PO Box 1980, Hobbs, NM 88241-1980 PO Drawer DD, Arteau, NM \$\$211-0719 District III

State of New Mexico Energy, Minerals & Natural Resources Department

OIL CONSERVATION DIVISION PO Box 2088

Form C-101 Revised February 10, 1994

Instructions on back Submit to Appropriate District Office

State Lease - 6 Copies

Anasazi "4" State Surface Location Township Range Lot Ida Feet from the 1650 South 1980 East Lea	Santa Fe, MM				a Fe, NM 8	A 87504-2088				Fee Lease - 5 Copie			
APPLICATION FOR PERMIT TO DRILL, RE-ENTER, DEEPEN, PLUGBACK, OR ADD A Z Operator Name and Address. Mitchell Energy Corporation P.O. Box 4000 The Woodlands, Texas 77387-4000 The Woodlands, Texas 7738-4000 The Woodlands, Texas 7738-4000		ala Fe, NM	87504-2088							X	_	•	
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Mitchell Energy Corporation P.O. Box 4000 The Woodlands, Texas 77387-4000 Property Code	AFFERCA	IION.	FUR IL	KIVIII	TO DK	LL, KE-EIN	TEK, DEI	EPEN	. PLUGBA	ACK,			
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	Printed name:	Provided name:					DiscinCT SUPERVISOR						

Title:

Approval DAUG 3 0 1994

Conditions of Approval:

Attached 🗆

Expiration Date:

George Mullen

Regulatory Affairs Specialist

Phone: (713)377-5855

Title:

Date:

5-05-94

AUG 2 9 1994

UEEIUE.

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Well Plan

ANASAZI / SCHARBAUER AREA

Lea County. New Mexico

SECEIVED

AUG 2 9 1994

WELL DATA

Company:

Mitchell Energy Corporation

Field:

West Teas

Objective:

Yates

Total Depth:

3600'

TABLE OF CONTENTS

Section Title:	Section No.		
Well Data	1.0		
Drilling Prognosis	2.0		
Drilling Program	3.0		
Mud Program	4.0		
Casing String Design	5.0		
Cementing Program	6.0		
BOP Diagrams	7.0		

AUE 2 3 1994

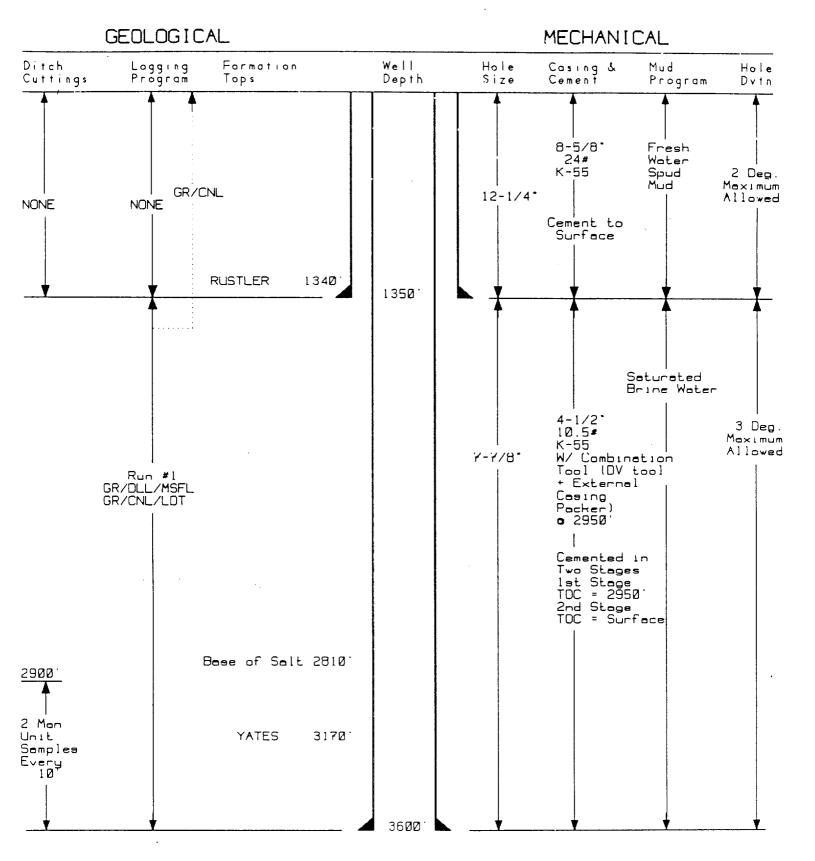
DRILLING PROGNOSIS

FIELD: West Teas

WELL: Anasazi/Scharbauer Area

OBJECTIVE: Yates

ELEVATION:



AUE > 3 /994

DRILLING PROGRAM

- 1.0 Set conductor at +/- 40' with rat hole machine.
- 2.0 Move in drilling rig and rig up same.
- 3.0 Drill 12-1/4" hole to +/- 1350'.
- 4.0 At 1350' circulate and condition hole for casing.
- 5.0 Run 8-5/8" casing as shown on the appropriate attachment, "Casing String Design".
- 5.1 Once casing string is made up, circulate a minimum of one entire circulation while reciprocating casing.
- 6.0 Cement 8-5/8" casing as per attached cement program.
- 7.0 Cut off conductor and 8-5/8" casing and install 11" x 3MWP head as shown on attachment.
- 8.0 Nipple up 11" x 3MWP BOP stack as shown on attachment.
- 9.0 Test annular BOP to 1000 psi. Test rams, choke manifold and all associated equipment to 1000 psi.
- 10.0 Drill 7-7/8" hole to +/- 3600'.
 - 10.1 Prior to drilling the float collar, pressure test the casing to 600 psi by closing the annular preventer and pressuring up to 600psi. Hold this pressure for a minimum of 30 minutes and record any pressure fluctuations. Report the results of this test on the morning report.
- 11.0 At 3600', condition hole for logs and log well as per attached "Geological Prognosis".
- 12.0 Following logging operations, trip back in hole and circulate a minimum of one complete circulation. Have the mud engineer perform a full check during this circulation and verify mud is in condition to run casing.
- 13.0 Once the order has been given to run pipe and the above conditions have been met, begin the trip out of the hole laying down the drill string to run casing.

Section 3 - Page 1 of 6

AUE 2 3 1994

- 14.0 Make up and run 4 1/2" casing as per the following:
- A. Clean exposed threads on the guide shoe, first joint of 4 1/2" casing, float collar, and second joint of casing.
 - B. Apply thread lock to the above listed connections prior to make-up.
 - C. The bottom assembly of the casing assembly must be made up as follows with the first listed being the first in the hole:
 - 1. Guide shoe
 - 2. First joint of 4 1/2" casing
 - 3. Float collar
 - 4. 4 1/2" casing back to setting depth of 2950' (140' below the salt).
 - 5. Combination Tool (DV Tool with External Casing Packer)
 - 6. 4-1/2" casing back to surface.
 - D. Install centralizers as follows on the 4-1/2" casing:
 - 1. 10' above the guide shoe by means of a stop collar.
 - 2. Around the first coupling above the float collar.
 - 3. Every third coupling back to the combination tool.
 - 4. Around the coupling immediately below the combination tool.
 - 5. Around the coupling immediately above the combination tool.
 - 6. Every third coupling back to surface.
- 15. With casing on bottom, circulate mud a minimum of one circulation. Monitor returns to ensure hole is "clean".
- 16. Cement the 4 1/2" casing string as follows:
 - A. Reciprocate the casing during the <u>first stage</u> circulation and cementation.
 - B. Once the first stage cement is in place (Figure 1), drop the **EXTERNAL CASING PACKER / DV TOOL ACTUATION DEVICE** (a.k.a. Ball, Bomb, Plug, Dart (Figure 2)).
 - C. With guidance from the tool manufacturers representative, set the external casing packer and open the DV tool.
 - D. Circulate one complete circulation through the DV tool to ensure any residual cement from the first stage is removed from the annulus above the combination tool.
 - E. Pump the second stage cement into position followed by the **SECOND STAGE FOLLOWING PLUG.** Displace cement and plug with drilling fluid. The **SECOND STAGE FOLLOWING PLUG** will close the DV tool ports when the cement is in place (Figure 3).

