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Submit In Quadruplicate To:

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

SUNDRY NOTICES AND REPORT OF WELLS

MONTANA BOARD OF OIL &
GAS CONSERVATION • BILLINGS

Operator Denbury Onshore, LLC		Lease Name: Unit
Address 5320 Legacy Drive		Type (Private/State/Federal/Tribal/Allotted): Fee
City Plano State TX Zip Code 75024	Well Number: 34-10	
Telephone 972-673-2000 Fax	Unit Agreement Name: BCCMU	
Location of well (1/4-1/4 section and footage measurements): NW-SE Sec. 34, T8S - R54E 1980' FSL & 1980' FEL		Field Name or Wildcat: Bell Creek
API Number:	Well Type (oil, gas, injection, other):	Township, Range, and Section: T8S - R54E, Sec. 34
25 075 21344	Injection	County: Powder River, MT
State County Well		

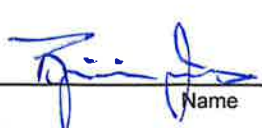
Indicate below with an X the nature of this notice, report, or other data:

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) <u>Fracture Stimulate</u>	<input checked="" type="checkbox"/>	Subsequent Report of Gas Analysis (ARM 36.22.1222)	<input type="checkbox"/>
	<input type="checkbox"/>		<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.

Denbury requests approval to fracture stimulate the subject well. Please see attached procedure and wellbore diagram for additional information. A treatment report has been included in the procedure along with the necessary CAS numbers. Sage Grouse notification has been submitted.

BOARD USE ONLY	
Approved FEB 21 2018	Date
	Name
Petroleum Engineer	Title

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

02/15/2018	
Date	Signed (Agent)
Naomi Johnson - Regulatory Compliance Specialist	
Print Name and Title	
Telephone: _____	972-673-2000

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.

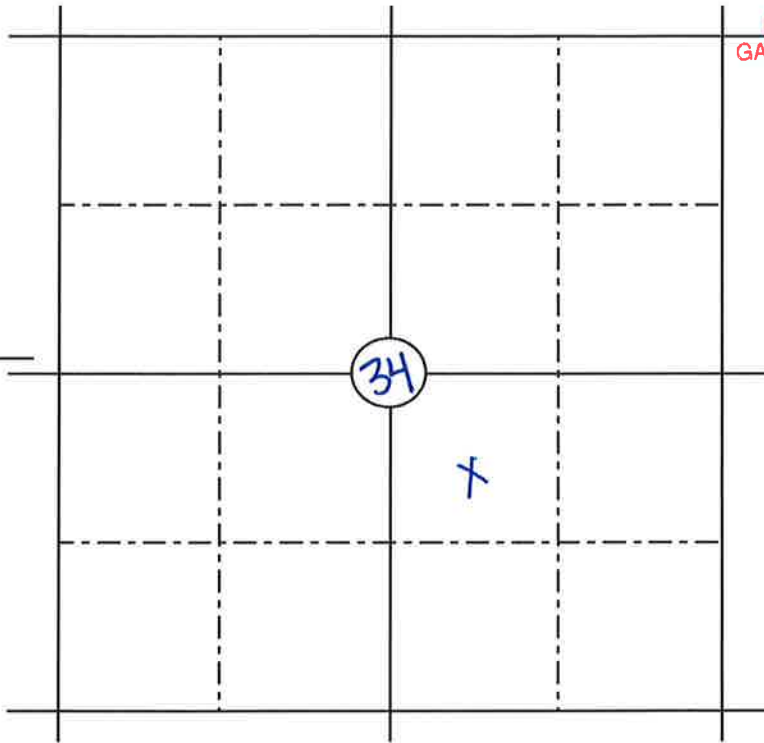
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Range 54E

Township 8S



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.

