OCD-ARTESIA

Form 3160-5
(June 2015)

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT

FORM APPROVED
OMB NO. 1004-0137
Expires: January 31, 2018

**SUNDRY NOTICES AND REPORTS ON WELLS**

***Do not use this form for proposals to drill or to re-enter an abandoned well. Use form 3160-3 (APD) for such proposals.***

***SUBMIT IN TRIPLICATE - Other instructions on page 2***

5. Lease Serial No.
NMNM0404441

6. If Indian, Allottee or Tribe Name

7. If Unit or CA/Agreement, Name and/or No.

1. Type of Well
☐ Oil Well ☐ Gas Well ☒ Other: INJECTION

8. Well Name and No.
BARCLAY 11H FED 1

2. Name of Operator
DEVON ENERGY PROD CO LP
Contact: CHANCE BLAND
E-Mail: chance.bland@dvn.com

9. API Well No.
30-015-25419

3a. Address
123 W. SHERIDAN AVE
OKLAHOMA CITY, OK 73102

3b. Phone No. (include area code)
Ph: 405-693-9277

10. Field and Pool or Exploratory Area
LIVINGSTON RIDGE; SOUTH

4. Location of Well *(Footage, Sec., T., R., M., or Survey Description)*
Sec 11 T23S R31E Mer NMP SENE 2180FNL 660FEL

DENIED

11. County or Parish, State
EDDY COUNTY, NM

12. CHECK THE APPROPRIATE BOX(ES) TO INDICATE NATURE OF NOTICE, REPORT, OR OTHER DATA

| TYPE OF SUBMISSION | TYPE OF ACTION | | | |
|---|---|---|---|---|
| ☒ Notice of Intent | ☐ Acidize | ☐ Deepen | ☐ Production (Start/Resume) | ☐ Water Shut-Off |
| ☐ Subsequent Report | ☐ Alter Casing | ☐ Hydraulic Fracturing | ☐ Reclamation | ☐ Well Integrity |
| ☐ Final Abandonment Notice | ☐ Casing Repair | ☐ New Construction | ☐ Recomplete | ☒ Other |
| | ☐ Change Plans | ☐ Plug and Abandon | ☐ Temporarily Abandon | |
| | ☐ Convert to Injection | ☐ Plug Back | ☐ Water Disposal | |

13. Describe Proposed or Completed Operation: Clearly state all pertinent details, including estimated starting date of any proposed work and approximate duration thereof. If the proposal is to deepen directionally or recomplete horizontally, give subsurface locations and measured and true vertical depths of all pertinent markers and zones. Attach the Bond under which the work will be performed or provide the Bond No. on file with BLM/BIA. Required subsequent reports must be filed within 30 days following completion of the involved operations. If the operation results in a multiple completion or recompletion in a new interval, a Form 3160-4 must be filed once testing has been completed. Final Abandonment Notices must be filed only after all requirements, including reclamation, have been completed and the operator has determined that the site is ready for final inspection.

Devon Energy Prod Co., L.P. respectfully requests to increase maximum permitted injection pressure by running a Step Rate Test per the following procedure:

DENIED

NM OIL CONSERVATION
ARTESIA DISTRICT
JUL 12 2017

1. Wait on BLM sundry review and approval of sundry.
2. Notify BLM 24 hours before beginning test.
3. Discontinue injection for minimum 48 hours prior to test. Document pressures.
4. MIRU pumps, iron and stage injection fluid.
5. ~~Initiate injection at a rate of 7 GPM. Step up rates in 30 GPM stages, each for 45 minutes, to a maximum of 150 GPM. Hold final rate for 90 minutes (utilizing a down-hole pressure gauge).~~ Begin COA procedure
6. Shut in and record pressures.
7. Conclude test and RQMO pumps.
8. Run MIT test and chart. File MIT w/ NMOCD office.
9. Return well to injection service.