AUG 2 9 1994

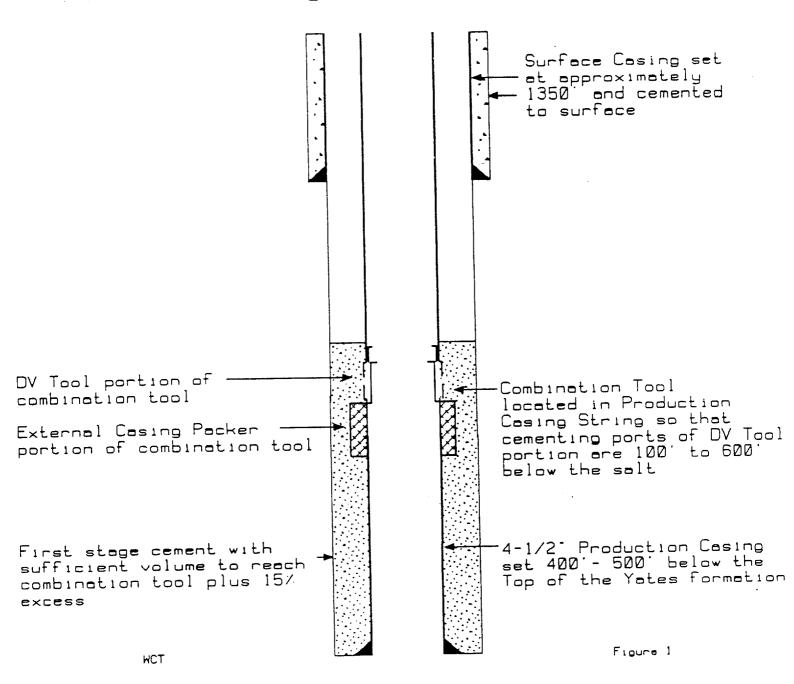
- 17. Set the slips on the 4 1/2" casing in the as cemented condition.
- 18. Install the "Bell Nipple" tubing head, and associated equipment comprising the B" section.
- 19. Once all contractual obligations are met, release the rig.
- 20. !!!!!!!!!! -- NET THE PITS -- !!!!!!!!!!!!!

