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Form 3160-3  
(April 2004)

JUN 10 2010  
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FORM APPROVED  
OMB No 1004-0137  
Expires March 31, 2007

UNITED STATES  
DEPARTMENT OF THE INTERIOR  
BUREAU OF LAND MANAGEMENT

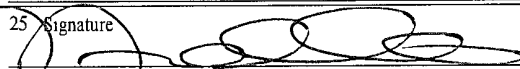
APPLICATION FOR PERMIT TO DRILL OR REENTER

1a. Type of work <input checked="" type="checkbox"/> DRILL <input type="checkbox"/> REENTER		5. Lease Serial No. <b>NMNM 68084</b>
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 <b>Devon Energy Production Company, LP</b>		7. If Unit or CA Agreement, Name and No
3a. Address <b>20 North Broadway Oklahoma City, Oklahoma City 73102-8260</b>	3b. Phone No. (include area code) <b>405-552-8198</b>	8. Lease Name and Well No. <b>Mesa Verde 7 Federal 8</b>
4. Location of Well (Report location clearly and in accordance with any State requirements *) At surface <b>660 FSL &amp; 660 FWL, Unit M</b> At proposed prod zone <b>660 FSL &amp; 660 FWL, Unit M</b>		9. API Well No. <b>30-025-39771</b>
14. Distance in miles and direction from nearest town or post office* <b>Approximately 22 miles east of Loving, NM</b>		10. Field and Pool, or Exploratory <b>Mesa Verde Delaware</b>
15. Distance from proposed* location to nearest property or lease line, ft. (Also to nearest drig. unit line, if any) <b>660'</b>	16. No. of acres in lease <b>421.56</b>	11. Sec., T. R. M. or Blk and Survey or Area <b>Sec 7, T24S R32E</b>
18. Distance from proposed location* to nearest well, drilling, completed, applied for, on this lease, ft. <b>1355'</b>	19. Proposed Depth <b>8700'</b>	12. County or Parish <b>Lea County</b>
21. Elevations (Show whether DF, KDB, RT, GL, etc) <b>3586' GL</b>	22. Approximate date work will start* <b>06/01/2010</b>	13. State <b>NM</b>
20. BLM/BIA Bond No. on file <b>CO-1104</b>		
23. Estimated duration <b>30 days</b>		

24. Attachments

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

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

25. Signature 	Name (Printed/Typed) <b>Norvella Adams</b>	Date <b>03/19/2010</b>
Title <b>Sr. Staff Eng. Tech</b>		

Approved by (Signature) <b>/s/ Don Peterson</b>	Name (Printed/Typed)	Date <b>JUN 8 2010</b>
Title <b>FIELD MANAGER</b>	Office <b>CARLSBAD FIELD OFFICE</b>	

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.

**APPROVAL FOR TWO YEARS**

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)

Carlsbad Controlled Water Basin

*K-2*

Approval Subject to General Requirements  
& Special Stipulations Attached

**SEE ATTACHED FOR  
CONDITIONS OF APPROVAL**

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JUN 10 2010

HOBBSOCD

## DISTRICT I

1625 N. French Dr., Hobbs, NM 88240

## DISTRICT II

1301 W. Grand Avenue, Artesia, NM 88210

## DISTRICT III

1000 Rio Brazos Rd., Aztec, NM 87410

## DISTRICT IV

1220 S. St. Francis Dr., Santa Fe, NM 87505

State of New Mexico

Energy, Minerals and Natural Resources Department

Form C-102

Revised October 15, 2009

Submit one copy to appropriate  
District Office

## OIL CONSERVATION DIVISION

1220 South St. Francis Dr.  
Santa Fe, New Mexico 87505

## WELL LOCATION AND ACREAGE DEDICATION PLAT

☐ AMENDED REPORT

API Number <b>30-025-39771</b>	Pool Code <b>96191</b>	Pool Name Mesa Verde Delaware
Property Code <b>30873</b>	Property Name MESA VERDE "7" FEDERAL	Well Number 8
OGRID No. 6137	Operator Name DEVON ENERGY PRODUCTION COMPANY, L.P.	Elevation 3586'

## Surface Location

UL or lot No.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County
M	7	24 S	32 E		660	SOUTH	660	WEST	LEA

## Bottom Hole Location If Different From Surface

UL or lot No.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County
Dedicated Acres <b>45.25</b>	Joint or Infill	Consolidation Code	Order No.						

