00	WINE GLASS RANCH LLC

Appendix A: Groundwater Rights within Area of Potential Impact

WR Number	All Owners
42M 30112593	MONTANA STATE BOARD OF LAND COMMISSIONERS
42M 59500 00	CHARLIE PENNINGTON; MCKEN-ZE PENNINGTON
42M 30045323	SCOTT FORNALL
40S 66156 00	DAVID VAIRA
42M 30044883	DH RANCH
40P 71735 00	GULDBORG BROTHERS INC
42M 30070201	JAMES E STEINBEISSER
42M 69261 00	DON D BOUCHARD; RONALD R BOUCHARD
40P 5072 00	WZB FARM INC
42M 30044357	PHILLIP GEIGER
42M 101080 00	KOPP FARMS INC
42M 2627 00	WILLIAM J REHBEIN
42M 71217 00	DEBRA ANDERSON; GREG ANDERSON
40P 30004012	HAROLD K MOOS
40P 55480 00	HEART PLUS LLC
40P 30047157	KOUNTZ RANCH INC
42M 168989 00	KENNETH KITTLESON; MARION KITTLESON
42M 1445 00	STEVEN DEMPEWOLF
40E 83070 00	MAVES RANCH INC
42M 17227 00	CLIFFORD BERGSTEDT; LINDA BERGSTEDT
40S 30809 00	IVERSEN BROTHERS INC
40P 7059 00	TODD VERSCHOOT
42M 30008518	FRANZ CONSTRUCTION INC
40P 83042 00	LECHNER INC
42M 168988 00	KENNETH KITTLESON; MARION KITTLESON
42M 30049987	COLE THORNTON; JANA THORNTON
40S 89083 00	WAYNE BROWN; DIANA ELI
40P 30158730	DEL GACKLE INC
40P 40887 00	JERRY L NAGLE
40S 81345 00	FS3 LAND & CATTLE INC
42M 30114439	COLE THORNTON
42M 33815 00	GLORIA K HARALSON
42M 30064107	CAROLYN G STURGIS
40P 4461 00	DAVID K KASTEN
42M 17228 00	CLIFFORD BERGSTEDT; LINDA BERGSTEDT
40P 7200 00	KNIEPKAMP INC
40P 44964 00	LAZY D BAR SEVEN RANCH INC
42M 30050024	KUBESH INC
40P 7679 00	JARED KOUNTZ; MELISSA KOUNTZ
40P 10542 00	LANETTE M BEERY; RONDEL AC BEERY
40P 30121502	ALAN NIELSON
42M 13172 00	MEGAN GREENWALT; SAMUEL GREENWALT
40P 8058 00	EISSINGER LAND & CATTLE CO
40S 30042697	PENNIE K THORNTON; WILLIAM D THORNTON
42M 9507 00	LESTER J ERNSTER
42M 30071042	RAYMOND J BASTA

Appendix A: Groundwater Rights within Area of Potential Impact

WR Number	All Owners
42M 10962 00	HILL, SHARON K LIVING TRUST; HILL, SHARON K MARITAL TRUST
40P 30119942	DONALD W SWITZER
42M 9925 00	MCMULLET INC
42M 30161421	YOUNG, LOREN INC
40P 59502 00	EDWARD R HEIDE
40P 117565 00	JEANNE MEISSNER; JERRY B MEISSNER
40P 1148 00	CROSSWIND PROPERTIES LLC
42M 28933 00	SIDNEY CIRCLE HOMEOWNERS ASSN
42M 109889 00	DARREN HAGEN
42M 94631 00	CROSSROADS FARM INC
40P 12909 00	HEIDI BEERY; JASON BEERY
42M 51954 00	HAROLD HAFEMANN
42M 21402 00	J D FARMS
42M 44663 00	SANDRA J FINK; WILLIAM D FINK
42M 30042554	CRAIG R SEEVE
42M 66158 00	GARTNER DENOWH ANGUS RANCH
42M 51916 00	BRIAN D LEWIS
40P 13127 00	AURILLA JOHNSTON; MARLIN W JOHNSTON
42M 109891 00	DEBRA ENGESSER; DONALD ENGESSER
40P 101036 00	BUTKA FARM LLC
42M 69284 00	JANETTE GRANMOE; LYNN GRANMOE; RAYMOND C GRANMOE; RONNIE G GRANMOE
42M 92879 00	EATON, FRANK & SONS
42M 30871 00	RANDALL R RADKE; SUZANN M RADKE
42M 44961 00	LAZY D BAR SEVEN RANCH INC
42M 50238 00	FOUR J RANCH INC
42M 30050025	KUBESH INC
40P 16823 00	MONTANA STATE BOARD OF LAND COMMISSIONERS
42M 164431 00	FOUR J RANCH INC
42M 11946 00	GUDRUN K UNDEM; MARGO G UNDEM; SAM K UNDEM
42M 23025 00	CODY G SHARP
42M 51795 00	DENNIS LATKA; LATKA, STEPHEN & JOSEPHINE FAMILY TRUST
42M 720 00	LARS E KALBERG
42M 53342 00	PAUL C BEYER
40P 63981 00	BRUCE A WAGNER; DARCI WAGNER
42M 15197 00	THOMAS H MARTINI
42M 5139 00	MONTANA STATE BOARD OF LAND COMMISSIONERS
40S 171279 00	TERRIL L RAAUM
40S 71694 00	VICKIE BARBOT; LARRY POFF
42M 12961 00	MARTY CASEY
42M 71709 00	LARSON, LOWELL H & JOANNE M REVOCABLE LIVING TRUST
42M 17541 00	FIFTY TWO RANCH INC; GEORGE LEWIS
42M 165242 00	EATON, FRANK & SONS
42M 15260 00	BERNICE A WALKER
40P 30120330	NICK MOTHERSHEAD; VALERIE J MOTHERSHEAD
42M 32428 00	JAMES W HUNTER

Appendix A: Groundwater Rights within Area of Potential Impact

WR Number	All Owners
40P 88308 00	MONTANA STATE BOARD OF LAND COMMISSIONERS
42M 30071069	HEATHER N BIRELEY; JAMIE M BIRELEY
42M 30105766	JOHN K DYNNESON; NANCY K DYNNESON
42M 44664 00	SANDRA J FINK; WILLIAM D FINK
42M 30001565	KATHLEEN M MORRIS; LARRY E MORRIS
40S 170317 00	AMESTOY, P & C INC
42M 104460 00	DARCIE K YADON; THOMAS W YADON
42M 17265 00	RAYMOND J BASTA
40S 171278 00	TERRIL L RAAUM
42M 30121730	LISA K LITWILLER; MATTHEW J LITWILLER
42M 30121732	LISA K LITWILLER; MATTHEW J LITWILLER
42M 16348 00	SIDNEY, CITY OF
42M 61784 00	SIDNEY, CITY OF
42M 16351 00	SIDNEY, CITY OF
42M 163439 00	PUST, ERICH W INC
42M 16350 00	SIDNEY, CITY OF
40P 30010190	BETTINNA C MOOS; JEFFREY S MOOS
40P 16443 00	ROLANDSON IMPLEMENT CO
40P 64103 00	BROOKE MACGILLIVRAY; SHERRY L MACGILLIVRAY
42M 16349 00	SIDNEY, CITY OF
40P 66200 00	MAHLSTEDT RANCH INC
42M 16347 00	SIDNEY, CITY OF
42M 16352 00	SIDNEY, CITY OF
42M 30951 00	WOLFF, HELMUT & CAROLYN REVOCABLE LIVING TRUST
42M 46662 00	STORTZ RANCH INC
40P 10179 00	BROOKE MACGILLIVRAY; SHERRY L MACGILLIVRAY
42M 24790 00	US BAR RANCH INC
40P 74582 00	KIRCHNER BROTHERS LLC
42M 30028900	MERRILL, TBA FAMILY PARTNERSHIP
42M 22678 00	CHARLES COUTURE
42M 96389 00	KITTLESON FAMILY PARTNERSHIP LP
42M 178313 00	WOLFF & SONS INC
42M 30114305	RONALD R BOUCHARD
42M 30066850	SHANDON W ERICKSON
42M 30027456	SHANDON W ERICKSON
42M 41512 00	DYNNESON RANCH INC
40S 74368 00	CODY J STEPPLER; VERLIN R STEPPLER
42M 70214 00	PREVOST RANCH INC
42M 89888 00	MOUNT PLEASANT ESTATES
42M 11476 00	MONTANA STATE BOARD OF LAND COMMISSIONERS
40P 5721 00	BRUCE L VAN HORN; DELLA J VAN HORN
42M 10644 00	MONTANA STATE BOARD OF LAND COMMISSIONERS
42M 165807 00	ANDREW D DOWNS; BETTY L DOWNS; CRAIG HULL; ROGER HULL; VICKI LISCOMBE; JON TORBERT
42M 30125401	BILLIE J WELTY
40P 6825 00	ROSS C OAKLAND; TARA DAWN OAKLAND; SCHLICHT FAMILY TRUST

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WR Number	All Owners
40P 104471 00	R KURT VOSS; RHONDA M VOSS
42M 108386 00	MICHAEL G DENOWH; PAUL J DENOWH
42M 27937 00	LORI B JOHNSON
40S 3788 00	BEVERLY K RAAUM; TERRIL L RAAUM
42M 163349 00	ALISA WERNER; HEATH WERNER
42M 109575 00	DONALD S FRANKLIN
42M 24526 00	BERNICE A WALKER
40P 35587 00	BEERYS LAND & LIVESTOCK CO
40E 15140 00	LOGAN FARM INC
40P 77177 00	BRUCE L VAN HORN; DELLA J VAN HORN
42M 17962 00	MOUNT PLEASANT ESTATES
40E 15139 00	LOGAN FARM INC
40P 30021516	MASSAR RANCH INC
42M 163348 00	ALISA WERNER; HEATH WERNER
42M 37726 00	RUSSELL A NELSON
40E 109576 00	LOGAN FARM INC
40S 30044140	ANDREW L CARDA; BECKY CARDA
42M 30042688	PATRICK N VAIRA
42M 109584 00	ALISA WERNER; HEATH WERNER
42M 59674 00	MARY A ROSAAEN; NEWELL S ROSAAEN
42M 30049532	4 J RANCH INC
40E 30122211	HAROLD E WALLER
42M 22541 00	KEITH A KINDEN
42M 30161422	YOUNG, LOREN INC
42M 75850 00	HERBERT F ALLARD; RALPH W ALLARD
42M 22540 00	RICHLAND AVIATION
42M 163504 00	JENNA L MCCORMICK; TREVOR J MCCORMICK
42M 163491 00	SIDNEY COUNTRY CLUB
42M 30062869	WADSWORTH BROTHERS CONSTRUCTION CO
42M 50239 00	FOUR J RANCH INC
42M 46346 00	FOUR J RANCH INC
42M 30159885	RICHLAND COUNTY PUBLIC WORKS
40S 78221 00	CYNTHIA SUNDHEIM; SCOTT SUNDHEIM
42M 88246 00	PREWITT TRUST
42M 987 00	DELORA DETMERS
42M 30119460	HOOPER PROPERTIES LLC
42M 88280 00	JUDEAN SUNDHEIM; PATTY SUNDHEIM
42M 30158284	JAMES W HUNTER; RHONDA H HUNTER
42M 9308 00	BEAR GULCH RANCH INC
42M 30069566	JAMES A NAGLE
40P 63930 00	DELP, ROBERT & DONNA FAMILY TRUST
40P 111447 00	TODD VERSCHOOT
42M 22410 00	DAVID J LEASTMAN; REGINA R LEASTMAN
40P 106971 00	FLINT HANCE
40P 30120151	KOUNTZ RANCH INC
42M 30063749	WADSWORTH BROTHERS CONSTRUCTION CO

Appendix A: Groundwater Rights within Area of Potential Impact

WR Number	All Owners
42M 76567 00	BARBARA BERNDT; CLAUDIA K SCHMIDT; MARCELLE M WARDEN
42M 30025676	MONTANA STATE BOARD OF LAND COMMISSIONERS
42M 66277 00	PREWITT TRUST
42M 30063412	HAY CREEK RESOURCES LLC
40P 30115575	MARY KAY KOUNTZ
42M 165284 00	CRAIG R SEEVE; DONNA M SEEVE
40P 38533 00	VICKI VAIRA
42M 30064445	SHELLY HUTTON; ROBERT SCHEPENS
40P 30147179	GULDBORG BROTHERS INC
42M 163305 00	ROSS C OAKLAND; TARA DAWN OAKLAND; SCHLICHT FAMILY TRUST
42M 122121 00	JAMES A MURRAY
42M 72920 00	RONALD R BOUCHARD
42M 17263 00	RAYMOND J BASTA
40S 38588 00	HEART PLUS LLC
42M 30150475	EVERETT WILLIAMS
40P 13216 00	CUMMINGS, JIM INC
42M 61885 00	DARYL NORGAARD
42M 109559 00	MERLYN D LARSON; ROSEMARY LARSON
40S 30044186	DAYTON FOUNDATION
42M 77172 00	CHAD ALBIN
40S 30064325	WILLIAM D THORNTON
42M 59513 00	PAMELA J CAYER; STEPHEN J CAYER
40P 30533 00	PAWLOWSKI BROTHERS INC
42M 30025394	DAVID G LINDE
42M 30064087	ADAM H MILTON; MARJA R MILTON
42M 165288 00	CRAIG R SEEVE; DONNA M SEEVE
40S 30125725	DAVID VAIRA
40P 86163 00	DARREL J BULLER; BULLER, JANICE R REVOCABLE TRUST
40S 30150565	WILLIAM D THORNTON
40P 30158645	KIRCHNER BROTHERS LLC
40P 77520 00	MONTANA STATE BOARD OF LAND COMMISSIONERS
42M 71271 00	ILA K HARDY; JOYCE HERNANDEZ; JODI KORDONOWY; JEFFREY L PARTIN; RICHARD I PARTIN; TIMOTHY T PARTIN; NADINE M SWISSE
42M 51882 00	LONE TREE RANCH INC
42M 66310 00	GLENDIVE RANCH LLC
42M 30013017	CAROLYN G STURGIS
42M 30068630	STICKVILLE REVOCABLE TRUST
40P 10609 00	DAVID K KASTEN
42M 30125435	BRIEN PANASUK; TOBY A PANASUK; ZANE R PANASUK
42M 16447 00	DOWNS INC
42M 163527 00	EATON, FRANK & SONS
40P 39244 00	DUANE W WHITE
42M 154297 00	ANN R POPPER; MICHAEL K POPPER
42M 30154616	DIANA YOUNGQUIST; LARRY D YOUNGQUIST
42M 106920 00	CLIFFORD BERGSTEDT
42M 30043724	LABONTE DIAMOND D FARMS LLC

Appendix A: Groundwater Rights within Area of Potential Impact

WR Number	All Owners
42M 7429 00	GORDON KOLBERG
40P 30004815	JORDAN FAMILY TRUST 09/4/2020
42M 30051731	JOHN L FRANKLIN
40P 111366 00	YARGER INC
42M 37566 00	FRANZ RANCH LAND TRUST
40P 30122770	MICHAEL A THOENY
42M 30069037	EMEP ACQUISITIONS LLC
42M 10884 00	MICHAEL RAMBUR
40P 30153599	JORDAN, WILLIAM C LLC
42M 45514 00	L 7 RANCH INC
42M 30042083	BAKKEN INC
42M 21403 00	J D SUBDIVISIONS INC
40P 102762 00	ALAYNA J HAYNIE; MICHAEL L HAYNIE; RUDY HAYNIE; RUTH HAYNIE
42M 32649 00	DARREN HAGEN
40S 61865 00	DONALD R HERNESS; HERNESS CHILDREN; P & E HERNESS LAND LLC; PATES CHILDREN
42M 17550 00	FIFTY TWO RANCH INC; GEORGE LEWIS
42M 66312 00	BALLINGER, DEBRA S TRUST
40P 102812 00	WAGNER, ROY BENEFICIARY TRUST
42M 28820 00	DUANE SCHULTZ; PAMELA SCHULTZ
40S 99045 00	KITTLESON FAMILY PARTNERSHIP LP
42M 109919 00	EATON, FRANK & SONS
40S 3782 00	DAVID E HARDY; SHARON E HARDY
42M 30064088	SANDRA L ODONNELL; TODD ODONNELL
40P 42503 00	DENNIS D WOLFF; KAREN C WOLFF
42M 30162765	CARSON LIVING TRUST
42M 30070643	NAGLE FAMILY LLLP
42M 30133543	JAN JACKMAN
40P 31482 00	DUANE W WHITE
42M 30133703	JEANNE SMALIS
42M 17097 00	DARREN HAGEN
42M 38912 00	MIKE C KAYS; SUSAN R KAYS
40P 35844 00	BECKER, SCOTT R & KONNY J BECKER REVOCABLE TRUST
42M 30065322	R A RENTALS LLC
40P 91844 00	NICK MOTHERSHEAD; VALERIE J MOTHERSHEAD
42M 34650 00	JOSEPH MAY
40P 57305 00	GF HOLDING LLP
42M 76536 00	DYNNESON LAND LLC
42M 78239 00	LER FARMS
42M 101112 00	SIDNEY RICHLAND REGIONAL AIRPORT AUTHORITY
40S 30115413	MILES G PANASUK
42M 114786 00	EATON, FRANK & SONS
40P 111453 00	MILLER, LORVETTA TRUST
40P 36154 00	AMANDA HOVE; BRYCE A HOVE; MOOS, DONALD D LIVING TRUST
40P 117583 00	BARBARA A SIKVELAND; NILS K SIKVELAND
42M 57339 00	JEFF AISENBREY; LUANNA AISENBREY

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WR Number	All Owners
42M 97747 00	TIM C LECHNER
42M 114672 00	WILLIAM C STEINBEISSER
42M 66207 00	MARK A MARTIN; MARY H MARTIN
40P 13338 00	BECKER-ZAHN INC
40P 41360 00	CIRCLE, TOWN OF
42M 30065716	R A RENTALS LLC
40P 30067347	COLLEEN EVENSON
42M 33542 00	CARL T DYNNESON; LINDSEY L DYNNESON
40P 97806 00	THOMAS F REEVES
42M 101401 00	BRADLEY M ANVIK
	ERVIN E GOSS; JAMES D GOSS; JULIE M GOSS; GOSS, JANET R TRUST; GOSS, MARVIN F
40S 30021914	TRUST; GOSS, VICKY L FAMILY SHARE TRUST UNDER WILL
40S 49262 00	HACKLEY IRREVOCABLE TRUST; DIANE L SPOKLIE
42M 11931 00	GUDRUN K UNDEM; MARGO G UNDEM; SAM K UNDEM
42M 30113196	STICKVILLE REVOCABLE TRUST
42M 74576 00	KOPP FARMS INC
40P 80529 00	HJ LAND CO
40P 30998 00	SWITZER, LARRY J TRUST
42M 30027937	CHAD BURNS
42M 66302 00	MARLO SALSBURY
42M 30115843	STICKVILLE REVOCABLE TRUST
40S 59654 00	KELLY, SHIRLEY TRUSTEE; CHERYL UNRUH
40S 106939 00	HAROLD J FINK; FINK FARMS INC
40S 26473 00	HAROLD J FINK; HELEN FINK
42M 30161467	KLEMPEL FRANK INC
42M 30148602	CRAIG BEISWANGER; GEORGIA BEISWANGER
42M 57320 00	MURRAY, JIM RANCH INC
42M 4824 00	DIANE KILSDONK; ANGELA PRUITT; SIMON PRUITT
42M 21564 00	WILLIAM BUCKLEY
42M 6080 00	AURIE SCHWARTING
42M 64073 00	BRADY BOUCHARD
40P 35354 00	QUICK RANCH LLC
42M 99099 00	AUDREY A HILL
42M 44388 00	BEAR GULCH RANCH INC
42M 22484 00	MURRAY, JIM RANCH INC
40E 30113512	ARNSTON RANCH INC
42M 74579 00	DCLW CORP
42M 22485 00	MURRAY, JIM RANCH INC
40P 114744 00	MASSAR RANCH INC
42M 71712 00	CHRIS C LARSON; MICHELLE R LARSON
42M 28072 00	CHRIS UNDEM
42M 30014275	NANCY VERSCHOOT
42M 46345 00	FOUR J RANCH INC
42M 30157916	FRANZ RANCH LAND TRUST
42M 36819 00	JAMES A WYSE; MICHAEL J WYSE; TIMOTHY R WYSE
42M 66281 00	EDWARD L PIERCE; MARIE A PIERCE

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WR Number	All Owners
40P 9354 00	HANZ H HAYNIE; SYLVIA B HAYNIE
42M 33994 00	EATON, FRANK & SONS
40P 16537 00	MASSAR RANCH INC
40P 8974 00	DAVID N MCCLOY
42M 91874 00	STORTZ INC
42M 36672 00	THIESSEN INC
42M 66146 00	SIDNEY RICHLAND REGIONAL AIRPORT AUTHORITY
40S 74619 00	CAROLYN CASTERLINE
42M 66316 00	LEE DELP
40P 30005641	LAZY A M RANCH INC
40S 71744 00	GEORGES, ANNE M TRUST
40P 30043735	TODD VERSCHOOT; TONY J VERSCHOOT
40P 55535 00	MAL ZUROFF
40P 109597 00	KATHY VAIRA; LARRY VAIRA
40S 122014 00	GEORGES, ANNE M TRUST
42M 30154604	ANGELA R KREIMAN; GARY L KREIMAN
42M 30009300	KENNETH MICHAEL BACKES
40P 30116216	VOSS RANCH INC
40S 122013 00	GEORGES, ANNE M TRUST
40P 30127419	JENSEN BROTHERS OF CIRCLE INC
42M 25513 00	GARTNER DENOWH ANGUS RANCH
40P 30002090	ARLON W FRANZ
42M 30003198	COUNTRY CROSS RANCH LLC
42M 30004133	THIESSEN INC
42M 66289 00	HOT WHEELS SERVICES INC
42M 30018145	ANGELA PRUITT; SIMON PRUITT
42M 30009491	DIEDE, EMIL INC
40P 133056 00	ARLON W FRANZ
42M 14891 00	SCHMITZ JOE & ANNA AND BURKE PAT & ANNA TRUST
42M 66244 00	MCNUTT FAMILY TRUST
42M 61799 00	FRANK C STICKA; SHEILA STICKA
42M 53227 00	CLIFFORD DAHL; DEBBIE DAHL
40P 30020750	MASSAR RANCH INC
42M 117239 00	HUFFMAN, JAMES TRUST
42M 61838 00	EDWIN J RIES; LINDA L RIES
42M 1161 00	ROSS C OAKLAND; TARA DAWN OAKLAND
40P 51950 00	SHAYLEE J HANCE; DALTON L WAHL
42M 30065050	BRENDA L VERSCHOOT; CHASE L VERSCHOOT
40S 30042695	CLAYTON K VAIRA; JENIFER S VAIRA
40P 646 00	SWITZER, L J RANCH INC
42M 81283 00	CAROL B MOFFETT; EDWIN E NIELSEN
42M 30109085	DOWNS INC
42M 83006 00	WOLFF & SONS INC
40S 69265 00	DEVILS ELBOW RANCH LLC
40S 59636 00	JUDITH FOSS TURNBULL; NEIL TURNBULL
42M 91923 00	PAUL C BEYER

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WR Number	All Owners
40P 30153119	KAREN DORRIS; MICHAEL DORRIS
42M 30151175	FRANZ RANCH LAND TRUST
	DONALD R HERNESS; HERNESS, LINDSEY K TRUST; P & E HERNESS LAND LLC; PATES
40S 30103565	CHILDREN
40P 10865 00	CLINT KIRCHNER; SHAWN KIRCHNER; WALLER, GLENN INC
40P 30025566	DANIEL R UNDEM; DAWN L UNDEM
40P 50368 00	MARGARET SCHARA; ROGER SCHARA
40S 30113928	WALLER FARMS, INC
42M 165339 00	EATON, FRANK & SONS
42M 165340 00	EATON, FRANK & SONS
40P 71762 00	SCOT BROWN; SUE ANN GOOD-BROWN
40S 18626 00	CYNTHIA SUNDHEIM; SCOTT SUNDHEIM
42M 11940 00	GUDRUN K UNDEM; MARGO G UNDEM; SAM K UNDEM
40S 30042696	KATHY W THORNTON; RUSSELL D THORNTON
40P 30030998	WITTKOPP LAND LLC
40S 16403 00	GENE IRIGOIN
	DON D BOUCHARD; MELODY J BOUCHARD; RONALD R BOUCHARD; VERNA M
42M 76558 00	BOUCHARD
42M 30001030	JOHN K DYNNESON; NANCY K DYNNESON
42M 30072618	COLE THORNTON; JANA THORNTON
42M 30071720	DEBRA ENGESSER; DONALD ENGESSER
40P 30029518	GREGG W HEIDE; SCOTT HEIDE
40P 35218 00	WITTKOPP INC
40P 48219 00	LARRY SCHIPMAN; PATTI SCHIPMAN
40S 44789 00	MONTANA STATE BOARD OF LAND COMMISSIONERS
42M 54881 00	USA (DEPT OF INTERIOR BUREAU OF LAND MGMT)
42M 73761 00	FRANZ RANCH LAND TRUST
40P 94637 00	GREGG W HEIDE; SCOTT HEIDE
40P 30068647	HUSEBY FARMS INC
42M 19847 00	CLAYTON LITWILLER; KATELYNN LITWILLER; PHYLLIS MULLET; STEVEN L MULLET
42M 104493 00	BRENDA LARSON; TIM D LARSON
42M 64075 00	JODI KORDONOWY; RAY W KORDONOWY
40P 5071 00	EUGENE VOSS
40P 66245 00	ANITA M NAGEL; LAWRENCE L NAGEL
40P 6535 00	CROSS S RANCH REVOCABLE TRUST
40P 57450 00	ERVIN E GOSS; JAMES D GOSS; MARVIN F GOSS; PATTI A MCGINNIS
42M 46180 00	KOLBERG INC
42M 11835 00	TILLMAN FAMILY REVOCABLE TRUST
42M 23197 00	KAYLA S WICK; WAYNE G WICK
42M 109906 00	HUBING RANCH INC
42M 16717 00	MONTANA STATE BOARD OF LAND COMMISSIONERS
40P 47016 00	CANFIELD, WILLIAM B REV LIVING TRUST; WYATT HANDY
40P 63256 00	CROSS S RANCH REVOCABLE TRUST
40P 30072639	CROSS S RANCH REVOCABLE TRUST
40P 57298 00	LARRY SCHIPMAN; PATTI SCHIPMAN
42M 109892 00	HUBING RANCH INC

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WR Number	All Owners
42M 57391 00	LER FARMS
40S 109601 00	MONTANA STATE BOARD OF LAND COMMISSIONERS
42M 2628 00	WILLIAM J REHBEIN
40P 51936 00	CHRISTOPHER T HILL; SHIRLEY A HILL; EDWARD E MARSHALL
42M 109907 00	HUBING RANCH INC
42M 17544 00	FIFTY TWO RANCH INC; GEORGE LEWIS
42M 16331 00	THIESSEN, DWIGHT & DIANA FAMILY TRUST
40P 66165 00	KIP BRADEN
	CHARLOTTE IVERSEN; DALE E IVERSEN; KENNETH A IVERSEN; THERESA M IVERSEN;
42M 61779 00	IVERSEN, MARK W TRUST
42M 30048949	FRANCES SYTH; SAM SYTH
40P 35586 00	BEERYS LAND & LIVESTOCK CO
42M 30116338	ORION A SUNDHEIM
40P 4579 00	MOLINE, CHARLES AND DARLENE FAMILY TRUST
40P 63979 00	KAYLEEN J GACKLE; MICHAEL L GACKLE
42M 30067099	KIMBERLY S USSELMAN; SHANE USSELMAN
42M 31303 00	SIDNEY COUNTRY CLUB
40P 66175 00	CIRCLE VET CLINIC
40P 30004947	SWITZER LAND CO
40P 4870 00	DEAN SCHILLINGER
40P 117580 00	GULDBORG BROTHERS INC
42M 5722 00	ALAN SISCO; ARDELLE SISCO; DEAN SISCO
42M 101408 00	ALBIN FARMS
40P 96369 00	JENSEN BROTHERS OF CIRCLE INC
40P 16516 00	TOD L KASTEN
40P 30005710	TOD L KASTEN
40S 51810 00	DANIELS FAMILY PRTNRSHP
40P 91871 00	OLSON-LOVAAS INC
40P 6529 00	HAROLD W PEABODY
42M 53224 00	DARIN MULLIN
40P 102765 00	GREGG W HEIDE
42M 69290 00	CLIFFORD BERGSTEDT
40S 8268 00	SARA LYN HUFT; SCOTTY HUFT
42M 81307 00	DANIEL L YOUNG; LANETTE A YOUNG
40P 38918 00	JEFFREY CARDA; MICHELLE CARDA
42M 88331 00	R A RENTALS LLC; DEBORA SCHIEFFER
42M 9356 00	DEEDRA ERICKSON; SHANDON W ERICKSON
42M 66322 00	CHERYL L STEFFAN; MARK G STEFFAN
42M 50299 00	KAYLA S WICK; WAYNE G WICK
40S 16412 00	KELLY, SHIRLEY TRUSTEE; CHERYL UNRUH
42M 116918 00	DAVID R STEINBEISSER; DAWN STEINBEISSER
42M 113737 00	HERBERT F ALLARD; RALPH W ALLARD
42M 53331 00	MONTANA STATE BOARD OF LAND COMMISSIONERS
40P 549 00	SWITZER, L J RANCH INC
40P 30004777	JOEL HAYNIE
42M 163566 00	NANCY A HUFFMAN

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WR Number	All Owners
42M 30045477	PHILIP JOHNSON; ROBYN JOHNSON
40S 78227 00	DANIEL B BIDEGARAY
40P 30003079	LECHNER INC
42M 30155462	DONALD KUEHN; VERA KUEHN; KUEHN DONALD & VERA TRUST
40P 30041956	ROBERT E SCHOCK; SHERRI B SCHOCK
42M 74593 00	PREWITT TRUST
42M 30029298	MICHAEL STEFFAN; NANCY M STEFFAN
42M 57392 00	DYNNESON LAND LLC
40P 30105119	MARY KAY KOUNTZ
40P 41242 00	ERVIN E GOSS; JAMES D GOSS; MARVIN F GOSS; PATTI A MCGINNIS
42M 111363 00	KITTLESON FAMILY PARTNERSHIP LP
42M 30012793	WOLFF & SONS INC
40P 30070877	MONTANA STATE BOARD OF LAND COMMISSIONERS
42M 30149887	MARIO S THORSEN
	KLEMPEL, JEFF & PAM FAMILY TRUST; KLEMPEL, WALTER FAMILY LLC; MAVIRDA N
40P 70185 00	LEPEL; MATTHEW J TEDESCO
40P 30070783	MONTANA STATE BOARD OF LAND COMMISSIONERS
40S 22305 00	WAYNE BROWN; DIANA ELI
40P 53339 00	JEFFREY CARDA; MICHELLE CARDA
42M 24439 00	ANDREW D DOWNS
42M 30065524	DAVID S HILL; JULIE E HILL
40P 72941 00	ROBERT G CANDEE
42M 30121938	PETERSEN, J K INC
42M 30025675	US BAR RANCH INC
42M 30021689	JAMES W HUNTER; RHONDA H HUNTER
42M 106038 00	GRUE RANCH INC
42M 30009713	ARDYS G TORGERSON; CHRISTOPHER J TORGERSON; LARRY D TORGERSON
40S 89084 00	MARY STEPPLER; STEPPLER, DONALD LIVING TRUST
42M 3263 00	HAROLD A SIMARD; JUDITH D SIMARD
40P 91937 00	AURILLA JOHNSTON; MARLIN W JOHNSTON
40S 30120159	SCHMITZ JOE & ANNA AND BURKE PAT & ANNA TRUST
42M 165345 00	EATON, FRANK & SONS
42M 30148172	DUANE A ANDERSON; LINDA J ANDERSON
40P 10784 00	WOLFF LLC
42M 59567 00	BRANDON C BATTY; JULIE A BATTY
42M 4096 00	STORTZ INC
40P 57280 00	STONEY INC
40S 1530 00	ELM, HENRY ESTATE OF
40S 22409 00	HEART PLUS LLC
40P 31544 00	WAGNER, VICTOR REVOCABLE TRUST
42M 1273 00	HOWARD MARTINI; MARION MARTINI
	BARBARA J ALBRECHT; DONNA P QUALLEY; MARK T QUALLEY; PAT D QUALLEY;
	ROXANNE M QUALLEY; STEVEN B QUALLEY; TIMOTHY A QUALLEY; QUALLEY, CRAIG D
42M 4400 00	TRUST; DAVID B SORENSON
42M 70187 00	PATRICIA M CARLSEN
42M 17545 00	FIFTY TWO RANCH INC; GEORGE LEWIS

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WR Number	All Owners
40P 37433 00	SULLIVAN, JAMES & AGNES FAMILY TRUST
40P 30047333	CLAUDE A HAYES
40P 30115858	SWITZER LAND CO
40P 30154401	FLINT HANCE; JANA HANCE
40P 30046387	JENSEN BROTHERS OF CIRCLE INC
40P 30044330	MASSAR RANCH INC
40P 39497 00	ROLANDSON IMPLEMENT CO
40P 30155340	DAVID C DESPAIN; NANCY A DESPAIN
42M 12563 00	LILES, KENNETH INC
42M 5647 00	ERICH PUST
40P 66190 00	JENSEN BROTHERS OF CIRCLE INC
40P 51777 00	MLBC PROPERTIES, LLC
40P 102797 00	MASSAR RANCH INC
42M 14867 00	LISA F YOUNG; SHAWN E YOUNG
42M 30115844	STICKVILLE REVOCABLE TRUST
42M 30049996	STICKVILLE REVOCABLE TRUST
42M 30116352	HUBING RANCH INC
40P 30069986	JERRY L NAGLE
42M 10331 00	ALBIN FARMS
42M 10352 00	LOWMAN, CHARLES & MARLEEN FAMILY TRUST
40P 74616 00	MASSAR RANCH INC
42M 5087 00	ASHLEA J ANDERSON; RYAN R ANDERSON
42M 69293 00	DOROTHY M KALBERG
40P 4282 00	VICKI VAIRA
42M 34345 00	BILL CUNDIFF
42M 113729 00	WOLFF LLC
42M 113735 00	WOLFF LLC
40P 30003614	GREEN, EARL INC
40P 81295 00	GARPESTAD GORDON AND MARYANN FAMILY TRUST
40P 39436 00	VEVERKA INC
40P 79885 00	DELTON R GACKLE
40P 30030083	CHANTEL M VERSCHOOT; THOMAS VERSCHOOT
40P 68081 00	ROBYN T KETCHUM; THOMAS J KETCHUM
42M 30067686	CLIFFORD DAHL; DEBBIE DAHL
40E 9811 00	MAVES RANCH INC
42M 30106841	CRAIG JOHNSON
40P 16562 00	LEROY JORDAN
42M 30066243	JIM BOUSQUET
40P 7978 00	ROBERT G CANDEE
42M 89092 00	BOJE FARMS INC
42M 76557 00	PUST, ERICH W INC
40P 89884 00	MARGARET SCHARA; ROGER SCHARA
40P 30119841	WILLIAM J BRODY; BRODY, J RANCH INC
42M 33861 00	MICHAEL F HIER; RICHARD T HIER
40S 51887 00	GORDON LEWIS PETRIK; JUNE E PETRIK
42M 4943 00	MCENROE, JAMES ERNEST LIVING TRUST

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WR Number	All Owners
40S 74577 00	PHILLIP A FINK
40P 89868 00	YARGER INC
42M 25510 00	GARTNER DENOWH ANGUS RANCH
42M 88334 00	MONTANA STATE BOARD OF LAND COMMISSIONERS
42M 30026967	HARDY INVESTMENTS LP
40S 3120 00	EVERETT A BAXTER; RED WING CORP
42M 44607 00	COLE FINK; ERIN FINK
42M 20945 00	BRADY BOUCHARD
42M 597 00	MONTANA STATE BOARD OF LAND COMMISSIONERS
40P 30113101	KIM A KLASNA; TIMOTHY J KLASNA
40P 55578 00	VEVERKA INC
40E 9888 00	LOGAN, BENJAIMEN REVOCABLE TRUST
42M 30128816	LILES, KENNETH INC
42M 30114440	SHARON M ELLIS
40P 30065367	PASTURE CREEK INC
42M 30066962	BRADLEY, GORDON & MARGARET FAMILY TRUST
42M 30104104	JOSHUA R JOHNSON; WENDY S JOHNSON
40P 31487 00	HABER INC
42M 59005 00	ANN R POPPER; MICHAEL K POPPER
42M 17617 00	SCHMITZ JOE & ANNA AND BURKE PAT & ANNA TRUST
40P 30043008	WALLACE HALL
42M 30159143	JEFFREY L MCKINNEY; MEREDITH B MCKINNEY
42M 66273 00	LILLIAN DELORES GILBERT
42M 1645 00	DENNIS LATKA; LATKA, STEPHEN & JOSEPHINE FAMILY TRUST
42M 59489 00	MARK D OLSON
42M 30047258	KJELD JONSSON
42M 18413 00	D LUNDEMO RENTALS LLC
42M 97729 00	GOOSEN FAMILY FARM LLC
40S 69268 00	CAROLYN CASTERLINE
42M 94647 00	CLINT MULLIN
42M 53315 00	THIESSEN INC
40P 59528 00	TRIOP FARMS INC
42M 33060 00	CHAD OAKLAND
40P 77150 00	DONALD W SWITZER
40P 30070851	JAMES D GOSS; JULIE M GOSS
40S 30013532	KITTLESON FAMILY PARTNERSHIP LP
42M 30068526	ELAINE L HILL; WILBUR W HILL
42M 30104109	CANDEE ANGUS FARM INC
40P 91938 00	AURILLA JOHNSTON; MARLIN W JOHNSTON
42M 102446 00	MICKELSON SYLVIA TRUST
42M 59542 00	EATON, FRANK & SONS
40S 59580 00	DEVILS ELBOW RANCH LLC
42M 111394 00	LEWIS I LER; PATRICIA A LER
42M 30046440	EDWARDS, LYLE INC
42M 96336 00	DAVID LER; MATT LER
40P 30119550	GULDBORG BROTHERS INC

Appendix A: Groundwater Rights within Area of Potential Impact

WR Number	All Owners
42M 24286 00	CURTIS M MILLER; JANA D MILLER
42M 33847 00	CHARLEY BUEHNER
40P 78225 00	DANNY D MARLENEE; TERESA R WOLFF
40P 79895 00	JORDAN FAMILY TRUST 09/4/2020
40E 28583 00	MARY M GARFIELD; WAYNE L GARFIELD
40P 84902 00	SWITZER LAND CO
40P 30154591	BETTINNA C MOOS; JEFFREY S MOOS
40P 16166 00	MARILYN K REINEMER; R PHILIP REINEMER
40S 3122 00	EVERETT A BAXTER; RED WING CORP
40P 36624 00	HABER INC
40P 75814 00	SCHOCK POLLED HEREFORD CO
40P 88298 00	MONTANA STATE BOARD OF LAND COMMISSIONERS
42M 1321 00	JAMES K PETERSEN
42M 59562 00	KIRBY A BASTA; KENT A CRESS; LAUREL R CRESS
40P 97805 00	THOMAS F REEVES
42M 6427 00	GARY C SCHOEPP; KAREN L SCHOEPP
42M 102790 00	ERIC L SUNDHEIM
40P 30108726	JAMES D GOSS; JULIE M GOSS
40P 69225 00	JAMES D GOSS; JULIE M GOSS
40P 81377 00	STEVEN EGGEBRECHT
42M 30063248	AUDREY A HILL
40P 21649 00	PAUL E GEBHARDT
40P 4580 00	BURL J BELEY; VICKI L BELEY
42M 70225 00	DONALD M WALKER; JACKLYN M WALKER
40P 16312 00	LAZY A M RANCH INC
40P 21767 00	CANDACE GREEN; WILLIAM R GREEN
42M 17233 00	JOHNSON, CALVIN Z LAND LLC; JOHNSON, CRAIG L LAND LLC
42M 111413 00	LEWIS INC
40S 171254 00	F & M RANCH LLC
40P 63933 00	JARED KOUNTZ; MELISSA KOUNTZ
42M 70193 00	DONALD M WALKER; JACKLYN M WALKER
40S 30065300	RONALD J FINK
40P 30005024	ROBERT G CANDEE
40P 30013885	CATHERINE L WORKMAN; DAVID C WORKMAN
40S 69246 00	PLEASANT VALLEY INC
42M 81336 00	CHAD OAKLAND
40P 41333 00	WAGNER, ROY BENEFICIARY TRUST
40P 7996 00	CHANTEL M VERSCHOOT; THOMAS VERSCHOOT
40P 31479 00	DUANE W WHITE
40P 1990 00	JARED KOUNTZ; MELISSA KOUNTZ
40P 30127228	KOUNTZ RANCH INC
42M 71262 00	SLAGSVOLD HEREFORD RANCH
42M 30069953	JAMES W HUNTER; RHONDA H HUNTER
42M 74592 00	HAY CREEK RESOURCES LLC
42M 30021903	HUFFMAN, JAMES TRUST
42M 69282 00	MONTANA STATE BOARD OF LAND COMMISSIONERS

Appendix A: Groundwater Rights within Area of Potential Impact

WR Number	All Owners
40P 30043723	PASTURE CREEK INC
40P 71275 00	MEISSNER BROTHERS INC
40S 30052433	CYNTHIA SUNDHEIM; SCOTT SUNDHEIM
42M 30024396	ARDYS G TORGERSON
40P 20762 00	VICKIE L MCCLOY
40P 76561 00	HEIDE RANCH INC
40P 41241 00	KIRCHNER BROTHERS LLC
40P 30048224	CHANTEL M VERSCHOOT; THOMAS VERSCHOOT
42M 30161469	KLEMPEL FRANK INC
42M 30025852	ARDYS G TORGERSON
42M 30160031	MONTANA STATE BOARD OF LAND COMMISSIONERS
40S 51912 00	PAMELA K UNTERSEHER; STEVEN J UNTERSEHER
42M 14743 00	BRENDA BEVERLY; MARK Q GOLDEN; KIMBERLY J MANGELS
40P 83543 00	L 7 RANCH INC; MACIOROSKI, DAVID FAMILY TRUST
40P 83019 00	BRODY, J RANCH INC
40P 30029304	BROCKWAY SUPPER CLUB
42M 50347 00	E C RANCH INC
42M 78202 00	JERRY R MCMILLEN
40P 30049170	CAROL J FATZINGER; ROY C FATZINGER
42M 30021929	ULLMAN HOLDINGS LLC
40S 30160621	USA (DEPT OF INTERIOR BUREAU OF LAND MGMT)
40S 59579 00	MONTANA STATE BOARD OF LAND COMMISSIONERS
42M 7304 00	PAMELA R SCHIPMAN
40P 114659 00	CHERYL WRIGHT; FRANK C WRIGHT
42M 88307 00	DYNNESON RANCH INC
42M 99070 00	LANGE, ROBERT INC
40P 56557 00	HEIDI BEERY; JASON BEERY
40P 114770 00	R KURT VOSS; RHONDA M VOSS
42M 94596 00	GWENDOLYN ZIEGLER; KAREN ZIEGLER; LARRY J ZIEGLER; LEIGHTON L ZIEGLER
42M 17234 00	JOHNSON, CALVIN Z LAND LLC; JOHNSON, CRAIG L LAND LLC
40S 79886 00	IVERSEN BROTHERS INC
40S 101048 00	USA (DEPT OF INTERIOR BUREAU OF LAND MGMT)
42M 89096 00	PAUL DOUGLAS SVENVOLD
42M 30124988	KRISTAN E BASTA
40S 79893 00	PLEASANT VALLEY INC
42M 30159570	ULLMAN HOLDINGS LLC
42M 30022181	PREWITT TRUST
40P 108415 00	AURILLA JOHNSTON; MARLIN W JOHNSTON
42M 81344 00	DANIEL L YOUNG
42M 59556 00	ERIK P SORENSEN
40E 30047158	MURPHY & SON INC
42M 30107054	ARLON W FRANZ; DONALD A FRANZ
42M 74583 00	LEWIS INC
40P 30119457	ALLEN EVENSON
42M 66196 00	CONSTANCE F JACKSON; GARY L JACKSON
40S 30003948	VICKIE BARBOT; LARRY POFF

Appendix A: Groundwater Rights within Area of Potential Impact

WR Number	All Owners
40P 91884 00	AURILLA JOHNSTON; MARLIN W JOHNSTON
42M 30030977	KENNETH MICHAEL BACKES
42M 102792 00	ULLMAN HOLDINGS LLC
40E 86164 00	HAROLD E WALLER
40S 70195 00	DAVID VAIRA; PEGGY VAIRA
40S 30104251	CODY J STEPPLER; VERLIN R STEPPLER
40P 30051221	VICKI VAIRA
42M 30106866	CHASE PREWITT
42M 102776 00	JUDEAN SUNDHEIM

Appendix B: Groundwater Rights within the 1-ft Drawdown Contour

Appendix B: Groundwater Rights within the 1-ft Drawdown Contour

WR Number	All Owners	Total Well Depth (ft)	Static Water Level (ft)	Additional Drawdown (ft)	Remaining Available Water Column (ft)
42M 101408 00	ALBIN FARMS	152	92	1.8	58.2
42M 74579 00	DCLW CORP	135	80	1.6	53.4
42M 101401 00	BRADLEY M ANVIK	131	100	3.1	27.9
40S 26473 00	HAROLD J FINK; HELEN FINK	134	82	1.5	50.5
40S 30150565	WILLIAM D THORNTON	120	58	1.5	60.5
42M 78202 00	JERRY R MCMILLEN	200	154	2.0	44.0
42M 30068525	ELAINE L HILL; WILBUR W HILL	60	22	1.6	36.4
42M 25507 00	GARTNER DENOWH ANGUS RANCH	66	57	2.1	6.9
42M 37716 00	RUSSELL H JOHNSON; SANDRA S JOHNSON; TARA MATHERN	81	50	2.1	28.9
42M 30049987	COLE THORNTON; JANA THORNTON	100	45	2.0	53.0
42M 99090 00	LARRY D DREVECKY; BRYAN P GARTNER	75	30	2.2	42.8
42M 30009713	ARDYS G TORGERSON; CHRISTOPHER J TORGERSON; LARRY D TORGERSON	160	68	1.7	90.3
42M 24286 00	CURTIS M MILLER; JANA D MILLER	180	110	1.8	68.2
42M 89103 00	DAVID R MCMILLEN	30	5	1.9	23.1
42M 53342 00	PAUL C BEYER	109	35	1.7	72.3
42M 30008518	FRANZ CONSTRUCTION INC	100	42	1.9	56.1
42M 17546 00	BEVERLY R EDAM; DALE W EDAM	57	8	1.9	47.1
42M 69223 00	PREVOST RANCH INC	70	48	1.7	20.3
42M 31821 00	WILLIAM J REHBEIN	40	8	1.7	30.3
42M 74576 00	KOPP FARMS INC	132	40	1.7	90.3
42M 30127074	BRIEN PANASUK; TOBY A PANASUK; ZANE R PANASUK	95	90	1.9	3.1
42M 50390 00	GARTNER DENOWH ANGUS RANCH	70	60	2.1	7.9
40S 16185 00	J HARRY JOHNSON LIMITED PARTNERSHIP	40	20	1.6	18.4
42M 1272 00	HOWARD MARTINI; MARION MARTINI	57	35	2.0	20.0
42M 30063248	AUDREY A HILL	185	72	1.6	111.4
42M 36672 00	THIESSEN INC	140	69	1.6	69.4
42M 66158 00	GARTNER DENOWH ANGUS RANCH	105	43	2.1	59.9
42M 5213 00	AUDREY A HILL	33	7	1.6	24.4
42M 50237 00	FOUR J RANCH INC	84	30	1.8	52.2
42M 37565 00	FRANZ RANCH LAND TRUST	38	16	1.7	20.3
42M 28413 00	GREG ANDERSON	77	58	3.2	15.8

Appendix B: Groundwater Rights within the 1-ft Drawdown Contour

WR Number	All Owners	Total Well Depth (ft)	Static Water Level (ft)	Additional Drawdown (ft)	Remaining Available Water Column (ft)
42M 55523 00	GARTNER DENOWH ANGUS RANCH	48	18	2.3	27.7
42M 51916 00	BRIAN D LEWIS	105	38	1.8	65.2
42M 33847 00	CHARLEY BUEHNER	180	135	2.8	42.2
42M 30025541	KLOSE LANDS LLLP	95	33	2.3	59.7
42M 29467 00	THIESSEN, DWIGHT & DIANA FAMILY TRUST	47	22	1.7	23.3
42M 71271 00	ILA K HARDY; JOYCE HERNANDEZ; JODI KORDONOWY; JEFFREY L PARTIN; RICHARD I PARTIN; TIMOTHY T PARTIN; NADINE M SWISSE	120	40	2.2	77.8
42M 61875 00	ILA K HARDY; JOYCE HERNANDEZ; JODI KORDONOWY; JEFFREY L PARTIN; RICHARD I PARTIN; TIMOTHY T PARTIN; NADINE M SWISSE	80	25	2.2	52.8
42M 30112705	ERIN C SIEBENALER; KENNETH C SIEBENALER	40	30	2.1	7.9
42M 86145 00	WILLIAM D SORTEBERG	60	28	1.6	30.4
42M 30044998	MONTANA STATE BOARD OF LAND COMMISSIONERS	75	31	1.5	42.5
42M 37564 00	FRANZ RANCH LAND TRUST	91	14	1.7	75.3
42M 5214 00	AUDREY A HILL	55	10	1.6	43.4
42M 30116349	JARED D ROSAAEN	70	9.1	1.5	59.4
42M 73798 00	THIESSEN INC	50	15	1.8	33.2
42M 30010531	MONDALIN INC	40	10	1.7	28.3
42M 30025852	ARDYS G TORGERSON	198	128	1.8	68.2
42M 28783 00	KENNETH MICHAEL BACKES	40	18	1.5	20.5
42M 30157916	FRANZ RANCH LAND TRUST	137	63	2.4	71.6
42M 30067255	DALE ROBERTS; KIM I ROBERTS	78	28	1.6	48.4
42M 30148172	DUANE A ANDERSON; LINDA J ANDERSON	160	30	1.9	128.1
42M 33071 00	MICHAEL F HIER; RICHARD T HIER	72	36	1.6	34.4
42M 37567 00	FRANZ RANCH LAND TRUST	55	16	1.8	37.2
42M 30042688	PATRICK N VAIRA	120	51	1.5	67.5
42M 97728 00	MICHAEL G DENOWH; PAUL J DENOWH	40	8	2.3	29.7
40S 51810 00	DANIELS FAMILY PRTNRSHP	154	110	1.6	42.4
40S 30051665	FINK FARMS INC	63	32	1.5	29.5

Appendix B: Groundwater Rights within the 1-ft Drawdown Contour

WR Number	All Owners	Total Well Depth (ft)	Static Water Level (ft)	Additional Drawdown (ft)	Remaining Available Water Column (ft)
42M 1273 00	HOWARD MARTINI; MARION MARTINI	162	60	2.0	100.0
42M 30114439	COLE THORNTON	100	45	2.0	53.0
42M 50236 00	MARTHEA A JOHNSON	74	48	2.4	23.6
42M 23197 00	KAYLA S WICK; WAYNE G WICK	147	18	1.7	127.3
42M 30001030	JOHN K DYNNESON; NANCY K DYNNESON	143	70	1.9870107	71.01298934
42M 30009300	KENNETH MICHAEL BACKES	140	5	1.5875366	133.4124634
42M 53307 00	KOPP FARMS INC	40	15	1.7290468	23.27095318
42M 30008523	PENNIE K THORNTON; WILLIAM D THORNTON	45	12	1.7282862	31.27171378
42M 30072618	COLE THORNTON; JANA THORNTON	143	92	1.9209351	49.0790649
40S 30065300	RONALD J FINK	190	55	1.5018621	133.4981379
42M 30150475	EVERETT WILLIAMS	120	60	1.5610477	58.43895234
42M 61885 00	DARYL NORGAARD	120	75	2.4189746	42.58102541
42M 88307 00	DYNNESON RANCH INC	200	85	1.8180258	113.1819742
42M 79009 00	MICHAEL F HIER; RICHARD T HIER	85	20	1.6817632	63.31823682
42M 59538 00	LESUEUR FAMILY; JANA MINIFIE; BETTE KAY NELSON; JOHN T VOLDEN; VOLDEN, DONALD T & ROSEMARIE FAMILY TRUST	40	19	1.656829	19.34317098
42M 30068526	ELAINE L HILL; WILBUR W HILL	180	120	1.6150556	58.38494444
42M 7353 00	STEVE VITT	60	30	1.5557037	28.4442963
42M 70214 00	PREVOST RANCH INC	115	70	1.6580842	43.34191585
42M 5918 00	RUSS S GOMKE; MELISSA F WILLIAMS	80	46	1.569014	32.43098599
42M 30048949	FRANCES SYTH; SAM SYTH	150	100	3.2080497	46.79195027
42M 66207 00	MARK A MARTIN; MARY H MARTIN	130	72	2.4697949	55.5302051
40S 20354 00	KELLY FINK; RONALD J FINK	34	25	1.4972644	7.502735609
42M 81282 00	GARTNER DENOWH ANGUS RANCH	83	68	2.1375309	12.8624691
42M 15595 00	JAMES M EDINGER; TAMMY L EDINGER	83	34	2.0320933	46.96790665
42M 77172 00	CHAD ALBIN	120	50	1.7352552	68.26474475
42M 50299 00	KAYLA S WICK; WAYNE G WICK	157	50	1.6827987	105.3172013
42M 30069037	EMEP ACQUISITIONS LLC	123	85	3.0514431	34.94855693
42M 30051628	GARTNER, COLIN & SUSAN FAMILY TRUST	75	22	2.1798912	50.82010877
42M 30065524	DAVID S HILL; JULIE E HILL	160	80	1.8579963	78.14200374
42M 37562 00	FRANZ RANCH LAND TRUST	89	16	1.7314954	71.26850458

Appendix B: Groundwater Rights within the 1-ft Drawdown Contour

WR Number	All Owners	Total Well Depth (ft)	Static Water Level (ft)	Additional Drawdown (ft)	Remaining Available Water Column (ft)
42M 5375 00	DAVID R MCMILLEN; MARGARET P MCMILLEN	40	24	1.8967164	14.10328357
42M 109559 00	MERLYN D LARSON; ROSEMARY LARSON	120	50	2.247566	67.75243402
40S 30044186	DAYTON FOUNDATION	120	40	1.5479335	78.45206648
42M 86219 00	BRYAN J PREVOST	80	10	1.6180219	68.38197811
42M 104493 00	BRENDA LARSON; TIM D LARSON	145	87	2.2079735	55.79202647
42M 28742 00	CASSIDY KLIND; CODY L STENSLAND	60	30	1.6814557	28.3185443
42M 25513 00	GARTNER DENOWH ANGUS RANCH	140	135	1.9854567	3.014543327
40S 16412 00	KELLY, SHIRLEY TRUSTEE; CHERYL UNRUH	157	137	1.5489041	18.45109591
42M 33061 00	MERLYN D LARSON; ROSEMARY LARSON	34	11	2.2826691	20.71733088
42M 101495 00	DCLW CORP	40	16	1.5752195	22.42478054
42M 108389 00	MONDALIN INC	40	8	1.7252987	30.27470132
42M 30121938	PETERSEN, J K INC	160	57	2.0019115	100.9980885
42M 30004133	THIESSEN INC	140	69	1.6389224	69.36107762
42M 4400 00	BARBARA J ALBRECHT; DONNA P QUALLEY; MARK T QUALLEY; PAT D QUALLEY; ROXANNE M QUALLEY; STEVEN B QUALLEY; TIMOTHY A QUALLEY; QUALLEY, CRAIG D TRUST; DAVID B SORENSON	162	130	4.6087099	27.39129013
42M 40743 00	D M C NEVINS TRUST	79	53	1.8329896	24.16701041
42M 69261 00	DON D BOUCHARD; RONALD R BOUCHARD	100	51	1.7029348	47.29706517
42M 30127431	KATHY M OBERGFELL; ROCKY L OBERGFELL	14	10	2.2616398	1.738360195
42M 30071720	DEBRA ENGESSER; DONALD ENGESSER	143	85	1.6023663	56.39763369
42M 30070220	5S PARTNERSHIP	40	22	2.0867424	15.9132576
42M 66193 00	LARRY D DREVECKY; BRYAN P GARTNER	56	40	2.1010776	13.89892238
42M 64075 00	JODI KORDONOWY; RAY W KORDONOWY	145	50	2.4833246	92.51667537
42M 30018145	ANGELA PRUITT; SIMON PRUITT	140	65	3.1050083	71.89499166
42M 30008736	AUDREY A HILL	75	30	1.5059881	43.49401188
42M 10962 00	HILL, SHARON K LIVING TRUST; HILL, SHARON K MARITAL TRUST	103	55	1.5889477	46.41105232
42M 66302 00	MARLO SALSBURY	133	80	1.7122421	51.28775794

Appendix B: Groundwater Rights within the 1-ft Drawdown Contour

WR Number	All Owners	Total Well Depth (ft)	Static Water Level (ft)	Additional Drawdown (ft)	Remaining Available Water Column (ft)
42M 16328 00	AUDREY A HILL; MELVIN R HILL	30	22	1.6248697	6.375130313
42M 25505 00	GARTNER DENOWH ANGUS RANCH	66	57	2.1375309	6.862469103
42M 2628 00	WILLIAM J REHBEIN	150	95	1.7637844	53.23621559
42M 57339 00	JEFF AISENBREY; LUANNA AISENBREY	130	80	2.9483368	47.05166318
42M 30067686	CLIFFORD DAHL; DEBBIE DAHL	170	122	3.2593938	44.74060622
42M 30070201	JAMES E STEINBEISSER	100	13.5	2.1787726	84.32122736
42M 30104125	SUNNY SLOPE RANCH INC	60	16	1.6849885	42.31501151
42M 17234 00	JOHNSON, CALVIN Z LAND LLC; JOHNSON, CRAIG L LAND LLC	200	165	2.2356381	32.76436193
42M 32130 00	PREVOST RANCH INC	75	31	1.6957042	42.30429582
42M 30125435	BRIEN PANASUK; TOBY A PANASUK; ZANE R PANASUK	121	40	1.9889375	79.0110625
42M 66277 00	PREWITT TRUST	120	30	1.8134336	88.18656644
42M 80550 00	THIESSEN, DWIGHT & DIANA FAMILY TRUST	75	26	1.7454664	47.25453361
42M 73761 00	FRANZ RANCH LAND TRUST	145	60	1.7447326	83.25526744
42M 30063412	HAY CREEK RESOURCES LLC	120	21	1.7397637	97.26023629
42M 48435 00	DAVID A MULLIN; MERLE A MULLIN	36	20	1.5168595	14.48314052
42M 101080 00	KOPP FARMS INC	100	10	1.6668316	88.33316843
42M 30050448	GARTNER, COLIN & SUSAN FAMILY TRUST	68	25	2.1798912	40.82010877
42M 2627 00	WILLIAM J REHBEIN	100	55	1.8128605	43.18713945
42M 4222 00	LOUISE A REHBEIN	95	65	1.8297189	28.17028115
42M 104499 00	RICHLAND COUNTY SCHOOL DIST #2	54	10	1.7542197	42.24578027
42M 99053 00	SUNNY SLOPE RANCH INC	67	15	1.8730417	50.12695828
42M 30105766	JOHN K DYNNESON; NANCY K DYNNESON	110	37	2.0016957	70.99830433
42M 96324 00	KITTLESON FAMILY PARTNERSHIP LP	60	25	1.6289445	33.37105554
42M 30951 00	WOLFF, HELMUT & CAROLYN REVOCABLE LIVING TRUST	113	90	2.4175695	20.58243049
42M 30028900	MERRILL, TBA FAMILY PARTNERSHIP	114	80	2.251336	31.74866399
42M 89085 00	THIESSEN, DWIGHT & DIANA FAMILY TRUST	95	42	1.7401796	51.25982044
42M 77543 00	FRANZ RANCH LAND TRUST	90	13	1.7180215	75.28197853
42M 61838 00	EDWIN J RIES; LINDA L RIES	140	80	2.8626458	57.13735415
42M 16327 00	AUDREY A HILL	30	22	1.6248697	6.375130313
42M 53227 00	CLIFFORD DAHL; DEBBIE DAHL	140	82	2.9130973	55.08690268

