

UNITED STATES  
DEPARTMENT OF THE INTERIOR  
BUREAU OF LAND MANAGEMENTFORM APPROVED  
Budget Bureau No. 1004-0136  
Expires: February 28, 1995

## APPLICATION FOR PERMIT TO DRILL OR DEEPEN

1a. Type of Work

DRILL ☒DEEPEN ☐

b. Type of Well

Oil Well ☐ Gas Well ☒ Other ☐Single Well ☒ Multiple Zone ☐

2. Name of Operator

Merrion Oil &amp; Gas Corporation

3. Address and Telephone No.

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

4. Location of Well (Footages)

At Surface 1844' fsl &amp; 1606' fwl (ne sw)

At proposed prod. zone Same

14. Distance in Miles and Directions from Nearest Town or Post Office

30 miles south of Farmington NM

15. Distance from Proposed Location to Nearest

Property or Lease Line, Ft 1606'

16. No. of Acres in Lease

320 acres

17. No. of Acres Assigned to This Well

320 acres

18. Distance from Proposed Location to Nearest Well Drilling, Completed, or Applied for, on this Lease, FT

-/-NA

19. Proposed Depth

5700'

20. Rotary or Cable Tools

Rotary

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

6222' GR, 6235' RKB

22. Approximate Date Work will Start

As soon as permitted

## PROPOSED CASING AND CEMENTING PROGRAM

SIZE OF HOLE	SIZE & GRADE OF CASING	WEIGHT PER FOOT	SETTING DEPTH	QUANTITY OF CEMENT
12-1/4"	9 5/8" J55	36 ppf	~320' KB	~200 sx (236 cuft)
8-3/4"	7" J55	23 ppf	~5700' KB	~988 sx (1693 cuft)

Merrion proposes to drill 12-1/4" hole with native mud to approx 320' and set 9 5/8" 36# J55 surface casing, cement to surface with ~200 sx 'B' w/ 2% CaCl<sub>2</sub> (236 cuft). Will drill 8-3/4" hole to TD @ approx 5700' KB with low solids non-dispersed mud system. Run open hole surveys. Will set 7" 23 ppf J55 production casing from TD to surface. Will cement in two stages: first stage with 114 sx 'B' w/ 2% SMS (235 cuft) and tail in with 268 sx 'B' 2% gel (327 cuft) cement to fill from total depth across the Dakota pay zones and above the Gallup formation; second stage DV tool will be set at ~3500' at the Mancos top, will cement with 466 sx 'B' w/ w/ 2% gel (961 cuft) and tail in with 139 sx 'B' 2% gel (170 cuft) cement to fill DV tool to surface. (Will adjust volumes based on caliper log)

*Cement will come production string from TD to surface*

Will test Dakota through perforated casing. Will fracture stimulate and put on for production test. Drilling operations below surface casing will be conducted with a double-ram BOP in place, minimum working pressure ~2000 psig. Additional drilling technical details attached.

Water spacers will be pumped ahead of the lead slurries to prevent mud contamination of the cement. If cement does not reach surface, a temperature log or cement bond log will be run to determine top of cement.

The production casing will be centralized through Dakota interval and above/below the DV tool.

*This action is subject to technical and procedural review pursuant to 43 CFR 3160.3 and appeal pursuant to 43 CFR 3160.4.*

IN ABOVE SPACE DESCRIBE PROPOSED PROGRAM: If proposal to deepen, give present productive zone and proposed new productive zone.

COPIES: BLM+6, WELL FILE+1

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

Signed

Connie S. Dinning Title Production Engineer

Date September 24, 2001

(This space for Federal or State office use)

Permit No.

