

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

Application for Permit To:

Drill Deepen Re-enter
Oil Gas Other

Operator: Prima Exploration, Inc.
Address: 250 Filmore St, Suite 500
City: Denver State: CO Zip: 80206
Telephone Number: 303-755-5681

Surface Location of Well (quarter-quarter and footage measurements):
NE 1/4 NW1/4 Sec. 30 T25N R59E 290' FNL 1795' FWL

Proposed Total Depth and Bottom-hole Location(s) if directional or horizontal well:
TD - 20,743' MD.
BHL - NE 1/4 NW 1/4 Sec. 18 T25N R59E 250' FNL 2004' FWL

Lease Name: Butch Cassidy
Lease Type (Private/State/Federal): Private
Well Number: 2H
Field Name or Wildcat: Elm Coulee Northeast
Unit Name (if applicable): N/A
Objective Formation(s): Bakken
Township, Range, and Section: T25N R59E Section 30
County: Richland
Elevation (indicate GL or KB): 2195' GL

Size and description of drilling/spacing unit and applicable order, if any: 1280 Acre Section 18/19, MT Docket 118-2019
Formation at total depth: Bakken
Anticipated Spud Date: 7/20/2022

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Hole Size	Casing Size	Weight / Foot	Grade (API)	Depth	Sacks of Cement	Type of Cement
13 1/2"	9 5/8"	36#	J-55 LTC	2,200'	625	See Attached
8 3/4"	7"	32#	HCP110 LTC	10,699'	640	See Attached
6"	4 1/2"	13.5#	HCP110 GBCD	20,743'	564	See Attached

Describe Proposed Operations:
Describe or attach labeled diagram of blowout preventer equipment. Indicate if air drilled or describe mud program.
Please see attached programs.
Prima Exploration, Inc. requests variance to NOT run Open hole logs on the subject well. Offset logs can be found for the ~~Tenneco Oil Company - E.V. Vanderhoof #1, Sec. 19 T25N R59E, Richland County, MT.~~
Young Heirs 4 30

BOARD USE ONLY *By omw consulting inc.*

Approved (date) MAR 14 2022 Permit Fee \$150.00
By [Signature] Check Number 51635
Title Petroleum Engineer Permit Expires SEP 14 2022
Permit Number 32701

The undersigned hereby certifies that the information contained on this application is true and correct:
Signed (Agent) [Signature]
Title Ren Gardner - Agent/Petroleum Engineer
Date 3/9/2022
Telephone Number 406-259-4878

THIS PERMIT IS SUBJECT TO THE CONDITIONS OF APPROVAL STATED ON THE BACK
API Number: 25 - 083 - 23426

Samples Required: NONE 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

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:

- 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:

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

Stage	STAGE TYPE	PFA	FLUID	PROPS	STAGE	CLEAN VOLUME	SLOTTED VOLUME	PROFITANT	ADDITIONAL AGENT (MEDIUM PARTICLE)	ADDITIONAL AGENT (LARGE PARTICLE)	DPA-18 (O/F/F)	SPT-SMS MCELLAR CONCENTRATION	MS-C-18 HTS (PT/SPR)	MS-C-18 HTS (PT/SPR)
1	SW - Ball drop	0.25	15% HCl	Liberty PR	15	10,000	10,000	0	0	0	1.50	0.20	0.10	1000.00
2	15% HCl	0.50	15% HCl	Liberty PR	15	10,000	10,000	0	0	0	1.50	0.20	0.10	1000.00
3	15% HCl	0.50	15% HCl	Liberty PR	15	10,000	10,000	0	0	0	1.50	0.20	0.10	1000.00
4	15% HCl	0.50	15% HCl	Liberty PR	15	10,000	10,000	0	0	0	1.50	0.20	0.10	1000.00
5	Ramp 1-2.5	1.75	HCHR (Spt)	100 MESH	80	7,000	107	0	0	0	1.50	0.20	0.10	1000.00
6	Ramp 1-2.5	1.75	HCHR (Spt)	100 MESH	80	7,000	107	0	0	0	1.50	0.20	0.10	1000.00
7	Ramp 1-2.5	1.75	HCHR (Spt)	100 MESH	80	7,000	107	0	0	0	1.50	0.20	0.10	1000.00
8	Ramp 1-2.5	1.75	HCHR (Spt)	100 MESH	80	7,000	107	0	0	0	1.50	0.20	0.10	1000.00
9	Drain	2.50	DI	100 MESH	80	40,000	6,651	0	0	0	1.50	0.20	0.10	1000.00
						10,000	429	0	0	0	1.50	0.20	0.10	1000.00
						142,850	3,216	0	0	0	142,850	32	14	250
						711,000	18,876	0	0	0	711,000	142	71	2500
Total Pumps														
Project Name														
Proposed Name														
Contract No.														
WHITE SAND 2010														
2.50														

