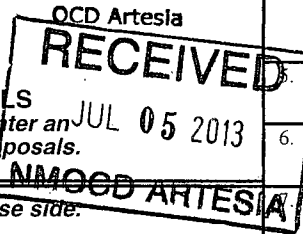


UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENTFORM APPROVED
OMB NO. 1004-0135
Expires: July 31, 2010**SUNDRY NOTICES AND REPORTS ON WELLS**
*Do not use this form for proposals to drill or to re-enter an abandoned well. Use form 3160-3 (APD) for such proposals.***SUBMIT IN TRIPLICATE - Other instructions on reverse side.**

1. Type of Well <input type="checkbox"/> Oil Well <input checked="" type="checkbox"/> Gas Well <input type="checkbox"/> Other		8. Well Name and No. COTTON DRAW UNIT 117H
2. Name of Operator DEVON ENERGY PRODUCTION CO, LP Contact: TRINA C COUCH Email: trina.couch@dvn.com		9. API Well No. 30-015-38434
3a. Address DEVON ENERGY PRODUCTION CO, LP 333 WEST OKLAHOMA CITY, OK 73102-5015	3b. Phone No. (include area code) SHERIDAN 2002 OKLAHOMA CITY, OK 73102-5015	10. Field and Pool, or Exploratory UL 3 BONE SPRING
4. Location of Well (Footage, Sec., T., R., M., or Survey Description) Sec 34 T24S R31E 160FSL 1980FEL		11. County or Parish, and State EDDY COUNTY COUNTY, NM

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

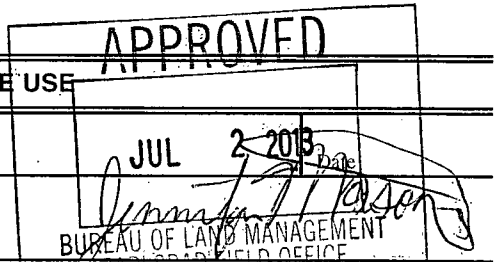
TYPE OF SUBMISSION	TYPE OF ACTION			
<input checked="" type="checkbox"/> Notice of Intent	<input type="checkbox"/> Acidize	<input type="checkbox"/> Deepen	<input type="checkbox"/> Production (Start/Resume)	<input type="checkbox"/> Water Shut-Off
<input type="checkbox"/> Subsequent Report	<input type="checkbox"/> 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
	<input type="checkbox"/> Change Plans	<input type="checkbox"/> Plug and Abandon	<input type="checkbox"/> Temporarily Abandon	Change to Original A
	<input type="checkbox"/> Convert to Injection	<input type="checkbox"/> Plug Back	<input type="checkbox"/> Water Disposal	PD

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 recompleate 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 shall be filed within 30 days following completion of the involved operations. If the operation results in a multiple completion or recompleation in a new interval, a Form 3160-4 shall be filed once testing has been completed. Final Abandonment Notices shall 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 Production Company, L.P. respectfully requests to change the approved APD on the Cotton Draw Unit 117, API# 30-015-38434. We would like to no longer drill the proposed pilot hole to 13,500 ft. TVD. Devon would like to drill a 8-3/4" hole down to a vertical TVD of 9,754 ft. before kicking off and drilling our curve and lateral targeting the 2nd Bone Springs Sandstone at a TVD of ~10,300 ft. Devon would also like to request altering the casing design that was originally submitted in the APD. The current APD is approved for setting 20" 106.5# BTC J-55 at 1,000 ft. Devon respectfully requests that we alter this casing program to have the surface hole drilled with a 17.5" hole to a depth of 875 ft. where we would then set 13-3/8" 40# H-40 STC casing. We would then drill our 12.25" intermediate hole to a depth of 4,335 ft. and set 9-5/8" 40# HCK-55 BTC casing. This well is located in UL 3 Section 34-T24S-R31E. Attached you will find the new Directional Plan along with our new proposed casing, cement, and mud design.

Accepted for record
NMOC 106
7/6/2013
SEE ATTACHED FOR
CONDITIONS OF APPROVAL

14. I hereby certify that the foregoing is true and correct. Electronic Submission #212253 verified by the BLM Well Information System For DEVON ENERGY PRODUCTION CO, LP, sent to the Hobbs	
Name (Printed/Typed) TRINA C COUCH	Title REGULATORY ASSOCIATE
Signature (Electronic Submission)	Date 07/01/2013
THIS SPACE FOR FEDERAL OR STATE OFFICE USE	
Approved By _____	Title _____
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.	

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

Additional data for EC transaction #212253 that would not fit on the form

32. Additional remarks, continued

Attachments:
Directional Survey
Drilling Plan

Cotton Draw Unit 117H – APD DRILLING PLAN
RJC 7-1-2013

Casing Program

<u>Hole Size</u>	<u>Hole Interval</u>	<u>OD Csg</u>	<u>Casing Interval</u>	<u>Weight</u>	<u>Collar</u>	<u>Grade</u>
17-1/2"	0 – 875	13-3/8"	0 – 875	48#	STC	H-40
12-1/4"	875 – 4,335	9-5/8"	0 – 4,335	40#	BTC	HCK-55
8-3/4"	4,335 – 9,500	5-1/2"	0 – 9,500	17#	LTC	HCP-110
8-3/4"	9,500 – 14,463	5-1/2"	9,500 – 14,463	17#	BTC	HCP-110

Note: only new casing will be utilized

MAXIMUM LATERAL TVD 10,327

Design Factors:

<u>Casing Size</u>	<u>Collapse Design Factor</u>	<u>Burst Design Factor</u>	<u>Tension Design Factor</u>
13-3/8", 48#, H-40, ST&C	1.69	3.81	6.75
9-5/8", 40#, J-55 LTC HCK	1.88	1.75	4.00
5-1/2" 17# HCP-110 LTC	1.93	2.40	2.76
5-1/2" 17# HCP-110 BTC	1.78	2.2	2.31

Mud Program:

<u>Depth</u>	<u>Mud Wt.</u>	<u>Visc.</u>	<u>Fluid Loss</u>	<u>Type System</u>
0 – 875	8.4 – 9.0	30 – 34	N/C	FW
875 – 4,335	9.8 – 10.0	28 – 32	N/C	Brine
4,335 – 14,463	8.6 – 9.0	28 – 32	N/C-12	FW

Pressure Control Equipment:

The BOP system used to drill the intermediate hole will consist of a 13-5/8" Double Ram and Annular preventer. The BOP system will be tested as per BLM Onshore Oil and Gas Order No. 2, a 3M system will be installed and tested prior to drilling out the surface casing shoe.

