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JUN 10 2010

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Form 3160-3  
(April 2004)

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UNITED STATES  
DEPARTMENT OF THE INTERIOR  
BUREAU OF LAND MANAGEMENT

## APPLICATION FOR PERMIT TO DRILL OR REENTER


FORM APPROVED  
OMB No. 1004-0137  
Expires March 31, 2007

1a. Type of work: <input checked="" type="checkbox"/> DRILL <input type="checkbox"/> REENTER		5. Lease Serial No. NMNM 68084
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, LP		7. If Unit or CA Agreement, Name and No
3a. Address 20 North Broadway Oklahoma City, Oklahoma City 73102-8260		8. Lease Name and Well No. <b>&lt;30873&gt;</b> Mesa Verde 7 Federal 6
3b. Phone No. (include area code) 405-552-8198		9. API Well No. <b>30-025-39770</b>
4. Location of Well (Report location clearly and in accordance with any State requirements.) At surface 1980 FSL & 660 FWL, Unit L At proposed prod zone 1980 FSL & 660 FWL, Unit L		10. Field and Pool, or Exploratory Mesa Verde Delaware <b>&lt;96191&gt;</b>
14. Distance in miles and direction from nearest town or post office* Approximately 22 miles east of Loving, NM		11. Sec, T, R, M. or Blk. and Survey or Area Sec 7, T24S R32E
15. Distance from proposed* location to nearest property or lease line, ft (Also to nearest drig. unit line, if any) 660'	16. No. of acres in lease 421.56	12. County or Parish Lea County
17. Spacing Unit dedicated to this well 40	13. State NM	
18. Distance from proposed location* to nearest well, drilling, completed, applied for, on this lease, ft. 1355'	19. Proposed Depth 8700'	20. BLM/BIA Bond No. on file CO-1104
21. Elevations (Show whether DF, KDB, RT, GL, etc.) 3580' GL	22. Approximate date work will start* 06/01/2010	23. Estimated duration 30 days

## 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) Norvella Adams	Date 03/19/2010
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Title  
Sr. Staff Eng. Tech

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

Approval Subject to General Requirements  
& Special Stipulations AttachedSEE ATTACHED FOR  
CONDITIONS OF APPROVAL

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

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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>30-025-39770</b>	Pool Code <b>96191</b>	Pool Name Mesa Verde Delaware
Property Code <b>30873</b>	Property Name MESA VERDE "7" FEDERAL	Well Number 6
GRID No. 6137	Operator Name DEVON ENERGY PRODUCTION COMPANY, L.P.	Elevation 3580'

Surface Location

UL or lot No. L	Section 7	Township 24 S	Range 32 E	Lot Idn	Feet from the 1980	North/South line SOUTH	Feet from the 660	East/West line WEST	County LEA
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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>40 45.34</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>OPERATOR CERTIFICATION</b></p> <p>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 unleased 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.</p> <p>Signature: <i>Norvella Adams</i> Date: <b>3/19/10</b></p> <p>Printed Name: <b>Norvella Adams</b></p>
	<p><b>SURVEYOR CERTIFICATION</b></p> <p>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.</p>
	<p>DATE SURVEYED: <b>FEBRUARY 24, 2010</b></p> <p>SIGNATURE &amp; SEAL OF PROFESSIONAL SURVEYOR: <i>[Signature]</i></p> <p>CERTIFICATE NO.: <b>7977</b></p>
	<p>Certificate No. <b>Gary L. Jones 7977</b></p> <p><b>BASIN SURVEYS</b></p>

## DRILLING PROGRAM

Devon Energy Production Company, LP

### **Mesa Verde 7 Federal 6**

Surface Location: 1980' FSL & 660' FWL, Unit L, Sec 7 T24S R32E, Lea, NM

Bottom Hole Location: 1980' FSL & 660' FWL, Unit L, 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 CWK	11"	2000' - 4600'	8 5/8"	2000' - 4600'	32#	LT&C	J-55
	7 7/8"	4600' - 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 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 pgs. 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'.
- See COT*

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 CTA***

- 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 and Gamma Ray. Compensated Neutron – Z Density log with Gamma Ray and Caliper. Dual Laterolog-Micro Laterolog with SP
  - 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.