Pump Time per Stage: 80 min

Stage	STAGE TYPE	PFA	FLUID	PROPS	STAGE	CLEAN VOLUME	SLOTTED VOLUME	PROFITANT	ADDITIONAL AGENT (MEDIUM PARTICLE)	ADDITIONAL AGENT (LARGE PARTICLE)	DPA-18 (O/F/F)	SPT-SMS MCELLAR CONCENTRATION	MS-C-18 HTS (PT/SPR)	MS-C-18 HTS (PT/SPR)
1	SW - Ball drop	0.25	15% HCl	Liberty PR	15	8,000	8,000	0	0	0	1.50	0.20	0.10	1000.00
2	15% HCl	0.50	15% HCl	Liberty PR	15	8,000	8,000	0	0	0	1.50	0.20	0.10	1000.00
3	15% HCl	0.50	15% HCl	Liberty PR	15	8,000	8,000	0	0	0	1.50	0.20	0.10	1000.00
4	15% HCl	0.50	15% HCl	Liberty PR	15	8,000	8,000	0	0	0	1.50	0.20	0.10	1000.00
5	Ramp 1-2.5	1.75	HCHR (Spt)	100 MESH	80	4,000	107	0	0	0	1.50	0.20	0.10	1000.00
6	Ramp 1-2.5	1.75	HCHR (Spt)	100 MESH	80	4,000	107	0	0	0	1.50	0.20	0.10	1000.00
7	Ramp 1-2.5	1.75	HCHR (Spt)	100 MESH	80	4,000	107	0	0	0	1.50	0.20	0.10	1000.00
8	Ramp 1-2.5	1.75	HCHR (Spt)	100 MESH	80	4,000	107	0	0	0	1.50	0.20	0.10	1000.00
9	Drain	2.50	DI	100 MESH	80	20,000	2,122	0	0	0	1.50	0.20	0.10	1000.00
10	Drain	2.50	DI	100 MESH	80	20,000	2,122	0	0	0	1.50	0.20	0.10	1000.00
11	Drain	2.50	DI	100 MESH	80	20,000	2,122	0	0	0	1.50	0.20	0.10	1000.00
12	Drain	2.50	DI	100 MESH	80	20,000	2,122	0	0	0	1.50	0.20	0.10	1000.00
13	Drain	2.50	DI	100 MESH	80	20,000	2,122	0	0	0	1.50	0.20	0.10	1000.00
14	Drain	2.50	DI	100 MESH	80	20,000	2,122	0	0	0	1.50	0.20	0.10	1000.00
						142,850	3,216	0	0	0	142,850	32	14	250
Total Pumps														
Project Name														
Proposed Name														
Contract No.														
WHITE SAND 2010														
2.50														