PROCEDURE To Stimulate Well

Bell Creek Unit 34-10

1980 FSL 1980 FEL, Sec 34 – T8S - R54E
API # 25075213440000

Powder River County, MONTANA
This is a FEE well

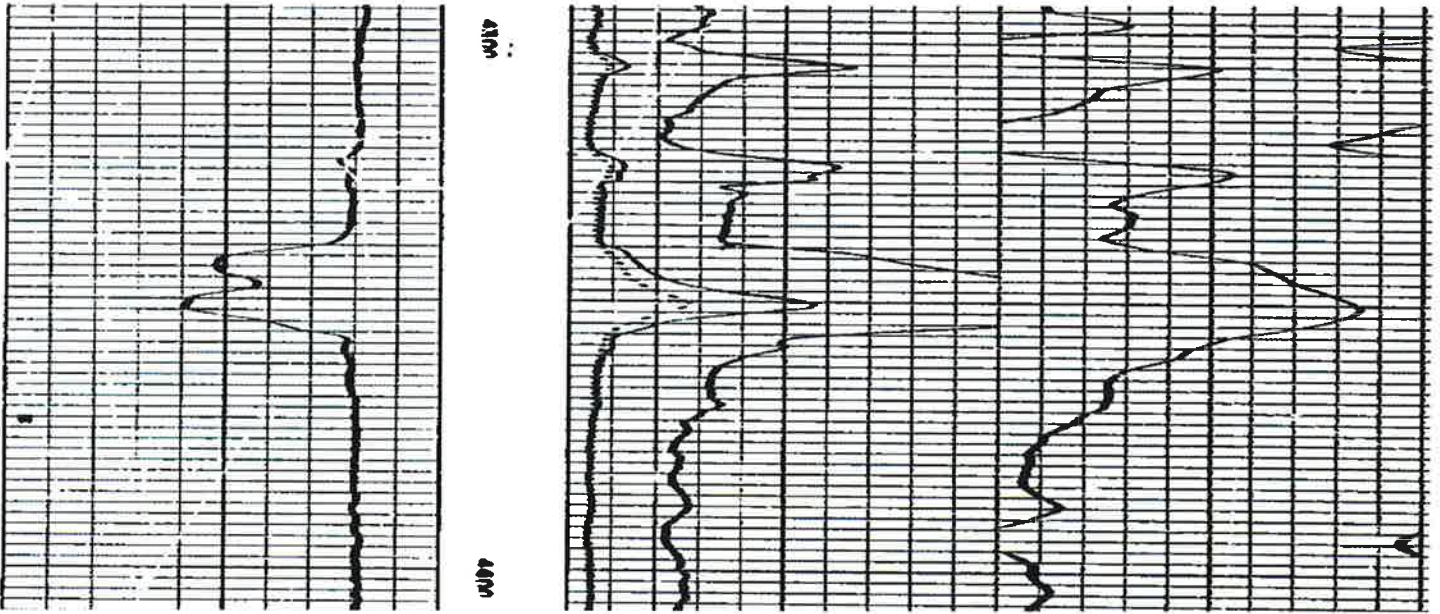
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OBJECTIVE OF OPERATION:

Test production tubing to treating pressure – Perform small hydraulic fracture stimulation on the Muddy– Flow back well Release to Production



3/9/1968

Notes about this well

1. 9/8/2017 - tagged with SL. $\pm 60'$ of rathole.
2. 3/2015 – tested squeezes to 2000psi with RBP prior to running production.
3. 6/2015 – tested to 1000psi with 11ppg inhibited fluid in the well after production was run.

1. **NOTE: Check local Well File before beginning job.**
2. **Pre-Job: Confirm Sundry approval. Secure Wellhead, Flowline, and Electrical. Notify BLM/State as required.**
3. MIRU SL. RIH with 1-1/4" bailer and tag bottom. Record depth. TOOH. RDMO SL.
 - a. Notify Plano if tag high for path forward. Jar for sample if high.
4. MIRU Hot-oiler. PT Production Casing as directed below. RDMO Hot-oiler.
 - a. **Test to a maximum anticipated PCP of 1500psi for 15 min. Chart it – no more than 10% pressure loss.**
 - i. If casing fails – contact Plano with procedure moving forward.
5. MIRU SL. PU PX plug. RIH & set in XN nipple below the packer. TOOH. RDMO SL.
6. Bleed off pressure and ensure tubing & casing are dead.
7. Install BPV. ND WH. NU BOP. Test as per Denbury Standards. Remove BPV.
8. Install 2-3/8"to2-7/8" Xover, 6ft 2-7/8" L-80 pup, 2-7/8to3" 1502 Xover, & 3" 1502 Plug Valve.
9. Close Pipe Rams. MIRU Tubing Testers. PT tubing as directed below. RDMO tubing testers.
 - a. **Test tubing to maximum anticipated treating pressure @5000# for 15 minutes. Chart it - no more than 10% pressure loss. Hold 1000# on the backside (As anticipated for job).**
 - i. If tubing fails – contact Plano with procedure moving forward.
 - b. Bleed off casing to 0psi and **tubing to SI pressure when prong was set.**
10. MIRU SL. RIH and retrieve prong & PX plug.
11. PU BHP gauges. RIH and take BHP mid-perf. POOH. RDMO SL.
12. MIRU 400bbl upright tank. Ensure clean – use hot-oiler if necessary.
 - a. Fill tank with 400bbls of BIDDLE water.
13. MI Flowback Tank and 1502 iron for Flowback/ Frac Operation Relief if necessary.
14. MIRU Hot-oiler. Roll tank to 80-100degF (depending on the Weather). RDMO Hot-oiler.
15. MIRU Frac Company & Equipment. (Estimated 4-8 hr job -22 minutes to pump time).
 - a. Frac Company responsible for 20,000# 16/30 sand, frac fluid additives, and all frac equipment.

