

Submit to Appropriate  
District Office  
State Lease - 6 copies  
Fee Lease - 5 copies

State of New Mexico  
Energy, Minerals and Natural Resources Department

Form C-101  
Revised 1-1-89

DISTRICT I  
P.O. Box 1980, Hobbs, NM 88240

DISTRICT II  
P.O. Drawer DD, Artesia, NM 88210

DISTRICT III  
1000 Rio Brazos Rd., Aztec, NM 87410

OIL CONSERVATION DIVISION

P.O. Box 2088  
Santa Fe, New Mexico 87504-2088

OIL CON. DIV.

DIST. 3

API NO. (assigned by OCD on New Wells)

30-045-28512

5. Indicate Type of Lease

STATE ☐

FEE ☒

6. State Oil & Gas Lease No.

APPLICATION FOR PERMIT TO DRILL, DEEPEN, OR PLUG BACK

1a. Type of Work:

DRILL ☒

RE-ENTER ☐

DEEPEN ☐

PLUG BACK ☐

b. Type of Well:

OIL  
WELL ☒

GAS  
WELL ☐

OTHER ☐

SINGLE  
ZONE ☒

MULTIPLE  
ZONE ☐

7. Lease Name or Unit Agreement Name

7840  
Santa Fe 20

2. Name of Operator

14634  
Merrion Oil & Gas Corporation

8. Well No.

5

3. Address of Operator

P. o. Box 840, Farmington, New Mexico 87410

9. Pool name or Wildcat

57440  
Snake Eyes Entrada Ext.

4. Well Location

Unit Letter

A

1150

Feet From The

North

Line and

720

Feet From The

East

Line

Section

20

Township

21N

Range

8W

NMPM

San Juan

County

10. Proposed Depth

5720'

11. Formation

Entrada

12. Rotary or C.T.

Rotary

13. Elevations (Show whether DF, RT, GR, etc.)

6576'

14. Kind & Status Plug. Bond

Nationwide

15. Drilling Contractor

Unknown

16. Approx. Date Work will start

Spring, 1991

17.

PROPOSED CASING AND CEMENT PROGRAM

SIZE OF HOLE	SIZE OF CASING	WEIGHT PER FOOT	SETTING DEPTH	SACKS OF CEMENT	EST. TOP
12-1/4"	9-5/8"	36#/ft	240'	150 sx	Surface
8-3/4"	7"	23#/ft	5720'	600 sx	Surface

Will drill 12-1/4" hole to 240' and set 240' of 9-5/8", 36#/ft, J-55 casing with 150 sx (177 cu.ft.) of Class G, 2% CaCl. TOC at surface. Wait on cement 10 hours. Will pressure test to 600 psi for 30 minutes, prior to drillout. Drill 8-3/4" hole to  $\pm$  5720' KB. May core Entrada interval. May run drillstem test of Entrada interval. If Entrada appears productive, will drill to 5720' KB. Run open hole logs. Will run 7", 23#/ft, J-55 casing to 5720' and cement in two stages. First stage will pump 300 sx Class H, 2% gel (366 cu.ft.) to cover from TD to above Gallup at  $\pm$  3285'. Will set stage tool at  $\pm$  2700', and cement with 250 sx Class "B" with 2% D-79 (515 cu.ft.) followed by 50 sx Class H (61 cu.ft.). Top of cement estimated at surface. Will perforate and stimulate as deemed necessary. Additional drilling program details included in attachment.

IN ABOVE SPACE DESCRIBE PROPOSED PROGRAM: IF PROPOSAL IS TO DEEPEN OR PLUG BACK, GIVE DATA ON PRESENT PRODUCTIVE ZONE AND PROPOSED NEW PRODUCTIVE ZONE. GIVE BLOWOUT PREVENTER PROGRAM, IF ANY.

I hereby certify that the information above is true and complete to the best of my knowledge and belief.

SIGNATURE

Steven S. Dunn

TITLE

Operations Manager

DATE

Jan. 30, 1991

TYPE OR PRINT NAME

TELEPHONE NO.

(This space for State Use)

Distribution:

0+5 NMOCD-Aztec, NM ; 1 Well File

APPROVED BY

TITLE

DEPUTY OIL & GAS INSPECTOR, DIST. #3

DATE

JAN 31 1991

CONDITIONS OF APPROVAL, IF ANY:

APPROVAL EXPIRES 7-31-91  
UNLESS DRILLING IS COMMENCED.  
SPUD NOTICE MUST BE SUBMITTED  
WITHIN 10 DAYS.