Pump Time per Stage: 67 min

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15 MMlb Design

Stages: 25 Through 80

Stage	STAGE TYPE	PFA	FLUID	Type	Pump Flow (GPM)	CLEAR VOLUME		SLURRY VOLUME		PROPAGANT		ADDITIONAL CONCENTRATIONS	DPR-15 (Dry Ft)	SPT-847 (CELLULAR DISPERSION CONC. in water)	MCC-18 (TWS CONC. in water)		
						Q (GAL)	W (LBS)	Q (GAL)	W (LBS)	Q (GAL)	W (LBS)						
1	SW - Ball 0909		Liberty FR Pad	100 MESH	15	8,000	210	71	0	0	0	0.10	0.20	0.10			
2	SW		Liberty FR	100 MESH	60	3,000	71	281	0	0	0	1.30	0.20	0.10			
3	P.F.	0.28	Liberty FR	100 MESH	80	3,333	179	300	633	833	0	1.30	0.20	0.10			
4	P.F.	0.28	Liberty FR	100 MESH	80	3,333	179	300	633	833	0	1.30	0.20	0.10			
5	Ramp 1-2-5	1.78	ACFR (Disp)	100 MESH	80	25,000	548	1,027	40,200	43,180	0	1.30	0.20	0.10			
6	Ramp 2-3-5	2.89	ACFR (Disp)	100 MESH	80	18,000	443	1,470	20,958	22,428	0	1.30	0.20	0.10			
7	Diverts in 1 Up FR		Liberty FR Pad	100 MESH	80	1,600	36	1,508	0	96,683	0	1.30	0.20	0.10			
8	P.F.	0.28	Liberty FR	100 MESH	80	3,000	71	1,597	3,000	0	96,683	0	1.30	0.20	0.10		
9	P.F.	0.28	Liberty FR	100 MESH	80	3,000	71	1,597	3,000	0	96,683	0	1.30	0.20	0.10		
10	P.F.	0.28	Liberty FR	100 MESH	80	3,000	71	1,597	3,000	0	96,683	0	1.30	0.20	0.10		
11	P.F.	0.28	Liberty FR	100 MESH	80	3,000	71	1,597	3,000	0	96,683	0	1.30	0.20	0.10		
12	Ramp 1-2-5	1.78	ACFR (Disp)	100 MESH	80	25,000	548	1,027	2,500	26,997	0	1.30	0.20	0.10			
13	Ramp 2-3-5	2.89	ACFR (Disp)	100 MESH	80	18,000	443	2,746	2,000	21,746	0	1.30	0.20	0.10			
14	Diverts in 1 Up FR		Liberty FR Pad	100 MESH	80	1,600	36	2,822	1,500	181,237	0	1.30	0.20	0.10			
15	P.F.	0.28	Liberty FR	100 MESH	80	3,000	71	2,815	3,000	0	181,237	0	1.30	0.20	0.10		
16	P.F.	0.28	Liberty FR	100 MESH	80	3,000	71	2,815	3,000	0	181,237	0	1.30	0.20	0.10		
17	P.F.	0.28	Liberty FR	100 MESH	80	3,000	71	2,815	3,000	0	181,237	0	1.30	0.20	0.10		
18	Ramp 1-2-5	1.78	ACFR (Disp)	100 MESH	80	25,000	548	1,027	2,000	26,997	0	1.30	0.20	0.10			
19	Ramp 2-3-5	2.89	ACFR (Disp)	100 MESH	80	18,000	443	1,470	2,000	20,468	0	1.30	0.20	0.10			
20	Diverts in 1 Up FR		Liberty FR	100 MESH	80	1,600	36	1,597	3,000	0	208,990	0	1.30	0.20	0.10		
21	Diverts in 1 Up FR		Liberty FR	100 MESH	80	1,600	36	1,597	3,000	0	208,990	0	1.30	0.20	0.10		
Total													879	32	1518	19	0

Stage	Propagant name	Q (GAL)	W (LBS)	Q (GAL)	W (LBS)	Q (GAL)	W (LBS)	Q (GAL)	W (LBS)	Q (GAL)	W (LBS)	Q (GAL)	W (LBS)				
1	100 MESH	15	8,000	210	71	0	0	0	0	0	0	0	0				
2	100 MESH	60	3,000	71	281	0	0	0	0	0	0	0	0				
3	100 MESH	80	3,333	179	300	633	833	0	0	0	0	0	0				
4	100 MESH	80	3,333	179	300	633	833	0	0	0	0	0	0				
5	100 MESH	80	25,000	548	1,027	40,200	43,180	0	0	0	0	0	0				
6	100 MESH	80	18,000	443	1,470	20,958	22,428	0	0	0	0	0	0				
7	100 MESH	80	1,600	36	1,508	0	96,683	0	0	0	0	0	0				
8	100 MESH	80	3,000	71	1,597	3,000	0	96,683	0	0	0	0	0				
9	100 MESH	80	3,000	71	1,597	3,000	0	96,683	0	0	0	0	0				
10	100 MESH	80	3,000	71	1,597	3,000	0	96,683	0	0	0	0	0				
11	100 MESH	80	3,000	71	1,597	3,000	0	96,683	0	0	0	0	0				
12	100 MESH	80	25,000	548	1,027	2,500	26,997	0	0	0	0	0	0				
13	100 MESH	80	18,000	443	2,746	2,000	21,746	0	0	0	0	0	0				
14	100 MESH	80	1,600	36	2,822	1,500	181,237	0	0	0	0	0	0				
15	100 MESH	80	3,000	71	2,815	3,000	0	181,237	0	0	0	0	0				
16	100 MESH	80	3,000	71	2,815	3,000	0	181,237	0	0	0	0	0				
17	100 MESH	80	3,000	71	2,815	3,000	0	181,237	0	0	0	0	0				
18	100 MESH	80	25,000	548	1,027	2,000	26,997	0	0	0	0	0	0				
19	100 MESH	80	18,000	443	1,470	2,000	20,468	0	0	0	0	0	0				
20	100 MESH	80	1,600	36	1,597	3,000	0	208,990	0	0	0	0	0				
21	100 MESH	80	1,600	36	1,597	3,000	0	208,990	0	0	0	0	0				
Total													879	32	1518	19	0

Pump Time per Stage: 71 min

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