FORM NO. 22 R 10/09 | SUBMIT IN QUADRUPLICATE TO: | ARM 36.22.307 ARM 36.22.601

MONTANA BOARD OF OIL AND GAS CONSERVATION
2535 ST. JOHNS AVENUE, BILLINGS, MONTANA 59102

Application for Permit To:

Drill [X] Deepen [ ] Re-enter [ ]
Oil [X] Gas [ ] Other _____ [ ]

Operator: Black Dog Operating, LLC
Address: 6110 Clarkson Ln
City: Houston State: TX Zip: 77055
Telephone Number: 832-541-8334

Surface Location of Well (quarter-quarter and footage measurements):
SWSE, 340' FSL, 2266' FEL
Section 13, T29N, R57E

Proposed Total Depth and Bottom-hole Location(s) if directional or horizontal well:
10021' TVD; 26003' MD
BHL - 220 FSL, 660 FEL, ~~NWNW~~ NENE, Section 1, T29N, R57E

Order 103-2025

Lease Name: Graham
Lease Type (Private/State/Federal): Private
Well Number: 13-12-1-1H
Field Name or Wildcat: Elm Coulee, Northeast
Unit Name (if applicable): NA
Objective Formation(s): Bakken
Township, Range, and Section: T29N, R57E, Section 13
County: Roosevelt
Elevation (indicate GL or KB): 2136' GL

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Size and description of drilling/spacing unit and applicable order, if any:	Formation at total depth:	Anticipated Spud Date:
1920 Acres (Sections 1, 12, & 13; T29N, R57E)	Bakken	6/1/2025

Hole Size	Casing Size	Weight / Foot	Grade (API)	Depth	Sacks of Cement	Type of Cement
12-1/4"	9-5/8"	36.0 lbs/ft	J-55	2000'	549	Class C (Type III)
8-3/4"	7"	32.0 lbs/ft	P-110	10570'	674	Class G
6"	4-1/2"	13.5 lbs/ft	P-110	25983'	971	Class G

Describe Proposed Operations:
Describe or attach labeled diagram of blowout preventer equipment. Indicate if air drilled or describe mud program.
Drill 12-1/4" surface hole to 2000' with fresh water. Run 9-5/8" surface casing and cement to surface. Drill 8-3/4" intermediate hole to 10570' with oil based (invert) mud. Run 7" intermediate casing and cement to 2000' from surface. Drill 6" lateral to 26003' with inhibited fresh water mud. Run 4-1/2" liner and cement to liner top at 9659'. Cement bond log and pressure test 7" intermediate casing. Hydraulically fracture stimulate well with approximately 21250400 lbs of sand in 370400 bbls at 90 bbls/min over 79 intervals. Clean out lateral, and flow test well. Install artificial lift, and construct surface facility. Please refer to the attached supplemental information for additional operational details.

BOARD USE ONLY

Approved (date) OCT 31 2025
By Benjamin L Davis
Title Technical Program Coordinator

Permit Fee $150.00
Check Number 1087
Permit Expires APR 30 2026
Permit Number 33080

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

API Number: 25 - 085 - 22097

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

Signed (Agent) Danny Green
Title Petroleum Engineering Consultant
Date 3/25/2025
Telephone Number 406-855-6208

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

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SUPPLEMENTAL INFORMATION

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

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:

- [X] 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.

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Hydraulic Fracturing Fluid Product Component Information Disclosure

Job Start Date	7/1/2025 (proposed)
Job End Date	7/20/2025 (proposed)
State	Montana
County	Roosevelt
API Number	25-085-XXXXX-00-00
Operator Number	Black Dog Operating, LLC
Well Name and Number	Graham 13-12-1-1H
Federal Well	No
Indian Well	No
Longitude	-104.247271
Latitude	48.259926
Datum	NAD83
True Vertical Depth (TVD)	10,021
Total Base Water Volume (gal)	15,556,800
Total Base Non Water Volume	0

FracFocus Chemical Disclosure Registry

GROUNDWATER PROTECTION COUNCIL

Oil & Gas

Additive	Specific Gravity	Additive Quantity	Mass (lbs)
Water	8.33	15,556,800	129,588,144
ASP FSC200	10.00	3,111	31,098
Product 6191	8.29	6,222	51,580
BIOC11139W	9.34	3,889	36,323
FFR4100	10.00	23,333	233,330
Crystalline Silica, Quartz, Sand		21,250,400	21,250,400
			151,190,875

