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ATS-16-338

Form 3160-3
(March 2012)

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

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT

APPLICATION FOR PERMIT TO DRILL OR REENTER

1a. Type of work: ☑ DRILL ☐ REENTER	5. Lease Serial No. NMLC0061863A
	6. If Indian, Allotee or Tribe Name
	7. If Unit or CA Agreement, Name and No.
1b. Type of Well: ☑ Oil Well ☐ Gas Well ☐ Other ☑ Single Zone ☐ Multiple Zone	8. Lease Name and Well No. Cotton Draw 32 State Fed Com 5H (39237)
2. Name of Operator Devon Energy Production Company, L.P. (6137)	9. API Well No. 30-025-43274
3a. Address 333 West Sheridan Avenue Oklahoma City, OK 73102-5010 / 3b. Phone No. (include area code) 405-552-6558	10. Field and Pool, or Exploratory Paduca; Delaware, North (49490)
4. Location of Well (Report location clearly and in accordance with any State requirements.*) At surface Unit J, Sec 32-T24S-R32E, 2400' FSL 1980' FEL PP: 2200' FSL 1980' FEL At proposed prod. zone Unit O, Sec 5-T25S-R32E, 330' FSL 1980' FEL	11. Sec., T. R. M. or Blk. and Survey or Area SHL: Sec 32-T24S-R32E
14. Distance in miles and direction from nearest town or post office* Approximately 31 miles Southeast of Carlsbad, NM	12. County or Parish Lea / 13. State NM
15. Distance from proposed* location to nearest property or lease line, ft. (Also to nearest drig. unit line, if any) See attached map / 16. No. of acres in lease 1882.600 Acres / 17. Spacing Unit dedicated to this well 240 Acres	
18. Distance from proposed location* to nearest well, drilling, completed, applied for, on this lease, ft. See attached map / 19. Proposed Depth 15,433' MD / 8330' TVD / 20. BLM/BIA Bond No. on file CO-1104	
21. Elevations (Show whether DF, KDB, RT, GL, etc.) 3474.9' GL / 22. Approximate date work will start* 5/15/2016 / 23. Estimated duration 45 Days	

24. Attachments

The following, completed in accordance with the requirements of Onshore Oil and Gas Order No.1, must be attached to this form:

1. Well plat certified by a registered surveyor.
2. A Drilling Plan.
3. A Surface Use Plan (if the location is on National Forest System Lands, the SUPO must be filed with the appropriate Forest Service Office).
4. Bond to cover the operations unless covered by an existing bond on file (see Item 20 above).
5. Operator certification
6. Such other site specific information and/or plans as may be required by the BLM.

25. Signature Linda Good	Name (Printed/Typed) Linda Good	Date 12/14/2015
Title Regulatory Compliance Specialist		
Approved by (Signature) James A. Amos	Name (Printed/Typed)	Date MAY 16 2016
Title FOR FIELD MANAGER	Office BLM-CARLSBAD FIELD OFFICE	

Application approval do... title to those rights in the subject lease which would entitle the applicant to conduct operations there... Conditions of approval, ...

APPROVAL FOR TWO YEARS

See attached NMOCD Conditions of Approval

Title 18 U.S.C. Section 10... States any false, fictitious ... knowingly and willfully to make to any department or agency of the United States ... its jurisdiction.

(Continued on pag...

*(Instructions on page 2)

APPROVAL SUBJECT TO GENERAL REQUIREMENTS AND SPECIAL STIPULATIONS ATTACHED

SEE ATTACHED FOR CONDITIONS OF APPROVAL

05/24/16

Witness Surface Casing

Carlsbad Controlled Water Basin

Devon Energy, Cotton Draw 32 State Fed Com 5H

1. Geologic Formations

TVD of target	8,330'	Pilot hole depth	N/A
MD at TD:	15,443'	Deepest expected fresh water:	

Basin

Formation	Depth (TVD) from KB	Water/Mineral Bearing/ Target Zone?	Hazards*
Rustler	782		
Salado	1142		
Castile	3020		
Base of Salt	4382		
Lamar	4599		
Bell Canyon	4636		
Cherry Canyon	5557		
Brushy Canyon	6903		
Lower Brushy Canyon	8230		
Landing Depth	8330		
Vertical Depth at TD	8330		

*H2S, water flows, loss of circulation, abnormal pressures, etc.