Filed C-104 FOR NSC

**MERRION OIL & GAS CORPORATION**

**DRILLING TECHNICAL PROGRAM**

**ATTACHMENT TO FORM C-101**

**SANTA FE 20 No. 5**  
1150' FNL & 720' FEL  
Section 20, T21N, R8W  
San Juan County, New Mexico

**1. ESTIMATED FORMATION TOPS**

<u>FORMATION</u>	<u>DEPTH</u>
Pictured Cliffs	Surface
Cliff House	875'
Menefee	912'
Point Lookout	2590'
Mancos	2692'
Gallup	3285'
Base of Greenhorn	4360'
Dakota	4582'
Morrison	4770'
Todilto	5589'
Entrada	5620'
Total Depth	5720'

**2. WELL CONTROL SYSTEM**

- A. Proposed blowout preventer system (schematic drawings attached) is series 900 double ram with choke and kill manifold.
- B. Minimum required working pressure rating for BOP stack is 3000 psi.
- C. BOP pressure testing will be conducted at time of installation and prior to drillout of surface casing shoe. The BOP's will be activated at minimum on each trip for a bit and recorded in driller's log.

**3. DRILLING MUD PROGRAM**

- A. Surface hole will be drilled with fresh water - gel system, lime added to provide viscosity as needed.

- B. 8-3/4" hole will be drilled utilizing a low solids, non-dispersed gel-water mud system. Additives such as starch, cmc, soda ash and others will be used to control mud characteristics as necessary. Lost circulation materials will be stored on location, as necessary, for use in restoring lost circulation.

<u>INTERVAL</u>	<u>MUD SYSTEM</u>	<u>WEIGHT #/GAL</u>	<u>VISCOSITY SEC/QT</u>	<u>WATER LOSS CC</u>
0 - 240'	GEL-LIME	9.0	35-45	NA
240'-5500'±	GEL-WTR ND	8.4-9.0	28-45	≤ 12
5500'-TD	PHPA OR MMH	8.6-8.7	45-50	≤ 6

- C. Mud trip monitoring will be done visually.

#### 4. HAZARDS

- A. No abnormal pressure is anticipated. However, 3M BOPs will be used under surface casing to total depth. Normal Entrada pressure gradient is  $\approx 0.38$  psi/ft of depth in this area. Formation pressure at total depth is  $\approx 2170$  psi. Water hydrostatic is 2480 psi.
- B. No lost circulation has been encountered during previous drilling in this area.
- C. No  $H_2S$  is expected to be encountered. However, should  $H_2S$  be found during drilling, detection and warning equipment will be installed.
- D. Unintentional hole deviation is not expected to be a problem. Single shot surveys giving hole inclination will be run a minimum of every 500 feet.

#### 5. LOGGING AND TESTING

- A. An IES Induction Log will be run from TD to surface. A Compensated Density Log will be run to cover zones of interest.
- B. A drill stem test may be run to test the Entrada if deemed necessary.
- C. The Entrada interval may be cored.
- D. Plans call for using a mud logging unit during drilling.

Submit to Appropriate  
District Office  
State Lease - 4 copies  
Fee Lease - 3 copies

State of New Mexico  
Energy, Minerals and Natural Resources Department

Form C-162  
Revised 1-1-89

OIL CONSERVATION DIVISION

P.O. Box 2088

Santa Fe, New Mexico 87504-2088

DISTRICT I

P.O. Box 1980, Hobbs, NM 88240

DISTRICT II

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DISTRICT III

1000 Rio Brazos Rd., Aztec, NM 87410

WELL LOCATION AND ACREAGE DEDICATION PLAT

All Distances must be from the outer boundaries of the section

Operator <b>MERRION OIL &amp; GAS CORP.</b>			Lease <b>SANTE FE 20</b>		Well No. <b>5</b>
Unit Letter <b>A</b>	Section <b>20</b>	Township <b>21N</b>	Range <b>8W</b>	County <b>SAN JUAN</b>	
Actual Footage Location of Well: <b>1150</b> feet from the <b>NORTH</b> line and <b>720</b> feet from the <b>EAST</b> line					
Ground level Elev. <b>6576</b>	Producing Formation <b>Entrada</b>		Pool <b>Snake Eyes</b>		Dedicated Acreage: <b>40 Acres</b>

1. Outline the acreage dedicated to the subject well by colored pencil or hatchure marks on the plat below.

2. If more than one lease is dedicated to the well, outline each and identify the ownership thereof (both as to working interest and royalty).

3. If more than one lease of different ownership is dedicated to the well, have the interest of all owners been consolidated by communitization, unitization, force-pooling, etc.?