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DERINE

Wellbore Schematic

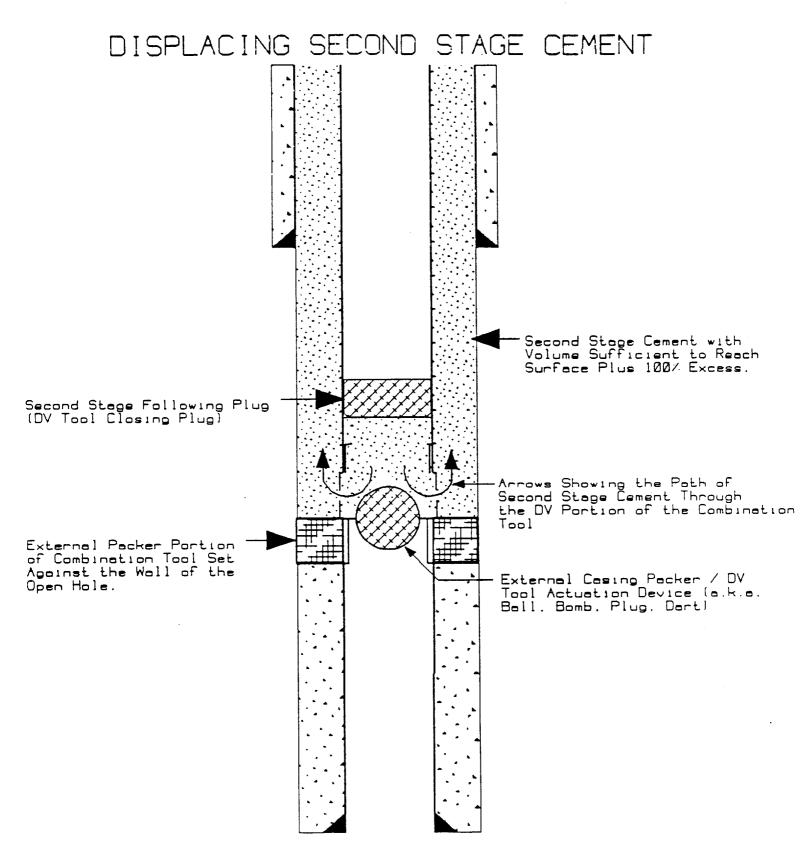
First Stage Cement In Place



AUG 2 3 1994

OFFIRE

Wellbore Schematic

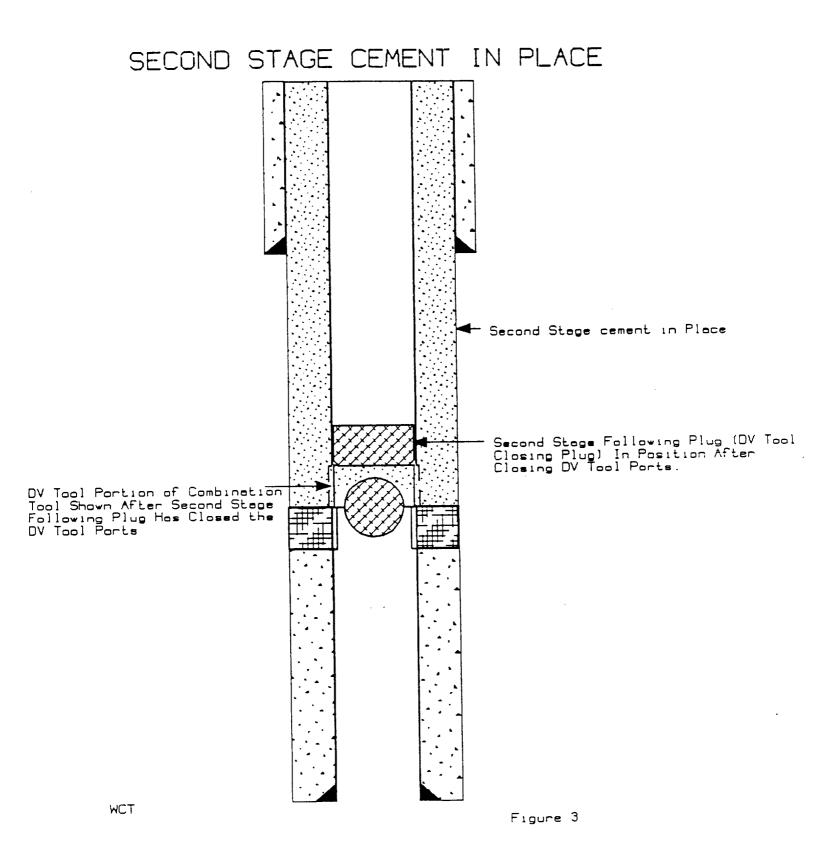


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DEENE

Wellbore Schematic



RECENTER

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DECINE

MUD PROGRAM

Depth Interval (feet)	Density PPG)	Funnel Viscosity (Seconds)	Type Mud	Filtrate (cc)
0-1350'	8.5	40-45	Spud Mud	NC
1350'-3600'	10.0	28	Saturated Brine Water	NC

REPENSED

AU5 2 9 1994

DEGIA

CASING STRING DESIGN

DEPTH:

1350'

TYPE:

Surface

SIZE:

8-5/8"

MUD WEIGHT:

8.5

			mod Welditt:			0.5		
Description Interval		Length Per Section	Weig Per Sect		Cumm. Weight	Min. Strength	Tens. S.F.	
24#,ST8	&C,K-55	0-1350'	1350'	3240	00#	32400#	263,000	8.12
Collaps Force	se *Resist	S.F.	Burst Force	Resist.	S.F.	Minimum Torque	Optimum Torque	Maximum Torque
596	1370	2.29	624	2950	4.72	1970	2630	3290

^{*} Tension effect on collapse resistance included

Procedure:

- 1. Clean threads on shoe joint, float collar, and guide shoe to bare shiny metal. Apply Thread Lock to connections prior to make-up.
- 2. The casing assembly will be made up as follows:

Note: Best-o-Life 2000 will be applied to all connections not receiving Thread Lock.