NO ALLOWABLE WILL BE ASSIGNED TO THIS COMPLETION UNTIL ALL INTERESTS HAVE BEEN CONSOLIDATED  
OR A NON-STANDARD UNIT HAS BEEN APPROVED BY THE DIVISION

<p><b>SURFACE LOCATION</b>          Lat - N 32°13'35.19"          Long - W 103°43'15.08"          NMSPCE - N 446653.556          E 730731.758          (NAD-83)</p>	<b>OPERATOR CERTIFICATION</b>  I hereby certify that the information contained herein is true and complete to the best of my knowledge and belief, and that this organization either owns a working interest or undivided mineral interest in the land including the proposed bottom hole location or has a right to drill this well at this location pursuant to a contract with an owner of such a mineral or working interest, or to a voluntary pooling agreement or a compulsory pooling order heretofore entered by the division.  Signature  Date <b>3/19/10</b> Norvella Adams Printed Name
	<b>SURVEYOR CERTIFICATION</b>  I hereby certify that the well location shown on this plat was plotted from field notes of actual surveys made by me or under my supervision and that the same is true and correct to the best of my belief.
	FEBRUARY 24 2010 Date Surveyed Signature & Seal Professional Surveyor 
	Certificate No. <b>Gary L. Jones 7977</b> BASIN SURVEYS

## DRILLING PROGRAM

Devon Energy Production Company, LP

### **Mesa Verde 7 Federal 8**

Surface Location: 660' FSL & 660' FWL, Unit M, Sec 7 T24S R32E, Lea, NM

Bottom Hole Location: 660' FSL & 660' FWL, Unit M, Sec 7 T24S R32E, Lea, NM

#### **1. Geologic Name of Surface Formation**

- a. Quaternary Eolian and Piedmont Deposits

#### **2. Estimated Tops of Geological Markers & Depths of Anticipated Fresh Water, Oil or Gas:**

a. Fresh Water	230'	
b. Rustler	841'	
c. Salado	1174'	
d. Salt	1304'	
e. Base Salt	4370'	
f. Delaware/Lamar	4612'	
g. Bell Canyon	4648'	
h. Cherry Canyon	5529'	Oil
i. Brushy Canyon	6779'	Oil
j. Bone Spring	8473'	Oil

No other formations are expected to yield oil, gas or fresh water in measurable volumes. The surface fresh water sands will be protected by setting 8 5/8" casing at 4600' and circulating cement back to surface. The Bone Spring intervals will be isolated by setting 5 1/2" casing to total depth and circulating cement 4100'.

#### **3. Casing Program:**

	<u>Hole</u> <u>Size</u>	<u>Hole</u> <u>Interval</u>	<u>OD</u> <u>Csg</u>	<u>Casing</u> <u>Interval</u>	<u>Weight</u>	<u>Collar</u>	<u>Grade</u>
	14 3/4"	0' - 900'	11 3/4"	0' - 900'	42#	ST&C	H-40
	11"	900' - 2000'	8 5/8"	0' - 2000'	24#	ST&C	J-55
See COA	11"	2000' - <del>4600'</del>	8 5/8"	2000' - 4600'	32#	LT&C	J-55
	7 7/8"	<del>4600'</del> - 8700'	5 1/2"	0 - 8700'	17#	LT&C	J-55

#### **Design Parameter Factors:**

<u>Casing Size</u>	<u>Collapse Design</u> <u>Factor</u>	<u>Burst Design</u> <u>Factor</u>	<u>Tension Design</u> <u>Factor</u>
11 3/4"	2.54	4.70	8.12
8 5/8", 24# J-55 STC	1.32	2.84	1.86
8 5/8", 32# J-55 LTC	1.18	1.64	5.01
5 1/2"	1.21	1.31	1.67

NOTE REGARDING COLLAPSE DESIGN FACTOR FOR INTERMEDIATE CASING: The maximum possible collapse load that the intermediate casing will experience will result from evacuated casing with the pore pressure exerting a collapse load at TD. The pore pressure is estimated to be 9.0 ppg for this calculation. This results in a collapse design factor of 1.18 for the 8-5/8" 32# J-55 LTC casing at a depth of 4,600 ft. While running the intermediate casing, the casing string will never be completely evacuated. There is no potential for the intermediate casing to be used as a production string.

