

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT

APPLICATION FOR PERMIT TO DRILL OR DEEPEN

1a. TYPE OF WORK
DRILL ☒ DEEPEN ☐

1b. TYPE OF WELL
OIL WELL ☒ GAS WELL ☐ OTHER ☐

2. NAME OF OPERATOR
14634
Merrion Oil & Gas Corporation

3. ADDRESS AND TELEPHONE NO.
610 Reilly Avenue, Farmington, NM 87401-2634 505 327-9801

4. LOCATION OF WELL (Report location clearly and in accordance with any State requirements.)
At surface 2090' fnl & 655' fwl (SWNW)
At proposed prod. zone 2145' 645'

14. DISTANCE IN MILES AND DIRECTION FROM NEAREST TOWN OR POST OFFICE*
30 miles southwest of Cuba, New Mexico

15. DISTANCE FROM PROPOSED* LOCATION TO NEAREST PROPERTY OR LEASE LINE, FT. (Also to nearest drlg. unit line, if any)
655'

16. NO. OF ACRES IN LEASE
160

17. NO. OF ACRES ASSIGNED TO THIS WELL
40

18. DISTANCE FROM PROPOSED LOCATION* TO NEAREST WELL, DRILLING, COMPLETED, OR APPLIED FOR, ON THIS LEASE, FT.
770' ±

19. PROPOSED DEPTH
5620'

20. ROTARY OR CABLE TOOLS
Rotary

21. ELEVATIONS (Show whether DF, RT, GR, etc.)
6595' GR

22. APPROX. DATE WORK WILL START*
August, 1996

5. LEASE DESIGNATION AND SERIAL NO.
N00-C-14-20-2713

6. IF INDIAN, ALLOTTEE OR TRIBE NAME
Navajo Allotted

7. UNIT AGREEMENT NAME
Eagle Mesa Unit

8. FARM OR LEASE NAME, WELL NO.
EMU No. 7 16788

9. AP WELL NO.
30-043-20938

10. FIELD AND POOL, OR WILDCAT
Eagle Mesa Entrada 20430

11. SEC., T., R., M., OR BLM. AND SURVEY OR AREA
Sec. 13, T19N, R4W

12. COUNTY OR PARISH
Sandoval

13. STATE
New Mexico

PROPOSED CASING AND CEMENTING PROGRAM

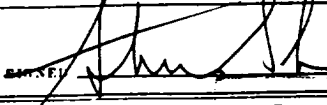
SIZE OF HOLE	GRADE SIZE OF CASING	WEIGHT PER FOOT	SETTING DEPTH	QUANTITY OF CEMENT
10-3/4"	9-5/8"	36#	240'±	150 sxs (177 cu.ft.)
8-3/4"	This action is subject to technical and procedural review pursuant to 43 CFR 3165.3 and appeal pursuant to 43 CFR 3165.4.	23#	5610'±	740 sxs (1378 cu.ft.)

We propose to drill 12-1/4" surface hole to 240 ft. and set 240 ft. of 9-5/8", 36#, J-55 surface casing with 150 sxs Class B (177 cu.ft.) 2% CaCl₂. Will wait on cement 10 hrs, pressure test to 600 psi for 15 minutes. Will drill 8-3/4" hole to 5620 ft. Will run open hole logs. If well appears productive, we will run 5620 ft. of 7", 23#, J-55 casing and cement 1st Stage with 290 sxs (597 cu.ft.) of Class B, 2% Sodium Metasilicate (yield 2.06 cu.ft.), followed by 75 sxs (92 cu.ft.) of Class H with 2% gel (yield 1.22 cu.ft./sx). Will circulate 3-4 hours between stages. Second stage tool in Mancos at ± 2100 ft. Will cement with 275 sxs (567 cu.ft.) of Class B, 2% Sodium Metasilicate (yield 2.06 cu.ft./sx), followed by 100 sxs (122 cu.ft.) of Class H with 2% gel (yield 1.22 cu.ft./sx). Estimated top of cement is at the surface. We will perforate and stimulate as necessary to test the potentially productive intervals.

Additional drilling technical details are attached.

DRILLING OPERATIONS AUTHORIZED ARE
SUBJECT TO COMPLIANCE WITH ATTACHED
"GENERAL REQUIREMENTS"

IN ABOVE SPACE DESCRIBE PROPOSED PROGRAM: If proposal is to deepen, give data on present productive zone and proposed new productive zone. If proposal is to drill or deepen directionally, give pertinent data on subsurface locations and measured and true vertical depths. Give blowout preventer program, if any.