The BOP system used to drill the production hole will consist of a 13-5/8" Double Ram and Annular preventer. The BOP system will be tested as per BLM Onshore Oil and Gas Order No. 2 a 3M system will be installed prior to drilling out the intermediate casing shoe.

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 5,000 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.

Cementing Program (cement volumes based on a minimum of 50 % excess)

13-3/8" Surface ^{1000'}
875 ft **Lead:** 710 sacks Class C Cement + 1% bwoc Calcium Chloride + 0.125 lbs/sack Cello Flake + 4% bwoc Bentonite + 81.1% Fresh Water, 13.5 ppg

Yield: 1.73 cf/sk

TOC @ surface

Tail: 250 sacks Class C Cement + 1% bwoc Calcium Chloride + 0.125 lbs/sack Cello Flake + 56.2% Fresh Water, 14.8 ppg

Yield: 1.34 cf/sk

9-5/8" Intermediate 4335 ft **Lead:** 1200 sacks (60:40) Poz (Fly Ash): Class C Cement + 5% bwow Sodium Chloride + 0.1% bwoc R-3 + 0.125 lbs/sack Cello Flake + 1% bwoc Sodium Metasilicate + 0.25% bwoc FL-52A + 92.7% Fresh Water, 12.6 ppg

Yield: 1.73 cf/sk

TOC @ surface

Tail: 300 (60:40) Poz (Fly Ash): Class C Cement + 5% bwow Sodium Chloride + 0.125 lbs/sack Cello Flake + 0.1% bwoc Sodium Metasilicate + 0.5% bwoc BA-10A + 4% bwoc MPA-5 + 65.2% Fresh Water, 13.8 ppg

Yield: 1.38 cf/sk

5-1/2" Production 14463 ft **Stage 1:**

Lead: 950 sacks (35:65) Poz (Fly Ash): Class H Cement + 3% bwow Sodium Chloride + 3 lbs/sack LCM-1 + 6% bwoc Bentonite + 0.7% bwoc FL-52A + 0.125 lbs/sack Cello Flake + 102.5% Fresh Water, 12.5 ppg

Yield: 2.01 cf/sk

Tail: 1,215 sacks (50:50) (50:50) Poz (Fly Ash): Class H Cement + 5% bwow Sodium Chloride 0.3% bwoc CD-32 + 0.5% bwoc FL-25 + 0.6% bwoc Sodium Metasilicate + 0.4% bwoc FL-52A + 57.3% Fresh Water, 11.4 ppg

Yield: 1.28 cf/sk

Displace with 335.3 bbls.

Drat = 6,000' per Ryan Clark 7/1/13

Stage 2:

Lead: 265 sacks Class C Cement + 1% bwoc R-3 + 0.125 lbs/sack Cello Flake + 3% bwoc Sodium Metasilicate + 157% Fresh Water, 12.5 ppg

Yield: 2.88 cf/sk

Tail: 150 sacks (60:40) Poz (Fly Ash): Class C Cement + 5% bwow Sodium Chloride 0.125 lbs/sack Cello Flake + 0.1% bwoc Sodium Metasilicate + 4% bwoc MPA-5 + 65.4% Fresh Water, 13.8 ppg

Yield: 1.37 cf/sk

TOC for All Strings:

Surface:	0
Intermediate:	0
Production:	3835. ft

ACTUAL CEMENT VOLUMES WILL BE ADJUSTED BASED ON FLUID CALIPER AND CALIPER LOG DATA.

DEVON ENERGY

Project: Eddy County, NM (NAD-83)
 Site: Cotton Draw Unit
 Well: 117H
 Wellbore: OH
 Design: Plan #1



Azimuths to Grid North
 True North: -0.30°
 Magnetic North: 7.14°
 Magnetic Field
 Strength: 48379.2snT
 Dip Angle: 60.06°
 Date: 04/09/2013
 Model: IGRF2010

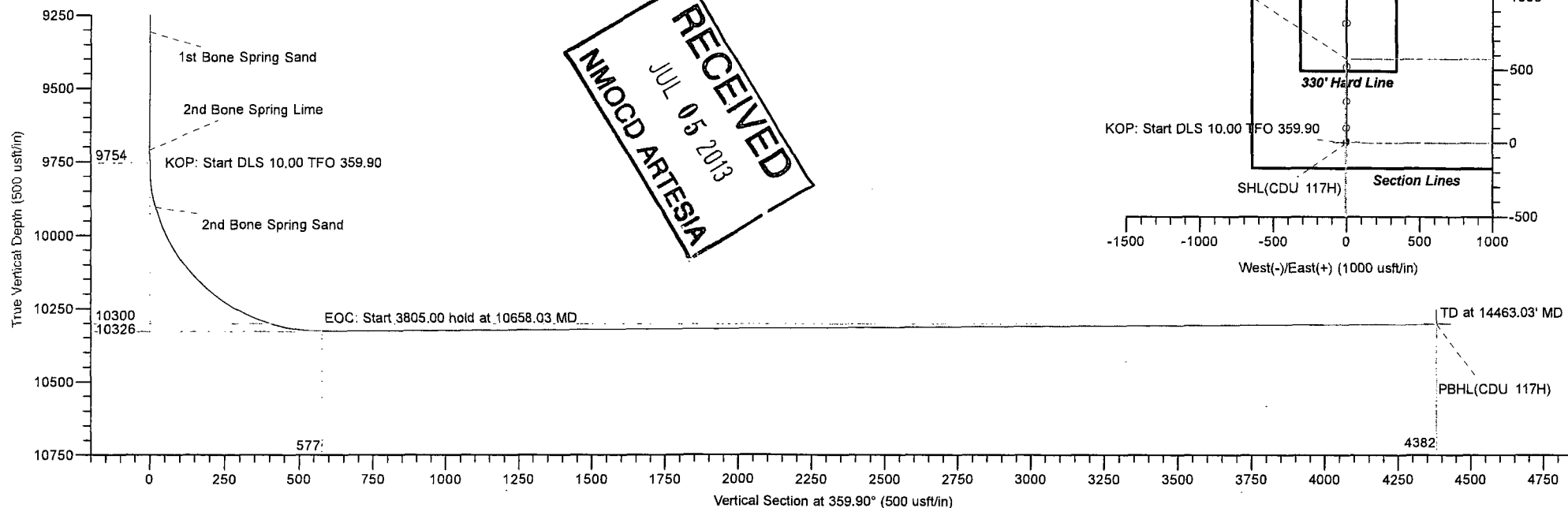
devon

DESIGN TARGET DETAILS

Name	TVD	+N/-S	+E/-W	Northing	Easting	Latitude	Longitude
SHL(CDU 117H)	0.00	0.00	0.00	425040.23	717633.89	32° 10' 2.031 N	103° 45' 48.891 W
PBHL(CDU 117H)10300.41	4381.86	-7.84	429422.09	717626.06	32° 10' 45.393 N	103° 45' 48.713 W	