Appendix B: Groundwater Rights within the 1-ft Drawdown Contour

WR Number	All Owners	Total Well Depth (ft)	Static Water Level (ft)	Additional Drawdown (ft)	Remaining Available Water Column (ft)
42M 53315 00	THIESSEN INC	180	100	1.6343235	78.36567648
42M 30044138	ROGER W MEYER	33	18	1.5951988	13.40480124
42M 38652 00	KENNETH MICHAEL BACKES	60	4	1.6254625	54.37453755
42M 33542 00	CARL T DYNNESON; LINDSEY L DYNNESON	131	45	2.0046942	83.9953058
42M 17233 00	JOHNSON, CALVIN Z LAND LLC; JOHNSON, CRAIG L LAND LLC	190	175	2.2402076	12.75979241
42M 30012285	KATHY M OBERGFELL; ROCKY L OBERGFELL	21	16	2.2616398	2.738360195
42M 30127489	KATHY M OBERGFELL; ROCKY L OBERGFELL	21	16	2.2781671	2.72183288
42M 69259 00	PREVOST RANCH INC; MONTE TORGERSON; VERNETTE TORGERSON	60	38	1.8078368	20.19216322
42M 30012288	KATHY M OBERGFELL; ROCKY L OBERGFELL	32	18	2.2616398	11.73836019
42M 15290 00	JILL NORBY; KELLI NORBY	50	27	1.5900525	21.4099475
42M 71217 00	DEBRA ANDERSON; GREG ANDERSON	100	48	3.2460353	48.75396471
42M 30014275	NANCY VERSCHOOT	137	75	1.7139695	60.28603047
40S 2400 00	HAROLD J FINK	45	5	1.4992115	38.50078852
42M 9356 00	DEEDRA ERICKSON; SHANDON W ERICKSON	157	85	2.7261578	69.27384221
42M 46342 00	FOUR J RANCH INC	30	13	1.9610909	15.03890912
42M 71759 00	DANIELS FAMILY PRTNRSHP	92	40	1.6440933	50.35590675
42M 59500 00	CHARLIE PENNINGTON; MCKEN-ZE PENNINGTON	100	40	1.9826289	58.01737106
42M 50239 00	FOUR J RANCH INC	120	65	1.9570034	53.0429966
42M 46346 00	FOUR J RANCH INC	120	60	1.9530977	58.04690232
42M 43669 00	ASHLEA J ANDERSON; RYAN R ANDERSON	75	27	2.7416392	45.25836082
42M 41512 00	DYNNESON RANCH INC	115	40	1.8896328	73.11036718
42M 30154616	DIANA YOUNGQUIST; LARRY D YOUNGQUIST	122	80	2.7839539	39.21604613
42M 10065 00	KENNETH KILEN; MARLON J KILEN; PAMELA K KILEN	50	30	1.6788598	18.3211402
40S 30163038	GLADOWSKI RANCH INC	30	12	1.5654653	16.43453474
42M 10331 00	ALBIN FARMS	165	80	1.784305	83.21569499
42M 8583 00	DARLA HILL	51	20	1.5145274	29.4854726
42M 39412 00	LOUISE A REHBEIN	95	65	1.8297189	28.17028115
42M 30012283	KATHY M OBERGFELL; ROCKY L OBERGFELL	14	10	2.2616398	1.738360195

Appendix B: Groundwater Rights within the 1-ft Drawdown Contour

WR Number	All Owners	Total Well Depth (ft)	Static Water Level (ft)	Additional Drawdown (ft)	Remaining Available Water Column (ft)
42M 30107054	ARLON W FRANZ; DONALD A FRANZ	200	70	1.8265335	128.1734665
42M 30024396	ARDYS G TORGERSON	196	72	1.6815251	122.3184749
42M 30044883	DH RANCH	100	55	1.6185369	43.38146308
42M 8429 00	THIESSEN INC	60	28	1.6389224	30.36107762
42M 30030094	JOHN K DYNNESON; NANCY K DYNNESON	85	50	1.9973108	33.00268915
42M 88280 00	JUDEAN SUNDHEIM; PATTY SUNDHEIM	120	35	1.8016231	83.19837692
42M 114729 00	BRETT R BENNION; DANIELA J BENNION	50	10	2.5893738	37.41062618
42M 30127430	KATHY M OBERGFELL; ROCKY L OBERGFELL	32	18	2.2616398	11.73836019
42M 30070638	SHADWELL RESOURCES GROUP LLC	60	25	2.0676204	32.93237959
42M 30127433	KATHY M OBERGFELL; ROCKY L OBERGFELL	90	70	2.0376294	17.96237055
42M 30153810	JOHN K DYNNESON; NANCY K DYNNESON	60	10	2.0670946	47.93290541
42M 30113468	MELISSA BUCKLEY	53	12	2.1596167	38.84038333
42M 30065050	BRENDA L VERSCHOOT; CHASE L VERSCHOOT	140	95	1.7116539	43.2883461
42M 20945 00	BRADY BOUCHARD	175	135	1.9926307	38.00736925
42M 59556 00	ERIK P SORENSEN	200	62	2.1847302	135.8152698
42M 30011518	MICHAEL T ANVIK	90	21	2.826061	66.17393897
42M 37566 00	FRANZ RANCH LAND TRUST	123	60	1.7718387	61.2281613
42M 30063224	GARTNER, COLIN & SUSAN FAMILY TRUST	70	14	2.1635364	53.83646355
42M 37563 00	FRANZ RANCH LAND TRUST	55	16	1.7385559	37.26144409
42M 74589 00	SUNNY SLOPE RANCH INC	83	50	1.6276214	31.3723786
42M 74592 00	HAY CREEK RESOURCES LLC	195	75	1.6855143	118.3144857
42M 30070138	PREVOST RANCH INC	65	45	1.8763641	18.12363587
42M 20495 00	PREVOST RANCH INC	30	10	1.7427724	18.2572276
42M 30042595	HARL OLAND; JANICE OLAND	77	33	1.5567742	42.44322578
42M 30045477	PHILIP JOHNSON; ROBYN JOHNSON	159	100	2.0100927	56.98990729
42M 71712 00	CHRIS C LARSON; MICHELLE R LARSON	137	85	2.1502014	49.84979862
42M 23573 00	MERLYN D LARSON	40	20	1.8545279	18.14547214
42M 30049532	4 J RANCH INC	120	40	1.7388704	78.26112964
42M 34650 00	JOSEPH MAY	130	97	2.9130973	30.08690268
42M 30027937	CHAD BURNS	133	105	3.3497995	24.65020052
42M 16326 00	AUDREY A HILL	30	10	1.6248697	18.37513031

Appendix B: Groundwater Rights within the 1-ft Drawdown Contour

WR Number	All Owners	Total Well Depth (ft)	Static Water Level (ft)	Additional Drawdown (ft)	Remaining Available Water Column (ft)
42M 15825 00	DCLW CORP	60	40	1.5752195	18.42478054
42M 28072 00	CHRIS UNDEM	137	85	3.0118783	48.98812166
40S 59539 00	DOUGLAS J JOHNSON; JEFFEREY D JOHNSON; MARY S JOHNSON	80	60	1.5445076	18.45549237
42M 36516 00	BERTRAND J SAWYER	44	28	1.8751846	14.12481541
42M 89844 00	LISA M VERSCHOOT; TONY J VERSCHOOT	80	38	1.5448757	40.45512425
42M 25510 00	GARTNER DENOWH ANGUS RANCH	175	170	2.1271193	2.872880722
42M 94647 00	CLINT MULLIN	180	107	1.6672866	71.3327134
42M 30125433	BILLIE J WELTY	60	30	1.9590144	28.04098556
40S 71694 00	VICKIE BARBOT; LARRY POFF	110	73	1.5453416	35.45465839
42M 66273 00	LILLIAN DELORES GILBERT	180	53	2.4674128	124.5325872
42M 30148602	CRAIG BEISWANGER; GEORGIA BEISWANGER	135	40	2.4388679	92.56113214
42M 4824 00	DIANE KILSDONK; ANGELA PRUITT; SIMON PRUITT	135	72	3.1050083	59.89499166
42M 15197 00	THOMAS H MARTINI	110	60	2.1334165	47.86658346
42M 5087 00	ASHLEA J ANDERSON; RYAN R ANDERSON	166	50	2.764939	113.235061
40S 30042696	KATHY W THORNTON; RUSSELL D THORNTON	143	100	1.5201069	41.47989311
42M 21564 00	WILLIAM BUCKLEY	135	44	2.1510904	88.84890963
42M 30051731	JOHN L FRANKLIN	123	80	2.7392357	40.2607643
42M 91923 00	PAUL C BEYER	140	40	1.7100066	98.28999338
42M 19396 00	DOUBLEDA, LLC	60	20	1.879444	38.12055598
40S 106939 00	HAROLD J FINK; FINK FARMS INC	134	82	1.5366764	50.46332358
42M 12961 00	MARTY CASEY	110	63	3.1605689	43.83943108
42M 30012282	KATHY M OBERGFELL; ROCKY L OBERGFELL	90	70	2.0376294	17.96237055
42M 64108 00	DEBRA SCHILLINGER; SCHILLINGER FAMILY LEGACY TRUST DTD 9/16/2023	31	19	1.6542153	10.34578475
42M 76536 00	DYNNESON LAND LLC	130	50	1.8269365	78.17306346
42M 53224 00	DARIN MULLIN	155	80	1.5672708	73.43272924
42M 27577 00	KATHY W THORNTON; RUSSELL D THORNTON	20	7	1.7686776	11.23132236
42M 64073 00	BRADY BOUCHARD	135	3	2.54162	129.45838
42M 103694 00	SHERMAN L DYNNESON	40	19	1.8574073	19.14259271
42M 33861 00	MICHAEL F HIER; RICHARD T HIER	173	120	1.5039645	51.49603546
42M 66281 00	EDWARD L PIERCE; MARIE A PIERCE	138	78	2.4968781	57.50312186
42M 30125401	BILLIE J WELTY	117	75	1.9249162	40.07508381

Appendix B: Groundwater Rights within the 1-ft Drawdown Contour

WR Number	All Owners	Total Well Depth (ft)	Static Water Level (ft)	Additional Drawdown (ft)	Remaining Available Water Column (ft)
42M 30012287	KATHY M OBERGFELL; ROCKY L OBERGFELL	21	16	2.2781671	2.72183288
42M 102776 00	JUDEAN SUNDHEIM	200	70	1.8016231	128.1983769
40S 69258 00	DAYTON FOUNDATION	90	36	1.538265	52.46173501
42M 71709 00	LARSON, LOWELL H & JOANNE M REVOCABLE LIVING TRUST	110	52	2.4304068	55.56959317
42M 6080 00	AURIE SCHWARTING	135	72	1.6004403	61.39955968
42M 89863 00	STONEY BUTTE FARMS INC	100	84	1.6364194	14.3635806
42M 29454 00	MONTANA STATE BOARD OF LAND COMMISSIONERS	29	14	1.7769714	13.22302857
42M 30151175	FRANZ RANCH LAND TRUST	140	54	1.8508435	84.1491565
42M 30042536	THIESSEN, DWIGHT & DIANA FAMILY TRUST	63	27	1.5907543	34.40924574
42M 30021930	SIMONSEN, KENNETH FAMILY REVOCABLE LIVING TRUST	60	14	1.6685711	44.3314289
42M 30127052	BRIEN PANASUK; TOBY A PANASUK; ZANE R PANASUK	75	70	1.9934833	3.006516664

Groundwater Permit Technical Analyses Report – Part B

Department of Natural Resources and Conservation (DNRC or Department)
Water Resources Division
Ashley Kemmis, Water Resource Specialist, Glasgow Regional Office

Application No.	42M 30163320	**Proposed Point of Diversion**	NENENE Section 8, T22N, R58E, Richland County
Applicant	Big Horn Leasing LLC		

Overview

This report is Part B of a two-part publication which analyzes data submitted by the Applicant in support of the above-mentioned water right application. This report provides technical analyses as required under the Administrative Rules of Montana (ARM) 36.12.1303 in support of the water rights criteria assessment as required in §85-2-311, Montana Code Annotated (MCA).

This Groundwater Permit Technical Analyses Report – Part B contains the following sections:

Variances

A variance from the requirements found in ARM 36.12.1702(3)(a) to maintain a pumping rate that cannot depart from the average pumping rate by more than 5% was granted by the Glasgow Regional Office on April 3, 2024. Pumping in the Production Well was not maintained at a constant discharge rate. The discharge rate fluctuated by more than 5% within the first five minutes of the test before stabilizing at an average rate of 37.8 gpm for the remainder of the 72-hour test. The discharge rate also fluctuated by more than 5% at the beginning of the two 24-hour tests (up to the first 13 minutes for the Well #3 test).

1.0 Application Details

The Applicant proposes to divert water January 1 through December 31 from 3 manifold wells at a rate of 142 GPM per year. A volume of 229 AF would be appropriated from January 1 through December 31 for water marketing purpose in the NENE of Section 8, Township 22N, Range 58E, Richland County. The total appropriation includes 10 AF to account for net evaporation from three storage ponds, and 219 AF will be utilized for water marketing to oil field development. The service area for water marketing will include a large portion of southern Richland County.

2.0 Surface Water Analysis of Depleted Surface Water

2.1 Source Description

Part A of the Technical Analyses Report includes the Groundwater Analysis, which describes the methodologies used to identify the depleted surface water source.

Depleted Source of Water: Yellowstone River

Depleted Source Type: Perennial

Location of Depletions: Lot 4, SWSWSE, Section 17, Township 22N Range 59E

2.2 Method of Estimation

Gage Name: Yellowstone River Near Sidney MT

Gage Number: USGS 06329500

Period of Record: 1910 - 2024

Why this gage is considered an appropriate data source: According to ARM 36.12.1702, available stream gage records will be used to quantify physical availability using the median of the mean monthly flow rate and volume during the proposed months of diversion. This gage is approximately 1.5 miles downstream of the location of surface water depletions.

2.3 Monthly Flow Rate and Volume

Methodology: USGS Gage #06329500 is the nearest gage to the identified depletion on the Yellowstone River. The date range used includes the entire period of record for this gage.

Physical availability of Yellowstone River water at the location of the surface water depletion will be quantified monthly. Department practice for physical availability analyses where the gage used is downstream of the start of depletion is to add the monthly flow rates of existing water rights between the gage and the start of surface water depletion to the median of the mean monthly flows at the gage. The DNRC used the method below to quantify physically available monthly flows and volumes at the start of depletion during the proposed period of diversion:

1. The Department calculated median of the mean monthly flow rates in cubic feet per second (CFS) for the Yellowstone River using USGS Gage #06329500 records for each month of the proposed period of diversion (Table 1, column B). Those flows were converted to monthly volumes in AF (Table 1, column C) using the following equation found on DNRC Water Calculation Guide: median of the mean monthly flow (CFS) × 1.98 (AF/day/1 CFS) × days per month = AF/month.
2. The Department calculated the monthly flows appropriated by existing users upstream of the gage on the source (Table 1, column D) by:
    i. Generating a list of existing water rights from the surface water depletion location to USGS Gage #06329500;
    ii. Assigning irrigation and lawn and garden uses with no period of diversion as occurring from April 1 to October 31;
    iii. Assigning all other water uses with no period of diversion as year-round uses;
    iv. Calculating a flow rate for all livestock direct from source rights without a designated flow rate via the following steps per Department standards:
        i. Assigning either 30 GPD/AU for Statements of Claim or 15 GPD/AU
        ii. Multiplying by the number of Animal Units (AU)
        iii. Converting to CFS
        iv. Adding that to 35 GPM (converted to CFS)
    v. Assuming that the flow rate of each existing right is continuously diverted throughout each month of the period of diversion. This assumption is necessary due to the difficulty of differentiating the distribution of appropriated volume over the period of diversion. This leads to an overestimation of existing uses from the source. The Department finds this an appropriate measure of assessing existing rights as it protects existing water users.
3. Since the gage used is downstream of the start of surface water depletion, the Department added in the flow rates of the existing rights between USGS Gage #06329500 and the point of surface water depletion (Table 1, column D) to the median of the mean monthly gage values (Table 1, column B) to determine physical availability at the start of depletion (Table 1, column E). Physically available monthly flows were then converted to monthly volumes (Table 1, column F).

Table 1: Physical Availability at the Top of Depletion on Yellowstone River

A	B	C	D	E	F
Month	**Median of the Mean Monthly Flow at Gage 06329500 (CFS)**	**Median of the Mean Monthly Volume at Gage 06329500 (AF)**	**Existing Rights from Surface Water Depletion to Gage 06329500 (CFS)**	**Physically Available Water at POD (CFS)**	**Physically Available Water at POD (AF)**
January	5,656.50	347,195.97	0	5,656.50	347,195.97
February	6,022.50	333,887.40	0	6,022.50	333,887.40
March	9,323.00	572,245.74	0	9,323.00	572,245.74
April	9,132.00	542,440.80	176.22	9,308.22	552,908.27

May	17,490.00	1,073,536.20	176.22	17,666.22	1,084,352.58
June	40,480.00	2,404,512.00	176.22	40,656.22	2,414,979.47
July	21,580.00	1,324,580.40	176.22	21,756.22	1,335,396.78
August	7,516.00	461,332.08	176.22	7,692.22	472,148.46
September	6,789.00	403,266.60	176.22	6,965.22	413,734.07
October	7,803.00	478,948.14	176.22	7,979.22	489,764.52
November	7,297.00	433,441.80	0	7,297.00	433,441.80
December	5,925.50	363,707.19	0	5,925.50	363,707.19

3.0 Area of Potential Impact Analysis of Depleted Surface Water

The Area of Potential Impact for this application is: The area of potential impact is approximately 11 miles downstream from the area of surface water depletion on the Yellowstone River to the Montana/North Dakota state border (Figure 1). The surface water depletion begins in Lot 4, SWSWSE, Section 17, Township 22N Range 59E, and the river crosses the Montana/North Dakota border in the E2, Section 8 and 17, T23N, R60E. A total of 19 surface water rights exist within this reach. A list of rights can be found in **Appendix A**.

Why this is an appropriate Area of Potential Impact: The Yellowstone River is a major surface water source compared to other streams in the area. It departs Montana 11 miles downstream of the area of surface water depletion then enters North Dakota. The Water Sciences Bureau determined that net depletion from the proposed pumping would accrue to the Yellowstone River via springs at outcrops of the Tongue River member of the Fort Union formation and seeps along the Yellowstone valley alluvium. The location of depletions would be the southern boundary of Section 17, T22N R59E. Because there are no significant tributaries between the surface water depletion and the state border in the E2, Section 8 and 17, T23N, R60E, and the Department only assesses Montana water rights for this analysis, the Department will designate the said reach as the area of potential impact. The Department will examine 19 active Montana water rights which could be affected by the proposed project.

Methodology: A list of senior surface water rights within the area of potential impact were compiled using the DNRC GIS web application Converge. Types of legal demands that could be included are all active claims, certificates, exempt notices, permits, perfected conservation district reservations, instream flows, tribal rights, and hydropower water rights.

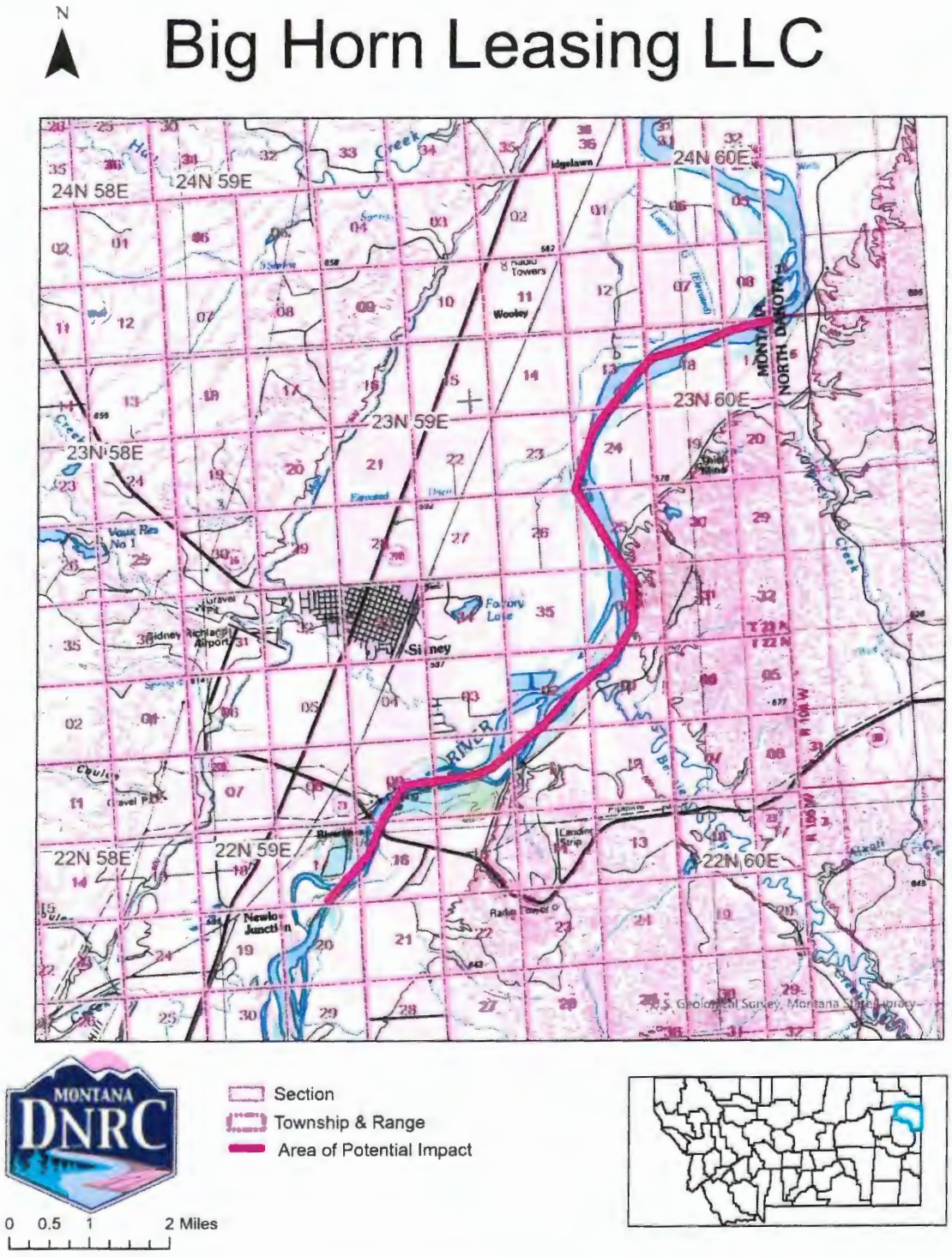


Figure 1: Map of the Area of Potential Impact

Review

This document has been reviewed by the Department on May 17, 2024.

References

ARM 36.12.02 Permit Application Criteria – Physical Surface Water Availability
Department Standard Practice for Determining Area of Potential Impact
Department Standard Practice for Determining Physical Availability of Surface Water
Technical Memorandum: Physical Availability of Surface Water with Gage Data

Appendix A: Water Rights within the Area of Potential Impact

Water Rights on Yellowstone River in the Area of Potential Impact		
A	**B**	**C**
Water Right #	**Period of Diversion**	**Township/Range/Sec**
42M 104422 00	04/01 to 10/15	22N59E2
42M 104509 00	04/01 to 10/01	23N59E25
42M 114728 00	04/01 to 11/01	23N59E25
42M 119268 00	04/01 to 10/31	22N59E11
42M 119269 00*	04/01 to 10/31	23N59E25
42M 119271 00	04/01 to 10/31	23N59E25
42M 119272 00**	04/01 to 10/31	23N59E25
42M 137597 00	01/01 to 12/31	23N60E8
42M 137600 00	01/01 to 12/31	23N59E36
42M 137604 00	01/01 to 12/31	23N59E13
42M 137605 00	01/01 to 12/31	23N60E18
42M 137617 00	01/01 to 12/31	23N59E36
42M 165230 00	01/01 to 12/31	22N59E9
42M 30017772	01/01 to 12/31	22N59E9
42M 30051296	04/01 to 10/15	22N59E2
42M 31493 00	01/01 to 12/31	22N59E9
42M 3656 00	05/01 to 09/01	22N59E9
42M 6815 00	05/01 to 09/15	23N60E18
42M 80579 00	04/01 to 11/01	23N59E24

42M 30163487 has submitted their 600P Preapplication form and. If issued, it could be in the area of potential impact by the time of legal analyses.

*42M 119268 is the parent right of 42M 119269. They share the same volume for irrigation use.

**42M 119271 is the parent right of 42M 119272. They share the same volume for stock use.

Form No. 600/606-WMA (01/2024) Applicant Name

APPLICATION FOR BENEFICIAL WATER USE PERMIT OR APPLICATION TO CHANGE A WATER RIGHT

WATER MARKETING PURPOSE ADDENDUM

§85-2-310(9)

Complete this addendum and attach the required information if the purpose of the permit application or change application will be to market or sell water. Responses that are larger than the space provided can be answered in an attachment. If an attachment is used, specify "see attachment" on this form. Label all attachments with the question number.

1. ☐ Y ■ N Will the marketed water be used outside the state of Montana? If yes, you will need to complete the requirements of Montana law (§ 85.2.311(4), MCA, for a permit and § 85-2-402(6), MCA, for a change application). If no, explain below how you will ensure water will not be transported out-of-state.

   Customer must agree that the Freshwater will only be used in the State of Montana. Signs will also be posted at the facility that state the freshwater is for use in the state of Montana only.

2. Explain how you will measure the amount of water diverted from the source.

   we will be utelizing a flowmeter to measure the amount of water produced.

3. Explain how you will measure the amount of water marketed.

   there will be a flow meter in place from the storage facility to the point of sale. All water sold will be metched to the customer

4. Submit firm contracts for the entire volume and flow rate sought. An applicant must demonstrate a good faith and bona fide intent to appropriate Montana's water through firm contracts to purchase the flow and volume sought. At the end of the period of completion, the applicant will have a perfected right to market only that amount of water which he or she actually contracted and sold on an annual basis during the period of completion. The firm contracts to purchase must include the following information:
   - ✓(A) The name of the entity who will use the water
   - ✓(B) The amount of water (acre-feet) each entity will use
   - ✓(C) Where the entity will use the water
   - ✓(D) The nature of relationship between the applicant and each entity using the water (The Applicant may not contract with itself to buy water)
   - ✓(E) Terms sufficient to demonstrate the bona fide intent to the water to use under § 85-2-310(9)(c)(v), MCA.

Attachment #2

Commercial Water Purchase Agreement

This Commercial Water Agreement (the "Agreement") is made and entered into by and between Big Horn Leasing LLC., located at P.O. Box 1049 Sidney, MT 59270 (hereinafter referred to as the "Seller") and EMEP Operating, LLC, located at 1200 Smith St., Suite 680, Houston, TX 77002 (hereinafter referred to as "Purchaser") as of the "Effective Date" as set forth herein.

Recitals

WHEREAS, Seller and Purchaser desire to enter into a formal legal agreement to sell and purchase water for commercial purposes, i.e., oil and natural gas development; and

WHEREAS, Purchaser has multiple oil and gas drilling sites located near Seller's water supply,

WHEREAS, Seller has agreed to supply water in the specific amounts below and will be utilizing the water purchased from the Purchaser solely for "beneficial use" in the oil and natural gas operations to be conducted solely within the State of Montana.

NOW, THEREFORE, IN CONSIDERATION of the mutual promises, conditions and agreements contained in this Agreement, the sufficiency of which is hereby acknowledged, the parties hereby mutually agree as follows:

1) **SELLER'S REPRESENTATIONS.** Seller holds (or will hold) the exclusive right to sell water from the NE/4NE/4 of Section 8, Township 22 North, Range 58 East as described in the Seller's pending application for the Beneficial Water Use Permit No. 42M 30163320 (Provisional or Pending) and hereinafter referred to as the "Permit." (See DNRC Application Number 42M 30163320)
2) **PURCHASER'S REPRESENTATIONS.** Purchaser will purchase up to 219 Acre Feet Acre feet of water per year from Seller as described by the Permit Application No. 42M 30163320 and that the water to be purchased shall be utilized solely for the Purchaser's beneficial use in oil and gas development operations conducted solely in the State of Montana.
3) **SPECIFIC USE/LOCATIONS[S] OF PURCHASER'S BENEFICIAL USAGE OF PURCHASED WATER.** The following specific locations (not including and additional locations that Purchaser deems to be economically feasible) are as follows and more specifically described in the "Permit" application:

   PLACE OF USE: See attached "Exhibit A"

4) **PRICING.** For and in consideration of the mutual covenants and conditions stated herein, Purchaser shall pay Seller the agreed upon price per barrel for each barrel of water purchased in accordance with the Agreement and the parties' hereto agree that the purchase price per barrel shall remain confidential.

5) **PAYMENT BY PURCHASER.** Purchaser shall, pursuant to Section 4 of this agreement, remit to Seller the agreed upon per barrel payment at the address identified below on or before the 30th day following the months that water is transported from the Seller's water source as described in the "Permit".

6) **WATER PURPOSE AND TRANSPORTATION.** Purchaser agrees to comply with MCA 85-2-310 (9). Furthermore, Purchaser agrees that the purpose for which the water is being purchased is for the end use in oil and gas development, specifically including but not limited to providing and transporting water to well sites located solely in the State of Montana and more specifically described in Section 3 of MCA 85-2-310.

7) **PURCHASERS BENEFICIAL USE SHALL BE SOLELY WITHIN THE STATE OF MONTANA.** Purchaser hereby agrees that the water purchased pursuant to the Agreement will not be transported out of the State of Montana and that by signing the Agreement Purchaser is on notice of the prohibition of transporting water out of the State of Montana and restrictions of in-state use pursuant to Seller's Permit No. 42M 30163320 . In the event Purchaser defaults under the requirements of this paragraph, Seller reserves the right to terminate this Agreement immediately without notice of default being required as provided for in Section 18 below.

8) **TERM OF AGREEMENT.** Purchaser and Seller hereby agree that this agreement shall remain in full force and effect for the period of ten (10) years in consecutive one-year agreements that will automatically go into effect upon the expiration of the preceding Agreement and may be extended by the mutual agreement of the parties' provided said extension is set forth in writing. Due to the inherent fluctuations of the Oil and Gas Industry this Agreement may be modified or terminated by either party with thirty (30) days' notice to the other party or as otherwise provided herein.

9) **NO AGENCY CREATED.** Nothing in the Agreement shall be construed to constitute either party of the agent of the other, and neither party shall have authority to bind the other to a third party in any manner whatsoever.

10) **EXPENSES.** Except as otherwise specifically provided, each party is responsible for its own fees, costs, and other expenses including fees for counsel, financial advisors, and accountants- incurred in negotiating and preparing this Agreement and in closing and carrying out the transactions contemplated under it.

11) **AMENDMENTS.** No provision of this Agreement may be amended or modified except by a written instrument executed by all parties to this Agreement.

12) **MULTIPLE ORIGINALS; VALIDITY OF COPIES.** This Agreement may be signed in any number of counter parts, each of with will be deemed an original. Any personals may rely on a copy of this Agreement that any party to this Agreement certifies to be a try copy to the same effect as if it were an original and an electronically transmitted executed copy shall be deemed an original.

13) **NO THIRD-PARTY BENEFICIARIES.** This agreement is for the sale benefit of its parties and their respective heirs, executors, administrators, successors, and assigns. Nothing in this agreement, expressed or implied, confers any legal or equitable right, benefit, or remedy of any nature whatsoever upon any other person or the creditors of any person.

14) **SUCCESSORS.** Except as otherwise provided in this Agreement, all provisions of this Agreement bind, inure to the benefit of, and are enforceable by and against the respective heirs, executors, administrators, personal representatives, successors, and permitted assigns of any of the parties to this Agreement subject to the provisions contained in Section 15 below.

15) **ASSIGNMENT.** The Parties hereto agree that this Agreement may not be transferred or assigned without the prior written consent of the other party.

16) **RELATIONSHIP/NOTHIRD-PARTY BENEFICIARIES.** This Agreement is for the sole benefit of its parties and their respective heirs, executors, administrators, successors, and assigns. Nothing in this Agreement, express or implied, confers any legal or equitable right, benefit, or remedy of any nature whatsoever upon any other person of the creditors of any person. Each party to this Agreement is an independent party and there are no other relationships other than that of the Purchaser and Seller.

17) **NOTICES.** All notices and other communications given or made under this Agreement must be in writing and will be considered duly given or made: On the date delivered, if delivered personally or if sent by facsimile and the facsimile is promptly confirmed by written confirmation sent by or registered or certified US mail (postage prepaid, return receipt requested);

Or

Three (3) days after being mailed, if mailed by registered or certified US mail (postage prepaid, return receipt requested) to the parties to this Agreement at the following addresses (or the address a party specifies by like notice, except that notices of changes of address shall be effective upon receipt).

If to Purchaser:

EMEP Operating, LLC

Attn: Kyle Dubiel, VP BD, Land and Legal

Address: 1200 Smith St., Suite 680

Houston, TX 77002

If to Seller:

Mr. Tim Partin, Owner Big
Horn Leasing LLC.
P.O. Box 1049
Sidney, MT 59270

18) **DEFAULT.** In the event that a party to this Agreement defaults on any provision of this Agreement, the non-defaulting party shall be required to provide written notice of the default to the defaulting party. The defaulting party shall have thirty (30) days to cure the default after receipt of written notice of default from the non-defaulting party. If any such default of which the defaulting party has received notice is not cured within thirty (30) days, the non-defaulting party has the right to collect damages for breach hereof or to recover past due amounts hereunder.

19) **ATTORNEYS' FEES.** If any party to this Agreement institutes any legal cause of action against another party arising out of or relating to this Agreement, the prevailing party will be entitled to

the cost incurred in conducting the cause of action, including reasonable attorneys' fees and expenses and court costs.

20) **MODIFICATION FOR LEGAL EVENTS.** If any court of competent jurisdiction determines that any provisions or any part of a provision set forth in this Agreement is unenforceable because of its duration or geographic scope, the court has the power to modify the unenforceable provision instead of severing it from this Agreement in its entirety. The modification may be by rewriting the offending provision, by deleting all or a portion of the offending provision, by adding additional language to this Agreement, or by making other modifications, as it determines necessary to carry out the parties' intent to maximum extent permitted by applicable law. The parties expressly agree that this agreement modified by the court is binding upon and enforceable against each of them.

21) **SEVERABILITY.** The invalidity or unenforceability of any provision of this Agreement does not affect the validity or enforceability of any other provision of this Agreement. If a court of competent jurisdiction determines that any provision is invalid, the remaining provisions of this agreement are to be construed as if the invalid provision had never been included in this Agreement. Subject to Section 20, upon a determination that any provision is invalid, illegal, or unenforceable, the parties to this Agreement shall negotiate in good faith to modify this Agreement to give effect to the original intent of the parties as closely as possible in a mutually acceptable manner so that the transactions contemplated by this agreement be consummated as originally contemplated to the greatest extent possible.

22) **FURTHER ASSURANCES.** In connection with this Agreement and the transactions contemplated by it, the Seller and Purchaser each agree to provide further assurances if requested by the other. These further assurances include signing and delivering any additional documents, instruments, conveyances, and other assurances or taking any further actions necessary to carry out the provisions of or transactions contemplated by this Agreement.

23) **INDEMNIFICATION.** For purposes of this Section, the following definitions shall apply: Purchaser means Purchaser, EMEP Operating, LLC, any subsidiary and affiliated companies, and its and their officers, members, managers, employees, contractors, subcontractors, and invitees. Seller means Seller Big Horn Leasing, LLC (entity) subsidiary and affiliated companies, and its and their officers, members, managers, employees, contractors, subcontractors, and invitees.

EMEP Operating, LLC / PURCHASER AGREES TO ASSUME FULL RESPONSIBILITY FOR AND RELEASE, PROTECT, DEFEND, INDEMNIFY AND HOLD HARMLESS BIG HORN LEASING, LLC/SELLER, FROM AND AGAINST ALL LOSSES, CLAIMS, DEMANDS, AND CAUSES OF ACTION OF EVERY KIND AND CHARACTER, RELATED TO PERSONAL OR BODILY INJURY, ILLNESS, OR DEATH OF ANY MEMBER OF THE PURCHASER GROUP OR DAMAGE TO OR LOSS OF PROPERTY OF ANY MEMBER OF THE PURCHASER GROUP, ARISING OUT OF, IN CONNECTION WITH OR INCIDENT TO THE RESULTING DIRECTLY OR INDIRECTLY FROM THIS AGREEMENT OR THE SERVICES PROVIDED HEREUNDER OR PURSUANT HERETO;

This section shall survive the termination or expiration of this Agreement.

24) **HEADINGS.** All Section headings are inserted for convenience only and are not intended to modify or interpret this Agreement.

25) **EFFECTIVE DATE/COMMENCEMENT DATE.** The "Effective Date" of this Agreement shall be the date of execution by both parties. The "Commencement Date" shall be deemed to be upon the date the date the Seller's Water Permit Application is approved by the State of Montana Department of Natural Resources and Conservation (DNRC).

26) **ENTIRE AGREEMENT; MODIFICATION.** This Agreement constitutes the sole and entire agreement of its parties with respect to the Agreement's subject matter. This Agreement supersedes all prior and contemporaneous understandings, agreements, representations, and warranties-both written and oral-with respect to the subject matter. As between or among the parties, no oral statements or prior written material not specifically incorporated herein shall be of any force and effect. The parties specifically acknowledge that, entering into and executing this Agreement, each is relying solely upon the representations and agreements contained in this Agreement and no others.

27) **LEGAL AUTHORITY.** The parties hereto warrant and represent that they have the full legal authority by their respective entities to legally execute this Agreement and that said execution is legally binding.

28) **JURISDICTION.** The parties hereto agree that this agreement shall be governed by the laws of the State of Montana and that venue shall lie exclusively in Richland County, Montana unless otherwise mutually agreed upon by the parties hereto.

IN WITNESS WHEREOF, the parties hereto duly executed this Agreement as of this 26th day of March 2024.

PURCHASER

EMEP Operating, LLC

By:

Kyle Dubiel – VP BD, Land and Legal

SELLER

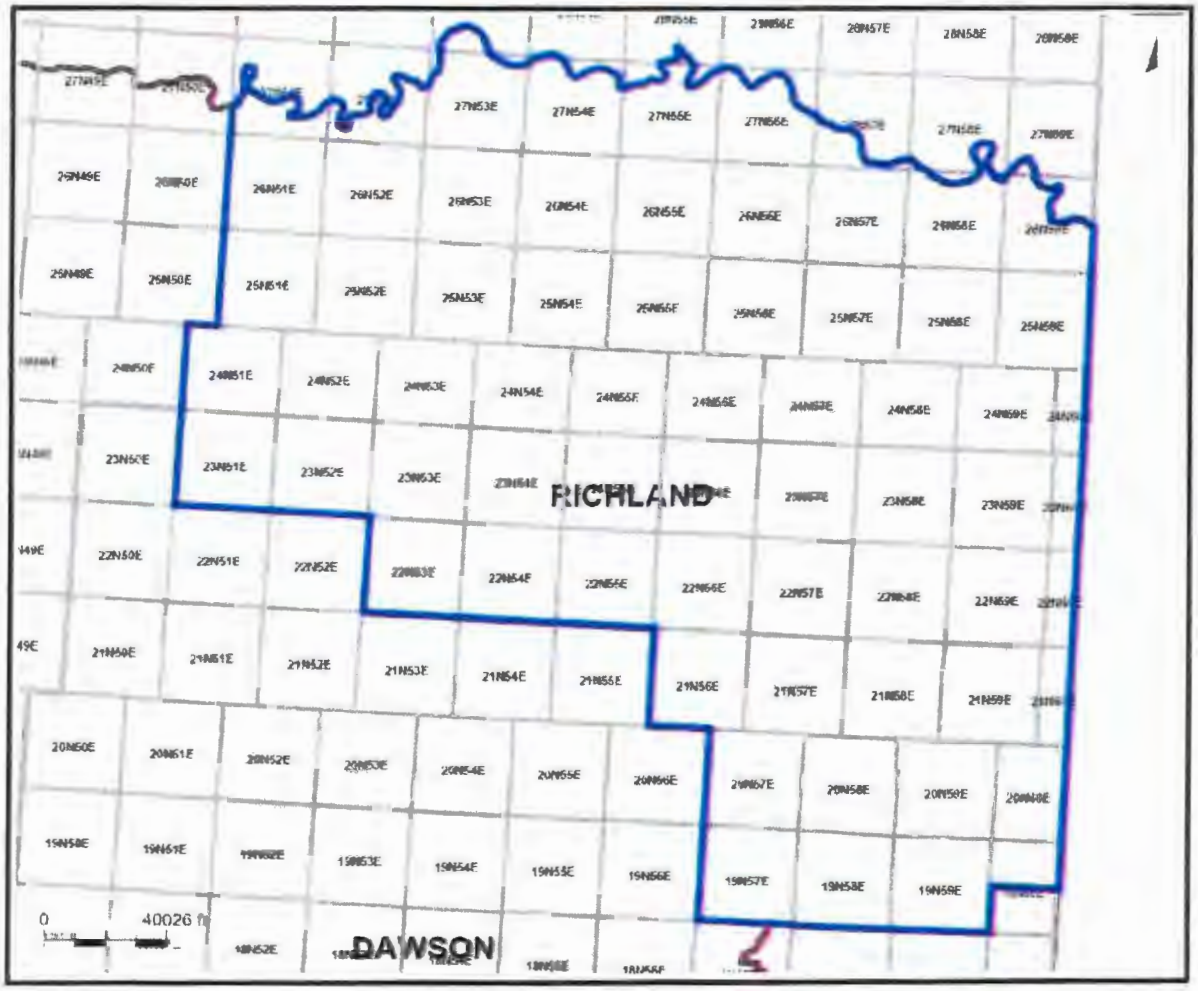
BIG HORN LEASING, LLC.
TIM PARTIN, OWNER

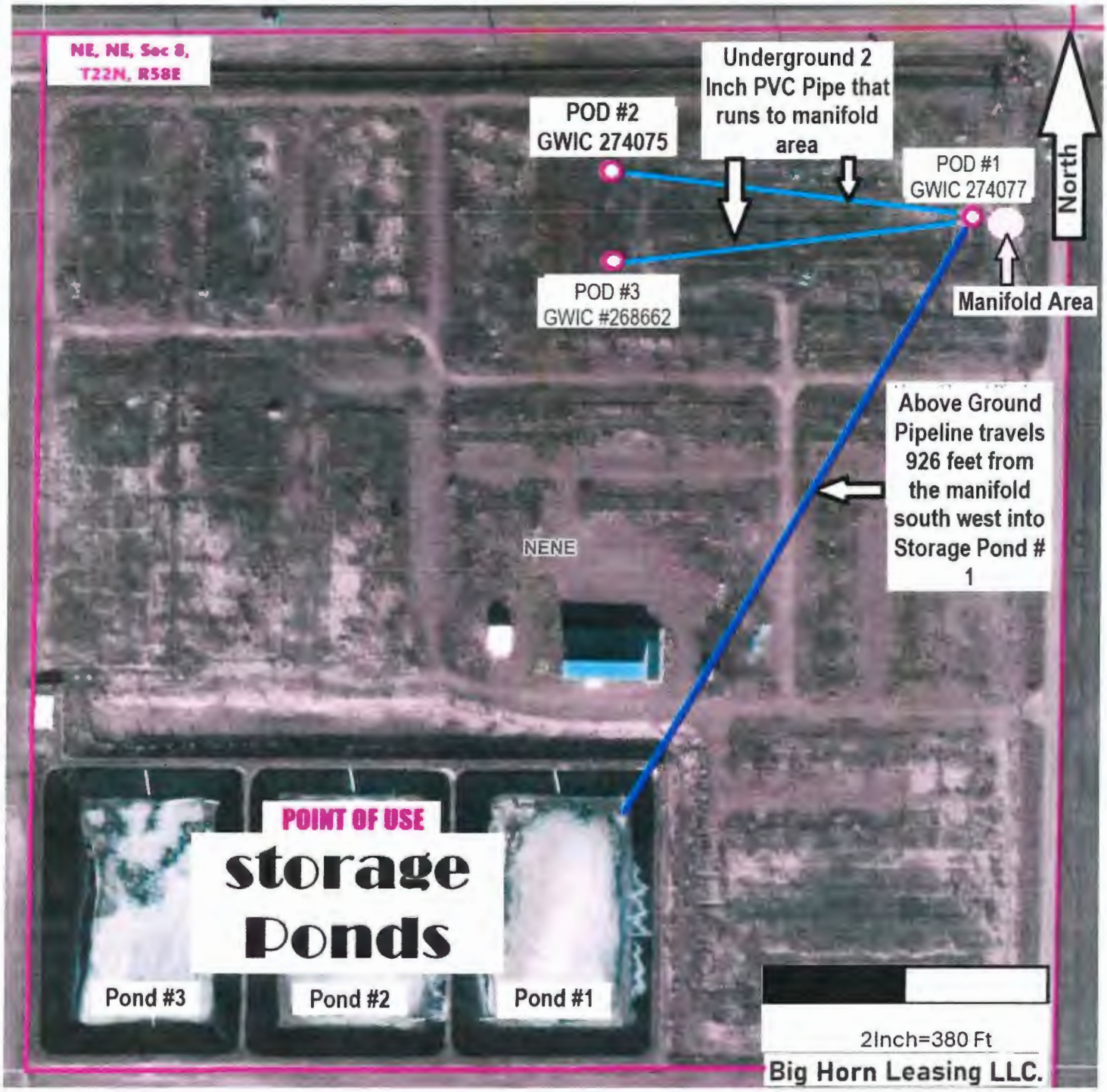
Exhibit A

Attached to that certain Commercial Water Purchase Agreement by and between Big Horn Leasing LLC (as Seller) and EMEP Operating, LLC (as Purchaser) dated the 26th day of March, 2024.

Specific Use/Locations

Being those certain Township and Ranges depicted below, located in Richland County, Montana:





Attachment #3

Addendum 1

Adequate means of diversion and operation

39)

Well #1 located in the NE, NE Sec 8, T22N, R58E is drilled to a depth of 160 feet with a cased diameter of 5 inches. This well was drilled on May 16th 2013 by Higgins Drilling Company, License #MWC-169. Higgins Drilling well report shows the static water level was 109 feet with a recover time of 0.07 hours after the drill stem test. Located inside the 5-inch diameter casing is an electric 3HP 2-inch pump set at 150 feet and pumps water through a 2-inch PVC pipe at a rate of 59 GPM. This 2-inch pump delivers water up the well bore to a point 7 feet below surface to a "Pitless Adapter" (See Exhibit 1). From there water exits the well bore via a 2-inch PVC pipe and travels 38 feet to the east where it then is brought to surface. At surface this 2-inch PVC pipe is connected to a 2-inch shut off valve and a 2-inch back flow prevention valve. From there water runs into a 6-inch distribution manifold. Well #1 is capable of producing 94.17 Acre-Feet of water per year.

Well #2 Located in the NE, NE, Sec 8, T22N, R58E is drilled to a depth of 160 feet with a cased diameter of 5 inches. This well was drilled on May 11th 2013 by Higgins Drilling Company, License #MWC-169. Higgins Drilling well report shows the static water level was 112 feet with a recover time of 0.08 hours after the drill stem test. Located inside the 5-inch diameter casing is an electric 3HP 2-inch pump set at 155 feet and pumps water through a 2-inch PVC pipe at a rate of 38 GPM. This 2-inch pump delivers water up the well bore to a point 7 feet below surface to a "Pitless Adapter" (See Exhibit 1). From there water exits the well bore via a 2-inch PVC pipe and travels 470 feet to the east where it then is brought to surface. At surface this 2-inch PVC pipe is connected to a 2-inch shut off valve and a 2 inch back flow prevention valve. From there water runs into a 6-inch distribution manifold.

Well #3 is located in the NE, NE, Sec 8, T22N, R58E is drilled to a depth of 160 feet with a cased diameter of 6 inches. This well was drilled on October 8th 2012 by Thermal Drill Inc., License #WWC-626. Thermal Drill Inc.'s well report shows the static water level was 110 feet with a recover time of 0.25 hours after the drill stem test. Located inside the 5-inch diameter casing is an electric 3HP 2-inch pump set at 150 feet and pump water through a 2-inch PVC pipe at a rate of 74.20 GPM. This 2-inch pump delivers water up the well bore to

Attachment #4

a point 7 feet below surface to a "Pitless Adapter" (See Exhibit 1). From there water exits the well bore via a 2-inch PVC pipe and travels 529 feet to the east where it then is brought to surface. At surface this 2-inch PVC pipe is connected to a 2-inch shut off valve and a 2-inch back flow prevention valve. From there water runs into a 6-inch distribution manifold.

Distribution Manifold All 3 wells travel 7 feet underground from their respective well bore to the distribution manifold. All 3 wells are connected to the 6-inch distribution manifold via a 2-inch schedule 80 PVC pipe. The manifold is constructed of 6-inch schedule 80 PVC pipe. The distribution manifold is then reduced from 6 inches down to 4 inch PVC Schedule 80 pipe and then fitted to a 4-inch flow meter. The flow meter used for our project is a McCrow Meter Flow Meter, Item #10233-10, Serial #13-06924 with an ID of 4.026 inches. From the flow meter water travels south a total distance of 926 feet into Storage Pit #1 (See Exhibit #2)

Distribution Pipeline From the distribution manifold the water travels 926 feet through a 4-inch lay flat pipeline. (See Exhibit 4) The water travels down the distribution manifold into storage pond #1 at a rate of 143 GPM. There is a total of 4 sections of lay flat pipe consisting of 300 feet each for a total of 1,200 ft of lay flat pipe. There is only 926 feet of lay flat pipe needed to reach the storage pond, however we plan to run the excess lay flat pipe down the bank of the storage pond towards the middle of the pond. There is a shut off valve also located at the end of the lay flat pipe that goes into pond #1.

47.2

Well #1: Drilled by Higgins Drilling. License # MWC-169

Well #2: Drilled by Higgins Drilling. License # MWC-169

Well #3: Drilled by Thermal Drill Inc. License # WWC-626

Exhibit 1-Pitless Adapter

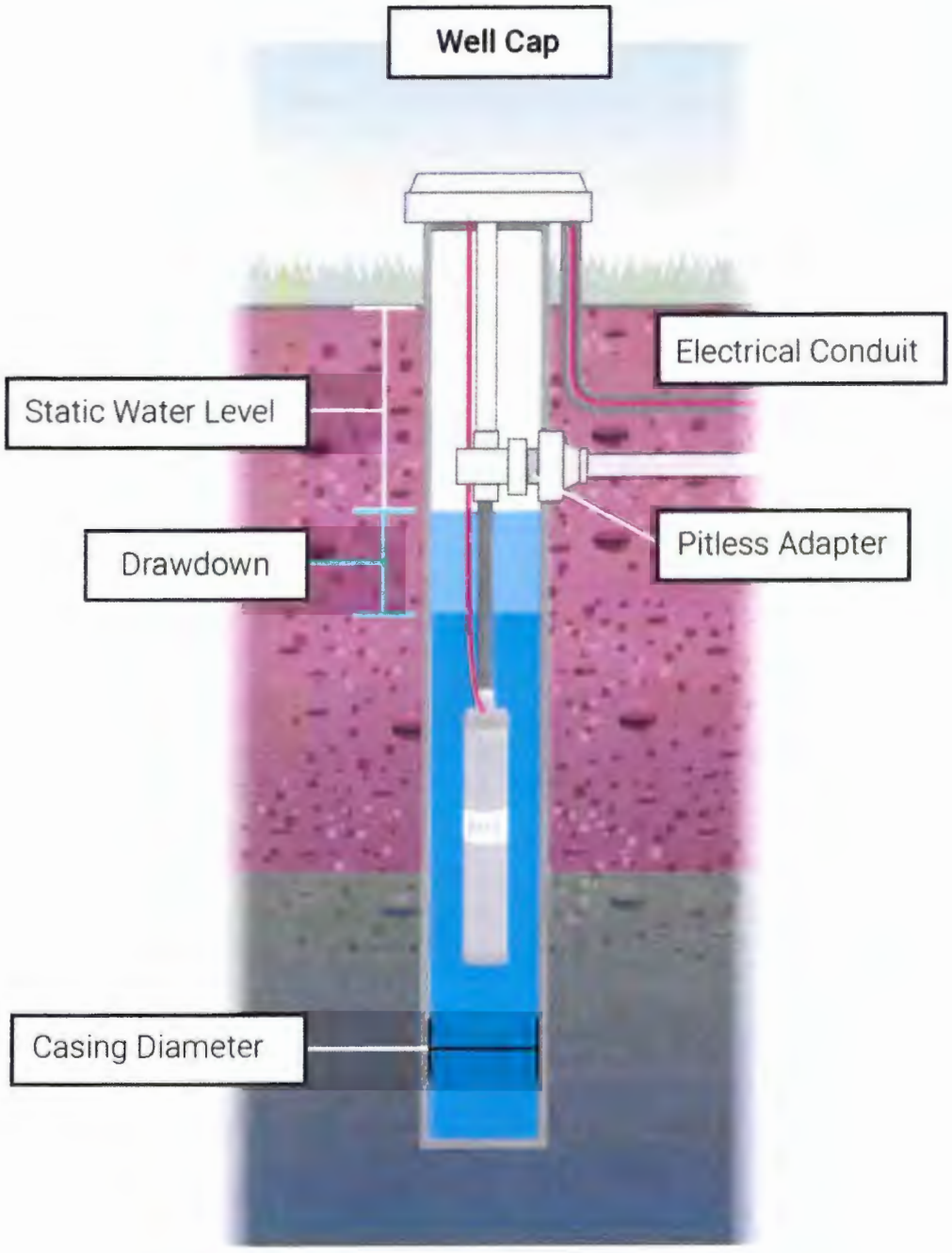


Exhibit 2-Storage Ponds & Facility

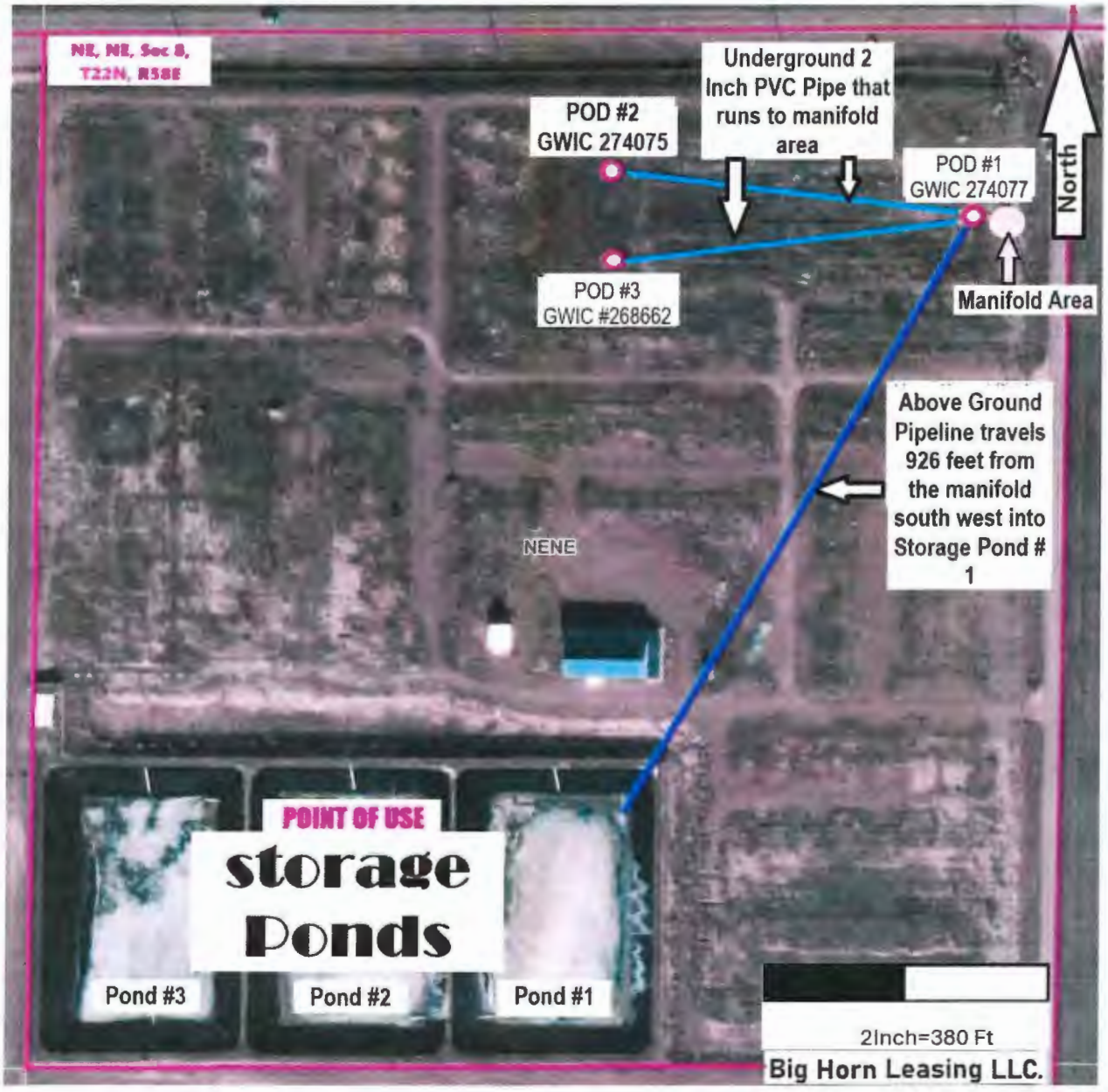


Exhibit 3

40

Well #1 is capable of producing 94.17 Acre Feet if produced from Jan 1st-Dec 31st.

