

PLEASE EXPEDITE LEASE NM-104703 EXPIRES 06/01/10

Form 3160-3
(April 2004)

RECEIVED

OCD-HOBBS

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

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT
HOBBSOCB
APPLICATION FOR PERMIT TO DRILL OR REENTER

1a. Type of work: <input checked="" type="checkbox"/> DRILL <input type="checkbox"/> REENTER		Split Estate	
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			
2. Name of Operator ROBERT E. LANDRETH (432-684-4781) <25827>		5. Lease Serial No. NM-104703	
3a. Address 110 WEST LOUISIANA SUITE 404 MIDLAND, TEXAS 79701		6. If Indian, Allottee or Tribe Name -----	
3b. Phone No. (include area code) 432-684-47		7. If Unit or CA Agreement, Name and No. -----	
4. Location of Well (Report location clearly and in accordance with any State requirements.) At surface 1980' FEL & 1980' SL SECTION 16 T25S-R35E LEA CO. NM At proposed prod. zone 1980' FEL & 2310' FNL SECTION 21 T25S-R35E		8. Lease Name and Well No. <58182> RAINBOW "16" STATE COM. # 1H	
14. Distance in miles and direction from nearest town or post office* Approximately 12 miles West of Jal New Mexico		9. API Well No. 30-025-39719	
15. Distance from proposed* location to nearest property or lease line, ft. (Also to nearest drig. unit line, if any) 1980' (330')		10. Field and Pool, or Exploratory WILDCAT-BONE SPRING	
16. No. of acres in lease 600		11. Sec., T. R. M. or Blk. and Survey or Area SEC. 16 T25S-R35E W/2 of SE/ SEC. 21 T25S-R35E W/2 of NE/	
17. Spacing Unit dedicated to this well 160		12. County or Parish LEA CO.	
18. Distance from proposed location* to nearest well, drilling, completed, applied for, on this lease, ft. NA		13. State NM	
19. Proposed Depth TVD-9200' MD-13,285'		20. BLM/BIA Bond No. on file NM# 2925	
21. Elevations (Show whether DF, KDB, RT, GL, etc.) 3232' GL		22. Approximate date work will start* WHEN APPROVED	
		23. Estimated duration 45 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 <i>Joe T. Janica</i>	Name (Printed/Typed) Joe T. Janica	Date 04/17/10
Title Permit Eng.		
Approved by (Signature) /s/ Don Peterson	Name (Printed/Typed)	Date MAY 28 2010
Title FIELD MANAGER	Office CARLSBAD FIELD OFFICE	

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

SEE ATTACHED FOR
CONDITIONS OF APPROVAL

APPROVAL SUBJECT TO
GENERAL REQUIREMENTS
AND SPECIAL STIPULATIONS

RECEIVED

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

JUN 02 2010

HOBBSOC

OIL CONSERVATION DIVISION

1220 SOUTH ST. FRANCIS DR.

Santa Fe, New Mexico 87505

Form C-102

Revised October 12, 2005

Submit to Appropriate District Office

State Lease - 4 Copies

Fee Lease - 3 Copies

WELL LOCATION AND ACREAGE DEDICATION PLAT

☐ AMENDED REPORT

API Number 30-025-39719	Pool Code 96037	Pool Name WILDCAT-BONE SPRING
Property Code 38182	Property Name RAINBOW 16 STATE COM	Well Number 1H
OGRID No. 25827	Operator Name ROBERT E. LANDRETH	Elevation 3232'