SECTION DETAILS

Sec	MD	Inc	Azi	TVD	+N/-S	+E/-W	Dleg	TFace	Vsect	Annotation
1	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
2	9754.03	0.00	0.00	9754.03	0.00	0.00	0.00	0.00	0.00	KOP: Start DLS 10.00 TFO 359.90
3	10658.03	90.40	359.90	10326.97	576.96	-1.03	10.00	359.90	576.96	EOC: Start 3805.00 hold at 10658.03 MD
4	14463.03	90.40	359.90	10300.41	4381.86	-7.84	0.00	0.00	4381.87	TD at 14463.03' MD



LEAM DRILLING SYSTEMS LLC
 2010 East Davis, Conroe, Texas 77301
 Phone: 936/756-7577, Fax 936/756-7595

Plan: Plan #1 (117H/OH)
 Cotton Draw Unit
 Created By: Tyler Carlson Date: 13/22, April 09 2013
 Date: _____
 Approved: _____ Date: _____

LEAM Drilling Systems LLC

Planning Report

Database:	EDM 5000.1 Single User Db	Local Co-ordinate Reference:	Well 117H
Company:	DEVON ENERGY	TVD Reference:	GE 3443 + KB 28 @ 347.100usft (Permitting)
Project:	Eddy County, NM (NAD 83)	MD Reference:	GE 3443 + KB 28 @ 347.100usft (Permitting)
Site:	Cotton Draw Unit	North Reference:	Grid
Well:	117H	Survey Calculation Method:	Minimum Curvature
Wellbore:	OH		
Design:	Plan #1		

Project:	Eddy County, NM (NAD 83)		
Map System:	US State Plane 1983	System Datum:	Mean Sea Level
Geo Datum:	North American Datum 1983		
Map Zone:	New Mexico Eastern Zone		

Site:	Cotton Draw Unit		
Site Position:		Northing:	419,194.51 usft
From:	Map	Easting:	722,955.98 usft
Position Uncertainty:	0.00 usft	Slot Radius:	13-3/16"
		Latitude:	32° 9' 3.901 N
		Longitude:	103° 44' 47.345 W
		Grid Convergence:	0.31 °

Well	117H					
Well Position	+N/-S	5,845.72 usft	Northing:	425,040.23 usft	Latitude:	32° 10' 2.031 N
	+E/-W	-5,322.09 usft	Easting:	717,633.89 usft	Longitude:	103° 45' 48.891 W
Position Uncertainty		0.00 usft	Wellhead Elevation:		Ground Level:	3,443.00 usft

Wellbore:	OH				
Magnetics	Model Name	Sample Date	Declination	Dip Angle	Field Strength
			(°)	(°)	(nT)
	IGRF2010	04/09/13	7.45	60.06	48,379

Design: Plan #1				
Audit Notes:				
Version:		Phase:	PLAN	Tie On Depth: 0.00
Vertical Section:	Depth From (TVD)	N-S	E-W	Direction
	(usft)	(usft)	(usft)	(°)
	0.00	0.00	0.00	359.90

Plan Sections										
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N-S (usft)	+E-W (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)	TFO (°)	Target
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
9,754.03	0.00	0.00	9,754.03	0.00	0.00	0.00	0.00	0.00	0.00	
10,658.03	90.40	359.90	10,326.97	576.96	-1.03	10.00	10.00	-0.01	359.90	
14,463.03	90.40	359.90	10,300.41	4,381.86	-7.84	0.00	0.00	0.00	0.00	PBHL(CDU 117H)

LEAM Drilling Systems LLC

Planning Report

Database:	EDM:5000.1;Single>User.Db	Local/Co-ordinate Reference:	Well:117H
Company:	DEVON/ENERGY	TVD/Reference:	GE 3443 + KB 28 @ 3471.00usft (Permitting)
Project:	Eddy County,NM(NAD-83)	MD/Reference:	GE 3443 + KB 28 @ 3471.00usft (Permitting)
Site:	Cotton Draw/Unit	North/Reference:	Grid
Well:	117H	Survey/Calculation Method:	Minimum(Curvature)
Wellbore:	OH		
Design:	Plan#1		