**4. Cement Program:**

- |                        |  |
|------------------------|--|
| a. 11 3/4" Surface     | Lead with 350 sx (35:65) Poz Class C + 5% NaCl + ¼ lbs/sx Celloflake, and 4% Bentonite + 1% Sodium Metasilicate + 5% MPA-5; 12.8 ppg, 1.96 cf/sx, 10.56 gps. Tail with 250 sx Class C + 2% CaCl <sub>2</sub> + ¼ lbs/sx Celloflake; 14.8 ppg, 1.35 cf/sx, 6.35 gps. TOC = 0.   |
| b. 8 5/8" Intermediate | Lead with 950 sx (35:65) Poz Class C + 2% CaCl <sub>2</sub> + ¼ lbs/sx Cello Flake + 6% Bentonite + 5% NaCl; 12.5 ppg, 2.04 cf/sx, 11.24 gps. Tail with 300 sx Class C + ¼ lbs/sx Cello Flake; 14.8 ppg, 1.35 cf/sx, 6.35 gps. TOC = 0.  |
| c. 5 1/2" Production   | <div style="display: flex; align-items: center;"> <div style="margin-right: 20px;">See<br/>COA</div> <div>           Stage 1: 225 sx (15:61:11) Class C + 1% KCl + 0.75% EC-1 + 0.4% CD-32 + 3 #/sx LCM-1 + 0.6% FL-25 + 0.6% FL-52A; 13.30 ppg, 1.56 cf/sx, 7.55 gps.. Stage 2: Lead with 365 sx (35:65) Poz Class C + ¼ #/sx Cello Flake + 6% Bentonite; 12.50 ppg, 1.94 cf/sx, 10.65 gps. Tail with 150 sx (60:40) Poz Class C + 2% NaCl + 0.1% Sodium Metasilicate + 4% MPA-5; 13.8 ppg, 1.35 cf/sx, 6.29 gps. TOC = 4,100. DV tool set at 6,950'.         </div> </div> |

The above cement volumes could be revised pending the caliper measurement from the open hole logs. All casing is new and API approved.

**5. Pressure Control Equipment:**

The BOP system used to drill the intermediate hole will consist of an 11" 5M Double Ram and Annular preventer. The BOP system will be tested as per BLM Onshore Oil and Gas Order No. 2 as a 3M system prior to drilling out the surface casing shoe.

The BOP system used to drill the production hole will consist of an 11" 5M Double Ram and Annular preventer. The BOP system will be tested as per BLM Onshore Oil and Gas Order No. 2 as a 5M system 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.

**6. Proposed Mud Circulation System**

<u>Depth</u>	<u>Mud Wt.</u>	<u>Visc</u>	<u>Fluid Loss</u>	<u>Type System</u>
0' – 900'	8.4 - 9.0	30-34	NC	Fresh Water
900' – 4600'	9.8 –10.0	28-32	NC	Brine
4600' – 8700'	8.6 - 9.0	28-32	NC-12 cc	Fresh Water

The necessary mud products for weight addition and fluid loss control will be on location at all times.

**7. Auxiliary Well Control and Monitoring Equipment:**

- a. A Kelly cock will be in the drill string at all times.
- b. A full opening drill pipe stabbing valve having the appropriate connections will be on the rig floor at all times.
- c. Hydrogen Sulfide detection equipment will be in operation after drilling out the 8 5/8" casing shoe until the 5 1/2" casing is cemented. Breathing equipment will be on location upon drilling the 8 5/8" shoe until total depth is reached.

**8. Logging, Coring, and Testing Program: *See COA***

- a. Drill stem tests will be based on geological sample shows.
- b. If a drill stem test is anticipated; a procedure, equipment to be used and safety measures will be provided via sundry notice to the BLM.
- c. The open hole electrical logging program will be:
  - i. Total Depth to Intermediate Casing      Dual Laterolog-Micro Laterolog with SP and Gamma Ray. Compensated Neutron – Z Density log with Gamma Ray and Caliper.
  - ii. Total Depth to Surface      Compensated Neutron with Gamma Ray
  - iii. No coring program is planned
  - iv. Additional testing will be initiated subsequent to setting the 5 1/2" production casing. Specific intervals will be targeted based on log evaluation, geological sample shows and drill stem tests.