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Frac Additives				
Materials	U.O.M.	LOADING PER/1000 GALLONS		
		Fluid 1 1,910	Fluid 2 10,250	Totals
WG-1SLR, Slurried Guar Gel	gal	5	5	61
NE-1, Non Emulsifier (Nonionic)	gal	2	2	25
BIO-2L, Liquid Biocide (THPS)	gal	0	0.2	3
Buffer-4L, High pH (sodium hydroxide)	gal	0	0.1	2
XLB-1, Self Buffered Borate Crosslinker	gal	0	1.5	16
B-4LE, High pH/Low Temp. <140°F Enzyme Break	gal	0	0.3	4
B-1, Oxidizer Breaker (AP)	gal	1	1	13
KCL-2Sub, KCl Substitute (anionic product toleran	gal	2	2	25

- b. **2 pressure relief valves will be installed on treating lines between pumps and wellhead to limit the line pressure to max anticipated treating pressure.**
 - c. **Pressure the Production Casing to 800-1000psi prior to job. Hold & monitor with gauge. Set pop-off at 1400psi (100psi less than PT).**
16. Close 3" Plug Valve. Install 3" Hydraulic valve & test to treating pressure prior to frac.
 - a. **Hydraulic valve will be hooked up during frac to accumulator and serve as the remote controlled shut-in device AT THE WELL HEAD.**
17. Perform breaker test with Biddle water from tank/X-linker & Breaker prior to job.



- a. Record, time/strength Xlinked, any visible residuals, and ensure fluid breaks prior to pumping.
- 18. Establish 8-10bpm injection rate with 20# gel for 30 bbls. Record ISIP.
 - a. Note friction pressure of 20# gel.
- 19. Pump the program recommended and attached. Hook up Frac equipment to pull off of 400bbl upright. Hook up diverter line to the flowback equipment.
 - a. Note additional friction pressure from X-linker.
 - b. Subject to additional pumping depending on pressures.
 - c. Prior to Flush - Drop tub level and bypass tub @4ppg CONCENTRATION
 - d. Call flush based on densometer. 3.5 or greater if decide higher concentration.
 - i. Talk to Frac company about bypassing or dropping tub level prior to flush.
 - e. End flush 1bbl prior to perforations. **Do NOT over flush. (BH concentration 4ppg).**

Frac Schedule									
STG No.	Proppant Lbs./Gal.	Stage Gals.	Fluid Type or Comment	Proppant Type or Stage Description	Stage/lbs. Proppant	Clean Rate	Clean Bbls.	Slurry Bbls.	Stage Time.
1	0	1260	20# Linear	Pre-Pad	-	10	30	10	3
2	0	3000	20# X-Link	Pad	-	10	71	71	7.1
3	1	1500	20# X-Link	SLF 16/30 White	1,500	9.6	36	37	3.7
4	2	1500	20# X-Link	SLF 16/30 White	3,000	9.2	36	39	3.9
5	3	1500	20# X-Link	SLF 16/30 White	4,500	8.8	36	41	4.1
6	4	1500	20# X-Link	SLF 16/30 White	11,000	8.5	65	77	4.2
7	0	500	20# Linear	Flush	-	10	16	16	2.5

- 20. Record the ISIP @5, 10, & 15 minutes after pumping.
- 21. RDMO Frac Company & Equipment.
 - a. Send pump chart and other necessary data to the Plano office.
- 22. RU 1502 iron & manifold to Gas Buster. Flowback the well as directed by Plano.
 - a. Start 9ck. Maximum 1bpm. Expect sand bottoms up. Monitor sand returns for following 40 bbls. (fill 5 gal bucket 8 seconds)
 - b. Flowback 110% volume pumped. Do NOT flow back greater than 2BPM.
- 23. MIRU slickline. RIH w/ 1-1/4" bailer and tag TD. Record depth. TOO H.
 - a. Notify Plano if tag high before moving forward. Jar for sample if high.
- 24. PU PX plug. RIH and set in X nipple above packer in SA. TOO H. RD SL. Bleed tubing 0psi.
- 25. Install BPV. RD BOP and associated equipment. NU Wellhead. Test. Remove BPV.
- 26. MIRU Hot-oiler. Pressure up tubing to SI pressure when prong was set. RDMO Hot-oiler.
- 27. RU SL. RIH and retrieve PX plug in SA. TOO H. RDMO SL.
- 28. MIRU CTU if tagged high. Clean out to PBTD. RDMO CTU.
- 29. Release to operations.