Planned Survey									
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
100.00	0.00	0.00	100.00	0.00	0.00	0.00	0.00	0.00	0.00
200.00	0.00	0.00	200.00	0.00	0.00	0.00	0.00	0.00	0.00
300.00	0.00	0.00	300.00	0.00	0.00	0.00	0.00	0.00	0.00
400.00	0.00	0.00	400.00	0.00	0.00	0.00	0.00	0.00	0.00
500.00	0.00	0.00	500.00	0.00	0.00	0.00	0.00	0.00	0.00
599.00	0.00	0.00	599.00	0.00	0.00	0.00	0.00	0.00	0.00
RUSTLER									
600.00	0.00	0.00	600.00	0.00	0.00	0.00	0.00	0.00	0.00
700.00	0.00	0.00	700.00	0.00	0.00	0.00	0.00	0.00	0.00
800.00	0.00	0.00	800.00	0.00	0.00	0.00	0.00	0.00	0.00
900.00	0.00	0.00	900.00	0.00	0.00	0.00	0.00	0.00	0.00
994.00	0.00	0.00	994.00	0.00	0.00	0.00	0.00	0.00	0.00
TOP/SALT									
1,000.00	0.00	0.00	1,000.00	0.00	0.00	0.00	0.00	0.00	0.00
1,100.00	0.00	0.00	1,100.00	0.00	0.00	0.00	0.00	0.00	0.00
1,200.00	0.00	0.00	1,200.00	0.00	0.00	0.00	0.00	0.00	0.00
1,300.00	0.00	0.00	1,300.00	0.00	0.00	0.00	0.00	0.00	0.00
1,400.00	0.00	0.00	1,400.00	0.00	0.00	0.00	0.00	0.00	0.00
1,500.00	0.00	0.00	1,500.00	0.00	0.00	0.00	0.00	0.00	0.00
1,600.00	0.00	0.00	1,600.00	0.00	0.00	0.00	0.00	0.00	0.00
1,700.00	0.00	0.00	1,700.00	0.00	0.00	0.00	0.00	0.00	0.00
1,800.00	0.00	0.00	1,800.00	0.00	0.00	0.00	0.00	0.00	0.00
1,900.00	0.00	0.00	1,900.00	0.00	0.00	0.00	0.00	0.00	0.00
2,000.00	0.00	0.00	2,000.00	0.00	0.00	0.00	0.00	0.00	0.00
2,100.00	0.00	0.00	2,100.00	0.00	0.00	0.00	0.00	0.00	0.00
2,200.00	0.00	0.00	2,200.00	0.00	0.00	0.00	0.00	0.00	0.00
2,300.00	0.00	0.00	2,300.00	0.00	0.00	0.00	0.00	0.00	0.00
2,400.00	0.00	0.00	2,400.00	0.00	0.00	0.00	0.00	0.00	0.00
2,500.00	0.00	0.00	2,500.00	0.00	0.00	0.00	0.00	0.00	0.00
2,600.00	0.00	0.00	2,600.00	0.00	0.00	0.00	0.00	0.00	0.00
2,700.00	0.00	0.00	2,700.00	0.00	0.00	0.00	0.00	0.00	0.00
2,800.00	0.00	0.00	2,800.00	0.00	0.00	0.00	0.00	0.00	0.00
CASTILE									
2,900.00	0.00	0.00	2,900.00	0.00	0.00	0.00	0.00	0.00	0.00
3,000.00	0.00	0.00	3,000.00	0.00	0.00	0.00	0.00	0.00	0.00
3,100.00	0.00	0.00	3,100.00	0.00	0.00	0.00	0.00	0.00	0.00
3,200.00	0.00	0.00	3,200.00	0.00	0.00	0.00	0.00	0.00	0.00
3,300.00	0.00	0.00	3,300.00	0.00	0.00	0.00	0.00	0.00	0.00
3,400.00	0.00	0.00	3,400.00	0.00	0.00	0.00	0.00	0.00	0.00
3,500.00	0.00	0.00	3,500.00	0.00	0.00	0.00	0.00	0.00	0.00
3,600.00	0.00	0.00	3,600.00	0.00	0.00	0.00	0.00	0.00	0.00
3,700.00	0.00	0.00	3,700.00	0.00	0.00	0.00	0.00	0.00	0.00
3,800.00	0.00	0.00	3,800.00	0.00	0.00	0.00	0.00	0.00	0.00
3,900.00	0.00	0.00	3,900.00	0.00	0.00	0.00	0.00	0.00	0.00
4,000.00	0.00	0.00	4,000.00	0.00	0.00	0.00	0.00	0.00	0.00
4,100.00	0.00	0.00	4,100.00	0.00	0.00	0.00	0.00	0.00	0.00
4,200.00	0.00	0.00	4,200.00	0.00	0.00	0.00	0.00	0.00	0.00
4,300.00	0.00	0.00	4,300.00	0.00	0.00	0.00	0.00	0.00	0.00
4,400.00	0.00	0.00	4,400.00	0.00	0.00	0.00	0.00	0.00	0.00
4,407.00	0.00	0.00	4,407.00	0.00	0.00	0.00	0.00	0.00	0.00
Bell Canyon									

LEAM Drilling Systems LLC

Planning Report

Database:	EDM/5000.1/Single User DB	Local Co-ordinate Reference:	Well: 117H
Company:	DEVON ENERGY	TVD Reference:	GE 3443 + KB 28' @ 3471.00usft (Permitting)
Project:	Eddy County, NM (NAD-83)	MD Reference:	GE 3443 + KB 28' @ 3471.00usft (Permitting)
Site:	Cotton Draw Unit	North Reference:	Grid
Well:	117H	Survey Calculation Method:	Minimum Curvature
Wellbore:	OH		
Design:	Plan #1		