Well #2 is capable of producing 61.29 Acre Feet if produced from Jan 1st-Dec 31st.

Well #3 is capable of producing 74.20 Acre Feet if produced from Jan 1st-Dec 31st.

All 3 wells combined are capable of producing 229 Acre Feet of water yearly.

Exhibit 4-Layflat pipe

DEPARTMENT OF NATURAL RESOURCES
AND CONSERVATION
Glasgow Water Resources Regional Office

GREG GIANFORTE, GOVERNOR

222 6TH ST SOUTH
PO BOX 1269

PHONE: (406) 228-2561

GLASGOW, MONTANA 59230-1269

May 17, 2024

Big Horn Leasing LLC
P.O. Box 385
Sidney, MT 59270

Subject: Completed Technical Analyses Report for Beneficial Water Use Permit Preapplication No. 42M 30163320.

Dear Applicant,

As designated on the submitted Preapplication Meeting Form per §85-2-302(3)(b), MCA, the Department of Natural Resources and Conservation (DNRC or Department) has completed the technical analyses for Beneficial Water Use Permit Preapplication No. 42M 30163320 based on the information provided in your Preapplication Meeting Form submitted to the Department on April 8, 2024. The technical analyses can be found in the attached report.

This Technical Analyses Report **IS**: A collection of facts that the DNRC has gathered, including content provided in the Preapplication Meeting Form materials. The Department will use these data to analyze the criteria in §85-2-311, MCA if you submit an application for the project described in the completed Preapplication Meeting Form.

This Technical Analyses Report **IS NOT**: An analysis or discussion of whether the Preapplication Meeting Form as filed meets the criteria (§85-2-311, MCA).

You have 180 days to submit the Beneficial Water Use Permit Application Form 600 considering the information provided in the technical analyses and Preapplication Meeting Form. If the Application Form is not submitted to the Glasgow Regional Office by November 13,2024, a new preapplication meeting will be required to process the Application with expedited timelines (ARM 36.12.1302(6)(b)). If any elements described in the submitted Application are changed from that of the submitted Preapplication Meeting Form, the discounted filing fee and expedited timelines will not apply (ARM 36.12.1302(6)(a)). Please note that the technical analyses will expire one year from the date of this letter (ARM 36.12.1302(8)).

Please let me know if you have any questions.

Best,

Ashley Kemmis
Water Resource Specialist
Glasgow Regional Office
Ashley.kemmis@mt.gov
(406) 808-7075

CC:

Cherise Partin via Email

Groundwater Permit Technical Analyses Report - Part A

Department of Natural Resources and Conservation (DNRC)
Water Resources Division
Jack Landers, Groundwater Hydrologist, Water Sciences Bureau (WSB)

Applicant No.	42M 30163320	**Point of Diversion Legal Land Description**	Section 08, Township 22 North, Range 58 East
Applicant	Big Horn Leasing LLC		

Overview

This report is Part A of a two-part publication which analyzes data submitted by the Applicant in support of the above-mentioned water right application. This report provides technical analyses as required under the Administrative Rules of Montana (ARM) 36.12.1303 in support of the water rights criteria assessment as required in §85-2-311, Montana Code Annotated (MCA). For applications in closed basins, this report fulfills the requirements of MCA 85-2-361.

This Groundwater Permit Technical Analyses Report – Part A contains the following sections:

1.0 Executive Summary

Application Details

The Applicant proposes to divert water year-round from three wells at a cumulative rate of 142.0 gallons per minute (gpm) and volume of 229.0 acre-feet (AF) for water marketing purposes. All three wells would be manifolded, and water would be pumped to three storage ponds year-round. Of the total requested volume of 229.0 AF, 10 AF would be lost to evaporation from the ponds and the remaining 219.0 AF would fulfill existing leases for oil and gas development in Richland County.

The proposed points of diversion and ponds were previously authorized under Permit 42M 30068052 for multiple domestic purposes. However, the project was not completed as proposed and the permit expired.

Approved Variances from ARM 36.12.121

A variance from the aquifer test requirements found in ARM 36.12.121(3)(a) was granted from the Glasgow Regional office. Pumping in the Production Well was not maintained at a constant discharge rate. The discharge rate fluctuated by more than 5% within the first five minutes of the test before stabilizing at an average rate of 37.8 gpm for the remainder of the 72-hour test. The discharge rate also fluctuated by more than 5% at the beginning of the two 24-hour tests (up to the first 13 minutes for the Well #3 test).

WSB Technical Findings

Based on information submitted, the WSB estimated aquifer properties, evaluated the production wells' available water column, quantified the water available in the source aquifer, and evaluated potential impacts to existing groundwater and surface water rights. These technical analyses are in support of the following criteria assessment: adequacy of diversion, physical availability, and adverse effect. A summary of WSB findings described in subsequent sections are listed below.

TECHNICAL ANALYSES FINDINGS

AQUIFER TEST ANALYSIS	An aquifer Transmissivity (T) of 1,706 ft^2/day and Storativity (S) of 3.5 x 10^{-5} generated from the Cooper-Jacob (1946) solution applied to the Observation Well #3 drawdown data was estimated using submitted aquifer test data.
ADEQUACY OF DIVERSION	The proposed Well #1, Well #2, and Well #3 using the Theis (1935) solution, a T = 1,706 ft^2/day, S = 3.5 x 10^{-5}, and the monthly pumping schedule identified in **Table 4** would experience 30.7, 54.3, and 40.5 feet (ft) of drawdown after the first year, leaving approximately 17.8, 0.3, and 18.1 ft of available water column above the bottom of the perforated interval, respectively.
PHYSICAL AVAILABILITY	The model predicted the 0.01-foot drawdown contour or zone of influence (ZOI) occurs 450,000 ft from the Applicant's well and was truncated to the Tongue River Member aquifer boundary north and northwest of the proposed wells. Groundwater flux through the ZOI is equal to 36,309

	AF/year. There are 1,367 active groundwater rights completed within the ZOI and source aquifer that need to be evaluated as a legal demand.
ADVERSE EFFECT (DRAWDOWN IN EXISTING WELLS)	After five years, assuming the well is pumped according to the schedule identified in **Table 4**, 243 groundwater rights in the source aquifer are predicted to experience drawdown equal to or greater than one foot (Appendix A).
ADVERSE EFFECT (NET DEPLETION TO SURFACE WATER)	The Yellowstone River (3.8 miles east of well) is identified as being hydraulically connected to the source aquifer. Monthly net depletions resulting from the proposed use of groundwater are identified in **Table 1** and the depleted reach in **Figure 14**.

Table 1: Total consumed volume and net depletion to surface water for the production well.

Month	Total Consumed Volume (AF)	Yellowstone River Net Depletion (AF)	Yellowstone River Net Depletion (gpm)
January	19.4	19.4	142.0
February	17.6	17.6	142.0
March	19.4	19.4	142.0
April	18.8	18.8	142.0
May	19.4	19.4	142.0
June	18.8	18.8	142.0
July	19.4	19.4	142.0
August	19.4	19.4	142.0
September	18.8	18.8	142.0
October	19.4	19.4	142.0
November	18.8	18.8	142.0
December	19.4	19.4	142.0
Total	229.0	229.0	

2.0 Hydrogeologic Setting

As identified in **Figure 1**, the proposed project is located approximately six miles southwest of Sidney, MT in the northeast quarter of Section 8, Township 22 North, Range 58 East. The proposed wells are completed in a 20-40 ft thick sandstone aquifer that is located between 100-140 ft below ground surface (bgs) locally. Well #1 (GWIC ID 274077) was completed at a depth of 160 ft bgs with a screened interval between 122 and 157 bgs and a static water level of 109 ft below top of casing (btc). Well #2 (GWIC ID 274075) total depth is 160 ft bgs with a screened interval between 130 and 155 ft bgs and a static water level of 112 ft btc. Well #3 (GWIC ID 268662) total depth is 160 ft bgs with a screened interval between 150 and 160 ft bgs and a static water level of 110 ft btc (**Table 2**). All three wells are screened in the sandstone aquifer.

During the late Cretaceous and early Paleocene Epochs, much of eastern Montana was covered by an inland sea. Mud and sand were deposited during periods of sea cover, later forming the Pierre and Fox Hill formations. As the inland sea receded, eastern flowing streams subsequently deposited mud and sand which later formed the overlying Hell Creek and Fort Union Formations (Smith et al., 2000). The Fort Union Formation is exposed at the land surface across much of eastern Montana and consists of sandstone, siltstone, mudstone, coal, and clinker (Smith et al., 2000).

The Fort Union Formation consists of two aquifers at a regional scale, described as a shallow and deep hydrologic unit (Smith et al., 2000, Crowley et al., 2017, LaFave, 2021). The shallow hydrologic unit of the Fort Union Formation occurs within 200 ft of the land surface and generally consists of unconfined and semi-confined aquifers. The deep hydrologic unit is located at depths greater than 200 ft below land surface and lies on top of a confining unit in the Hell Creek Formation and the Fox Hills Formation. The proposed wells are completed in the shallow hydrologic unit consisting of the Tongue River Member of the Fort Union Formation (Vuke et al., 2003).

In the lower Yellowstone Basin, the Fort Union Formation is the shallowest and most utilized bedrock source of groundwater (MBMG, 1978; Slagle, 1983). Well yields are as much as 160 gpm, but average around 20 gpm for stock and domestic wells (Stoner and Lewis, 1980). Stoner and Lewis (1980) described the Tongue River aquifer as having many thin, discontinuous, and alternating beds that may act as local boundaries, but on a regional scale they function as one continuous aquifer.

Near Sidney, the groundwater in the Tongue River Member aquifer flow towards the Yellowstone River (Slagle, 1983; Patton et al., 1998, Smith et al., 2000). Recharge to the Tongue River aquifer system is from infiltration of precipitation, losses from streams, and irrigation water lost by percolation through fields and leakage from ditches. Places where water discharges are springs at the outcrop of the Tongue River Member and seeps along the Yellowstone River valley bottom and the subcrops beneath Yellowstone River alluvium (Smith et al., 2000).

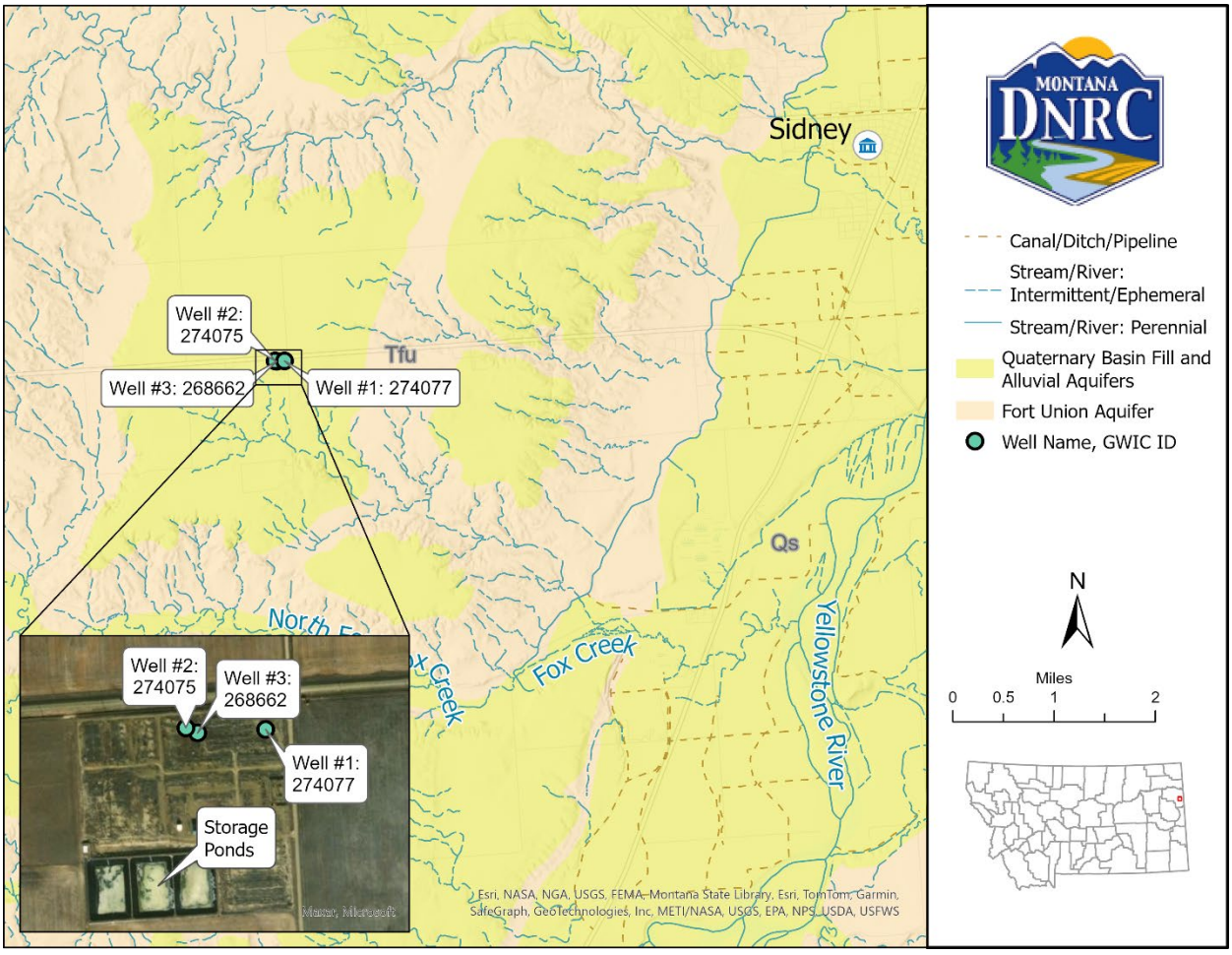


Figure 1: Map of the Applicant's aquifer test location.

3.0 Aquifer Test Summary

Field Methods and Equipment

A 72-hour aquifer test was conducted on the Production Well (Well #2, GWIC ID 274075) beginning on June 18, 2023. A 24-hour aquifer test was conducted on Well #1 and Well #3 beginning on August 12, 2023, and August 14, 2023, respectively.

Water levels during the 72-hr aquifer test were collected using In-Situ Level Troll Model 700 dataloggers in the Production Well and Observation Well #3 and a Solinst Levelogger Gold pressure transducer in Observation Well #1. Observation Well #1 and Observation Well #3 are 425 ft and 56 ft east of the Production Well, respectively. The discharge was measured with a SeaMetrics magnetic flow meter.

Background Data

Prior to the 72-hr aquifer test, background groundwater levels were monitored in the Production Well and Observation Well #3 for 91 hours starting on June 14, 2023, and ending on June 18, 2023. As identified in **Figure 2**, groundwater levels in the Production Well and Observation Well #3 declined during the beginning of the background monitoring period, apparently due to pumping

from the Production Well (DNRC, 2014). Water levels recovered in both wells after pumping ceased and exhibited a downward trend for the remainder of the background monitoring period. Groundwater levels at the end of the background monitoring period were within 2 ft of the static water levels at the beginning of the period for both wells and the slight downward trend did not affect analysis of the aquifer test data.

Background groundwater levels were monitored in Observation Well #1 for 24 hours beginning on June 17, 2023, and ending on June 18, 2023, and showed no apparent trend.

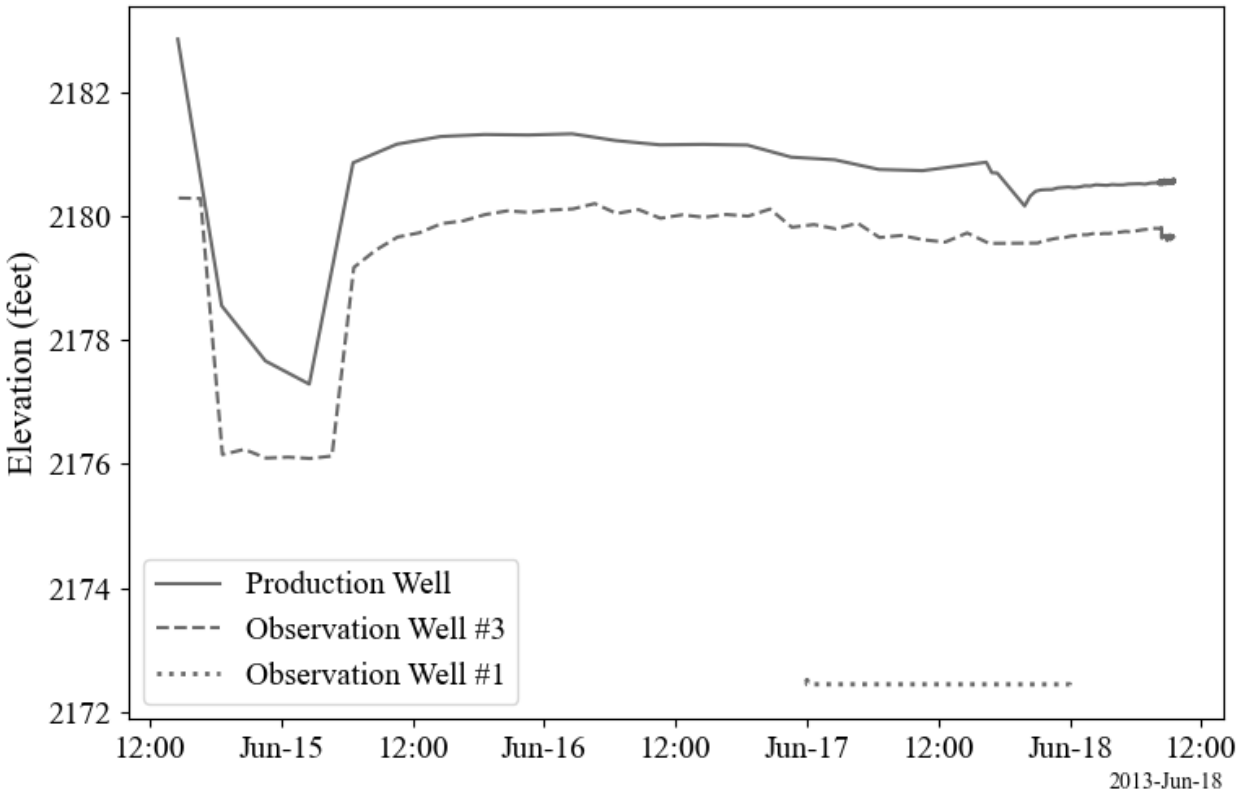


Figure 2: Background data for the Production Well (GWIC ID: 274075), Observation Well #3 (GWIC ID: 268662), and Observation Well #1 (GWIC ID: 274077) prior to the 72-hour aquifer test.

Drawdown Data

The 72-hour aquifer test started on June 18, 2013, at 9:28 AM on the Production Well and is considered (t = 0) for computation of drawdown. The test started with a discharge of 24 gpm and increased to 38 gpm two minutes after the test began. The discharge remained within 3% of the average flow rate of 37.8 gpm for the remainder of the test. As shown in **Figure 3**, the maximum drawdown in the Production Well was 27.87 ft below the static water level (swl) of 102.42 ft btc leaving 26.71 ft of available water column above the bottom of the perforated interval (based on the bottom of the screened interval at 155 ft bgs and well casing stickup of 2 ft).

Observation Well #3 experienced a maximum drawdown of 4.60 ft below the swl of 103.33 ft btc leaving 54.07 ft of available water column above the bottom of the well and perforated interval (based on the bottom of the screened interval at 160 ft bgs and well casing stickup of 2 ft).

Observation Well #1 experienced a maximum drawdown of 0.35 ft below the swl of 110.5 ft btc leaving 48.15 ft of available water column above the bottom of the perforated interval (based on the bottom of the screened interval at 157 ft bgs and well casing stickup of 2 ft).

Recovery Data

Groundwater levels were monitored during the recovery period for 72-hours in the Production and Observation Wells from June 21, 2013, through June 24, 2013. At the end of the recovery period the Production and Observation Wells were 0.11 ft and 0.49 ft from pre-test static water levels, respectively.

24-hr Drawdown and Yield Tests

A 24-hr drawdown and yield test was conducted on Well #1 on August 12, 2013, and on Well #3 on August 14, 2013. Groundwater levels during the two 24-hr tests were collected using In-Situ Level Troll Model 700 dataloggers in Well #1 and Well #3. No observation wells were monitored during the 24-hr tests. The average flow rate during the 24-test for Well #1 was 59.1 gpm and for Well #3 was 45.9 gpm. Well #1 experienced a maximum drawdown of 20.24 ft below the swl of 111.22 ft btc, leaving 27.54 ft of available water column above the perforated interval. Well #3 experienced a maximum drawdown of 22.43 ft below the swl of 103.07 ft btc, leaving 36.5 ft of available water column above the bottom of the well and perforated interval.

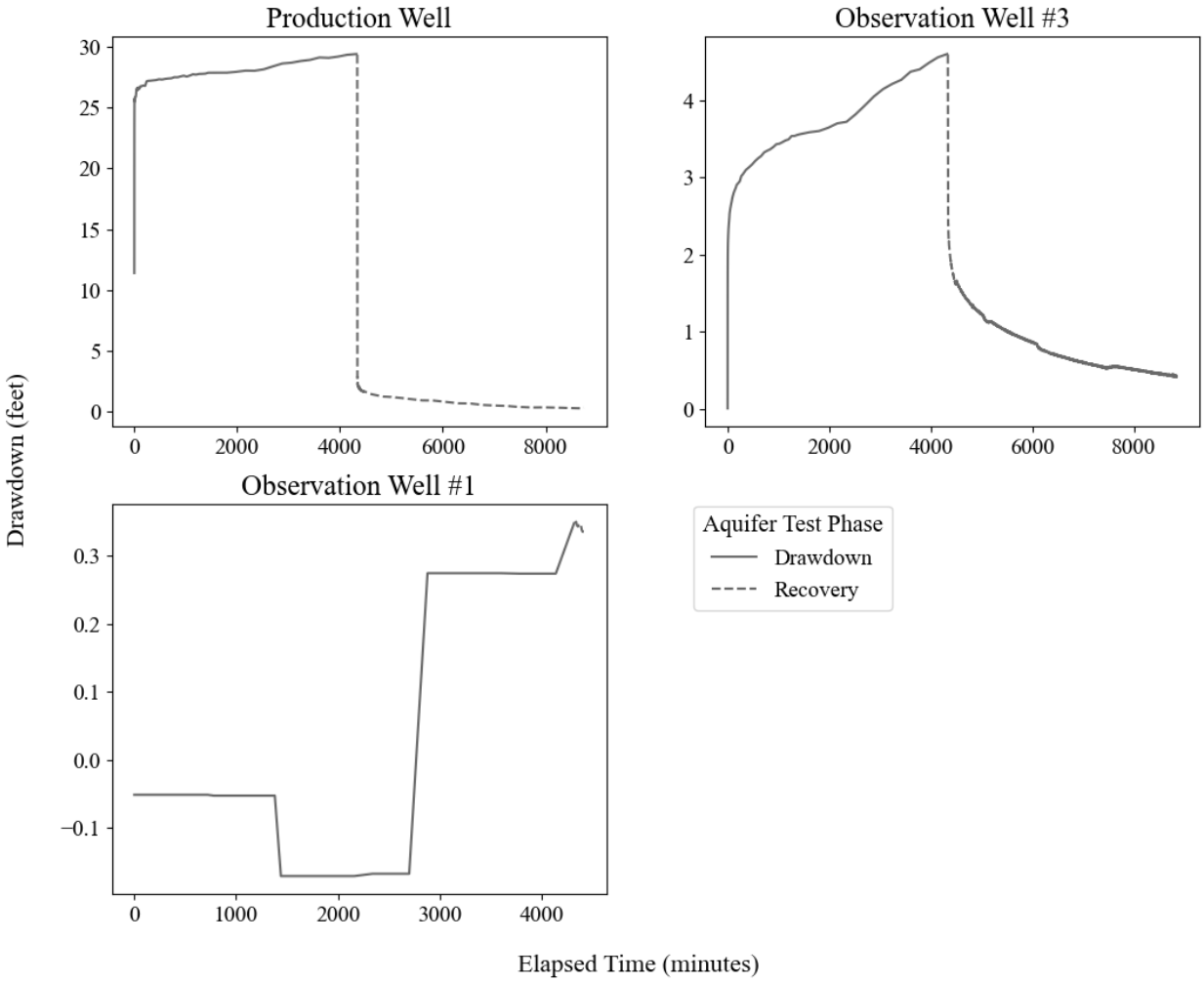


Figure 3: Drawdown and recovery data for the 72-hour aquifer test.

4.0 Aquifer Test Analysis

Methods

The DNRC utilized AQTESOLV® (HydroSOLVE, Inc., 2007) to analyze drawdown data from the aquifer test and obtain estimates of aquifer properties. Aquifer properties were used in forward modeling to evaluate the available water column in the well, quantity of water available in the source aquifer, and potential impacts to groundwater and surface water rights. AQTESOLV® is an analytical modeling software that uses image well theory and the principle of superposition to simulate aquifer stress tests. Drawdown data and measured flow rates from the aquifer test, and the spatial location of each well are input into the model. Using this compilation of data, aquifer properties including Transmissivity (T) and Storativity (S) are identified based on a best-fit visual and statistical match between the observed and theoretical drawdown data.

Analyses

Analytical groundwater solutions were matched to Observation Well drawdown data to generate estimates of aquifer properties for the source aquifer**.** As shown in **Figure 4**, the Cooper-Jacob

(1946) solution was fit to the Observation Well #3 drawdown data. Late-time data were ignored due to a change in rate of drawdown at the end of the test. At approximately 2,000 minutes after the test began, the rate of drawdown increased significantly until the test was finished. The change in rate of drawdown may be due to boundary conditions, such as thinning of the sandstone formation at the aquifer margin or secondary porosity of the confined bedrock aquifer material. Solutions that account for secondary porosity in bedrock aquifers were evaluated in Aqtesolv® (HydroSOLVE, Inc., 2007) but they did not adequately account for the increased rate in drawdown at the end of the test and produced a poor fit to the drawdown and residual data. The Cooper-Jacob (1946) straight line solution was fit to the drawdown data at late-time, 350 minutes after the test began and prior to the change in rate of drawdown, 2,000 minutes after the test began (**Figure 4**).

Observation Well #1 did not exhibit drawdown during the 72-hr aquifer test until 2,780 minutes after the test began and only experienced a maximum drawdown of 0.35 ft (**Figure 3**). Therefore, data collected from this well was not used to analyze aquifer properties.

The Cooper-Jacob (1946) solution was also fit to the Production Well drawdown data, as shown in **Figure 5**. The Production Well showed a similar drawdown response at late time as Observation Well #3.

Recovery data was analyzed for Observation Well #3, as shown in **Figure 6**. The Theis (1935) solution was fit to late-time data (t/t'=1) which is more representative of regional aquifer transmissivity (Willman et al., 2007). The ratio of S/S' is indicative of either an infinite non-leaky confined aquifer (S/S'=1), leaky-confined aquifer (S/S'>1) or no-flow boundary (S/S'<1) (Theis, 1935). The calculated S/S' of 0.97 supports the confined aquifer interpretation of the hydrogeologic setting.

Drawdown and recovery data was also analyzed for the two 24-hr tests. A radial flow plot for Well #1 exhibited a unit slope at early time, which is indicative of well bore storage. Therefore, the Papadopulos-Cooper (1967) solution was fit to the drawdown and recovery data as shown in **Figure 7**. The pumping rate during the 24-hr test for Well #3 fluctuated for the first 100 minutes of the test, therefore the Cooper-Jacob (1946) solution was fit to late-time data as shown in **Figure 8**. The variable flow rate and apparent lack of drawdown during the early part of the test resulted in a poor fit to the drawdown data and residuals.

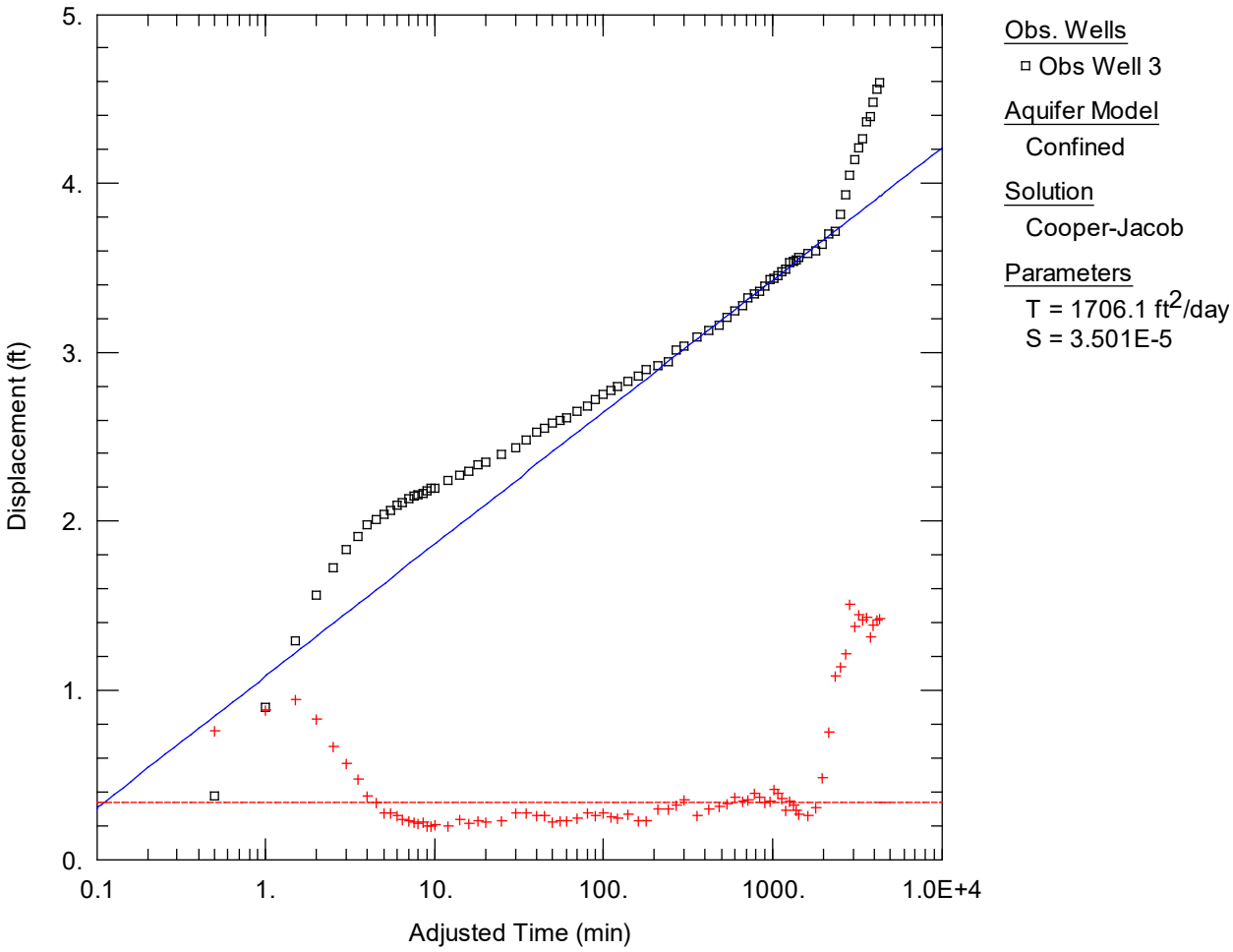


Figure 4: Cooper-Jacob (1946) drawdown and derivative analysis for the Observation Well (GWIC ID 268662).

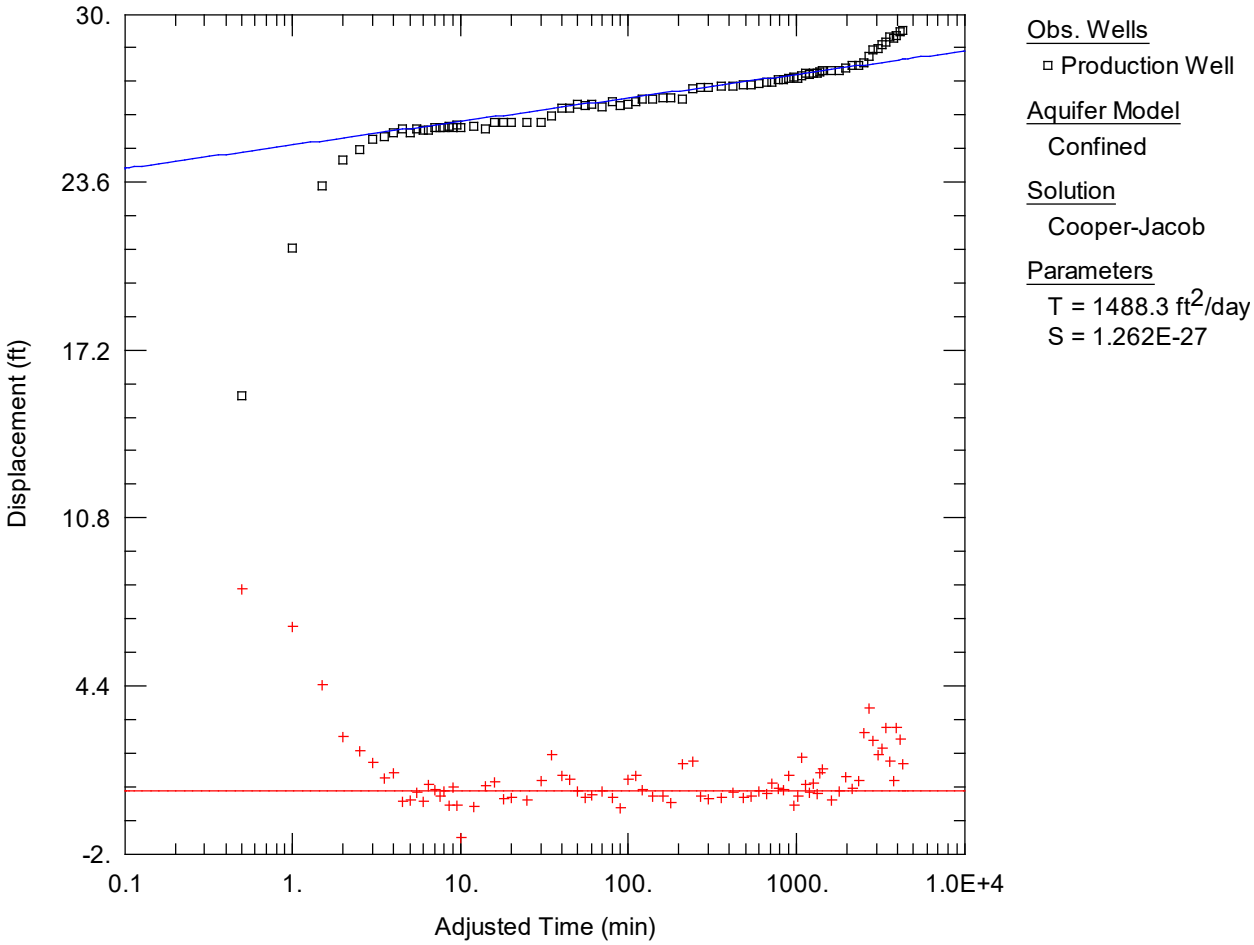


Figure 5: Cooper-Jacob (1946) drawdown and derivative analysis for the Production Well (GWIC ID 274075).

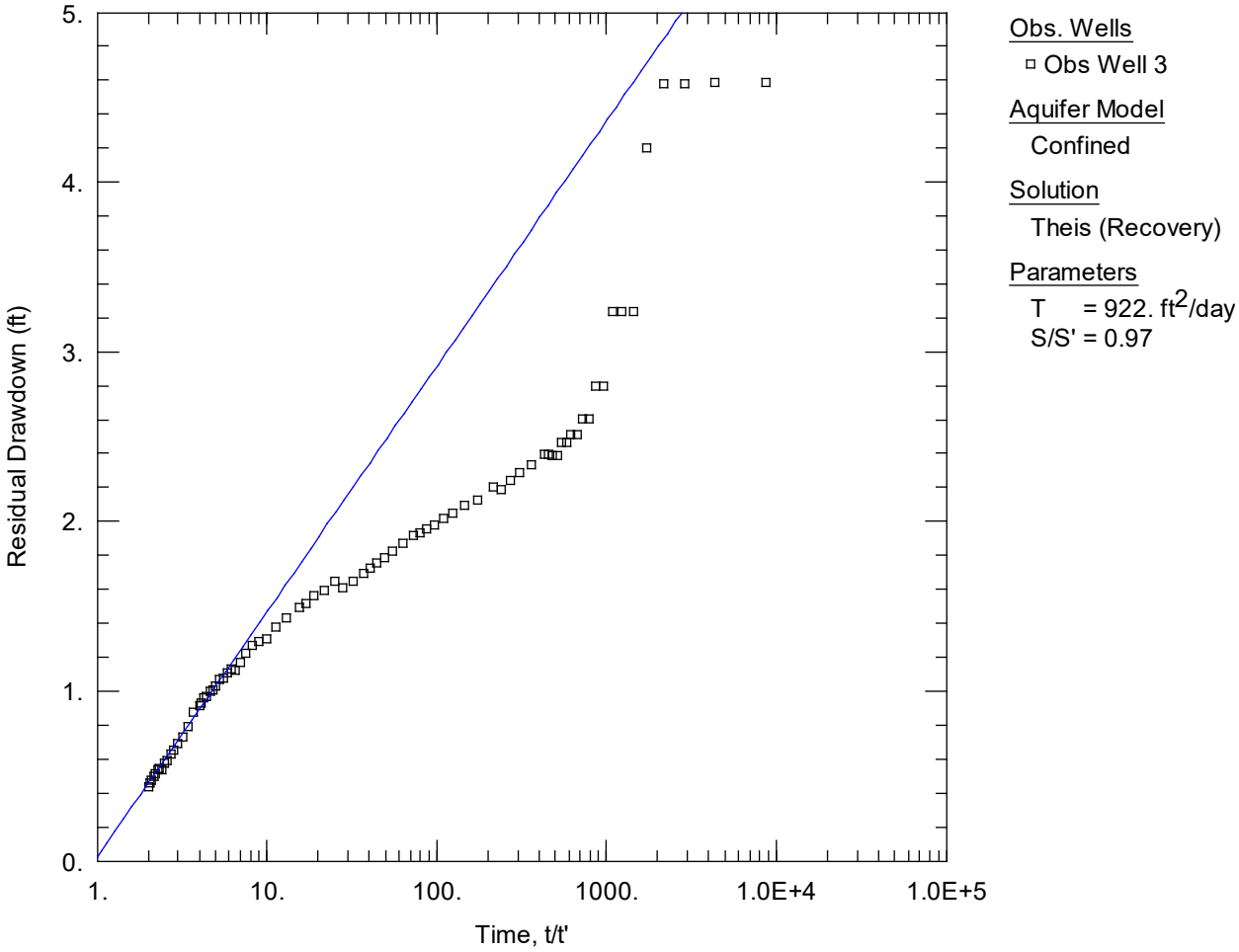


Figure 6: Theis (1935) residual drawdown and recovery analysis for Observation Well #3 (GWIC ID 268662).

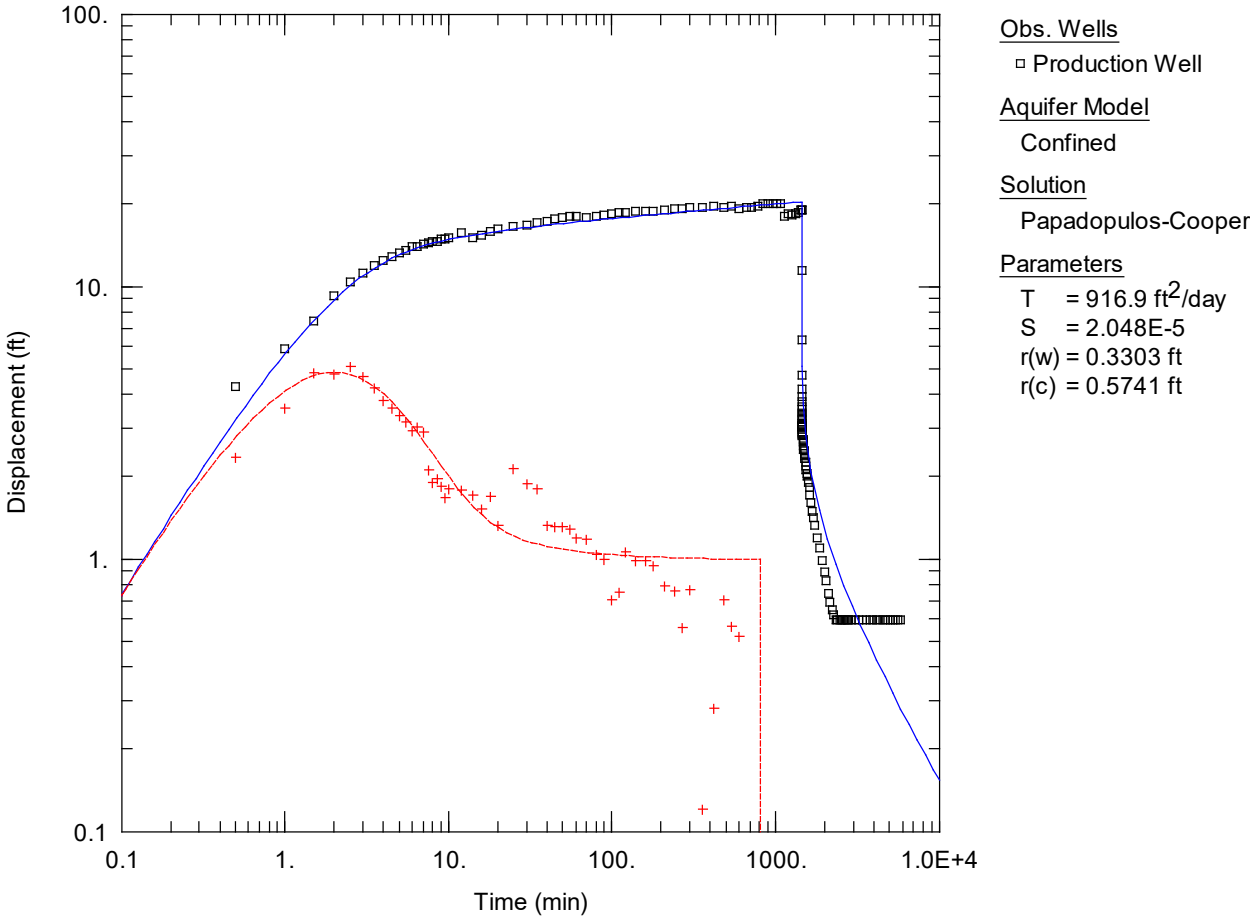


Figure 7: Papadopulos-Cooper (1967) drawdown and derivative analysis for Well #1 24-hr aquifer test.

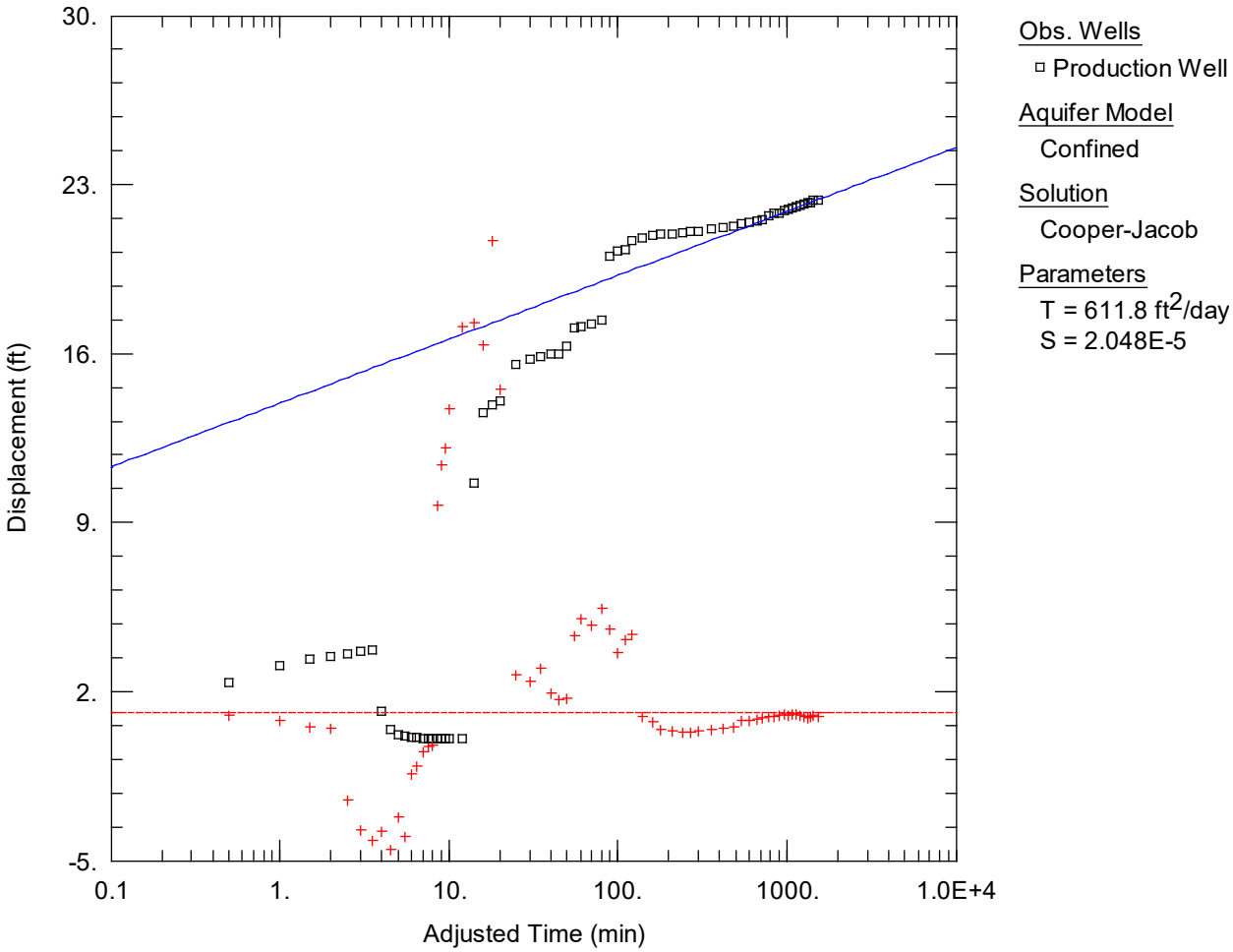


Figure 8: Cooper-Jacob (1946) drawdown and derivative analysis for Well #3 24-hr aquifer test.

Table 2: Aquifer test analyses for observation well.

Aquifer Test Phase	Test Length	Well (GWIC ID)	Analysis Solution	T (ft^2/day)	S
Production Well, Pumping	72	274075	Cooper-Jacob (1946)	1,488	N/A
Observation Well #3, Pumping	72	268662	Cooper-Jacob (1946)	1,706	$3.5x10^{-5}$
Observation Well #3, Recovery	72	268662	Theis (1935)	922	N/A
Well #1, Pumping	24	274077	Papadopulos-Cooper (1967)	917	N/A
Well #3, Pumping	24	268662	Cooper-Jacob (1946)	612	N/A

The recommended aquifer T and S value to be used in forward modeling is 1,706 ft^2/day and 3.5 x 10^{-5} from the Cooper-Jacob (1946) solution analysis of the Observation Well #3 from the 72-hr aquifer test. This solution was chosen because the longer 72-hr test is more likely to sufficiently stress the aquifer and generate accurate aquifer properties compared to the shorter 24-hr tests and use of the observation well data allows determination of a storage coefficient, as opposed to the Production Well drawdown data.

Aquifer Property Comparison

The results of aquifer tests conducted in the Fort Union Formation are shown in **Table 3**. Only one aquifer test conducted in the Tongue River Member was identified (row 1, **Table 3**). The other three aquifer tests presented in **Table 3** are from deeper hydrologic units of the Fort Union Formation, resulting in lower T values than the aquifer test analyzed for this application. The first row of **Table 3** shows the results of the previous analysis for expired Permit 42M 30068052 using the same aquifer data analyzed as part of this permit application. In the previous analysis, the Theis/Hantush (1935) solution was fit to the entire range of drawdown and recovery data, therefore resulting in a poor overall fit due to the significant increase in the rate of drawdown at late time.

Table 3: Nearby Aquifer Tests. Note: T = Transmissivity. NA = Not Available.

Water Right No.	GWIC ID	Well Depth (ft)	Distance from Applicant Well (miles)	Aquifer Test Length (hours)	Pumping Rate (gpm)	T (ft^2/day)	S
42M 30068052	274075	160	0	72	37.8	1,722	$1.5x10^{-5}$
42M 30070505	279977	375	12.5	72	362.7	580	$4.4x10^{-4}$
42M 30103504	283375	400	14.4	72	35.0	155	$2.5x10^{-3}$
42M 30152566	314524	480	7.6	48.5	150.0	107	$8.7x10^{-5}$

5.0 Adequacy of Diversion Analysis

An evaluation of the potentially available water column remaining in the production well is modeled using the Theis (1935) solution with a T = 1,706 ft^2/day and S = 3.5 x 10^{-5}. Predicted theoretical drawdown for the proposed well is modeled for the period of diversion using the monthly pumping schedule identified in **Table 4**. The Applicant requests 229.0 AF for water marketing, which was apportioned evenly year-round.

Table 4: Assumed monthly pumping schedule for the Production Well.

Month	Total Diverted Flow Rate (gpm)	Total Diverted Volume (AF)	Total Consumed Volume (AF)
January	142.0	19.4	19.4
February	142.0	17.6	17.6
March	142.0	19.4	19.4
April	142.0	18.8	18.8
May	142.0	19.4	19.4
June	142.0	18.8	18.8
July	142.0	19.4	19.4
August	142.0	19.4	19.4
September	142.0	18.8	18.8
October	142.0	19.4	19.4
November	142.0	18.8	18.8
December	142.0	19.4	19.4
Total		229.0	229.0

As identified in **Table 5,** total drawdown is the sum of interference drawdown and predicted drawdown with well loss. Well loss is calculated by dividing the predicted theoretical maximum drawdown by a well efficiency value. Well efficiency is calculated by dividing the modeled maximum drawdown for the aquifer test by the maximum observed drawdown of the aquifer test.

The mean aquifer test rate and maximum drawdown observed during the three aquifer tests conducted on each well were used to model the predicted drawdown and well efficiencies. The proposed wells would be pumped simultaneously, therefore the theoretical maximum drawdown for each well was modeled using a flow rate of 47.3 gpm. The aquifer adjacent to Well #1, Well #2, and Well #3 would experience a predicted total drawdown of 30.7, 54.3, and 40.5 ft respectively at the end of the first year. The remaining available water column for Well #1, Well #2, and Well #3 is 17.8, 0.3, and 18.1 ft and is equal to the available drawdown above the bottom of the well minus total drawdown and accounting for 2-ft of well casing stickup above ground surface.

Table 5: Remaining available water column for the proposed wells.

Drawdown Estimate	Well #1	Well #2	Well #3
Total Depth at Bottom of Perforated Interval (ft btc)[1]	159.0	157.0	162.0
Pre-Test Static Water Level (ft btc)	110.5	102.4	103.3
Available Drawdown Above Bottom of Well (ft)	48.5	54.6	58.7
Observed Drawdown of Aquifer Test (ft)	20.2	27.9	22.4
Modeled Drawdown Using Mean Aquifer Test Rate (ft)	10.6	6.8	8.2
Well Efficiency (%)	52%	24%	37%
Predicted Theoretical Maximum Drawdown (ft)	10.1	10.1	10.1
Predicted Drawdown with Well Loss (ft)	19.3	41.4	27.6
Interference Drawdown (ft)	11.4	12.9	12.9
Total Drawdown (ft)	30.7	54.3	40.5
Remaining Available Water Column (ft)	17.8	0.3	18.1

[1]Well casing stickup of 2 ft added to total depth bgs to calculate total depth btc.

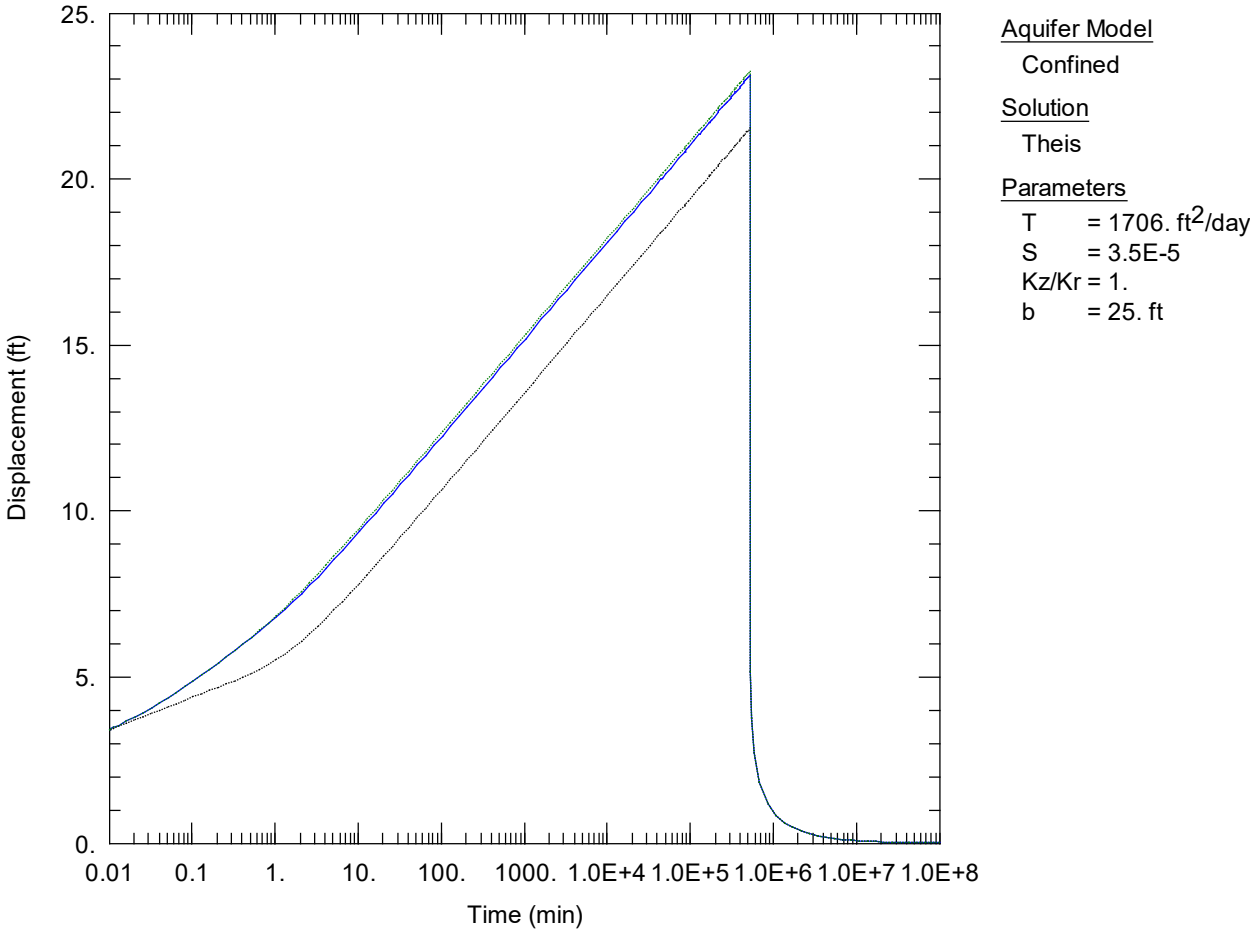


Figure 9: Theis (1935) distance-drawdown plot at the end of the first year of the assumed monthly pumping schedule. The overlapping solid blue and dashed line is Well #2 and Well #3 (56 ft away from Well #2) respectively. The dashed grey line is Well #1 (425 ft away from Well #2).

6.0 Physical Availability Analysis

An evaluation of groundwater availability in the source aquifer for the purpose of evaluating physical and legal availability was done by calculating groundwater flux through a zone of influence (ZOI) corresponding to the 0.01-foot drawdown contour (DNRC, 2019). The three proposed wells were modeled as one well at the center of the proposed points of diversion due to their close proximity to each other. A distance-drawdown plot was generated using the Theis (1935) confined solution, a constant pumping rate of 142 gpm for the period of diversion, a T = 1,706 ft^2/day, and S = 3.5 x 10^{-5}. The Yellowstone River was included as a constant head boundary at a distance of 30,000 ft from the pumping well.

According to **Figure 10** the 0.01-foot drawdown contour occurs 450,000 ft from the Applicant's well. The 0.01-ft drawdown contour extends farther to the northeast and southwest due to the effects of the Yellowstone River constant head boundary. According to the geologic map of the Fort Union Formation by Stoner and Lewis, 1980, the 0.01-ft drawdown contour extends past the Tongue River Member aquifer boundaries to the north and northwest. Therefore, the contour was truncated to the Missouri River alluvium to the north and the mapped extent of the Tongue River Member aquifer to the northwest (**Figure 11)**.

The regional depth of the Tongue River Member is 200 ft below ground surface (Crowley et al., 2017). Therefore, groundwater rights with well depths less than or equal to 200 ft and located within the ZOI were identified for legal demand in the source aquifer.

Appendix A is a list of the 1,367 groundwater rights that need to be evaluated as a legal demand. Groundwater flow direction is predominantly from west to east (Slagle, 1983; Patton et al., 1998, Smith et al., 2000), therefore the width of the ZOI that is perpendicular to groundwater flow is 508,000 ft. The calculation for groundwater flux (Q) through the delineated area is given by Eq. 1 and is 4,333,240 ft^3/day or 36,309 AF/year:

$$\mathbf{Q = TWi}$$

where:

T = Transmissivity = 1,706 ft^2/day
W = Width of Zone of Influence = 508,000 ft
i = Groundwater Gradient (from Slagle, 1983, and Patton et al., 1998 water level contour map) = 0.005 ft/ft.