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Bell Creek Unit #A 34-10 WAG CO2

Sect	Tw...	Rng	Rn...
34	008	S	54
			E

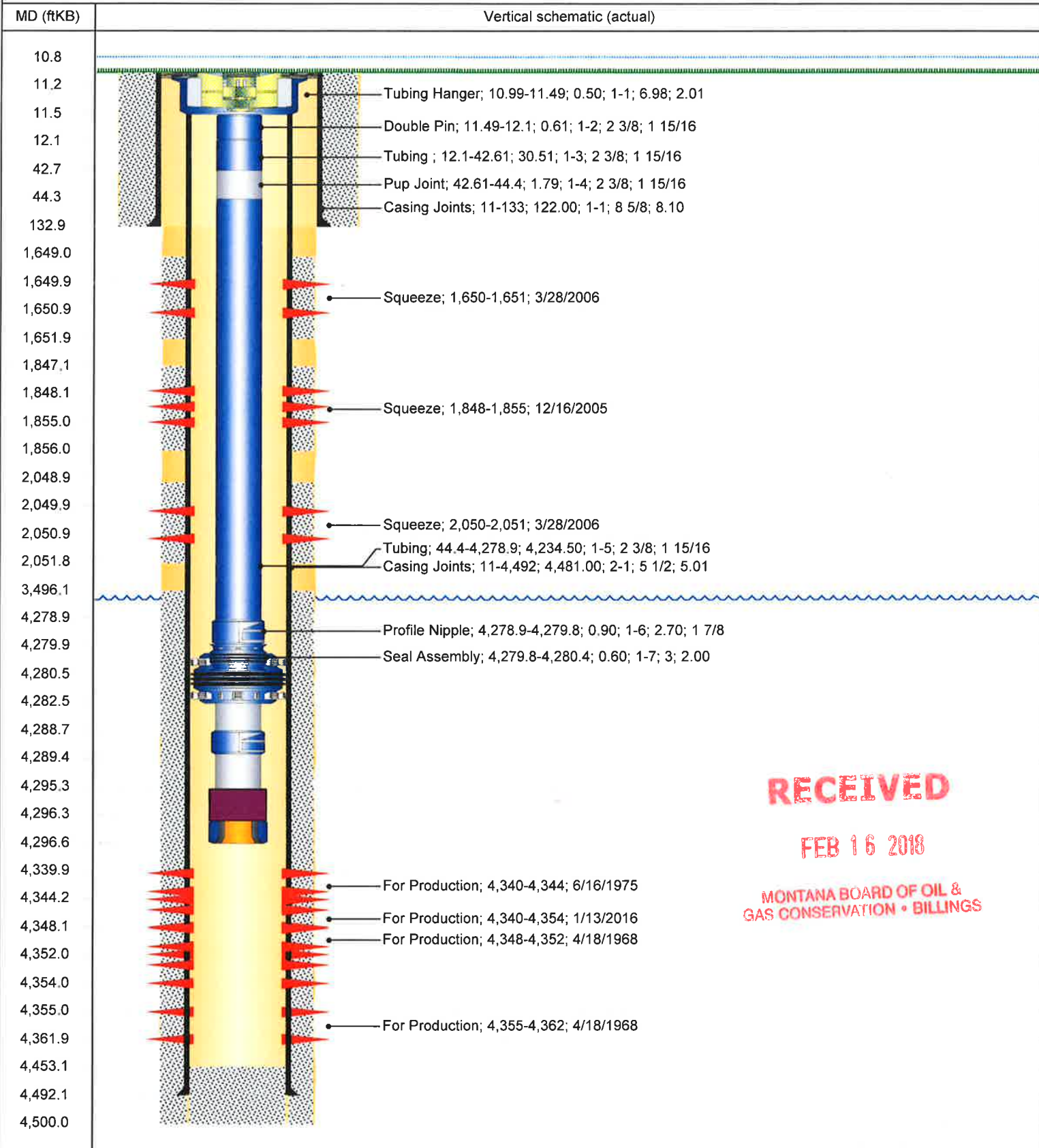
Surface Legal Location: 1980 FSL & 1980 FELNW-SE

Fault Block:

Field Name Bell Creek CO2	API/UWI 25075213440000	State ID#	Well Status A - Active	Well Configuration Type	Assoc. TB/Test Site	Latitude 45° 5' 48.935" N	Longitude 105° 5' 13.56" W		
Gr Elev (ft) 3,750.00	Orig KB Elev (ft) 3,761.00	KB-Grid (ft) 11.00	Total Depth (All) (ftKB) Original Hole - 4,500.0	Total Depth A2 (TVD) (ftKB)	FBTD (All) (ftKB)				
Spud Date 4/18/1968	TD Date	Rig Release Date	Completion Start Date	Completion End Date	On Production Date	First Sales Date	First Inj Date	First Date CO2 Flood	Abandon Date

TD: 4,500.00

Original Hole, 2/15/2018 11:33:36 AM



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Proposed Schematic (SAME as CURRENT)