24.  Steven S. Dunn TITLE Operations Manager DATE 5/8/96
(This space for Federal or State office use)

PERMIT NO. _____ APPROVAL DATE _____
Application approval does not constitute a warranty, title, or equitable title to those rights in the subject lease which would be the subject of operations thereon.
CONDITIONS OF APPROVAL, IF ANY _____

RECEIVED
NOV 13 1996

APPROVED
AS AMENDED

NOV 08 1996

APPROVED BY _____ TITLE _____ DATE _____
DISTRICT MANAGER

*See Instructions On Reverse Side

NMOCD

RECEIVED
JAN 10 1964
U.S. AIR FORCE

41

AS AMENDED
APPROVED

111

RECEIVED JAN 10 1964

District I
PO Box 1980, Hobbs, NM 88241-1980
District II
PO Drawer DD, Artesia, NM 88211-0719
District III
1000 Rio Brazos Rd., Aztec, NM 87410
District IV
PO Box 2088, Santa Fe, NM 87504-2088

State of New Mexico
Energy, Minerals & Natural Resources Department

OIL CONSERVATION DIVISION
PO Box 2088
Santa Fe, NM 87504-2088

Form C-102
Revised February 21, 1994

Instructions on back
Submit to Appropriate District Office
State Lease - 4 Copies
Fee Lease - 3 Copies

☐ AMENDED REPORT

WELL LOCATION AND ACREAGE DEDICATION PLAT

API Number <u>30-043-20938</u>		Pool Code 20430	Pool Name Eagle Mesa Entrada
Property Code <u>16788</u>	Property Name EMU		Well Number No. 7
OGRID No. 014634	Operator Name MERRION OIL & GAS		Elevation 6595

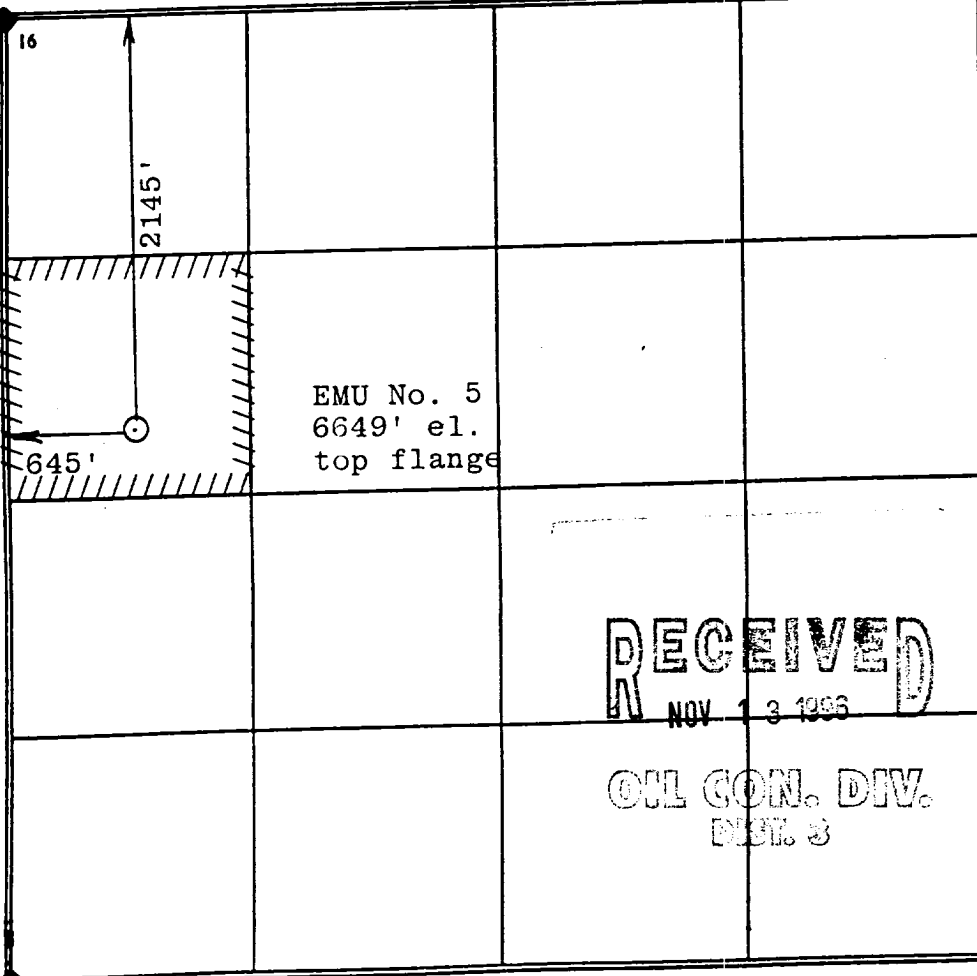
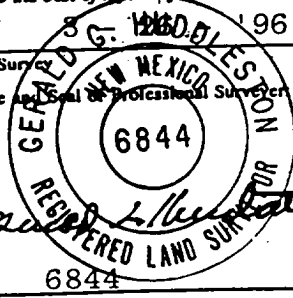
¹⁰ Surface Location