2. Casing Program

Hole Size	Casing Interval From	Casing Interval To	Csg. Size	Weight (lbs)	Grade	Conn.	SF Collapse	SF Burst	SF Tension
17.5"	0	825'	13.375"	48	H-40	STC	2.04	4.58	13.66
12.25"	0	4,300'	9.625"	40	J-55	BTC	1.15	1.77	5.38
12.25"	4,300'	4,610'	9.625"	40	HCK-55	BTC	1.76	1.65	5.02
8.75"	0	15,443'	5.5"	17	P-110	BTC	1.87	2.67	1.82
					BLM Minimum Safety Factor		1.125	1.00	1.6 Dry 1.8 Wet

All casing strings will be tested in accordance with Onshore Oil and Gas Order #2 III.B.1.h

Must have table for contingency casing

	Y or N
Is casing new? If used, attach certification as required in Onshore Order #1	Y
Does casing meet API specifications? If no, attach casing specification sheet.	Y
Is premium or uncommon casing planned? If yes attach casing specification sheet.	N
Does the above casing design meet or exceed BLM's minimum standards? If not provide justification (loading assumptions, casing design criteria).	Y
Will the intermediate pipe be kept at a minimum 1/3 fluid filled to avoid approaching the collapse pressure rating of the casing?	Y
Is well located within Capitan Reef?	N
If yes, does production casing cement tie back a minimum of 50' above the Reef?	
Is well within the designated 4 string boundary.	
Is well located in SOPA but not in R-111-P?	N
If yes, are the first 2 strings cemented to surface and 3rd string cement tied back 500' into previous casing?	
Is well located in R-111-P and SOPA?	N
If yes, are the first three strings cemented to surface?	
Is 2nd string set 100' to 600' below the base of salt?	
Is well located in high Cave/Karst?	N
If yes, are there two strings cemented to surface?	
(For 2 string wells) If yes, is there a contingency casing if lost circulation occurs?	
Is well located in critical Cave/Karst?	N
If yes, are there three strings cemented to surface?	

3. Cementing Program

Casing	# Sks	Wt. lb/ gal	H_2O gal/sk	Yld ft3/ sack	500# Comp. Strength (hours)	Slurry Description
13-3/8" Surf	890	14.8	6.32	1.33	6	Tail: Class C Cement + 0.125 lbs/sack Poly-E-Flake
9-5/8" Inter.	990	12.9	9.81	1.85	14	Lead: (65:35) Class C Cement: Poz (Fly Ash): 6% BWOC Bentonite + 5% BWOW Sodium Chloride + 0.125 lbs/sack Poly-E-Flake
	430	14.8	6.32	1.33	6	Tail: Class C Cement + 0.125 lbs/sack Poly-E-Flake
5-1/2" Prod Single Stage	300	9	15.64	3.56	25	Lead: Tuned Light® Cement
	2030	14.5	5.31	1.2	25	Tail: (50:50) Class H Cement: Poz (Fly Ash) + 0.5% bwoc HALAD-344 + 0.4% bwoc CFR-3 + 0.2% BWOC HR-601 + 2% bwoc Bentonite
5-1/2" Prod Two Stage	430	11.9	12.89	2.31	n/a	1st Stage Lead: (50:50) Class H Cement: Poz (Fly Ash) + 10% BWOC Bentonite + 1 lb/sk of Kol-Seal + 0.3% BWOC HR-601 + 0.5lb/sk D-Air 5000
	2030	14.5	5.31	1.2	25	1st Stage Tail: (50:50) Class H Cement: Poz (Fly Ash) + 0.5% bwoc HALAD-344 + 0.4% bwoc CFR-3 + 0.2% BWOC HR-601 + 2% bwoc Bentonite
	DV Tool = 4660ft					
	20	11	14.81	2.55	22	2nd Stage Lead: Tuned Light® Cement + 0.125 lb/sk Pol-E-Flake
	30	14.8	6.32	1.33	6	2nd Stage Tail: Class C Cement + 0.125 lbs/sack Poly-E-Flake