Surface Location

UL or lot No.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County
J	16	25-S	35-E		1980	SOUTH	1980	EAST	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
G	21	25-S	35-E		2310	NORTH	1980	EAST	LEA
Dedicated Acres 160	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>PROJECT AREA →</p> <p>PRODUCING AREA →</p> <p>GEODETIC COORDINATES NAD 27 NME SURFACE LOCATION Y=411781.4 N X=798261.5 E</p> <p>LAT.=32.128437° N LONG.=103.369857° W</p> <p>BOTTOM HOLE LOCATION Y=407822.3 N X=798296.1 E</p> <p>GRID AZ.=179°29'49" HORZ. DIST.=4289.9'</p> <p>SECTION 16 SECTION 21</p> <p>NM-104703</p> <p>B.H.</p>	<p>V-7365</p> <p>3237.3' 3231.5'</p> <p>600'</p> <p>1980'</p> <p>POE 1980' FEL & 1475' FSL</p> <p>3232.2' 3232.1'</p> <p>1980'</p> <p>2310'</p> <p>1980'</p>	<p>OPERATOR CERTIFICATION</p> <p>I hereby certify that the information 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 mineral or working interest, or to a voluntary pooling agreement or a compulsory pooling order heretofore entered by the division.</p> <p>Signature: <i>Joe T. Janica</i> Date: 04/17/10</p> <p>Printed Name: Joe T. Janica</p>
	<p>SURVEYOR CERTIFICATION</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>GARY G. EIDSON MARCH 2010 LA REV 4/16/10</p> <p>Date Surveyed: 4/16/10 Signature & Seal of Professional Surveyor: <i>Gary G. Eidson</i> 10.13.0562</p> <p>Certificate No. GARY EIDSON 12641</p>	
	<p>OPERATOR: Please do not report production under this pool code until you have checked with the OCD District I Geologist Paul Kautz, and he confirms where your perts are producing from and gives you the correct pool code.</p>	

APPLICATION TO DRILL

ROBERT E. LANDRETH
 RAINBOW "16" STATE COM. # 1H
 UNIT "J" SECTION 16
 T25S-R35E LEA CO. NM

In response to questions asked under Section II of Bulletin NTL-6, the following information on the above well will be provided.

1. LOCATION: 1980' FSL & 1980' FEL SECTION 16 T25S-R35E LEA CO. NM
 BHL 2310' FNL & 1980' FEL SECTION 21 T25S-R35E LEA CO. NM
2. ELEVATION ABOVE SEA LEVEL: 3232' GL
3. GEOLOGICAL NAME OF SURFACE FORMATION: Quaternary Aeolian Deposits;
4. DRILLING TOOLS AND ASSOCIATED EQUIPMENT: Conventional rotary drilling rig using drilling mud as a circulating medium for the removal of solids from hole.
5. PROPOSED DRILLING DEPTH: TVD- 9200' MD-13,285'
6. ESTIMATED TOPS OF GEOLOGICAL FORMATIONS:

Rustler Anhydrite	774'	Cherry Canyon	6220'
Salt	914'	Brushy Canyon	7645'
Delaware Lime	5244'	Bone Spring	9110'
Bell Canyon	5300'	TD	MD-13,285' TVD 9200'
7. POSSIBLE MINERAL BEARING FORMATIONS:

Rustler	Water	Cherry Canyon	Oil
Bell Canyon	Oil	Brushy Canyon	Oil
		Bone Spring	Oil & Gas
8. CASING PROGRAM:

HOLE SIZE	INTERVAL	CASING OD	WEIGHT	THREAD	COLLAR	GRADE	CONDITION
26"	0-40	20"	NA	NA	NA	Conductor	New
17 1/2"	0-850' OK	13 3/8"	48#	8-R	ST&C	H-40	New
12 1/2"	0-3400'	9 5/8"	36#	8-R	LT&C	J-55	New
	3400-5140'	9 5/8"	40#	8-R	LT&C	J-55 N-80	New
8 3/4"	0-8700'	5 1/2"	17#	8-R	LT&C	P-110	New
	8700-13,285'	5 1/2"	17#	Butt.	BT&C	P-110	New

See
COA

per operator 5/19/12 RGA

APPLICATION TO DRILL

ROBERT E. LANDRETH
RAINBOW "16" STATE COM. # 1H
UNIT "J" SECTION 16
T25S-R35E LEA CO. NM

9. CASING SETTING DEPTHS & CEMENTING:

SEE ATTACHED SHEETS FOR CEMENTING AND DESIGN FACTORS.

10. PRESSURE CONTROL EQUIPMENT: Exhibit "E" shows a 900 Series 3000 PSI working pressure B.O.P. consisting of an annular bag type preventor, middle blind rams, and bottom pipe rams. The B.O.P. will be nipped up on the 13 3/8" casing and tested to API specifications. The B.O.P. will be operated at least once in each 24 hour period, and the blind rams will be operated when the drill pipe is out of the hole. Full opening stabbing valve and upper kelly cock will be available at all times on the derrick floor. Exhibit "E-1" shows a hydraulically operate closing unit and a 5000 PSI working pressure choke manifold with dual adjustable chokes. No abnormal pressures or temperatures are expected while drilling this well.