Planned Survey										
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)	
4,500.00	0.00	0.00	4,500.00	0.00	0.00	0.00	0.00	0.00	0.00	
4,600.00	0.00	0.00	4,600.00	0.00	0.00	0.00	0.00	0.00	0.00	
4,700.00	0.00	0.00	4,700.00	0.00	0.00	0.00	0.00	0.00	0.00	
4,800.00	0.00	0.00	4,800.00	0.00	0.00	0.00	0.00	0.00	0.00	
4,900.00	0.00	0.00	4,900.00	0.00	0.00	0.00	0.00	0.00	0.00	
5,000.00	0.00	0.00	5,000.00	0.00	0.00	0.00	0.00	0.00	0.00	
5,100.00	0.00	0.00	5,100.00	0.00	0.00	0.00	0.00	0.00	0.00	
5,200.00	0.00	0.00	5,200.00	0.00	0.00	0.00	0.00	0.00	0.00	
5,296.00	0.00	0.00	5,296.00	0.00	0.00	0.00	0.00	0.00	0.00	
Cherry Canyon										
5,300.00	0.00	0.00	5,300.00	0.00	0.00	0.00	0.00	0.00	0.00	
5,400.00	0.00	0.00	5,400.00	0.00	0.00	0.00	0.00	0.00	0.00	
5,500.00	0.00	0.00	5,500.00	0.00	0.00	0.00	0.00	0.00	0.00	
5,600.00	0.00	0.00	5,600.00	0.00	0.00	0.00	0.00	0.00	0.00	
5,700.00	0.00	0.00	5,700.00	0.00	0.00	0.00	0.00	0.00	0.00	
5,800.00	0.00	0.00	5,800.00	0.00	0.00	0.00	0.00	0.00	0.00	
5,900.00	0.00	0.00	5,900.00	0.00	0.00	0.00	0.00	0.00	0.00	
6,000.00	0.00	0.00	6,000.00	0.00	0.00	0.00	0.00	0.00	0.00	
6,100.00	0.00	0.00	6,100.00	0.00	0.00	0.00	0.00	0.00	0.00	
6,200.00	0.00	0.00	6,200.00	0.00	0.00	0.00	0.00	0.00	0.00	
6,300.00	0.00	0.00	6,300.00	0.00	0.00	0.00	0.00	0.00	0.00	
6,400.00	0.00	0.00	6,400.00	0.00	0.00	0.00	0.00	0.00	0.00	
6,500.00	0.00	0.00	6,500.00	0.00	0.00	0.00	0.00	0.00	0.00	
6,600.00	0.00	0.00	6,600.00	0.00	0.00	0.00	0.00	0.00	0.00	
6,621.00	0.00	0.00	6,621.00	0.00	0.00	0.00	0.00	0.00	0.00	
Brushy Canyon										
6,700.00	0.00	0.00	6,700.00	0.00	0.00	0.00	0.00	0.00	0.00	
6,800.00	0.00	0.00	6,800.00	0.00	0.00	0.00	0.00	0.00	0.00	
6,900.00	0.00	0.00	6,900.00	0.00	0.00	0.00	0.00	0.00	0.00	
7,000.00	0.00	0.00	7,000.00	0.00	0.00	0.00	0.00	0.00	0.00	
7,100.00	0.00	0.00	7,100.00	0.00	0.00	0.00	0.00	0.00	0.00	
7,200.00	0.00	0.00	7,200.00	0.00	0.00	0.00	0.00	0.00	0.00	
7,300.00	0.00	0.00	7,300.00	0.00	0.00	0.00	0.00	0.00	0.00	
7,400.00	0.00	0.00	7,400.00	0.00	0.00	0.00	0.00	0.00	0.00	
7,500.00	0.00	0.00	7,500.00	0.00	0.00	0.00	0.00	0.00	0.00	
7,600.00	0.00	0.00	7,600.00	0.00	0.00	0.00	0.00	0.00	0.00	
7,700.00	0.00	0.00	7,700.00	0.00	0.00	0.00	0.00	0.00	0.00	
7,800.00	0.00	0.00	7,800.00	0.00	0.00	0.00	0.00	0.00	0.00	
7,900.00	0.00	0.00	7,900.00	0.00	0.00	0.00	0.00	0.00	0.00	
8,000.00	0.00	0.00	8,000.00	0.00	0.00	0.00	0.00	0.00	0.00	
8,100.00	0.00	0.00	8,100.00	0.00	0.00	0.00	0.00	0.00	0.00	
8,200.00	0.00	0.00	8,200.00	0.00	0.00	0.00	0.00	0.00	0.00	
8,203.00	0.00	0.00	8,203.00	0.00	0.00	0.00	0.00	0.00	0.00	
1st Bone Spring Lime										
8,300.00	0.00	0.00	8,300.00	0.00	0.00	0.00	0.00	0.00	0.00	
8,400.00	0.00	0.00	8,400.00	0.00	0.00	0.00	0.00	0.00	0.00	
8,500.00	0.00	0.00	8,500.00	0.00	0.00	0.00	0.00	0.00	0.00	
8,600.00	0.00	0.00	8,600.00	0.00	0.00	0.00	0.00	0.00	0.00	
8,700.00	0.00	0.00	8,700.00	0.00	0.00	0.00	0.00	0.00	0.00	
8,800.00	0.00	0.00	8,800.00	0.00	0.00	0.00	0.00	0.00	0.00	
8,900.00	0.00	0.00	8,900.00	0.00	0.00	0.00	0.00	0.00	0.00	

LEAM Drilling Systems LLC

Planning Report

Database:	EDM\5000.1\SingleUser.Db	Local Co-ordinate Reference:	Well: 117H
Company:	DEVON ENERGY	TVD Reference:	GE 3443 - KB 28 @ 3471.00usft
Project:	Eddy County, NM (NAD 83)	MD Reference:	(Permitting)
Site:	Cotton Draw Unit	North Reference:	GE 3443 - KB 28 @ 3471.00usft
Well:	117H	Survey Calculation Method:	(Permitting)
Wellbore:	OH		Grid
Design:	Plan #1		Minimum Curvature