See COA

DV tool depth(s) will be adjusted based on hole conditions and cement volumes will be adjusted proportionally. DV tool will be set a minimum of 50 feet below previous casing and a minimum of 200 feet above current shoe. Lab reports with the 500 psi compressive strength time for the cement will be onsite for review.

Casing String	TOC	% Excess
13-3/8" Surface	0'	100%
9-5/8" Intermediate	0'	75%
5-1/2" Production Casing Single Stage Option	4410'	25%
5-1/2" Production Casing Two Stage Option	1St Stage = 4660' / 2nd Stage = 4410'	25%

4. Pressure Control Equipment

N	A variance is requested for the use of a diverter on the surface casing. See attached for schematic.

BOP installed and tested before drilling which hole?	Size?	Min. Required WP	Type	✓	Tested to:
12-1/4"	13-5/8"	3M	Annular	x	50% of working pressure
			Blind Ram		3M
			Pipe Ram		
			Double Ram	x	
			Other*		
8-3/4"	13-5/8"	3M	Annular	x	50% testing pressure
			Blind Ram		3M
			Pipe Ram		
			Double Ram	x	
			Other *		
			Annular		
			Blind Ram		
			Pipe Ram		
			Double Ram		
			Other *		

*Specify if additional ram is utilized.

BOP/BOPE will be tested by an independent service company to 250 psi low and the high pressure indicated above per Onshore Order 2 requirements. The System may be upgraded to a higher pressure but still tested to the working pressure listed in the table above. If the system is upgraded all the components installed will be functional and tested.

Pipe rams will be operationally checked each 24 hour period. Blind rams will be operationally checked on each trip out of the hole. These checks will be noted on the daily tour sheets. Other accessories to the BOP equipment will include a Kelly cock and floor safety valve (inside BOP) and choke lines and choke manifold. See attached schematics.

Y	Formation integrity test will be performed per Onshore Order #2. On Exploratory wells or on that portion of any well approved for a 5M BOPE system or greater, a pressure integrity test of each casing shoe shall be performed. Will be tested in accordance with Onshore Oil and Gas Order #2 III.B.1.i.	
Y	A variance is requested for the use of a flexible choke line from the BOP to Choke Manifold. See attached for specs and hydrostatic test chart.	
	Y	Are anchors required by manufacturer?

See COA

Y	A multibowl wellhead may be used. The BOP will be tested per Onshore Order #2 after installation on the surface casing which will cover testing requirements for a maximum of 30 days. If any seal subject to test pressure is broken the system must be tested. Devon may use a multi-bowl wellhead assembly. This assembly will only be tested when installed on the surface casing. Minimum working pressure of the blowout preventer (BOP) and related equipment (BOPE) required for drilling below the surface casing shoe shall be 3000 (3M) psi. • Wellhead will be installed by wellhead representatives. • If the welding is performed by a third party, the wellhead representative will monitor the temperature to verify that it does not exceed the maximum temperature of the seal. • Wellhead representative will install the test plug for the initial BOP test. • The wellhead company will install a solid steel body pack-off to completely isolate the lower head after cementing intermediate casing. After installation of the pack-off, the pack-off and the lower flange will be tested to 3M, as shown on the attached schematic. Everything above the pack-off will not have been altered whatsoever from the initial nipple up. Therefore the BOP components will not be retested at that time. • If the cement does not circulate and one inch operations would have been possible with a standard wellhead, the well head will be cut and top out operations will be conducted. • Devon will pressure test all seals above and below the mandrel (but still above the casing) to full working pressure rating. • Devon will test the casing to 0.22 psi/ft or 1500 psi, whichever is greater, as per Onshore Order #2. After running the 13-3/8" surface casing, a 13-5/8" BOP/BOPE system with a minimum rating of 3M will be installed on the Uni-head wellhead system and will undergo a 250 psi low pressure test followed by a 3,000 psi high pressure test. The 3,000 psi high and 250 psi low test will cover testing requirements a maximum of 30 days, as per Onshore Order #2. If the well is not complete within 30 days of this BOP test, another full BOP test will be conducted, as per Onshore Order #2. After running the 9-5/8' intermediate casing with a mandrel hanger, the 13-5/8" BOP/BOPE system with a minimum rating of 3M will already be installed on the wellhead The pipe rams will be operated and checked each 24 hour period and each time the drill pipe is out of the hole. These tests will be logged in the daily driller's log. A 2" kill line and 3" choke line will be incorporated into the drilling spool below the ram BOP. In addition to the rams and annular preventer, additional BOP accessories include a kelly cock, floor safety valve, choke lines, and choke manifold rated at 3,000 psi WP. Devon requests a variance to use a flexible line with flanged ends between the BOP and the choke manifold (choke line). The line will be kept as straight as possible with minimal turns