11. PROPOSED MUD CIRCULATING SYSTEM:

DEPTH	MUD WT.	VISC.	FLUID LOSS	TYPE MUD SYSTEM
40-850'	8.6-8.7	30-32	NC	Fresh water spud mud use paper to control seepage.
850-5140'	10.0-10.1	28-29	NC	Brine water use paper to control seepage and high viscosity sweeps to clean hole.
5140-13,285'	8.4-9.0	28-30	NC	Fresh water to cut brine use high viscosity sweeps to clean hole, and starch if necessary for fluid loss

Sufficient mud materials will be kept on location at all times in order to combat lost circulation, or unexpected kicks. In order to run DST's, open hole logs, and casing the viscosity and/or water loss may have to be adjusted in order to meet these needs.

APPLICATION TO DRILL

ROBERT E. LANDRETH
RAINBOW "16" STATE COM. # 1H
UNIT "J" SECTION 16
T25S-R35E LEA CO. NM

12. LOGGING, CORING, AND TESTING PROGRAM:

- See —
COA
- A. Open hole logs. CNL, FDC, SONIC, Gamma Ray, Caliper from TD back to 9 5/8" casing shoe. Gamma Ray, CNL from TD (9350') to surface.
 - B. Rig up mud logger on hole at 5140' and remain on hole to TD.
- No DST's or cores are planned at this time.

13. POTENTIAL HAZARDS:

No abnormal pressures or temperatures are expected. There is no known presence of H²S in this area. If H²S is encountered the operator will comply with the provisions of Onshore Oil and Gas Order No. 6. No lost circulation is expected to occur. All personnel will be familiar with all aspects of safe operation of equipment being used to drill this well. Estimated BHP 4200 PSI, and Estimated BHT 145°.

14. ANTICIPATED STARTING DATE AND DURATION OF OPERATION:

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 operation and drilling is expected to take 45 days. If production casing is run then an additional 30 days will be needed to complete well and construct surface facilities and/or lay flowlines in order to place well on production.

15. OTHER FACETS OF OPERATIONS:

After running casing, cased hole Gamma Ray, Neutron Collar logs will be run from TD back to all possible productive zones. The Bone Spring formation will be perforated and stimulated in order to establish production. The well will be swab tested and potentialized as an oil well.

Rainbow 16 State Com #1H

Cementing Information

1. Surface Casing

Bit Size	Casing O.D. and Wt.	Depth	Stage	Sx.	Yield	Wt.	Volume Based On	TOC
17 1/2"	13 3/8" 48#	850'	1	700	1.65	13.8	150% excess	Surface
			2	250	1.34	14.8		
			Total	950				

Cement with 700 sx. Class C w/4% Gel, 2% CC, 1/8#/sk CF, tail with 250 sx. Class C w/2% CaCl, 0.004 gps CF-41L
Actual volumes will be determined by fluid caliper and open hole logs.

2. Intermediate Casing

Bit Size	Casing O.D. and Wt.	Depth	Stage	Sx.	Yield	Wt.	Volume Based On	TOC
12 1/4"	9 5/8" 36 & 40#	5140'	1	1030	2.1	12.4	100% excess	Surface
			2	840	1.31	14.4		
			Total	1870				

Cement with 1030 sx. 65/35/6 Class C w/5% salt, 5#/sk Kolseal, 0.004 gps CF-41L, tail with 840 sx. 50/50/2
Class C w/2/10% C-12, 10% salt, 2% gypsum, 3#/sk. Kolseal, 0.004 gps CF-41L
Actual volumes will be determined by fluid caliper and open hole logs.

3. Open Hole Kick-Off Plug

Drill to 9350', run logs. Spot 475 sx. Class H w/1.0% DO65 dispersant and 0.4% D800 Retarder (weight 17.5 ppg, yield 0.94 cu.ft./sk) in open hole from 9350' to 8420'. Drill out cement with 8 3/4" bit to 8720', kick off at 8720', build angle, go horizontal at 9200' with 8 3/4" bit. Cement volume assumes 8 3/4" hole with 15% washout.
Final volume will be determined from logs.