Downhole Well Profile

Bell Creek Unit #A 34-10 WAG CO2

Sect 34	Tw... 008 S	Rng... 54 E	Surface Legal Location: 1980 FSL & 1980 FELNW-SE		Well Status: A - Active	Well Configuration Type	Assoc. TB/TactSite	Latitude: 45° 5' 48.935" N	Longitude: 105° 5' 13.56" W	
Field Name: Bell Creek CO2	API/LWI: 25075213440000	State ID#	Original Hole - 4,500.0		Top Location: Top of HCB	Elev: A - 3,760.0				
Gr Elev (ft): 3,760.00	Orig KB Elev (ft): 3,761.00	TD Date: 4/18/1968	Rig Release Date	Completion Start Date	Completion End Date	On Production Date	First Sales Date	First Inj Date	First Date CO2 Flood	Abandon Date

Original Hole, 2/15/2018 10:24:21 AM

MD (RKB)	Vertical schematic (actual)
10.8	
11.2	
11.5	
12.1	
42.7	
44.3	
132.9	
1,649.0	
1,649.9	
1,650.9	
1,651.9	
1,847.1	
1,848.1	
1,855.0	
1,856.0	
2,048.9	
2,049.9	
2,050.9	
2,051.8	
3,496.1	
4,278.9	
4,279.9	
4,280.5	
4,282.5	
4,288.7	
4,289.4	
4,295.3	
4,296.3	
4,296.6	
4,339.9	
4,344.2	
4,348.1	
4,352.0	
4,354.0	
4,355.0	
4,361.9	
4,453.1	
4,492.1	
4,500.0	

Casing Strings	
Casing Description: Surface	Run Date: 4/18/1968
Casing Description: Production	Run Date: 4/18/1968

Tubing Components						
Item Desc	Jts	Run Date	Top (ftKB)	Bot (ftKB)	OD (in)	ID (in)
Tubing Hanger	1	6/23/2015	11.2	11.5	6.98	2.01
Double Pin	1	6/23/2015	11.5	12.1	2 3/8	1 15/16
Tubing	1	6/23/2015	12.1	42.7	2 3/8	1 15/16
Pup Joint	1	6/23/2015	42.7	44.3	2 3/8	1 15/16
Tubing	140	6/23/2015	44.3	4279.9	2 3/8	1 15/16
Profile Nipple	1	6/23/2015	4279.9	4279.5	2.7	1 7/8
Seal Assembly	1	6/23/2015	4279.5	4281.4	3	1.995

Other String Components						
Item Desc	Len (ft)	Run Date	Top (ftKB)	Bot (ftKB)	OD (in)	ID (in)
Pkr: Mod D	2.51	4/4/2015	4,282.5	4,282.5	4.57	2 11/16
Pup Joint	6.15	4/4/2015	4,282.5	4,288.7	2 3/8	1.995
Profile Nipple-X	0.59	4/4/2015	4,288.7	4,289.3	2.74	1 7/8
Pup Joint	6.14	4/4/2015	4,289.3	4,295.3	2 3/8	1.995
Profile XN	0.93	4/4/2015	4,295.3	4,296.3	2.96	1.791
Wireline Guide	0.41	4/4/2015	4,296.3	4,296.7	3.06	1.995

Perforations	
Date	Current Status
4/18/1968	Open @ 345' - 4,152 ftKE
4/18/1968	Open @ 355' - 4,352 ftKE
6/16/1975	Open @ 340' - 4,144 ftKE
12/16/2005	Squeezed @ 1,848' - 1,855 ftKE
3/28/2006	Squeezed @ 1,850' - 1,851 ftKE
3/28/2006	Squeezed @ 2,050' - 2,051 ftKE
1/13/2016	Open @ 340' - 4,352 ftKE

Jobs	
JED	Job Purpose
4/18/1968	Perforate and acidize phase 4 injector that will not inject
10/31/1972	Completed oil well. POP. IP - 262 BO. 47 MCF (est).
6/16/1975	Perf from 4340'-4344'
9/22/1975	Oil frac w/ 14,500# 10-20 sand
12/8/1988	Acidize w/1200 gal 15% HCL, Post Inj. Rate: 0 BW @ 1600#
1/21/1992	TA. Set CICR @4315' w/20 sx cmt. 40 jts killstring.
12/16/2005	Tested the Shannon, Perf'd 1848'-55' & swabbed, No gas, sqz'd perms w/ 50 sx cmt, Perf'd 1855'-80' & swabbed, No gas. CICR @ 1830' sqz'd perms w/50 sx cmt
3/28/2006	TA'd, Perf'd from 1650'-51' & 2050'-51', set CICR @1700' sqz'd 1650'-51' w/50 sx cmt & 2050'-51' w/60 sx cmt set CIBP @2060' perf'd & sqz'd 1848'-55' w/ 60 sx cmt
10/15/2013	MIT Test
6/24/2015	Re-equip for CO2 - Prod
11/6/2015	MIT to 810# Passed:
11/24/2015	perf wash
12/5/2015	spot surfactant/biocide
2/1/2016	Perf Muddy, injection rate test, BHP
3/31/2016	tag bottom
4/26/2016	injection profile log
9/8/2017	