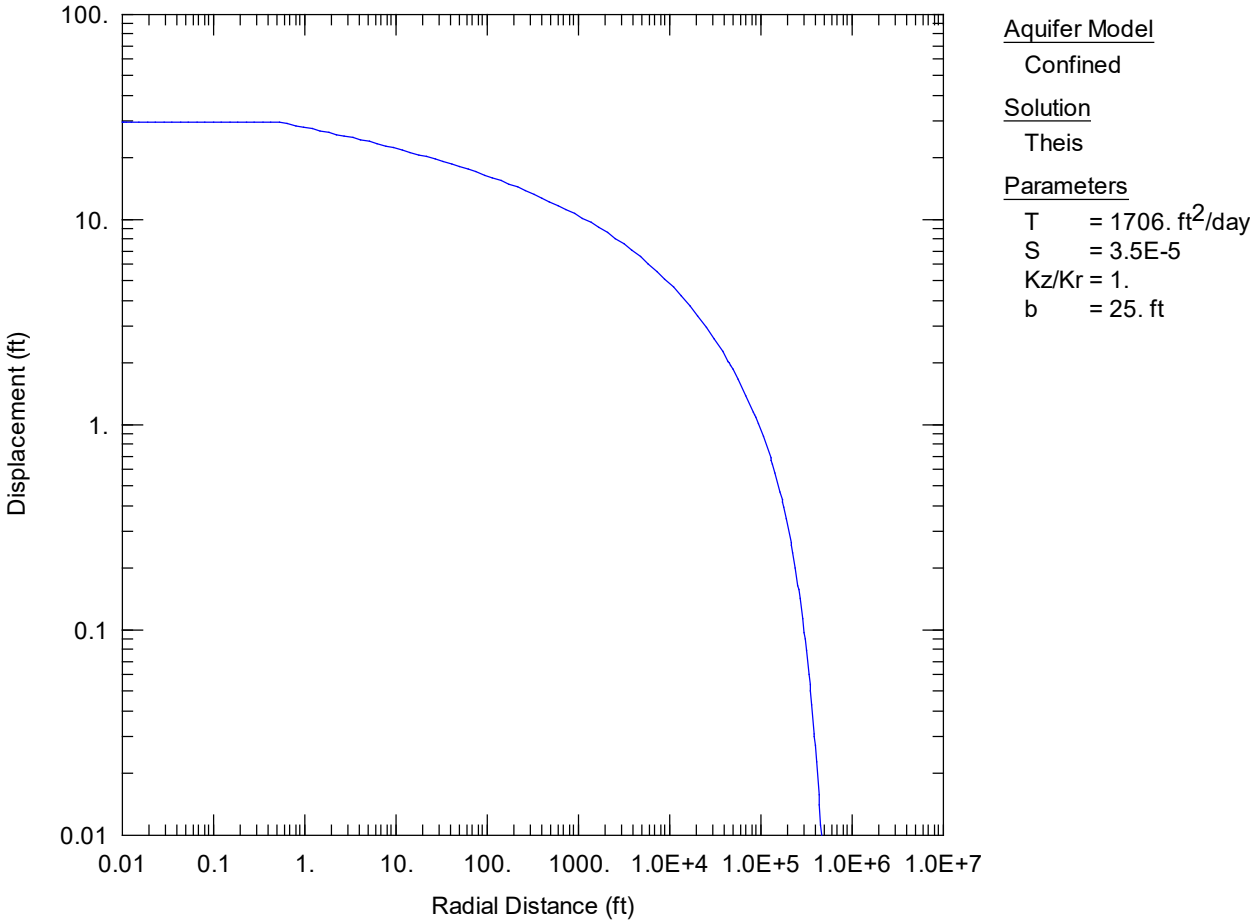


Figure 10: Theis (1935) distance-drawdown plot for one year of pumping the proposed wells at 142.0 gpm.

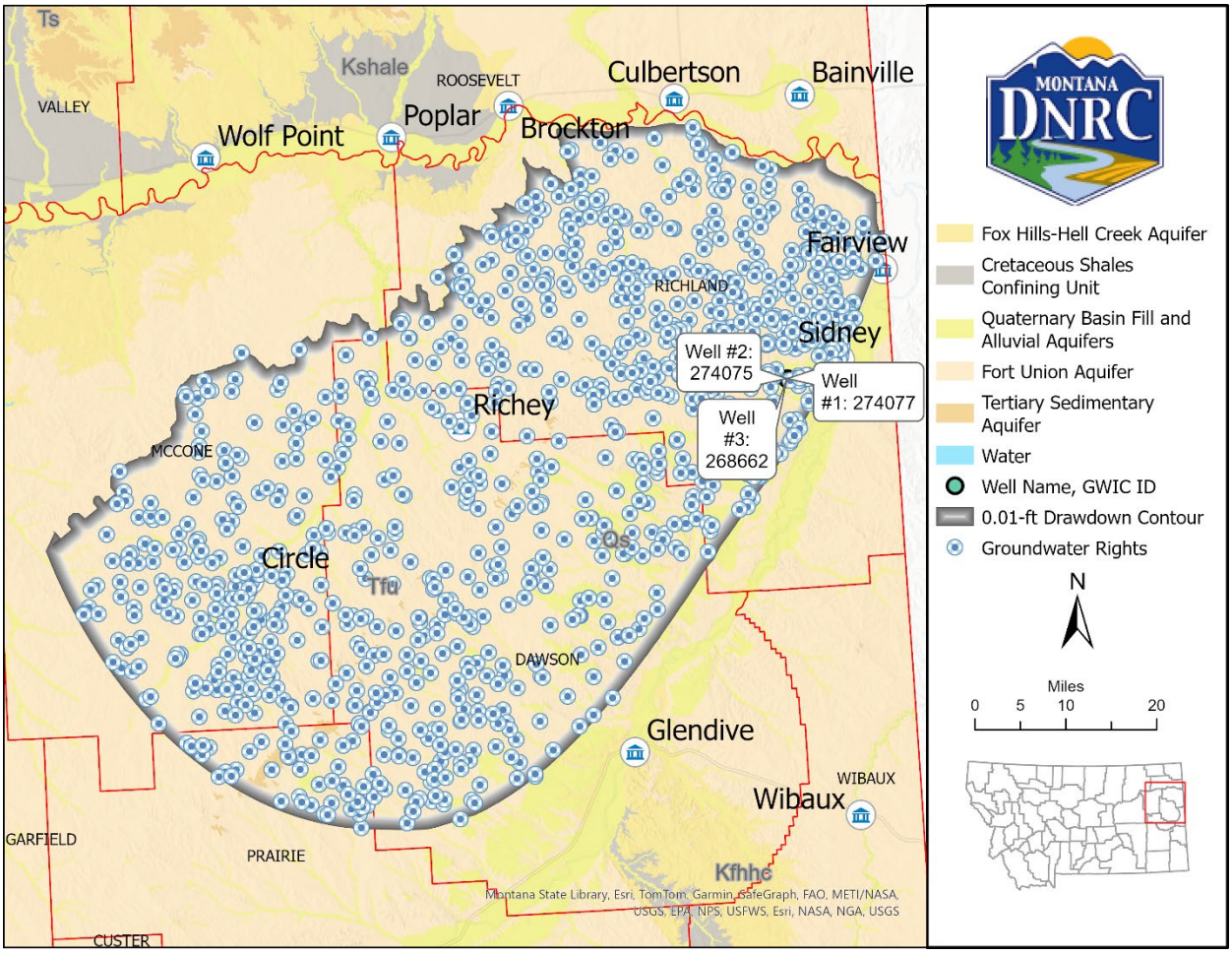


Figure 11: Groundwater rights within the 0.01-foot drawdown contour to analyze for legal demand within the source aquifer. The ZOI was truncated to the mapped extent of the Tongue River Member to the northwest (Stoner and Lewis, 1980) and the Missouri River alluvium to the north.

7.0 Adverse Effect Analysis

Using the Applicant's proposed pump schedule and associated annual volume, potential impacts to existing water rights is evaluated by modeling drawdown in nearby wells and net depletions to surface water(s).

7.1 Groundwater - Drawdown in Existing Wells

The drawdown in existing wells was modeled for proposed conditions using the following inputs: Theis (1935) solution, a T value equal to 1,706 ft^2/day, S value of 3.5 x 10^{-5}, the monthly pumping schedule identified in **Table 4** for a period of five years, and a constant head boundary at the Yellowstone River 30,000 ft from the proposed wells. The drawdown is the largest at the end of the fifth year using the proposed pumping schedule. The 1-foot drawdown contour would occur 100,000 ft from the Applicant's wells (**Figure 13**). Appendix B lists 243 groundwater rights that would experience drawdown greater than or equal to 1-ft from the proposed use.

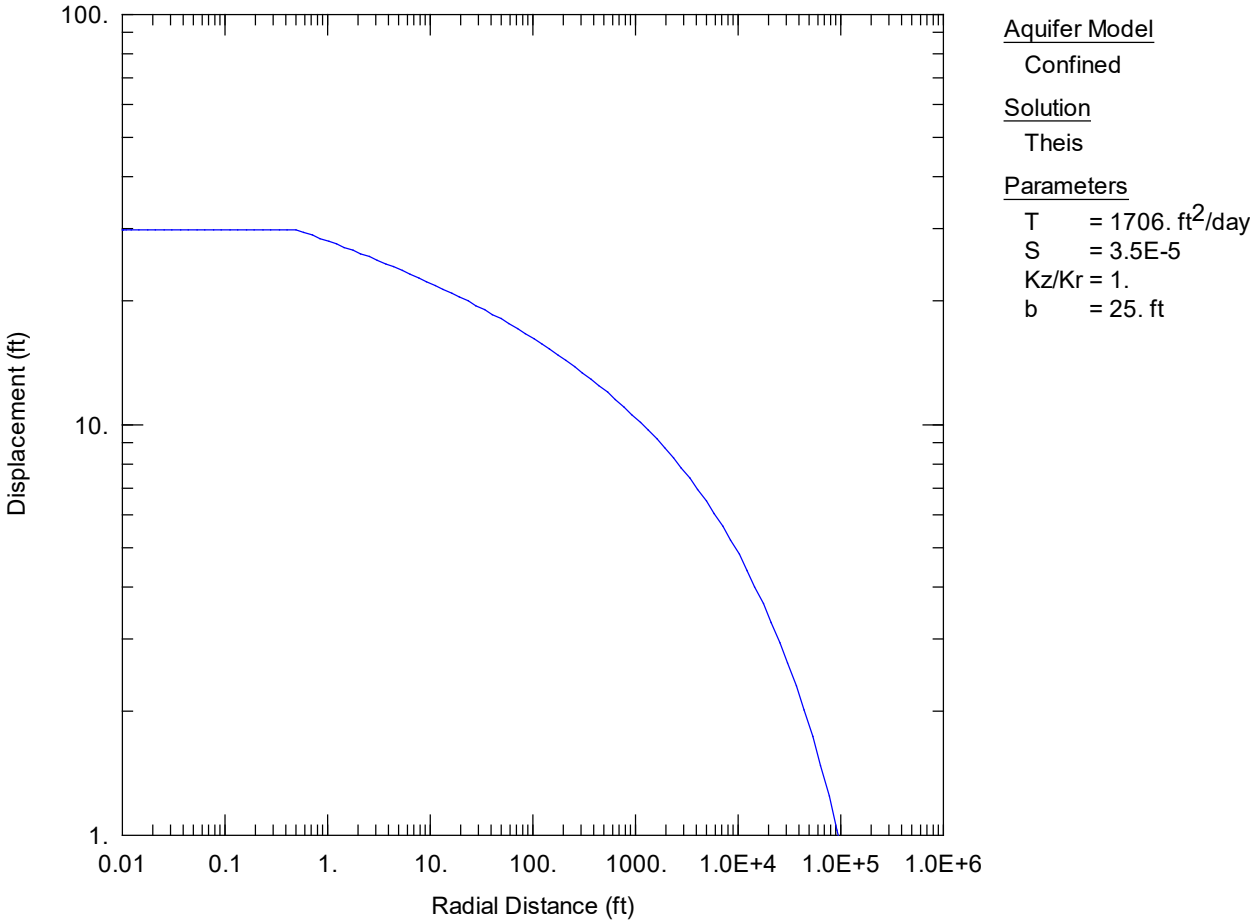


Figure 12: Theis (1935) distance-drawdown plot at the end of the fifth year of the assumed monthly pumping schedule.

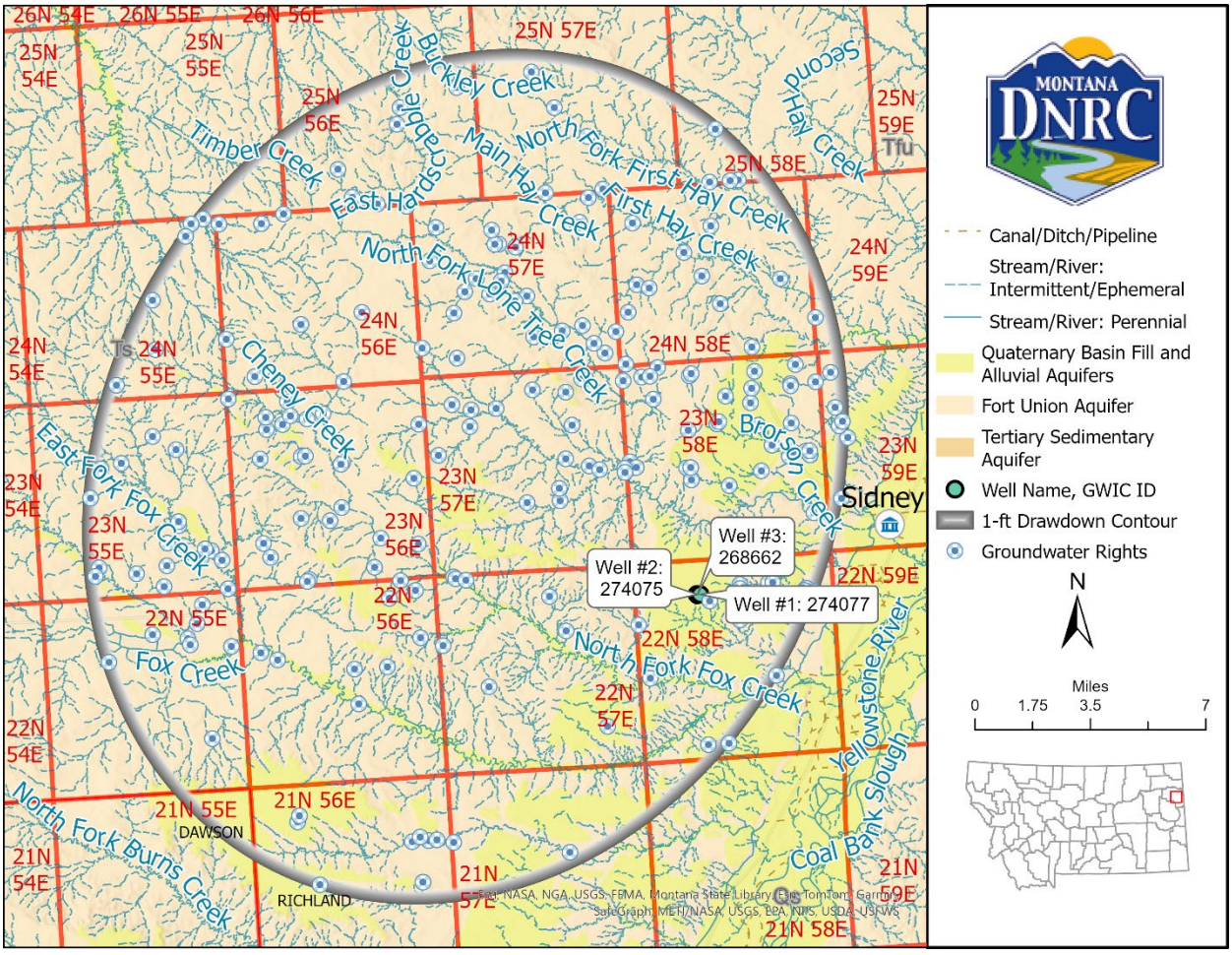


Figure 13: 1-foot drawdown contour and groundwater rights that would experience drawdown greater than or equal to one foot from the proposed use.

7.2 Surface Water - Net Depletion

Net depletion is equal to the consumed volume for a proposed groundwater use and is described as the calculated volume, rate, timing, and location of reductions to surface water that are offset by return flows (non-consumed water). Net depletion is evaluated by 1.) quantifying the consumed volume associated with the proposed use; 2.) identifying hydraulically connected surface waters; and 3.) calculating the monthly rate and timing of net depletions to affected surface water(s).

1. Consumed Volume

Consumed groundwater does not return to the source aquifer. Consumed volume depends on the proposed use and its associated percentage of known consumption. Depletion is assumed to be equivalent to consumption on an annual basis unless return flows do not accrete to the potentially affected surface water.

For the subject application, the proposed use is water marketing and is considered 100% consumptive. A total volume of 229.0 AF would be diverted and consumed at a constant year-round rate with the monthly breakdown shown in **Table 4.**

2. Hydraulically Connected Surface Water(s)

Net depletions to surface water depend on propagation of drawdown to locations where surface water is hydraulically connected to groundwater, the hydraulic properties of an aquifer, and is not a function of groundwater flow rate or direction (Theis, 1938; Leake, 2011). Hydraulic connection depends on the depth to groundwater beneath the beds of surface waters and can vary along a reach and with time of year. Drawdown from pumping can propagate through the entire thickness of the confining layer to overlying aquifers or surface waters (Konikow and Neuzil, 2007).

Hydraulic connection of individual stream reaches to groundwater is evaluated by comparing streambed elevations to static groundwater elevations measured in wells less than 50 ft deep and within 1,000 ft of surface water or from published water table maps (DNRC, 2018). Surface water within that area is considered hydraulically connected to the unconfined aquifer if static ground water elevations are above or within 10 ft of the elevation of the stream bed.

The source aquifer is a 20-40 ft thick sandstone unit of the Tongue River Member of the Fort Union Formation and is interpreted to be confined. Surface water bodies that are located in the vicinity of the proposed project include North Fork Fox Creek, Fox Creek, Lone Tree Creek, and the Yellowstone River. Several shallow wells (GWIC IDs: 35686, 35687, 35689, and 700577) are located adjacent to North Fork Fox Creek, but do not report static water levels on the well logs. Shallow wells near Lone Tree Creek are located primarily near the confluence with the Yellowstone River as the stream flows over the alluvial sediments. These shallow wells are likely indicative of the surficial alluvial aquifer in the Yellowstone River valley bottom rather than hydraulic connection of the Tongue River Member aquifer.

The National Hydrography Dataset (NHD) and USGS Probability of Streamflow Permanence (PROSPER) web application were also used to evaluate perennial classification of nearby surface water bodies. North Fork Fox Creek, Fox Creek, and Lone Tree Creek exhibit alternating reaches of perennial and ephemeral classification in the NHD. In addition, these water bodies have a probability of streamflow permanence of 0.2 aggregated by a HUC 12 basin for the years 1989 through 2018 in PROSPER. The alternating perennial and ephemeral classification are likely areas where the Fort Union Formation outcrops and gains or loses water to the shallow hydrologic unit.

The lack of continuous perennial stream classification identified from the NHD and PROSPER indicate that locally, these streams are not continuously connected to the shallow hydrologic unit of the Fort Union Formation. Therefore, the proposed use will result in constant year-round depletions to the Yellowstone River near areas where the Tongue River Member outcrops and where seeps exist along the Yellowstone River valley alluvium.

As identified in **Figure 14**, the depleted reach of the Yellowstone River starts at the southern boundary of Section 17, Township 22 North, Range 59 East, Richland County.

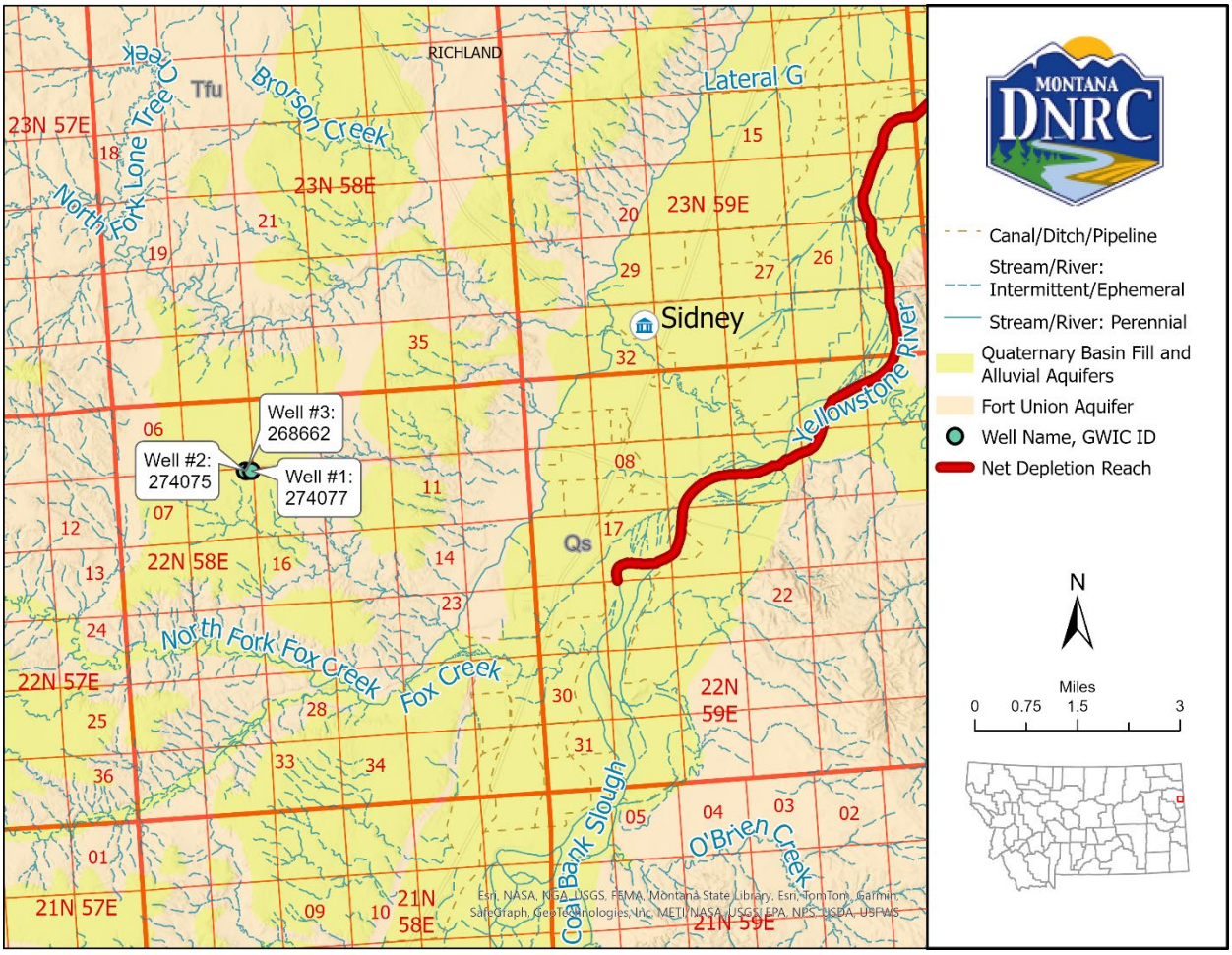


Figure 14: Location of net depletion to the Yellowstone River.

3. Rate and Timing of Depletions

Evaluations of the rate and timing of depletions caused by pumping are based on the basic concept that groundwater pumping eventually is offset by an equivalent increase in recharge or decrease in discharge (Theis, 1940; Leake et al., 2008), a process defined as capture by Lohman (1972). Capture occurs as drawdown propagates to surface water and areas of phreatophyte vegetation (areas of groundwater discharge) that takes water directly from groundwater. In the absence of credible evidence to the contrary, capture of ET by phreatophytes is neglected and net depletion is assumed to equal total capture. This assumption is justified because published estimates for conditions common in Montana alluvial valleys indicate capture of ET generally is less than 10 percent of total capture (Xunhong, 2006). Capture of ET in ephemeral drainages may be significant and will be evaluated on an application-by-application basis.

The rate and timing of net depletion caused by pumping may be modeled using a variety of analytical and numerical models selected to fit site-specific conditions and needs. Simple models including the Alluvial Water Accounting System (AWAS) and the Well Pumping Depletion Model (WPDM) typically are used by DNRC to model depletions to one source with simple aquifer boundaries. Adjustments may be made for more complex conditions or multiple sources using

methods like those described by Contor (2011), analytical models by Hunt (2003) and Butler et al. (2001) or a superposition numerical groundwater flow model.

Modeling is not necessary in some situations such as where a proposed use is constant year-round because of the depth to the source aquifer and the distance to potentially affected stream reaches. Modeling of depletions can be simplified if the proposed place of use is located the same relative distance from the potentially affected surface water as the proposed wells and all non-consumed water infiltrates the source aquifer and returns to the potentially affected surface water as return flows. Under those simplifying assumptions, depletion can be modeled based on withdrawal of the monthly consumed amounts. Otherwise, depletion by the full withdrawals and return flows need to be modeled separately with net depletion calculated as depletion minus return flows.

The proposed water marketing use is constant year-round and is considered 100% consumptive. Due to the distance of 3.8 miles to the Yellowstone River, depletions would accrue at a constant rate equal to the diverted flow rate and volume shown in **Table 1**.

Review

This document has been reviewed on May 16, 2024, in accordance with Category 7 of DNRC's Water Sciences Bureau Minimum Standards of Review, Version 2, February 2024.

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Appendix A: Groundwater Rights within Area of Potential Impact

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WR Number	All Owners
42M 3392 00	SIR RANCH TRUST
42M 163248 00	MELROSES DOUBLE U INC
42M 163346 00	DOANE INC
42M 163249 00	MELROSES DOUBLE U INC
42M 163351 00	DOANE INC
42M 163352 00	DOANE INC
42M 11949 00	GUDRUN K UNDEM; MARGO G UNDEM; SAM K UNDEM
42M 163350 00	DOANE INC
42M 30127431	KATHY M OBERGFELL; ROCKY L OBERGFELL
42M 30012283	KATHY M OBERGFELL; ROCKY L OBERGFELL
42M 165315 00	EATON, FRANK & SONS
42M 41842 00	DIAMOND V CORP
40P 31541 00	KEYSORS LLC
42M 27577 00	KATHY W THORNTON; RUSSELL D THORNTON
42M 11379 00	PREWITT TRUST
42M 165321 00	EATON, FRANK & SONS
42M 100109 00	KUEHN RANCH CO
42M 3729 00	DON A PIRRIE; MARY H PIRRIE
42M 44159 00	KUEHN RANCH CO
42M 3731 00	DON A PIRRIE; MARY H PIRRIE
40P 4773 00	LORRAINE WHITEMAN; WHITEMAN, FLOYD JR TESTAMENTARY TRUST
42M 109947 00	DIEDE, EMIL INC
42M 30012287	KATHY M OBERGFELL; ROCKY L OBERGFELL
40S 59534 00	KELLY FINK; RONALD J FINK
42M 30127489	KATHY M OBERGFELL; ROCKY L OBERGFELL
42M 30012285	KATHY M OBERGFELL; ROCKY L OBERGFELL
40P 41336 00	JEFFREY CARDA; MICHELLE CARDA
42M 163668 00	EDWARDS, LYLE INC
42M 164450 00	DAVID R MCMILLEN; MARGARET P MCMILLEN
42M 17552 00	FIFTY TWO RANCH INC; GEORGE LEWIS
40P 30673 00	LARRY SCHIPMAN; PATTI SCHIPMAN
40S 46534 00	ANDREW C HOLLOM; ORRIN W HOLLOM
40S 46535 00	ANDREW C HOLLOM; ORRIN W HOLLOM
40P 16840 00	LISA LOCKHART
42M 71698 00	JENNIFER H LOVEGREN; WILLIAM C LOVEGREN
42M 4623 00	DONALD J PREVOST
40P 13980 00	ERVIN E GOSS; JAMES D GOSS; MARVIN F GOSS; PATTI A MCGINNIS
42M 46661 00	STORTZ RANCH INC
40P 64051 00	TODD VERSCHOOT
42M 32902 00	RAYMOND J BASTA
42M 27622 00	LARS E KALBERG
42M 30024600	AFTON DALIMATA; FRANCIS DALIMATA
42M 33468 00	MONTANA STATE BOARD OF LAND COMMISSIONERS
42M 47041 00	JAMES A NAGLE; MARY C NAGLE; MARJORIE A SELL
42M 165316 00	EATON, FRANK & SONS
42M 29454 00	MONTANA STATE BOARD OF LAND COMMISSIONERS

WR Number	All Owners
40P 875 00	SWITZER, L J RANCH INC
40P 2120 00	PAWLOWSKI BROTHERS INC
42M 101379 00	OAK RANCH FAMILY TRUST
42M 16325 00	AUDREY A HILL
42M 89103 00	DAVID R MCMILLEN
42M 20495 00	PREVOST RANCH INC
42M 101387 00	JEANNE SMALIS
42M 16326 00	AUDREY A HILL
42M 30029577	ANITA MULLIN; RICK MULLIN
40S 30163038	GLADOWSKI RANCH INC
42M 9521 00	ANITA MULLIN; RICK MULLIN
42M 16327 00	AUDREY A HILL
42M 46342 00	FOUR J RANCH INC
42M 30044795	MONTANA STATE BOARD OF LAND COMMISSIONERS
40P 30048207	MONTANA STATE BOARD OF LAND COMMISSIONERS
42M 16328 00	AUDREY A HILL; MELVIN R HILL
40S 30153600	DOUBLE J FARMS INC
42M 30128010	HENNING SKOV
42M 99125 00	ELIZABETH VERHASSELT; TREVOR VERHASSELT
40P 30021665	LARRY SCHIPMAN; PATTI SCHIPMAN
40S 15770 00	KRIS CARDA; TARA CARDA
40P 30018125	KEYSORS LLC
42M 64108 00	DEBRA SCHILLINGER; SCHILLINGER FAMILY LEGACY TRUST DTD 9/16/2023
42M 30127430	KATHY M OBERGFELL; ROCKY L OBERGFELL
40P 97825 00	LESLIE D CARLSEN
40P 61795 00	KEITH R GROH
40P 11351 00	DAVID N MCCLOY
42M 30012288	KATHY M OBERGFELL; ROCKY L OBERGFELL
42M 30014017	JANICE DIGE; RUSSELL DIGE
40S 171271 00	HARDY INVESTMENTS LP
40S 30536 00	MULLIN LIVING TRUST DTD 11/30/2007
42M 5213 00	AUDREY A HILL
42M 30044138	ROGER W MEYER
40S 22306 00	WAYNE BROWN; DIANA ELI
40S 20354 00	KELLY FINK; RONALD J FINK
42M 33061 00	MERLYN D LARSON; ROSEMARY LARSON
42M 30066848	SHANDON W ERICKSON
42M 109939 00	DIEDE, EMIL INC
42M 101381 00	OAK RANCH FAMILY TRUST
40S 6570 00	PHILLIP A FINK
40P 30044091	MONTANA STATE BOARD OF LAND COMMISSIONERS
40S 66292 00	COY D MARTIN; SARA E MARTIN
40S 28354 00	SCHLENZ, LEVON P TRUST
42M 164370 00	ANGIE R HAGEN; BETTY HAGEN; DARREN HAGEN; JUSTUS HAGEN
40S 12470 00	BARBEE K HEKKEL; DUANE D HEKKEL; PENNIE M MUTH; SONJA R SMART
42M 102528 00	WOLFF & SONS INC

WR Number	All Owners
42M 109940 00	DIEDE, EMIL INC
42M 7317 00	PREWITT TRUST
42M 101494 00	DCLW CORP
40P 55598 00	ORLAN OLSON
42M 10832 00	KRISTAN E BASTA
42M 30050023	KUBESH INC
42M 48435 00	DAVID A MULLIN; MERLE A MULLIN
40P 36678 00	MONTANA STATE BOARD OF LAND COMMISSIONERS
42M 4099 00	EATON, FRANK & SONS
40P 83018 00	ORLAN OLSON
	ERVIN E GOSS; GOSS, JANET R TRUST; GOSS, MARVIN F TRUST; GOSS, VICKY L FAMILY
42M 57290 00	SHARE TRUST UNDER WILL
42M 30064106	CAROLYN G STURGIS
40S 29266 00	CYNTHIA SUNDHEIM; SCOTT SUNDHEIM
42M 69226 00	CRYSTAL STRAIT; MACKENZIE STRAIT
42M 37565 00	FRANZ RANCH LAND TRUST
42M 1363 00	EATON, FRANK & SONS
40P 109558 00	RENETTE WALDO; SHAD O WALDO
40P 91887 00	DEBORAH C THOMAS
40S 29919 00	BUD & JOE LLC
42M 6396 00	GARY KING
40P 37019 00	JEFFREY CARDA; MICHELLE CARDA
42M 111274 00	ULLMAN HOLDINGS LLC
42M 1477 00	DIAMOND V CORP
40S 16185 00	J HARRY JOHNSON LIMITED PARTNERSHIP
40P 30031194	ALLEN EVENSON
40P 71740 00	DALE E HEIDE
40S 79872 00	MARY STEPPLER
40S 15698 00	MICHAEL A IRIGOIN
42M 43924 00	O BAR X RANCH INC
42M 163486 00	GARY WHITMER
42M 23573 00	MERLYN D LARSON
42M 9424 00	ANITA MULLIN; RICK MULLIN
42M 104477 00	KRISTINA K HENSON
40S 63943 00	AMESTOY, CHARLES A & ELAINE A MINERAL TRUST
40S 72924 00	DEVILS ELBOW RANCH LLC
42M 30016838	MELODY K DAHLE; WILLIAM J DAHLE
42M 30133828	JEANNE SMALIS
42M 30063213	RICHLAND VENTURES LLC
40S 7235 00	PENNIE M MUTH
42M 101495 00	DCLW CORP
42M 108389 00	MONDALIN INC
40P 6039 00	JOHN A GEER
42M 17549 00	FIFTY TWO RANCH INC; GEORGE LEWIS
42M 56583 00	FULFORD, JAMES M REVOCABLE TRUST 3-3-1976
42M 1839 00	EDWARDS, LYLE INC

WR Number	All Owners
42M 1476 00	DIAMOND V CORP
42M 59514 00	CYNTHIA C BLOOMFIELD; SCOT A BLOOMFIELD
42M 30070220	5S PARTNERSHIP
42M 5375 00	DAVID R MCMILLEN; MARGARET P MCMILLEN
40P 25011 00	VICKI VAIRA
	LESUEUR FAMILY; JANA MINIFIE; BETTE KAY NELSON; JOHN T VOLDEN; VOLDEN,
42M 59538 00	DONALD T & ROSEMARIE FAMILY TRUST
42M 73775 00	DAVID R STEINBEISSER; DAWN STEINBEISSER
42M 1642 00	KITTLESON FAMILY PARTNERSHIP LP
42M 30010531	MONDALIN INC
42M 28783 00	KENNETH MICHAEL BACKES
42M 97728 00	MICHAEL G DENOWH; PAUL J DENOWH
42M 89088 00	ULLMAN HOLDINGS LLC
42M 53307 00	KOPP FARMS INC
42M 17232 00	MARIAN BERGSTEDT
42M 30023202	FRED BARKLEY
42M 30112705	ERIN C SIEBENALER; KENNETH C SIEBENALER
40P 96360 00	MILNE, DEBORAH L REVOCABLE LIVING TRUST 11/29/2023
40S 7065 00	SCHMITZ JOE & ANNA AND BURKE PAT & ANNA TRUST
	JOHNSON, JUDITH A REVOCABLE LIVING TRUST; JOHNSON, WARREN E REVOCABLE
42M 35711 00	LIVING TRUST
42M 21086 00	RUSSELL DIGE
42M 108412 00	JESSICA J RAHN; RANDALL D RAHN
42M 30016639	JOSEPHINE K FINNICUM
42M 31821 00	WILLIAM J REHBEIN
42M 59541 00	DYNNESON LAND LLC
42M 103694 00	SHERMAN L DYNNESON
42M 28846 00	JOSHUA T ODONNELL
42M 99126 00	JOHANNA R LEPEL
40P 13634 00	AMANDA HOVE; BRYCE A HOVE
40S 22430 00	LISA M STEPPLER; WESLEY D STEPPLER
42M 30052275	PHILIP HAFEMANN
40P 1206 00	KENNETH V YOUNGQUIST
40S 22308 00	WAYNE BROWN; DIANA ELI
42M 101527 00	EATON, FRANK & SONS
42M 12197 00	CARLA J ASPENLIEDER; DOUGLAS D KAUFMAN; SUSAN R MURDOCK; VICKIE L POTTER
42M 7394 00	WOLFF & SONS INC
40P 30043412	PATRICK E GIBBS
42M 30063554	DIEDE, EMIL INC
42M 16974 00	RAY A ZIMDARS
42M 51905 00	CHERYL L HANSEN; GREGORY R HANSEN
42M 30045645	GENE TRUDELL; NANCY TRUDELL
42M 163762 00	JULIE LEWIS
40S 63936 00	CALVIN I STEPPLER; CODY J STEPPLER; VERLIN R STEPPLER
40S 130588 00	KIM A KLASNA; TIMOTHY J KLASNA

WR Number	All Owners
42M 36516 00	BERTRAND J SAWYER
40P 30127271	QUICK RANCH LLC
40S 59575 00	CODY J STEPPLER; VERLIN R STEPPLER
42M 6376 00	EUGENE ANDERSEN
40S 6879 00	DANIEL B BIDEGARAY
40P 42052 00	BURL J BELEY; VICKI L BELEY
42M 30106488	RICHARD A ALBIN
40P 7849 00	DEAN SCHILLINGER
40S 2400 00	HAROLD J FINK
42M 109926 00	BERRY HOMESTEAD LLC
40P 30014922	EISSINGER LAND & CATTLE CO
42M 99102 00	WILLIAM C STEINBEISSER
40P 31480 00	DUANE W WHITE
40S 30028766	LISA M STEPPLER; WESLEY D STEPPLER
40P 13408 00	DONALD R HABER
42M 3582 00	OAK RANCH FAMILY TRUST
42M 20107 00	DARRELL G HYSTAD; DEBRA J HYSTAD
42M 2025 00	KITTLESON FAMILY PARTNERSHIP LP
42M 30008523	PENNIE K THORNTON; WILLIAM D THORNTON
40P 9288 00	JOHN A GEER; JUNE F GEER
40P 102760 00	ALAYNA J HAYNIE; MICHAEL L HAYNIE; RUDY HAYNIE; RUTH HAYNIE
42M 8141 00	ORVILLE WIKE
42M 14841 00	MONTANA STATE BOARD OF LAND COMMISSIONERS
40S 4585 00	BUD & JOE LLC
40P 12885 00	ANN GROH
42M 9010 00	JOSEPH J WALKER
42M 29467 00	THIESSEN, DWIGHT & DIANA FAMILY TRUST
40P 74077 00	IDLAND, ODDVAR & PATRICIA REVOCABLE TRUST
40P 30043467	TODD VERSCHOOT
42M 15883 00	ARTHUR R OLMSTEAD; BARBARA D OLMSTEAD
40P 50385 00	ROBERT E LOKKEN
40P 22480 00	STORTZ RANCH INC
42M 55523 00	GARTNER DENOWH ANGUS RANCH
42M 38666 00	JULIE A BRODHEAD; MARK BRODHEAD
40P 41494 00	COLLIN VAIRA; VAIRA, COLLIN R ESTATE OF
40P 30003627	ANDREW M BELUS
42M 18703 00	BOESE, ROSE M REVOCABLE TRUST
42M 30472 00	RICHLAND VENTURES LLC
40P 86180 00	CAROL L SWITZER; DONALD W SWITZER
42M 23534 00	L 7 RANCH INC
42M 30161254	LARAMIE (LARRY) J WYMAN
42M 66237 00	GREGORY KOZMA; MELISSA KOZMA
40P 7058 00	RHINES FARMING CORP
40P 7848 00	SCHILLINGER, DAVE CONSTRUCTION INC
42M 102552 00	WOLFF & SONS INC
42M 10065 00	KENNETH KILEN; MARLON J KILEN; PAMELA K KILEN

WR Number	All Owners
42M 30063387	DOTTIE SHEEHAN
42M 114729 00	BRETT R BENNION; DANIELA J BENNION
40S 10757 00	KATHERINE M IRIGOIN; THOMAS J IRIGOIN
42M 30030189	STORM HOMESTEAD LLC
42M 154318 00	JO ANNE ROOS; JOHN P ROOS
42M 5118 00	SENNER GRAIN INC
42M 30068013	CLAYTON S ZILER; LISA ZILER
42M 17551 00	FIFTY TWO RANCH INC; GEORGE LEWIS
42M 51915 00	DAVID G LINDE
40P 24779 00	EISSINGER LAND & CATTLE CO
42M 74093 00	TIM LARSON
42M 15290 00	JILL NORBY; KELLI NORBY
42M 163221 00	BEAR GULCH RANCH INC
42M 103447 00	BAD ROUTE CATTLE LLC; MAT MACIOROSKI
40P 64096 00	JOHN A GEER
42M 73798 00	THIESSEN INC
42M 94621 00	HEART PLUS LLC; VAIRA, SUSIE TRUST
42M 101085 00	BRANDON C BATTY; JULIE A BATTY
42M 29452 00	RENEE J SUNDHEIM; ROBERT E SUNDHEIM
42M 101491 00	DCLW CORP
42M 46152 00	JON KLEINKE; COREY WIELAND
42M 19610 00	ELDON EVANS
42M 51906 00	RAUSCHENDORFER, ROBERT FAMILY TRUST
42M 15824 00	SIDNEY CEMETERY ASSN
42M 30026150	DONALD A FRANZ
42M 109925 00	BERRY HOMESTEAD LLC
42M 1840 00	EDWARDS, LYLE INC
40P 31481 00	DUANE W WHITE
42M 8583 00	DARLA HILL
40P 2119 00	PAWLOWSKI BROTHERS INC
42M 30113845	CHRISTOBEL STEINBEISSER; LARRY STEINBEISSER
40S 6832 00	WAYNE BROWN; DIANA ELI
42M 1342 00	DAVID ROBSON
42M 20823 00	SHAWN FASCHING
42M 86195 00	PREWITT TRUST
40P 52 00	ERVIN E GOSS; JAMES D GOSS; MARVIN F GOSS; PATTI A MCGINNIS
42M 33054 00	JAMES W HUNTER; RHONDA H HUNTER
40P 39241 00	PAWLOWSKI BROTHERS INC
42M 30120002	BARBARA J REIDLE
40P 10181 00	BROOKE MACGILLIVRAY; SHERRY L MACGILLIVRAY
42M 30016652	JOSEPHINE K FINNICUM
42M 10385 00	PARK PLAZA MOTEL INC
42M 30113468	MELISSA BUCKLEY
40S 30991 00	PENNIE K THORNTON; WILLIAM D THORNTON
40S 3124 00	EVERETT A BAXTER; RED WING CORP
42M 104499 00	RICHLAND COUNTY SCHOOL DIST #2

WR Number	All Owners
40S 22916 00	B KAY CARDA; HAROLD E CARDA
42M 30011257	STRUCKMAN CORP
40S 30042424	JAMES A CARDA; THERESA M CARDA
42M 64070 00	PAULA STEINBEISSER; RUSSEL STEINBEISSER
40S 130589 00	KIM A KLASNA; TIMOTHY J KLASNA
42M 37563 00	FRANZ RANCH LAND TRUST
42M 70242 00	SCHMITZ JOE & ANNA AND BURKE PAT & ANNA TRUST
42M 30069029	RICHLAND VENTURES LLC
40P 30112097	LORRAINE WHITEMAN
42M 30051786	CRAIG STEINBEISSER; KAREN STEINBEISSER
42M 37567 00	FRANZ RANCH LAND TRUST
42M 430 00	DAVID R STEINBEISSER
42M 5214 00	AUDREY A HILL
40P 57313 00	JENSEN BROTHERS OF CIRCLE INC
42M 113760 00	HERBERT F ALLARD; RALPH W ALLARD
40P 548 00	SWITZER, L J RANCH INC
40S 44879 00	GORDON LEWIS PETRIK; JUNE E PETRIK
42M 46783 00	SIMONSEN, KENNETH FAMILY REVOCABLE LIVING TRUST
42M 42862 00	GENE A ROTH; ILENE M ROTH
40P 81352 00	MILNE, DEBORAH L REVOCABLE LIVING TRUST 11/29/2023
42M 113756 00	HERBERT F ALLARD; RALPH W ALLARD
42M 66193 00	LARRY D DREVECKY; BRYAN P GARTNER
42M 165334 00	EATON, FRANK & SONS
42M 165338 00	EATON, FRANK & SONS
40P 30163029	MONTANA STATE BOARD OF LAND COMMISSIONERS
40P 30120338	CLINT KIRCHNER; SHAWN KIRCHNER
40P 63927 00	CLINT KIRCHNER; SHAWN KIRCHNER
42M 716 00	CAROL M DEMPEWOLF; DEXTER A DEMPEWOLF
42M 17546 00	BEVERLY R EDAM; DALE W EDAM
42M 1272 00	HOWARD MARTINI; MARION MARTINI
40P 32687 00	MONTANA STATE BOARD OF LAND COMMISSIONERS
40P 36015 00	HABER INC
42M 1453 00	DENNIS D BASTA; JAMIE L BASTA; JOEL J BASTA; MARGARET A BASTA
42M 30161664	DONALD A FRANZ; VALERIE E FRANZ
40P 101068 00	MARILYN BUECHLER
40S 70246 00	JOSEPH F IRIGOIN
40P 2939 00	STEVEN EGGEBRECHT
40P 72902 00	BURL J BELEY; VICKI L BELEY
40P 69289 00	DUANE W WHITE
40S 28353 00	SCHLENZ, LEVON P TRUST
40P 13337 00	BECKER-ZAHN INC
42M 22430 00	BARBARA J REIDLE
42M 17267 00	MARY E CRESS
42M 30068525	ELAINE L HILL; WILBUR W HILL
40P 30000137	AMANDA HOVE; BRYCE A HOVE
40S 89107 00	MILES G PANASUK

WR Number	All Owners
42M 30161666	DONALD A FRANZ; VALERIE E FRANZ
42M 33469 00	PREWITT TRUST
40P 50280 00	CHANTEL M VERSCHOOT; THOMAS VERSCHOOT
42M 30021930	SIMONSEN, KENNETH FAMILY REVOCABLE LIVING TRUST
42M 114708 00	WOLFF & SONS INC
42M 30125433	BILLIE J WELTY
42M 109879 00	LEWIS INC
40P 111444 00	MILNE, DEBORAH L REVOCABLE LIVING TRUST 11/29/2023
40S 16904 00	KITTLESON FAMILY PARTNERSHIP LP
42M 19396 00	DOUBLEDA, LLC
40S 55484 00	JAMES A CARDA; THERESA M CARDA
42M 30027753	STICKVILLE REVOCABLE TRUST
40S 4347 00	COY D MARTIN
40P 30071790	ARNOLD J WALLER
42M 71713 00	ANITA MULLIN; RICK MULLIN
40P 30015689	MONTANA STATE BOARD OF LAND COMMISSIONERS
42M 15825 00	DCLW CORP
42M 30121934	PETERSEN, J K INC
42M 29453 00	JOSHUA R JOHNSON; WENDY S JOHNSON
42M 30121933	PETERSEN, J K INC
40P 30052015	DILLON LAND & LIVESTOCK LLC; K N INC
42M 30070638	SHADWELL RESOURCES GROUP LLC
42M 8429 00	THIESSEN INC
40S 16402 00	FINNICUM, BAKER & ANNE LAURIE FAMILY TRUST; FINNICUM, BOBBY J LIVING TRUST
42M 30153810	JOHN K DYNNESON; NANCY K DYNNESON
42M 96324 00	KITTLESON FAMILY PARTNERSHIP LP
42M 30011743	JIMMY L MULLIN
42M 99030 00	DONALD A FRANZ
42M 34902 00	PREWITT TRUST
42M 59486 00	SCHMITZ JOE & ANNA AND BURKE PAT & ANNA TRUST
40P 66280 00	HAROLD K MOOS; SUSAN M MOOS
42M 38652 00	KENNETH MICHAEL BACKES
42M 173672 00	REILLY, JIM AND NORMA FAMILY TRUST
42M 69259 00	PREVOST RANCH INC; MONTE TORGERSON; VERNETTE TORGERSON
42M 173671 00	REILLY, JIM AND NORMA FAMILY TRUST
42M 28742 00	CASSIDY KLIND; CODY L STENSLAND
40S 99078 00	B KAY CARDA; HAROLD E CARDA; USA (DEPT OF INTERIOR BUREAU OF LAND MGMT)
40S 3119 00	EVERETT A BAXTER; RED WING CORP
40P 37041 00	GOTTLIEB G SCHOCK
40P 39245 00	HAY CREEK INC; HOWARD L KOCH
40P 38637 00	YARGER INC
42M 30104125	SUNNY SLOPE RANCH INC
42M 111348 00	ANDREW D DOWNS
40S 114662 00	DANIEL B BIDEGARAY

WR Number	All Owners
40S 53367 00	MONTANA STATE BOARD OF LAND COMMISSIONERS
40P 111443 00	MILNE, DEBORAH L REVOCABLE LIVING TRUST 11/29/2023
40P 46974 00	MARILYN K REINEMER; R PHILIP REINEMER
40P 30116543	GULDBORG BROTHERS INC
40S 30103340	COY D MARTIN; SARA E MARTIN
42M 61879 00	MARVELLE J FINK
42M 165346 00	EATON, FRANK & SONS
42M 7353 00	STEVE VITT
42M 70229 00	EATON, FRANK & SONS
42M 86145 00	WILLIAM D SORTEBERG
40P 45377 00	LORRAINE F BENES; MERRICK V BENES
42M 30063147	CANDEE ANGUS FARM INC
40P 91926 00	JEFFREY CARDA; MICHELLE CARDA
40P 30070852	JAMES D GOSS; JULIE M GOSS
40P 53285 00	DAVID D NELSON
42M 71772 00	KENNETH KITTLESON
42M 86160 00	MONTANA STATE BOARD OF LAND COMMISSIONERS
42M 30063321	SKYLINE DREDGING & EXCAVATING
40P 39713 00	HEIDI BEERY; JASON BEERY
40P 81348 00	HAROLD K MOOS; SUSAN M MOOS
42M 2081 00	MELODY K DAHLE
42M 10862 00	HAROLD SATHER
42M 165320 00	EATON, FRANK & SONS
40S 171317 00	BENSCH, FREIDA E REVOCABLE TRUST
40P 86172 00	JAMES H CROCKETT
40P 2891 00	HANZ H HAYNIE
42M 165319 00	EATON, FRANK & SONS
40P 99074 00	ROBERT G CANDEE
42M 91877 00	PREWITT TRUST
42M 6394 00	TESS R HURLEY; TRAVIS D STURGIS
42M 109609 00	MELODY K DAHLE
40P 41119 00	MARILYN K REINEMER; R PHILIP REINEMER
40P 86209 00	BALDWIN, P T RANCH
42M 30042536	THIESSEN, DWIGHT & DIANA FAMILY TRUST
40S 30021956	FINNICUM, BAKER & ANNE LAURIE FAMILY TRUST; FINNICUM, BOBBY J LIVING TRUST PENNY C KRUGLER; BRUCE R MCMORRIS; COY E MCMORRIS; PATRICIA MCMORRIS;
40S 86201 00	SHERRY L MCMORRIS; THOMPSON FARM
40P 99117 00	OLSON, DALE TRUST
40P 30009399	DALE W HUBING; PHYLLIS L HUBING
40P 30119944	DONALD W SWITZER
40S 6960 00	DEAN M STEPPLER; DORIS M STEPPLER
40S 30051665	FINK FARMS INC
42M 6916 00	CLIFFORD BERGSTEDT; LINDA BERGSTEDT
40P 9756 00	JEFFREY S MOOS
42M 3682 00	VEVERKA INC

WR Number	All Owners
42M 17229 00	CLIFFORD BERGSTEDT; LINDA BERGSTEDT
42M 165267 00	EATON, FRANK & SONS
42M 30070138	PREVOST RANCH INC
42M 1071 00	BAD ROUTE CATTLE LLC
40S 10692 00	COY D MARTIN
40P 30069044	MONTANA STATE BOARD OF LAND COMMISSIONERS
42M 40726 00	SUNNY SLOPE RANCH INC
42M 165266 00	EATON, FRANK & SONS
40P 83027 00	T & V SENNER INC
42M 4271 00	GUDRUN K UNDEM
40P 81330 00	LONGRASS FARMS
42M 17230 00	CLIFFORD BERGSTEDT; LINDA BERGSTEDT
40S 101049 00	KITTLESON FAMILY PARTNERSHIP LP
42M 30017221	DAVID L REIDLE; REBBECA L REIDLE
42M 96385 00	JULIE A BRODHEAD; MARK BRODHEAD
42M 25505 00	GARTNER DENOWH ANGUS RANCH
42M 25507 00	GARTNER DENOWH ANGUS RANCH
40P 3672 00	JOSEPH THURBY; JOSEPH THURBY
40P 74075 00	MASSAR RANCH INC
40P 30120339	KIRCHNER BROTHERS LLC
40S 171260 00	DOUBLE BAR M LLC
40S 171276 00	F & M RANCH LLC
42M 99053 00	SUNNY SLOPE RANCH INC
42M 101520 00	RENEE E LEHMAN
40P 9777 00	FRANK KASTEN; JEANNE R KASTEN
42M 30050448	GARTNER, COLIN & SUSAN FAMILY TRUST
42M 263 00	FOUR MILE FARMS
42M 1866 00	VIOLA MITCHELL
42M 30115257	JO ANN HUDSON
42M 14442 00	LARRY WILKEN
42M 83034 00	BERRY HOMESTEAD LLC
40P 91895 00	ANITA J HEIDE; JAMES E HEIDE
42M 101521 00	EATON, FRANK & SONS
42M 83023 00	PREWITT TRUST
42M 30044327	JESSICA J RAHN; RANDALL D RAHN
40S 44871 00	GORDON LEWIS PETRIK; JUNE E PETRIK
40S 171277 00	TERRIL L RAAUM
42M 26670 00	GALE A GEISER; MARY F NORGARD
42M 30063224	GARTNER, COLIN & SUSAN FAMILY TRUST
40P 55582 00	THOMAS, COLETTE LIVING TRUST
42M 66145 00	PATRICIA M CARLSEN
40S 25148 00	KELLY, SHIRLEY TRUSTEE; CHERYL UNRUH
42M 52588 00	L 7 RANCH INC; MAT MACIOROSKI
40P 81287 00	ERICKSON, DENNIS FARMS INC
42M 30116349	JARED D ROSAAEN
40P 55479 00	SCOTT HEIDE

WR Number	All Owners
42M 46995 00	STONEWALL PROPERTY HOLDINGS LLC
40S 30014827	RED WING RANCH INC
42M 81349 00	GREEN, EARL INC
42M 69223 00	PREVOST RANCH INC
42M 50390 00	GARTNER DENOWH ANGUS RANCH
42M 30012220	E 4 RANCH INC
42M 47011 00	ANGIE R HAGEN; BETTY HAGEN; DARREN HAGEN; JUSTUS HAGEN
40S 5102 00	DEAN M STEPPLER; DORIS M STEPPLER
42M 154326 00	JO ANNE ROOS; JOHN P ROOS
40P 30133724	PATRICIA ANN WHITE
42M 33071 00	MICHAEL F HIER; RICHARD T HIER
40P 10180 00	BROOKE MACGILLIVRAY; SHERRY L MACGILLIVRAY
42M 30029299	MICHAEL STEFFAN; NANCY M STEFFAN
40S 6554 00	CAROLYN CASTERLINE
40P 4281 00	VICKI VAIRA
42M 101524 00	RENEE E LEHMAN
40P 44963 00	LAZY D BAR SEVEN RANCH INC
42M 163751 00	MARTHEA A JOHNSON
42M 50236 00	MARTHEA A JOHNSON
40P 44880 00	GORDON LEWIS PETRIK; JUNE E PETRIK
42M 27623 00	LARS E KALBERG
40P 50250 00	DUCO FARMS INC
42M 99090 00	LARRY D DREVECKY; BRYAN P GARTNER
40P 78242 00	VOSS RANCH INC
42M 59670 00	BRYHN INC
42M 43669 00	ASHLEA J ANDERSON; RYAN R ANDERSON
42M 40888 00	NAGLE FAMILY LLLP
42M 20456 00	LACIE L LABRIE; TODD F LABRIE; LABRIE, WENDY L LIVING TRUST
40P 9603 00	WITTKOPP INC
42M 80550 00	THIESSEN, DWIGHT & DIANA FAMILY TRUST
42M 40886 00	NAGLE FAMILY LLLP
40P 101043 00	ORLAN OLSON
42M 30008736	AUDREY A HILL
42M 32130 00	PREVOST RANCH INC
42M 69266 00	RENEE J SUNDHEIM; ROBERT E SUNDHEIM
42M 20463 00	LACIE L LABRIE; TODD F LABRIE; LABRIE, WENDY L LIVING TRUST
42M 30051628	GARTNER, COLIN & SUSAN FAMILY TRUST
40P 64059 00	ASH CREEK FARMS INC
40S 29823 00	WILLIAM BUCKLEY; SHARON L MCCOY; BARBARA NELSON; CINDY SUNDHEIM
42M 99110 00	ERIK E SCARPHOLT
42M 20454 00	LACIE L LABRIE; TODD F LABRIE; LABRIE, WENDY L LIVING TRUST
42M 3125 00	VICKIE BARBOT; LARRY POFF
42M 30044998	MONTANA STATE BOARD OF LAND COMMISSIONERS
42M 11262 00	OMNI COMMUNICATIONS INC
42M 30127052	BRIEN PANASUK; TOBY A PANASUK; ZANE R PANASUK
40P 57337 00	DANIEL R UNDEM; DAWN L UNDEM

WR Number	All Owners
40P 16905 00	TRIOP FARMS INC
40P 30047141	GORDON LEWIS PETRIK; JUNE E PETRIK
42M 30021330	DONALD S FRANKLIN
42M 30042595	HARL OLAND; JANICE OLAND
42M 28413 00	GREG ANDERSON
40S 171258 00	DOUBLE BAR M LLC
40S 171259 00	DOUBLE BAR M LLC
42M 111451 00	SKILLESTAD RANCH
42M 30067255	DALE ROBERTS; KIM I ROBERTS
40S 30067579	ROLLAND R RAAUM
40P 73777 00	DANIEL R UNDEM; DAWN L UNDEM
42M 57447 00	ANITA A SCHEETZ; THOMAS H SCHEETZ
42M 40743 00	D M C NEVINS TRUST
42M 30001603	DYNNESON RANCH INC
42M 91925 00	JENNA L MCCORMICK; TREVOR J MCCORMICK
42M 163520 00	EATON, FRANK & SONS
42M 69240 00	KATHLEEN PUST; PUST, DUANE FAMILY TRUST
42M 30068877	DALICE DOWNS
40S 30030164	CLG LIVING TRUST DTD 11/25/2008; PATRICK N VAIRA
40P 83076 00	NICK MOTHERSHEAD; VALERIE J MOTHERSHEAD
40P 30108326	KASTEN DAVID K REVOCABLE TRUST; KASTEN ELIZABETH K REVOCABLE TRUST
42M 43759 00	KENNETH GOSS
40S 59539 00	DOUGLAS J JOHNSON; JEFFEREY D JOHNSON; MARY S JOHNSON
42M 89844 00	LISA M VERSCHOOT; TONY J VERSCHOOT
42M 30161427	DJM TRUST
40P 12610 00	ALBERT HOWARD
42M 29817 00	ARDIS M PAUL; CARL M PAUL
42M 49059 00	SUNNY SLOPE RANCH INC
42M 30162577	TOBY A PANASUK
42M 30050163	CARMEN J ROBERTS
42M 30134353	MELROSES DOUBLE U INC
40S 17548 00	CAVANAUGH INVESTMENTS LLC
40S 114661 00	DANIEL B BIDEGARAY
40P 30018863	COUNTRY CROSS RANCH LLC
42M 111427 00	JANETTE GRANMOE; LYNN GRANMOE; RAYMOND C GRANMOE; RONNIE G GRANMOE
42M 44889 00	KITTLESON FAMILY PARTNERSHIP LP
42M 83600 00	JO ANNE ROOS; JOHN P ROOS
42M 91863 00	BRENDA BEVERLY; MARK Q GOLDEN; KIMBERLY J MANGELS
40P 1488 00	MONTANA STATE BOARD OF LAND COMMISSIONERS
42M 30045479	PHILIP JOHNSON; ROBYN JOHNSON
42M 53353 00	RICHLAND AVIATION
42M 164367 00	ANGIE R HAGEN; BETTY HAGEN; DARREN HAGEN; JUSTUS HAGEN
42M 86219 00	BRYAN J PREVOST
40S 30045467	ORRIN W HOLLOM
40P 30043765	PEASE RANCH INC