4. Production Casing

Bit	Casing O.D. and Wt.	Depth	Stage	Sx.	Yield	Wt.	Volume Based On	TOC
8 3/4"	5 1/2" 17#	8700'	1	590	2.69	11.5	50%	500' above
8 3/4"	5 1/2" 17#	8700-13,285'	2	1202	1.42	13	excess	9 5/8" csg. shoe
			Total	1792				

Cement with 590 sx. of Class C 50-50 POZ with 1% Salt, 10% Bentonite, 3#/sk. Colite, 0.125#/sk. Polyester Flake, wt. 11.5 ppg, yield 2.69 cu.ft./sk., tail w/1202 sx. TXI lightweight with 2% Expander, 0.3% fluid loss, 0.1% dispersant, 0.2% anti-foam, 0.3% retarder, Wt. 13.0 ppg, yield 1.42 cu. ft./sk.
Actual volumes will be determined by fluid caliper and open hole logs.

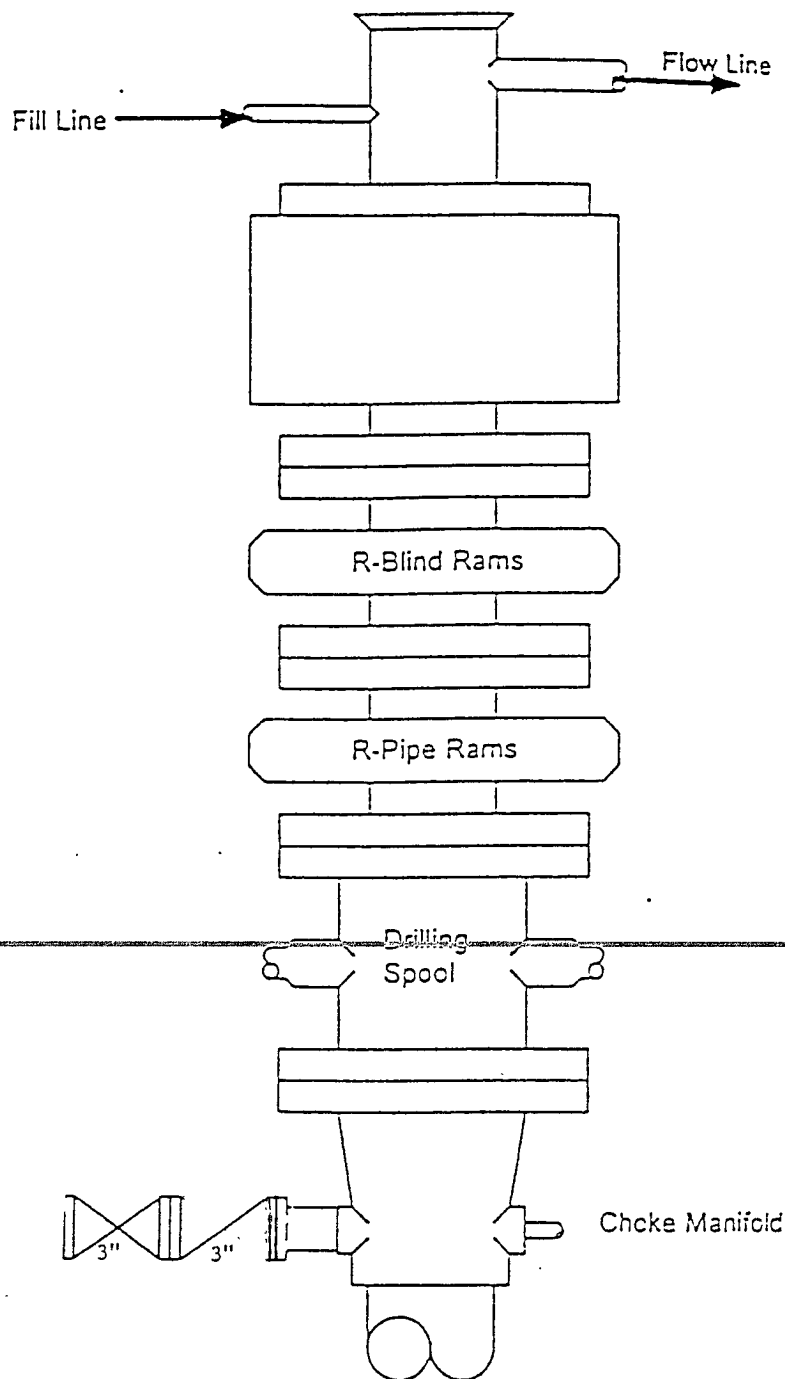
575-391-8603

Rainbow 16 State Com No. 1_HCasing Ratings and Minimum Design Factors

Size	Interval	Length	Wt./Ft.	Grade	Connection	Section Wt./Lbs.	API Ratings			
							Collapse psi	Burst psi	Tensile, k# Tube Joint	