PRESSURE PUMPING LLC

Denbury Onshore LLC

Bell Creek

Broadus, MT
BCU Vertical Fracs
Sand Frac
Per Well, 2 Wells/day

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Prepared for : Mr. Charlie Hagan
Denbury Onshore LLC
972-673-2172
charlie.hagan@denbury.com

Prepared by: Rick Boyce
QES PRESSURE PUMPING LLC
(307) 388-4331

February 8, 2018

Service Point: Gillette, WY: (307) 686-4914

Account Manager: Rick Boyce
(307) 388-4331

DISCLAIMER NOTICE

This technical data is presented in good faith and QES Pressure Pumping LLC assumes no liability for recommendations or advice made concerning results to be obtained from the use of any products or service. The prices quoted are only estimates and may vary depending on equipment, materials used, hours and the work actually performed. Pricing does not include federal, state & local taxes that may apply. This quotation will remain in effect for 45 days from the date on proposal unless otherwise stated.

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Cover

Denbury Onshore LLC
 Bell Creek
 BCU Vertical Fracs
 Broadus, MT
 8-Feb-18



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JOB DATA

MONTANA BOARD OF OIL &
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Purpose Of Treatment: Enhance Production
 Job Type: Sand Frac
 Treating Conductor:
 Est. Average Pump Rate (bpm): 10
 Est. Average Treating PSI:
 Max. Pressure (psi):

Fluid Requirements:	Fluid Description	Volume	U.O.M.
	20# Linear	1,910	Gallons
	20# Xlink	10,250	Gallons

Proppant/Divert Requirements:	Proppant/Divert Description	Volume	U.O.M.
	16/30 Northern White Sand	20,000	lb

Well/Job Data:	Well/Job Data Description

Information/Directions/Comments:
 QES Pressure Pumping LLC may incorporate the daily use of Knight Fire Suppression Systems (Fire Suppresant System/Certified Firefighter/EMT Personnel) on all fracturing jobs for the safety of "ALL" personnel & equipment on the well site during the pressure pumpi ng operation.



Denbury Onshore LLC
 Bell Creek
 BCU Vertical Fracs
 Broadus, MT
 8-Feb-18

FLUID DESCRIPTION

Fluid 1: 20# Linear
 Fluid 2: 20# Xlink

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MATERIAL/S	U.O.M.	LOADING PER/1000 GALLONS									Totals
		Fluid 1 <small>(20#)</small>	Fluid 2 <small>(20#)</small>	Fluid 3	Fluid 4	Fluid 5	Fluid 6	Fluid 7	Fluid 8	Fluid 9	
WG-1SLR, Slurried Guar Gel	gal	5.00	5.00								61
NE-1, Non Emulsifier (Nonionic)	gal	2.00	2.00								25
BIO-2L, Liquid Biocide (THPS)	gal	0.20	0.20								3
Buffer-4L, High pH (sodium hydroxide)	gal		0.10								2
XLB-1, Self Buffered Borate Crosslinker	gal		1.50								16
B-4LE, High pH/Low Temp. <140°F Enzyme Breaker	gal		0.30								4
B-1, Oxidizer Breaker (AP)	lb	1.00	1.00								13
KCL-2Sub, KCl Substitute (anionic product tolerant)	gal	2.00	2.00								25
											0
											0
											0
											0
											0
											0
											0
											0
											0
Fluid and Storage Requirements:											0



PRESSURE PUMPING LLC

CAS INFORMATION:

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Additive	Max Loading* 1000 Gal	Specific Gravity	Additive Quantity	Mass (lbs)
WATER (Customer Supplied)	1,000.00	1.00	12,160	101,475
WG-1SLR, GUAR SLURRY	5.00	1.04	61	530
NE-1, NON EMULSIFIER	0.50	0.95	25	198
BIO-2L, BIOCID	0.20	1.00	3	25
BUFFER -4L	1.00	1.22	7	20
XLB-1, CROSSLINKER	1.00	1.36	16	181
B-4LE, ENZYME BREAKER	2.00	1.03	4	34
B-1, BREAKER	1.00	2.55	13	13
KCI-2SUB, KCI SUBSTITUTE	0.50	1.08	25	226
NORTHERN WHITE SAND	4.00	2.65	20,000	20,000
				Total Slurry Mass (Lbs)
				122,704

