

15-622

Form 3160-3  
(March 2012)

HOBBS OCD

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



UNITED STATES  
DEPARTMENT OF THE INTERIOR  
BUREAU OF LAND MANAGEMENT

JUN 28 2016

APPLICATION FOR PERMIT TO DRILL OR REENTER

RECEIVED

1a. Type of work: <input checked="" type="checkbox"/> DRILL <input type="checkbox"/> REENTER		5. Lease Serial No. NMNM117126
1b. Type of Well: <input checked="" type="checkbox"/> Oil Well <input type="checkbox"/> Gas Well <input type="checkbox"/> Other <input checked="" type="checkbox"/> Single Zone <input type="checkbox"/> Multiple Zone		6. If Indian, Allottee or Tribe Name
2. Name of Operator Devon Energy Production Company, L.P. (6137)		7. If Unit or CA Agreement, Name and No.
3a. Address 333 W. Sheridan Oklahoma City, OK 73102		8. Lease Name and Well No. (316381) PURPLE ACE 1 FEDERAL 1H
3b. Phone No. (include area code) 405.552.7848		9. API Well No. 30-025-43326 (97719)
4. Location of Well (Report location clearly and in accordance with any State requirements.) At surface 330 FNL & 200 FWL, Unit D PP: 660 FNL & 200 FWL At proposed prod. zone 660 FNL & 330 FEL, Unit A		10. Field and Pool, or Exploratory WC-025 G-05 5253532H; DEL
14. Distance in miles and direction from nearest town or post office* Approximately 13 miles SW of Jal, NM		11. Sec., T. R. M. or Blk. and Survey or Area Sec 1, T26S, R35E
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 1,080 ac	17. Spacing Unit dedicated to this well 160 ac
18. Distance from proposed location* to nearest well, drilling, completed, applied for, on this lease, ft. See attached map	19. Proposed Depth TVD: 8,593'; MD: 13,116'	20. BLM/BIA Bond No. on file CO-1104; NMB-000801
21. Elevations (Show whether DF, KDB, RT, GL, etc.) 3,067.7' GL	22. Approximate date work will start* 07/12/2015	23. Estimated duration 45 Days

UNORTHODOX  
LOCATION

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

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

25. Signature	Name (Printed/Typed) David H. Cook	Date 5/4/2015
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Title Regulatory Compliance Professional		
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Approved by (Signature) <b>James A. Amos</b>	Name (Printed/Typed)	Date JUN 17 2016
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Title FIELD MANAGER	Office CARLSBAD FIELD OFFICE
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Application approval 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.

Conditions of approval, if any, are attached.

Title 18 U.S.C. Section 1001 and Title 43 U.S.C. Section 1 States any false, fictitious or fraudulent statements or n

(Continued on page 2)

See attached NMOCD  
Conditions of Approval

APPROVAL FOR TWO YEARS

ke to any department or agency of the United

\*(Instructions on page 2)

Carlsbad Controlled Water Basin

KZ  
06/29/16

Ke

Approval Subject to General Requirements  
& Special Stipulations Attached

SEE ATTACHED FOR  
CONDITIONS OF APPROVAL



**Devon Energy, Purple Ace 1 Fed 1H**

**2. Casing Program**

**Primary Design:**

*See COA*

Hole Size	Casing Interval		Csg. Size	Weight (lbs)	Grade	Conn	SF Collapse	SF Burst	SF Tension
	From	To							
17.5"	0	<del>1,125</del> <i>830</i>	13.375"	48	H-40	STC	1.45	2.79	2.19
12.25"	0	3,000'	9.625"	36	J-55	BTC	1.30	1.14	2.07
12.25"	3,000'	<del>5,400</del> <i>5700</i>	9.625	40	HCK-55	BTC	1.36	1.89	3.5
8.75"	0	8,000'	7"	29	P-110	BTC	1.87	1.32	3.09
8.75"	8,000'	13,116	5.5"	17	P-110	BTC	1.54	1.36	3.17
BLM Minimum Safety Factor							1.125	1.00	1.6 Dry 1.8 Wet

**Alternative 5.5" production string design:**

*See COA*

Hole Size	Casing Interval		Csg. Size	Weight (lbs)	Grade	Conn	SF Collapse	SF Burst	SF Tension
	From	To							
17.5"	0	<del>1,125</del> <i>830</i>	13.375"	48	H-40	STC	1.45	2.79	2.19
12.25"	0	3,000'	9.625"	36	J-55	BTC	1.30	1.14	2.07
12.25"	3,000'	<del>5,400</del> <i>5700</i>	9.625	40	HCK-55	BTC	1.36	1.89	3.5
8.75"	0	13,116	5.5"	17	P-110	BTC	1.54	1.25	2.48
BLM Minimum Safety Factor							1.125	1.00	1.6 Dry 1.8 Wet

**If lost circulation is encountered while drilling the production wellbore, the 5.5" production longstring will be used with a DV tool installed a minimum of 50' below the previous casing shoe and a minimum of 200' above the current shoe. If the DV tool has to be moved, the cement volumes will be adjusted proportionately. See Cementing Program.**

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

**Devon Energy, Purple Ace 1 Fed 1H**

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 3 <sup>rd</sup> 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 2 <sup>nd</sup> 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?	