WR Number	All Owners
40S 59576 00	CODY J STEPPLER; VERLIN R STEPPLER
42M 30154874	ANGELA R KREIMAN; GARY L KREIMAN
42M 14818 00	EATON, FRANK & SONS
42M 5918 00	RUSS S GOMKE; MELISSA F WILLIAMS
42M 176995 00	STEVEN PHIPPS; TENEIL PHIPPS
42M 12788 00	MARGARET F DANIELS; BRYAN A PETERSON; RICHARD W PETERSON
	ILA K HARDY; JOYCE HERNANDEZ; JODI KORDONOWY; JEFFREY L PARTIN; RICHARD I
42M 61875 00	PARTIN; TIMOTHY T PARTIN; NADINE M SWISSE
40P 30042347	MONTANA STATE BOARD OF LAND COMMISSIONERS
40S 6251 00	ALVIN WILHELM; LORI A WILHELM
40P 69235 00	BRIAN D LEWIS
40P 30043316	JAMES D GOSS; JULIE M GOSS
42M 86159 00	HEART PLUS LLC; VAIRA, SUSIE TRUST
40P 47453 00	JUDITH A JAMES
42M 37716 00	RUSSELL H JOHNSON; SANDRA S JOHNSON; TARA MATHERN
42M 49253 00	LEON J SELENSKY
42M 46971 00	DONNA R SUNDSTED
40P 30151774	GARY S KLIND; BRENDA K ST PIERRE
40P 30022658	KOUNTZ RANCH INC
42M 66241 00	BEVERLY K HELLESVIG; COLLEEN HELLESVIG
40P 30112963	MASSAR RANCH INC
42M 101526 00	MONTANA STATE BOARD OF LAND COMMISSIONERS
40S 73783 00	ROCKING R CORP
40P 13123 00	BRADLEY T SENNER; PAULETTE SENNER
40P 94644 00	LAVONNE M SANDERS; SANDERS, LYNN & JULIE REVOCABLE FAMILY TRUST
42M 46185 00	KOLBERG INC
42M 74589 00	SUNNY SLOPE RANCH INC
40P 96388 00	KIRK WINHOFER
40S 72919 00	FINK FARMS INC
42M 165348 00	EATON, FRANK & SONS
42M 165347 00	EATON, FRANK & SONS
42M 4985 00	JAMES R BUCKLEY; STACY RAE BUCKLEY
42M 81282 00	GARTNER DENOWH ANGUS RANCH
42M 15595 00	JAMES M EDINGER; TAMMY L EDINGER
42M 114748 00	STONEWALL PROPERTY HOLDINGS LLC
40P 13170 00	KENNETH R LUCKOW; KENNETH R LUCKOW; MARY C LUCKOW
40P 43442 00	KEYSTONE USA CORP
42M 50237 00	FOUR J RANCH INC
40P 59658 00	NICK MOTHERSHEAD; VALERIE J MOTHERSHEAD
40P 53329 00	MARY A ROSAAEN; NEWELL S ROSAAEN
42M 114669 00	G NELL SUNDHEIM
42M 101380 00	OAK RANCH FAMILY TRUST
42M 4312 00	DOWNS INC
42M 30030094	JOHN K DYNNESON; NANCY K DYNNESON
40P 42267 00	GREGG W HEIDE; SCOTT HEIDE
42M 163551 00	DALE L EDAM; LADEAN EDAM

WR Number	All Owners
40S 3578 00	DANIEL B BIDEGARAY
42M 79009 00	MICHAEL F HIER; RICHARD T HIER
42M 5162 00	HARVEY OLMSTEAD LLC
40P 66211 00	DAVE I HARRIS; JOANNE E HARRIS
40S 88318 00	MINDY NELSON; REBEL E NELSON
42M 117164 00	DAVID R SMITH; KATHIE L SMITH
42M 55457 00	GABRIEL F ZEILER
40E 8639 00	MURPHY RANCH INC
40S 18099 00	RAUSCHYS REAL ESTATE LLC
42M 46647 00	EDWARDS, DAVE INC
42M 102775 00	BRIAN T LUNDERBY
40P 16708 00	MASSAR RANCH INC
42M 25063 00	KLEMPEL FRANK INC
42M 12562 00	JEFFREY ERICKSON; JILL NEZWORSKI
42M 37562 00	FRANZ RANCH LAND TRUST
40S 69258 00	DAYTON FOUNDATION
42M 50290 00	RICHARD A CHRISTENSEN; RHONDA LAWHEAD
42M 17269 00	KENT A CRESS; LAUREL R CRESS
42M 30012282	KATHY M OBERGFELL; ROCKY L OBERGFELL
40P 28115 00	PARK RICE
42M 30122462	DEBI K BASTA; TODD J BASTA
42M 30011518	MICHAEL T ANVIK
42M 30127433	KATHY M OBERGFELL; ROCKY L OBERGFELL
40S 6075 00	JIM VITT
42M 66291 00	JODI KORDONOWY; RAY W KORDONOWY
42M 77543 00	FRANZ RANCH LAND TRUST
40P 36116 00	BRODY, J RANCH INC
40P 101109 00	KEITH R GROH; SHARLENE G GROH
40S 164392 00	MONTANA STATE BOARD OF LAND COMMISSIONERS
40S 51796 00	MONTANA STATE BOARD OF LAND COMMISSIONERS
40S 89870 00	SCHLENZ, LEVON P TRUST
42M 46632 00	SUNNY SLOPE RANCH INC
40P 76553 00	KEITH R GROH; SHARLENE G GROH
42M 30127040	BRIEN PANASUK; TOBY A PANASUK
42M 4966 00	MICHAEL W SUNDHEIM
42M 165291 00	EATON, FRANK & SONS
40S 30010191	FINNICUM, BAKER & ANNE LAURIE FAMILY TRUST; FINNICUM, BOBBY J LIVING TRUST
42M 4459 00	HEART PLUS LLC; VAIRA, SUSIE TRUST
42M 30003080	BRUCE A DOWNS; JOANNE C DOWNS
42M 51888 00	DAVID G LINDE
40P 97818 00	MARJORIE J MOORE; ROBERT C MOORE
40S 30573 00	DAVID IVERSON
42M 37564 00	FRANZ RANCH LAND TRUST
42M 8319 00	JIM SUNDHEIM
40S 8197 00	HERNESS BROTHERS

WR Number	All Owners
40S 49260 00	HACKLEY IRREVOCABLE TRUST; DIANE L SPOKLIE
42M 71759 00	DANIELS FAMILY PRTNRSHP
42M 154325 00	JO ANNE ROOS; JOHN P ROOS
40S 41376 00	AMESTOY, CHARLES A & ELAINE A MINERAL TRUST
40P 30047142	GORDON LEWIS PETRIK; JUNE E PETRIK
40P 30042594	RICK BALDWIN
42M 32789 00	LILES, KENNETH INC
40P 41149 00	WALLER, GLENN INC
40P 114710 00	WALLER, GLENN INC
40P 41150 00	WALLER, GLENN INC
40S 88300 00	JAMES A CARDA; THERESA M CARDA
42M 30025541	KLOSE LANDS LLLP
40P 9691 00	DANIEL F FEIST
42M 89085 00	THIESSEN, DWIGHT & DIANA FAMILY TRUST
42M 4222 00	LOUISE A REHBEIN
40P 30071930	GARRETT R HERDEN
40P 111441 00	KEITH K GROH
40P 81355 00	WAGNER, ROY BENEFICIARY TRUST
40S 83010 00	WILLIAM BUCKLEY; SHARON L MCCOY; BARBARA NELSON; CINDY SUNDHEIM
42M 26946 00	NORTANA GRAIN CO
42M 109888 00	DARREN HAGEN
42M 48977 00	SIDNEY RICHLAND REGIONAL AIRPORT AUTHORITY
42M 84860 00	PATRICIA M CARLSEN
42M 30127074	BRIEN PANASUK; TOBY A PANASUK; ZANE R PANASUK
42M 39412 00	LOUISE A REHBEIN
42M 3519 00	CHRISTOPHER J RAISL; WILLIAM P RAISL
40P 30021655	LORRAINE WHITEMAN; WHITEMAN, FLOYD JR TESTAMENTARY TRUST
42M 1362 00	EATON, FRANK & SONS
40P 89029 00	MARGARET SCHARA; ROGER SCHARA
42M 48711 00	COUNTRY CROSS RANCH LLC
40P 27575 00	CARLA J BALDWIN
40S 37327 00	DEAN M STEPPLER; DORIS M STEPPLER
40P 93505 00	WINE GLASS RANCH LLC
42M 29455 00	PREWITT TRUST
40P 42268 00	GREGG W HEIDE; SCOTT HEIDE
40S 30103567	P & E HERNESS LAND LLC
42M 20430 00	OSTERMAN LIVING TRUST
42M 163521 00	EATON, FRANK & SONS
40S 74607 00	RICHARD J IVERSEN
42M 109596 00	AMANDA J ERHART; PAT ERHART
42M 69241 00	HEART PLUS LLC; VAIRA, SUSIE TRUST
40P 103647 00	LANETTE M BEERY; RONDEL AC BEERY
42M 52593 00	ANN R POPPER; MICHAEL K POPPER
42M 89861 00	HEART PLUS LLC; VAIRA, SUSIE TRUST
42M 89863 00	STONEY BUTTE FARMS INC
40P 33661 00	WINE GLASS RANCH LLC

WR Number	All Owners
42M 30112593	MONTANA STATE BOARD OF LAND COMMISSIONERS
42M 59500 00	CHARLIE PENNINGTON; MCKEN-ZE PENNINGTON
42M 30045323	SCOTT FORNALL
40S 66156 00	DAVID VAIRA
42M 30044883	DH RANCH
40P 71735 00	GULDBORG BROTHERS INC
42M 30070201	JAMES E STEINBEISSER
42M 69261 00	DON D BOUCHARD; RONALD R BOUCHARD
40P 5072 00	WZB FARM INC
42M 30044357	PHILLIP GEIGER
42M 101080 00	KOPP FARMS INC
42M 2627 00	WILLIAM J REHBEIN
42M 71217 00	DEBRA ANDERSON; GREG ANDERSON
40P 30004012	HAROLD K MOOS
40P 55480 00	HEART PLUS LLC
40P 30047157	KOUNTZ RANCH INC
42M 168989 00	KENNETH KITTLESON; MARION KITTLESON
42M 1445 00	STEVEN DEMPEWOLF
40E 83070 00	MAVES RANCH INC
42M 17227 00	CLIFFORD BERGSTEDT; LINDA BERGSTEDT
40S 30809 00	IVERSEN BROTHERS INC
40P 7059 00	TODD VERSCHOOT
42M 30008518	FRANZ CONSTRUCTION INC
40P 83042 00	LECHNER INC
42M 168988 00	KENNETH KITTLESON; MARION KITTLESON
42M 30049987	COLE THORNTON; JANA THORNTON
40S 89083 00	WAYNE BROWN; DIANA ELI
40P 30158730	DEL GACKLE INC
40P 40887 00	JERRY L NAGLE
40S 81345 00	FS3 LAND & CATTLE INC
42M 30114439	COLE THORNTON
42M 33815 00	GLORIA K HARALSON
42M 30064107	CAROLYN G STURGIS
40P 4461 00	DAVID K KASTEN
42M 17228 00	CLIFFORD BERGSTEDT; LINDA BERGSTEDT
40P 7200 00	KNIEPKAMP INC
40P 44964 00	LAZY D BAR SEVEN RANCH INC
42M 30050024	KUBESH INC
40P 7679 00	JARED KOUNTZ; MELISSA KOUNTZ
40P 10542 00	LANETTE M BEERY; RONDEL AC BEERY
40P 30121502	ALAN NIELSON
42M 13172 00	MEGAN GREENWALT; SAMUEL GREENWALT
40P 8058 00	EISSINGER LAND & CATTLE CO
40S 30042697	PENNIE K THORNTON; WILLIAM D THORNTON
42M 9507 00	LESTER J ERNSTER
42M 30071042	RAYMOND J BASTA

WR Number	All Owners
42M 10962 00	HILL, SHARON K LIVING TRUST; HILL, SHARON K MARITAL TRUST
40P 30119942	DONALD W SWITZER
42M 9925 00	MCMULLET INC
42M 30161421	YOUNG, LOREN INC
40P 59502 00	EDWARD R HEIDE
40P 117565 00	JEANNE MEISSNER; JERRY B MEISSNER
40P 1148 00	CROSSWIND PROPERTIES LLC
42M 28933 00	SIDNEY CIRCLE HOMEOWNERS ASSN
42M 109889 00	DARREN HAGEN
42M 94631 00	CROSSROADS FARM INC
40P 12909 00	HEIDI BEERY; JASON BEERY
42M 51954 00	HAROLD HAFEMANN
42M 21402 00	J D FARMS
42M 44663 00	SANDRA J FINK; WILLIAM D FINK
42M 30042554	CRAIG R SEEVE
42M 66158 00	GARTNER DENOWH ANGUS RANCH
42M 51916 00	BRIAN D LEWIS
40P 13127 00	AURILLA JOHNSTON; MARLIN W JOHNSTON
42M 109891 00	DEBRA ENGESSER; DONALD ENGESSER
40P 101036 00	BUTKA FARM LLC
42M 69284 00	JANETTE GRANMOE; LYNN GRANMOE; RAYMOND C GRANMOE; RONNIE G GRANMOE
42M 92879 00	EATON, FRANK & SONS
42M 30871 00	RANDALL R RADKE; SUZANN M RADKE
42M 44961 00	LAZY D BAR SEVEN RANCH INC
42M 50238 00	FOUR J RANCH INC
42M 30050025	KUBESH INC
40P 16823 00	MONTANA STATE BOARD OF LAND COMMISSIONERS
42M 164431 00	FOUR J RANCH INC
42M 11946 00	GUDRUN K UNDEM; MARGO G UNDEM; SAM K UNDEM
42M 23025 00	CODY G SHARP
42M 51795 00	DENNIS LATKA; LATKA, STEPHEN & JOSEPHINE FAMILY TRUST
42M 720 00	LARS E KALBERG
42M 53342 00	PAUL C BEYER
40P 63981 00	BRUCE A WAGNER; DARCI WAGNER
42M 15197 00	THOMAS H MARTINI
42M 5139 00	MONTANA STATE BOARD OF LAND COMMISSIONERS
40S 171279 00	TERRIL L RAAUM
40S 71694 00	VICKIE BARBOT; LARRY POFF
42M 12961 00	MARTY CASEY
42M 71709 00	LARSON, LOWELL H & JOANNE M REVOCABLE LIVING TRUST
42M 17541 00	FIFTY TWO RANCH INC; GEORGE LEWIS
42M 165242 00	EATON, FRANK & SONS
42M 15260 00	BERNICE A WALKER
40P 30120330	NICK MOTHERSHEAD; VALERIE J MOTHERSHEAD
42M 32428 00	JAMES W HUNTER

WR Number	All Owners
40P 88308 00	MONTANA STATE BOARD OF LAND COMMISSIONERS
42M 30071069	HEATHER N BIRELEY; JAMIE M BIRELEY
42M 30105766	JOHN K DYNNESON; NANCY K DYNNESON
42M 44664 00	SANDRA J FINK; WILLIAM D FINK
42M 30001565	KATHLEEN M MORRIS; LARRY E MORRIS
40S 170317 00	AMESTOY, P & C INC
42M 104460 00	DARCIE K YADON; THOMAS W YADON
42M 17265 00	RAYMOND J BASTA
40S 171278 00	TERRIL L RAAUM
42M 30121730	LISA K LITWILLER; MATTHEW J LITWILLER
42M 30121732	LISA K LITWILLER; MATTHEW J LITWILLER
42M 16348 00	SIDNEY, CITY OF
42M 61784 00	SIDNEY, CITY OF
42M 16351 00	SIDNEY, CITY OF
42M 163439 00	PUST, ERICH W INC
42M 16350 00	SIDNEY, CITY OF
40P 30010190	BETTINNA C MOOS; JEFFREY S MOOS
40P 16443 00	ROLANDSON IMPLEMENT CO
40P 64103 00	BROOKE MACGILLIVRAY; SHERRY L MACGILLIVRAY
42M 16349 00	SIDNEY, CITY OF
40P 66200 00	MAHLSTEDT RANCH INC
42M 16347 00	SIDNEY, CITY OF
42M 16352 00	SIDNEY, CITY OF
42M 30951 00	WOLFF, HELMUT & CAROLYN REVOCABLE LIVING TRUST
42M 46662 00	STORTZ RANCH INC
40P 10179 00	BROOKE MACGILLIVRAY; SHERRY L MACGILLIVRAY
42M 24790 00	US BAR RANCH INC
40P 74582 00	KIRCHNER BROTHERS LLC
42M 30028900	MERRILL, TBA FAMILY PARTNERSHIP
42M 22678 00	CHARLES COUTURE
42M 96389 00	KITTLESON FAMILY PARTNERSHIP LP
42M 178313 00	WOLFF & SONS INC
42M 30114305	RONALD R BOUCHARD
42M 30066850	SHANDON W ERICKSON
42M 30027456	SHANDON W ERICKSON
42M 41512 00	DYNNESON RANCH INC
40S 74368 00	CODY J STEPPLER; VERLIN R STEPPLER
42M 70214 00	PREVOST RANCH INC
42M 89888 00	MOUNT PLEASANT ESTATES
42M 11476 00	MONTANA STATE BOARD OF LAND COMMISSIONERS
40P 5721 00	BRUCE L VAN HORN; DELLA J VAN HORN
42M 10644 00	MONTANA STATE BOARD OF LAND COMMISSIONERS
42M 165807 00	ANDREW D DOWNS; BETTY L DOWNS; CRAIG HULL; ROGER HULL; VICKI LISCOMBE; JON TORBERT
42M 30125401	BILLIE J WELTY
40P 6825 00	ROSS C OAKLAND; TARA DAWN OAKLAND; SCHLICHT FAMILY TRUST

WR Number	All Owners
40P 104471 00	R KURT VOSS; RHONDA M VOSS
42M 108386 00	MICHAEL G DENOWH; PAUL J DENOWH
42M 27937 00	LORI B JOHNSON
40S 3788 00	BEVERLY K RAAUM; TERRIL L RAAUM
42M 163349 00	ALISA WERNER; HEATH WERNER
42M 109575 00	DONALD S FRANKLIN
42M 24526 00	BERNICE A WALKER
40P 35587 00	BEERYS LAND & LIVESTOCK CO
40E 15140 00	LOGAN FARM INC
40P 77177 00	BRUCE L VAN HORN; DELLA J VAN HORN
42M 17962 00	MOUNT PLEASANT ESTATES
40E 15139 00	LOGAN FARM INC
40P 30021516	MASSAR RANCH INC
42M 163348 00	ALISA WERNER; HEATH WERNER
42M 37726 00	RUSSELL A NELSON
40E 109576 00	LOGAN FARM INC
40S 30044140	ANDREW L CARDA; BECKY CARDA
42M 30042688	PATRICK N VAIRA
42M 109584 00	ALISA WERNER; HEATH WERNER
42M 59674 00	MARY A ROSAAEN; NEWELL S ROSAAEN
42M 30049532	4 J RANCH INC
40E 30122211	HAROLD E WALLER
42M 22541 00	KEITH A KINDEN
42M 30161422	YOUNG, LOREN INC
42M 75850 00	HERBERT F ALLARD; RALPH W ALLARD
42M 22540 00	RICHLAND AVIATION
42M 163504 00	JENNA L MCCORMICK; TREVOR J MCCORMICK
42M 163491 00	SIDNEY COUNTRY CLUB
42M 30062869	WADSWORTH BROTHERS CONSTRUCTION CO
42M 50239 00	FOUR J RANCH INC
42M 46346 00	FOUR J RANCH INC
42M 30159885	RICHLAND COUNTY PUBLIC WORKS
40S 78221 00	CYNTHIA SUNDHEIM; SCOTT SUNDHEIM
42M 88246 00	PREWITT TRUST
42M 987 00	DELORA DETMERS
42M 30119460	HOOPER PROPERTIES LLC
42M 88280 00	JUDEAN SUNDHEIM; PATTY SUNDHEIM
42M 30158284	JAMES W HUNTER; RHONDA H HUNTER
42M 9308 00	BEAR GULCH RANCH INC
42M 30069566	JAMES A NAGLE
40P 63930 00	DELP, ROBERT & DONNA FAMILY TRUST
40P 111447 00	TODD VERSCHOOT
42M 22410 00	DAVID J LEASTMAN; REGINA R LEASTMAN
40P 106971 00	FLINT HANCE
40P 30120151	KOUNTZ RANCH INC
42M 30063749	WADSWORTH BROTHERS CONSTRUCTION CO

WR Number	All Owners
42M 76567 00	BARBARA BERNDT; CLAUDIA K SCHMIDT; MARCELLE M WARDEN
42M 30025676	MONTANA STATE BOARD OF LAND COMMISSIONERS
42M 66277 00	PREWITT TRUST
42M 30063412	HAY CREEK RESOURCES LLC
40P 30115575	MARY KAY KOUNTZ
42M 165284 00	CRAIG R SEEVE; DONNA M SEEVE
40P 38533 00	VICKI VAIRA
42M 30064445	SHELLY HUTTON; ROBERT SCHEPENS
40P 30147179	GULDBORG BROTHERS INC
42M 163305 00	ROSS C OAKLAND; TARA DAWN OAKLAND; SCHLICHT FAMILY TRUST
42M 122121 00	JAMES A MURRAY
42M 72920 00	RONALD R BOUCHARD
42M 17263 00	RAYMOND J BASTA
40S 38588 00	HEART PLUS LLC
42M 30150475	EVERETT WILLIAMS
40P 13216 00	CUMMINGS, JIM INC
42M 61885 00	DARYL NORGAARD
42M 109559 00	MERLYN D LARSON; ROSEMARY LARSON
40S 30044186	DAYTON FOUNDATION
42M 77172 00	CHAD ALBIN
40S 30064325	WILLIAM D THORNTON
42M 59513 00	PAMELA J CAYER; STEPHEN J CAYER
40P 30533 00	PAWLOWSKI BROTHERS INC
42M 30025394	DAVID G LINDE
42M 30064087	ADAM H MILTON; MARJA R MILTON
42M 165288 00	CRAIG R SEEVE; DONNA M SEEVE
40S 30125725	DAVID VAIRA
40P 86163 00	DARREL J BULLER; BULLER, JANICE R REVOCABLE TRUST
40S 30150565	WILLIAM D THORNTON
40P 30158645	KIRCHNER BROTHERS LLC
40P 77520 00	MONTANA STATE BOARD OF LAND COMMISSIONERS
42M 71271 00	ILA K HARDY; JOYCE HERNANDEZ; JODI KORDONOWY; JEFFREY L PARTIN; RICHARD I PARTIN; TIMOTHY T PARTIN; NADINE M SWISSE
42M 51882 00	LONE TREE RANCH INC
42M 66310 00	GLENDIVE RANCH LLC
42M 30013017	CAROLYN G STURGIS
42M 30068630	STICKVILLE REVOCABLE TRUST
40P 10609 00	DAVID K KASTEN
42M 30125435	BRIEN PANASUK; TOBY A PANASUK; ZANE R PANASUK
42M 16447 00	DOWNS INC
42M 163527 00	EATON, FRANK & SONS
40P 39244 00	DUANE W WHITE
42M 154297 00	ANN R POPPER; MICHAEL K POPPER
42M 30154616	DIANA YOUNGQUIST; LARRY D YOUNGQUIST
42M 106920 00	CLIFFORD BERGSTEDT
42M 30043724	LABONTE DIAMOND D FARMS LLC

WR Number	All Owners
42M 7429 00	GORDON KOLBERG
40P 30004815	JORDAN FAMILY TRUST 09/4/2020
42M 30051731	JOHN L FRANKLIN
40P 111366 00	YARGER INC
42M 37566 00	FRANZ RANCH LAND TRUST
40P 30122770	MICHAEL A THOENY
42M 30069037	EMEP ACQUISITIONS LLC
42M 10884 00	MICHAEL RAMBUR
40P 30153599	JORDAN, WILLIAM C LLC
42M 45514 00	L 7 RANCH INC
42M 30042083	BAKKEN INC
42M 21403 00	J D SUBDIVISIONS INC
40P 102762 00	ALAYNA J HAYNIE; MICHAEL L HAYNIE; RUDY HAYNIE; RUTH HAYNIE
42M 32649 00	DARREN HAGEN
40S 61865 00	DONALD R HERNESS; HERNESS CHILDREN; P & E HERNESS LAND LLC; PATES CHILDREN
42M 17550 00	FIFTY TWO RANCH INC; GEORGE LEWIS
42M 66312 00	BALLINGER, DEBRA S TRUST
40P 102812 00	WAGNER, ROY BENEFICIARY TRUST
42M 28820 00	DUANE SCHULTZ; PAMELA SCHULTZ
40S 99045 00	KITTLESON FAMILY PARTNERSHIP LP
42M 109919 00	EATON, FRANK & SONS
40S 3782 00	DAVID E HARDY; SHARON E HARDY
42M 30064088	SANDRA L ODONNELL; TODD ODONNELL
40P 42503 00	DENNIS D WOLFF; KAREN C WOLFF
42M 30162765	CARSON LIVING TRUST
42M 30070643	NAGLE FAMILY LLLP
42M 30133543	JAN JACKMAN
40P 31482 00	DUANE W WHITE
42M 30133703	JEANNE SMALIS
42M 17097 00	DARREN HAGEN
42M 38912 00	MIKE C KAYS; SUSAN R KAYS
40P 35844 00	BECKER, SCOTT R & KONNY J BECKER REVOCABLE TRUST
42M 30065322	R A RENTALS LLC
40P 91844 00	NICK MOTHERSHEAD; VALERIE J MOTHERSHEAD
42M 34650 00	JOSEPH MAY
40P 57305 00	GF HOLDING LLP
42M 76536 00	DYNNESON LAND LLC
42M 78239 00	LER FARMS
42M 101112 00	SIDNEY RICHLAND REGIONAL AIRPORT AUTHORITY
40S 30115413	MILES G PANASUK
42M 114786 00	EATON, FRANK & SONS
40P 111453 00	MILLER, LORVETTA TRUST
40P 36154 00	AMANDA HOVE; BRYCE A HOVE; MOOS, DONALD D LIVING TRUST
40P 117583 00	BARBARA A SIKVELAND; NILS K SIKVELAND
42M 57339 00	JEFF AISENBREY; LUANNA AISENBREY

WR Number	All Owners
42M 97747 00	TIM C LECHNER
42M 114672 00	WILLIAM C STEINBEISSER
42M 66207 00	MARK A MARTIN; MARY H MARTIN
40P 13338 00	BECKER-ZAHN INC
40P 41360 00	CIRCLE, TOWN OF
42M 30065716	R A RENTALS LLC
40P 30067347	COLLEEN EVENSON
42M 33542 00	CARL T DYNNESON; LINDSEY L DYNNESON
40P 97806 00	THOMAS F REEVES
42M 101401 00	BRADLEY M ANVIK
40S 30021914	ERVIN E GOSS; JAMES D GOSS; JULIE M GOSS; GOSS, JANET R TRUST; GOSS, MARVIN F TRUST; GOSS, VICKY L FAMILY SHARE TRUST UNDER WILL
40S 49262 00	HACKLEY IRREVOCABLE TRUST; DIANE L SPOKLIE
42M 11931 00	GUDRUN K UNDEM; MARGO G UNDEM; SAM K UNDEM
42M 30113196	STICKVILLE REVOCABLE TRUST
42M 74576 00	KOPP FARMS INC
40P 80529 00	HJ LAND CO
40P 30998 00	SWITZER, LARRY J TRUST
42M 30027937	CHAD BURNS
42M 66302 00	MARLO SALSBURY
42M 30115843	STICKVILLE REVOCABLE TRUST
40S 59654 00	KELLY, SHIRLEY TRUSTEE; CHERYL UNRUH
40S 106939 00	HAROLD J FINK; FINK FARMS INC
40S 26473 00	HAROLD J FINK; HELEN FINK
42M 30161467	KLEMPEL FRANK INC
42M 30148602	CRAIG BEISWANGER; GEORGIA BEISWANGER
42M 57320 00	MURRAY, JIM RANCH INC
42M 4824 00	DIANE KILSDONK; ANGELA PRUITT; SIMON PRUITT
42M 21564 00	WILLIAM BUCKLEY
42M 6080 00	AURIE SCHWARTING
42M 64073 00	BRADY BOUCHARD
40P 35354 00	QUICK RANCH LLC
42M 99099 00	AUDREY A HILL
42M 44388 00	BEAR GULCH RANCH INC
42M 22484 00	MURRAY, JIM RANCH INC
40E 30113512	ARNSTON RANCH INC
42M 74579 00	DCLW CORP
42M 22485 00	MURRAY, JIM RANCH INC
40P 114744 00	MASSAR RANCH INC
42M 71712 00	CHRIS C LARSON; MICHELLE R LARSON
42M 28072 00	CHRIS UNDEM
42M 30014275	NANCY VERSCHOOT
42M 46345 00	FOUR J RANCH INC
42M 30157916	FRANZ RANCH LAND TRUST
42M 36819 00	JAMES A WYSE; MICHAEL J WYSE; TIMOTHY R WYSE
42M 66281 00	EDWARD L PIERCE; MARIE A PIERCE

WR Number	All Owners
40P 9354 00	HANZ H HAYNIE; SYLVIA B HAYNIE
42M 33994 00	EATON, FRANK & SONS
40P 16537 00	MASSAR RANCH INC
40P 8974 00	DAVID N MCCLOY
42M 91874 00	STORTZ INC
42M 36672 00	THIESSEN INC
42M 66146 00	SIDNEY RICHLAND REGIONAL AIRPORT AUTHORITY
40S 74619 00	CAROLYN CASTERLINE
42M 66316 00	LEE DELP
40P 30005641	LAZY A M RANCH INC
40S 71744 00	GEORGES, ANNE M TRUST
40P 30043735	TODD VERSCHOOT; TONY J VERSCHOOT
40P 55535 00	MAL ZUROFF
40P 109597 00	KATHY VAIRA; LARRY VAIRA
40S 122014 00	GEORGES, ANNE M TRUST
42M 30154604	ANGELA R KREIMAN; GARY L KREIMAN
42M 30009300	KENNETH MICHAEL BACKES
40P 30116216	VOSS RANCH INC
40S 122013 00	GEORGES, ANNE M TRUST
40P 30127419	JENSEN BROTHERS OF CIRCLE INC
42M 25513 00	GARTNER DENOWH ANGUS RANCH
40P 30002090	ARLON W FRANZ
42M 30003198	COUNTRY CROSS RANCH LLC
42M 30004133	THIESSEN INC
42M 66289 00	HOT WHEELS SERVICES INC
42M 30018145	ANGELA PRUITT; SIMON PRUITT
42M 30009491	DIEDE, EMIL INC
40P 133056 00	ARLON W FRANZ
42M 14891 00	SCHMITZ JOE & ANNA AND BURKE PAT & ANNA TRUST
42M 66244 00	MCNUTT FAMILY TRUST
42M 61799 00	FRANK C STICKA; SHEILA STICKA
42M 53227 00	CLIFFORD DAHL; DEBBIE DAHL
40P 30020750	MASSAR RANCH INC
42M 117239 00	HUFFMAN, JAMES TRUST
42M 61838 00	EDWIN J RIES; LINDA L RIES
42M 1161 00	ROSS C OAKLAND; TARA DAWN OAKLAND
40P 51950 00	SHAYLEE J HANCE; DALTON L WAHL
42M 30065050	BRENDA L VERSCHOOT; CHASE L VERSCHOOT
40S 30042695	CLAYTON K VAIRA; JENIFER S VAIRA
40P 646 00	SWITZER, L J RANCH INC
42M 81283 00	CAROL B MOFFETT; EDWIN E NIELSEN
42M 30109085	DOWNS INC
42M 83006 00	WOLFF & SONS INC
40S 69265 00	DEVILS ELBOW RANCH LLC
40S 59636 00	JUDITH FOSS TURNBULL; NEIL TURNBULL
42M 91923 00	PAUL C BEYER

WR Number	All Owners
40P 30153119	KAREN DORRIS; MICHAEL DORRIS
42M 30151175	FRANZ RANCH LAND TRUST
40S 30103565	DONALD R HERNESS; HERNESS, LINDSEY K TRUST; P & E HERNESS LAND LLC; PATES CHILDREN
40P 10865 00	CLINT KIRCHNER; SHAWN KIRCHNER; WALLER, GLENN INC
40P 30025566	DANIEL R UNDEM; DAWN L UNDEM
40P 50368 00	MARGARET SCHARA; ROGER SCHARA
40S 30113928	WALLER FARMS, INC
42M 165339 00	EATON, FRANK & SONS
42M 165340 00	EATON, FRANK & SONS
40P 71762 00	SCOT BROWN; SUE ANN GOOD-BROWN
40S 18626 00	CYNTHIA SUNDHEIM; SCOTT SUNDHEIM
42M 11940 00	GUDRUN K UNDEM; MARGO G UNDEM; SAM K UNDEM
40S 30042696	KATHY W THORNTON; RUSSELL D THORNTON
40P 30030998	WITTKOPP LAND LLC
40S 16403 00	GENE IRIGOIN
42M 76558 00	DON D BOUCHARD; MELODY J BOUCHARD; RONALD R BOUCHARD; VERNA M BOUCHARD
42M 30001030	JOHN K DYNNESON; NANCY K DYNNESON
42M 30072618	COLE THORNTON; JANA THORNTON
42M 30071720	DEBRA ENGESSER; DONALD ENGESSER
40P 30029518	GREGG W HEIDE; SCOTT HEIDE
40P 35218 00	WITTKOPP INC
40P 48219 00	LARRY SCHIPMAN; PATTI SCHIPMAN
40S 44789 00	MONTANA STATE BOARD OF LAND COMMISSIONERS
42M 54881 00	USA (DEPT OF INTERIOR BUREAU OF LAND MGMT)
42M 73761 00	FRANZ RANCH LAND TRUST
40P 94637 00	GREGG W HEIDE; SCOTT HEIDE
40P 30068647	HUSEBY FARMS INC
42M 19847 00	CLAYTON LITWILLER; KATELYNN LITWILLER; PHYLLIS MULLET; STEVEN L MULLET
42M 104493 00	BRENDA LARSON; TIM D LARSON
42M 64075 00	JODI KORDONOWY; RAY W KORDONOWY
40P 5071 00	EUGENE VOSS
40P 66245 00	ANITA M NAGEL; LAWRENCE L NAGEL
40P 6535 00	CROSS S RANCH REVOCABLE TRUST
40P 57450 00	ERVIN E GOSS; JAMES D GOSS; MARVIN F GOSS; PATTI A MCGINNIS
42M 46180 00	KOLBERG INC
42M 11835 00	TILLMAN FAMILY REVOCABLE TRUST
42M 23197 00	KAYLA S WICK; WAYNE G WICK
42M 109906 00	HUBING RANCH INC
42M 16717 00	MONTANA STATE BOARD OF LAND COMMISSIONERS
40P 47016 00	CANFIELD, WILLIAM B REV LIVING TRUST; WYATT HANDY
40P 63256 00	CROSS S RANCH REVOCABLE TRUST
40P 30072639	CROSS S RANCH REVOCABLE TRUST
40P 57298 00	LARRY SCHIPMAN; PATTI SCHIPMAN
42M 109892 00	HUBING RANCH INC

WR Number	All Owners
42M 57391 00	LER FARMS
40S 109601 00	MONTANA STATE BOARD OF LAND COMMISSIONERS
42M 2628 00	WILLIAM J REHBEIN
40P 51936 00	CHRISTOPHER T HILL; SHIRLEY A HILL; EDWARD E MARSHALL
42M 109907 00	HUBING RANCH INC
42M 17544 00	FIFTY TWO RANCH INC; GEORGE LEWIS
42M 16331 00	THIESSEN, DWIGHT & DIANA FAMILY TRUST
40P 66165 00	KIP BRADEN
42M 61779 00	CHARLOTTE IVERSEN; DALE E IVERSEN; KENNETH A IVERSEN; THERESA M IVERSEN; IVERSEN, MARK W TRUST
42M 30048949	FRANCES SYTH; SAM SYTH
40P 35586 00	BEERYS LAND & LIVESTOCK CO
42M 30116338	ORION A SUNDHEIM
40P 4579 00	MOLINE, CHARLES AND DARLENE FAMILY TRUST
40P 63979 00	KAYLEEN J GACKLE; MICHAEL L GACKLE
42M 30067099	KIMBERLY S USSELMAN; SHANE USSELMAN
42M 31303 00	SIDNEY COUNTRY CLUB
40P 66175 00	CIRCLE VET CLINIC
40P 30004947	SWITZER LAND CO
40P 4870 00	DEAN SCHILLINGER
40P 117580 00	GULDBORG BROTHERS INC
42M 5722 00	ALAN SISCO; ARDELLE SISCO; DEAN SISCO
42M 101408 00	ALBIN FARMS
40P 96369 00	JENSEN BROTHERS OF CIRCLE INC
40P 16516 00	TOD L KASTEN
40P 30005710	TOD L KASTEN
40S 51810 00	DANIELS FAMILY PRTNRSHP
40P 91871 00	OLSON-LOVAAS INC
40P 6529 00	HAROLD W PEABODY
42M 53224 00	DARIN MULLIN
40P 102765 00	GREGG W HEIDE
42M 69290 00	CLIFFORD BERGSTEDT
40S 8268 00	SARA LYN HUFT; SCOTTY HUFT
42M 81307 00	DANIEL L YOUNG; LANETTE A YOUNG
40P 38918 00	JEFFREY CARDA; MICHELLE CARDA
42M 88331 00	R A RENTALS LLC; DEBORA SCHIEFFER
42M 9356 00	DEEDRA ERICKSON; SHANDON W ERICKSON
42M 66322 00	CHERYL L STEFFAN; MARK G STEFFAN
42M 50299 00	KAYLA S WICK; WAYNE G WICK
40S 16412 00	KELLY, SHIRLEY TRUSTEE; CHERYL UNRUH
42M 116918 00	DAVID R STEINBEISSER; DAWN STEINBEISSER
42M 113737 00	HERBERT F ALLARD; RALPH W ALLARD
42M 53331 00	MONTANA STATE BOARD OF LAND COMMISSIONERS
40P 549 00	SWITZER, L J RANCH INC
40P 30004777	JOEL HAYNIE
42M 163566 00	NANCY A HUFFMAN

WR Number	All Owners
42M 30045477	PHILIP JOHNSON; ROBYN JOHNSON
40S 78227 00	DANIEL B BIDEGARAY
40P 30003079	LECHNER INC
42M 30155462	DONALD KUEHN; VERA KUEHN; KUEHN DONALD & VERA TRUST
40P 30041956	ROBERT E SCHOCK; SHERRI B SCHOCK
42M 74593 00	PREWITT TRUST
42M 30029298	MICHAEL STEFFAN; NANCY M STEFFAN
42M 57392 00	DYNNESON LAND LLC
40P 30105119	MARY KAY KOUNTZ
40P 41242 00	ERVIN E GOSS; JAMES D GOSS; MARVIN F GOSS; PATTI A MCGINNIS
42M 111363 00	KITTLESON FAMILY PARTNERSHIP LP
42M 30012793	WOLFF & SONS INC
40P 30070877	MONTANA STATE BOARD OF LAND COMMISSIONERS
42M 30149887	MARIO S THORSEN
	KLEMPEL, JEFF & PAM FAMILY TRUST; KLEMPEL, WALTER FAMILY LLC; MAVIRDA N
40P 70185 00	LEPEL; MATTHEW J TEDESCO
40P 30070783	MONTANA STATE BOARD OF LAND COMMISSIONERS
40S 22305 00	WAYNE BROWN; DIANA ELI
40P 53339 00	JEFFREY CARDA; MICHELLE CARDA
42M 24439 00	ANDREW D DOWNS
42M 30065524	DAVID S HILL; JULIE E HILL
40P 72941 00	ROBERT G CANDEE
42M 30121938	PETERSEN, J K INC
42M 30025675	US BAR RANCH INC
42M 30021689	JAMES W HUNTER; RHONDA H HUNTER
42M 106038 00	GRUE RANCH INC
42M 30009713	ARDYS G TORGERSON; CHRISTOPHER J TORGERSON; LARRY D TORGERSON
40S 89084 00	MARY STEPPLER; STEPPLER, DONALD LIVING TRUST
42M 3263 00	HAROLD A SIMARD; JUDITH D SIMARD
40P 91937 00	AURILLA JOHNSTON; MARLIN W JOHNSTON
40S 30120159	SCHMITZ JOE & ANNA AND BURKE PAT & ANNA TRUST
42M 165345 00	EATON, FRANK & SONS
42M 30148172	DUANE A ANDERSON; LINDA J ANDERSON
40P 10784 00	WOLFF LLC
42M 59567 00	BRANDON C BATTY; JULIE A BATTY
42M 4096 00	STORTZ INC
40P 57280 00	STONEY INC
40S 1530 00	ELM, HENRY ESTATE OF
40S 22409 00	HEART PLUS LLC
40P 31544 00	WAGNER, VICTOR REVOCABLE TRUST
42M 1273 00	HOWARD MARTINI; MARION MARTINI
	BARBARA J ALBRECHT; DONNA P QUALLEY; MARK T QUALLEY; PAT D QUALLEY;
	ROXANNE M QUALLEY; STEVEN B QUALLEY; TIMOTHY A QUALLEY; QUALLEY, CRAIG D
42M 4400 00	TRUST; DAVID B SORENSON
42M 70187 00	PATRICIA M CARLSEN
42M 17545 00	FIFTY TWO RANCH INC; GEORGE LEWIS

WR Number	All Owners
40P 37433 00	SULLIVAN, JAMES & AGNES FAMILY TRUST
40P 30047333	CLAUDE A HAYES
40P 30115858	SWITZER LAND CO
40P 30154401	FLINT HANCE; JANA HANCE
40P 30046387	JENSEN BROTHERS OF CIRCLE INC
40P 30044330	MASSAR RANCH INC
40P 39497 00	ROLANDSON IMPLEMENT CO
40P 30155340	DAVID C DESPAIN; NANCY A DESPAIN
42M 12563 00	LILES, KENNETH INC
42M 5647 00	ERICH PUST
40P 66190 00	JENSEN BROTHERS OF CIRCLE INC
40P 51777 00	MLBC PROPERTIES, LLC
40P 102797 00	MASSAR RANCH INC
42M 14867 00	LISA F YOUNG; SHAWN E YOUNG
42M 30115844	STICKVILLE REVOCABLE TRUST
42M 30049996	STICKVILLE REVOCABLE TRUST
42M 30116352	HUBING RANCH INC
40P 30069986	JERRY L NAGLE
42M 10331 00	ALBIN FARMS
42M 10352 00	LOWMAN, CHARLES & MARLEEN FAMILY TRUST
40P 74616 00	MASSAR RANCH INC
42M 5087 00	ASHLEA J ANDERSON; RYAN R ANDERSON
42M 69293 00	DOROTHY M KALBERG
40P 4282 00	VICKI VAIRA
42M 34345 00	BILL CUNDIFF
42M 113729 00	WOLFF LLC
42M 113735 00	WOLFF LLC
40P 30003614	GREEN, EARL INC
40P 81295 00	GARPESTAD GORDON AND MARYANN FAMILY TRUST
40P 39436 00	VEVERKA INC
40P 79885 00	DELTON R GACKLE
40P 30030083	CHANTEL M VERSCHOOT; THOMAS VERSCHOOT
40P 68081 00	ROBYN T KETCHUM; THOMAS J KETCHUM
42M 30067686	CLIFFORD DAHL; DEBBIE DAHL
40E 9811 00	MAVES RANCH INC
42M 30106841	CRAIG JOHNSON
40P 16562 00	LEROY JORDAN
42M 30066243	JIM BOUSQUET
40P 7978 00	ROBERT G CANDEE
42M 89092 00	BOJE FARMS INC
42M 76557 00	PUST, ERICH W INC
40P 89884 00	MARGARET SCHARA; ROGER SCHARA
40P 30119841	WILLIAM J BRODY; BRODY, J RANCH INC
42M 33861 00	MICHAEL F HIER; RICHARD T HIER
40S 51887 00	GORDON LEWIS PETRIK; JUNE E PETRIK
42M 4943 00	MCENROE, JAMES ERNEST LIVING TRUST

WR Number	All Owners
40S 74577 00	PHILLIP A FINK
40P 89868 00	YARGER INC
42M 25510 00	GARTNER DENOWH ANGUS RANCH
42M 88334 00	MONTANA STATE BOARD OF LAND COMMISSIONERS
42M 30026967	HARDY INVESTMENTS LP
40S 3120 00	EVERETT A BAXTER; RED WING CORP
42M 44607 00	COLE FINK; ERIN FINK
42M 20945 00	BRADY BOUCHARD
42M 597 00	MONTANA STATE BOARD OF LAND COMMISSIONERS
40P 30113101	KIM A KLASNA; TIMOTHY J KLASNA
40P 55578 00	VEVERKA INC
40E 9888 00	LOGAN, BENJAIMEN REVOCABLE TRUST
42M 30128816	LILES, KENNETH INC
42M 30114440	SHARON M ELLIS
40P 30065367	PASTURE CREEK INC
42M 30066962	BRADLEY, GORDON & MARGARET FAMILY TRUST
42M 30104104	JOSHUA R JOHNSON; WENDY S JOHNSON
40P 31487 00	HABER INC
42M 59005 00	ANN R POPPER; MICHAEL K POPPER
42M 17617 00	SCHMITZ JOE & ANNA AND BURKE PAT & ANNA TRUST
40P 30043008	WALLACE HALL
42M 30159143	JEFFREY L MCKINNEY; MEREDITH B MCKINNEY
42M 66273 00	LILLIAN DELORES GILBERT
42M 1645 00	DENNIS LATKA; LATKA, STEPHEN & JOSEPHINE FAMILY TRUST
42M 59489 00	MARK D OLSON
42M 30047258	KJELD JONSSON
42M 18413 00	D LUNDEMO RENTALS LLC
42M 97729 00	GOOSEN FAMILY FARM LLC
40S 69268 00	CAROLYN CASTERLINE
42M 94647 00	CLINT MULLIN
42M 53315 00	THIESSEN INC
40P 59528 00	TRIOP FARMS INC
42M 33060 00	CHAD OAKLAND
40P 77150 00	DONALD W SWITZER
40P 30070851	JAMES D GOSS; JULIE M GOSS
40S 30013532	KITTLESON FAMILY PARTNERSHIP LP
42M 30068526	ELAINE L HILL; WILBUR W HILL
42M 30104109	CANDEE ANGUS FARM INC
40P 91938 00	AURILLA JOHNSTON; MARLIN W JOHNSTON
42M 102446 00	MICKELSON SYLVIA TRUST
42M 59542 00	EATON, FRANK & SONS
40S 59580 00	DEVILS ELBOW RANCH LLC
42M 111394 00	LEWIS I LER; PATRICIA A LER
42M 30046440	EDWARDS, LYLE INC
42M 96336 00	DAVID LER; MATT LER
40P 30119550	GULDBORG BROTHERS INC

WR Number	All Owners
42M 24286 00	CURTIS M MILLER; JANA D MILLER
42M 33847 00	CHARLEY BUEHNER
40P 78225 00	DANNY D MARLENEE; TERESA R WOLFF
40P 79895 00	JORDAN FAMILY TRUST 09/4/2020
40E 28583 00	MARY M GARFIELD; WAYNE L GARFIELD
40P 84902 00	SWITZER LAND CO
40P 30154591	BETTINNA C MOOS; JEFFREY S MOOS
40P 16166 00	MARILYN K REINEMER; R PHILIP REINEMER
40S 3122 00	EVERETT A BAXTER; RED WING CORP
40P 36624 00	HABER INC
40P 75814 00	SCHOCK POLLED HEREFORD CO
40P 88298 00	MONTANA STATE BOARD OF LAND COMMISSIONERS
42M 1321 00	JAMES K PETERSEN
42M 59562 00	KIRBY A BASTA; KENT A CRESS; LAUREL R CRESS
40P 97805 00	THOMAS F REEVES
42M 6427 00	GARY C SCHOEPP; KAREN L SCHOEPP
42M 102790 00	ERIC L SUNDHEIM
40P 30108726	JAMES D GOSS; JULIE M GOSS
40P 69225 00	JAMES D GOSS; JULIE M GOSS
40P 81377 00	STEVEN EGGEBRECHT
42M 30063248	AUDREY A HILL
40P 21649 00	PAUL E GEBHARDT
40P 4580 00	BURL J BELEY; VICKI L BELEY
42M 70225 00	DONALD M WALKER; JACKLYN M WALKER
40P 16312 00	LAZY A M RANCH INC
40P 21767 00	CANDACE GREEN; WILLIAM R GREEN
42M 17233 00	JOHNSON, CALVIN Z LAND LLC; JOHNSON, CRAIG L LAND LLC
42M 111413 00	LEWIS INC
40S 171254 00	F & M RANCH LLC
40P 63933 00	JARED KOUNTZ; MELISSA KOUNTZ
42M 70193 00	DONALD M WALKER; JACKLYN M WALKER
40S 30065300	RONALD J FINK
40P 30005024	ROBERT G CANDEE
40P 30013885	CATHERINE L WORKMAN; DAVID C WORKMAN
40S 69246 00	PLEASANT VALLEY INC
42M 81336 00	CHAD OAKLAND
40P 41333 00	WAGNER, ROY BENEFICIARY TRUST
40P 7996 00	CHANTEL M VERSCHOOT; THOMAS VERSCHOOT
40P 31479 00	DUANE W WHITE
40P 1990 00	JARED KOUNTZ; MELISSA KOUNTZ
40P 30127228	KOUNTZ RANCH INC
42M 71262 00	SLAGSVOLD HEREFORD RANCH
42M 30069953	JAMES W HUNTER; RHONDA H HUNTER
42M 74592 00	HAY CREEK RESOURCES LLC
42M 30021903	HUFFMAN, JAMES TRUST
42M 69282 00	MONTANA STATE BOARD OF LAND COMMISSIONERS

WR Number	All Owners
40P 30043723	PASTURE CREEK INC
40P 71275 00	MEISSNER BROTHERS INC
40S 30052433	CYNTHIA SUNDHEIM; SCOTT SUNDHEIM
42M 30024396	ARDYS G TORGERSON
40P 20762 00	VICKIE L MCCLOY
40P 76561 00	HEIDE RANCH INC
40P 41241 00	KIRCHNER BROTHERS LLC
40P 30048224	CHANTEL M VERSCHOOT; THOMAS VERSCHOOT
42M 30161469	KLEMPEL FRANK INC
42M 30025852	ARDYS G TORGERSON
42M 30160031	MONTANA STATE BOARD OF LAND COMMISSIONERS
40S 51912 00	PAMELA K UNTERSEHER; STEVEN J UNTERSEHER
42M 14743 00	BRENDA BEVERLY; MARK Q GOLDEN; KIMBERLY J MANGELS
40P 83543 00	L 7 RANCH INC; MACIOROSKI, DAVID FAMILY TRUST
40P 83019 00	BRODY, J RANCH INC
40P 30029304	BROCKWAY SUPPER CLUB
42M 50347 00	E C RANCH INC
42M 78202 00	JERRY R MCMILLEN
40P 30049170	CAROL J FATZINGER; ROY C FATZINGER
42M 30021929	ULLMAN HOLDINGS LLC
40S 30160621	USA (DEPT OF INTERIOR BUREAU OF LAND MGMT)
40S 59579 00	MONTANA STATE BOARD OF LAND COMMISSIONERS
42M 7304 00	PAMELA R SCHIPMAN
40P 114659 00	CHERYL WRIGHT; FRANK C WRIGHT
42M 88307 00	DYNNESON RANCH INC
42M 99070 00	LANGE, ROBERT INC
40P 56557 00	HEIDI BEERY; JASON BEERY
40P 114770 00	R KURT VOSS; RHONDA M VOSS
42M 94596 00	GWENDOLYN ZIEGLER; KAREN ZIEGLER; LARRY J ZIEGLER; LEIGHTON L ZIEGLER
42M 17234 00	JOHNSON, CALVIN Z LAND LLC; JOHNSON, CRAIG L LAND LLC
40S 79886 00	IVERSEN BROTHERS INC
40S 101048 00	USA (DEPT OF INTERIOR BUREAU OF LAND MGMT)
42M 89096 00	PAUL DOUGLAS SVENVOLD
42M 30124988	KRISTAN E BASTA
40S 79893 00	PLEASANT VALLEY INC
42M 30159570	ULLMAN HOLDINGS LLC
42M 30022181	PREWITT TRUST
40P 108415 00	AURILLA JOHNSTON; MARLIN W JOHNSTON
42M 81344 00	DANIEL L YOUNG
42M 59556 00	ERIK P SORENSEN
40E 30047158	MURPHY & SON INC
42M 30107054	ARLON W FRANZ; DONALD A FRANZ
42M 74583 00	LEWIS INC
40P 30119457	ALLEN EVENSON
42M 66196 00	CONSTANCE F JACKSON; GARY L JACKSON
40S 30003948	VICKIE BARBOT; LARRY POFF

Appendix A: Groundwater Rights within Area of Potential Impact

WR Number	All Owners
40P 91884 00	AURILLA JOHNSTON; MARLIN W JOHNSTON
42M 30030977	KENNETH MICHAEL BACKES
42M 102792 00	ULLMAN HOLDINGS LLC
40E 86164 00	HAROLD E WALLER
40S 70195 00	DAVID VAIRA; PEGGY VAIRA
40S 30104251	CODY J STEPPLER; VERLIN R STEPPLER
40P 30051221	VICKI VAIRA
42M 30106866	CHASE PREWITT
42M 102776 00	JUDEAN SUNDHEIM

Appendix B: Groundwater Rights within the 1-ft Drawdown Contour

Appendix B: Groundwater Rights within the 1-ft Drawdown Contour

WR Number	All Owners	Total Well Depth (ft)	Static Water Level (ft)	Additional Drawdown (ft)	Remaining Available Water Column (ft)
42M 101408 00	ALBIN FARMS	152	92	1.8	58.2
42M 74579 00	DCLW CORP	135	80	1.6	53.4
42M 101401 00	BRADLEY M ANVIK	131	100	3.1	27.9
40S 26473 00	HAROLD J FINK; HELEN FINK	134	82	1.5	50.5
40S 30150565	WILLIAM D THORNTON	120	58	1.5	60.5
42M 78202 00	JERRY R MCMILLEN	200	154	2.0	44.0
42M 30068525	ELAINE L HILL; WILBUR W HILL	60	22	1.6	36.4
42M 25507 00	GARTNER DENOWH ANGUS RANCH	66	57	2.1	6.9
42M 37716 00	RUSSELL H JOHNSON; SANDRA S JOHNSON; TARA MATHERN	81	50	2.1	28.9
42M 30049987	COLE THORNTON; JANA THORNTON	100	45	2.0	53.0
42M 99090 00	LARRY D DREVECKY; BRYAN P GARTNER	75	30	2.2	42.8
42M 30009713	ARDYS G TORGERSON; CHRISTOPHER J TORGERSON; LARRY D TORGERSON	160	68	1.7	90.3
42M 24286 00	CURTIS M MILLER; JANA D MILLER	180	110	1.8	68.2
42M 89103 00	DAVID R MCMILLEN	30	5	1.9	23.1
42M 53342 00	PAUL C BEYER	109	35	1.7	72.3
42M 30008518	FRANZ CONSTRUCTION INC	100	42	1.9	56.1
42M 17546 00	BEVERLY R EDAM; DALE W EDAM	57	8	1.9	47.1
42M 69223 00	PREVOST RANCH INC	70	48	1.7	20.3
42M 31821 00	WILLIAM J REHBEIN	40	8	1.7	30.3
42M 74576 00	KOPP FARMS INC	132	40	1.7	90.3
42M 30127074	BRIEN PANASUK; TOBY A PANASUK; ZANE R PANASUK	95	90	1.9	3.1
42M 50390 00	GARTNER DENOWH ANGUS RANCH	70	60	2.1	7.9
40S 16185 00	J HARRY JOHNSON LIMITED PARTNERSHIP	40	20	1.6	18.4
42M 1272 00	HOWARD MARTINI; MARION MARTINI	57	35	2.0	20.0
42M 30063248	AUDREY A HILL	185	72	1.6	111.4
42M 36672 00	THIESSEN INC	140	69	1.6	69.4
42M 66158 00	GARTNER DENOWH ANGUS RANCH	105	43	2.1	59.9
42M 5213 00	AUDREY A HILL	33	7	1.6	24.4
42M 50237 00	FOUR J RANCH INC	84	30	1.8	52.2
42M 37565 00	FRANZ RANCH LAND TRUST	38	16	1.7	20.3
42M 28413 00	GREG ANDERSON	77	58	3.2	15.8