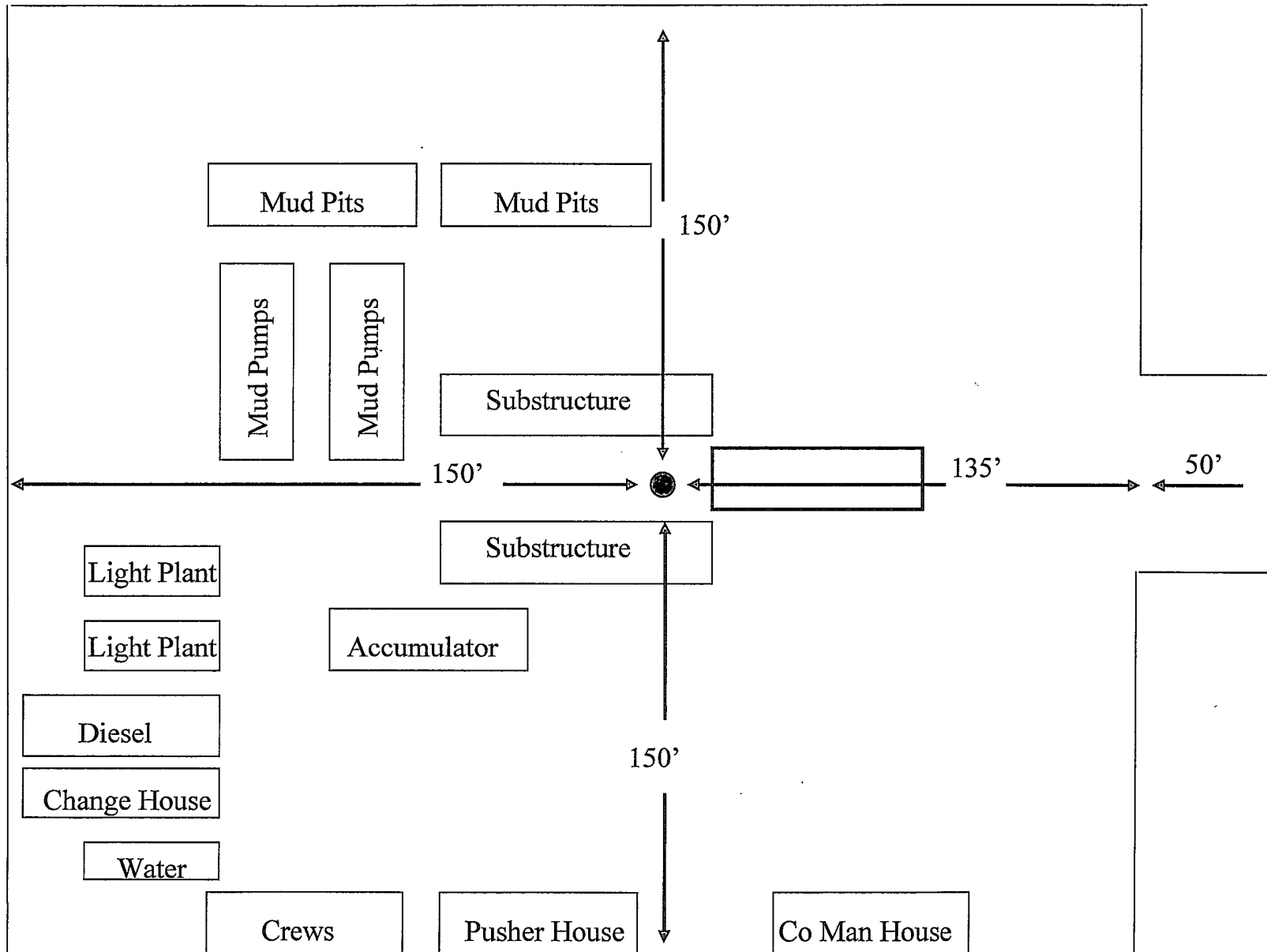
**9. Potential Hazards:**

- 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°.