Planned Survey										
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	N/S (usft)	E/W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)	
9,000.00	0.00	0.00	9,000.00	0.00	0.00	0.00	0.00	0.00	0.00	
9,100.00	0.00	0.00	9,100.00	0.00	0.00	0.00	0.00	0.00	0.00	
9,200.00	0.00	0.00	9,200.00	0.00	0.00	0.00	0.00	0.00	0.00	
9,300.00	0.00	0.00	9,300.00	0.00	0.00	0.00	0.00	0.00	0.00	
9,306.00	0.00	0.00	9,306.00	0.00	0.00	0.00	0.00	0.00	0.00	
1st Bone Spring Sand										
9,400.00	0.00	0.00	9,400.00	0.00	0.00	0.00	0.00	0.00	0.00	
9,500.00	0.00	0.00	9,500.00	0.00	0.00	0.00	0.00	0.00	0.00	
9,600.00	0.00	0.00	9,600.00	0.00	0.00	0.00	0.00	0.00	0.00	
9,700.00	0.00	0.00	9,700.00	0.00	0.00	0.00	0.00	0.00	0.00	
9,711.00	0.00	0.00	9,711.00	0.00	0.00	0.00	0.00	0.00	0.00	
2nd Bone Spring Lime										
9,754.03	0.00	0.00	9,754.03	0.00	0.00	0.00	0.00	0.00	0.00	
KOP: Start DLS 10.00 TFO 359.90										
9,800.00	4.60	359.90	9,799.95	1.84	0.00	1.84	10.00	10.00	0.00	
9,850.00	9.60	359.90	9,849.55	8.02	-0.01	8.02	10.00	10.00	0.00	
9,900.00	14.60	359.90	9,898.43	18.49	-0.03	18.49	10.00	10.00	0.00	
9,904.73	15.07	359.90	9,903.00	19.71	-0.04	19.71	10.00	10.00	0.00	
2nd Bone Spring Sand										
9,950.00	19.60	359.90	9,946.20	33.19	-0.06	33.19	10.00	10.00	0.00	
10,000.00	24.60	359.90	9,992.51	51.99	-0.09	51.99	10.00	10.00	0.00	
10,050.00	29.60	359.90	10,037.01	74.76	-0.13	74.76	10.00	10.00	0.00	
10,100.00	34.60	359.90	10,079.36	101.32	-0.18	101.32	10.00	10.00	0.00	
10,150.00	39.60	359.90	10,119.22	131.47	-0.24	131.47	10.00	10.00	0.00	
10,200.00	44.60	359.90	10,156.31	164.98	-0.30	164.98	10.00	10.00	0.00	
10,250.00	49.60	359.90	10,190.34	201.59	-0.36	201.59	10.00	10.00	0.00	
10,300.00	54.60	359.90	10,221.05	241.03	-0.43	241.03	10.00	10.00	0.00	
10,350.00	59.60	359.90	10,248.20	283.00	-0.51	283.00	10.00	10.00	0.00	
10,400.00	64.60	359.90	10,271.59	327.17	-0.59	327.17	10.00	10.00	0.00	
10,450.00	69.60	359.90	10,291.04	373.21	-0.67	373.21	10.00	10.00	0.00	
10,500.00	74.60	359.90	10,306.41	420.78	-0.75	420.78	10.00	10.00	0.00	
10,550.00	79.60	359.90	10,317.57	469.50	-0.84	469.50	10.00	10.00	0.00	
10,600.00	84.60	359.90	10,324.44	519.01	-0.93	519.01	10.00	10.00	0.00	
10,650.00	89.60	359.90	10,326.97	568.93	-1.02	568.93	10.00	10.00	0.00	
10,658.03	90.40	359.90	10,326.97	576.96	-1.03	576.96	10.00	10.00	0.00	
EOC: Start 3806.00 hold at 10658.03 MD										
10,700.00	90.40	359.90	10,326.68	618.93	-1.11	618.93	0.00	0.00	0.00	
10,800.00	90.40	359.90	10,325.98	718.92	-1.29	718.92	0.00	0.00	0.00	
10,900.00	90.40	359.90	10,325.28	818.92	-1.46	818.92	0.00	0.00	0.00	
11,000.00	90.40	359.90	10,324.59	918.92	-1.64	918.92	0.00	0.00	0.00	
11,100.00	90.40	359.90	10,323.89	1,018.92	-1.82	1,018.92	0.00	0.00	0.00	
11,200.00	90.40	359.90	10,323.19	1,118.91	-2.00	1,118.91	0.00	0.00	0.00	
11,300.00	90.40	359.90	10,322.49	1,218.91	-2.18	1,218.91	0.00	0.00	0.00	
11,400.00	90.40	359.90	10,321.79	1,318.91	-2.36	1,318.91	0.00	0.00	0.00	
11,500.00	90.40	359.90	10,321.10	1,418.91	-2.54	1,418.91	0.00	0.00	0.00	
11,600.00	90.40	359.90	10,320.40	1,518.90	-2.72	1,518.90	0.00	0.00	0.00	
11,700.00	90.40	359.90	10,319.70	1,618.90	-2.90	1,618.90	0.00	0.00	0.00	
11,800.00	90.40	359.90	10,319.00	1,718.90	-3.07	1,718.90	0.00	0.00	0.00	
11,900.00	90.40	359.90	10,318.30	1,818.89	-3.25	1,818.90	0.00	0.00	0.00	
12,000.00	90.40	359.90	10,317.60	1,918.89	-3.43	1,918.90	0.00	0.00	0.00	
12,100.00	90.40	359.90	10,316.91	2,018.89	-3.61	2,018.89	0.00	0.00	0.00	

LEAM Drilling Systems LLC

Planning Report

Database:	EDM5000.1 Single User Db	Local Co-ordinate Reference:	Well 117H
Company:	DEVONENERGY	TVD Reference:	GE 3443 KB28 @ 3471.00usft
Project:	Eddy County NM (NAD-83)	MD Reference:	(Permitting)
Site:	Cotton Draw Unit	North Reference:	GE 3443 KB28 @ 3471.00usft
Well:	117H	Survey Calculation Method:	(Permitting)
Wellbore:	OH		Grid
Design:	Plan#1		Minimum Curvature

Planned Survey										
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/S (usft)	+E/W (usft)	Vertical Section (usft)	Dogleg Rate (%/100usft)	Build Rate (%/100usft)	Turn Rate (%/100usft)	
12,200.00	90.40	359.90	10,316.21	2,118.89	-3.79	2,118.89	0.00	0.00	0.00	
12,300.00	90.40	359.90	10,315.51	2,218.88	-3.97	2,218.89	0.00	0.00	0.00	
12,400.00	90.40	359.90	10,314.81	2,318.88	-4.15	2,318.89	0.00	0.00	0.00	
12,500.00	90.40	359.90	10,314.11	2,418.88	-4.33	2,418.88	0.00	0.00	0.00	
12,600.00	90.40	359.90	10,313.42	2,518.88	-4.50	2,518.88	0.00	0.00	0.00	
12,700.00	90.40	359.90	10,312.72	2,618.87	-4.68	2,618.88	0.00	0.00	0.00	
12,800.00	90.40	359.90	10,312.02	2,718.87	-4.86	2,718.88	0.00	0.00	0.00	
12,900.00	90.40	359.90	10,311.32	2,818.87	-5.04	2,818.87	0.00	0.00	0.00	
13,000.00	90.40	359.90	10,310.62	2,918.87	-5.22	2,918.87	0.00	0.00	0.00	
13,100.00	90.40	359.90	10,309.92	3,018.86	-5.40	3,018.87	0.00	0.00	0.00	
13,200.00	90.40	359.90	10,309.23	3,118.86	-5.58	3,118.87	0.00	0.00	0.00	
13,300.00	90.40	359.90	10,308.53	3,218.86	-5.76	3,218.86	0.00	0.00	0.00	
13,400.00	90.40	359.90	10,307.83	3,318.86	-5.94	3,318.86	0.00	0.00	0.00	
13,500.00	90.40	359.90	10,307.13	3,418.85	-6.11	3,418.86	0.00	0.00	0.00	
13,600.00	90.40	359.90	10,306.43	3,518.85	-6.29	3,518.86	0.00	0.00	0.00	
13,700.00	90.40	359.90	10,305.74	3,618.85	-6.47	3,618.85	0.00	0.00	0.00	
13,800.00	90.40	359.90	10,305.04	3,718.85	-6.65	3,718.85	0.00	0.00	0.00	
13,900.00	90.40	359.90	10,304.34	3,818.84	-6.83	3,818.85	0.00	0.00	0.00	
14,000.00	90.40	359.90	10,303.64	3,918.84	-7.01	3,918.85	0.00	0.00	0.00	
14,100.00	90.40	359.90	10,302.94	4,018.84	-7.19	4,018.84	0.00	0.00	0.00	
14,200.00	90.40	359.90	10,302.24	4,118.83	-7.37	4,118.84	0.00	0.00	0.00	
14,300.00	90.40	359.90	10,301.55	4,218.83	-7.54	4,218.84	0.00	0.00	0.00	
14,400.00	90.40	359.90	10,300.85	4,318.83	-7.72	4,318.84	0.00	0.00	0.00	
14,463.03	90.40	359.90	10,300.41	4,381.86	-7.84	4,381.87	0.00	0.00	0.00	
TD at 14463.03 MD										