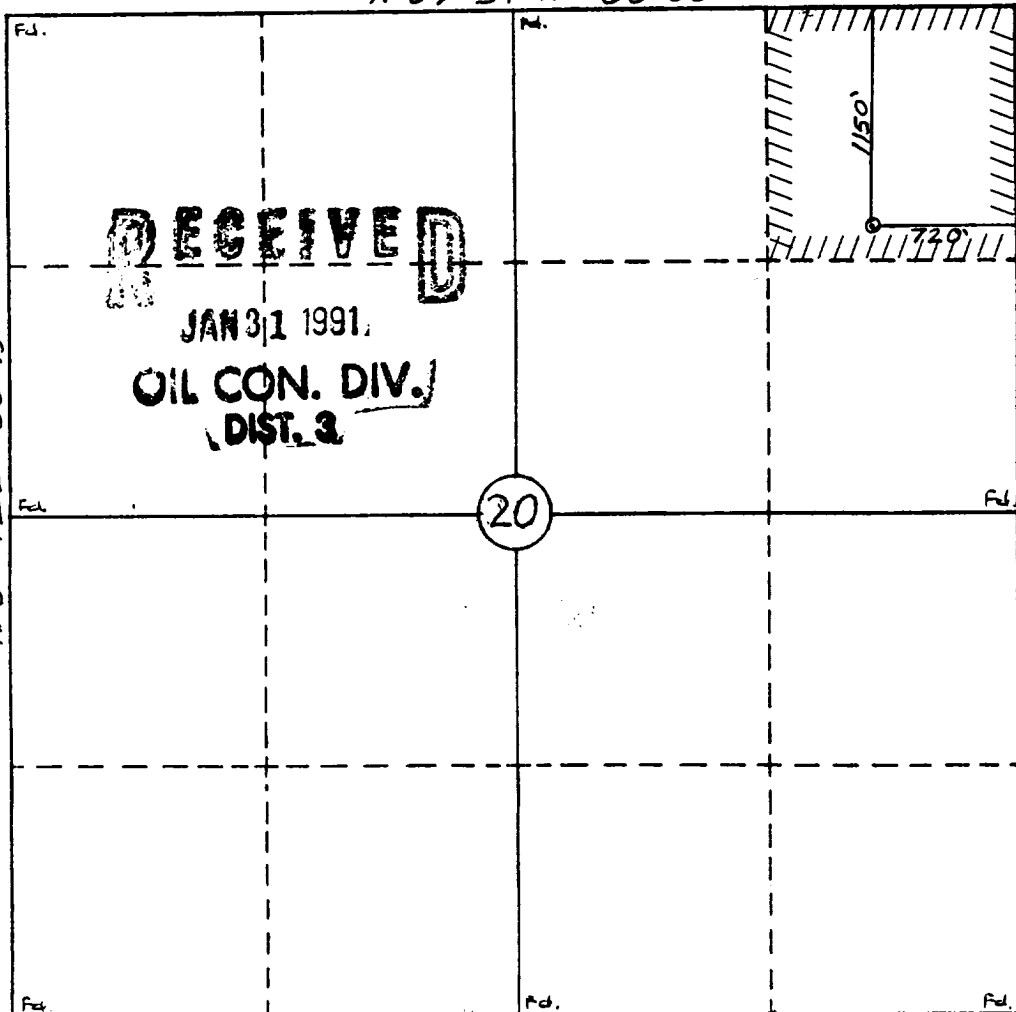
☐ Yes ☐ No If answer is "yes" type of consolidation \_\_\_\_\_

If answer is "no" list the owners and tract descriptions which have actually been consolidated. (Use reverse side of this form if necessary).

No allowable will be assigned to the well until all interests have been consolidated (by communitization, unitization, forced-pooling, or otherwise) or until a non-standard unit, eliminating such interest, has been approved by the Division.

0 330 660 990 1320 1650 1980 2310 2640 2970 3300 3630 3960 4290 4620 4950 5280 5610 5940 6270 6600

N 89-34 W 80.00



OPERATOR CERTIFICATION

I hereby certify that the information contained herein is true and complete to the best of my knowledge and belief.

Signature \_\_\_\_\_

Printed Name  
**Steven S. Dunn**

Position  
**Operations Manager**

Company  
**Merrion Oil & Gas Company**

Date  
**January 30, 1991**

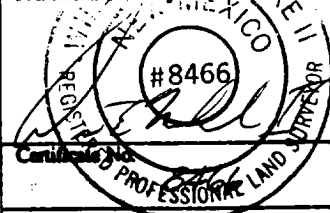
SURVEYOR CERTIFICATION

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 knowledge and belief.

