

UNITED STATES  
DEPARTMENT OF THE INTERIOR  
BUREAU OF LAND MANAGEMENT

**RECEIVED**  
OCD Artesia  
DEC 21 2012  
NMOCD ARTESIA

FORM APPROVED  
OMB No. 1004-0137  
Expires: October 31, 2014

**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.**

5. Lease Serial No.  
NMOCD000503  
6. Indian, Allottee or Tribe Name

**SUBMIT IN TRIPLICATE** – Other instructions on page 2.

1. Type of Well

Oil Well     Gas Well     Other

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

2. Name of Operator  
Devon Energy Production Company, L.P.

8. Well Name and No.  
Cotton Draw Unit 162H

3a. Address  
333 W. Sheridan Avenue  
Oklahoma City, Oklahoma 73102

3b. Phone No. (include area code)  
405-228-4248

9. API Well No.  
30-015-39730

10. Field and Pool or Exploratory Area  
Cotton Draw; Delaware

4. Location of Well (Footage, Sec., T., R., M., or Survey Description)  
SHL: 330' FSL & 860' FWL, Unit M  
BHL: 330' FNL & 600' FWL, Unit D    Sec 11-25S-31E

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			
<input checked="" type="checkbox"/> Notice of Intent	<input type="checkbox"/> Acidize	<input type="checkbox"/> Deepen	<input type="checkbox"/> Production (Start/Resume)	<input type="checkbox"/> Water Shut-Off
<input type="checkbox"/> Subsequent Report	<input type="checkbox"/> Alter Casing	<input type="checkbox"/> Fracture Treat	<input type="checkbox"/> Reclamation	<input type="checkbox"/> Well Integrity
<input type="checkbox"/> Final Abandonment Notice	<input type="checkbox"/> Casing Repair	<input type="checkbox"/> New Construction	<input type="checkbox"/> Recomplete	<input checked="" type="checkbox"/> Other <u>continue completion</u>
	<input type="checkbox"/> Change Plans	<input type="checkbox"/> Plug and Abandon	<input type="checkbox"/> Temporarily Abandon	<u>operations prior to</u>
	<input type="checkbox"/> Convert to Injection	<input type="checkbox"/> Plug Back	<input type="checkbox"/> Water Disposal	<u>remedial cement job.</u>

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 is requesting that we be allowed to continue completion operations which include fracture stimulation prior to a remedial cement job to satisfy the Conditions of Approval on the approved APD. This is due to a lower than expected cement top on the production casing. We believe that the best remediation efforts can be completed post-job. This is due to a combination of factors including: timing constraints, frac crew availability, monitoring of the annulus during the job, and casing integrity depending on the remediation efforts needed. We believe the current TOC, and quality of cement, allows for adequate zonal isolation and that the stimulation efforts will have no detrimental effects. Our fracture stimulation is scheduled to begin on December 27th.

During the 5-1/2" production casing cement job we were not able to circulate cement to the required height of 3,835' (500' above 9-5/8" intermediate casing shoe). Our CBL shows the TOC to be at ~4,865' (see attached). This leaves us 530' short of the intermediate shoe. The annulus will take 2% KCL at a rate of 7.2 BPM @ 600 psi. Our current plans include pumping a tracer survey down the annulus to determine what zones are taking fluid – this will assist us in determine what zones are taking fluid. This will assist us in determining the most effective remediation effort.

Devon is requesting that we be allowed to continue completion operations which include fracture stimulation. The CBL was run under 1000 psi – it appears to show good bond and a high quality cement that should provide zonal isolation for our planned treatments. We would monitor the intermediate casing throughout the stimulation process and will shut down if any issues arise. Following completion, we will seek guidance to determine the most effective remediation effort that will bring this well back into compliance. See attached documents for additional information.

**ON step 24 – Operator to contact BLM to document and finalize bradenhead squeeze cement program**

14. I hereby certify that

Patti Riechers

Title Regulatory Specialist

Signature

*Patti Riechers*

Date 12/18/2012

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

Approved by

**PETROLEUM ENGINEER**

Title

Date

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

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)

ACCEPTED  
TOS 12/21/2012  
NMOCD  
**APPROVED**  
BUREAU OF LAND MANAGEMENT  
CARLSBAD FIELD OFFICE



Fernandez, Edward <efernand@blm.gov>

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## Sundry Request: Cotton Draw Unit 162H - Low 5-1/2" TOC

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McCorkell, Dan <Dan.McCorkell@dvn.com>

Wed, Dec 19, 2012 at 11:55 AM

To: "efernand@blm.gov" <efernand@blm.gov>

Ed,

I believe I have made the requested changes and highlighted them in red. Thank you for your help.