Design Targets										
Target Name	Dip Angle (°)	Dip Dir (°)	TVD (usft)	+N/S (usft)	+E/W (usft)	Northing (usft)	Easting (usft)	Latitude	Longitude	
hit/miss target										
Shape										
SHL(CDU 117H)	0.00	0.00	0.00	0.00	0.00	425,040.23	717,633.89	32° 10' 2.031 N	103° 45' 48.891 W	
- plan hits target center										
- Point										
PBHL(CDU 117H)	0.00	0.01	10,300.41	4,381.86	-7.84	429,422.09	717,626.05	32° 10' 45.393 N	103° 45' 48.713 W	
- plan hits target center										
- Point										

LEAM Drilling Systems LLC

Planning Report

Database Company:	EDM:5000.1 Single User Db DEVON ENERGY	Local Co-ordinate Reference:	Well: 117H
Project:	Eddy County, NM (NAD-83)	TVD Reference:	GE 3443' - KB 28' @ 3471.00usft (Permitting)
Site:	Cotton Draw Unit	MD Reference:	GE 3443' - KB 28' @ 3471.00usft (Permitting)
Well:	117H	North Reference:	Grid
Wellbore:	OH	Survey Calculation Method:	Minimum Curvature
Design:	Plan #1		

Formations						
Measured Depth (usft)	Vertical Depth (usft)	Name	Lithology	Dip (°)	Dip Direction	
599.00	599.00	RUSTLER				
994.00	994.00	TOP SALT				
2,800.00	2,800.00	CASTILE				
4,407.00	4,407.00	Bell Canyon				
5,296.00	5,296.00	Cherry Canyon				
6,621.00	6,621.00	Brushy Canyon				
8,203.00	8,203.00	1st Bone Spring Lime				
9,306.00	9,306.00	1st Bone Spring Sand				
9,711.00	9,711.00	2nd Bone Spring Lime				
9,904.73	9,903.00	2nd Bone Spring Sand				

Plan Annotations					
Measured Depth (usft)	Vertical Depth (usft)	Local Coordinates			
		+N/-S (usft)	+E/-W (usft)	Comment	
9,754.03	9,754.03	0.00	0.00	KOP: Start DLS 10.00 TFO 359.90	
10,658.03	10,326.97	576.96	-1.03	EOC: Start 3805.00 hold at 10658.03 MD	
14,463.03	10,300.41	4,381.86	-7.84	TD at 14463.03' MD	

PECOS DISTRICT CONDITIONS OF APPROVAL

OPERATOR'S NAME:	Devon Energy Production Co.
LEASE NO.:	NMNM-036379
WELL NAME & NO.:	Cotton Draw Unit 117H
SURFACE HOLE FOOTAGE:	0160' FSL & 1980' FEL
BOTTOM HOLE FOOTAGE:	0660' FNL & 1980' FEL
LOCATION:	Section 34, T. 24 S., R 31 E., NMPM
COUNTY:	Eddy County, New Mexico

Commercial Well Determination

A commercial well determination shall be submitted after production has been established for at least six months.

Unit Wells

The well sign for a unit well shall include the unit number in addition to the surface and bottom hole lease numbers. This also applies to participating area numbers. If a participating area has not been established, the operator can use the general unit designation, but will replace the unit number with the participating area number when the sign is replaced.

I. DRILLING

A. DRILLING OPERATIONS REQUIREMENTS

The BLM is to be notified in advance for a representative to witness:

- a. Spudding well (minimum of 24 hours)
- b. Setting and/or Cementing of all casing strings (minimum of 4 hours)
- c. BOPE tests (minimum of 4 hours)

☒ **Eddy County**

Call the Carlsbad Field Office, 620 East Greene St., Carlsbad, NM 88220,
(575) 361-2822

1. **Although Hydrogen Sulfide has not been reported in the area, it is always a potential hazard. If Hydrogen Sulfide is encountered, report measured amounts and formations to the BLM.**
2. Unless the production casing has been run and cemented or the well has been properly plugged, the drilling rig shall not be removed from over the hole without prior approval. **If the drilling rig is removed without approval – an Incident of Non-Compliance will be written and will be a “Major” violation.**

3. Floor controls are required for 3M or Greater systems. These controls will be on the rig floor, unobstructed, readily accessible to the driller and will be operational at all times during drilling and/or completion activities. Rig floor is defined as the area immediately around the rotary table; the area immediately above the substructure on which the draw works is located, this does not include the dog house or stairway area.
4. **The record of the drilling rate along with the GR/N well log run from TD to surface (horizontal well – vertical portion of hole) shall be submitted to the BLM office as well as all other logs run on the borehole 30 days from completion. If available, a digital copy of the logs is to be submitted in addition to the paper copies. The Rustler top and top and bottom of Salt are to be recorded on the Completion Report.**

B. CASING

Changes to the approved APD casing program need prior approval if the items substituted are of lesser grade or different casing size. The Operator can exchange the components of the proposal with that of superior strength (i.e. changing from J-55 to N-80, or from 36# to 40#). Changes to the approved cement program need prior approval if the altered cement plan has less volume or strength or if the changes are substantial (i.e. Multistage tool, ECP, etc.).

Centralizers required on surface casing per Onshore Order 2.III.B.1.f.