RECEIVED

150 gpm = 5,143 BPD

INJECTION RATE INCREASES ARE APPROVED BY NMOCD - SANTA FE ENGINEERING BUREAU. CONTACT THEM FOR APPROVAL.

NMOCD 7/12/17

SEE ATTACHED FOR CONDITIONS OF APPROVAL

14. I hereby certify that the foregoing is true and correct.
**Electronic Submission #377364 verified by the BLM Well Information System**
**For DEVON ENERGY PROD CO LP, sent to the Carlsbad**
**Committed to AFMSS for processing by DEBORAH MCKINNEY on 05/30/2017 ()**

Name *(Printed/Typed)* CHANCE BLAND — Title AUTHORIZED REPRESENTATIVE

Signature (Electronic Submission) — Date 05/26/2017

APPROVED

**THIS SPACE FOR FEDERAL OR STATE OFFICE USE**

Approved By _____ Title _____ Date JUN 23 2017

Conditions of approval, if any, are attached. Approval of this notice does not warrant or certify that the applicant holds legal or equitable title to those rights in the subject lease which would entitle the applicant to conduct operations thereon. Office

BUREAU OF LAND MANAGEMENT
CARLSBAD FIELD OFFICE

Title 18 U.S.C. Section 1001 and Title 43 U.S.C. Section 1212, make it a crime for any person knowingly and willfully to make to any department or agency of the United States any false, fictitious or fraudulent statements or representations as to any matter within its jurisdiction.

(Instructions on page 2)

**** OPERATOR-SUBMITTED ** OPERATOR-SUBMITTED ** OPERATOR-SUBMITTED ****

# Conditions of Approval

## Devon Energy Production Company L.P.
## Barkley - 01, API 3001525419
## T23S-R31E, Sec 11, 2180FNL & 660FEL
## June 23, 2017

1. **Operator is required to have the BLM approved NOI procedure with applicable conditions of approval on location for this workover operation.**
2. Due to being within the Lesser Prairie Chicken habitat, this workover activity will be restricted to the hours of 9:00am through 3:00am for the period of March 1 through June 15.
3. Stabilized injection required, delay the test until disposal volume rates and injection pressures have leveled out for about 3 months.
4. Subject to like approval by the New Mexico Oil Conservation Division.
5. Notify BLM 575-200-7902 Eddy Co. as work begins. Some procedures witnessed. If there is no response, call 575-361-2822, leave a voice mail with the API#, workover purpose, and a call back phone number.
6. **Submit a chart and MIT record taken in the last five years.**
7. **BLM is requesting an electronic copy (Adobe, pdf, or tiff) of a cement bond log recorded 07/23/2003 covering depths of 6420 to 4350.** Attach the CBL to a pswartz@blm.gov email.
8. **Operator targeted** maximum bbl/day 5150 injection rate. **The objective is to avoid fracturing the injection formation.**
9. **Take a charted record of shut in psig for no less than 48 hours. If the wellhead shut in psig is not less than the approved injection pressure, bled the wellhead pressure below that approved injection pressure before beginning the Step Rate Test.**
10. The Step Rate Test fluid used should be the same as the proposed injection fluid.
11. Flow rates controlled with a constant flow regulator, measured with a turbine flow meter calibrated within 0.1 bbl/min, and recorded on the SRT data sheet.
12. Use a device (located within 50ft above the top injection interval) to transmit formation pressures to the surface and a surface pressure device with accuracies of ±10psig. The five minute values are to be recorded on the data sheet at the surface during the SRT.
13. **Record in the input cell(s) of the attached "STEP RATE TEST DATA for BLM, CFO"** (SRT data sheet) **the data information as indicated. Include the completed data information with a subsequent sundry and request a wellhead pressure change for BLM approval.**
14. **Preform a minimum of seven steps, recording rates to ±0.1bpm, surface pressures and formation pressures collected to ±10psig in five minute intervals. Record the bpm rate changes with the formation pressure and surface pressure readings in real time at the surface during the field operations.**