- a. Guide shoe
- b. Shoe Joint
- c. Float collar
- d. Remainder of casing string
- 3. Centralizers should be applied 10 feet above the guide shoe by means of a stop collar, around the first coupling above the float collar, and every fourth coupling back to surface.

RECEIVE.

AUG 2 3 1994

CASING STRING DESIGN

DEPTH:

3600'

TYPE:

Production

SIZE:

4-1/2"

MUD WEIGHT:

10.0

Descrip	otio n	Interval	Length Per Section	Weight Per Section	Cumi Weigi			ens. .F.
10.5#,L	T&C,K-55	0-3600'	3600'	37,800#	37,80	0# 146K	3.	86
Collaps Force	se Resist	S.F.	Burst Force	Resist.	S.F.	Minimum Torque	Optimui Torque	m Maximum Torque
1872	4010	2.14	1740	4790	2.75	1100	1460	1825

Procedure:

Make up and run 4 1/2" casing as per the following:

- A. Clean exposed threads on the guide shoe, first joint of 4 1/2" casing, float collar, and second joint of casing. Apply Thread Lock to these connections prior to make-up.
 - B. The bottom assembly of the casing assembly must be made up as follows with the first listed being the first in the hole:

Note: Seal Lube will be applied to all conections not receiving Thread Lock.

- 1. Guide shoe
- 2. First joint of 4 1/2" casing
- 3. Float collar
- 4. 4 1/2" casing back to setting depth of 2950' (140' below the salt).
- 5. Combination Tool (DV Tool with External Casing Packer)
- 6. 4-1/2" casing back to surface.
- C. Install centralizers as follows on the 4-1/2" casing:
 - 1. 10' above the guide shoe by means of a stop collar.
 - 2. Around the first coupling above the float collar.
 - 3. Every third coupling back to the combination tool.
 - 4. Around the coupling immediately below the combination tool.
 - 5. Around the coupling immediately above the combination tool.
 - 6. Every third coupling back to surface. Section 5 Page 2 of 2

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Cementing Program

8-5/8" Surface Casing

Depth:

1350'

Casing Size:

8-5/8"

Hole Size:

12.25"

Calculated Cement Fill: 1350'

Excess Calculated:

100%

Cementing Company:

Halliburton

Cement Recommendation:

Spacer: 20 Bbls Fresh Water

Slurry: 860 sacks Premium Plus + 2% CaCl2

Slurry Weight:

14.8 ppg

Slurry Yield:

1.34 cu.ft./sack

Procedure:

- 1. Utilize the two-plug system.
- 2. Wait on cement a minimum of 8 hours.

NOTE: VOLUME ADJUSTMENTS BASED ON THE CALIPER WILL BE UNATTAINABLE. THE STANDARD PRACTICE FOR SURFACE CASING CEMENT VOLUME DETERMINATION HAS BEEN CALCULATED (GAUGE HOLE PLUS 100% EXCESS). NO FURTHER CALCULATIONS WILL BE MADE FOR CEMENT VOLUME.

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Cementing Program

4-1/2" Production Casing

Depth:

3600'

Casing Size:

4-1/2"

Hole Size:

7-7/8"

Caiculated Cement Fill:

3600' (In Two Stages)

Excess Calculated

1st Stage:

15% over caliper

2nd Stage:

100%

Cementing Company:

Halliburton

Cement Recommendation:

1st Stage:

Slurry: 150 sacks Premium Plus + 2.5 #/sk Salt (Accelerator) + 0.4% HALAD-322 (Fluid Loss)

Slurry Weight:

14.8 ppg

Slurry Yield:

1.36 cu.ft./sack

2nd Stage:

Lead Slurry: 720 sacks Premium Plus + 1% CaCl2 + 15 #/sk Salt

Slurry Weight:

14.0 ppg

Slurry Yield:

1.75 cu.ft./sack

Tail Slurry:

80 sacks Premium Plus

Slurry Weight:

14.8 ppg

Slurry Yield:

1.32 cu.ft./sack

Procedure:

Cement the 4 1/2" casing string as follows:

A. Reciprocate the casing during the <u>first stage</u> circulation and cementation.

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Cementing Program

4-1/2" Production Casing Continued

- B. Once the first stage cement is in place (Figure 1), drop the **EXTERNAL CASING PACKER / DV TOOL ACTUATION DEVICE** (a.k.a. Ball, Bomb, Plug, Dart).
 - C. With guidance from the tool manufacturers representative, set the external casing packer and open the DV tool.
 - D. Circulate one complete circulation through the DV tool to ensure any residual cement from the first stage is removed from the annulus above the combination tool.
- E. Pump the second stage cement into position followed by the **SECOND STAGE FOLLOWING PLUG.** Displace cement and plug with drilling fluid. The **SECOND STAGE FOLLOWING PLUG** will close the DV tool ports when the cement is in place

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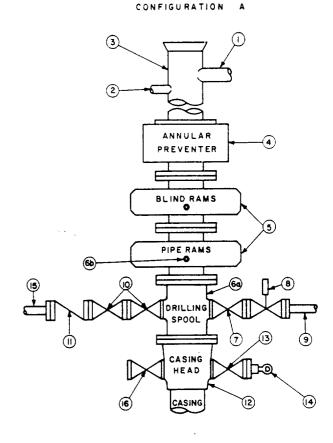
MINIMUM BLOWOUT PREVENTER REQUIREMENTS

3,000 psi Working Pressure

3 MWP

STACK REQUIREMENTS

			Min. I.D.	Min. Nominal
No.	Item		1.0.	HOITIMIAI
1	Flowline			
2	Fill up line			2"
3	Drilling nipple			
4	Annular preventer			
5	Two single or one dual hy operated rams	draulically		
6a	Drilling spool with 2" min. 3" min choke line outlets	kill line and		
6b	2" min. kill line and 3" mi outlets in ram. (Alternate			
7	Valve	Gate □ Plug □	3-1/8"	
8	Gate valve-power opera	ted	3-1/8"	
9	Line to choke manifold			3″
10	Valves	Gate □ Plug □	2-1/16"	
11	Check valve		2-1/16"	
12	Casing head			
13	Valve	Gate □ Plug □	1-13/16"	
14	Pressure gauge with need	die valve		
15	Kill line to rig mud pump i			2"



	OPTIONAL							
16	Flanged valve		1-13/16"					

CONTRACTOR'S OPTION TO FURNISH:

- All equipment and connections above bradenhead or casinghead. Working pressure of preventers to be 3,000 psi, minimum.
- Automatic accumulator (80 gallon, minimum) capable of closing BOP in 30 seconds or less and, holding them closed against full rated working pressure.
- 3.BOP controls, to be located near drillers position.
- 4. Kelly equipped with Kelly cock.
- Inside blowout prevventer or its equivalent on derrick floor at all times with proper threads to fit pipe being used.
- **6.**Kelly saver-sub equipped with rubber casing protector at all times.
- 7. Plug type blowout preventer tester.
- 8.Extra set pipe rams to fit drill pipe in use on location at all times.
- 9. Type RX ring gaskets in place of Type R.

MEC TO FURNISH:

- Bradenhead or casinghead and side
 values
- 2. Wear bushing, if required.

GENERAL NOTES:

- Deviations from this drawing may be made only with the express permission of MEC's Drilling Manager.
- 2.All connections, valves, fittings, piping, etc., subject to well or pump pressure must be flanged (suitable clamp connections acceptable) and have minimum working pressure equal to rated working pressure of preventers up through choke. Valves must be full opening and suitable for high pressure mud service.
- Controls to be of standard design and each marked, showing opening and closing position.
- 4.Chokes will be positioned so as not to hamper or delay changing of choke beans. Replaceable parts for adjustable choke, other bean sizes, retainers, and choke wrenches to be conveniently located for immediate use.
- 5.All valves to be equipped with handwheels or handles ready for immediate
- 6. Choke lines must be suitably anchored.

- 7. Handwheels and extensions to be connected and ready for use.
- Valves adjacent to drilling spool to be kept open. Use outside valves except for emergency.
- All seamless steel control piping (3000 psi working pressure) to have flexible joints to avoid stress. Hoses will be permitted.
- 10.Casinghead connections shall not be used except in case of emergency.
- Do not use kill line for routine fill-up operations.

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