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Submit In Quadruplicate To:

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

AUG 18 2025

MONTANA BOARD OF OIL &  
GAS CONSERVATION • BILLINGS**SUNDRY NOTICES AND REPORT OF WELLS**

Operator NorthWestern Corporation		Lease Name: Dry Creek Deep
Address 9 W. Granite		Type (Private/State/Federal/Tribal/Allotted): Private
City Butte	State MT	Well Number: Dry Creek Deep #1
Zip Code 59701		Unit Agreement Name: Dry Creek Storage
Telephone 406-497-3521	Fax 406-265-4938	Field Name or Wildcat: Dry Creek
Location of well (1/4-1/4 section and footage measurements): NW-NW Sec 3, T7S, R21E; 583 FNL, 583' FWL		Township, Range, and Section: T7S, R21E, Sec 3
API Number: 25   009   21162 State County Well	Well Type (oil, gas, injection, other): Gas Storage	County: Carbon

Indicate below with an X the nature of this notice, report, or other data:

Notice of Intention to Change Plans	<input type="checkbox"/>	Subsequent Report of Mechanical Integrity Test	<input type="checkbox"/>
Notice of Intention to Run Mechanical Integrity Test	<input type="checkbox"/>	Subsequent Report of Stimulation or Treatment	<input type="checkbox"/>
Notice of Intention to Stimulate or to Chemically Treat	<input checked="" type="checkbox"/>	Subsequent Report of Perforation or Cementing	<input type="checkbox"/>
Notice of Intention to Perforate or to Cement	<input type="checkbox"/>	Subsequent Report of Well Abandonment	<input type="checkbox"/>
Notice of Intention to Abandon Well	<input type="checkbox"/>	Subsequent Report of Pulled or Altered Casing	<input type="checkbox"/>
Notice of Intention to Pull or Alter Casing	<input type="checkbox"/>	Subsequent Report of Drilling Waste Disposal	<input type="checkbox"/>
Notice of Intention to Change Well Status	<input type="checkbox"/>	Subsequent Report of Production Waste Disposal	<input type="checkbox"/>
Supplemental Well History	<input type="checkbox"/>	Subsequent Report of Change in Well Status	<input type="checkbox"/>
Other (specify) _____	<input type="checkbox"/>	Subsequent Report of Gas Analysis (ARM 36.22.1222)	<input type="checkbox"/>

**Describe Proposed or Completed Operations:**

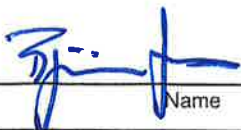
Describe planned or completed work in detail. Attach maps, well-bore configuration diagrams, analyses, or other information as necessary. Indicate the intended starting date for proposed operations or the completion date for completed operations.

Hydraulically fracture stimulate the 2nd and 3rd Fronteir storage zones. See attached. Begin on or after August 27th.

**SEE ATTACHED**  
**CONDITIONS OF APPROVAL**

**BOARD USE ONLY**

Approved AUG 20 2025  
 Date

  
 Name

  
 Title

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

8/14/2025

Date

Signed (Agent)

Aaron Olson - Manager Gas Growth and Storage

Print Name and Title

Telephone: (406) 497-3521

### SUPPLEMENTAL INFORMATION

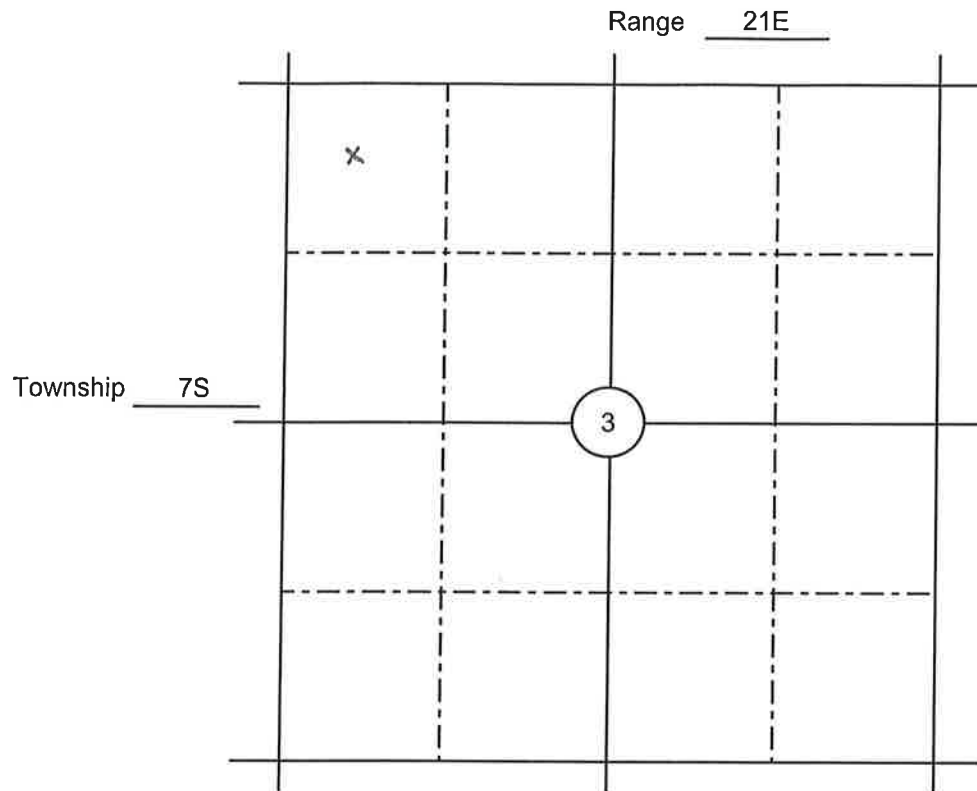
NOTE: Additional information or attachments may be required by Rule or by special request.