3-26-90

Date Surveyed  
**William E. Mahnke II**

Signature & Seal of  
Professional Surveyor



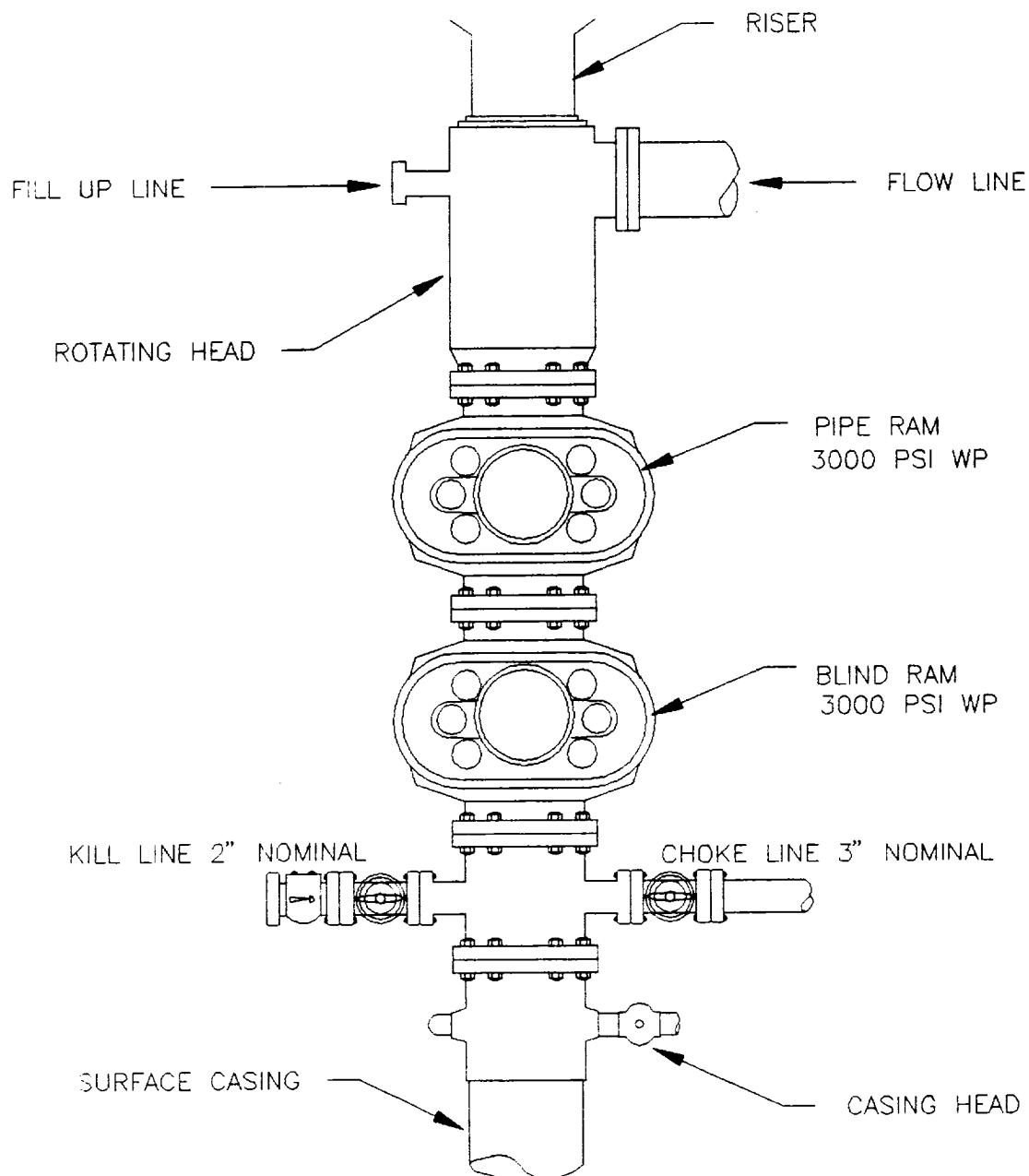


# MERRION OIL & GAS CORPORATION

610 REILLY AVE., FARMINGTON, N.M. (505) 327-9801

## BLOWOUT PREVENTER SCHEMATIC FOR 3M SERVICE

(ATTACHMENT TO DRILLING TECHNICAL PROGRAM)