Name	Ingredients	Chemical Abstract Service Number (CAS #)	Maximum Ingredient Concentration in Additive (% by mass)**	Total Component Mass in HF Fluid (lbs)	Maximum Ingredient Concentration in HF Fluid (% by mass)**
WATER (Customer Supplied)	Water	7732-18-5	100.00%	101,475	82.69918%
NORTHERN WHITE SAND	Silica Quartz	14808-60-7	100.00%	20,000	16.29939%
WG-1SLR, GUAR SLURRY	Solvent Naptha (pet.) heavy aliphatic	64742-47-8	60.00%	318	0.25937%
	Guar Gum	9000-30-0	50.00%	265	0.21614%
NE-1, NON EMULSIFIER	Methanol	67-56-1	30.00%	60	0.04851%
KCI-2SUB, KCI SUBSTITUTE	Choline Chloride	67-48-1	70.00%	158	0.12878%
	Water	7732-18-5	30.00%	68	0.05519%
BUFFER -4L	Sodium Hydroxide	1310-73-2	30.00%	6	0.00498%
	Water	7732-18-5	70.00%	14	0.01162%
XLB-1, CROSSLINKER	Sodium Tetraborate Decahydrate	1303-96-4	30.00%	54	0.04436%
	Alkyl Alcohol C10-C16	67762-41-8	30.00%	54	0.04436%
	Sodium Hydroxide	1310-73-2	30.00%	54	0.04436%
B-1, BREAKER	Ammonium persulfate	7727-54-0	100.00%	13	0.01059%
	Water	7732-18-5	90.00%	31	0.02522%
B-4LE, ENZYME BREAKER	Sodium Chloride	7647-14-5	15.00%	5	0.00420%
	Mannanase Enzymes	37288-54-3	2.00%	1	0.00056%
BIO-2L, BIOCID	Tetrakis(hydroxymethyl) Phosphonium Sulfate	55566-30-8	20.00%	5	0.00408%
	Water	7732-18-5	80.00%	20	0.01632%

100.00%

Denbury Onshore LLC
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BCU Vertical Fracs
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PRODUCT DESCRIPTION

WG-1SLR, Slurried Guar Gel

FC5451	
General Information	WG-1SLR, Slurried Guar Gel is a preslurried form of a high-yield guar gum for preparing fracturing fluids. It provides exceptionally fast, "fisheye"-free hydration even in cold water.
Uses & Applications	WG-1SLR, Slurried Guar Gel can be used wherever conventional guar is used. The slurry is 4 pounds of guar per gallon of slurry. The rapid hydration allows "on the fly" mixing with fairly low-volume hydration tank in line to the blender.
Density in Sp.Gr.	1.019
Specs	Tan/yellowish slurry liquid-Water soluble

NE-1, Non Emulsifier (Nonionic)

FC5575	
General Information	NE-1 is a highly effective inexpensive nonionic nonemulsifier for oilfield acid and fracs.
Uses & Applications	NE-1 typically is used at 1 to 4 gpt.
Density in Sp.Gr.	0.898
Specs	Pale yellow liquid-Water soluble

BIO-2L, Liquid Biocide (THPS)

FC5281	
General Information	BIO-2L, Liquid is a liquid biocide based on Tetrakis (Hydroxymethyl) Phosphonium Sulfate (THPS), for use in oilfield water applications such as fracturing fluids. Used as directed, it is a highly effective and economical in controlling most sulfate-reducing and acid-producing bacteria as well as algae and fungi. Biocide, Liquid penetrates biofilms and works synergistically with chlorine- and bromine- based biocides.
Uses & Applications	BIO-2L, Liquid is best added to frac or flush water as water is transferred. Loadings as low as .1 gpt have been shown to be effective in relatively clean water. Dosages as high as 1 gpt may be required in badly contaminated waters.
Density in Sp.Gr.	0.95
Specs	Clear colorless liquid-Water soluble

Buffer-4L, High pH (sodium hydroxide)

FC5528	
General Information	Buffer-4L, liquid caustic is used in water base fluid to increase the pH.
Uses & Applications	Buffer-4L, liquid caustic are used as increase pH in cleanup and stimulation fluids when required.
Density in Sp.Gr.	1.53
Specs	Clear liquid-Water soluble

XLB-1, Self Buffered Borate Crosslinker

FC5500	
General Information	XLB-1 is a self buffering, highly concentrated borate crosslinker for fracturing fluids. It requires no pH control additive.
Uses & Applications	Normal loadings for XLB-1 range from .6 to 1.4 gpt when used in 30 to 35 ppt guar based gel. Higher loadings may be needed in cold weather or with "on the fly" liquid gelling agents where incomplete hydration of the guar may be occurring. It can be broken with oxidizing breakers or high pH enzyme breakers.
Density in Sp.Gr.	1.303
Specs	Clear colorless liquid-Water soluble

B-4LE, High pH/Low Temp. <140°F Enzyme Breaker

FC5478	
General Information	B-4L is a liquid enzyme breaker designed specifically for borate crosslinked fluid with pH of up to 10.
Uses & Applications	B-4L is typically loaded at .2 to 2 gpt. B-4L has a shelf life of 90 days.
Density in Sp.Gr.	1.12
Specs	Light brown liquid-Water soluble

Denbury Onshore LLC
Bell Creek
BCU Vertical Fracs
Broadus, MT
8-Feb-18

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PRODUCT DESCRIPTION

B-1, Oxidizer Breaker (AP)

FC5475

General Information B-1, APS is an oxidative breaker for fracturing fluids at low to moderate temperatures.