15. **The last two five minute surface pressure readings of each step (minimum of 30 minutes) are to be within 15psig of each other. If not, hold that step injection rate past the 30 minute step until two consecutive pressure readings are within 15psig. Record the average of those last two pressure readings and the average of the last two rates as the "Data Point" for that Step #.**
16. When formation breakdown pressure not achieved at the **targeted barrels per day rate,** the formation is accepting the injection fluid without fracturing, which is the **objective**.
17. Record surface and formation pressures at the instant of shut in, at five, ten, and fifteen minutes at the surface after the rate pumps stop. Post SRT instant formation shut-in pressure is vital to determining permitted pressures after a fracture does occur.
18. The surface pressure transducer should be located between the rate pump shut off valve and the wellhead for these readings.
19. When the formation fracture pressure has been exceeded it may be evidenced by two rate-pressure combinations graphed with a slope less than the previous steps' slope of data.
20. Record the bottom hole Instantaneous Shut-in Pressure. After a fracture this ISIP is the minimum pressure that will hold this formation open, at this well. The maximum surface pressure BLM will approve is fifty psig less than the wellhead fracture pressure.
21. Provide BLM with the tabulated "STEP RATE TEST DATA for BLM, CFO" data. Submit a (BLM Form 3160-**5** subsequent report (dated daily) via BLM's Well Information System;
22. Submit an electronic copy (Adobe, .pdf , or .tiff formats) of an injection profile survey for the well for review by BLM after the increased rate and pressure has stabilized.

# STEP RATE TEST DATA for BLM, CFO

Operator: Devon Energy Production Company, L.P. Well: BARCLAY 11 H FEDERAL-1

API#: 3001525419 Lease: NM0404441

Data Collection Date: Sfc Loc: T23S-R31E,11.2180n660e

< Cell(s) for Input < Cell(s) that are Calculated by Excel

Tbg O.D.: Tbg Wt.: Grade: Pipe I.D.: Packer at:

Top Injection Depth: **5,210** X 0.20psig/ft = Generic Surface Injection psig: **1042**

Beginning Wellhead psig: Msrd No Flow Formation psig: at Depth of:

Testing Wtr measured wth Mud Wt Scale - lbs/gal: Calc Production Water - lbs/gal:

Target Maximum Rate bpd (barrels per day): **5150**

Minimum Bbls of Disposal Production Water to be on Location for S. R. T.: **574**

**1.** Take a charted record of shut in psig for no less than 48 hours. If the wellhead shut in psig is not less than the approved injection pressure, bled the wellhead pressure below 0.2psig/ft x depth at top of injection before beginning the Step Rate Test.

**2.** Preform a min of 7 steps, recording the rate to ±1/10bpm, surface and down hole pressures to ±10psig in five minute intervals on the surface. **The first three steps should graph a straight line.**

**3.** The last two five minute surface pressure readings of each (minimum 30 minute) step are to be within 15psig of each other. And the last two five minute formation pressure readings of each (minimum 30 minute) step are to be within 15psig of each other. If if either are not, continue 5 minute readings. Record the (surface pressure, formation pressure, & rate) of the last reading as the Data Point for that Step.

**Step 1** 10 StepTest Rate (±05% of maximum bpd/1440 = **0.18**

7 StepTest Rate (05% of maximum bpd/1440 = 0.18 bpm for **Step 1**

| Step 1 data at: | 5 min | 10 min | 15 min | 20 min | 25 min | 30 min |
|---|---|---|---|---|---|---|
| Surface (psig): | | | | | | |
| Formation (psig) | | | | | | |
| bpm: | | | | | | |
| Step 1 data at: | 35 min | 40 min | 45 min | 50 min | 25 min | 60 min |
| Surface (psig): | | | | | | |
| Formation (psig): | | | | | | |
| bpm: | | | | | | |

Start Time:

@ bpd: 0

Data Point **#1**

Sfc psig:

F psig:

@ bpm:

**Step 2** 10 StepTest Rate (±10% of maximum bpd/1440 = 0.4

7 StepTest Rate (10% of maximum bpd/1440 = 0.4 bpm for **Step 2**

| Step 2 data at: | 5 min | 10 min | 15 min | 20 min | 25 min | 30 min |
|---|---|---|---|---|---|---|
| Surface (psig): | | | | | | |
| Formation (psig): | | | | | | |
| bpm: | | | | | | |
| At bpm Rate: | 35 min | 40 min | 45 min | 50 min | 25 min | 60 min |
| Surface (psig): | | | | | | |
| Formation (psig): | | | | | | |
| bpm: | | | | | | |

@ bpd: 0

Data Point **#2**

Sfc psig:

F psig:

bpm:

**Step 3** 10 StepTest Rate (±20% of maximum bpd/1440 = 0.7

7 Step Test Rate (20% of maximum bpd/1440 = 0.7 bpm for **Step 3**

| Step 3 data at: | 5 min | 10 min | 15 min | 20 min | 25 min | 30 min |
|---|---|---|---|---|---|---|
| Surface (psig): | | | | | | |
| Formation (psig): | | | | | | |
| bpm: | | | | | | |
| Step 3 data at: | 35 min | 40 min | 45 min | 50 min | 25 min | 60 min |
| Surface (psig): | | | | | | |
| Formation (psig) | | | | | | |
| bpm: | | | | | | |

@ bpd: 0

Data Point **#3**

Sfc psig:

F psig:

bpm:

# STEP RATE TEST DATA for BLM, CFO

Operator: Devon Energy Production Company, L.P. Well: BARCLAY 11 H FEDERAL-1

API#: 3001525419 Lease: NM0404441

Data Collection Date: Sfc Loc: T23S-R31E,11.2180n660e

| **Step 4** | 10 StepTest Rate (±30% of maximum bpd/1440 = | 1.1 | | | | | |
|---|---|---|---|---|---|---|---|
| | 7 Step Test Rate (40% of maximum bpd/1440 = | 1.4 | bpm for **Step 4** | | | | |
| Step 4 data at: | 5 min | 10 min | 15 min | 20 min | 25 min | 30 min | |
| Surface (psig): | | | | | | | |
| Formation (psig): | | | | | | | @ bpd: 0 |
| Rate bbl/min: | | | | | | | Data Point **#4** |
| Step 4 data at: | 35 min | 40 min | 45 min | 50 min | 25 min | 60 min | |
| Surface (psig): | | | | | | | Sfc psig: |
| Formation (psig): | | | | | | | F psig: |
| bpm: | | | | | | | bpm: |

| **Step 5** | 10 Step Test Rate (±40% of maximum bpd/1440 = | 1.4 | | | | | |
|---|---|---|---|---|---|---|---|
| | 7 Step Test Rate (60% of maximum bpd/1440 = | 2.1 | bpm for **Step 5** | | | | |
| Step 5 data at: | 5 min | 10 min | 15 min | 20 min | 25 min | 30 min | |
| Surface (psig): | | | | | | | |
| Formation (psig) | | | | | | | @ bpd: 0 |
| bpm: | | | | | | | Data Point **#5** |
| Step 5 data at: | 35 min | 40 min | 45 min | 50 min | 25 min | 60 min | |
| Surface (psig): | | | | | | | Sfc psig: |
| Formation (psig): | | | | | | | F psig: |
| bpm: | | | | | | | bpm: |

| **Step 6** | 10 Step Test Rate (±60% of maximum bpd/1440 = | 2.1 | | | | | |
|---|---|---|---|---|---|---|---|
| | 7 Step Test Rate (80% of maximum bpd/1440 = | 2.9 | bpm for **Step 6** | | | | |
| Step 6 data at: | 5 min | 10 min | 15 min | 20 min | 25 min | 30 min | |
| Surface (psig): | | | | | | | |
| Formation (psig) | | | | | | | @ bpd: 0 |
| Rate bbl/min: | | | | | | | Data Point **#6** |
| Step 6 data at: | 35 min | 40 min | 45 min | 50 min | 25 min | 60 min | |
| Surface (psig): | | | | | | | Sfc psig: |
| Formation (psig): | | | | | | | F psig: |
| bpm: | | | | | | | bpm: |

