

FORM NO. 22 R 10/09

SUBMIT IN QUADRUPPLICATE TO:

ARM 36.22.307
ARM 36.22.601**MONTANA BOARD OF OIL AND GAS CONSERVATION**
2535 ST. JOHNS AVENUE, BILLINGS, MONTANA 59102

Lease Name:

State 18-7-6-31

Lease Type (Private/State/Federal):

Private, State, Fed

RECEIVED

Application for Permit To:

Drill ☒Deepen ☐Re-enter ☐Oil ☒Gas ☐Other ☐

Well Number:

BH

MAY 30 2025

Operator: Heritage Energy Operating, LLC

Address: 2448 E. 81st Street Suite 3600

City: Tulsa

State: OK

Zip: 74137

Telephone Number: 918-600-0801

Field Name or Wildcat: MONTANA BOARD OF OIL & GAS CONSERVATION • BILLINGS

Unit Name (if applicable):

Surface Location of Well (quarter-quarter and footage measurements):

SE/4 SW/4 of Section 18-T26N-R56E (390' FSL & 1963' FWL)

Objective Formation(s):

Middle Bakken

Proposed Total Depth and Bottom-hole Location(s) if directional or horizontal well:

TD: 31,104' MD, 10,047' TVD

Section 31-T27N-R56E (200' FNL & 1980' FWL) NE NW'

Township, Range, and Section:

18-T26N-R56E

County:

Richland

Elevation (indicate GL or KB):

2,110 KB

Order 131-2025

Size and description of drilling/spacing unit and applicable order, if any:

Secs. 6, 7 + 18 - T26N - R56E, Sec. 31 - T27N - R56E

Formation at total depth:

Middle Bakken

Anticipated Spud Date:

10/12/2025

Hole Size	Casing Size	Weight / Foot	Grade (API)	Depth	Sacks of Cement	Type of Cement
12 1/4	9 5/8	36#	J-55	2090	470	See Attached
8 3/4	7	32#	P-110	10397	608	See Attached
6	4 1/2	13.5#	P-110	31104	1055	See Attached

Describe Proposed Operations:

Describe or attach labeled diagram of blowout preventer equipment. Indicate if air drilled or describe mud program.

Heritage Energy Operating, LLC requests to drill a horizontal well to complete and produce the Bakken formation situated in a drilling and spacing unit for which an application is to be filed and encompasses Sections 18 & 7 & 6 of T25N-R56E and Section 31 of T27N-R56E, Richland County, Montana.

See attachments for details.

Heritage Energy Operating, LLC requests variance to not run open hole logs on the subject well. Offset logs can be found for

BOARD USE ONLY

Approved (date) NOV 20 2025

Permit Fee \$150.00

By

Benjamin J. Davis

Check Number 1033

Title

Technical
Program
Coordinator

Permit Expires MAY 20 2026

Permit Number 33091

THIS PERMIT IS SUBJECT TO THE
CONDITIONS OF APPROVAL
STATED ON THE BACK

API Number: 25 - 083 - 23524

The undersigned hereby certifies that the information
contained on this application is true and correct:

Signed (Agent)

[Signature]

Title Chief Executive Officer

Date 2/23/2025

Telephone Number 918-600-0801

Samples Required:

NONE

X

ALL

FROM

feet to _____ feet

Core chips to address below, full cores to USGS, Core Laboratory, Arvada, CO. Required samples must be washed, dried and delivered prepaid to:

Montana Board of Oil and Gas Conservation
2535 St. Johns Avenue
Billings, MT 59102

RECEIVED

MAY 30 2025

SUPPLEMENTAL INFORMATION

Note: Additional information or attachments may be required by Rule or by special request.