## Devon Energy, Purple Ace 1 Fed 1H

### 3. Cementing Program

Casing	# Sks	Wt. lb/gal	H <sub>2</sub> O gal/sk	Yld ft <sup>3</sup> /sack	500# Comp. Strength (hours)	Slurry Description
13-3/8" Surface	470	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
	550	14.8	6.32	1.33	6	Tail: Class C Cement + 0.125 lbs/sack Poly-E-Flake
9-5/8" Inter.	1180	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
7 x 5-1/2" Combo Prod.	170	10.4	16.9	3.17	16	Lead: Tuned Light <sup>®</sup> + 0.125 lb/sk Pol-E-Flake
	1350	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 (Optional)	350	11.9	12.89	2.31	n/a	1 <sup>st</sup> 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
	1350	14.5	5.31	1.2	25	1 <sup>st</sup> 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 = 5500ft					
	20	11	14.81	2.55	22	2 <sup>nd</sup> Stage Lead: Tuned Light <sup>®</sup> Cement + 0.125 lb/sk Pol-E-Flake
	50	14.8	6.32	1.33	6	2 <sup>nd</sup> Stage Tail: Class C Cement + 0.125 lbs/sack Poly-E-Flake

See COA

Actual cement volumes will be adjusted based on fluid caliper and caliper log data.

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%
7 x 5-1/2" Production Casing	5200' 4900' (200' He-back minimum)	25%
5-1/2" Production Casing	1 <sup>st</sup> Stage = 5500ft / 2 <sup>nd</sup> Stage = 5200ft	25%

**Devon Energy, Purple Ace 1 Fed 1H**

**4. Pressure Control Equipment**

N	A variance is requested for the use of a diverter on the surface casing. See attached for schematic.
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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  3M
			Blind Ram		
			Pipe Ram		
			Double Ram	x	
			Other*		
8-3/4"	13-5/8"	3M	Annular	x	50% testing pressure  3M
			Blind Ram		
			Pipe Ram		
			Double Ram	x	
			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.
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**Devon Energy, Purple Ace 1 Fed 1H**

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?
Y	<p>A multibowl wellhead is being 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.</p> <p>Devon proposes using 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.</p> <ul style="list-style-type: none"> <li>• Wellhead will be installed by vendor representative.</li> <li>• If the welding is performed by a third party, the vendor representative will monitor the temperature to verify that it does not exceed the maximum temperature of the seal.</li> <li>• Vendor representative will install the test plug for the initial BOP test.</li> <li>• Vendor 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.</li> <li>• 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.</li> <li>• Devon will pressure test all seals above and below the mandrel (but still above the casing) to full working pressure rating.</li> <li>• Devon will test the casing to 0.22 psi/ft or 1500 psi, whichever is greater, as per Onshore Order #2.</li> </ul> <p>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 multi-bowl 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.</p> <p>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.</p> <p>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.</p>	

See COA

See COA

**Devon Energy, Purple Ace 1 Fed 1H**

<p>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.</p> <p>See attached schematic.</p>
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**5. Mud Program**

*See COA*

Depth		Type	Weight (ppg)	Viscosity	Water Loss
From	To				
0	1,125' <i>830'</i>	FW Gel	8.6-8.8	28-34	N/C
<del>1,125'</del>	<del>5,400'</del> <i>5100'</i>	Saturated Brine	10.0-10.2	28-34	N/C
<del>5,400'</del>	13,116'	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
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**6. Logging and Testing Procedures**

Logging, Coring and Testing	
x	Will run GR/CNL from TD 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
CBL	Production casing
X Mud log	Intermediate shoe to TD
PEX	

**Devon Energy, Purple Ace 1 Fed 1H**

**7. Drilling Conditions**

<b>Condition</b>	<b>Specify what type and where?</b>
BH Pressure at deepest TVD	3798 psi
Abnormal Temperature	No

Mitigation measure for abnormal conditions: 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

Directional Plan

Other, describe