Wait on cement (WOC) time prior to drilling out for a primary cement job will be a minimum 18 hours for a water basin, 24 hours in the potash area, or 500 pounds compressive strength, whichever is greater for all casing strings. DURING THIS WOC TIME, NO DRILL PIPE, ETC. SHALL BE RUN IN THE HOLE. Provide compressive strengths including hours to reach required 500 pounds compressive strength prior to cementing each casing string. IF OPERATOR DOES NOT HAVE THE WELL SPECIFIC CEMENT DETAILS ONSITE PRIOR TO PUMPING THE CEMENT FOR EACH CASING STRING, THE WOC WILL BE 30 HOURS. See individual casing strings for details regarding lead cement slurry requirements.

No pea gravel permitted for remedial or fall back remedial without prior authorization from the BLM engineer.

Possible water and brine flows in the Salado, Castile, Delaware, and Bone Springs. Possible lost circulation in the Delaware and Bone Spring groups. Abnormal high pressures may be encountered near the Wolfcamp formation.

1. The **13-3/8** inch surface casing shall be set at approximately **1000** feet (a minimum of 25 feet into the Rustler Anhydrite and above the salt) and cemented to the surface. **If salt is encountered, set casing at least 25 feet above the salt.**

a. If cement does not circulate to the surface, the appropriate BLM office shall be notified and a temperature survey utilizing an electronic type temperature survey with surface log readout will be used or a cement bond log shall be run to verify the top of the cement. Temperature survey will be run a minimum of six hours after pumping cement and ideally between 8-10 hours after completing the cement job.

b. Wait on cement (WOC) time for a primary cement job is to include the lead cement slurry.

c. Wait on cement (WOC) time for a remedial job will be a minimum of 4 hours after bringing cement to surface or 500 pounds compressive strength, whichever is greater.

d. If cement falls back, remedial cementing will be done prior to drilling out that string.

2. The minimum required fill of cement behind the **9-5/8** inch intermediate casing is:

☒ Cement to surface. If cement does not circulate see B.1.a, c-d above.

Centralizers required on horizontal leg, must be type for horizontal service and a minimum of one every other joint.

3. The minimum required fill of cement behind the **5-1/2** inch production casing is:

Operator has proposed DV tool at depth of 6000'. Operator is to submit sundry if DV tool depth varies by more than 100' from approved depth.

a. First stage to DV tool:

☒ Cement to circulate. If cement does not circulate, contact the appropriate BLM office before proceeding with second stage cement job. Operator should have plans as to how they will achieve circulation or approved top of cement on the next stage.

b. Second stage above DV tool:

☒ Cement should tie-back at least 500 feet into previous casing string. Operator shall provide method of verification.

4. If hardband drill pipe is rotated inside casing, returns will be monitored for metal. If metal is found in samples, drill pipe will be pulled and rubber protectors which have a larger diameter than the tool joints of the drill pipe will be installed prior to continuing drilling operations.

C. PRESSURE CONTROL

1. All blowout preventer (BOP) and related equipment (BOPE) shall comply with well control requirements as described in Onshore Oil and Gas Order No. 2 and API RP 53 Sec. 17.
2. Variance approved to use flex line from BOP to choke manifold. Check condition of flexible line from BOP to choke manifold, replace if exterior is damaged or if line fails test. Line to be as straight as possible with no hard bends and is to be anchored according to Manufacturer's requirements. The flexible hose can be exchanged with a hose of equal size and equal or greater pressure rating. **Anchor requirements, specification sheet and hydrostatic pressure test certification matching the hose in service, to be onsite for review. These documents shall be posted in the company man's trailer and on the rig floor.** If the BLM inspector questions the straightness of the hose, a BLM engineer will be contacted and will review in the field or via picture supplied by inspector to determine if changes are required (operator shall expect delays if this occurs).
3. 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.
 - a. **For surface casing only:** If the BOP/BOPE is to be tested against casing, the wait on cement (WOC) time for that casing is to be met (see WOC statement at start of casing section). Independent service company required.
4. The appropriate BLM office shall be notified a minimum of 4 hours in advance for a representative to witness the tests.
 - a. In a water basin, for all casing strings utilizing slips, these are to be set as soon as the crew and rig are ready and any fallback cement remediation has been done. The casing cut-off and BOP installation can be initiated four hours after installing the slips, which will be approximately six hours after bumping the plug. For those casing strings not using slips, the minimum wait time before cut-off is eight hours after bumping the plug. BOP/BOPE testing can begin after cut-off or once cement reaches 500 psi compressive strength (including lead when specified), whichever is greater. However, if the float does not hold, cut-off cannot be initiated until cement reaches 500 psi compressive strength (including lead when specified).

- b. The tests shall be done by an independent service company utilizing a test plug **not a cup or J-packer**. The operator also has the option of utilizing an independent tester to test without a plug (i.e. against the casing) pursuant to Onshore Order 2 with the pressure not to exceed 70% of the burst rating for the casing. Any test against the casing must meet the WOC time for water basin (18 hours) or potash (24 hours) or 500 pounds compressive strength, whichever is greater, prior to initiating the test (see casing segment as lead cement may be critical item).
- c. The test shall be run on a 5000 psi chart for a 2-3M BOP/BOP, on a 10000 psi chart for a 5M BOP/BOPE and on a 15000 psi chart for a 10M BOP/BOPE. If a linear chart is used, it shall be a one hour chart. A circular chart shall have a maximum 2 hour clock.
- d. The results of the test shall be reported to the appropriate BLM office.
- e. All tests are required to be recorded on a calibrated test chart. **A copy of the BOP/BOPE test chart and a copy of independent service company test will be submitted to the appropriate BLM office.**
- f. The BOP/BOPE test shall include a low pressure test from 250 to 300 psi. The test will be held for a minimum of 10 minutes if test is done with a test plug and 30 minutes without a test plug. This test shall be performed prior to the test at full stack pressure.

D. DRILL STEM TEST

If drill stem tests are performed, Onshore Order 2.III.D shall be followed.

E. WASTE MATERIAL AND FLUIDS

All waste (i.e. drilling fluids, trash, salts, chemicals, sewage, gray water, etc.) created as a result of drilling operations and completion operations shall be safely contained and disposed of properly at a waste disposal facility. No waste material or fluid shall be disposed of on the well location or surrounding area.

Porto-johns and trash containers will be on-location during fracturing operations or any other crew-intensive operations.

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