MONTANA BOARD OF OIL &
GAS CONSERVATION • BILLINGS

1. Attach a survey plat certified by a registered surveyor. The survey plat must show the location of the well with reference to the nearest lines of an established public survey.
2. Attach an 8 1/2 x 11" photocopy of that portion of a topographic map showing the well location, the access route from county or other established roads, residences, and water wells within a 1/2 mile radius of the well.
3. Attach a sketch of the well site showing the dimensions and orientation of the site, the size and location of pits, topsoil stockpile, and the estimated cut/fill at the corners and centerstake. (Note: the diagram need not be done by an engineer or surveyor). Attach a sketch of a top view and two side views of the reserve pit(s), if utilized. The reserve pit sketch must show the length, width, depth, cut and fill, amount of freeboard, area of topsoil stockpile, and the height and width of berms.
4. Describe the type and amount of material or liner, if any, to be used to seal the reserve pit. If a synthetic liner is used, indicate the liner thickness (mils), bursting strength, tensile strength, tear strength, puncture resistance, hydrostatic resistance, or attach the manufacturer's specifications.
5. Describe the proposed plan for the treatment and/or the disposal of reserve pit fluids and solids after the well is drilled. If the operator intends to dispose of or treat the reserve pit contents off-site, specify the location and the method of waste treatment and disposal. (Note: The operator must comply with all applicable federal, state, county, and local laws and regulations with regard to the handling, transportation, treatment, and disposal of solid wastes.)
6. Does construction of the access road or location, or some other aspect of the drilling operation require additional federal, state, or local permits or authorizations? If yes, indicate the type of permit or authorization required:
 - ☒ No additional permits needed
 - ☐ 310 Permit (apply through county conservation district)
 - ☐ Air quality permit (apply through Montana Department of Environmental Quality)
 - ☐ Water discharge permit (apply through Montana Department of Environmental Quality)
 - ☐ Water use permit (apply through Montana Department of Natural Resources and Conservation)
 - ☐ Solid waste disposal permit (apply through Montana Department of Environmental Quality)
 - ☐ State lands drilling authorization (apply through Montana Department of Natural Resources and Conservation)
 - ☐ Federal drilling permit (specify agency)
 - ☐ Other federal, state, county, or local permit or authorization: (specify type) _____

NOTICES:

1. Date and time of spudding must be reported to the Board verbally or in writing within 72 hours after the commencement of drilling operations.
2. The operator must give notice of drilling operations to the surface owner as required by Section 82-10-503, MCA, before the commencement of any surface activity.

BOARD USE ONLY

CONDITIONS OF APPROVAL

The operator must comply with the following condition(s) of approval:

SEE ATTACHED
CONDITIONS OF APPROVAL

WARNING: Failure to comply with conditions of approval may void this permit.

Heritage Energy Operating, LLC Proposed Well Stimulation
 Total Clean Fluids - 560,000 bbls
 Maximum Anticipated Treating Pressure - 9,800 psi

Hydraulic Fracturing Fluid Components Information Disclosure:

Trade Name	Supplier	Purpose	Ingredients	Chemical Abstract Service Number (CAS #)	Maximum Ingredient Concentration in Additive (% by mass)**	Mass per Component (lbs)	Maximum Ingredient Concentration in HF Fluid (% by mass)**
Water	Operator	Carrier	Carrier				
Surf-tio 430	Innospec	Flowback Additive	MSDS and Non-MSDS Ingredients Listed Below	7732-18-5	100.00%	196,156,800.00	90.44574%
FRP-15	Liberty Oilfield Services	Friction reduction	MSDS and Non-MSDS Ingredients Listed Below			17,719.35	0.00817%
DVA75	Liberty Oilfield Services	Diverting Agent	MSDS and Non-MSDS Ingredients Listed Below			602,545.20	0.27783%
Bioclear 5000	Lubrizol	Biocide	MSDS and Non-MSDS Ingredients Listed Below			1,117.62	0.00052%
ScaleCease 7103	Innospec	Scale Inhibitor	MSDS and Non-MSDS Ingredients Listed Below			19,979.66	0.00921%
HCL-15	Liberty Oilfield Services	Solvent	MSDS and Non-MSDS Ingredients Listed Below			37,770.62	0.01742%
ACI-300	WST	Corrosion Inhibitor	MSDS and Non-MSDS Ingredients Listed Below			41,214.24	0.01900%
WA-100	WST	Wetting Agent	MSDS and Non-MSDS Ingredients Listed Below			160.68	0.00007%
IC-505	WST	Iron Control	MSDS and Non-MSDS Ingredients Listed Below			82.90	0.00004%
Liberty Clean Out	Liberty Oilfield Services	Cleanup Solution	MSDS and Non-MSDS Ingredients Listed Below			299.64	0.00014%
Crystalline Silica	Liberty Oilfield Services	Sand	MSDS and Non-MSDS Ingredients Listed Below			178.39	0.00008%
The trade name(s) of the additive(s) used, supplier(s), and the purpose(s) of the additive(s) for the above additive(s) are listed below. The ingredient(s) for the above additive(s) are listed below.							9.22178%
	Liberty Oilfield Services	Sand	Crystalline Silica (quartz)	14808-60-7	99.90%	19,980,000.00	9.21256%
	Liberty Oilfield Services	Sand	Aluminum Oxide	1344-28-1	1.00%	200,000.00	0.09222%
	Liberty Oilfield Services	Sand	Iron Oxide	1309-37-1	0.10%	20,000.00	0.00922%
	Liberty Oilfield Services	Sand	Titanium Oxide	13463-67-7	0.10%	20,000.00	0.00922%
	Liberty Oilfield Services	Friction reduction	Petroleum distillates, hydrotreated light	64742-47-8	45.00%	271,145.33	0.12502%
	Liberty Oilfield Services	Friction reduction	Polyoxy-1,2-ethanediyl, a-tridecyl-w-hydroxy-, branched	69011-36-5	3.00%	18,076.35	0.00833%
	Innospec	Scale Inhibitor	Water	7732-18-5	95.00%	35,882.08	0.01654%
	Innospec	Scale Inhibitor	BHMT Phosphonate	Proprietary	5.00%	1,888.53	0.00087%
	Innospec	Scale Inhibitor	Proprietary Ingredient	Proprietary	5.00%	1,888.53	0.00087%
	Liberty Oilfield Services	Solvent	Water	7732-18-5	85.00%	35,032.10	0.01615%
	Liberty Oilfield Services	Solvent	Hydrochloric Acid	7647-01-0	15.00%	6,182.14	0.00285%
	Innospec	Flowback Additive	Water	7732-18-5	95.00%	16,833.39	0.00776%
	WST	Corrosion Inhibitor	2-Propyn-1-ol compound with methyloctane	38172-91-7	14.99%	24.09	0.00001%
	Lubrizol	Biocide	2,2-dibromo-3-nitriopropionamide	10222-01-2	10.00%	1,998.68	0.00092%
	Liberty Oilfield Services	Diverting Agent	Polylactide Resin	9051-89-2	100.00%	1,117.62	0.00052%
	Innospec	Flowback Additive	Benzenesulfonic Acid, dodecyl-, empd, with2-aminoethanol	26836-07-7	10.00%	1,771.94	0.00082%
	Innospec	Flowback Additive	Dodecylbenzene sulfonate, triethanolamine salt	27323-41-7	10.00%	1,771.94	0.00082%
	Innospec	Flowback Additive	Sodium Alpha Olefin Sulfonate	68439-57-6	5.00%	885.97	0.00041%
	WST	Iron Control	2-hydroxypropane-1,2,3-tricarboxylic acid	77-92-9	60.00%	179.80	0.00008%
	WST	Wetting Agent	Ethoxylated Decyl Alcohol	78330-20-8	40.01%	33.17	0.00002%
	Liberty Oilfield Services	Cleanup Solution	Oxidizante and paraffinic stream	87606-86-0	99.00%	176.60	0.00008%
	Liberty Oilfield Services	Cleanup Solution	C.I. Solvent Yellow 33	8003-22-3	1.00%	1.79	0.00000%
	Innospec	Flowback Additive	Triethanolamine	103-71-6	0.01%	1.60	0.00000%
	Innospec	Flowback Additive	Ethanolamine	141-43-5	0.01%	1.60	0.00000%

RECEIVED
 MAY 30 2025



HERITAGE ENERGY