	See attached schematic.

5. Mud Program

Depth		Type	Weight (ppg)	Viscosity	Water Loss
From	To				
0	825'	FW Gel	8.6-8.8	28-34	N/C
825'	4,610'	Saturated Brine	10.0-10.2	28-34	N/C
4,610'	15,443'	Cut Brine	8.5-9.3	28-34	N/C

Sufficient mud materials to maintain mud properties and meet minimum lost circulation and weight increase requirements will be kept on location at all times.

What will be used to monitor the loss or gain of fluid?	PVT/Pason/Visual Monitoring

6. Logging and Testing Procedures See COA

Logging, Coring and Testing.	
x	Will run GR/CNL fromTD to surface (horizontal well – vertical portion of hole). Stated logs run will be in the Completion Report and submitted to the BLM.
	No Logs are planned based on well control or offset log information.
	Drill stem test? If yes, explain
	Coring? If yes, explain

Additional logs planned		Interval
	Resistivity	Int. shoe to KOP
	Density	Int. shoe to KOP
X	CBL	Production casing
X	Mud log	Intermediate shoe to TD
	PEX	

7. Drilling Conditions

Condition	Specify what type and where?
BH Pressure at deepest TVD	4028 psi
Abnormal Temperature	No

Mitigation measure for abnormal conditions. Describe. Lost circulation material/sweeps/mud scavengers.

Hydrogen Sulfide (H2S) monitors will be installed prior to drilling out the surface shoe. If H2S is detected in concentrations greater than 100 ppm, the operator will comply with the provisions of Onshore Oil and Gas Order #6. If Hydrogen Sulfide is encountered, measured values and formations will be provided to the BLM.	
N	H2S is present
Y	H2S Plan attached

8. Other facets of operation

Is this a walking operation? No.
Will be pre-setting casing? No.

Attachments
_x_ Directional Plan
___ Other, describe

Schlumberger

Devon **Plan - Rev0** devon

Borehole:	Well:	Field:	Structure:
Devon Cotton Draw 32 State Fed Com 5H	Devon Cotton Draw 32 State Fed Com 5H	NM Lea County (NAD 83)	Devon Cotton Draw 32 State Fed Com 5H