Appendix B: Groundwater Rights within the 1-ft Drawdown Contour

WR Number	All Owners	Total Well Depth (ft)	Static Water Level (ft)	Additional Drawdown (ft)	Remaining Available Water Column (ft)
42M 55523 00	GARTNER DENOWH ANGUS RANCH	48	18	2.3	27.7
42M 51916 00	BRIAN D LEWIS	105	38	1.8	65.2
42M 33847 00	CHARLEY BUEHNER	180	135	2.8	42.2
42M 30025541	KLOSE LANDS LLLP	95	33	2.3	59.7
42M 29467 00	THIESSEN, DWIGHT & DIANA FAMILY TRUST	47	22	1.7	23.3
42M 71271 00	ILA K HARDY; JOYCE HERNANDEZ; JODI KORDONOWY; JEFFREY L PARTIN; RICHARD I PARTIN; TIMOTHY T PARTIN; NADINE M SWISSE	120	40	2.2	77.8
42M 61875 00	ILA K HARDY; JOYCE HERNANDEZ; JODI KORDONOWY; JEFFREY L PARTIN; RICHARD I PARTIN; TIMOTHY T PARTIN; NADINE M SWISSE	80	25	2.2	52.8
42M 30112705	ERIN C SIEBENALER; KENNETH C SIEBENALER	40	30	2.1	7.9
42M 86145 00	WILLIAM D SORTEBERG	60	28	1.6	30.4
42M 30044998	MONTANA STATE BOARD OF LAND COMMISSIONERS	75	31	1.5	42.5
42M 37564 00	FRANZ RANCH LAND TRUST	91	14	1.7	75.3
42M 5214 00	AUDREY A HILL	55	10	1.6	43.4
42M 30116349	JARED D ROSAAEN	70	9.1	1.5	59.4
42M 73798 00	THIESSEN INC	50	15	1.8	33.2
42M 30010531	MONDALIN INC	40	10	1.7	28.3
42M 30025852	ARDYS G TORGERSON	198	128	1.8	68.2
42M 28783 00	KENNETH MICHAEL BACKES	40	18	1.5	20.5
42M 30157916	FRANZ RANCH LAND TRUST	137	63	2.4	71.6
42M 30067255	DALE ROBERTS; KIM I ROBERTS	78	28	1.6	48.4
42M 30148172	DUANE A ANDERSON; LINDA J ANDERSON	160	30	1.9	128.1
42M 33071 00	MICHAEL F HIER; RICHARD T HIER	72	36	1.6	34.4
42M 37567 00	FRANZ RANCH LAND TRUST	55	16	1.8	37.2
42M 30042688	PATRICK N VAIRA	120	51	1.5	67.5
42M 97728 00	MICHAEL G DENOWH; PAUL J DENOWH	40	8	2.3	29.7
40S 51810 00	DANIELS FAMILY PRTNRSHP	154	110	1.6	42.4
40S 30051665	FINK FARMS INC	63	32	1.5	29.5

Appendix B: Groundwater Rights within the 1-ft Drawdown Contour

WR Number	All Owners	Total Well Depth (ft)	Static Water Level (ft)	Additional Drawdown (ft)	Remaining Available Water Column (ft)
42M 1273 00	HOWARD MARTINI; MARION MARTINI	162	60	2.0	100.0
42M 30114439	COLE THORNTON	100	45	2.0	53.0
42M 50236 00	MARTHEA A JOHNSON	74	48	2.4	23.6
42M 23197 00	KAYLA S WICK; WAYNE G WICK	147	18	1.7	127.3
42M 30001030	JOHN K DYNNESON; NANCY K DYNNESON	143	70	1.9870107	71.01298934
42M 30009300	KENNETH MICHAEL BACKES	140	5	1.5875366	133.4124634
42M 53307 00	KOPP FARMS INC	40	15	1.7290468	23.27095318
42M 30008523	PENNIE K THORNTON; WILLIAM D THORNTON	45	12	1.7282862	31.27171378
42M 30072618	COLE THORNTON; JANA THORNTON	143	92	1.9209351	49.0790649
40S 30065300	RONALD J FINK	190	55	1.5018621	133.4981379
42M 30150475	EVERETT WILLIAMS	120	60	1.5610477	58.43895234
42M 61885 00	DARYL NORGAARD	120	75	2.4189746	42.58102541
42M 88307 00	DYNNESON RANCH INC	200	85	1.8180258	113.1819742
42M 79009 00	MICHAEL F HIER; RICHARD T HIER	85	20	1.6817632	63.31823682
42M 59538 00	LESUEUR FAMILY; JANA MINIFIE; BETTE KAY NELSON; JOHN T VOLDEN; VOLDEN, DONALD T & ROSEMARIE FAMILY TRUST	40	19	1.656829	19.34317098
42M 30068526	ELAINE L HILL; WILBUR W HILL	180	120	1.6150556	58.38494444
42M 7353 00	STEVE VITT	60	30	1.5557037	28.4442963
42M 70214 00	PREVOST RANCH INC	115	70	1.6580842	43.34191585
42M 5918 00	RUSS S GOMKE; MELISSA F WILLIAMS	80	46	1.569014	32.43098599
42M 30048949	FRANCES SYTH; SAM SYTH	150	100	3.2080497	46.79195027
42M 66207 00	MARK A MARTIN; MARY H MARTIN	130	72	2.4697949	55.5302051
40S 20354 00	KELLY FINK; RONALD J FINK	34	25	1.4972644	7.502735609
42M 81282 00	GARTNER DENOWH ANGUS RANCH	83	68	2.1375309	12.8624691
42M 15595 00	JAMES M EDINGER; TAMMY L EDINGER	83	34	2.0320933	46.96790665
42M 77172 00	CHAD ALBIN	120	50	1.7352552	68.26474475
42M 50299 00	KAYLA S WICK; WAYNE G WICK	157	50	1.6827987	105.3172013
42M 30069037	EMEP ACQUISITIONS LLC	123	85	3.0514431	34.94855693
42M 30051628	GARTNER, COLIN & SUSAN FAMILY TRUST	75	22	2.1798912	50.82010877
42M 30065524	DAVID S HILL; JULIE E HILL	160	80	1.8579963	78.14200374
42M 37562 00	FRANZ RANCH LAND TRUST	89	16	1.7314954	71.26850458

Appendix B: Groundwater Rights within the 1-ft Drawdown Contour

WR Number	All Owners	Total Well Depth (ft)	Static Water Level (ft)	Additional Drawdown (ft)	Remaining Available Water Column (ft)
42M 5375 00	DAVID R MCMILLEN; MARGARET P MCMILLEN	40	24	1.8967164	14.10328357
42M 109559 00	MERLYN D LARSON; ROSEMARY LARSON	120	50	2.247566	67.75243402
40S 30044186	DAYTON FOUNDATION	120	40	1.5479335	78.45206648
42M 86219 00	BRYAN J PREVOST	80	10	1.6180219	68.38197811
42M 104493 00	BRENDA LARSON; TIM D LARSON	145	87	2.2079735	55.79202647
42M 28742 00	CASSIDY KLIND; CODY L STENSLAND	60	30	1.6814557	28.3185443
42M 25513 00	GARTNER DENOWH ANGUS RANCH	140	135	1.9854567	3.014543327
40S 16412 00	KELLY, SHIRLEY TRUSTEE; CHERYL UNRUH	157	137	1.5489041	18.45109591
42M 33061 00	MERLYN D LARSON; ROSEMARY LARSON	34	11	2.2826691	20.71733088
42M 101495 00	DCLW CORP	40	16	1.5752195	22.42478054
42M 108389 00	MONDALIN INC	40	8	1.7252987	30.27470132
42M 30121938	PETERSEN, J K INC	160	57	2.0019115	100.9980885
42M 30004133	THIESSEN INC	140	69	1.6389224	69.36107762
42M 4400 00	BARBARA J ALBRECHT; DONNA P QUALLEY; MARK T QUALLEY; PAT D QUALLEY; ROXANNE M QUALLEY; STEVEN B QUALLEY; TIMOTHY A QUALLEY; QUALLEY, CRAIG D TRUST; DAVID B SORENSON	162	130	4.6087099	27.39129013
42M 40743 00	D M C NEVINS TRUST	79	53	1.8329896	24.16701041
42M 69261 00	DON D BOUCHARD; RONALD R BOUCHARD	100	51	1.7029348	47.29706517
42M 30127431	KATHY M OBERGFELL; ROCKY L OBERGFELL	14	10	2.2616398	1.738360195
42M 30071720	DEBRA ENGESSER; DONALD ENGESSER	143	85	1.6023663	56.39763369
42M 30070220	5S PARTNERSHIP	40	22	2.0867424	15.9132576
42M 66193 00	LARRY D DREVECKY; BRYAN P GARTNER	56	40	2.1010776	13.89892238
42M 64075 00	JODI KORDONOWY; RAY W KORDONOWY	145	50	2.4833246	92.51667537
42M 30018145	ANGELA PRUITT; SIMON PRUITT	140	65	3.1050083	71.89499166
42M 30008736	AUDREY A HILL	75	30	1.5059881	43.49401188
42M 10962 00	HILL, SHARON K LIVING TRUST; HILL, SHARON K MARITAL TRUST	103	55	1.5889477	46.41105232
42M 66302 00	MARLO SALSBURY	133	80	1.7122421	51.28775794

Appendix B: Groundwater Rights within the 1-ft Drawdown Contour

WR Number	All Owners	Total Well Depth (ft)	Static Water Level (ft)	Additional Drawdown (ft)	Remaining Available Water Column (ft)
42M 16328 00	AUDREY A HILL; MELVIN R HILL	30	22	1.6248697	6.375130313
42M 25505 00	GARTNER DENOWH ANGUS RANCH	66	57	2.1375309	6.862469103
42M 2628 00	WILLIAM J REHBEIN	150	95	1.7637844	53.23621559
42M 57339 00	JEFF AISENBREY; LUANNA AISENBREY	130	80	2.9483368	47.05166318
42M 30067686	CLIFFORD DAHL; DEBBIE DAHL	170	122	3.2593938	44.74060622
42M 30070201	JAMES E STEINBEISSER	100	13.5	2.1787726	84.32122736
42M 30104125	SUNNY SLOPE RANCH INC	60	16	1.6849885	42.31501151
42M 17234 00	JOHNSON, CALVIN Z LAND LLC; JOHNSON, CRAIG L LAND LLC	200	165	2.2356381	32.76436193
42M 32130 00	PREVOST RANCH INC	75	31	1.6957042	42.30429582
42M 30125435	BRIEN PANASUK; TOBY A PANASUK; ZANE R PANASUK	121	40	1.9889375	79.0110625
42M 66277 00	PREWITT TRUST	120	30	1.8134336	88.18656644
42M 80550 00	THIESSEN, DWIGHT & DIANA FAMILY TRUST	75	26	1.7454664	47.25453361
42M 73761 00	FRANZ RANCH LAND TRUST	145	60	1.7447326	83.25526744
42M 30063412	HAY CREEK RESOURCES LLC	120	21	1.7397637	97.26023629
42M 48435 00	DAVID A MULLIN; MERLE A MULLIN	36	20	1.5168595	14.48314052
42M 101080 00	KOPP FARMS INC	100	10	1.6668316	88.33316843
42M 30050448	GARTNER, COLIN & SUSAN FAMILY TRUST	68	25	2.1798912	40.82010877
42M 2627 00	WILLIAM J REHBEIN	100	55	1.8128605	43.18713945
42M 4222 00	LOUISE A REHBEIN	95	65	1.8297189	28.17028115
42M 104499 00	RICHLAND COUNTY SCHOOL DIST #2	54	10	1.7542197	42.24578027
42M 99053 00	SUNNY SLOPE RANCH INC	67	15	1.8730417	50.12695828
42M 30105766	JOHN K DYNNESON; NANCY K DYNNESON	110	37	2.0016957	70.99830433
42M 96324 00	KITTLESON FAMILY PARTNERSHIP LP	60	25	1.6289445	33.37105554
42M 30951 00	WOLFF, HELMUT & CAROLYN REVOCABLE LIVING TRUST	113	90	2.4175695	20.58243049
42M 30028900	MERRILL, TBA FAMILY PARTNERSHIP	114	80	2.251336	31.74866399
42M 89085 00	THIESSEN, DWIGHT & DIANA FAMILY TRUST	95	42	1.7401796	51.25982044
42M 77543 00	FRANZ RANCH LAND TRUST	90	13	1.7180215	75.28197853
42M 61838 00	EDWIN J RIES; LINDA L RIES	140	80	2.8626458	57.13735415
42M 16327 00	AUDREY A HILL	30	22	1.6248697	6.375130313
42M 53227 00	CLIFFORD DAHL; DEBBIE DAHL	140	82	2.9130973	55.08690268

Appendix B: Groundwater Rights within the 1-ft Drawdown Contour

WR Number	All Owners	Total Well Depth (ft)	Static Water Level (ft)	Additional Drawdown (ft)	Remaining Available Water Column (ft)
42M 53315 00	THIESSEN INC	180	100	1.6343235	78.36567648
42M 30044138	ROGER W MEYER	33	18	1.5951988	13.40480124
42M 38652 00	KENNETH MICHAEL BACKES	60	4	1.6254625	54.37453755
42M 33542 00	CARL T DYNNESON; LINDSEY L DYNNESON	131	45	2.0046942	83.9953058
42M 17233 00	JOHNSON, CALVIN Z LAND LLC; JOHNSON, CRAIG L LAND LLC	190	175	2.2402076	12.75979241
42M 30012285	KATHY M OBERGFELL; ROCKY L OBERGFELL	21	16	2.2616398	2.738360195
42M 30127489	KATHY M OBERGFELL; ROCKY L OBERGFELL	21	16	2.2781671	2.72183288
42M 69259 00	PREVOST RANCH INC; MONTE TORGERSON; VERNETTE TORGERSON	60	38	1.8078368	20.19216322
42M 30012288	KATHY M OBERGFELL; ROCKY L OBERGFELL	32	18	2.2616398	11.73836019
42M 15290 00	JILL NORBY; KELLI NORBY	50	27	1.5900525	21.4099475
42M 71217 00	DEBRA ANDERSON; GREG ANDERSON	100	48	3.2460353	48.75396471
42M 30014275	NANCY VERSCHOOT	137	75	1.7139695	60.28603047
40S 2400 00	HAROLD J FINK	45	5	1.4992115	38.50078852
42M 9356 00	DEEDRA ERICKSON; SHANDON W ERICKSON	157	85	2.7261578	69.27384221
42M 46342 00	FOUR J RANCH INC	30	13	1.9610909	15.03890912
42M 71759 00	DANIELS FAMILY PRTNRSHP	92	40	1.6440933	50.35590675
42M 59500 00	CHARLIE PENNINGTON; MCKEN-ZE PENNINGTON	100	40	1.9826289	58.01737106
42M 50239 00	FOUR J RANCH INC	120	65	1.9570034	53.0429966
42M 46346 00	FOUR J RANCH INC	120	60	1.9530977	58.04690232
42M 43669 00	ASHLEA J ANDERSON; RYAN R ANDERSON	75	27	2.7416392	45.25836082
42M 41512 00	DYNNESON RANCH INC	115	40	1.8896328	73.11036718
42M 30154616	DIANA YOUNGQUIST; LARRY D YOUNGQUIST	122	80	2.7839539	39.21604613
42M 10065 00	KENNETH KILEN; MARLON J KILEN; PAMELA K KILEN	50	30	1.6788598	18.3211402
40S 30163038	GLADOWSKI RANCH INC	30	12	1.5654653	16.43453474
42M 10331 00	ALBIN FARMS	165	80	1.784305	83.21569499
42M 8583 00	DARLA HILL	51	20	1.5145274	29.4854726
42M 39412 00	LOUISE A REHBEIN	95	65	1.8297189	28.17028115
42M 30012283	KATHY M OBERGFELL; ROCKY L OBERGFELL	14	10	2.2616398	1.738360195

Appendix B: Groundwater Rights within the 1-ft Drawdown Contour

WR Number	All Owners	Total Well Depth (ft)	Static Water Level (ft)	Additional Drawdown (ft)	Remaining Available Water Column (ft)
42M 30107054	ARLON W FRANZ; DONALD A FRANZ	200	70	1.8265335	128.1734665
42M 30024396	ARDYS G TORGERSON	196	72	1.6815251	122.3184749
42M 30044883	DH RANCH	100	55	1.6185369	43.38146308
42M 8429 00	THIESSEN INC	60	28	1.6389224	30.36107762
42M 30030094	JOHN K DYNNESON; NANCY K DYNNESON	85	50	1.9973108	33.00268915
42M 88280 00	JUDEAN SUNDHEIM; PATTY SUNDHEIM	120	35	1.8016231	83.19837692
42M 114729 00	BRETT R BENNION; DANIELA J BENNION	50	10	2.5893738	37.41062618
42M 30127430	KATHY M OBERGFELL; ROCKY L OBERGFELL	32	18	2.2616398	11.73836019
42M 30070638	SHADWELL RESOURCES GROUP LLC	60	25	2.0676204	32.93237959
42M 30127433	KATHY M OBERGFELL; ROCKY L OBERGFELL	90	70	2.0376294	17.96237055
42M 30153810	JOHN K DYNNESON; NANCY K DYNNESON	60	10	2.0670946	47.93290541
42M 30113468	MELISSA BUCKLEY	53	12	2.1596167	38.84038333
42M 30065050	BRENDA L VERSCHOOT; CHASE L VERSCHOOT	140	95	1.7116539	43.2883461
42M 20945 00	BRADY BOUCHARD	175	135	1.9926307	38.00736925
42M 59556 00	ERIK P SORENSEN	200	62	2.1847302	135.8152698
42M 30011518	MICHAEL T ANVIK	90	21	2.826061	66.17393897
42M 37566 00	FRANZ RANCH LAND TRUST	123	60	1.7718387	61.2281613
42M 30063224	GARTNER, COLIN & SUSAN FAMILY TRUST	70	14	2.1635364	53.83646355
42M 37563 00	FRANZ RANCH LAND TRUST	55	16	1.7385559	37.26144409
42M 74589 00	SUNNY SLOPE RANCH INC	83	50	1.6276214	31.3723786
42M 74592 00	HAY CREEK RESOURCES LLC	195	75	1.6855143	118.3144857
42M 30070138	PREVOST RANCH INC	65	45	1.8763641	18.12363587
42M 20495 00	PREVOST RANCH INC	30	10	1.7427724	18.2572276
42M 30042595	HARL OLAND; JANICE OLAND	77	33	1.5567742	42.44322578
42M 30045477	PHILIP JOHNSON; ROBYN JOHNSON	159	100	2.0100927	56.98990729
42M 71712 00	CHRIS C LARSON; MICHELLE R LARSON	137	85	2.1502014	49.84979862
42M 23573 00	MERLYN D LARSON	40	20	1.8545279	18.14547214
42M 30049532	4 J RANCH INC	120	40	1.7388704	78.26112964
42M 34650 00	JOSEPH MAY	130	97	2.9130973	30.08690268
42M 30027937	CHAD BURNS	133	105	3.3497995	24.65020052
42M 16326 00	AUDREY A HILL	30	10	1.6248697	18.37513031

Appendix B: Groundwater Rights within the 1-ft Drawdown Contour

WR Number	All Owners	Total Well Depth (ft)	Static Water Level (ft)	Additional Drawdown (ft)	Remaining Available Water Column (ft)
42M 15825 00	DCLW CORP	60	40	1.5752195	18.42478054
42M 28072 00	CHRIS UNDEM	137	85	3.0118783	48.98812166
40S 59539 00	DOUGLAS J JOHNSON; JEFFEREY D JOHNSON; MARY S JOHNSON	80	60	1.5445076	18.45549237
42M 36516 00	BERTRAND J SAWYER	44	28	1.8751846	14.12481541
42M 89844 00	LISA M VERSCHOOT; TONY J VERSCHOOT	80	38	1.5448757	40.45512425
42M 25510 00	GARTNER DENOWH ANGUS RANCH	175	170	2.1271193	2.872880722
42M 94647 00	CLINT MULLIN	180	107	1.6672866	71.3327134
42M 30125433	BILLIE J WELTY	60	30	1.9590144	28.04098556
40S 71694 00	VICKIE BARBOT; LARRY POFF	110	73	1.5453416	35.45465839
42M 66273 00	LILLIAN DELORES GILBERT	180	53	2.4674128	124.5325872
42M 30148602	CRAIG BEISWANGER; GEORGIA BEISWANGER	135	40	2.4388679	92.56113214
42M 4824 00	DIANE KILSDONK; ANGELA PRUITT; SIMON PRUITT	135	72	3.1050083	59.89499166
42M 15197 00	THOMAS H MARTINI	110	60	2.1334165	47.86658346
42M 5087 00	ASHLEA J ANDERSON; RYAN R ANDERSON	166	50	2.764939	113.235061
40S 30042696	KATHY W THORNTON; RUSSELL D THORNTON	143	100	1.5201069	41.47989311
42M 21564 00	WILLIAM BUCKLEY	135	44	2.1510904	88.84890963
42M 30051731	JOHN L FRANKLIN	123	80	2.7392357	40.2607643
42M 91923 00	PAUL C BEYER	140	40	1.7100066	98.28999338
42M 19396 00	DOUBLEDA, LLC	60	20	1.879444	38.12055598
40S 106939 00	HAROLD J FINK; FINK FARMS INC	134	82	1.5366764	50.46332358
42M 12961 00	MARTY CASEY	110	63	3.1605689	43.83943108
42M 30012282	KATHY M OBERGFELL; ROCKY L OBERGFELL	90	70	2.0376294	17.96237055
42M 64108 00	DEBRA SCHILLINGER; SCHILLINGER FAMILY LEGACY TRUST DTD 9/16/2023	31	19	1.6542153	10.34578475
42M 76536 00	DYNNESON LAND LLC	130	50	1.8269365	78.17306346
42M 53224 00	DARIN MULLIN	155	80	1.5672708	73.43272924
42M 27577 00	KATHY W THORNTON; RUSSELL D THORNTON	20	7	1.7686776	11.23132236
42M 64073 00	BRADY BOUCHARD	135	3	2.54162	129.45838
42M 103694 00	SHERMAN L DYNNESON	40	19	1.8574073	19.14259271
42M 33861 00	MICHAEL F HIER; RICHARD T HIER	173	120	1.5039645	51.49603546
42M 66281 00	EDWARD L PIERCE; MARIE A PIERCE	138	78	2.4968781	57.50312186
42M 30125401	BILLIE J WELTY	117	75	1.9249162	40.07508381

Appendix B: Groundwater Rights within the 1-ft Drawdown Contour

WR Number	All Owners	Total Well Depth (ft)	Static Water Level (ft)	Additional Drawdown (ft)	Remaining Available Water Column (ft)
42M 30012287	KATHY M OBERGFELL; ROCKY L OBERGFELL	21	16	2.2781671	2.72183288
42M 102776 00	JUDEAN SUNDHEIM	200	70	1.8016231	128.1983769
40S 69258 00	DAYTON FOUNDATION	90	36	1.538265	52.46173501
42M 71709 00	LARSON, LOWELL H & JOANNE M REVOCABLE LIVING TRUST	110	52	2.4304068	55.56959317
42M 6080 00	AURIE SCHWARTING	135	72	1.6004403	61.39955968
42M 89863 00	STONEY BUTTE FARMS INC	100	84	1.6364194	14.3635806
42M 29454 00	MONTANA STATE BOARD OF LAND COMMISSIONERS	29	14	1.7769714	13.22302857
42M 30151175	FRANZ RANCH LAND TRUST	140	54	1.8508435	84.1491565
42M 30042536	THIESSEN, DWIGHT & DIANA FAMILY TRUST	63	27	1.5907543	34.40924574
42M 30021930	SIMONSEN, KENNETH FAMILY REVOCABLE LIVING TRUST	60	14	1.6685711	44.3314289
42M 30127052	BRIEN PANASUK; TOBY A PANASUK; ZANE R PANASUK	75	70	1.9934833	3.006516664

Groundwater Permit Technical Analyses Report – Part B

Department of Natural Resources and Conservation (DNRC or Department)
Water Resources Division
Ashley Kemmis, Water Resource Specialist, Glasgow Regional Office

Application No.	42M 30163320	**Proposed Point of Diversion**	NENENE Section 8, T22N, R58E, Richland County
Applicant	Big Horn Leasing LLC		

Overview

This report is Part B of a two-part publication which analyzes data submitted by the Applicant in support of the above-mentioned water right application. This report provides technical analyses as required under the Administrative Rules of Montana (ARM) 36.12.1303 in support of the water rights criteria assessment as required in §85-2-311, Montana Code Annotated (MCA).

This Groundwater Permit Technical Analyses Report – Part B contains the following sections:

Variances

A variance from the requirements found in ARM 36.12.1702(3)(a) to maintain a pumping rate that cannot depart from the average pumping rate by more than 5% was granted by the Glasgow Regional Office on April 3, 2024. Pumping in the Production Well was not maintained at a constant discharge rate. The discharge rate fluctuated by more than 5% within the first five minutes of the test before stabilizing at an average rate of 37.8 gpm for the remainder of the 72-hour test. The discharge rate also fluctuated by more than 5% at the beginning of the two 24-hour tests (up to the first 13 minutes for the Well #3 test).

1.0 Application Details

The Applicant proposes to divert water January 1 through December 31 from 3 manifold wells at a rate of 142 GPM per year. A volume of 229 AF would be appropriated from January 1 through December 31 for water marketing purpose in the NENE of Section 8, Township 22N, Range 58E, Richland County. The total appropriation includes 10 AF to account for net evaporation from three storage ponds, and 219 AF will be utilized for water marketing to oil field development. The service area for water marketing will include a large portion of southern Richland County.

2.0 Surface Water Analysis of Depleted Surface Water

2.1 Source Description

Part A of the Technical Analyses Report includes the Groundwater Analysis, which describes the methodologies used to identify the depleted surface water source.

Depleted Source of Water: Yellowstone River

Depleted Source Type: Perennial

Location of Depletions: Lot 4, SWSWSE, Section 17, Township 22N Range 59E

2.2 Method of Estimation

Gage Name: Yellowstone River Near Sidney MT

Gage Number: USGS 06329500

Period of Record: 1910 - 2024

Why this gage is considered an appropriate data source: According to ARM 36.12.1702, available stream gage records will be used to quantify physical availability using the median of the mean monthly flow rate and volume during the proposed months of diversion. This gage is approximately 1.5 miles downstream of the location of surface water depletions.

2.3 Monthly Flow Rate and Volume

Methodology: USGS Gage #06329500 is the nearest gage to the identified depletion on the Yellowstone River. The date range used includes the entire period of record for this gage.

Physical availability of Yellowstone River water at the location of the surface water depletion will be quantified monthly. Department practice for physical availability analyses where the gage used is downstream of the start of depletion is to add the monthly flow rates of existing water rights between the gage and the start of surface water depletion to the median of the mean monthly flows at the gage. The DNRC used the method below to quantify physically available monthly flows and volumes at the start of depletion during the proposed period of diversion:

1. The Department calculated median of the mean monthly flow rates in cubic feet per second (CFS) for the Yellowstone River using USGS Gage #06329500 records for each month of the proposed period of diversion (Table 1, column B). Those flows were converted to monthly volumes in AF (Table 1, column C) using the following equation found on DNRC Water Calculation Guide: median of the mean monthly flow (CFS) × 1.98 (AF/day/1 CFS) × days per month = AF/month.

2. The Department calculated the monthly flows appropriated by existing users upstream of the gage on the source (Table 1, column D) by:

i. Generating a list of existing water rights from the surface water depletion location to USGS Gage #06329500;
ii. Assigning irrigation and lawn and garden uses with no period of diversion as occurring from April 1 to October 31;
iii. Assigning all other water uses with no period of diversion as year-round uses;
iv. Calculating a flow rate for all livestock direct from source rights without a designated flow rate via the following steps per Department standards:
    i. Assigning either 30 GPD/AU for Statements of Claim or 15 GPD/AU
    ii. Multiplying by the number of Animal Units (AU)
    iii. Converting to CFS
    iv. Adding that to 35 GPM (converted to CFS)
v. Assuming that the flow rate of each existing right is continuously diverted throughout each month of the period of diversion. This assumption is necessary due to the difficulty of differentiating the distribution of appropriated volume over the period of diversion. This leads to an overestimation of existing uses from the source. The Department finds this an appropriate measure of assessing existing rights as it protects existing water users.

3. Since the gage used is downstream of the start of surface water depletion, the Department added in the flow rates of the existing rights between USGS Gage #06329500 and the point of surface water depletion (Table 1, column D) to the median of the mean monthly gage values (Table 1, column B) to determine physical availability at the start of depletion (Table 1, column E). Physically available monthly flows were then converted to monthly volumes (Table 1, column F).

Table 1: Physical Availability at the Top of Depletion on Yellowstone River

A	B	C	D	E	F
Month	**Median of the Mean Monthly Flow at Gage 06329500 (CFS)**	**Median of the Mean Monthly Volume at Gage 06329500 (AF)**	**Existing Rights from Surface Water Depletion to Gage 06329500 (CFS)**	**Physically Available Water at POD (CFS)**	**Physically Available Water at POD (AF)**
January	5,656.50	347,195.97	0	5,656.50	347,195.97
February	6,022.50	333,887.40	0	6,022.50	333,887.40
March	9,323.00	572,245.74	0	9,323.00	572,245.74
April	9,132.00	542,440.80	176.22	9,308.22	552,908.27

May	17,490.00	1,073,536.20	176.22	17,666.22	1,084,352.58
June	40,480.00	2,404,512.00	176.22	40,656.22	2,414,979.47
July	21,580.00	1,324,580.40	176.22	21,756.22	1,335,396.78
August	7,516.00	461,332.08	176.22	7,692.22	472,148.46
September	6,789.00	403,266.60	176.22	6,965.22	413,734.07
October	7,803.00	478,948.14	176.22	7,979.22	489,764.52
November	7,297.00	433,441.80	0	7,297.00	433,441.80
December	5,925.50	363,707.19	0	5,925.50	363,707.19

3.0 Area of Potential Impact Analysis of Depleted Surface Water

The Area of Potential Impact for this application is: The area of potential impact is approximately 11 miles downstream from the area of surface water depletion on the Yellowstone River to the Montana/North Dakota state border (Figure 1). The surface water depletion begins in Lot 4, SWSWSE, Section 17, Township 22N Range 59E, and the river crosses the Montana/North Dakota border in the E2, Section 8 and 17, T23N, R60E. A total of 19 surface water rights exist within this reach. A list of rights can be found in **Appendix A**.

Why this is an appropriate Area of Potential Impact: The Yellowstone River is a major surface water source compared to other streams in the area. It departs Montana 11 miles downstream of the area of surface water depletion then enters North Dakota. The Water Sciences Bureau determined that net depletion from the proposed pumping would accrue to the Yellowstone River via springs at outcrops of the Tongue River member of the Fort Union formation and seeps along the Yellowstone valley alluvium. The location of depletions would be the southern boundary of Section 17, T22N R59E. Because there are no significant tributaries between the surface water depletion and the state border in the E2, Section 8 and 17, T23N, R60E, and the Department only assesses Montana water rights for this analysis, the Department will designate the said reach as the area of potential impact. The Department will examine 19 active Montana water rights which could be affected by the proposed project.

Methodology: A list of senior surface water rights within the area of potential impact were compiled using the DNRC GIS web application Converge. Types of legal demands that could be included are all active claims, certificates, exempt notices, permits, perfected conservation district reservations, instream flows, tribal rights, and hydropower water rights.

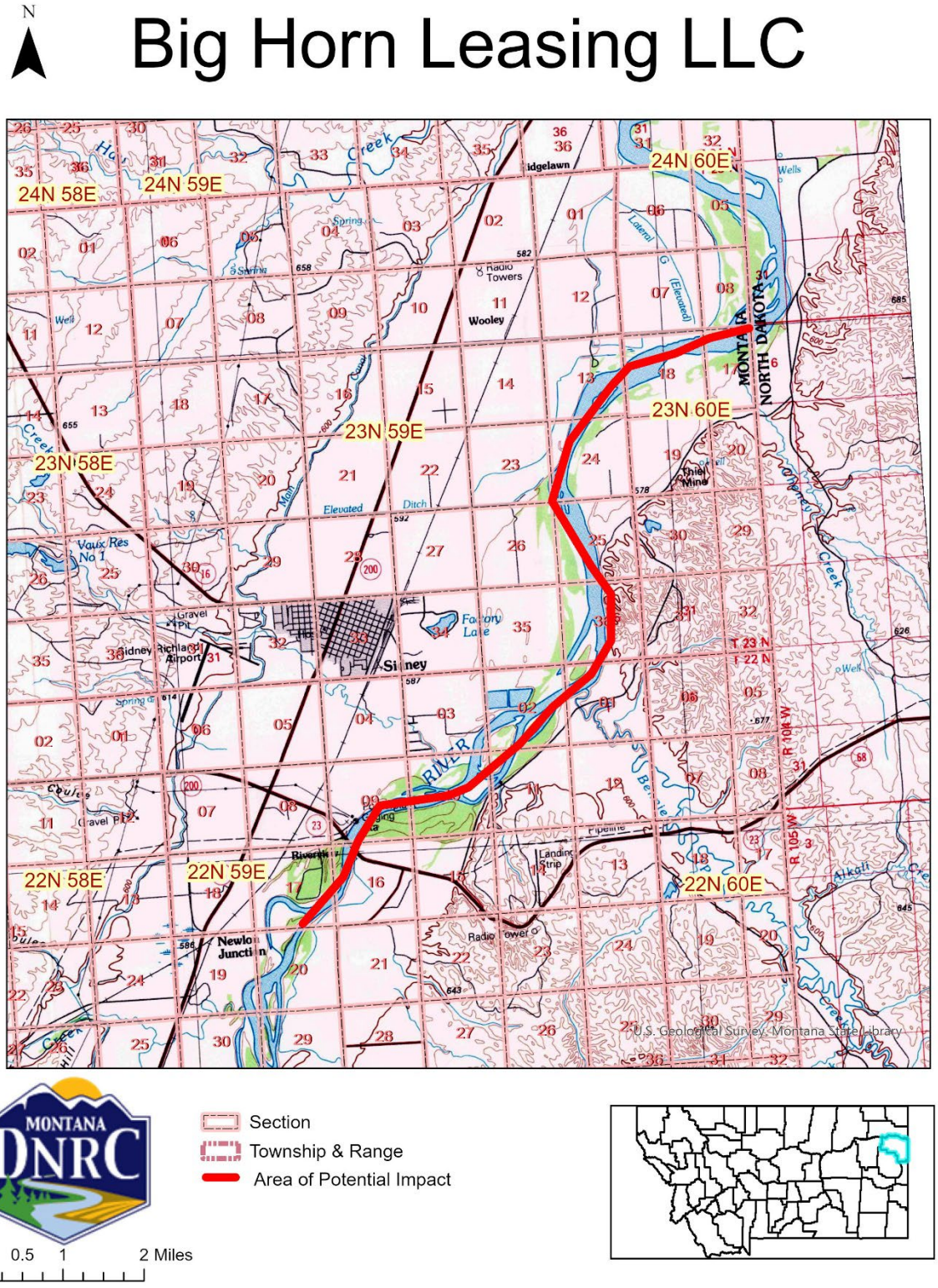


Figure 1: Map of the Area of Potential Impact

Review

This document has been reviewed by the Department on May 17, 2024.

References

ARM 36.12.02 Permit Application Criteria – Physical Surface Water Availability
Department Standard Practice for Determining Area of Potential Impact
Department Standard Practice for Determining Physical Availability of Surface Water
Technical Memorandum: Physical Availability of Surface Water with Gage Data

Appendix A: Water Rights within the Area of Potential Impact

Water Rights on Yellowstone River in the Area of Potential Impact		
A	**B**	**C**
Water Right #	**Period of Diversion**	**Township/Range/Sec**
42M 104422 00	04/01 to 10/15	22N59E2
42M 104509 00	04/01 to 10/01	23N59E25
42M 114728 00	04/01 to 11/01	23N59E25
42M 119268 00	04/01 to 10/31	22N59E11
42M 119269 00*	04/01 to 10/31	23N59E25
42M 119271 00	04/01 to 10/31	23N59E25
42M 119272 00**	04/01 to 10/31	23N59E25
42M 137597 00	01/01 to 12/31	23N60E8
42M 137600 00	01/01 to 12/31	23N59E36
42M 137604 00	01/01 to 12/31	23N59E13
42M 137605 00	01/01 to 12/31	23N60E18
42M 137617 00	01/01 to 12/31	23N59E36
42M 165230 00	01/01 to 12/31	22N59E9
42M 30017772	01/01 to 12/31	22N59E9
42M 30051296	04/01 to 10/15	22N59E2
42M 31493 00	01/01 to 12/31	22N59E9
42M 3656 00	05/01 to 09/01	22N59E9
42M 6815 00	05/01 to 09/15	23N60E18
42M 80579 00	04/01 to 11/01	23N59E24

42M 30163487 has submitted their 600P Preapplication form and. If issued, it could be in the area of potential impact by the time of legal analyses.
*42M 119268 is the parent right of 42M 119269. They share the same volume for irrigation use.
**42M 119271 is the parent right of 42M 119272. They share the same volume for stock use.

DEPARTMENT OF NATURAL RESOURCES AND CONSERVATION

Glasgow Water Resources Regional Office

GREG GIANFORTE, GOVERNOR

222 6TH ST SOUTH
PO BOX 1269

PHONE: (406) 228-2561

GLASGOW, MONTANA 59230-1269

April 8, 2024

Big Horn Leasing LLC
P.O. Box 385
Sidney, MT 59270

Subject: Complete Form for Beneficial Water Use Permit Application No. 42M 30163320

Dear Applicant,

The Glasgow Regional Office of the Department of Natural Resources and Conservation (DNRC or Department) received your Preapplication Meeting Form on April 8, 2024, and preapplication meeting fee on March 29, 2024, and the Department deems the submitted Preapplication Meeting Form to be successfully completed per ARM 36.12.1302.

As designated on the submitted Preapplication Meeting Form per §85-2-302(3)(b), MCA, the Department will produce the technical analyses based on the parameters included in the Preapplication Meeting Form (ARM 36.12.1302(4)) within 45 days of April 8, 2024.

Please let me know if you have any questions.

Best,

Ashley Kemmis
Water Resource Specialist
Glasgow Regional Office
Ashley.kemmis@mt.gov
(406)808-7075

Groundwater Permit Technical Analyses Checklist

Use this checklist for groundwater permit applications involving wells, pumping pits, or man-made ponds, in both open and closed basins. Applications with developed springs are not sent to WSB.

Complete this WSB checklist with values taken from the Permit Preapplication Meeting Form (600P) or Application for Beneficial Water Use Permit Form (600)/deficiency response if no pre-application meeting occurred. **Send the 600P or 600 and all attachments, electronic Form No. 633, and completed checklist to the WSB.**

Applicant			
Pre-Application No. ☐ **Application No.** ☒	*42M 30163320*	**Date Sent to WSB**	4/8/2024
Regional Office (RO)	Glasgow	**RO Staff Name**	Ashley Kemmis

Check the Appropriate Box for Groundwater Permit:

☒ Form No. 633 and the aquifer testing addendum were reviewed by the WSB, and the regional office has received the two-page Aquifer Testing Requirements (ATR) Review document.

☐ Form No. 633 and the aquifer testing addendum need to be reviewed by the WSB.

Groundwater Permit Technical Analyses Inputs:

If the listed information is not applicable to the application, leave it blank. The WSB will complete technical analyses using the values provided below.

Means of Diversion	☒ Well ☐ Pumping Pit ☐ Pond (not natural)
Number of Diversions	3
Flow Rate (☐ CFS ☒ GPM)	142 total (POD1=59, POD2=37, POD3=46)
Acres Irrigated (*if applicable*)	
Purpose(s)	*Water Marketing*
Period of Diversion	1/1-12/31
Diverted Volume (AF)	229 (includes 10 AF for evaporation)
Wastewater Disposal Method (*if applicable*)	*N/A*
Total Pond Capacity ~ 1 fill (AF)	30.27 AF (9.3 AF *2 ponds + 11.67 AF *1 pond)
Total Surface Area of Pond (ac)	6 ac total (3 ponds * 2AF per pond)
Total Net Evaporation off Pond Surface (AF)	10.08 AF Total (3.36 AF/pond using the annual evaporation rate of 20.16 inches)

Comment Section:

Use this section to summarize the proposed project, provide additional information and if there are supplemental and/or associated rights to explain their relationship.

Big Horn Leasing is proposing to pump water from 3 existing wells in the NENENE of Section 8, T22N, R56E, Richland County. The Applicant is requesting 229 AF at a total flow rate of 142 GPM. Of the requested volume, 10AF accounts for evaporation, and the other 219 AF have been contracted to EMEP Operating LLC. Water will be pumped from the three wells and pumped to three storage ponds year-round. The customer will then retrieve water from the storage ponds for oil and gas development in Richland County.

The wells and ponds have already been built, as the property was previously permitted (42M 30068052) for a multi-residential facility in 2013, but the project was not completed, and the permit expired. The applicant submitted data from aquifer testing done in 2013 (from the previous permit) on a current 633 form. A variance request was submitted due to discharge fluctuation outside of the 5% threshold in the first minutes of testing, which the Glasgow Regional Manager granted on April 3, 2024, in alignment with the Water Science Bureau findings.

FOLLOW-UP PAGE AFFIDAVIT & CERTIFICATION

"I/we attest that this preapplication meeting form, follow-up page, and amended responses page accurately portray my proposed project. I am aware that my application for this project will not qualify for a discounted filing fee and expedited timelines if upon submittal of the application to the department, I change any element of the proposed application from the preapplication meeting form and follow-up materials (ARM 36.12.1302(6)(a))."

Applicant Signature — Date: 4-4-24

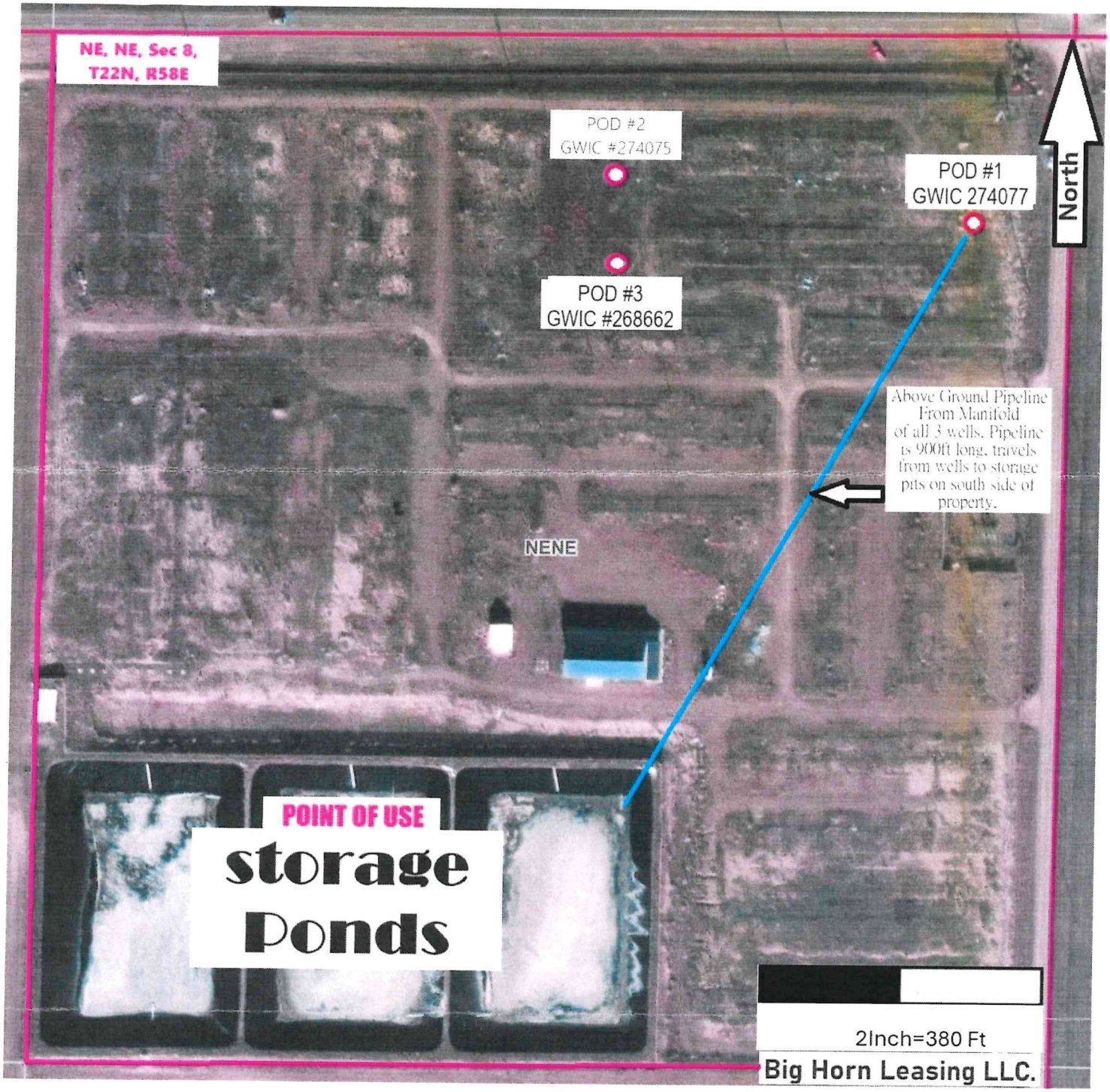
Applicant Signature — Date

"We confirm that the preapplication form and follow-up information are adequate for the Department to proceed with technical analyses in ARM 36.12.1303. Or, if the applicant has elected to complete technical analyses, we confirm they have submitted each piece of technical analysis required based on the proposed project and the Department is able to proceed with the scientific credibility review (ARM 36.12.1303(8))."

Department Signature — Date: 4/8/24

Department Signature — Date

Received
APR 08 2024
DNRC Water Resources
Glasgow Regional Office



Received

APR 08 2024

DNRC Water Resources
Glasgow Regional Office

DEPARTMENT OF NATURAL RESOURCES AND CONSERVATION

Glasgow Water Resources Regional Office

GREG GIANFORTE, GOVERNOR

222 6TH ST SOUTH
PO BOX 1269

PHONE: (406) 228-2561

GLASGOW, MONTANA 59230-1269

4/3/2024

Big Horn Leasing LLC
P.O. Box 385
Sidney, MT 59270

Subject: Incomplete Preapplication Form for Beneficial Water Use Permit Application No. 42M 30163320

Dear Applicant,

The Department received your Preapplication Meeting Form and preapplication fee on 4/1/2024. The Department deemed the submitted Preapplication Meeting Form to be incomplete because it lacks the following information:

- ❑ PREAPPLICATION MEETING FORM QUESTIONS #2 and #54 were inadequate. The maps submitted have Point of Diversion ID's that differ from the preapplication meeting form (i.e. the well labeled POD#1 on the map does not match POD#1 on the form). Also, there are two wells with the same GWIC ID.

The 180- day deadline from the original preapplication meeting is September 15, 2024. You have 165 remaining days to successfully complete the Preapplication Meeting Form. If you do not submit the successfully completed Preapplication Meeting Form to the Glasgow Regional Office by September 15, 2024, you will need to request a new preapplication meeting.

Four items were determined to be follow-up items for the Department, which are listed with the responses in the enclosed attachment titled Follow Up Responses for 42M 30163320.

Please let me know if you have any questions.

Best,

Ashley Kemmis
Water Resource Specialist
Glasgow Regional Office
Ashley.kemmis@mt.gov
(406) 808-7075

DEPARTMENT OF NATURAL RESOURCES AND CONSERVATION

Glasgow Water Resources Regional Office

GREG GIANFORTE
GOVERNOR

222 6TH ST SOUTH
PO BOX 1269

PHONE: (406) 228-2561

GLASGOW, MONTANA 59230-1269

April 3, 2024

Big Horn Leasing LLC
POB 385
Sidney, MT 59270

Subject: Aquifer Testing Variance for Preapplication 42M 30163320

Dear Applicant,

The proposed diversion is three wells located in the NENENE Section 8, Township 22N, Range 58E, Richland County. The Applicant is requesting 142 gallons per minute (GPM) and up to 229 acre-feet (AF) for water marketing purpose in the NENENE Section 8, Township 22N, Range 58E, Richland County. The wells had been tested in 2013 per ARM 36.12.121 in effect at the time and test data submitted to DNRC as part of Beneficial Water Use Permit Application 42M 30068052.

On March 27, 2024, the Applicant requested a variance from Permit Application Criteria for physical availability of Administrative Rules of Montana (ARM) 36.12.121 (3)(a). ARM 36.12.121(3)(a) requires that pumping must be maintained through the duration of the test, and the rate may not depart from the average pumping rate by more than 5%. During the 2013 tests, discharge fluctuated more than 5% of average at the beginning of all 3 tests (up to first 13 minutes for Well #3 test). DNRC Water Sciences Bureau (WSB) Groundwater Hydrologist Jack Landers determined that most of the test duration was within 5% of average rate. He also determined that the discharge rate stabilized within 5% of the average rate within 15 minutes of the start of the test, and the aquifer test analysis is not affected.

With WSB's recommendation to grant the variance for the aquifer testing requirements identified above, the Department has determined that the Applicant's request for variance from ARM 32.12.121(3)(a) is acceptable, thus the variance is **Granted.**

Sincerely,

Lih-An Yang
Acting Regional Manager
(406) 808-7076
Lih-An.Yang@mt.gov

ARM 36.12.121 - Aquifer Testing Requirements (ATR) - Review

Department of Natural Resources and Conservation (DNRC)
Water Sciences Bureau (WSB)

Applicant	Big Horn Leasing LLC		
Pre-Application/Application No.	42M 30163320	**Date Sent to RO**	March 27, 2024
Regional Office (RO)	Glasgow	**WSB Staff Name**	Jack Landers, Groundwater Hydrologist

This checklist identifies any deficiencies that would require a variance pertinent to Administrative Rules of Montana (ARM) 36.12.121. **Table 1** lists deficiencies that would require a variance, the recommended action and the rationale describing why the variance request could be considered appropriate. If the requirements of ARM 36.12.121 are satisfied for each item, the box will be checked next to that item indicating such.

Table 1: Deficiencies identified, recommended action and rationale from WSB.

☐ **No Deficiencies Identified**		
Variance (ARM):	**Recommend Granting Variance Request**	**Rationale:**
3(a)	☒ Yes ☐ No	Discharge fluctuated >5% of average at the beginning of all 3 tests (up to first 13 min for Well #3 test). Most of the test duration was within 5% of average rate and does not affect aquifer test analysis.
Choose an item.	☐ Yes ☐ No	
Choose an item.	☐ Yes ☐ No	
Choose an item.	☐ Yes ☐ No	
Choose an item.	☐ Yes ☐ No	

36.12.121(2): Minimum information that must be submitted with applications:

☒ **(a)** Map with labeled location of production and observation wells; and

☒ **(b)** Well logs of the production and observation wells; and

☒ **(c)** Form No. 633, in electronic format, with *all* information and data provided.

36.12.121 (3) Minimum testing procedures are as follows:

☐ **(a)** Pumping must be maintained throughout the duration of the test. The rate may not depart from the average pumping rate by more than +/- 5%.

☒ **(b)** The average pumping rate must be equal to or greater than the proposed flow rate if the application is for one well or if the total proposed rate for multiple wells can be obtained from a single well.

☒ **(c)** ☐ **NA** The proposed pumping rate may be demonstrated by testing multiple wells as long as (e) is met by one well and the remaining flow rate is demonstrated by eight-hour drawdown and yield tests on additional production wells under (e)(i)(i).

☒ **(d)** Pumping rate must be measured with a reliable measuring device and recorded with clock time according to the schedule on Form No. 633.

☒ **(e)** Minimum duration of pumping during an aquifer test must be 24 hours for a proposed pumping rate and volume equal to or less than 150 GPM or 50 AF, or 72 hours for a proposed pumping rate and volume greater than 150 GPM or 50 AF.

☒ **(e)(i)** ☐ **NA** At a minimum an eight-hour drawdown and yield test is required on all new production wells.

☒ **(e)(ii)** ☐ **NA** In addition to (e), if more than one new production well is proposed, at a minimum an eight-hour drawdown and yield test is required on all subsequent new production wells.

☒ **(e)(iii)** ☐ **NA** The testing procedures for a minimum eight-hour drawdown and yield test performed on any production well must follow (a), (d), and (h).

☒ **(f)** One or more observation wells must be completed in the same source aquifer as the proposed production well and close enough to the production well so that drawdown is measurable and far enough that well hydraulics do not affect the observation well.

☒ **(g)** Background groundwater levels in the production well and observation well(s) must be monitored at frequent intervals for at least two days prior to beginning the aquifer test according to the Form No. 633.

☒ **(h)** Groundwater levels in the production and/or observation well(s) must be reported with 0.01-foot precision according to the schedule specified on Form No. 633.

Received

APR 01 2024

DNRC Water Resources
Glasgow Regional Office

Form 600-ATA (u3-2016) Applicant Name Big Horn leasing LLC.

APPLICATION FOR BENEFICIAL WATER USE PERMIT
AQUIFER TESTING ADDENDUM
ARM 36.12.121

Complete this addendum if a Beneficial Water Use Permit application is for a groundwater well.

Applicants are encouraged to confer with department staff prior to designing an aquifer test to ensure that the test will not have to be repeated, which may require additional expense. Department staff will provide guidance on testing procedures, monitoring, and reporting, but will not provide technical support or assistance.

On a separate attachment, provide the information required below. Attachments must be labeled as shown in the sections below (i.e. ATA.3.a). If a section is not applicable, label the section as Not Applicable or NA.

Section 1. Attachments must make specific reference to the section item shown.

VARIANCE INFORMATION

ATA.1.a ☐ Applicant was granted a variance of the testing requirements. Provide a copy of the written variance and requested reporting information.

ATA.1.b ■ Applicant was not granted a variance of the testing requirements. Provide the information below.

Section 2. Attachments must make specific reference to the section item shown.

MINIMUM INFORMATION THAT MUST BE SUBMITTED WITH APPLICATIONS:

ATA.2.a ☒ Provide a topographic map with labeled locations of production and observation wells and water discharge point.

ATA.2.b ☒ Provide lithologic descriptions and drilling logs for all test wells.

ATA.2.c ☐ Provide distances between the pumping well(s) and the observation well(s), and depths, dimensions, and perforated intervals of each well as specified on Form No. 633.

ATA.2.d ☐ Provide wellhead elevations (preferably surveyed) and depth to static water level collected synoptically for a minimum of three wells for use in calculating the hydraulic gradient.

ATA.2.e ■ Provide a description of testing methods.

ATA.2.f ■ Provide Form 633 in electronic format with all information and data requested.

Section 3. Attachments must make specific reference to the section item shown.

MINIMUM TESTING PROCEDURES:
For any of the following, if the answer is "NO" or "NA", provide information explaining why on a separate attachment.

ATA.3.a YES ■ NO ☐ NA ☐ Was pumping maintained at a constant discharge rate equal to or greater than the proposed pumping rate for the entire duration of the test?

ATA.3.b YES ☐ NO ☐ NA ■ For a proposed use of 150 GPM or less and the proposed volume is 50 AF or less, was the pumping aquifer test duration at least 24 hours?

Applicant Name Big Horn Leasing LLC.

ATA.3.c YES ■ NO ☐ NA ☐ For a proposed use greater than 150 GPM and a proposed volume greater than 50 AF, was the duration of the aquifer test at least 72 hours?

ATA.3.d YES ■ NO ☐ NA ☐ Was the discharge of the pumped well measured with a reliable measuring device and recorded with clock time according to the schedule on Form 633?

ATA.3.e YES ■ NO ☐ NA ☐ Was the discharged water conveyed a sufficient distance from the production and observation wells to prevent recharge to the aquifer during the test? Adequate water conveyance devices include pipe, large-diameter hose (e.g., fire hose), lined ditch or canal.

ATA.3.f YES ■ NO ☐ NA ☐ Was one or more observation well completed in the same water-bearing zone(s) or aquifer as the proposed production well and close enough to the production well so that drawdown is measurable?

ATA.3.g YES ☐ NO ■ NA ☐ Were the observation well(s) being pumped during the test?

ATA.3.h YES ■ NO ☐ NA ☐ Were groundwater levels in the production well and the observation well(s) monitored at frequent intervals for at least two days prior to beginning the aquifer test?

ATA.3.i YES ■ NO ☐ NA ☐ Were groundwater levels in the production well and observation well(s) measured with 0.01-foot precision according to the time schedules for drawdown and recovery specified on Form No. 633? Electronic pressure transducer/data logger instrumentation, electric well probes, pressure gauges on turbine pumped wells, or graduated steel tapes are acceptable methods of measuring groundwater levels.

ATA.3.j YES ■ NO ☐ NA ☐ If additional production wells are required, were eight-hour duration drawdown and yield tests conducted for all additional wells?

APPLICATION FOR BENEFICIAL WATER USE PERMIT
AQUIFER TESTING ADDENDUM
ATTACHMENTS

Prepared For:
Big Horn Leasing LLC.
P.O. Box 385
Sidney, MT 59270

12293 CR 344
NE¼, NE¼, Section 8, Township 22 North, Range SSE
Richland County, Montana

November 7, 2013

Prepared by:
HydroSolutions Inc
1500 Poly Drive, Suite 103
Billings, Montana 59102

www.hydros, com

Contents

Introduction

This report contains all of the information requested by Form 600-ATA Responses are presented under the section headings listed on Form 600-ATA This report presents results from one approximately 72-,hour pumping test and two approximately 24-hour yield tests. Specifically, the three tests consisted of (1) a 72 hour pumping test that involved pumping Well #2 and observing Well #1 and Well #3 (2) a 24 hour pumping/yield test on Well #1, and (3) a 24 hour pumping/yield test on Well #3.

The 72 hour test was intended to demonstrate the sustainable yield of Well #2 as well as provide data for the determination of source aquifer parameters. The 24-hour tests were performed in order to demonstrate the sustainable yield of the two additional production wells. Responses to the information requirements of Form 600-ATA are provided in this document Linder sub-headings specific to each test. Detailed water level and flow measurement results from each test have been provided on separate copies of Form 633, which have been provided in electronic format on a compact disc along with this report.

ATA.1.a Variance (1)

A variance was neither requested nor granted.

ATA.1.b Variance (2)

A variance was neither requested nor granted.

ATA.2.a Topographic site map

A topographic site map is provided on Figure ATA.2.a.1 in the Figures section of this document. Details of the distribution system are shown in design plans prepared by Interstate Engineering, presented in Addendum B of *Form 600-GW Attachments.*

ATA.2.b Drilling Logs/Lithologic Descriptions

GWIC logs for the three wells are included in Attachment ATA.2.b.

ATA.2.c Well Information

The requested information for each well has been provided on the electronic copy of Form 633. Three wells were involved in one pumping test and two yield tests. The table below provides identification information for these three wells.

Well ID	GWICID	Location
Well#1	274077	47.68842N, 104.29331W
Well#2	274075	47.68847N, 104.29503W
Well#3	268662	47.68832N, 104.29517W

ATA.2.d Hydraulic Gradient

Wellhead elevations have not been surveyed because the height of well casing stick-ups was in the process of being changed due re-grading of the ground surface at the site. In general, groundwater in relatively shallow aquifers to the west of the Yellowstone River valley near Sidney is expected to flow to the east or southeast, towards the Yellowstone River or its tributary streams[1]. Based on an approximation from the referenced map, groundwater at the site is expected to flow to the southeast under a gradient of 0.01 or less[1].

ATA.2.e Description of Testing Methods

Three tests were performed: (1) a 72 hour pumping test that involved pumping Well #2 and observing Well #1 and Well #3, (2) a 24 hour pumping/yield test on Well #1, and (3) a 24 hour pumping/yield test on Well #3. Pumping of on-site wells that were not under test was suspended during the background, pumping and recovery periods of each test.