| **Step 7** | 10 Step Test Rate (±80% of maximum bpd/1440 = | 2.9 | | | | | |
|---|---|---|---|---|---|---|---|
| | 7 Step Test Rate (100% of maximum bpd/1440 = | 3.6 | bpm for **Step 7** | | | | |
| Step 7 data at: | 5 min | 10 min | 15 min | 20 min | 25 min | 30 min | |
| Surface (psig): | | | | | | | |
| Formation (psig): | | | | | | | @ bpd: 0 |
| bpm: | | | | | | | Data Point **#7** |
| Step 7 data at: | 35 min | 40 min | 45 min | 50 min | 25 min | 60 min | |
| Surface (psig): | | | | | | | Sfc psig: |
| Formation (psig): | | | | | | | F psig: |
| bpm: | | | | | | | bpm: |

# STEP RATE TEST DATA for BLM, CFO

Operator: Devon Energy Production Compai  Well: BARCLAY 11 H FEDE

API#: 3001525419  Lease: NM0404441

Data Collection Date:  Sfc Loc: T23S-R31E,11.2180n660e

| **Step 8** | 10 Step Test Rate (±100% of maximum bpd/1440 = | | | | 3.6 | bpm for **Step 8** | |
|---|---|---|---|---|---|---|---|
| Step 8 data at: | 5 min | 10 min | 15 min | 20 min | 25 min | 30 min | |
| Surface (psig): | | | | | | | |
| Formation (psig) | | | | | | | @ bpd: 0 |
| Rate bbl/min: | | | | | | | Data Point **#8** |
| Step 8 data at: | 35 min | 40 min | 45 min | 50 min | 25 min | 60 min | |
| Surface (psig): | | | | | | | Sfc psig: |
| Formation (psig): | | | | | | | F psig: |
| bpm: | | | | | | | bpm: |

| **Step 9** | 10 Step Test Rate (120% of maximum bpd/1440 = | | | | 4.3 | bpm for **Step 9** | |
|---|---|---|---|---|---|---|---|
| Step 9 data at: | 5 min | 10 min | 15 min | 20 min | 25 min | 30 min | |
| Surface (psig): | | | | | | | |
| Formation (psig): | | | | | | | @ bpd: 0 |
| bpm: | | | | | | | Data Point **#9** |
| Step 9 data at: | 35 min | 40 min | 45 min | 50 min | 25 min | 60 min | |
| Surface (psig): | | | | | | | Sfc psig: |
| Formation (psig): | | | | | | | F psig: |
| bpm: | | | | | | | bpm: |

| **Step 10** | 10 Step Test Rate (140% of maximum bpd/1440 = | | | | 5.0 | bpm for **Step 10** | |
|---|---|---|---|---|---|---|---|
| Step 9 data at: | 5 min | 10 min | 15 min | 20 min | 25 min | 30 min | |
| Surface (psig): | | | | | | | End Time: **19:13** |
| Formation (psig): | | | | | | | @ bpd: 0 |
| bpm: | | | | | | | Data Point **#9** |
| Step 9 data at: | 35 min | 40 min | 45 min | 50 min | 25 min | 60 min | |
| Surface (psig): | | | | | | | Sfc psig: |
| Formation (psig): | | | | | | | F psig: |
| bpm: | | | | | | | bpm: |

| | Surface | Formation | |
|---|---|---|---|
| **Instant Shut In Pressure:** | | | psig |
| **5 minute Shut In Pressure:** | | | psig |
| **10 minute Shut In Pressure:** | | | psig |
| **15 minute Shut In Pressure:** | | | psig |