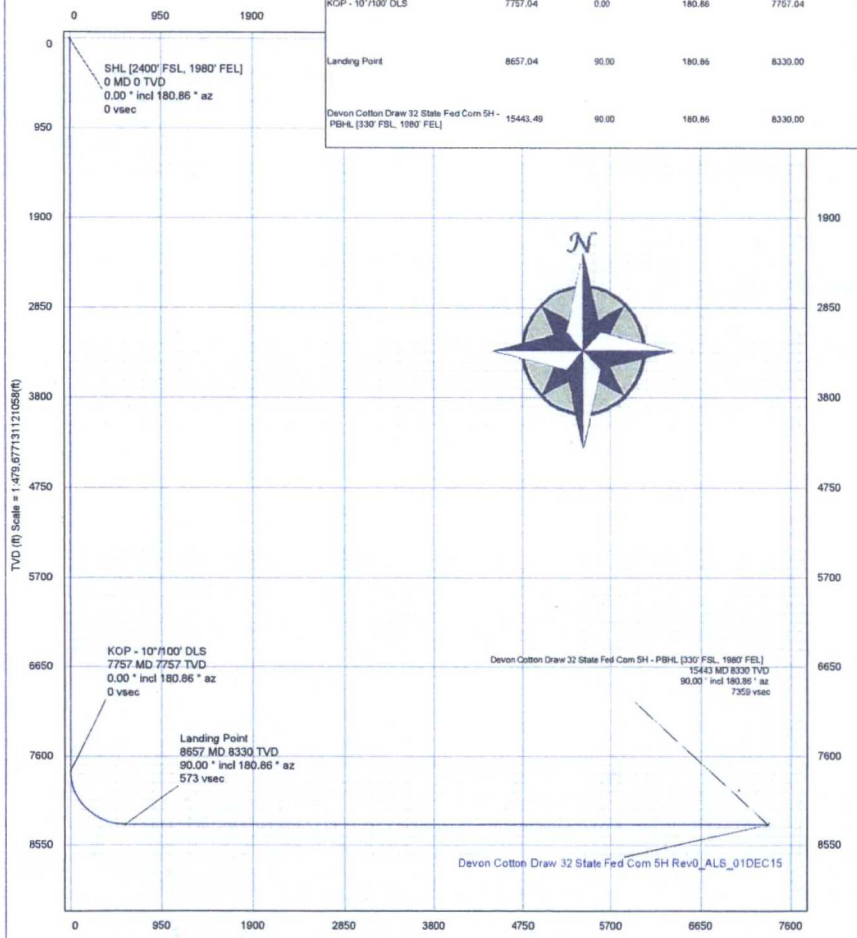
Gravity & Magnetic Parameters						Surface Location	NAD83 New Mexico State Plane, Eastern Zone, US Feet					Miscellaneous			
Model:	HDGM 2015	Dip:	59.942°	Date:	01-Dec-2015	Lat:	N 32 10 23.73	Northing:	427353.1ftUS	Grid Conv:	0.3402°	Slot:	Devon Cotton Draw 32 State Fed Com 5H	TVD Ref:	RKB(3499.9ft above MSL)
MagDec:	7.023°	FS:	48238.471nT	Gravity FS:	998.432mgn (9.80665 Based)	Lon:	W 103 41 40.33	Easting:	738985.73ftUS	Scale Fact:	0.99995383	Plan:	Devon Cotton Draw 32 State Fed Com 5H Rev0_ALS_01DEC15		

Grid
True | Mag

Grid North
Tot Corr (M->G 6.683°)
Mag Dec (7.023°)
Grid Conv (0.340°)

Critical Points

Critical Point	MD	INCL	AZIM	TVD	VSEC	N(+)/S(-)	E(+)/W(-)	DLS
SHL [2400' FSL, 1980' FEL]	0.00	0.00	180.86	0.00	0.00	0.00	0.00	
Marker MudLine	25.00	0.00	180.86	25.00	0.00	0.00	0.00	0.00
KOP - 10°/100' DLS	7757.04	0.00	180.86	7757.04	0.00	0.00	0.00	0.00
Landing Point	8657.04	90.00	180.86	8330.00	572.96	-572.89	-8.61	10.00
Devon Cotton Draw 32 State Fed Com 5H - PBHL [330' FSL, 1980' FEL]	15443.49	90.00	180.86	8330.00	7359.41	-7358.57	-110.65	0.00



CONTROLLED

Plan ref	Devon Cotton Draw 32 State Fed Com 5H Rev0_ALS_01DEC15
Drawing ref	
Copy number	of 3
Date	01-Dec-2015

1	Client	
2	Client	
3	Office	
4	Office