72 Hour Pumping Test (Well #2)

General Test Description

An aquifer pumping and recovery test was performed by pumping Well #2 at an average rate of 37.8 gpm for approximately 72.25 hours and observing groundwater level recovery after pumping was stopped for approximately 73 hours. The pumping well and two additional wells, identified as Well #1 and Well #3, were monitored continuously during the test with data logging pressure transducers (transducers). Well #3 and Well #1 are located approximately 56 arid 425 feet from the pumping well, respectively. The layout of the test site, including pumping and observation well locations, and the discharge location, is presented on a topographic map

[1] Patton, T.W., J.C. Rose, J.I. LaFave, and L.N. Smith, 1998. Potentiometric Surface Map for the Shallow Hydrologic Unit, Lower Yellowstone River Area: Dawson, Fallon, Prairie, Richland, and Wibaux Counties, Montana. Montana Ground-Water Assessment Atlas No. 1, Part B, Map 5: Montana Bureau of Mines and Geology.

shown in Figure ATA.2.a.1, and distances and bearings of the observation wells relative to the pumping well are contained on Form 633.

Background Water Level Data

Background water level data were collected prior to the test and are also presented on Form 633. The background record for Well #2 and Well #3 began during the afternoon of June 14. Water level measurements were collected at intervals of two or four hours using absolute-reading (non-vented) Solinst Levelogger transducers. During the evening prior to the test (June 17), transducers were re-arranged to reflect the configuration of instruments required for the test, which included the installation of an absolute-reading In-Situ LevelTROLL 700 in Well #1. At th.is point in time, new background logs were started using 30-minute logging intervals. Background data logs from absolute-reading instruments were corrected using data from a Solinst Barologger that was on-site during the background period.

Pumping and Recovery Water Level Data

Throughout the drawdown phase and part of the recovery phase of the test, water levels were recorded by a gauged (vented) In-Situ LevelTROLL 700 transducer (Well #2), by an absolute reading LevelTROLL 700 transducer (Well #3), and an absolute reading Solinst Levelogger (Well #1). The latter portion of the recovery test was recorded in Well #2 and Well #3 using absolute reading Solinst Levelogger transducers. Barometric pressure data were recorded during the duration of the background period and the pumping and recovery test using a data logging barometer located at the site. Water level data collected by absolute reading instruments were corrected using barometric data recorded by this instrument. Approximate water level recording intervals are shown on Table ATA.2.e.1, and the complete background, pumping and recovery data sets are presented on Form 633.

Table ATA.2.e.1. Water level recording intervals.

	Initial Drawdown	Drawdown	Initial Recovery	Recovery	late Recovery
Well #1 (obs)	5 minutes	5 minutes	not recorded	not recorded	not recorded
Well #2 (pumping)	1 second	10–60seconds	1 second	10–60 seconds- •	1ominutes
Well #3 (obs)	1 second	1o-60 seconds	60 seconds	60 seconds	60 seconds

Discharge Configuration

During the pumping phase of the test, water pumped from Well #2 was conveyed approximately 100 feet to the north through two-inch diameter PVC piping. This piping conveyed the discharge water to a borrow ditch along Highway 200. From the discharge point, water flowed to the west in the borrow ditch. The discharge point is shown on Figure ATA.2.a.1. Seepage back into the producing aquifer was not anticipated due to the depth of the aquifer and the substantial thickness of low permeability strata between the surface and the producing aquifer. No indications of seepage were noted in any of the test results.

During the test, the discharge rate was measured using a two-inch diameter Seametrics WMP-101 electromagnetic flow meter, which has a manufacturer stated accuracy of +/- 1% at the flow rates attained during this test. Flow measurements were both observed on the meter's display and recorded at one minute intervals throughout the test using a Seametrics DL76 data logger.

Yield Test (Well #1)

General Test Description

A 24.1 hour pumping test was performed on Well #1, and 14 hours of recovery data were also recorded. The average pumping rate during the test was 59.1 gpm. Observation wells were not utilized because this test was intended to demonstrate the yield of Well #1. The layout of the test site is presented on Figure ATA.2.a.1, and all pertinent test data are presented on Form 633.

Several small changes in water level on the order of 0.1 to 0.4 feet occurred during the drawdown phase of the test, in the early morning hours of 8/13/13. These changes do not correlate with any changes in the logged discharge rate, and their cause is uncertain. They are not anticipated to adversely impact the usability of the test results. Additionally, between approximately 11:26 and 11:29 AM on 8/13/13, the test was interrupted when a construction site electrician inadvertently turned off the breaker for the pump circuit. The pump was re-started as soon as the problem was identified and the test was continued to completion.

Background Water Level Data

None recorded.

Yield Test Water Level Data

Water levels were recorded by a gauged In-Situ LevelTROLL 700 transducer at an interval of 1 second during the early stages of drawdown and recovery, and at intervals of 10 seconds and 1 minute during the remainder of the drawdown and recovery phases of the test.

Discharge Configuration

Water was routed from the well under test through permanent buried two-inch PVC pipe to the pumphouse building. Water was routed out of the pumphouse building, through the Seametrics

magnetic flow meter, and through approximately 150 feet of two inch temporary PVC lay-flat hose before being discharged to the borrow ditch and being allowed to flow west away from the site (Figure ATA.2.a.1).

Yield Test (Well #3)

General Test Description

A 25.75 hour pumping test was performed on Well #3, and 26.4 hours of recovery data were also recorded. Observation wells were not utilized because this test was intended to demonstrate the yield of Well #3. The layout of the test site is presented on Figure ATA.2.a.1, and all pertinent test data are presented on Form 633.

The test experienced a "false start" between approximately 8:47 AM and 9:00 AM, because the pump was incorrectly wired. After identifying the problem and correcting the pump wiring, the test was re-started at approximately 9:00 AM. During the first hour of the test the pumping rate was increased several times because the well was capable of yielding more than anticipated. Time-stamped records of changes to the pumping rate are recorded in the discharge data log included on Form 633. At approximately 10:20 AM a steady rate of approximately 46-46.5 gpm was attained. This rate was maintained for the remaining 24.1 hours of the test.

Background Water Level Data

None recorded.

Yield test Water Level Data

Water levels were recorded by a gauged In-Situ LevelTROLL 700 transducer at an interval of 1 second during the early stages of drawdown and recovery, and at intervals of 10 seconds and 1 minute during the remainder of the drawdown and recovery phases of the test.

Discharge Configuration

Water was routed from the well under test through permanent buried two-inch PVC pipe to the pumphouse building. Water was routed out of the pumphouse building, through the Seametrics magnetic flow meter, and through approximately 150 feet of two-inch temporary PVC lay-flat hose. Water w s discharged from the hose to the borrow ditch along the northern boundary of the site, and was allowed to flow west away from the site (Figure ATA.2.a.1).

ATA.2.f Form 633

A separate electronic copy of Form 633 has been provided for each of the three tests on a CD along with this submission.

ATA.3.a Pumping Rate

The applicant is applying for a rate of 142.8 gpm as detailed on Form 600-GW. This rate is the sum of the pumping rates attained during the 72-hour pumping test (Well #2) and yield tests conducted on Well #1 and Well #3. Rates attained during each test are detailed below.

72 Hout Pumping Test

The average pumping rate throughout the duration of the 72 hour test was 37.8 gallons per minute (gpm). Discharge was steady throughout the test excepting one small flow adjustment around 1:30 pm on 6/18/13 that is evident in the Well #2 drawdown curve. This flow adjustment is barely perceptible in the discharge record.

Yield Test (Well.#1)

The average pumping rate throughout the duration of th.is test was 59.1 gpm. The discharge rate was adjusted during the first ten minutes of the test to attain the targeted pumping rate. Following these initial adjustments, discharge remained steady throughout the test, with the exception of the brief power interruption to the pump at approximately 11:26 on 8/13/13. Following the interruption, the discharge rate returned to its previous value.

Yield Test (Well #3)

The discharge rate was increased during the first hour of the test because the well was capable of yielding more than expected. Thus, for purposes of assessing the well's yield over a 24 hour period, an average reported flow rate of 45.9 gpm was calculated µsing flow measurements made between approximately 10:20 AM on 8/14/13 through 10:28 AM on 8/15/13. However, if it were desired to calculate aquifer transmissivity using these water level data, the detailed flow measurement record provided on Form 633 would allow for an accurate average flow rate to be calculated over the entire 25.75 hour testing period, or for the use of superposition to fit a constant rate solution to the full data set.

ATA.3.b Test Duration

Not Applicable. The proposed volume is greater than 50 acre-feet.

AtA.3.c Test Duration

One 72.25 hour pumping test was conducted on Well #2 in order to determine aquifer properties at the site, and to demonstrate adequacy of diversion for Well #2. Subsequently, yield tests were conducted on Well #3 (25.75 hours) and on Well #1 (24.1 hours) in order to demonstrate adequacy of diversion at the requested pumping rates for these wells.

ATA.3.d Discharge Measurement

In the case of the 72 hour test and the two yield tests, discharge rate was measured using a two inch diameter Seametrics WMP-101 electromagnetic flow meter, which has a manufacturer stated accuracy of +/- 1% under the conditions of these tests. Flow measurements were automatically logged at one minute intervals throughout the duration of the 72 hour test and at four minute intervals throughout the duration of the 24 hour tests. Refer to ATA.2.e and the individual Form 633's for detailed discharge measurement results for each test.

ATA.3.e Discharge Conveyance

- During the 72 hour test, discharge was conveyed through approximately 100 feet of temporary two inch PVC piping into the borrow ditch along Highway 200, where it flowed away from the site to the west.
- During the Well #1 yield test, discharge was routed out of the pumphouse and conveyed through approximately 150 feet of temporary two-inch PVC piping into the borrow ditch along Highway 200, where it flowed away from the site to the west.
- During the Well #3 yield test, discharge was conveyed through approximately 450 feet of permanent two-inch PVC piping to the pumphouse, routed through the pumphouse into approximately 150 feet of temporary two inch PVC piping, and discharged into the borrow ditch along Highway 200, where it flowed away from the site to the west.

Seepage back into the producing aquifer was not anticipated due to the depth of the aquifer and the substantial thickness of low permeability strata between the surface and the producing aquifer. No indications of seepage were noted in any of the test results.

See also ATA.2.e.

ATA.3.f Observation Wells (1)

Two observation wells were utilized for the 72 hour test, both of which were completed in the same water-bearing zone as the pumping well. The wells were close enough to the pumping well to show measurable drawdown during the test. Well #1 appears to be unaffected during the early stages of the 72 hour test but shows drawdown during the latter half of the test. Recovery data were not recorded for Well #1 because the transducer became lodged in the well following re-programming and could not be re-installed.

Observation wells were not utilized during the yield tests on Well #1 and Well #3.

ATA.3.g Observation Wells (2)

Observation wells were not pumped during the 72 hour test. Observation wells were not utilized during the yield tests on Well #1 and Well #3.

ATA.3.j Additional Production Wells

See ATA.3.a. A total of three production wells, completed in the same aquifer, will be utilized as points of diversion under this proposed water right (see Attachment ATA.2.c). The requested rate of 142.8 gpm is the sum of the pumping rates attained during the 72 hour pumping test on Well #2 and the yield tests on Well #1 and Well #3.

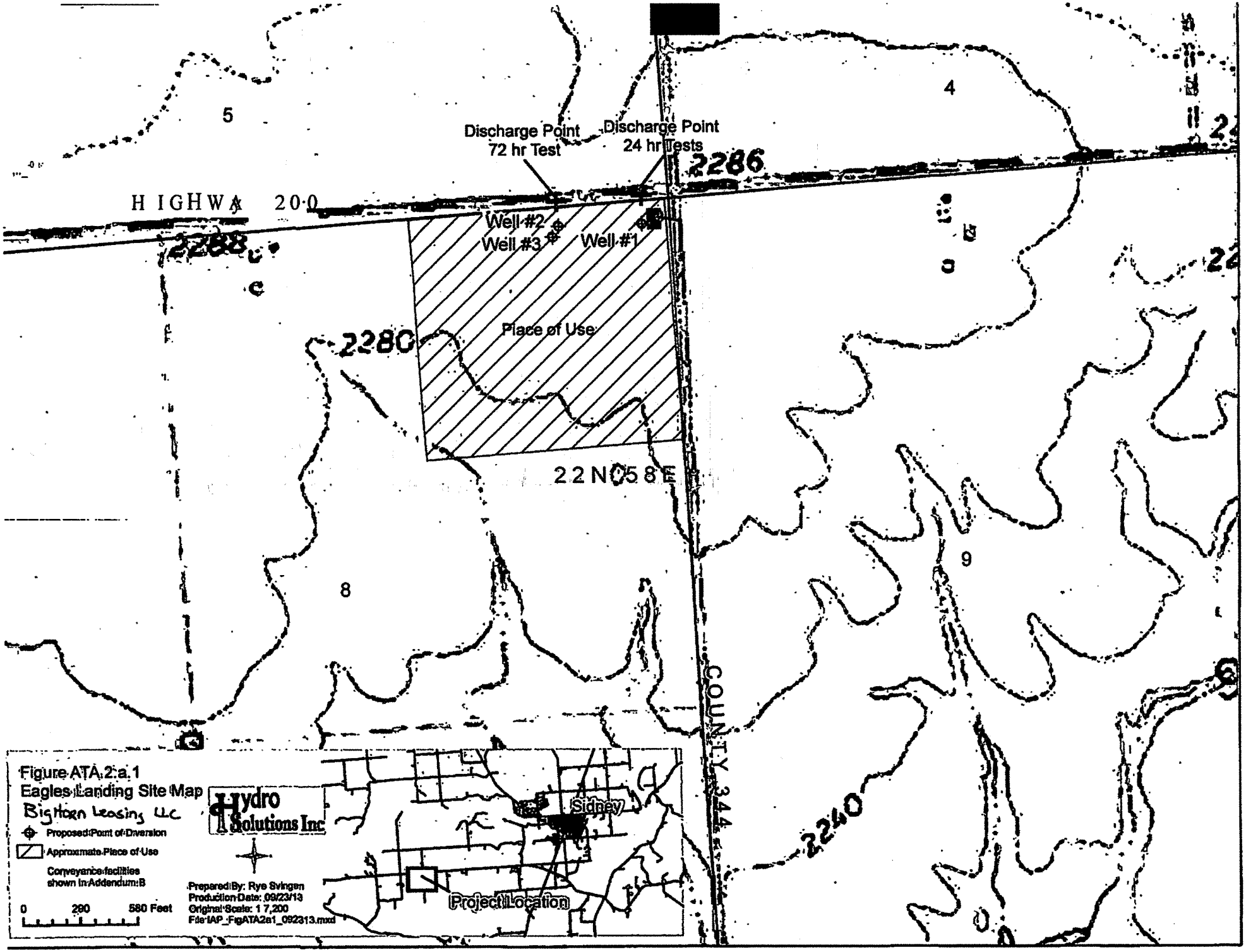
A summary of drawdown observed during each test is provided in the table below, along with estimated available drawdown for each well.

Table ATA.3.j.1. Observed drawdown versus available drawdown.

Well ID	Approximate test duration (hours)	Total Depth (feet bgs)	Static Water Level (feet bgs)	Estimated available drawdown (feet)[1]	Maximum drawdown (feet)	Average test pumping rate (gpm)
1	24.1	160	111.22	38.8	19.02	59.1
2	72.25	160	102.42	47.6	29.35	37.8
3	25.8 hr	160	103.07	56.5	22.4	45.9

[1]Estimated available drawdown assumes pump is placed m bottom 10 feet of well.

FIGURE


Discharge Point
72 hr Test
Discharge Point
24 hr Tests
2286
HIGHWAY 200
Well #2
Well #3
Well #1
2288
2280
Place of Use
22N 58E
5
4
8
9
COUNTY 344
2240
Sidney
Project Location
Figure ATA.2.a.1
Eagles Landing Site Map
Bighorn Leasing LLC
Proposed Point of Diversion
Approximate Place of Use
Conveyance facilities shown in Addendum B
0 290 580 Feet
Hydro Solutions Inc
Prepared By: Rye Svingen
Production Date: 09/23/13
Original Scale: 1:7,200
File: IAP_FigATA2a1_092313.mxd

ATTACHMENT ATA.2.b

GWIC/Driller's Logs

MONTANA WELL LOG REPORT

This well log reports the activities of a licensed Montana well driller, serves as the official record of work done within the borehole and casing, and describes the amount of water encountered. This report is compiled electronically from the contents of the Ground Water Information Center (GWIC) database for this site. Acquiring water rights is the well owner's responsibility and is NOT accomplished by the filing of this report.

Other Options

Return to menu
Plot this site on a topographic map

Site Name: BEACON LIGHT INC.
GWIC Id: 268662 Well #3

Section 1: Well Owner(s)

1) KING, TODD (MAIL)
1585 S CENTRAL AVE
SIDNEY MT 59270 [10/08/2012]
2) KING, TODD (WELL)
12293 CR 344
SIDNEY MT 59270 [10/08/2012]

Section 2: Location

Township	Range	Section	Quarter Sections
22N	58E	8	NE¼ NE¼

County: RICHLAND
Geocode:

Latitude	Longitude	Geomethod	Datum
47.688333	104.295	NAV-GPS	WGS84

Ground Surface Altitude: Method: Datum: Date:

Addition: Block: Lot:

Section 3: Proposed Use of Water

COMMERCIAL (1)

Section 4: Type of Work

Drilling Method: ROTARY

Section 5: Well Completion Date

Date well completed: Monday, October 08, 2012

Section 6: Well Construction Details

Borehole dimensions

From	To	Diameter
0	160	12

Casing

From	To	Diameter	Wall Thickness	Pressure Rating	Joint	Type
-2	25	8	0.25	250.0	WELDED	A53B STEEL
25	150	8	0.25	250 0	SPLINE	PVC-SDR 17

Completion (Perf/Screen)

From	To	Diameter	# of Openings	Size of Openings	Description
150	160	8	25	.020	SCREEN-CONTINUOUS-PVC

Annular Space (Seal/Grout/Packer)

From	To	Description	Cont. Fed?
0	130	BENTONITE CHIPS	
130	160	.00 ROCK	

Section 7: Well Test Data

Total Depth: 160
Static Water Level: 110
Water Temperature:

Air Test *

80 gpm with drill stem set at 160 feet for 2 hours.
Time of recovery _ hours.
Recovery water level _ feet.
Pumping water level _ feet.

Pump Test *

Depth pump set for test 125 feet.
50 gpm pump rate with 15 feet of drawdown after 2 hours of pumping.
Time of recovery 0.25 hours.
Recovery water level 110 feet.
Pumping water level _ feet.

** During the well test the discharge rate shall be as uniform as possible. This rate may or may not be the sustainable yield of the well. Sustainable yield does not include the reservoir of the well casing.*

Section 8: Remarks

Section 9: Well Log

Geologic Source

Unassigned

From	To	Description
0	30	BROWN SAND & CLAY
30	58	GRAVEL
58	100	SANDY GRAY CLAY
100	130	GRAY CLAY
130	155	GRAY SAND
155	160	GRAY CLAY

Driller Certification

All work performed and reported in this well log is in compliance with the Montana well construction standards. This report is true to the best of my knowledge.

Name: TERRY WILLIAMS
Company: THERMAL DRILL INC
License No: WWC-626
Date Completed: 10/8/2012

MONTANA WELL LOG REPORT

This well log reports the activities of a licensed Montana well driller, serves as the official record of work done within the borehole and casing, and describes the amount of water encountered. This report is compiled electronically from the contents of the Ground Water Information Center (GWIC) database for this site. Acquiring water rights is the well owner's responsibility and is NOT accomplished by the filing of this report.

Other Options

Go to GWIC website
Plot this site on a topographic map
View scanned well log (7/22/2013 9:24:51 AM)

Site Name: KRW REAL ESTATE INVESTMENTS
GWIC Id: 274075 Well #2

Section 1: Well Owner(s)
1) HORNER, BYRON, SEC. (MAIL)
201 W. MAIN ST. SUITE 201
MISSOULA MT 59802 [05/11/2013]
2) HORNER, BYRON, SEC. (WELL)
MONDAK OIL FIELD HOUST PROJECT
SIDNEY MT 59270 [05/11/2013]

Section 2: Location

Township	Range	Section	Quarter Sections
22N	58E	8	

County: RICHLAND
Geocode:

Latitude	Longitude	Geomethod	Datum
47.688433333333	104.295283333333	NAV-GPS	WGS84

Ground Surface Altitude: Method: Datum: Date:

Addition: Block: Lot:

Section 3: Proposed Use of Water
PUBLIC WATER SUPPLY (1)

Section 4: Type of Work
Drilling Method: ROTARY

Section 5: Well Completion Date
Date well completed: Saturday, May 11, 2013

Section 6: Well Construction Details

Borehole dimensions

From	To	Diameter
0	28	14
28	44	9.875
44	160	7.875

Casing

From	To	Diameter	Wall Thickness	Pressure Rating	Joint	Type
-2	44	8	0.25		WELDED	STEEL
0	28	10	0.25		WELDED	STEEL
10	130	5		250.00	THREADED	PVC
155	160	5		250.00	THREADED	PVC

Completion (Perf/Screen)

From	To	Diameter	# of Openings	Size of Openings	Description
130	155	5		0.015	SCREEN-CONTINUOUS-STAINLESS

Annular Space (Seal/Grout/Packer)

From	To	Description	Cont. Fed?
0	44	CEMENT AND BENTONITE	
110	155	10/20 SAND	

Section 7: Well Test Data

Total Depth: 160
Static Water Level: 112
Water Temperature:

Air Test *

28 gpm with drill stem set at 150 feet for 4 hours.
Time of recovery 0.08 hours.
Recovery water level 112 feet.
Pumping water level _ feet.

Pump Test *

Depth pump set for test 155 feet.
38 gpm pump rate with 38 feet of drawdown after 72 hours of pumping.
Time of recovery 0.33 hours.
Recovery water level 118 feet.
Pumping water level _ feet.

** During the well test the discharge rate shall be as uniform as possible. This rate may or may not be the sustainable yield of the well. Sustainable yield does not include the reservoir of the well casing.*

Section 8: Remarks

Section 9: Well Log
Geologic Source
Unassigned

From	To	Description
0	16	BROWN SANDY SHALE
16	44	GRAVEL AND SAND
44	58	YELLOW SANDY CLAY
58	73	GRAY CLAY
73	84	BROWN SANDSTONE
84	86	COAL
86	102	GRAY SHALE
102	114	GRAY BROWN SANDSTONE
114	117	ROCK-VERY HARD
117	126	GRAY CLAY
126	127	COAL
127	158	GRAY SAND
158	160	GRAY CLAY

Driller Certification
All work performed and reported in this well log is in compliance with the Montana well construction standards. This report is true to the best of my knowledge.

Name: MICHAEL HIGGINS
Company: HIGGINS DRILLING COMPANY
License No: MWC-169
Date Completed: 5/11/2013

MONTANA WELL LOG REPORT

This well log reports the activities of a licensed Montana well driller, serves as the official record of work done within the borehole and casing, and describes the amount of water encountered. This report is compiled electronically from the contents of the Ground Water Information Center (GWIC) database for this site. Acquiring water rights is the well owner's responsibility and is NOT accomplished by the filing of this report.

Other Options

Go to GWIC website
Plot this site on a topographic map
View scanned well log (7/22/2013 9:25:34 AM)

Site Name: KRW REAL ESTATE INVESTMENTS
GWIC Id: 274077 Well #1

Section 1: Well Owner(s)

1) HORNER, BYRON, SEC. (MAIL)
201 W. MAIN ST. SUITE 201
MISSOULA MT 59802 [05/16/2013]
2) HORNER, BYRON, SEC. (WELL)
MONDAK OILFIELD HOUSING
SIDNEY MT 59270 [05/16/2013]

Section 2: Location

Township	Range	Section	Quarter Sections
22N	58E	8	

County: RICHLAND
Geocode:

Latitude	Longitude	Geomethod	Datum
47.688316666667	104.2933	NAV-GPS	WGS84

Ground Surface Altitude: Method: Datum: Date:

Addition: Block: Lot:

Section 3: Proposed Use of Water

PUBLIC WATER SUPPLY (1)

Section 4: Type of Work

Drilling Method: ROTARY

Section 5: Well Completion Date

Date well completed: Thursday, May 16, 2013

Section 6: Well Construction Details

Borehole dimensions

From	To	Diameter
0	26	14
26	46	9.875
46	163	7.875

Casing

From	To	Diameter	Wall Thickness	Pressure Rating	Joint	Type
-2	46	8	0.25		WELDED	STEEL
-1	26	10	0.25		WELDED	STEEL
9	122	5		250 00	THREADED	PVC
157	160	5		250 00	THREADED	PVC

Completion (Perf/Screen)

From	To	Diameter	# of Openings	Size of Openings	Description
122	157	5		0.015	SCREEN-CONTINUOUS-STAINLESS

Annular Space (Seal/Grout/Packer)

From	To	Description	Cont. Fed?
0	43	CEMENT AND BENTONITE	
102	160	10/20 SAND	

Section 7: Well Test Data

Total Depth: 160
Static Water Level: 109
Water Temperature:

Air Test *

36 gpm with drill stem set at 155 feet for 2 hours.
Time of recovery 0.07 hours.
Recovery water level 109 feet.
Pumping water level _ feet.

** During the well test the discharge rate shall be as uniform as possible. This rate may or may not be the sustainable yield of the well. Sustainable yield does not include the reservoir of the well casing.*

Section 8: Remarks

Section 9: Well Log

Geologic Source
Unassigned

From	To	Description
0	22	BROWN SANDY SHALE
22	46	GRAVEL AND SAND
46	49	GRAY SHALE
49	54	YELLOW CLAY
54	59	BROWN SAND
59	102	BROWN AND GRAY CLAY WITH SAND STREAKS
102	121	BROWN SAND
121	158	GRAY SAND
158	161	COAL
161	163	GRAY SHALE

Driller Certification

All work performed and reported in this well log is in compliance with the Montana well construction standards. This report is true to the best of my knowledge.

Name: MICHAEL HIGGINS
Company: HIGGINS DRILLING COMPANY
License No: MWC-169
Date Completed: 5/16/2013

FOLLOW-UP PAGE AFFIDAVIT & CERTIFICATION

"I/we attest that this preapplication meeting form, follow-up page, and amended responses page accurately portray my proposed project. I am aware that my application for this project will not qualify for a discounted filing fee and expedited timelines if upon submittal of the application to the department, I change any element of the proposed application from the preapplication meeting form and follow-up materials (ARM 36.12.1302(6)(a))."

Applicant Signature — Date: 3/25/2024

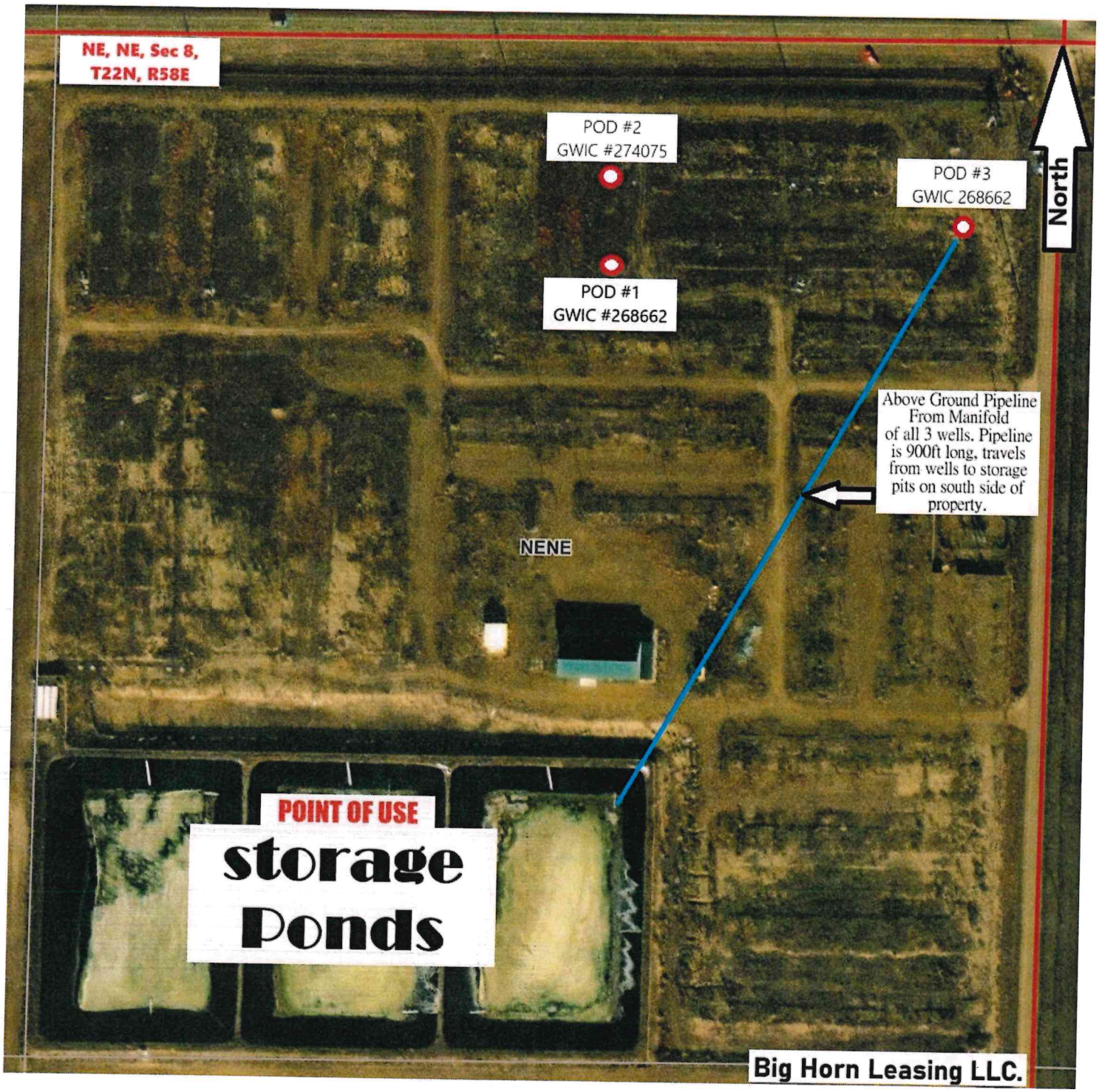
Applicant Signature — Date

"We confirm that the preapplication form and follow-up information are adequate for the Department to proceed with technical analyses in ARM 36.12.1303. Or, if the applicant has elected to complete technical analyses, we confirm they have submitted each piece of technical analysis required based on the proposed project and the Department is able to proceed with the scientific credibility review (ARM 36.12.1303(8))."

Department Signature — Date

Department Signature — Date

Received
APR 01 2024
DNRC Water Resources
Glasgow Regional Office



Received

APR 01 2024

DNRC Water Resources
Glasgow Regional Office

Commercial Water Purchase Agreement

This Commercial Water Agreement (the "Agreement") is made and entered into by and between Big Horn Leasing LLC., located at P.O. Box 1049 Sidney, MT 59270 (hereinafter referred to as the "Seller") and EMEP Operating, LLC, located at 1200 Smith St., Suite 680, Houston, TX 77002 (hereinafter referred to as "Purchaser") as of the "Effective Date" as set forth herein.

Recitals

WHEREAS, Seller and Purchaser desire to enter into a formal legal agreement to sell and purchase water for commercial purposes, i.e., oil and natural gas development; and

WHEREAS, Purchaser has multiple oil and gas drilling sites located near Seller's water supply,

WHEREAS, Seller has agreed to supply water in the specific amounts below and will be utilizing the water purchased from the Purchaser solely for "beneficial use" in the oil and natural gas operations to be conducted solely within the State of Montana.

NOW, THEREFORE, IN CONSIDERATION of the mutual promises, conditions and agreements contained in this Agreement, the sufficiency of which is hereby acknowledged, the parties hereby mutually agree as follows:

1) **SELLER'S REPRESENTATIONS.** Seller holds (or will hold) the exclusive right to sell water from the NE/4NE/4 of Section 8, Township 22 North, Range 58 East as described in the Seller's pending application for the Beneficial Water Use Permit No._____;(Provisional or Pending) and hereinafter referred to as the "Permit." (See DNRC Application Number_____)
2) **PURCHASER'S REPRESENTATIONS.** Purchaser will purchase up to 219 Acre Feet Acre feet of water per year from Seller as described by the Permit Application No._____ and that the water to be purchased shall be utilized solely for the Purchaser's beneficial use in oil and gas development operations conducted solely in the State of Montana.
3) **SPECIFIC USE/LOCATIONS[S] OF PURCHASER'S BENEFICIAL USAGE OF PURCHASED WATER.** The following specific locations (not including and additional locations that Purchaser deems to be economically feasible) are as follows and more specifically described in the "Permit" application:

   PLACE OF USE: See attached "Exhibit A"

4) **PRICING.** For and in consideration of the mutual covenants and conditions stated herein, Purchaser shall pay Seller the agreed upon price per barrel for each barrel of water purchased in accordance with the Agreement and the parties' hereto agree that the purchase price per barrel shall remain confidential.

5) **PAYMENT BY PURCHASER.** Purchaser shall, pursuant to Section 4 of this agreement, remit to Seller the agreed upon per barrel payment at the address identified below on or before the 30th day following the months that water is transported from the Seller's water source as described in the "Permit".

6) **WATER PURPOSE AND TRANSPORTATION.** Purchaser agrees to comply with MCA 85-2-310 (9). Furthermore, Purchaser agrees that the purpose for which the water is being purchased is for the end use in oil and gas development, specifically including but not limited to providing and transporting water to well sites located solely in the State of Montana and more specifically described in Section 3 of MCA 85-2-310.

7) **PURCHASERS BENEFICIAL USE SHALL BE SOLELY WITHIN THE STATE OF MONTANA.** Purchaser hereby agrees that the water purchased pursuant to the Agreement will not be transported out of the State of Montana and that by signing the Agreement Purchaser is on notice of the prohibition of transporting water out of the State of Montana and restrictions of in-state use pursuant to Seller's Permit No._____. In the event Purchaser defaults under the requirements of this paragraph, Seller reserves the right to terminate this Agreement immediately without notice of default being required as provided for in Section 18 below.

8) **TERM OF AGREEMENT.** Purchaser and Seller hereby agree that this agreement shall remain in full force and effect for the period of ten (10) years in consecutive one-year agreements that will automatically go into effect upon the expiration of the preceding Agreement and may be extended by the mutual agreement of the parties' provided said extension is set forth in writing. Due to the inherent fluctuations of the Oil and Gas Industry this Agreement may be modified or terminated by either party with thirty (30) days' notice to the other party or as otherwise provided herein.

9) **NO AGENCY CREATED.** Nothing in the Agreement shall be construed to constitute either party of the agent of the other, and neither party shall have authority to bind the other to a third party in any manner whatsoever.

10) **EXPENSES.** Except as otherwise specifically provided, each party is responsible for its own fees, costs, and other expenses including fees for counsel, financial advisors, and accountants incurred in negotiating and preparing this Agreement and in closing and carrying out the transactions contemplated under it.

11) **AMENDMENTS.** No provision of this Agreement may be amended or modified except by a written instrument executed by all parties to this Agreement.

12) **MULTIPLE ORIGINALS; VALIDITY OF COPIES.** This Agreement may be signed in any number of counter parts, each of with will be deemed an original. Any personals may rely on a copy of this Agreement that any party to this Agreement certifies to be a try copy to the same effect as if it were an original and an electronically transmitted executed copy shall be deemed an original.

13) **NO THIRD-PARTY BENEFICIARIES.** This agreement is for the sale benefit of its parties and their respective heirs, executors, administrators, successors, and assigns. Nothing in this agreement, expressed or implied, confers any legal or equitable right, benefit, or remedy of any nature whatsoever upon any other person or the creditors of any person.

14) **SUCCESSORS.** Except as otherwise provided in this Agreement, all provisions of this Agreement bind, inure to the benefit of, and are enforceable by and against the respective heirs, executors, administrators, personal representatives, successors, and permitted assigns of any of the parties to this Agreement subject to the provisions contained in Section 15 below.

15) **ASSIGNMENT.** The Parties hereto agree that this Agreement may not be transferred or assigned without the prior written consent of the other party.

16) **RELATIONSHIP/NOTHIRD-PARTY BENEFICIARIES.** This Agreement is for the sole benefit of its parties and their respective heirs, executors, administrators, successors, and assigns. Nothing in this Agreement, express or implied, confers any legal or equitable right, benefit, or remedy of any nature whatsoever upon any other person of the creditors of any person. Each party to this Agreement is an independent party and there are no other relationships other than that of the Purchaser and Seller.

17) **NOTICES.** All notices and other communications given or made under this Agreement must be in writing and will be considered duly given or made: On the date delivered, if delivered personally or if sent by facsimile and the facsimile is promptly confirmed by written confirmation sent by or registered or certified US mail (postage prepaid, return receipt requested);

Or

Three (3) days after being mailed, if mailed by registered or certified US mail (postage prepaid, return receipt requested) to the parties to this Agreement at the following addresses (or the address a party specifies by like notice, except that notices of changes of address shall be effective upon receipt).

If to Purchaser:

EMEP Operating, LLC

Attn: Kyle Dubiel, VP BD, Land and Legal

Address: 1200 Smith St., Suite 680

Houston, TX 77002

If to Seller:

Mr. Tim Partin, Owner Big
Horn Leasing LLC.
P.O. Box 1049
Sidney, MT 59270

18) **DEFAULT.** In the event that a party to this Agreement defaults on any provision of this Agreement, the non-defaulting party shall be required to provide written notice of the default to the defaulting party. The defaulting party shall have thirty (30) days to cure the default after receipt of written notice of default from the non-defaulting party. If any such default of which the defaulting party has received notice is not cured within thirty (30) days, the non-defaulting party has the right to collect damages for breach hereof or to recover past due amounts hereunder.

19) **ATTORNEYS' FEES.** If any party to this Agreement institutes any legal cause of action against another party arising out of or relating to this Agreement, the prevailing party will be entitled to

the cost incurred in conducting the cause of action, including reasonable attorneys' fees and expenses and court costs.

20) **MODIFICATION FOR LEGAL EVENTS.** If any court of competent jurisdiction determines that any provisions or any part of a provision set forth in this Agreement is unenforceable because of its duration or geographic scope, the court has the power to modify the unenforceable provision instead of severing it from this Agreement in its entirety. The modification may be by rewriting the offending provision, by deleting all or a portion of the offending provision, by adding additional language to this Agreement, or by making other modifications, as it determines necessary to carry out the parties' intent to maximum extent permitted by applicable law. The parties expressly agree that this agreement modified by the court is binding upon and enforceable against each of them.

21) **SEVERABILITY.** The invalidity or unenforceability of any provision of this Agreement does not affect the validity or enforceability of any other provision of this Agreement. If a court of competent jurisdiction determines that any provision is invalid, the remaining provisions of this agreement are to be construed as if the invalid provision had never been included in this Agreement. Subject to Section 20, upon a determination that any provision is invalid, illegal, or unenforceable, the parties to this Agreement shall negotiate in good faith to modify this Agreement to give effect to the original intent of the parties as closely as possible in a mutually acceptable manner so that the transactions contemplated by this agreement be consummated as originally contemplated to the greatest extent possible.

22) **FURTHER ASSURANCES.** In connection with this Agreement and the transactions contemplated by it, the Seller and Purchaser each agree to provide further assurances if requested by the other. These further assurances include signing and delivering any additional documents, instruments, conveyances, and other assurances or taking any further actions necessary to carry out the provisions of or transactions contemplated by this Agreement.

23) **INDEMNIFICATION.** For purposes of this Section, the following definitions shall apply: Purchaser means Purchaser, EMEP Operating, LLC, any subsidiary and affiliated companies, and its and their officers, members, managers, employees, contractors, subcontractors, and invitees. Seller means Seller Big Horn Leasing, LLC (entity) subsidiary and affiliated companies, and its and their officers, members, managers, employees, contractors, subcontractors, and invitees.

EMEP Operating, LLC / PURCHASER AGREES TO ASSUME FULL RESPONSIBILITY FOR AND RELEASE, PROTECT, DEFEND, INDEMNIFY AND HOLD HARMLESS BIG HORN LEASING, LLC/SELLER, FROM AND AGAINST ALL LOSSES, CLAIMS, DEMANDS, AND CAUSES OF ACTION OF EVERY KIND AND CHARACTER, RELATED TO PERSONAL OR BODILY INJURY, ILLNESS, OR DEATH OF ANY MEMBER OF THE PURCHASER GROUP OR DAMAGE TO OR LOSS OF PROPERTY OF ANY MEMBER OF THE PURCHASER GROUP, ARISING OUT OF, IN CONNECTION WITH OR INCIDENT TO THE RESULTING DIRECTLY OR INDIRECTLY FROM THIS AGREEMENT OR THE SERVICES PROVIDED HEREUNDER OR PURSUANT HERETO;

This section shall survive the termination or expiration of this Agreement.

24) **HEADINGS.** All Section headings are inserted for convenience only and are not intended to modify or interpret this Agreement.

25) **EFFECTIVE DATE/COMMENCEMENT DATE.** The "Effective Date" of this Agreement shall be the date of execution by both parties. The "Commencement Date" shall be deemed to be upon the date the date the Seller's Water Permit Application is approved by the State of Montana Department of Natural Resources and Conservation (DNRC).

26) **ENTIRE AGREEMENT; MODIFICATION.** This Agreement constitutes the sole and entire agreement of its parties with respect to the Agreement's subject matter. This Agreement supersedes all prior and contemporaneous understandings, agreements, representations, and warranties-both written and oral-with respect to the subject matter. As between or among the parties, no oral statements or prior written material not specifically incorporated herein shall be of any force and effect. The parties specifically acknowledge that, entering into and executing this Agreement, each is relying solely upon the representations and agreements contained in this Agreement and no others.

27) **LEGAL AUTHORITY.** The parties hereto warrant and represent that they have the full legal authority by their respective entities to legally execute this Agreement and that said execution is legally binding.

28) **JURISDICTION.** The parties hereto agree that this agreement shall be governed by the laws of the State of Montana and that venue shall lie exclusively in Richland County, Montana unless otherwise mutually agreed upon by the parties hereto.

IN WITNESS WHEREOF, the parties hereto duly executed this Agreement as of this 15th day of March, 2024.

PURCHASER

EMEP Operating, LLC

By: _____

Kyle Dubiel – VP BD, Land and Legal

SELLER

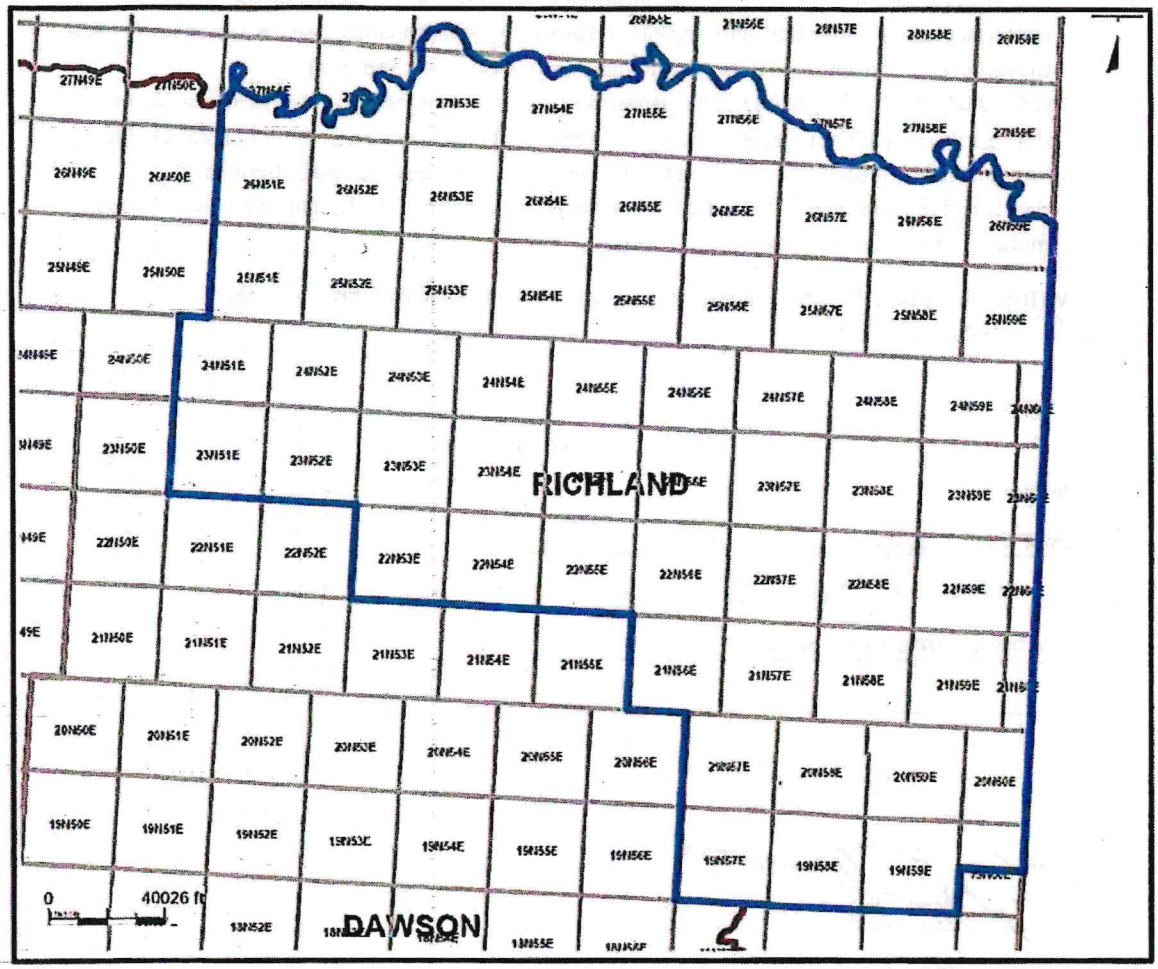
BIG HORN LEASING, LLC.
TIM PARTIN, OWNER

Exhibit A

Attached to that certain Commercial Water Purchase Agreement by and between Big Horn Leasing LLC (as Seller) and EMEP Operating, LLC (as Purchaser) dated the 15 day of March, 2024.

Specific Use/Locations

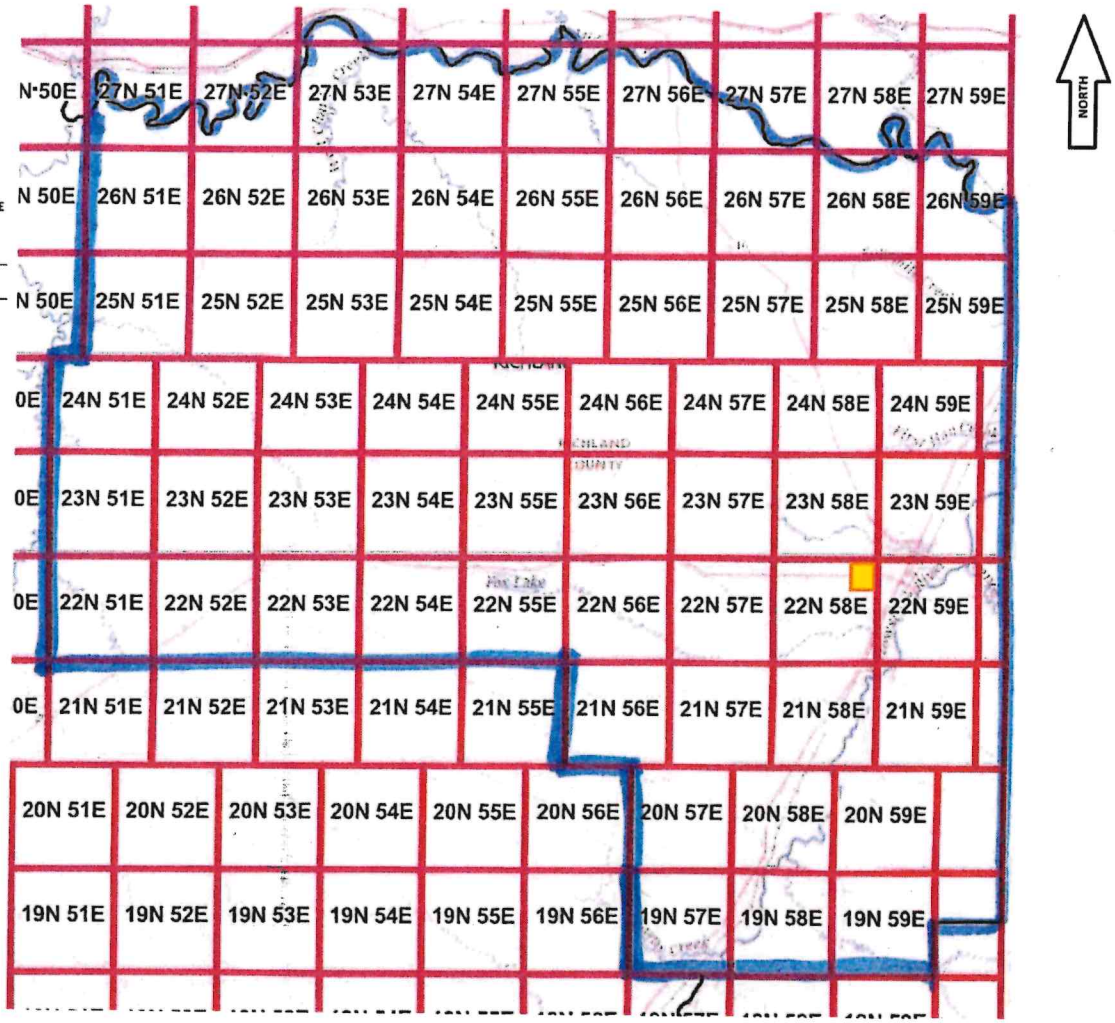
Being those certain Township and Ranges depicted below, located in Richland County, Montana:



Map of Richland County Montana
Big Horn Leasing LLC.
PROJECT LOCATION: NE, NE , Sec 8, T22N, R58E

Application #_____

Permit #_____



PREAPPLICATION MEETING FORM
PERMIT

§ 85-2-302
Form No. 600P *(Revised 3/2024)*

For Department Use Only

Application # 30163320 Basin 42M
Meeting Date 3/19/2024 Time 1:00 AM/PM
Completed Form Deadline _____

Received
APR 01 2024
DNRC Water Resources
Glasgow Regional Office

Completed Form Received _____
Fee Rec'd $ 500 Check # 11508
Deposit Receipt # GWS2422424
Payor Tim Partin
Refund $ _____ Date _____

PREAPPLICATION MEETING FEE
$ 500

FILING FEE REDUCTION & EXPEDITED TIMELINE
An application will be eligible for a filing fee reduction and expedited timelines if the applicant completes a preapplication meeting with the Department (ARM 36.12.1302(1)), which includes submitting any follow-up information identified by the Department (ARM 36.12.1302(3)(c)) and receiving either Department-completed technical analyses or Department review of applicant-submitted technical analyses (ARM 36.12.1302(4) and (5)). An application for the proposed project also must be submitted within 180 days of delivery of Department technical analyses or scientific credibility review and no element on the submitted application can be changed from the completed preapplication meeting form (ARM 36.12.1302(6)).

The Department will fill out Form No. 600P and will identify follow-up during the preapplication meeting. The Department and Applicant will sign the Preapplication Meeting Affidavit and Certification within five business days. Within 180 days of the preapplication meeting, the Applicant will complete identified follow-up on a separate document with the question numbers clearly labeled.

Applicant Information: *Add more as necessary.*

Applicant Name Big Horn Leasing LLC
Mailing Address P.O. Box 385 City Sidney State MT Zip 59270
Phone Numbers: Home _____ Work 406-489-4988 Cell _____
Email Address tim99partin@gmail.com

Applicant Name _____
Mailing Address _____ City _____ State _____ Zip _____
Phone Numbers: Home _____ Work _____ Cell _____
Email Address _____

Contact/Representative Information: *Add more as necessary.*

Contact/Representative is: ☐ Applicant ☐ Consultant ☐ Attorney ☑ Other (describe) _____
Contact/Representative Name Cherise Partin
Mailing Address P O Box 1369 City Sidney State MT Zip 59270
Phone Numbers: Home _____ Work 406-489-0474 Cell _____
Email Address cherisepartin@elitehotoil.com

NOTE: *If a contact person is identified as an attorney, all communication will be sent only to the attorney unless the attorney provides written instruction to the contrary. If a contact person is identified as a consultant, employee, or lessee, the individual filing the water right form or objection form will receive all correspondence and a copy may be sent to the contact person.*

Meeting Attendees: *Add more as necessary.*

Name	Organization	Position
Tim Partin	Big Horn Leasing LLC	Owner
Cherise Partin	Elite Hot Oil	Employee
Jack Landers	DNRC	Groundwater Hydrologist
Lih-An Yang	DNRC	Acting Regional Manager
Ashley Kemmis	DNRC	Water Resource Specialist

Table of Contents

Application Details

The following questions are mandatory and must be filled out before the Preapplication Meeting Form is determined to be complete. Narrative responses that are larger than the space provided can be answered in an attachment. If an attachment is used, mark the see attachment ("A") checkbox on this form and label the attachment with the question number. Constrain narrative responses to the specific question as is asked on the form; do not respond to multiple questions in one narrative. Label units in narrative responses. Responses in the form of a table may be entered into the table provided on this form or in an attachment. Responses in the form of a table that are larger than the table provided on this form should be placed in an attachment. If an attachment is used, the table must have the exact headings found on this form, and the see attachment ("A") checkbox must be marked. For tables in this form, circle correct unit at header of column when faced with a choice of units. For tables in attachments, label all units. Questions that require Applicant to submit items to the Department have a submitted ("S") checkbox, which is marked when the required item is attached to the Preapplication Meeting Form. Label all submitted items with the question number for which they were submitted. For all questions where follow-up is necessary, mark the "F" checkbox in the "Follow-Up" column and write the question number on the "Follow-Up Page".

Questions, Narrative Responses, and Tables	Check-boxes	Follow-Up
1. Do you elect to have DNRC conduct Technical Analyses?	■ Y ☐ N	☐ F
2. Provide a map created on an aerial photograph or topographic map that shows the following: section corners, township and range, a north arrow, all proposed points of diversion labeled with a unique POD ID number, all proposed places of use, all proposed conveyance structures, all proposed places of storage, and places of use for all overlapping water rights.	☐ S	■ F
3. Is the project located in a Controlled Groundwater Area or Basin Closure Area? If yes, immediately go to Project-Specific Questions 47 to 52 because Form 600 may be the incorrect form, or this project may not meet the requirements for the Department to accept a Form 600.	☐ Y ■ N	☐ F
4. Is the proposed use temporary?	☐ Y ■ N	☐ F
a. If yes, when will the appropriation cease? _____	☐ A	☐ F
5. Describe the proposed purpose information, including period of diversion (MM/DD-MM/DD), period of use (MM/DD-MM/DD), flow rate (GPM or CFS) and volume (AF).	■ A	☐ F

Purpose	Period of Diversion	Period of Use	Flow Rate			Volume
	(MM/DD-MM/DD)	*(MM/DD-MM/DD)*	*Flow Rate*	*GPM*	*CFS*	*(AF)*
Water Marketing	1/1-12/31	1/1-12/31	142	✓		229 AF
		Total				

6. Describe the proposed location of the point(s) diversion to the nearest 10 acres, if source is groundwater (GW) or surface water (SW), source name, and means of diversion (e.g., pump, headgate, well). Label each POD with the POD ID number used for the project map (question 2). ☒ A ☐ F

POD #	¼	¼	¼	Sec	Twp	Rge	County	Lot	Block	Tract	Subdivision	Gov Lot	SW or GW	Source Name	Means
1	NE	NE	NE	8	22N	58E	Richland						GW		Well
2	NE	NE	NE	8	22N	58E	Richland						GW		Well
3	NE	NE	NE	8	22N	58E	Richland						GW		Well

7. What are the geocodes of the place of use? ☒ A ☐ F

27-3324-08-1-01-02-0000	

8. Describe the legal land description for the proposed place of use and, if an irrigation or lawn and garden purpose, list the number of irrigated acres. ☒ A ☐ F

Acres	Gov't Lot	Block	¼	¼	¼	Sec	Twp	Rge	County
				NE	NE	8	22N	58E	Richland
	Total								

9. Will other water right(s) supplement or overlap the place of use to contribute to the purpose(s)? ☐ Y ☒ N ☐ F

a. If yes, summarize how the water rights will be operated as a whole to serve the purpose(s). ☐ A ☐ F

10. For each supplemental or overlapping water right, please list the water right number, purpose, typical period of diversion and use (MM/DD-MM/DD), flow rate (GPM or CFS), and the volume of water (AF) contributed.	☐ A	☐ F

Water Right No.	Avg. Period of Diversion (MM/DD-MM/DD)	Avg. Period of Use (MM/DD-MM/DD)	Flow Rate (GPM or CFS)	Volume Contributed (AF)

11. Will this application supplement contract water from a Federal Project, ditch company, or other source?	☐ Y ■ N	☐ F
a. If yes, explain. _____ _____	☐ A	☐ F
12. Does the project involve one or more place(s) of storage with a capacity of greater than 0.1 acre-feet? This does not include storage tanks and cisterns. If yes, answer questions 53 to 61 for place of storage.	■ Y ☐ N	☐ F
13. Does the project involve one or more conveyance ditches? If yes, answer questions 62 to 64 for ditch-specific questions.	☐ Y ■ N	☐ F
14. Does the project involve an appropriation that is greater than 5.5 CFS and 4,000 AF? If yes, you must submit a Criteria Addendum Application for Beneficial Water Use Permit for Appropriations Greater than 5.5 CFS and 4,000 AC-FT (Form 600-B) with application submittal. The criteria are found in §85-2-311(3), MCA.	☐ Y ■ N	☐ F
15. Will you be transporting water for use outside of Montana? If yes, you will need submit an Out-of-State Use Addendum (Form 600/606-OSA) with the application. The out-of-state use criteria are outlined in §85-2-402(6), MCA.	☐ Y ■ N	☐ F
16. Does the project include the water marketing purpose? If yes, answer questions 65 to 71 for water marketing. A Water Marketing Purpose Addendum (Form 600/606-WMA) will be required with application submittal.	■ Y ☐ N	☐ F
17. Is the project located in designated sage grouse habitat? If yes, you must have a consultation with and review of your project by the Montana Sage Grouse Habitat Conservation Program. The review letter will be required at application submittal.	☐ Y ■ N	☐ F

Surface Water

☐ **Applicable**, move on to question 18. ■ **Not Applicable**, skip to question 29.

The following questions are mandatory for surface water permit applications and must be filled out before the Preapplication Meeting Form is determined to be complete.