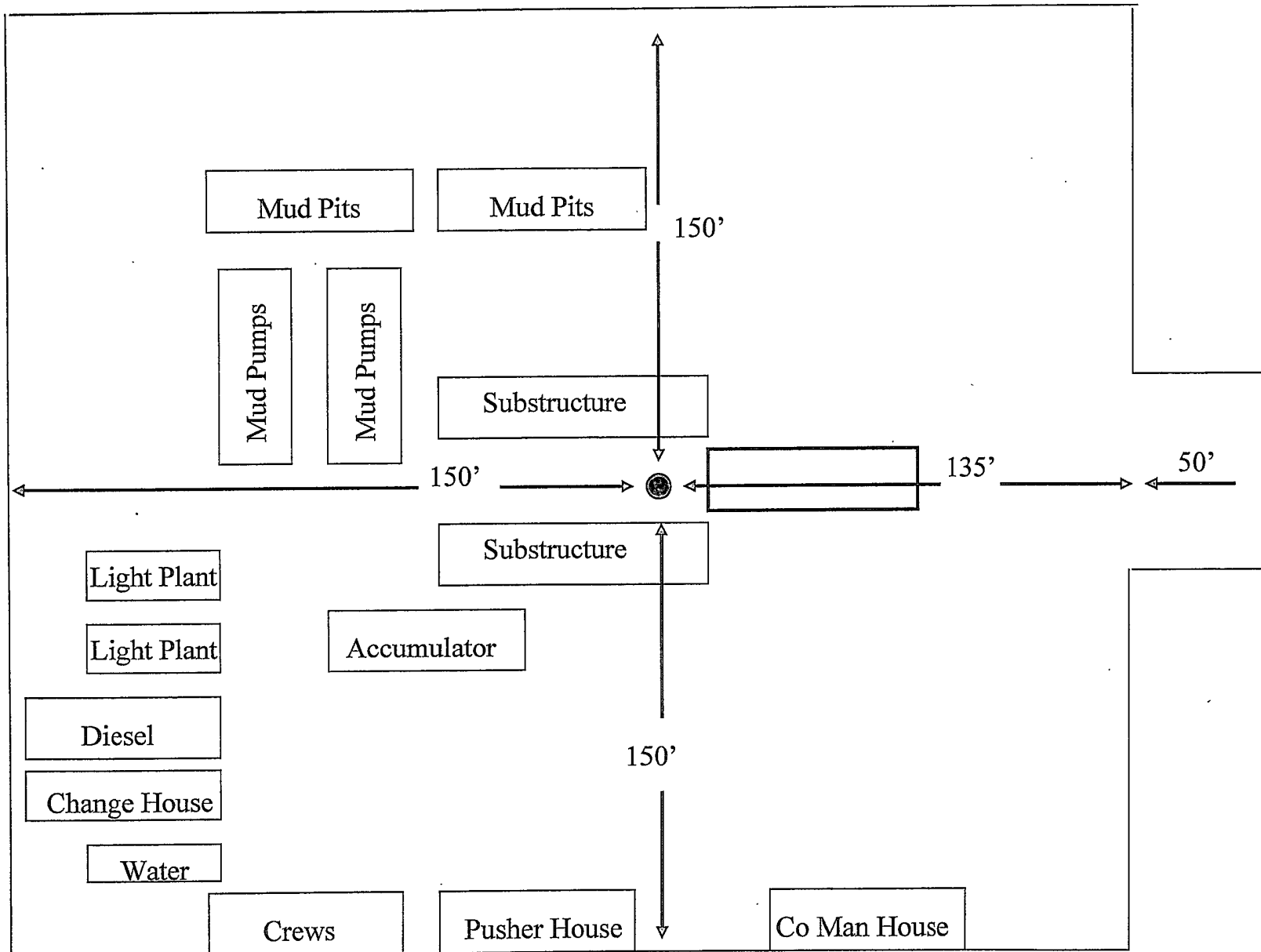
**9. Potential Hazards:**

- a. No abnormal pressures or temperatures are expected. A H2S contingency plan will be provided. All personnel will be familiar with all aspects of safe operation of equipment being used to drill this well. Estimated BHP 800 psi and Estimated BHT 150°.