UL or lot no.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County
E	13	19 N.	4 W.	SWNW	2145	North	645	West	Sandoval

¹¹ 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
¹² Dedicated Acres 40		¹³ Joint or Infill		¹⁴ Consolidation Code		¹⁵ Order No.			

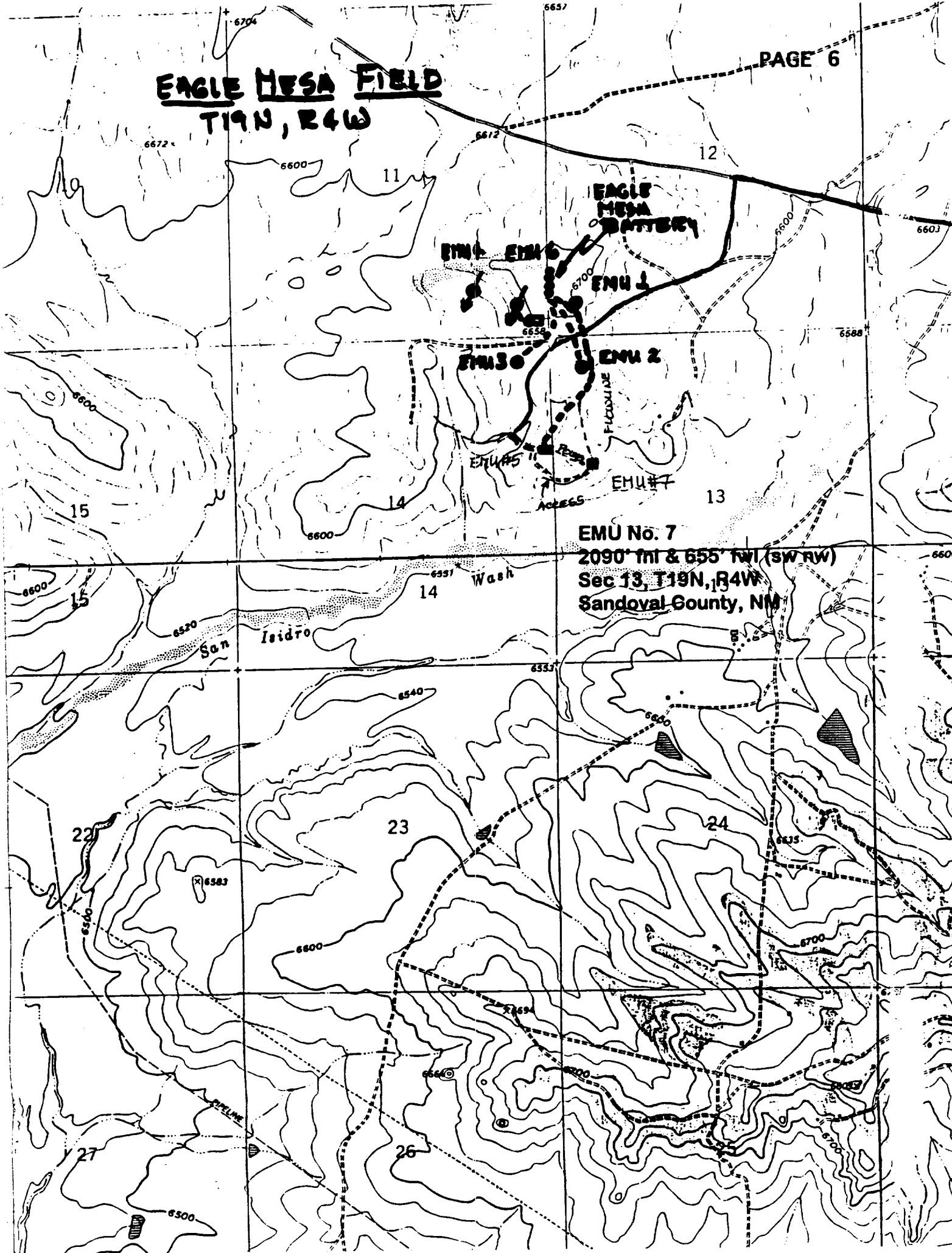
NO ALLOWABLE WILL BE ASSIGNED TO THIS COMPLETION UNTIL ALL INTERESTS HAVE BEEN CONSOLIDATED
OR A NON-STANDARD UNIT HAS BEEN APPROVED BY THE DIVISION