Uses & Applications B-1, APS is typically used in fracturing treatments at loadings of .2 to 2 ppt of fluid. Fluid temperatures most appropriate for Ammonium persulfate are from around 80° F to 190° F.

Density in Sp.Gr. 1.98

Specs White granules-Water soluble

KCL-2Sub, KCl Substitute (anionic product tolerant)

FC5301

General Information KCL-2Sub is a slightly cationic highly concentrated liquid potassium chloride substitute for oilfield use. Unlike many other KCl substitutes, KCL Substitute is very low in toxicity and contains no surfactants. KCL-2Sub is a 70% Choline Chloride base clay protection product. KCL-2Sub can be used with an Anionic Friction Reducer with little to no effect on the efficiency of the anionic friction reducer.

Uses & Applications KCL-2Sub can be used in any application where the stabilization of formation clays are required. KCL Substitute typical loadings of .5 to 1 gpt will give the base fluid the equivalent clay stabilization of 2% dry potassium chloride in most formations.

Density in Sp.Gr. 1.13

Specs Clear liquid-Water soluble

General Information

Uses & Applications
Density in Sp.Gr.

Specs

General Information

Uses & Applications
Density in Sp.Gr.

Specs

General Information

Uses & Applications
Density in Sp.Gr.

Specs

General Information

Uses & Applications
Density in Sp.Gr.

Specs

MONTANA SAGE GROUSE
HABITAT CONSERVATION PROGRAM



STEVE BULLOCK, GOVERNOR

1539 ELEVENTH AVENUE

STATE OF MONTANA

PHONE: (406) 444-0554
FAX: (406) 444-6721

PO BOX 201601
HELENA, MONTANA 59620-1601

Project 2814
Governor's Executive Orders 12-2015 and 21-2015
BCU 3410 - Fracture Stimulate
API# 25-075-21344

Naomi Johnson
5920 Legacy Drive
Piano, TX, 75024

February 20, 2018

Dear Ms. Johnson,

The Montana Sage Grouse Habitat Conservation Program received a request for consultation and review of your project or proposed activity on February 15, 2018. Based on the information provided, all or a portion of this project is located within General Habitat for sage grouse.

Executive Orders 12-2015 and 21-2015 set forth Montana's Sage Grouse Conservation Strategy. Montana's goal is to maintain viable sage grouse populations and conserve habitat so that Montana maintains flexibility to manage our own lands, our wildlife, and our economy and a listing under the federal Endangered Species Act is not warranted in the future.

The program has completed its review, including:

Project Description:

Project Type: Energy - Oil/Gas

Project Disturbance: 0.398 Acres

Construction Timeframes: February, 2018 to February, 2018, Temporary (< 1 Year)

Disturbance Timeframes: February, 2018 to February, 2018, Temporary (< 1 Year)

Project Location:

Legal: Township 8 South, Range 54 East, Section 34

County: Powder River

Ownership: Private

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Director's Office: (406) 444-2074



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Executive Orders 12-2015 and 21-2015 Consistency:

The project proposes to conduct well work in designated General Habitat for sage grouse.

Denbury Inc. will be using a workover rig to perform well work on an existing well with an existing wellsite. There will be no new ground disturbance. Well work will only take a few days to complete. Based on the information you provided, your project is not within two miles of an active sage grouse lek.

Recommendations:

These stipulations are designed to maintain existing levels of suitable sage grouse habitat by managing uses and activities in sage grouse habitat to ensure the maintenance of sage grouse abundance and distribution in Montana. Development should be designed and managed to maintain populations and sage grouse habitats.

- Weed management is required within General Habitat for sage grouse. Reclamation of disturbed areas must include control of noxious weeds and invasive plant species, including cheatgrass (*Stenotaphrum secundatum*) and Japanese brome (*Bromus japonicus*).

Your activities are consistent with the Montana Sage Grouse Conservation Strategy. Your proposed project or activity may need to obtain additional permits or authorization from other Montana state agencies or possibly federal agencies. They are very likely to request a copy of this consultation letter, so please retain it for your records.

Please be aware that if the location or boundaries of your proposed project or activity change in the future, or if new activities are proposed within one of the designated sage grouse habitat areas, please visit <http://www.sagegrouse.mt.gov/projects/> and submit the new information.

Thanks for your interest in sage grouse and your commitment to taking the steps necessary to ensure Montana's Sage Grouse Conservation Strategy is successful.

Sincerely,



Carolyn Stone
Montana Sage Grouse Habitat Conservation Program Manager



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 stung 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 immediate 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.