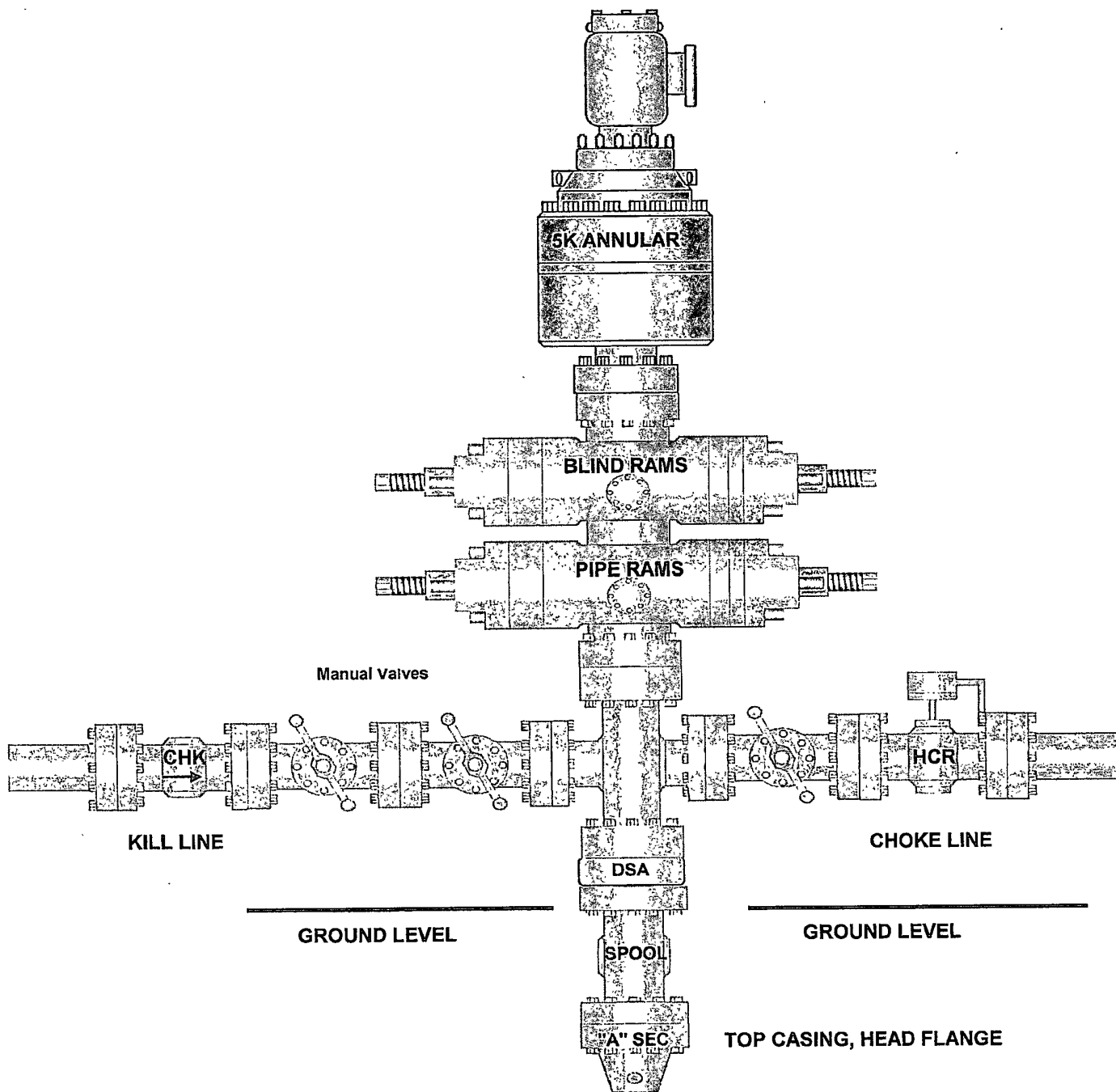
**10. Anticipated Starting Date and Duration of Operations:**

- 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