<div>16</div>  <p>EMU No. 5 6649' el. top flange</p>	<div>17 OPERATOR CERTIFICATION</div> <p>I hereby certify that the information contained herein is true and complete to the best of my knowledge and belief</p> <p>Signature <u>[Signature]</u></p> <p>Printed Name Steven S. Dunn</p> <p>Title Operations Manager</p> <p>Date 5/08/96</p>
	<div>18 SURVEYOR CERTIFICATION</div> <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 of Survey <u>5/8/96</u></p> <p>Signature <u>[Signature]</u></p> <p>Professional Surveyor Seal: </p> <p>Certificate Number 6844</p>

RECEIVED
NOV 13 1996
OIL CON. DIV.
DIST. 3

EAGLE MESA FIELD
T19N, R4W

PAGE 6



EMU No. 7
2090' Int & 655' Int (SW RW)
Sec 13, T19N, R4W
Sandoval County, NM

EMU No. 7

Section 13, T19N, R4W
Indioval County, New Mexico

The map displays a topographic representation of a specific land section. A thick black line delineates the boundary of the land owned by EMU No. 7. The map includes numerous labels for geographical features such as "Mesa Chivilla", "Mesa", "Rock Mesa", "San Arroyo", "Horn Valley", "Isidro", "Arroyo", "Wash", "Spring", "Mesa", "Sun", "Jones", and "Cano". Contour lines are drawn across the map, indicating elevation changes. A road or path is shown running through the center of the section. The map is oriented with North at the top.

MERRION OIL & GAS CORPORATION

EMU No. 7
Section 13, T19N, R4W
Sandoval County, New Mexico

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT

FORM APPROVED
Budget Bureau No. 1004-0135
Expires: March 31, 1993

5. Lease Designation and Serial No.
NOO-C-14-20-2713

6. If Indian, Allottee or Tribe Name
Navajo Allotted

7. If Unit or CA, Agreement Designation
Eagle Mesa Unit

8. Well Name and No.
EMU No. 7

9. API Well No.

10. Field and Pool, or Exploratory Area
Eagle Mesa Entrada

11. County or Parish, State
Sandoval, NM

SUNDRY NOTICES AND REPORTS ON WELLS

Do not use this form for proposals to drill or to deepen or reentry to a different reservoir
Use "APPLICATION FOR PERMIT-" for such proposals

SUBMIT IN TRIPLICATE 070 FARMINGTON, NM

1. Type of Well

☒ Oil Well ☐ Gas Well ☐ Other

2. Name of Operator

Merion Oil & Gas Corporation

3. Address and Telephone No.

610 Reilly Ave Farmington NM 87401
ph: (505) 327-9801

4. Location of Well (Footage, Sec., T., R., M., or Survey Description)

2140'fml & 645fwl (sw nw)
Section 13, T19N, R4W, NMPM

12. CHECK APPROPRIATE BOX(s) TO INDICATE NATURE OF NOTICE, REPORT, OR OTHER DATA

TYPE OF SUBMISSION	TYPE OF ACTION
<input type="checkbox"/> Notice of Intent	<input type="checkbox"/> Abandonment
<input type="checkbox"/> Subsequent Report	<input type="checkbox"/> Recompletion
<input type="checkbox"/> Final Abandonment Notice	<input type="checkbox"/> Plugging Back
	<input type="checkbox"/> Casing Repair
	<input type="checkbox"/> Altering Casing
	<input checked="" type="checkbox"/> Other Supplement to APD 3160
	<input type="checkbox"/> Change of Plans
	<input type="checkbox"/> New Construction
	<input type="checkbox"/> Non-Routine Fracturing
	<input type="checkbox"/> Water Shut-Off
	<input type="checkbox"/> Conversion to Injection
	<input type="checkbox"/> Dispose Water

(Note: Report results of multiple completion on Well Completion or Recompletion Report and Log Form.)