Plot the location of the well or site that is the subject of this notice or report.

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#### BOARD USE ONLY

#### CONDITIONS OF APPROVAL

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

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

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8/11/25 CAS INFORMATION: NorthWestern Energy Frontier

Additive	Max Loading/ 1000 Gal	Specific Gravity	Additive Quantity	Mass (lbs)
15% HCl ACID	1,000.00	1.08	1,000	8,971
CIA-1, CORROSION INHIBITOR (T-Hib AI 5500)	5.00	0.89	5	37
IC-1L, IRON CONTROL (T-Chem FE 350)	8.00	1.07	8	71
SURF PLUS, CNF	3.00	0.94	3	24

gal  
gal  
gal

Total Slurry Mass (Lbs)

9,103

Name	Ingredients	Chemical Abstract Service Number (CAS #)	Maximum Ingredient Concentration in Additive (% by mass) <sup>1,2</sup>	Total Component Mass in HF Fluid (lbs)	Maximum Ingredient Concentration in HF Fluid (% by mass) <sup>1,2</sup>	Comments
15% HCl ACID	Hydrogen Chloride	7647-01-0	15.00%	1,346	14.78224%	
	Water	7732-18-5	85.00%	7,625	83.76603%	
SURF PLUS, CNF	Dipentene: Limonene	138-86-3	30.00%	7.1	0.07772%	
	Ethoxylated Alcohol	68439-46-3	30.00%	7.1	0.07772%	
	Nonyl Phenol Ethoxylated	127087-87-0	30.00%	7.1	0.07772%	
	Isopropanol	67-63-0	15.00%	3.5	0.03886%	
CIA-1, CORROSION INHIBITOR (T-Hib AI 5500)	Ethylene Glycol	107-21-1	30.00%	11.1	0.12238%	
	Water	7732-18-5	30.00%	11.1	0.12238%	
	N,N-Dimethylformamide, anhyd	68-12-12	30.00%	11.1	0.12238%	
	1-(benzyl)quinolinium Chloride	15619-48-4	5.00%	1.9	0.02040%	
	Alcohols, C6-C12	68603-15-6	3.00%	1.1	0.01224%	
	Cinnamaldehyde	104-55-2	3.00%	1.1	0.01224%	
	Glycol Ether EB	111-76-2	3.00%	1.1	0.01224%	
	Triethyl Phosphate	78-40-0	3.00%	1.1	0.01224%	
IC-1L, IRON CONTROL (T-Chem FE 350)	Acetic Acid	64-19-7	40.00%	28.6	0.31389%	
	Citric Acid	77-92-9	20.00%	14.3	0.15694%	
	Water	7732-18-5	60.00%	42.9	0.47083%	

100.00%

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8/11/25 CAS INFORMATION: NorthWestern Energy Frontier

Additive	Max Loading/ 1000 Gal	Specific Gravity	Additive Quantity	Mass (lbs)	
Water (Customer Supplied)	1,000.00	1.00	24,780	206,789	gal
WG-1SLR, GUAR SLURRY	5.00	1.04	124	1,078	gal
BIO-2L, BIOCID	0.30	1.00	8	67	gal
SURF PLUS, CNF	2.00	0.94	53	417	gal
KCI-2SUB, KCI SUBSTITUTE	2.00	1.08	50	451	gal
XLB-1, CROSSLINKER	1.00	1.35	15	168.99	gal
B-1, BREAKER	2.00	2.55	50	50.0	lb
FA-1, FOAMER	5.00	1.02	124	1,054	gal
B-4LE, ENZYME BREAKER	0.30	1.03	8	69	gal
NORTHERN WHITE SAND	4,200.00	2.65	184,000	184,000	lb
N2	4,022.00	0.01	525,656	58,163	gal
				Total Slurry Mass (Lbs)	
				432,308	