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Hydraulic Fracturing Fluid Composition:

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)**	Comments
Water	Operator	Carrier	Water	7732-18-5	100.00%	129,588,144	85.71162%	
ASP FSC200	ChampionX	Scale Inhibitor	Water	7732-18-5	60.00%	18,659	0.01234%	
			Ethylene Glycol	107-21-1	15.00%	4,665	0.00309%	
			2-Propenoic Acid, Polymer with Sodium Phosphinate, Sodium Salt	129898-01-7	15.00%	4,665	0.00309%	
			Sodium Chloride	7647-14-5	4.00%	1,244	0.00082%	
			Calcium Chloride	10043-52-4	4.00%	1,244	0.00082%	
			Diethylene Glycol	111-46-6	0.50%	155	0.00010%	
			Sodium Hydroxide	1310-73-2	0.50%	155	0.00010%	
			Potassium Chloride	7447-40-7	0.10%	31	0.00002%	
Product 6191	ChampionX	Surfactant	Water	7732-18-5	70.00%	36,106	0.02388%	
			Poly (Oxy-1,2-Ethanediyl), Alpha-Isodecyl-Omega-Hydroxy	61827-42-7	20.00%	10,316	0.00682%	
			Quaternary Ammonium Compounds, Dicoco Alkyldimethyl, Chlorides	61789-77-3	1.00%	516	0.00034%	
			Isopropanol	67-63-0	1.00%	516	0.00034%	
			Amines, Dicoco Alkymethyl	61788-62-3	0.10%	52	0.00003%	
			Amines, Dicoco Alkymethyl, Hydrochloride	NA	0.10%	52	0.00003%	
			Sodium Chloride	7647-14-5	0.10%	52	0.00003%	
			Methane, Chloro-	74-87-3	0.10%	52	0.00003%	
BIOC11139W	ChampionX	Biocide	Isopropanol	67-63-0	30.00%	10,897	0.00721%	
			Water	7732-18-5	20.00%	7,265	0.00480%	
			Ethylene Glycol	107-21-1	20.00%	7,265	0.00480%	
			Quaternary Ammonium Compounds, Benzyl-C12-16-Alkyldimethyl, Chlorides	68424-85-1	20.00%	7,265	0.00480%	
			Glutaraldehyde	111-30-8	4.50%	1,635	0.00108%	
			Ethanol	64-17-5	4.50%	1,635	0.00108%	
			Methanol	67-56-1	0.10%	36	0.00002%	
FFR4100	ChampionX	Friction Reducer	Water	7732-18-5	40.00%	93,332	0.06173%	
			1-Propanesulfonic Acid, 2-Methyl-2-[(1-Oxo-2-Propenyl) Amino]-, Monosodium Salt, Polymer with 2-Propenamide	38193-60-1	20.00%	46,666	0.03087%	
			Distillates (Petroleum), Hydrotreated Light	64742-47-8	20.00%	46,666	0.03087%	
			Sodium Chloride	7647-14-5	5.00%	11,667	0.00772%	
			Alcohols, C11-14-Iso-, C13-Rich, Ethoxylated	78330-21-9	5.00%	11,667	0.00772%	
			Sorbitan, (Z)-9-Octadecenoate (2:3)	8007-43-0	5.00%	11,667	0.00772%	
			Alcohols, C9-11-Iso-, C10-Rich	68526-85-2	1.00%	2,333	0.00154%	
			Sorbitan, Monooleate, Polyoxyethylene Derivs	9005-65-6	1.00%	2,333	0.00154%	
			Acrylamide	79-06-1	0.10%	233	0.00015%	
			Tetrasodium EDTA	64-02-8	0.10%	233	0.00015%	
			Acetic Acid, Potassium Salt	127-08-2	0.10%	233	0.00015%	
			Sulfuric Acid, Copper (2+) Salt (1:1)	7758-98-7	0.10%	233	0.00015%	
			Acetic Acid	64-19-7	0.10%	233	0.00015%	
Crystalline Silica, Quartz		Proppant	Crystalline Silica in the form of Quartz	14808-60-7	100.00%	21,250,400	14.05535%	