13. Describe Proposed or Completed Operations (Clearly state all pertinent details, and give pertinent dates, including estimated date of starting any proposed work. If well is directionally drilled, give subsurface locations and measured and true vertical depths for all markers and zones pertinent to this work.)

Merion submits the following to supplement our APD for the subject well:

We request the BLM's approval to set surface casing at the depth proposed in the APD. Attached are a justification and typical mud log in the area of proposed drilling. Please keep in mind this is a development well area and not an exploratory well. Therefore experience plays a major role in determining the safe, prudent and efficient way to drill a well. Requiring an operator to invest unnecessary capital will ultimately discourage mineral development.

If further is required, please advise.

RECEIVED
NOV 13 1996

OIL CON. DIV.
DIST. 3

COPIES: BLM+4, WELL FILE+1

14. I hereby certify that the foregoing is true and correct

Signed

Steven S. Dunn

Title Operations Manager

Date May 24, 1996

(This space for Federal or State office use)

Approved by

Conditions of approval, if any:

Title

Date

APPROVED

NOV 08 1996

DISTRICT MANAGER

/S/ Duane W. Spencer

Title 18 U.S.C. Section 1001, makes 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 or to furnish any false, fictitious or fraudulent information in any matter within its jurisdiction.

NMOCD

RECEIVED

MAY 28 1996

Attachment to Sundry Notice

EMU No. 7

BUREAU OF LAND MANAGEMENT
FARMINGTON DISTRICT OFFICE

Merrion Oil & Gas submits the following to support setting surface casing at 240'±. Refer to the accompanying table and chart entitled Estimated Pore Pressure / Fracture Gradient vs Depth.

1. Many wells have been drilled in the south Chaco Slope area over the many years of oil and gas activity and have not encountered any significant problems with current surface casing setting depths. Our belief is that current practices are adequate, safe, and prudent.
2. The Morrison, Summerville, Todilto and Entrada formations are devoid of gas in this region (Typical mudlog enclosed). Therefore the Maximum Anticipated Surface Pressure (ASP) for this interval during drilling is 0 psi because the minimum mud weight (8.32 ppg for water) will overbalance the maximum anticipated formation pore pressure (7.1 ppg). On this basis, our proposed surface casing is adequate.
3. The deepest estimated occurrence of gas is the Dakota formation at 4,400'. Using the BLM guidelines for calculating the ASP:

$$ASP = Depth * (G_p - G_g)$$

$$ASP = 4400 \text{ ft} * (0.268 - 0.22) \text{ psi / ft}$$

$$ASP = 211 \text{ psig}$$

$$G_p = \text{Pore Pressure Gradient}$$

$$G_g = \text{Gas Cut Column Gradient}$$

Assuming a 1.0 psi/ft horizontal fracturing gradient for shallow horizontal fractures, recommended surface casing setting depth is ~ 211 feet ±. Again, our proposed surface casing is reasonable to handle the unlikely situation of a partially evacuated hole.

MAY 28 1996

BUREAU OF LAND MANAGEMENT
FARMINGTON DISTRICT OFFICE

ENTRADA WELLS

Estimated Pore Pressure/ Frac Gradient vs Depth

Formation	Source	Depth ft	Pore Pressure		Mud Wt ppg	Frac Pressure		Mud Wt ppg
			psia	psi/ft		psig	psi/ft	
	Est.	0	0	0.268	5.2		1.000	19.2
Lewis	Est	600	181	0.268	5.2	540	0.900	17.3
Mesaverde	Fluid Level	2,750	752	0.273	5.3	1,991	0.724	13.9
Gallup	Build-up	3,723	980	0.263	5.1	2,600	0.698	13.4
Dakota	Est	4,800	1,288	0.268	5.2	3,352	0.698	13.4
Morrison	Est	5,200	1,395	0.268	5.2	3,631	0.698	13.4
Summerville	Est	5,566	1,494	0.268	5.2	3,887	0.698	13.4
Entrada	DST	5,925	2,193	0.370	7.1	4,200	0.709	13.6