13 3/8"	0 - 850'	850'	48#	H40	ST&C	40,800	770	1,730	541	322
9 5/8"	0 - 3400'	3,400'	36#	J55	LT&C	122,400	2,020	3,520	564	453
9 5/8"	3400' - 5140'	1,740'	40#	N80	LT&C	69,600	3,090	5,750	916	737
9 5/8"	Total	5,140'				192,000				
5 1/2"	0 - 8700'	8,700'	17#	P110	LT&C	147,900	7,460	10,640	546	445
5 1/2"	8700' -13,285'	4,585'	17#	P110	Buttress	77,900	7,460	10,640	546	568
5 1/2"	Total	13,285'				225,800				

Minimum Design Factors

Size	Wt./Ft.	Grade	Thread	Minimum Design Factors			
				Collapse	Burst	Tension	
						Tube	Joint
13 3/8"	48#	J55	8RD	1.125	1.0	1.8	1.8
9 5/8"	36#	J55	8RD	1.125	1.0	1.8	1.8
9 5/8"	40#	J55	8RD	1.125	1.0	1.8	1.8
5 1/2"	17#	P110	8RD	1.125	1.0	1.8	1.8
5 1/2"	17#	P110	Buttress	1.125	1.0	1.8	1.6



Type 900 Series
3000 psi WP

EXHIBIT "E"
SKETCH OF B.O.P. TO BE USED ON
ROBERT E. LANDRETH
RAINBOW "16" STATE COM. # 1H
UNIT "J" SECTION 16
T25S-R35E LEA CO. NM