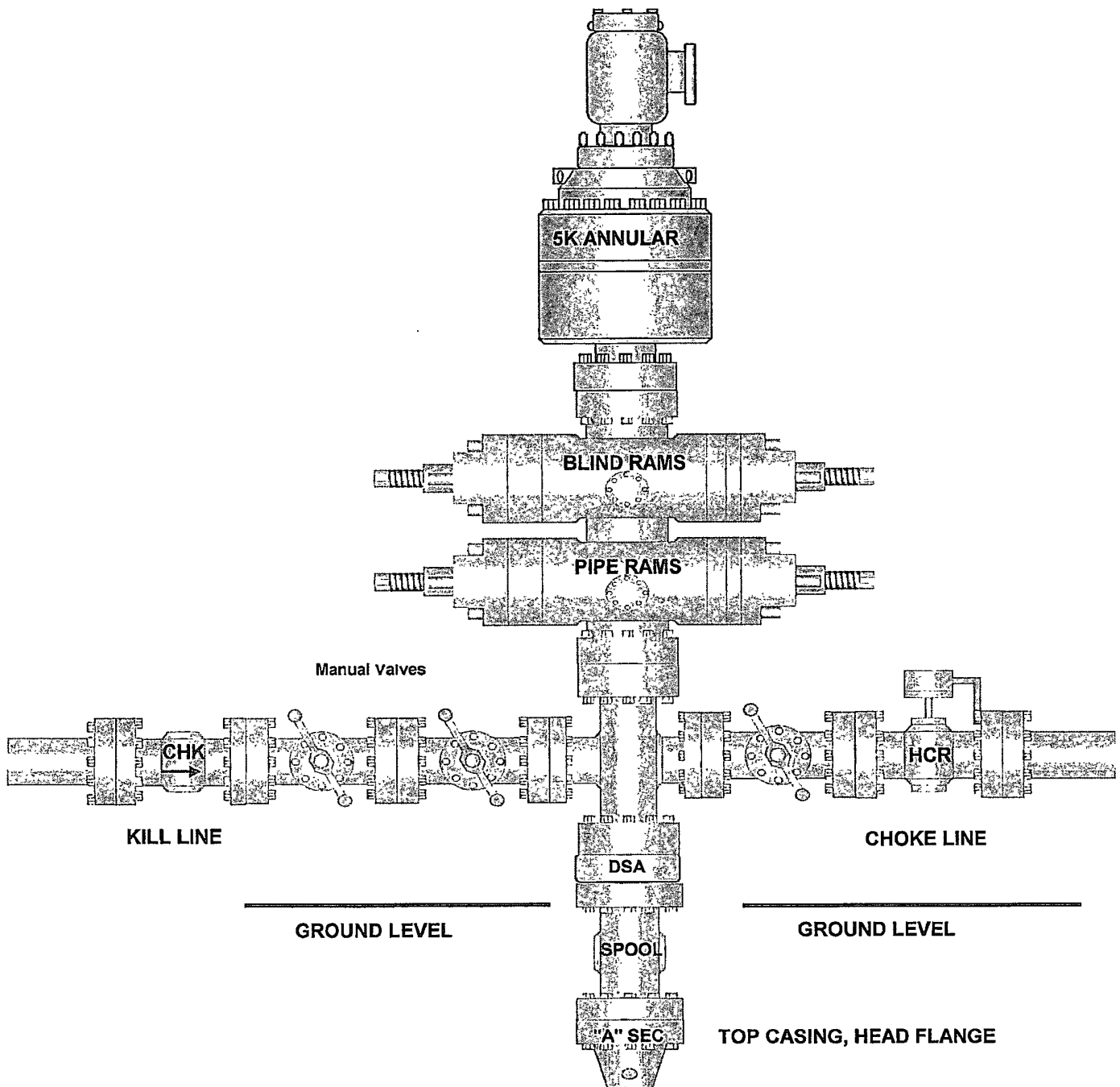
**10. Anticipated Starting Date and Duration of Operations:**

- a. Road and location construction will begin after the BLM has approved the APD. Anticipated spud date will be as soon after BLM approval and as soon as a rig will be available. Move in operations and drilling is expected to take 30 days. If production casing is run then an additional 30 days will be needed to complete well and construct surface facilities and/or lay flow lines in order to place well on production.

# PATTERSON RIG 41



# 11" x 5,000 psi BOP Stack



# 5,000 PSI CHOKE MANIFOLD