Thanks,

Dan

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Devon is requesting approval to allow fracture stimulation of the Cotton Draw 162H prior to a remedial cement job to satisfy the Conditions of Approval on our approved APD. This is due to a lower than expected cement top on the production casing. Our fracture stimulation is scheduled to begin on December 27<sup>th</sup>. We are requesting this approval with the belief that the best remediation efforts can be completed post-job; this is due to a combination of factors including: timing constraints, frac crew availability, monitoring of the annulus during the job, and casing integrity depending on the remediation efforts needed. We believe the current TOC, and quality of cement, allows for adequate zonal isolation and that the stimulation efforts will have no detrimental effects.

During the 5-1/2" production casing cement job we were not able to circulate cement to the required height of 3,835' (500' above 9-5/8" intermediate casing shoe). Our CBL shows the TOC to be at ~4,865' (see attached). This leaves us 530' short of the intermediate shoe. The annulus will take 2% KCL at a rate of 7.2 BPM @ 600 psi. Our current plans include pumping a tracer survey down the annulus to determine what zones are taking fluid - this will assist us in determining the most effective remediation effort.

Additional information and justification are as follows:

- The CBL was run under 1000 psi (with a repeat pass at 0 psi) - it shows good bond and a high quality cement that should provide zonal isolation for planned treatments. (See attached electronic copy)
- The frac job will have a maximum pressure of 8500 psi, ~80% of burst. (See attached for stimulation design and procedure)
- During the jobs we will open and actively monitor the 9-5/8" intermediate casing. A small initial flow is to be expected however at continuous flow shut down the job immediately - due to concerns of casing integrity.
- Issues that would cause the frac job to shut down would include, but are not limited to: large increases in intermediate casing pressure, casing integrity issues, and any significant drops in treating pressure indicating a loss of zonal isolation.
- Following the completion of this well, and based on tracer survey results, the preferred primary remediation effort will be a bradenhead squeeze down the annulus in an attempt to keep the casing intact. This will occur after flowback to reduce any EH&S concerns related to high pressures, but prior to placing this well on rod pump. If a bradenhead squeeze will not bring this well into spec, we would set a RBP, perforate the production casing above the TOC, and circulate cement to the required height of 3,835' or higher.

**COTTON DRAW Unit 162H  
DELAWARE HORIZONTAL COMPLETION  
WBS #: 98-04746**

**OBJECTIVE:** Delaware Brushy Canyon Completion.

**DIRECTIONS:** From CR 786 and CR 791 go south on 791 3.1 miles, turn left and go east 1.9 miles, turn right and go south 0.9 miles to a two track trail road and go west 0.9 miles and location is on the right (north) 340'.  
(From C102)

**WELL DATA:**

Reference elevation: KB 3270 (25' AGL)

Casing: 13-3/8" 48# H-40 @ 764' cmt'd w/900 sx to surface.  
9-5/8" 40# K-55 BTC @ 4335' cmt'd w/1502 sx surface.  
5 1/2" 17# P-110 BTC & LTC @ 12,595' cmt'd w/1875 sx. **Lost circulation during flush.**

TD: 12,595' MD (8198' TVD).  
PBSD: 12,547' MD  
TOC: ~4,865'

Marker Joints: 7,337'-7,359', 8,833'-8,855', 11,876'-11,898' (per WellView drilling report)

Contact	Company	Office #	Mobile #
Dan McCorkell	Devon (engr)	405-228-7528	405-443-8697
Mike Sarabia	B.J. Services (stim)	575-746-3140	
Craig Foster	Devon (purchasing)	405 228-8875	(405) 343-0982
Lloyd Warden	J-W Wireline	575-706-0339	575-706-0339
Chris Crews	BHI Centrilift	(432) 694-9676	(432) 254-6485