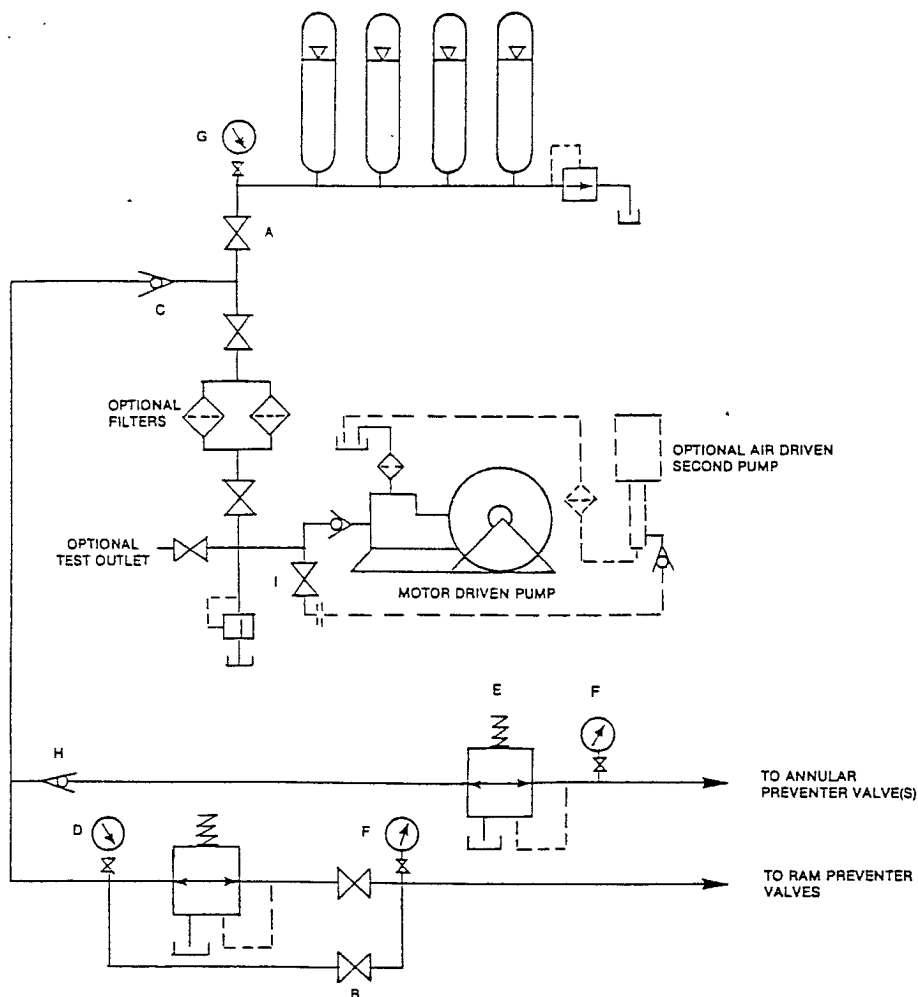


FIGURE K6-1. The schematic sketch of an accumulator system shows required and optional components.

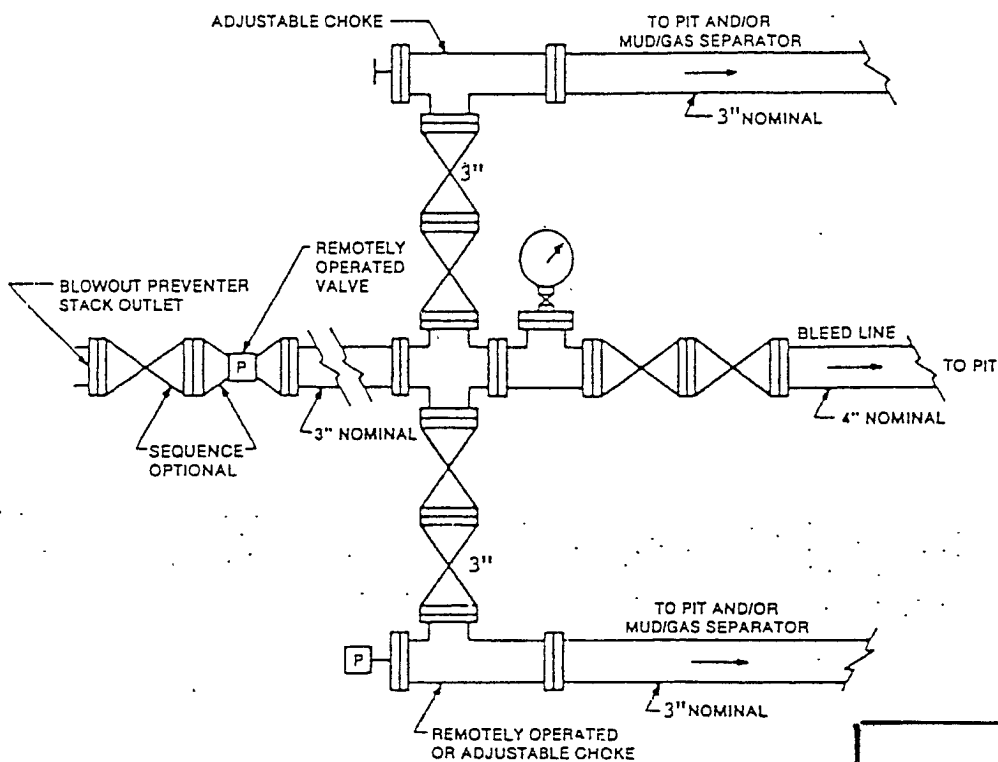


FIGURE K4-2. Typical choke manifold assembly for SM rated working pressure service — surface installation.

EXHIBIT "E-1"
CHOKE MANIFOLD & CLOSING UNIT

ROBERT E. LANDRETH
RAINBOW "16" STATE COM. # 1H
UNIT "J" SECTION 16
T25S-R35E LEA CO. NM