MERRION OIL & GAS

WELL NAME

LOCATION

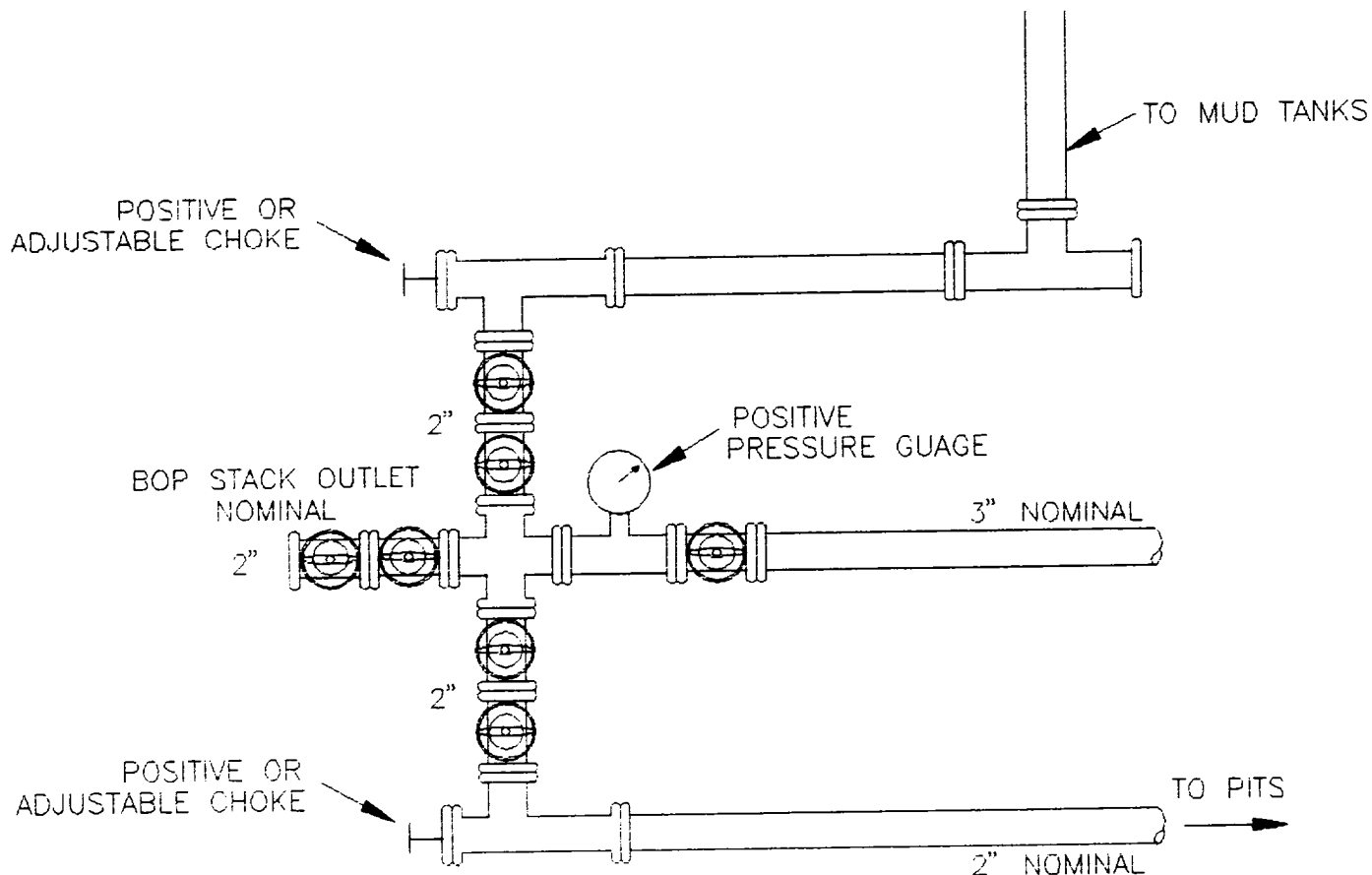
DATE: 1 30-91  
ENG: STEVE DUNN  
DRFT: M.E.G.

SANTA FE 20 #5

1150' FNL & 720' FEL  
SECTION 20, T21N, R8W  
SAN JUAN COUNTY, NEW MEXICO

MERRION OIL AND GAS CORPORATION  
CHOKE MANIFOLD SCHEMATIC  
(ATTACHMENT TO DRILLING TECHNICAL PROGRAM)

SANTA FE 20 #5  
1150' FNL & 720' FEL  
SECTION 20, T21N, R8W  
SAN JUAN COUNTY, NEW MEXICO



FOR 2,000 AND 3,000 PSI RATED  
WORKING PRESSURE

UPPER KELLY COCK VALVE WITH HANDLE AVAILABLE

SAFETY VALVE AND SUBS TO FIT ALL DRILL  
STRINGS IN USE WILL BE AVAILABLE

ENG: STEVE DUNN DRFT: M.E.G.  
DATE: 1-30-91