Surface Water: Physical Availability

Questions, Narrative Responses, and Tables	**Check-boxes**	**Follow-Up**
18. What is the flow rate (GPM or CFS), volume (AF), period of diversion start date and end date (MM/DD-MM/DD), and source type (e.g., perennial, ephemeral) at each point of diversion? Use the same POD # as the project map (question 2) to label each point of diversion.	☐ A	☐ F

POD #	Flow Rate (GPM or CFS)	Volume (AF)	Period Start (MM/DD)	Period End (MM/DD)	Source Type

19. What is the source type of the surface water diversion? _____						☐ A	☐ F
Perennial or intermittent	Answer question 20	**Ephemeral**	Answer questions 22 to 24	**Lakes**	Answer question 25	**Other**	Answer question 26

Surface Water: Physical Availability: Perennial or Intermittent

☐ Applicable ☐ Not Applicable

20. Is stream gage data available?	☐ Y ☐ N	☐ F
a. If yes, answer the following questions related to the number of stream gages that are available.		
i. One stream gage is available		
1. What is the gage name? _____		☐ F

2. Who operates and maintains the gage? _____		☐ F
3. Is the stream gage upstream or downstream of point(s) of diversion? _____		☐ F
4. Is there a limiting or controlling factor that would make the Drainage Area Method not practical? This includes dams that control the flow and streams with large gaining and/or losing reaches. If you have questions about this, please contact the Regional Hydro-Specialist or the Water Sciences Bureau.	☐ Y ☐ N	☐ F
5. Is the period of record greater than or equal to 10 years?	☐ Y ☐ N	☐ F
6. How frequently is stage data recorded? _____		☐ F
7. If data gaps were to occur, are they identified and left unfilled or estimated using interpolation, ice correction, or indirect discharge measurements methods?	☐ Y ☐ N	☐ F
8. Was the rating curve established and maintained throughout the duration of the period of record using measurements taken near the reference gage and stage recorder according to USGS protocols?	☐ Y ☐ N	☐ F
9. Were there requirements for maintaining a permanent gage datum and meeting specified accuracy limits?	☐ Y ☐ N	☐ F
10. Does the gage data meet the Department's standard to be sufficient to calculate the median of the mean monthly flow rate and volume during the proposed months of diversion?	☐ Y ☐ N	☐ F
a. If yes, this section is complete. Skip to question 27.		
b. If no, answer question 20.b.		
ii. More than one stream gage is available		
1. List the gage names. _____		☐ F
2. Who operates and maintains the gages? _____		☐ F
3. Is one stream gage upstream and one downstream of point(s) of diversion?	☐ Y ☐ N	☐ F
4. Do the stream gages have similar periods of record?	☐ Y ☐ N	☐ F
5. Are the periods of record each greater than or equal to 10 years?	☐ Y ☐ N	☐ F

6. How frequently is stage data recorded at each gage? _____		☐ F
7. For each gage, if data gaps were to occur, are they identified and left unfilled or estimated using interpolation, ice correction, or indirect discharge measurements methods?	☐ Y ☐ N	☐ F
8. Were the rating curves established and maintained throughout the duration of the period of record using measurements taken near the reference gages and stage recorders according to USGS protocols?	☐ Y ☐ N	☐ F
9. For each gage, were there requirements for maintaining a permanent gage datum and meeting specified accuracy limits?	☐ Y ☐ N	☐ F
10. Does the gage data meet the Department's standard to be sufficient to calculate the median of the mean monthly flow rate and volume during the proposed months of diversion?	☐ Y ☐ N	☐ F
a. If yes, this section is complete. Skip to question 27.		
b. If no, answer question 20.b.		
b. If no gage data is available or if available gage data does not meet the Department's standard to be sufficient to calculate the median of the mean monthly flow rate and volume during the proposed months of diversion, is the source otherwise measured?	☐ Y ☐ N	☐ F
i. If yes,		
1. Submit available measurements to the Department.	☐ S	☐ F
2. Who collected the measurements? _____	☐ A	☐ F
3. With what method was the data collected? _____ _____	☐ A	☐ F
4. What is the period of record? _____		☐ F
5. What is the frequency of measurement? _____		☐ F
6. Are there gaps in the data?	☐ Y ☐ N	☐ F

a. If yes, what is the nature of the gaps and how are gaps handled to ensure data quality?	☐ A	☐ F
7. Is there a process for maintaining the data and meeting specified accuracy limits?	☐ Y ☐ N	☐ F
a. If yes, explain.	☐ A	☐ F
8. Does available measurement data meet the Department's standard to be sufficient to calculate the median of the mean monthly flow rate and volume during the proposed months of diversion?	☐ Y ☐ N	☐ F
a. If yes, this section is complete. Skip to question 27.		
b. If no, answer question 21.		
21. Does the available measurement data, gage and/or otherwise measured, meet the Department's standard of including a minimum of high, moderate, and low flows to be sufficient to use for calibration of a department-accepted estimation technique?	☐ Y ☐ N	☐ F
a. If yes, describe the estimation technique.	☐ A	☐ F
b. If no,		
i. Will measurements be collected prior to submission of a completed Form No. 600P that meet the Department's standard of including a minimum of high, moderate, and low flows to be sufficient to use for calibration of a department-accepted estimation technique?	☐ Y ☐ N	☐ F
1. If yes,		
a. With what method will the data be collected?	☐ A	☐ F

b. What will be the interval of measurement? _____		☐ F
c. Describe the proposed estimation technique. _____ _____ _____ _____	☐ A	☐ F
2. If no,		
a. Describe your plan to comply with the requirements of ARM 36.12.1702(1). _____ _____ _____	☐ A	☐ F
b. Do you plan on requesting a variance from measurement requirements pursuant to ARM 36.12.1702(1)(b)?	☐ Y ☐ N	☐ F

Surface Water: Physical Availability: Ephemeral

☐ Applicable ☐ Not Applicable

22. If you will conduct Technical Analyses, what is your plan to calculate mean annual runoff? If DNRC will conduct Technical Analyses, write N/A. _____ _____	☐ A	☐ F
23. Where do you plan to obtain climate and drainage area data? _____ _____	☐ A	☐ F
24. Where is the downstream point of diversion, which will be used to delineate the drainage basin? _____	☐ A	☐ F

Surface Water: Physical Availability: Lakes

☐ Applicable ☐ Not Applicable

25. Do you have a design plan?	☐ Y ☐ N	☐ F
a. If yes, provide the design plans to DNRC	☐ S	☐ F
b. If no, has the lake volume been quantified by a qualified entity based on bathymetric data?	☐ Y ☐ N	☐ F
i. If yes, provide this information to DNRC.	☐ S	☐ F
ii. If no, answer the following questions,		
1. When do you plan to collect this information? _____		☐ F
2. With what method will it be collected? _____ _____	☐ A	☐ F

Surface Water: Physical Availability: Other

☐ Applicable ☐ Not Applicable

26. Have you measured the source?	☐ Y ☐ N	☐ F
a. If yes, answer the following questions,		
i. With what method was the data collected? _____ _____	☐ A	☐ F
ii. What is the measurement interval? _____		☐ F
1. Does the interval meet the requirements of 36.12.1702(4)?	☐ Y ☐ N	☐ F
b. If no or if the measurement interval does not meet the requirements of 36.12.1702(4)		
i. When do you plan to measure? _____		☐ F
ii. With what method will the measurements be collected? _____ _____ _____	☐ A	☐ F

Surface Water: Identification of Legal Demands in Area of Potential Impact

27. If you are conducting Technical Analysis, how will the Area of Potential Impact be defined? If Department is conducting Technical Analyses, write N/A. _____ _____ _____ _____	☐ A	☐ F

Surface Water: Basin Closure Area

28. Is the project located in a Basin Closure Area? If yes, explain how the project meets a closure exception. More information about basin closures online at: https://dnrc.mt.gov/Water-Resources/Water-Rights/Basin-Closures-Stream-Depletion-Controlled-Ground-Water-Areas. Answer the follow-up questions for specific Basin Closure Areas in the "Project-Specific Questions: Controlled Groundwater Areas and Basin Closures" section (questions 51 to 52). _____ _____ _____ _____ _____ _____	☐ Y ☐ N	☐ F

Groundwater

☐ **Applicable**, move on to question 29. ☐ **Not Applicable**, skip to question 47.

The following questions are mandatory for groundwater permit applications and must be filled out before the Preapplication Meeting Form is determined to be complete.

Questions, Narrative Responses, and Tables	**Check-boxes**	**Follow-Up**

Groundwater: Physical Availability

29. What is the type of groundwater diversion? Well	■ A	☐ F

Well/Pit	Answer questions 30 to 32	**Developed Spring**	Answer question 33	**Pond**	Answer questions 34 to 38

Groundwater: Physical Availability: Well/Pit

■ Applicable ☐ Not Applicable

30. Provide the Aquifer Testing Addendum (Form 600-ATA). This form will be required before the Preapplication Meeting Form is deemed complete.	☐ S	■ F
31. Have you submitted a completed Form 633 to DNRC for review?	☐ Y ☐ N	■ F
a. If no, submit Form 633 to DNRC for review. Form 633 is required by the time the Preapplication Meeting Form is deemed complete.	☐ S	■ F
b. If yes, did the Department identify deficiencies?	☐ Y ■ N	☐ F
i. If yes, are variances from ARM 36.12.121 needed?	☐ Y ☐ N	☐ F
1. If yes,		
a. Do you have data for aquifer characteristics?	☐ Y ☐ N	☐ F
i. If yes, provide the data to the Department.	☐ S	☐ F
b. Have you submitted Form 653 to the Department?	☐ Y ☐ N	☐ F
i. If yes, was the variance granted?	☐ Y ☐ N	☐ F
32. Do you have a map with the location of each well/pit labeled and, if available, with the GWIC ID?	■ Y ☐ N	☐ F
a. If no, have all the wells/pits been constructed?	☐ Y ☐ N	☐ F

i. If yes, provide a map with the wells/pits labeled and, if available, with the GWIC ID. Create map on an aerial photograph or topographic map that also includes the following: section corners, township and range, and a north arrow.	■ S	☐ F
ii. If no, answer the following questions,		
1. When will the wells/pits be constructed? _____		☐ F
2. Do you have an initial map with the proposed location of wells/pits?	■ Y ☐ N	☐ F
a. If yes, provide an initial map to the Department. Create map on an aerial photograph or topographic map that also includes the following: section corners, township and range, and a north arrow.	■ S	☐ F
3. Is the requested volume for each new well/pit known?	■ Y ☐ N	☐ F
a. If no, what is the total requested volume (AF) and the number of new PODs? _____		☐ F

Groundwater: Physical Availability: Developed Spring

☐ Applicable ■ Not Applicable

33. Have you measured the source?	☐ Y ☐ N	☐ F
a. If yes, answer the following questions,		
i. Do you have flow rate (GPM or CFS) and volume measurements?	☐ Y ☐ N	☐ F
ii. With what method were measurements collected? _____ _____	☐ A	☐ F
iii. What is the interval of measurements? _____		☐ F
iv. Is the interval of measurements sufficient to comply with ARM 36.12.1703(1)?	☐ Y ☐ N	☐ F
b. If no, or if measurements do not comply with ARM 36.12.1703(1),		
i. When do you plan to measure? _____		☐ F

ii. With what method and at what interval will measurements be collected? _____ _____	☐ A	☐ F

Groundwater: Physical Availability: Ponds

☐ Applicable ■ Not Applicable

34. Have you submitted Form 653 to apply for a variance from ARM 36.12.121 for the Aquifer Test?	☐ Y ☐ N	☐ F
a. If yes, did the Department approve the variance request?	☐ Y ☐ N	☐ F
35. Have you submitted measurements to the Department? If yes, describe. _____	☐ Y ☐ N	☐ F
36. Submit pond bathymetry data, survey, or engineering plans to the Department.	☐ S	☐ F
37. Please submit a map identifying the location of the proposed pond to the Department. Create map on an aerial photograph or topographic map that also includes the following: section corners, township and range, and a north arrow.	☐ S	☐ F
38. If you are conducting Technical Analyses, what is your plan to determine depth, surface area, and net evaporation of the pond? If DNRC is conducting Technical Analyses, write N/A. _____ _____ _____	☐ A	☐ F

Groundwater: Identification of Groundwater Legal Demands

All information to calculated Zone of Influence was collected in previous questions.

Groundwater: Adverse Effect to Existing Groundwater Rights

All information to calculate One-Foot Drawdown Contour was collected in previous questions.

Groundwater: Physical Availability of Depleted Surface Water Source(s)

39. What are the hydraulically connected surface water source(s)? North Fork Fox Creek, Lone Tree Creek		☐ F
40. For each hydraulically connected surface water source, is gage data available?	☐ Y ☐ N	■ F
a. If yes, answer the following questions for the number of stream gages that are available.		

i. One stream gage is available		
1. What is the gage name? _____		☐ F
2. Who operates and maintains the gage? _____		☐ F
3. Is the stream gage upstream or downstream of point(s) of diversion? _____		☐ F
4. Is there a limiting or controlling factor that would make the Drainage Area Method not practical? This includes dams that control the flow and streams with large gaining and/or losing reaches. If you have questions about this, please contact the Regional Hydro-Specialist or the Water Sciences Bureau.	☐ Y ☐ N	☐ F
5. Is the period of record greater than or equal to 10 years?	☐ Y ☐ N	☐ F
6. How frequently is stage data recorded? _____		☐ F
7. If data gaps were to occur, are they identified and left unfilled or estimated using interpolation, ice correction, or indirect discharge measurements methods?	☐ Y ☐ N	☐ F
8. Was the rating curve established and maintained throughout the duration of the period of record using measurements taken near the reference gage and stage recorder according to USGS protocols?	☐ Y ☐ N	☐ F
9. Were there requirements for maintaining a permanent gage datum and meeting specified accuracy limits?	☐ Y ☐ N	☐ F
10. Does the gage data meet the Department's standard to be sufficient to calculate the median of the mean monthly flow rate and volume during the proposed months of diversion?	☐ Y ☐ N	☐ F
a. If yes, this section is complete. Skip to question 42.		
b. If no, answer question 40.b.		
ii. More than one stream gage is available		
1. List the gage names. _____		☐ F
2. Who operates and maintains the gages? _____		☐ F
3. Is one stream gage upstream and one downstream of point(s) of diversion?	☐ Y ☐ N	☐ F

4. Do the stream gages have similar periods of record?	☐ Y ☐ N	☐ F
5. Are the periods of record each greater than or equal to 10 years?	☐ Y ☐ N	☐ F
6. How frequently is stage data recorded at each gage?		☐ F
7. For each gage, if data gaps were to occur, are they identified and left unfilled or estimated using interpolation, ice correction, or indirect discharge measurements methods?	☐ Y ☐ N	☐ F
8. Were the rating curves established and maintained throughout the duration of the period of record using measurements taken near the reference gages and stage recorders according to USGS protocols?	☐ Y ☐ N	☐ F
9. For each gage, were there requirements for maintaining a permanent gage datum and meeting specified accuracy limits?	☐ Y ☐ N	☐ F
10. Does the gage data meet the Department's standard to be sufficient to calculate the median of the mean monthly flow rate and volume during the proposed months of diversion?	☐ Y ☐ N	☐ F
a. If yes, this section is complete. Skip to question 42.		
b. If no, answer question 40.b.		
b. If no gage data is available or if available gage data does not meet the Department's standard to be sufficient to calculate the median of the mean monthly flow rate and volume during the proposed months of diversion, is the source otherwise measured?	■ Y ☐ N	☐ F
i. If yes,		
1. Submit measurements to the Department.	☐ S	☐ F
2. Who collected the measurements? USGS	■ A	☐ F
3. With what method was the data collected? Flow-meter	■ A	☐ F
4. What is the period of record? Fox Creek (1972-1996) Lone Tree (1980-1983)		☐ F
5. What is the frequency of measurement? Monthly		☐ F
6. Are there gaps in the data?	■ Y ☐ N	☐ F

a. If yes, what is the nature of the gaps and how are gaps handled to ensure data quality	☐ A	■ F
7. Is there a process for maintaining the data and meeting specified accuracy limits?	■ Y ☐ N	☐ F
a. If yes, explain. USGS standards	☐ A	☐ F
8. Does available measurement data meet the Department's standard to be sufficient to calculate the median of the mean monthly flow rate and volume during the proposed months of diversion?	☐ Y ■ N	☐ F
a. If yes, this section is complete. Skip to question 42.		
b. If no, answer question 41.		
41. For each hydraulically connected surface water source, does the available measurement data, gage and/or otherwise measured, meet the Department's standard of including a minimum of high, moderate, and low flows to be sufficient to use for calibration of a department-accepted estimation technique?	■ Y ☐ N	☐ F
a. If yes, describe the estimation technique. Rainfall-runoff model, which only works with minimum diversions.	■ A	☐ F
b. If no,		
i. Will measurements be collected prior to submission of a completed Form No. 600P that meet the Department's standard of including a minimum of high, moderate, and low flows to be sufficient to use for calibration of a department-accepted estimation technique?	☐ Y ☐ N	■ F
1. If yes,		
a. With what method will the data be collected?	☐ A	☐ F

b. What will be the interval of measurement? _____		☐ F
c. Describe the proposed estimation technique. _____ _____ _____ _____	☐ A	☐ F
2. If no, describe your plan to comply with the measurement requirements for hydraulically connected surface water sources. _____ _____ _____	☐ A	☐ F

Groundwater: Legal Availability of Depleted Surface Water Source(s)

All information to determine legal demands for depleted surface water source(s) was collected in previous questions.

Groundwater: Adequacy of Diversion

Questions, Narrative Responses, and Tables	Check-boxes	Follow-Up
42. What is the flow rate (GPM or CFS), volume (AF), and period of diversion required (MM/DD-MM/DD) at each groundwater point of diversion? If the POD is a well, provide the well depth (FT), if available, or estimated well depth (FT). Please use the same POD # as the project map (question 2) to match this information with the location information.	■ A	☐ F

POD #	Flow Rate (GPM or CFS)	Volume (AF)	Period of Diversion (MM/DD-MM/DD)	Well Depth (FT)	Measured or Estimated
1	59 GPM	95	1/1-12/31	160	Measured
2	37 GPM	60	1/1-12/31	160	Measured
3	46 GPM	74	1/1-12/31	160	Measured

43. Will the monthly pumping schedule differ from an allocation of diverted volume by the number of days in the month for year-round uses or the IWR 80% net irrigation requirements for irrigation/lawn & garden uses (IWR, NRCS 2003)?	☐ Y ■ N	☐ F

a. If yes, provide the alternative pumping schedule in the table below. Use the same POD # as the project map (question 2).	☐ A	☐ F

Month	POD #	Volume (AF)	Month	POD #	Volume (AF)
January			**July**		
February			**August**		
March			**September**		
April			**October**		
May			**November**		
June			**December**		

Groundwater: Basin Closure Area

44. Are the point(s) of diversion located in a basin closure area? If yes, fill out questions 45 to 46.	☐ Y ■ N	☐ F
45. Did you elect in question 1 for the Department to conduct Technical Analysis?	■ Y ☐ N	☐ F
a. If yes, the Basin Closure Area Addendum (Form 600-BCA), Hydrogeologic Report Addendum (Form 600-HRA), and Hydrogeologic Report are not required at this time. The Department's Technical Analyses will meet requirements of §85-2-360 for Form 600-HRA. Form 600-BCA will be required with application submittal.		
b. If no, submit the Basin Closure Area Addendum (Form 600-BCA), Hydrogeologic Report Addendum (600-HRA), and Hydrogeologic Report with your Technical Analysis.	☐ S	☐ F
46. If the Hydrogeologic Report indicates that the proposed groundwater use will impact a surface water source, which of the following three options best describe your plan to mitigate depletions of hydraulically connected surface water? A separate Preapplication Meeting will be required for each application to change a water right to a mitigation or aquifer recharge purpose to maintain expedited timelines and reduced filing fees for the project.		
a. Application to Change a Water Right to mitigate the adverse effects created.	☐ Y ☐ N	☐ F
b. Alternative mitigation plan.	☐ Y ☐ N	☐ F
c. Documentation to show a mitigation plan is not required.	☐ Y ☐ N	☐ F

Project-Specific Questions

The following questions are mandatory when applicable and must be filled out before the Preapplication Meeting Form is determined to be complete.

Questions, Narrative Responses, and Tables	Check-boxes	Follow-Up

Project-Specific Questions: Controlled Groundwater Areas and Basin Closures

47. Is the project located in the East Valley Controlled Groundwater Area?	☐ Y ■ N	☐ F
a. If yes,		
i. Do you have written approval from (1) Lewis and Clark County Board of Health, (2) Lewis and Clark County Water Quality Protection Bureau, (3) the U.S. Environmental Protection Agency, (4) the Montana State Dept. of Environmental Quality and (5) the Montana State Dept. of Natural Resources and Conservation? If the agencies have established a Technical Advisory Group, prior approval by the Technical Advisory Group satisfies this requirement.	☐ Y ☐ N	☐ F
ii. Is the project in Zone 2?	☐ Y ☐ N	☐ F
i. If yes, provide in the written approval the following recommendations which will also be included as conditions on the appropriation. a. Well design and construction requirements necessary to measure the water level and water quality for any well; b. Water level measurement and water quality sample reporting requirements for any new well; c. Any other requirements necessary to ensure new wells can be operated in a manner consistent with purpose of the EVCGWA.	☐ S	☐ F
iii. Is the project in Zone 1? If yes, a Form 600 cannot be accepted by the Department.	☐ Y ☐ N	☐ F
48. Is the project located in the South Pine Controlled Groundwater Area?	☐ Y ■ N	☐ F
a. If yes, have you completed an Application for Beneficial Water Use Permit South Pine Controlled Groundwater Area Addendum? The addendum needs to be completed by application submittal.	☐ Y ☐ N	☐ F
49. Is the project located in the Yellowstone Controlled Groundwater Area?	☐ Y ■ N	☐ F
a. If yes, is the use over 35 GPM or 10 AF per year?	☐ Y ☐ N	☐ F
i. If no, this is the incorrect form. Use instead the Yellowstone Controlled Groundwater Area Permit Application (600-YCGA).		
ii. If yes, answer the remaining parts of question 49. A Yellowstone Controlled Groundwater Area Addendum (600 Y over35) will be required with application submittal.		
1. Does the proposed use require a point of diversion with water temperature of 60 degrees Fahrenheit or more?	☐ Y ☐ N	☐ F
2. What is the ground elevation at the point of diversion? _____		☐ F

3. What is the specific conductance at the point of diversion? _____		☐ F
4. If an application is in a basin tributary to a category 3 or 4 stream (generally in or upstream of YNP), provide a report prepared by a professional qualified in the science of groundwater hydrology, verifying that the appropriation is not hydrologically connected to surface flow that is tributary to the reserved portion of category 3 or 4 streams.	☐ S	☐ F
50. Is the project located in one of the Controlled Groundwater Areas listed on the Department's website (https://dnrc.mt.gov/Water-Resources/Water-Rights/Basin-Closures-Stream-Depletion-Controlled-Ground-Water-Areas)?	☐ Y ■ N	☐ F
a. If yes, list which one and describe how the proposed project meets the requirements of the Controlled Groundwater Area. An application must meet the specific requirements of the Controlled Groundwater Area to be accepted by the Department. _____ _____ _____ _____ _____	☐ A	☐ F
51. Is the project located in one of the administrative, Department ordered, or legislative closures listed on the Department's website (https://dnrc.mt.gov/Water-Resources/Water-Rights/Basin-Closures-Stream-Depletion-Controlled-Ground-Water-Areas)?	☐ Y ■ N	☐ F
a. If yes, list which one and describe how the proposed project meet the requirements of the closure. An application must meet the specific requirements of the closure to be accepted by the Department. _____ _____ _____ _____ _____	☐ A	☐ F
52. Is the project located in one of the compact closures listed on the Department's website (https://dnrc.mt.gov/Water-Resources/Water-Rights/Basin-Closures-Stream-Depletion-Controlled-Ground-Water-Areas)?	☐ Y ■ N	☐ F
a. If yes, list which one and describe how the proposed project meet the requirements of the compact closure. An application must meet the specific requirements of the compact closure to be accepted by the Department. _____ _____ _____ _____	☐ A	☐ F

Project-Specific Questions: Place of Storage

53. Does the proposal include at least one place of storage? If yes, answer questions 54 to 61 for each individual place of storage (use Additional Place of Storage Sheet for additional places of storage). If no, this section is complete, and you can skip to question 62.	■ Y ☐ N	☐ F
54. Provide a map showing the location of the place of storage. Create map on an aerial photograph or topographic map that also includes the following: section corners, township and range, and a north arrow.	☐ S	■ F
55. Is this application to enlarge an existing reservoir?	☐ Y ■ N	☐ F
a. If yes, what is the water right number for the existing reservoir? _____		☐ F
56. Is the place of storage located on-stream?	☐ Y ■ N	☐ F
a. If no, explain the conveyance means to and from the off-stream place of storage and any losses that may occur with that conveyance. _____ _____ _____	☐ A	☐ F
57. What is the capacity of the proposed place of storage or the existing place of storage after it is enlarged? Use bathymetry data, survey, or engineering plans for capacity. Submit the data source used with this form. In lieu of these data sources, use the following equation: *Surface Acres x Maximum Depth (FT) x 0.5 (0.4-0.6 depending on side slope) = Capacity (AF)* 9.3 AF (2 storage ponds) - 11.67 AF (1 storage pond)	■ A	☐ F
58. Will the place of storage include primary and/or emergency spillways? Preliminary design specifications for primary and emergency spillways must be included with application submittal (ARM 36.12.113).	☐ Y ■ N	☐ F
59. Will the place of storage be lined?	■ Y ☐ N	☐ F
60. What is the annual net evaporation of water from the place of storage using the standards in ARM 36.12.116(1)? Gridded net evaporation layer is available from DNRC upon request. 20.16 inches annually		☐ F
61. Is the place of storage capacity calculated to be greater than 50 acre-feet?	☐ Y ■ N	☐ F
a. If yes, have you made an application to the DNRC Water Operations Bureau for a determination of whether the dam or reservoir is a high-hazard dam?	☐ Y ☐ N	☐ F

Project-Specific Questions: Ditch-Specific Questions

62. Does the proposal include at least one conveyance ditch? If yes, answer question 63 and, for each ditch, answer question 64. If no, this section is complete, and you can skip to question 65.	☐ Y ■ N	☐ F

63. Submit a Ditch Map that shows every ditch conveying water for the proposed project. Label the ditch name(s), POD(s), the POU(s), and the ditch measurement locations (requested in question 64.c). The map should be created on an aerial photograph or topographic map with the following: section corners, township and range, and a north arrow.	☐ S	☐ F
64. For each conveyance ditch, answer the following. If there is more than one conveyance ditch, use an Additional Ditch Sheet for each additional conveyance ditch.		
a. What is the ditch name? _____		☐ F
b. What is the distance water will be carried by the conveyance ditch? Only include segments between the POD and start of the POU; do not include segments within the POU. _____ _____	☐ A	☐ F
c. Provide at least one set of ditch measurements, which include width (FT), depth (FT), and slope (%). Discuss ditch characteristics with DNRC to determine the minimum number of ditch measurements. Include the location of each measurement, labeled with the 2-digit measurement ID number, used on the map submitted for question 63.	☐ S	☐ F

ID #	Width (FT)	Depth (FT)	Slope (%)	Date of Measurement

d. What is a reasonable Manning's n value? List the factors used for estimation. If you do not know this value, please work through estimation with the Department. _____ _____	☐ A	☐ F
e. What type of soils compose the proposed conveyance ditch? For lined ditches, write "lined" instead. _____ _____	☐ A	☐ F
f. Are other water rights conveyed by the conveyance ditch?	☐ Y ☐ N	☐ F
i. If yes,		
1. What are the water right numbers? _____ _____	☐ A	☐ F

2. What is the sum of the flow rates (GPM or CFS) for water rights conveyed?	☐ A	☐ F
3. Provide a map with your best estimate of where the existing POUs begin for the other water rights conveyed by the conveyance ditch for all POUs between the proposed POD and your proposed POU. Create map on an aerial photograph or topographic map that also includes the following: section corners, township and range, and a north arrow.	☐ S	☐ F

Project-Specific Questions: Water Marketing

65. Does the proposal include water marketing? If yes, please answer the questions in this section (questions 66 to 71). If no, this section is complete, and you can skip to question 72.	■ Y ☐ N	☐ F
66. Identify the flow rate (GPM or CFS) and volume (AF) of water that will be marketed. 142 GPM and 219 AF		☐ F
67. Will the marketed water return to the source?	☐ Y ■ N	☐ F
a. Explain how this determination was made. Oil and gas water used will be taken off site and not returned.	■ A	☐ F
68. For what purpose(s) will the marketed water be used? Oil and gas	■ A	☐ F
69. How will you control or limit access to the water? Fence and locked gates	■ A	☐ F
70. Do you have contracts for the entire volume and flow rate sought?	☐ Y ☐ N	■ F
71. Provide a service area map. Create map on an aerial photograph or topographic map and shows the following: general service area boundary, section corners, township and range, and a north arrow.	☐ S	■ F

Non-Mandatory Questions for Criteria Analysis

The following questions are not mandatory. They should be discussed in the Preapplication Meeting, but do not need to be filled out before the Preapplication Meeting Form is determined to be complete.

Adverse Effect

Questions, Narrative Responses, and Tables	Check-boxes
72. Do you have evidence that water is legally available in the proper flow rate, volume, and timing?	■ Y ☐ N
73. If water is not found to be legally available for part or all the proposed period of diversion, what is the plan to address this with the permitting process? Amend the permit to accommodate the availability.	■ A
74. Describe your plan to ensure that existing water rights will be satisfied during times of water shortage. Limit use or reduce flow rate.	■ A
75. Explain how you can control your diversion in response to call being made. Pumps can be shut off.	■ A
76. Are you aware of any calls that have been made on the source of supply or depleted surface water source?	☐ Y ■ N
a. If yes, explain.	☐ A
77. Does a water commissioner distribute water or oversee water distribution on your proposed source or depleted surface water source?	☐ Y ■ N

Adequate Diversion Means and Operation

78. Provide a diagram of how you will operate your system from the point of diversion to the place of use.	☐ S
79. Describe specific information about the capacity of the diversionary structure(s). This may include, where applicable: pump curves and total dynamic head calculations, headgate design specifications, and dike or dam height and length.	☐ A

80. Is the diversion capable of providing the full amount requested through the period of diversion?	■ Y ☐ N
81. Describe the size and configuration of infrastructure to convey water from point of diversion to place of use. This may include, where applicable: ditch capacity and/or pipeline size and configuration. 900 feet of 6 inch PVC pipe that will be above ground. It will run from the point of diversion to the storage ponds.	☐ A
82. Describe any losses related to conveyance. Evaporation from storage ponds.	☐ A
83. Is the conveyance infrastructure capable of providing the required flow and volume and any losses?	■ Y ☐ N
84. Does the proposed conveyance require easements?	☐ Y ■ N
a. If yes, explain.	☐ A
85. Describe any places of storage, including whether drainage devices will be installed, and provide preliminary designs, if available. Preliminary designs will be required at application submittal. On site ponds (3) for storage.	■ A
86. Describe specific information about how water is delivered within the place of use. This may include, where applicable, the range of flow rates needed for a pivot and output and configuration of sprinkler heads. All of the wells will be manifold via PVC manifold and free flow through 900 feet of 6 inch PVC schedule 80 pipes into pit 1. A 12 inch pipe runs between pits and can be controlled via valves. A 12,000 gallon storage tank will be added as an additional loading point for customers.	☐ A
87. Is the water delivery system capable of providing the requested beneficial use?	■ Y ☐ N
88. Will your system be designed to discharge water from the project?	☐ Y ■ N
a. If yes, explain the way water will be discharged and the wastewater disposal method.	☐ A

89. Provide a plan of operations.	☐ A
90. Can the plan of operations deliver the flow rate and volume for the beneficial use being requested?	■ Y ☐ N
91. Do you have any plans to measure your diversion and use?	■ Y ☐ N
a. If yes, describe the plan and the type of measurements you will take. Flow-meter will be installed after the manifold.	☐ A

Beneficial Use

92. Why is the requested flow rate and volume the amount needed for the purpose? They are contracted for that amount.	■ A
93. Does the Department have a standard for the purposes for which water is used? Department standards can be found in ARM 36.12.112.	☐ Y ■ N
a. If yes, does the proposed beneficial use fall within Department standards?	☐ Y ☐ N
94. If no standard, or if proposed beneficial use falls outside of Department standards, explain how the use is reasonable for the purpose. Water marketing used for oil and gas.	☐ A
95. Will your proposed project be subject to DEQ requirements for a public water supply (PWS) system or Certificate of Subdivision Approval (COSA)?	☐ Y ■ N
a. If yes,	
i. Have you researched or consulted with DEQ regarding those requirements?	☐ Y ☐ N
96. Are you proposing to use surface water for in-house domestic use?	☐ Y ■ N
a. If yes, does a COSA exist for the proposed place of use?	☐ Y ☐ N
i. If yes, please submit the COSA.	☐ S
ii. If no, have you researched or consulted with DEQ regarding their requirements?	☐ Y ☐ N

Possessory Interest

97. Do you have possessory interest, or the permission of the party with possessory interest, of the proposed place of use? Proof of possessory interest or permission of the party with possessory interest is required at application submittal.	■ Y ☐ N
a. If no, explain. _____ _____ _____	☐ A

PREAPPLICATION MEETING AFFIDAVIT & CERTIFICATION

"We attest that the information on this form accurately describes the proposed project discussed during the preapplication meeting and that the items marked for follow-up will require the applicant to provide additional information before the form is deemed complete."

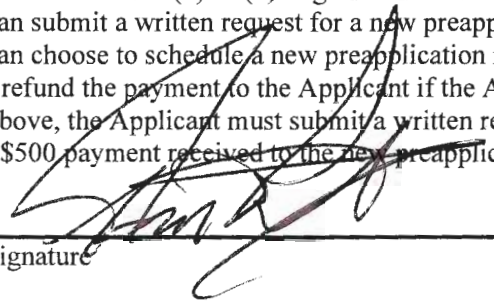
"Applicant acknowledges that any information provided by the Department during the preapplication is preliminary and subject to change."

"Applicant acknowledges that if the follow-up information provided to the Department substantially changes the proposed project, for example in a way that alters which sections of the form are applicable or which technical analyses are required, or who is to complete the technical analyses, the applicant will need to schedule a new preapplication meeting so that the department can identify any additional information necessary for completion of the technical analyses (ARM 36.12.1302(3)(c))."

Upon Department receipt of the completed form (within 180 days following the meeting), the Department reserves the first five days of the 45-day period in ARM 36.12.1302(4) or (5) to return the form to the applicant if:

1 – the completed form does not include all necessary follow-up information identified in the meeting, OR
2 – the completed form is not adequate for the Department to proceed with technical analyses, OR
3 – the applicant has elected to complete technical analyses and has not submitted each piece of technical analysis required, OR
4 – the applicant has substantially changed the details of the proposed project, such as in a way that alters which sections of the form are applicable, which technical analyses are required, or who is to complete the technical analyses.

If the Department returns the form to the Applicant within these five days due to reasons 1-3 above, the Applicant can use the balance of their 180-day period in ARM 36.12.1302(4) or (5) to gather the remaining follow-up information needed. If there is no time remaining in the 180-day period, the Applicant can submit a written request for a new preapplication meeting, pursuant to ARM 36.12.1302(2). Even if there is still time remaining, the Applicant can choose to schedule a new preapplication meeting. The Department shall transfer the $500 payment received to the new preapplication meeting, or refund the payment to the Applicant if the Applicant desires. If the Department returns the form to the Applicant within these five days due to reason (4) above, the Applicant must submit a written request for a new preapplication meeting, pursuant to ARM 36.12.1302(2). The Department shall transfer the $500 payment received to the new preapplication meeting, or refund the payment to the Applicant if the Applicant desires.



PRESIDENT

Applicant Signature

3-19-2024

Date

Applicant Signature

Date

DNRC (WATER RESOURCE SPECIALIST)

Department Signature

3/19/24

Date

FOLLOW-UP PAGE

Applicant will provide all responses to questions marked for follow-up on a separate document entitled "Follow-up Responses" with the question number labeled. Answer questions in the same format as the form. For responses in the form of checkboxes, write "Y", "N", or "S". Constrain narrative responses to the specific question as is asked on the form; do not respond to multiple questions in one narrative. Label units in narrative responses and tables. Tables must have the exact headings found on the form. Questions that require items to be submitted to the Department may be marked "S" when the required item is attached to the Preapplication Meeting Form. Label all submitted items with the question number for which they were submitted. The Applicant may not alter the Preapplication Meeting Form signed at the Preapplication Meeting. Instead, the Applicant must use the Amended Responses procedure defined below. Do not include additional information for questions not marked for follow-up here; instead include any additional information pursuant to the process for amending responses defined below.

Questions marked for follow-up	
2) Map showing POD, POU, conveyance	
54) Map of storage ponds	
70) Firm Contract for specific volume	
30) Submit Aquifer Testing Addendum (600ATA)	
31) Email the 633	
71) Determine if service map is adequate (DNRC)	
40) Assess the measurement data of nearby surface water (DNRC)	
40.B.6.a) Describe data gaps in the measurements (DNRC)	
41.B.i) Determine if estimation technique will be adequate	

AMENDED RESPONSES PAGE

The Applicant may not alter the Preapplication Meeting Form signed at the Preapplication Meeting or the Follow-up Page. If a response has changed to a question answered at the preapplication meeting, the Applicant can provide a new response in a separate document entitled "Amended Responses" with the question number labeled. Answer questions in the same format as the form. For responses in the form of checkboxes, write "Y", "N", or "S". Constrain narrative responses to the specific question as is asked on the form; do not respond to multiple questions in one narrative. Label units in narrative responses and tables. Tables must have the exact headings found on the form. Questions that require items to be submitted to the Department may be marked "S" when the required item is attached to the Preapplication Meeting Form. Label all submitted items with the question number for which they were submitted. The Applicant will mark all question numbers with an amended response in the table below and note for each question whether the response will replace the response given at the preapplication meeting or will provide additional information to consider in conjunction with the response given at the preapplication meeting. The Applicant will return the "Amended Responses" document with the "Follow-up Responses" document and the signed Preapplication Meeting Form.

Questions with amended responses

FOLLOW-UP PAGE AFFIDAVIT & CERTIFICATION

"I/we attest that this preapplication meeting form, follow-up page, and amended responses page accurately portray my proposed project. I am aware that my application for this project will not qualify for a discounted filing fee and expedited timelines if upon submittal of the application to the department, I change any element of the proposed application from the preapplication meeting form and follow-up materials (ARM 36.12.1302(6)(a))."

Applicant Signature Date

Applicant Signature Date

"We confirm that the preapplication form and follow-up information are adequate for the Department to proceed with technical analyses in ARM 36.12.1303. Or, if the applicant has elected to complete technical analyses, we confirm they have submitted each piece of technical analysis required based on the proposed project and the Department is able to proceed with the scientific credibility review (ARM 36.12.1303(8))."

Department Signature Date

Department Signature Date

VARIANCE REQUEST

ARM 36.12.123

Form No. 653 *(Revised 01/2024)*

For Department Use Only

Received

MAR 27 2024

DNRC Water Resources
Glasgow Regional Office

Application # 30163320 Basin 42M

Received Date 3/27/24

Received By AKK

INSTRUCTIONS

Use this form to request a variance from the requirements of ARM 36.12.121 or 36.12.1702, as provided for in ARM 36.12.123.

Submit this completed form to the appropriate regional office by the deadline for completion of the preapplication meeting form or if a preapplication meeting is not held, include this request with your filed application or as part of a deficiency response.

Applicant Name Big Horn Leasing LLC.

Mailing Address P.O. Box 385

City Sidney State MT Zip 59270

Home Phone 406-489-4988-Tim Other Phone 406-489-0474-Cherise

Email: cherisepartin@elitehotoil.com

Representative Name (if other than Applicant) _____

☐ Representative is Consultant ☐ Representative is Attorney ☐ Representative is Other (describe) _____

Mailing Address _____

City _____ State _____ Zip _____

Home Phone _____ Other Phone _____

Email: _____

Identify from which section(s) of ARM 36.12.121 or 36.12.1702 you are requesting a variance. Refer to the rule for a full list of requirements in these sections.

- ■ ARM 36.12.121 Aquifer Testing Requirements
  - ☐ (2)(a) map
  - ☐ (2)(b) well logs of production and observation wells
  - ☐ (2)(c) electronic Form No. 633
  - ■ (3)(a) constant pumping rate
  - ☐ (3)(b) pumping rate equal to or greater than proposed flow rate
  - ☐ (3)(c) pumping requirements for multiple well systems
  - ☐ (3)(d) measurement and recording of pumping rate
  - ☐ (3)(e) pumping duration and drawdown and yield tests
  - ☐ (3)(f) observation well monitored
  - ☐ (3)(g) background groundwater levels monitored
  - ☐ (3)(h) water level measurement precision

Explain the specific variance you are requesting and the reason for requesting it. Also identify your proposed alternative testing methodology or aquifer test data, if applicable. Attach additional sheets if necessary.

Initial pumping rate showed varience greater than 5%, but stabalized after 15 minutes of pumping. No additional testing needed for this aquifer test.

- ☐ ARM 36.12.1702 Physical Surface Water Availability
  - ☐ (1)(b) perennial and intermittent stream measurement
  - ☐ (4) other source type measurements

Explain the specific variance you are requesting and the reason for requesting it. Also identify your proposed alternative measurement methodology, if applicable. Attach additional sheets if necessary.

ARM 36.12.121 - Aquifer Testing Requirements (ATR) - Review

Department of Natural Resources and Conservation (DNRC)
Water Sciences Bureau (WSB)

Applicant	Big Horn Leasing LLC		
Pre-Application/Application No.	42M 30163320	**Date Sent to RO**	March 27, 2024
Regional Office (RO)	Glasgow	**WSB Staff Name**	Jack Landers, Groundwater Hydrologist

This checklist identifies any deficiencies that would require a variance pertinent to Administrative Rules of Montana (ARM) 36.12.121. **Table 1** lists deficiencies that would require a variance, the recommended action and the rationale describing why the variance request could be considered appropriate. If the requirements of ARM 36.12.121 are satisfied for each item, the box will be checked next to that item indicating such.

Table 1: Deficiencies identified, recommended action and rationale from WSB.

☐ **No Deficiencies Identified**		
Variance (ARM):	**Recommend Granting Variance Request**	**Rationale:**
3(a)	☒ Yes ☐ No	Discharge fluctuated >5% of average at the beginning of all 3 tests (up to first 13 min for Well #3 test). Most of the test duration was within 5% of average rate and does not affect aquifer test analysis.
Choose an item.	☐ Yes ☐ No	
Choose an item.	☐ Yes ☐ No	
Choose an item.	☐ Yes ☐ No	
Choose an item.	☐ Yes ☐ No	

36.12.121(2): Minimum information that must be submitted with applications:

☒ **(a)** Map with labeled location of production and observation wells; and

☒ **(b)** Well logs of the production and observation wells; and

☒ **(c)** Form No. 633, in electronic format, with *all* information and data provided.

36.12.121 (3) Minimum testing procedures are as follows:

☐ **(a)** Pumping must be maintained throughout the duration of the test. The rate may not depart from the average pumping rate by more than +/- 5%.

☒ **(b)** The average pumping rate must be equal to or greater than the proposed flow rate if the application is for one well or if the total proposed rate for multiple wells can be obtained from a single well.

☒ **(c)** ☐ **NA** The proposed pumping rate may be demonstrated by testing multiple wells as long as (e) is met by one well and the remaining flow rate is demonstrated by eight-hour drawdown and yield tests on additional production wells under (e)(i)(i).

☒ **(d)** Pumping rate must be measured with a reliable measuring device and recorded with clock time according to the schedule on Form No. 633.

☒ **(e)** Minimum duration of pumping during an aquifer test must be 24 hours for a proposed pumping rate and volume equal to or less than 150 GPM or 50 AF, or 72 hours for a proposed pumping rate and volume greater than 150 GPM or 50 AF.

☒ **(e)(i)** ☐ **NA** At a minimum an eight-hour drawdown and yield test is required on all new production wells.

☒ **(e)(ii)** ☐ **NA** In addition to (e), if more than one new production well is proposed, at a minimum an eight-hour drawdown and yield test is required on all subsequent new production wells.

☒ **(e)(iii)** ☐ **NA** The testing procedures for a minimum eight-hour drawdown and yield test performed on any production well must follow (a), (d), and (h).

☒ **(f)** One or more observation wells must be completed in the same source aquifer as the proposed production well and close enough to the production well so that drawdown is measurable and far enough that well hydraulics do not affect the observation well.

☒ **(g)** Background groundwater levels in the production well and observation well(s) must be monitored at frequent intervals for at least two days prior to beginning the aquifer test according to the Form No. 633.

☒ **(h)** Groundwater levels in the production and/or observation well(s) must be reported with 0.01-foot precision according to the schedule specified on Form No. 633.

REQUEST FOR PREAPPLICATION MEETING

ARM 36.12.1302(2)

(Revised 01/2024)

For Department Use Only

Date Received 2/14/2024

Received By LY

Scheduled Meeting Date 3/19/24 @ 1

Instructions

Use this optional form to submit a written request for a preapplication meeting, as required in ARM 36.12.1302(2) for applicants electing to complete a preapplication meeting with the department prior to submitting an application for a beneficial water use permit or change in appropriation right pursuant to §85-2-302, MCA. Use additional sheets as necessary.

Submit this form to the appropriate regional office; see contact information on the last page of this form.

---

1. Applicant Name Big Horn Leasing LLC.

Mailing Address P.O. Box 1049

City Sidney State MT Zip 59270

Home Phone 406-489-4988 (Tim) Other Phone 406-489-0474 (Cherise)

Email: tim99partin@gmail.com Cherisepartin@gmail.com

2. Representative Name (if other than Applicant) _____

☐ Representative is Consultant ☐ Representative is Attorney ☐ Representative is Other

Mailing Address _____

City _____ State _____ Zip _____

Home Phone _____ Other Phone _____

Email: _____

3. Are you requesting a preapplication meeting for a permit or change application?

☒ Permit ☒ Change

4. Identify the following elements of the proposed permit or change in appropriation.

a) The flow rate and volume of water required:

Flow Rate 142 ☒ GPM ☐ CFS Volume 200 Acre-Feet

b) The point of diversion:

Point of Diversion #1 NE 1/4 NE 1/4 ____ 1/4 Section 8, Township 22N ☒ N ☐ S, Range 58E ☒ E ☐ W

County Richland

Lot/Tract _____ Block _____ Subdivision Name _____

Point of Diversion #2 NE 1/4 NE 1/4 ____ 1/4 Section 8, Township 22N ☒ N ☐ S, Range 58E ☒ E ☐ W

County Richland

Lot/Tract _____ Block _____ Subdivision Name _____

c) The place of use:

39 Acres ____ Lot ____ Block NE 1/4 NE 1/4 ____ 1/4 Sec 8, Twp 22N ☒ N ☐ S, Rge 58E ☒ E ☐ W

_____ Acres ____ Lot ____ Block ____ 1/4 ____ 1/4 ____ 1/4 Sec ____, Twp ____ ☐ N ☐ S, Rge ____ ☐ E ☐ W

_____ Acres ____ Lot ____ Block ____ 1/4 ____ 1/4 ____ 1/4 Sec ____, Twp ____ ☐ N ☐ S, Rge ____ ☐ E ☐ W

_____ Acres ____ Lot ____ Block ____ 1/4 ____ 1/4 ____ 1/4 Sec ____, Twp ____ ☐ N ☐ S, Rge ____ ☐ E ☐ W

_____Acres ____ Lot ____ Block_____1/4 _____1/4 _____1/4 Sec ____, Twp ____ ☐ N ☐ S, Rge ____ ☐ E ☐ W

d) The source of water: Ground Water Source

e) The proposed purpose: Water Marketing

f) For a change in appropriation right, the water right(s) proposed for change:

Type of water right _____ Basin _____ Water Right # _____

Type of water right _____ Basin _____ Water Right # _____

Type of water right _____ Basin _____ Water Right # _____

g) For a change in appropriation right, an explanation of historical use of the right(s) proposed for change:

h) Any proposed place of storage, if applicable (only if storage capacity is greater than 0.1 acre-feet):

#1 Capacity: Surface Acres 2 x Max Depth (feet) 18 x (.4 for dams/.5 for pits) = 18 Acre-Feet

Location: NE 1/4 NE 1/4 ____1/4 Section 8, Township 22N ■ N ☐ S, Range 58E ■ E ☐ W

#2 Capacity: Surface Acres 2 x Max Depth (feet) 18 x (.4 for dams/.5 for pits) = 18 Acre-Feet

Location: NE 1/4 NE 1/4 ____1/4 Section 8, Township 22N ■ N ☐ S, Range 58E ■ E ☐ W

#3 Capacity: Surface Acres _____ x Max Depth (feet) _____ x (.4 for dams/.5 for pits) = _____ Acre-Feet

Location: NE 1/4 NE 1/4 ____1/4 Section 8, Township 22N ■ N ☐ S, Range 58E ■ E ☐ W

i) For applications proposing a new well or wells, the well depth(s) and location:

New Well #1 ____1/4 ____1/4 ____1/4 Section ____, Township _____ ☐ N ☐ S, Range _____ ☐ E ☐ W

County _____

Lot/Tract _____ Block_____ Subdivision Name_____

Estimated Well Depth _____ Feet

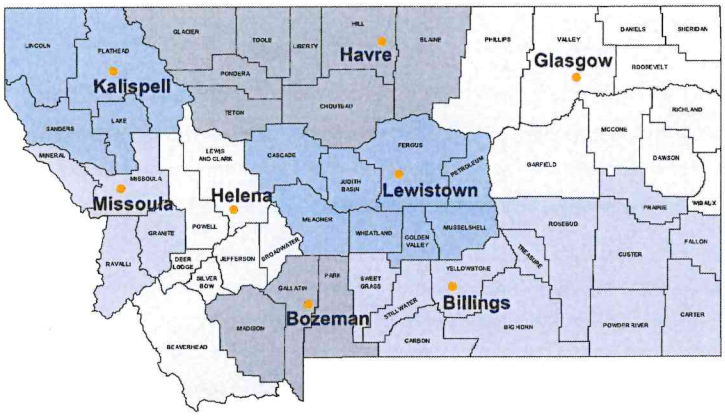
New Well #2 ____1/4 ____1/4 ____1/4 Section ____, Township _____ ☐ N ☐ S, Range _____ ☐ E ☐ W

County _____

Lot/Tract _____ Block_____ Subdivision Name_____

Estimated Well Depth _____ Feet

WATER RESOURCES REGIONAL OFFICES



BILLINGS
Airport Industrial Park, 1371 Rimtop Dr
Billings, MT 59105-9702

PHONE 406-247-4415 FAX 406-247-4416
EMAIL DNRCBillingsWater@mt.gov

Big Horn, Carbon, Carter, Custer, Fallon, Powder River, Prairie, Rosebud, Stillwater, Sweet Grass, Treasure, and Yellowstone Counties

BOZEMAN
2273 Boot Hill Court, Suite 110
Bozeman, MT 59715-7249

PHONE 406-586-3136 FAX 406-587-9726
EMAIL DNRCBozemanWater@mt.gov

Gallatin, Madison, and Park Counties

GLASGOW
222 6th Street South, PO Box 1269
Glasgow, MT 59230-1269

PHONE 406-228-2561
EMAIL DNRCGlasgowWater@mt.gov

Daniels, Dawson, Garfield, McCone, Phillips, Richland, Roosevelt, Sheridan, Valley, and Wibaux Counties

HAVRE
210 6th Ave., PO Box 1828
Havre, MT 59501-1828

PHONE 406-265-5516
EMAIL DNRCHavreWater@mt.gov

Blaine, Chouteau, Glacier, Hill, Liberty, Pondera, Teton, and Toole Counties

HELENA
1424 9th Ave., PO Box 201601,
Helena, MT 59620-1601

PHONE 406-444-6999 FAX 406-444-9317
EMAIL DNRCHelenaWater@mt.gov

Beaverhead, Broadwater, Deer Lodge, Jefferson, Lewis and Clark, Powell, and Silver Bow Counties

KALISPELL
655 Timberwolf Parkway, Suite 4
Kalispell, MT 59901-1215

PHONE 406-752-2288
EMAIL DNRCKalispellWater@mt.gov

Flathead, Lake, Lincoln, and Sanders Counties

LEWISTOWN
613 Northeast Main St., Suite E
Lewistown, MT 59457-2020

PHONE 406-538-7459
EMAIL DNRCLewistownWater@mt.gov

Cascade, Fergus, Golden Valley, Judith Basin, Meagher, Musselshell, Petroleum, and Wheatland Counties

MISSOULA
2705 Spurgin Rd. Bldg. C, PO Box 5004
Missoula, MT 59806-5004

PHONE 406-721-4284 FAX 406-542-5899
EMAIL DNRCMissoulaWater@mt.gov

Granite, Mineral, Missoula, and Ravalli Counties

[EXTERNAL] Re: Additional Information

Cherise Partin <cherisepartin@elitehotoil.com>

Wed 9/11/2024 3:22 PM

To:Kemmis, Ashley <Ashley.Kemmis@mt.gov>
Cc:Tim Partin <Tim99partin@gmail.com>;Yang, Lih-An <Lih-An.Yang@mt.gov>

Good Afternoon Ashley,

Yes, there are a couple different ways we could reduce the flow rate from the point of diversion. One way would be to use a Nelson 800 Series Control Valve. We would install the Nelson Control Valve inline with the 4 inch discharge pipe with the ability to set and adjust the needed flow rate. By being able to use the Nelson 800 Series Control Valve, we would be able to accommodate and adjust to any flow rate restrictions that may arise. (See photo 1 below) Another way we could reduce flow would be to shut off 1 or 2 of the water wells pumping. Since there are 3 separate wells on the property if need be we could simply shut off one or 2 of the wells to meet a flow restriction. Another option would be to neck down the discharge line. The discharge line is 4 inch, if we installed a 2 or 3 inch fitting on the end of our discharge line it would restrict the flow being discharged at the end of our 4 inch lay flat pipe. (See photo 2 below) Another option would be to install an inline choke. The inline choke would also be adjustable so we would be able to easily meet any flow restrictions as they arise. (See photo 3 below)

Photo 1-Nelson 800 Series Control Valve

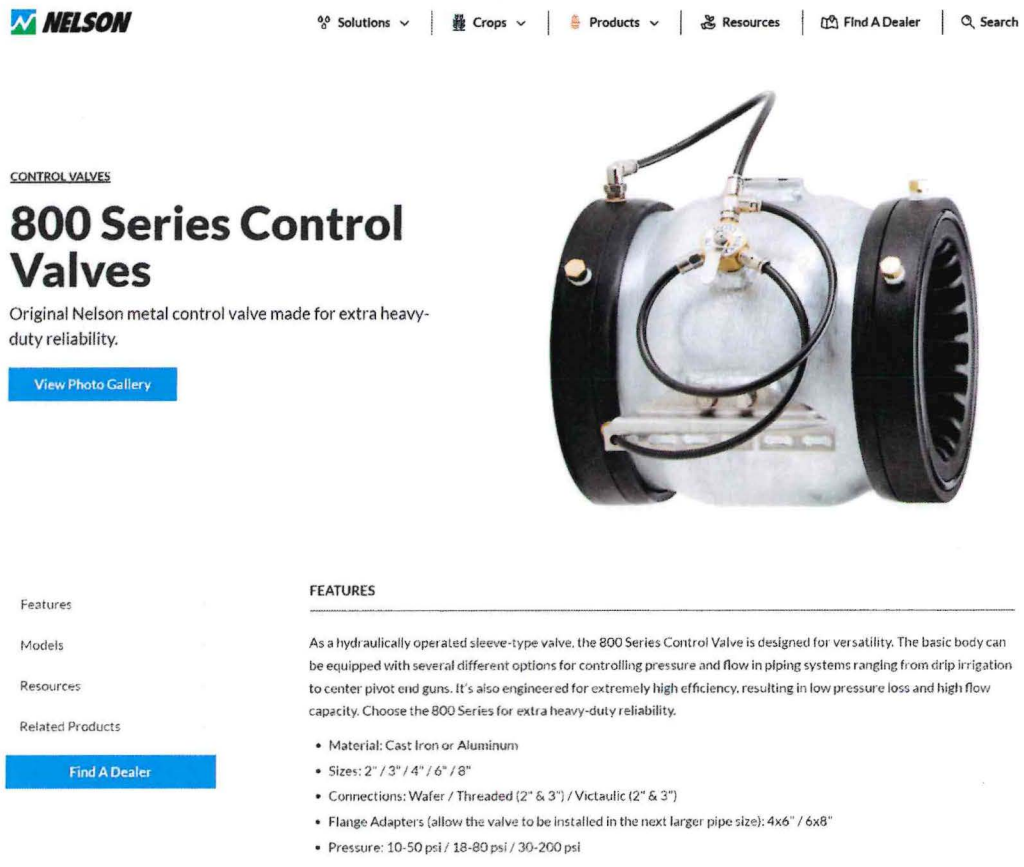


Photo 2- 4 inch x 2 inch reducer fitting

ⓘ DESCRIPTION

Female(coupler) camlock x male(adapter) camlock, also known as cam and groove fitting.
It allows for easy installation of a Male Camlock Adapter and a Female Camlock Coupler of different sizes to each opposing end.

- 4" Female x 2" Male

Photo 3-Inline choke

MDI / MDIS Series Chokes are made with wear resistant material to extend service life, with redundant O-Rings on the Bonnet Seals and Stem Seals that help prevent leakage.

Fully Guided Stems reduce imbalance and vibration. Control Discs provide ANSI Class III/IV Shut off.

TAYLOR MDI / MDIS CHOKE VALVES

Specs

Connection Size	1", 2", 3"
Connection Type	Threaded, Flanged, Butt Weld
Body Style	Angled
Body Material	1018/1020 CS, 316 SS
Process Fluid	Gas, Liquid, Steam
MDI Body Rating	1" & 2" - 5,000 PSI, 3" - 3,000 PSI
MDI CV Range	1" & 2" - 0.7 - 23.86, 3" - 11.2 - 84.65
MDIS Body Rating	1" & 2" - 5,000 PSI, 3" - 3,000 PSI
MDIS MAWP	1333 PSI for Steam
MDIS CV Range	1" & 2" - 0.7 - 23.86, 3" - 11.2 - 84.65

Thanks,

Cherise Partin
Elite Hot Oil Inc.
P.O. Box 1369
Sidney, MT 59270
(406) 489-0474

On Thu, Sep 5, 2024 at 10:54 AM Kemmis, Ashley <Ashley.Kemmis@mt.gov> wrote:

> Good morning,
>
> I am just working through the preliminary determination for your application and need an additional bit of information. Could you please provide an explanation of how the flow rate can be controlled from the point of diversion other than the use of shut off valves? Is there a way to reduce the flow rate if needed?
>
> Thanks,
> Ashley

Ashley Kemmis | Water Resource Specialist
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Montana Department of Natural Resources and Conservation
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How did we do? Let us know here: **[forms.office.com]Feedback Survey [forms.office.com]**