Name	Ingredients	Chemical Abstract Service Number (CAS #)	Maximum Ingredient Concentration in Additive (% by mass) <sup>1,2</sup>	Total Component Mass in HF Fluid (lbs)	Maximum Ingredient Concentration in HF Fluid (% by mass) <sup>1,2</sup>	Comments
Water (Customer Supplied)	Water	7732-18-5	100.00%	206,789	47.83377%	
NORTHERN WHITE SAND	Silica Quartz	14808-60-7	100.00%	184,000	42.56227%	
WG-1SLR, GUAR SLURRY	Solvent Naptha (pet.) heavy aliphatic	64742-47-8	55.00%	593	0.13718%	
	Guar Gum	9000-30-0	45.00%	485	0.11224%	
SURF PLUS, CNF	Dipentene; Limonene	138-86-3	30.00%	125.0	0.02891%	
	Ethoxylated Alcohol	68439-46-3	30.00%	125.0	0.02891%	
	Nonyl Phenol Ethoxylated	127087-87-0	30.00%	125.0	0.02891%	
	Isopropanol	67-63-0	15.00%	62.5	0.01446%	
KCI-2SUB, KCI SUBSTITUTE	Choline Chloride	67-48-1	70.00%	316.0	0.07310%	
	Water	7732-18-5	30.00%	135.4	0.03133%	
XLB-1, CROSSLINKER	Water	7732-18-5	60.00%	101.4	0.02345%	
	Potassium Hydroxide	1310-58-3	30.00%	50.7	0.01173%	
	Boric Acid	10043-35-3	30.00%	50.7	0.01173%	
B-1, BREAKER	Ammonium persulfate	7727-54-0	100.00%	50.0	0.01157%	
B-4LE, ENZYME BREAKER	Water	7732-18-5	84.99%	58.4	0.01352%	
	Sodium chloride	7647-14-5	15.00%	10.3	0.00239%	
	Sodium hydroxide	1310-73-2	0.01%	0.0	0.00000%	
	beta-D-Mannanase	37288-54-3	0.001%	0.0	0.00000%	
BIO-2L, BIOCID	Tetrakis(hydroxymethyl) Phosphonium Sul'fate	55566-30-8	20.00%	13.4	0.00309%	
	Water	7732-18-5	80.00%	53.4	0.01235%	
FA-1, FOAMER	Methyl Alcohol	67-56-1	25.00%	263.6	0.06098%	
	Water	7732-18-5	25.00%	263.6		
	Ethylene Glycol	107-21-1	20.00%	210.9	0.04878%	
	2-Butoxyethanol	111-76-2	20.00%	210.9	0.04878%	
	Glycerol	56-81-5	10.00%	105.4	0.02439%	
N2	Nitrogen	7727-37-9	100.00%	38,163	8.82783%	

100.00%

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## MONTANA BOARD OF OIL AND GAS ATTACHMENT TO FORM 2 "CONDITIONS OF APPROVAL"

A. Field Inspector must be notified at least **24 hours** in advance of the start of fracture stimulation operation.

### **B. 36.22.1106 SAFETY AND WELL CONTROL REQUIREMENTS – HYDRAULIC FRACTURING**

(1) New and existing wells which will be stimulated by hydraulic fracturing must demonstrate suitable and safe mechanical configuration for the stimulation treatment proposed.

(2) Prior to initiation of fracture stimulation, the operator must evaluate the well. If the operator proposes hydraulic fracturing through production casing or through intermediate casing, **the casing must be tested to the maximum anticipated treating pressure**. If the casing fails the pressure test it must be repaired or the operator must use a temporary casing string (fracturing string).

(a) **If the operator proposes hydraulic fracturing through a fracturing string, it must be strung into a liner or run on a packer set not less than 100 feet below the cement top of the production or intermediate casing and must be tested to not less than maximum anticipated treating pressure minus the annulus pressure applied between the fracturing string and the production or intermediate casing.**

(3) A casing pressure test will be considered successful if the pressure applied has been held for 30 minutes with no more than ten percent pressure loss.

(4) A **pressure relief valve(s)** must be installed on the treating lines between pumps and wellhead to limit the line pressure to the test pressure determined above; the well **must be equipped with a remotely controlled shut-in device** unless waived by the board administrator should the factual situation warrant.

(5) **The surface casing valve must remain open** while hydraulic fracturing operations are in progress; the annular space between the fracturing string and the intermediate or production casing must be monitored and may be pressurized to a pressure not to exceed the pressure rating of the lowest rated component that would be exposed to pressure should the fracturing string fail.

History: 82-11-111, MCA; IMP, 82-11-111, MCA; NEW, 2011 MAR p. 1686, Eff. 8/26/11.

### **C. 36.22.1010 WORK-OVER, RECOMPLETION, WELL STIMULATION – NOTICE AND APPROVAL**

(1) Within 30 days following completion of the well work, a subsequent report of the actual work performed must be submitted on Form No. 2.