**PROCEDURE:**

1. MIRU PU. NU BOP and test per company guidelines: RIH w/bit, DC's & 2-7/8" 6.5# N-80 tubing. Tag PBSD @ 12,547', circulating FW.
2. Circulate hole w/2% KCl. POH with tubing.
3. MIRU WLSU. NU WLBOPE and test per company guidelines.
4. RIH standard CBL to top of curve and run to find TOC. RD wireline.
5. RIH w/ pressure-actuated TCP guns. Perf intervals are: **12,523' - 25' (6 SPF, 12 holes)** and **12,293' - 95'** (10 holes), and **12,064 - 65'** (8 holes). Hole size 0.39", minimum 24" penetration.
6. Pressure up to ±2000 psi to fire TCP guns, per service company recommendation. Break down perfs with reverse unit. POOH and LD guns.
- 7.** Due to a lower than expected TOC pump tracer fluid down production and intermediate casing annulus. RIH with log and determine zones taking fluid. Report results back to **engineer and BLM.**
- 8.** RU BJ Services. NU frac valve and frac down casing per BHI proposal #856350185A (attached). Spearhead frac with acid and flush with linear gel. **Open and actively monitor 9 5/8" casing for fluid flow indicating casing integrity issues during job. A small initial flow is to be expected however - shut down immediately if flow becomes continuous. Max treating pressure is 8500 psi.**

## COTTON DRAW Unit 162H

9. RU wireline service unit. NU wireline BOPE and test.
10. Use pump truck down Halliburton composite frac plug (ball-drop type) and 3-1/8" scallop guns to perf 0.39" hole size, minimum 24" penetration. Set BP @ 11,950' +/- and PUH to perforate **11,833' - 35' (6 SPF, 12 holes)**, **11,603' - 05' (10 holes)**, and **11,374' - 75' (8 holes)**. Hole size 0.39", minimum 24" penetration.
11. ND wireline. Drop frac ball, then frac 11,374' - 11,833' down casing per BJ proposal #856350185A (attached). Spearhead with 7½% HCl and flush with 10# linear gel.
12. RU wireline service unit. NU wireline BOPE and test. Use pump truck down Halliburton composite frac plug (ball-drop type) and 3-1/8" scallop guns. Set BP @ 11,250' +/- and PUH to perforate **11,143' - 11,45' (6 SPF, 12 holes)**, **10,913' - 15' (10 holes)**, and **10,684' - 85' (8 holes)**
13. ND wireline. Drop frac ball and frac **10,684' - 11,143'** down casing per BJ proposal #856350185A (attached). Spearhead with 7½% HCl and flush with 10# linear gel.
14. RU wireline service unit. NU wireline BOPE and test. Use pump truck down Halliburton composite frac plug (ball-drop type) and 3-1/8" scallop guns. Set BP @ 10,550' +/- and PUH to perforate **10,453' - 55' (6 SPF, 12 holes)**, **10,223' - 25' (10 holes)**, and **9,994' - 95' (8 holes)**.
15. ND wireline. Drop frac ball and frac **9,994' - 10,455'** down casing per BHI proposal #856350185A (attached). Flush with 10# linear gel
16. RU wireline service unit. NU wireline BOPE and test. Use pump truck down Halliburton composite frac plug (ball-drop type) and 3-1/8" scallop guns. Set BP @ 9,850' +/- and PUH to perforate **9,763' - 9,765' (6 SPF, 12 holes)**, **9,533' - 35' (10 holes)**, and **9,304' - 05' (8 holes)**.
17. ND wireline. Drop frac ball and frac stage 5 **9,304' - 9,765'** down casing per BHI proposal #856350185A (attached). Spearhead with 7½% HCl and flush with 10# linear gel.
18. RU wireline service unit. NU wireline BOPE and test. Use pump truck down Halliburton composite frac plug (ball-drop type) and 3-1/8" scallop guns. Set BP @ 9,200' +/- and PUH to perforate **9,073' - 75' (6 SPF, 12 holes)**, **8,843' - 45' (10 holes)**, and **8,614' - 15' (8 holes)**.
19. ND wireline. Drop frac ball and frac stage 6 from **8,614' - 9,075'** down casing per BHI proposal #856350185A (attached). Spearhead with 7½% HCl and flush with 10# linear gel.
20. RD wireline and B.H.I services.
21. OWU and flow back @ ½ BPM for hours, then open up to 2 BPM and flow until dead or remainder of day.
22. NU BOPE and test. Then RIH with BHA on tubing to clean out plugs to PBTD.
23. PU Baker Hughes Centrilift ESP assembly and 2-7/8" production tubing and RIH to 7585' per service company recommendations. This will be the same pump and assembly as the CDU 159.
24. Based on results from tracer survey a bradenhead squeeze should be attempted to provide a continuous column of cement from our current TOC to 3835' or shallower. MIRU BHI to pump approx. 600 ft<sup>3</sup> Class H and flush with 560 ft<sup>3</sup> brine. (These volumes will be confirmed by tracer survey in step 7.)
25. PWOP and turn over to production.

DPM

12/18/2012