Approval Date

Application approval does not warrant or certify that 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

David J. Mankiewicz

APPROVED BY

TITLE

AFM

DATE

4/5/02

State of New Mexico  
Energy, Minerals & Mining Resources Department  
OIL CONSERVATION DIVISION  
2040 South Pacheco  
Santa Fe, NM 87505

Form C - 102

WELL LOCATION AND ACREAGE DEDICATION PLAT

2001 SEP 26 PM 2:13

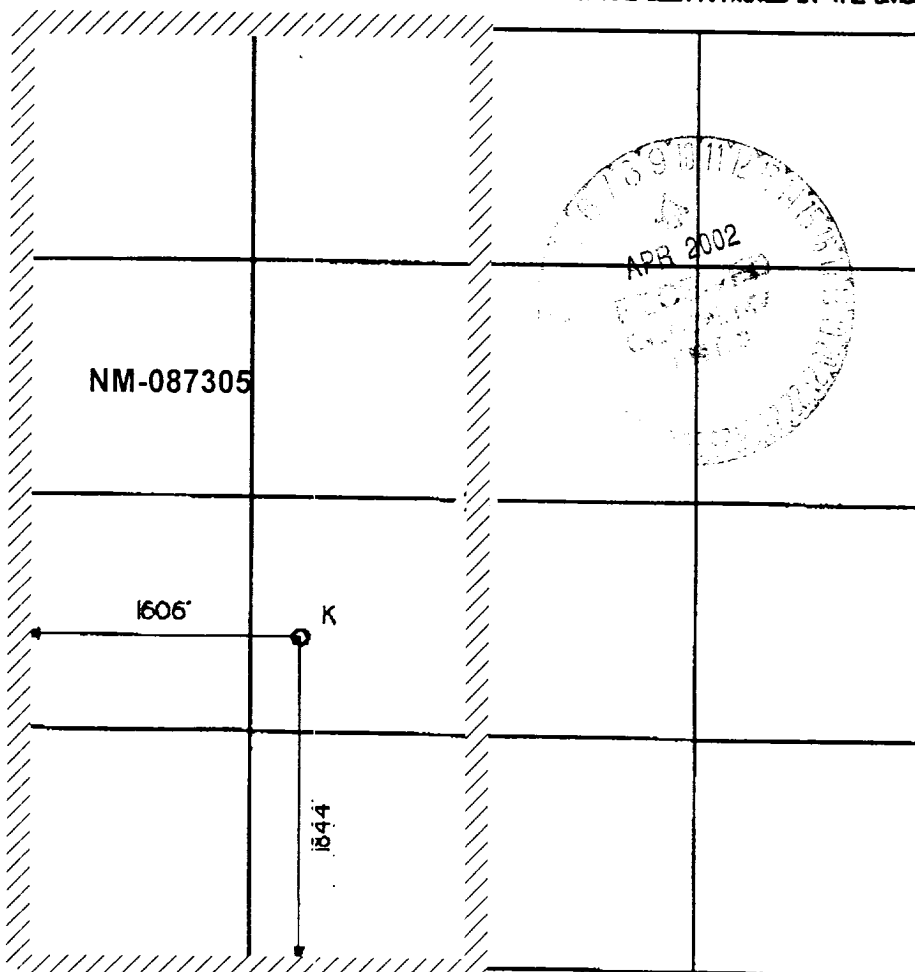
☐ AMENDED REPORT

APA Number <b>30-045-30856</b>	Pool Code	Pool Name <b>Basin Dakota</b>
Property Code <b>29663</b>	Property Name <b>ENGLEBERRY</b>	Well Number <b>1</b>
ORD No. <b>014634</b>	Operator Name <b>MERRION OIL &amp; GAS</b>	Elevation <b>6222'</b>

Surface Location									
UL or Lot <b>K</b>	Sec. <b>28</b>	Twp. <b>25 N.</b>	Rgn. <b>13 W.</b>	Lot 1/4 <b>ne sw</b>	Feet From <b>1844</b>	North/South <b>SOUTH</b>	Feet From <b>1606</b>	East/West <b>WEST</b>	County <b>SAN JUAN</b>

Bottom Hole Location if Different From Surface									
UL or Lot	Sec.	Twp.	Rgn.	Lot 1/4	Feet From	North/South	Feet From	East/West	County
Dedication <b>320 AC</b>	Job #	Consolidation	Order No.						

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

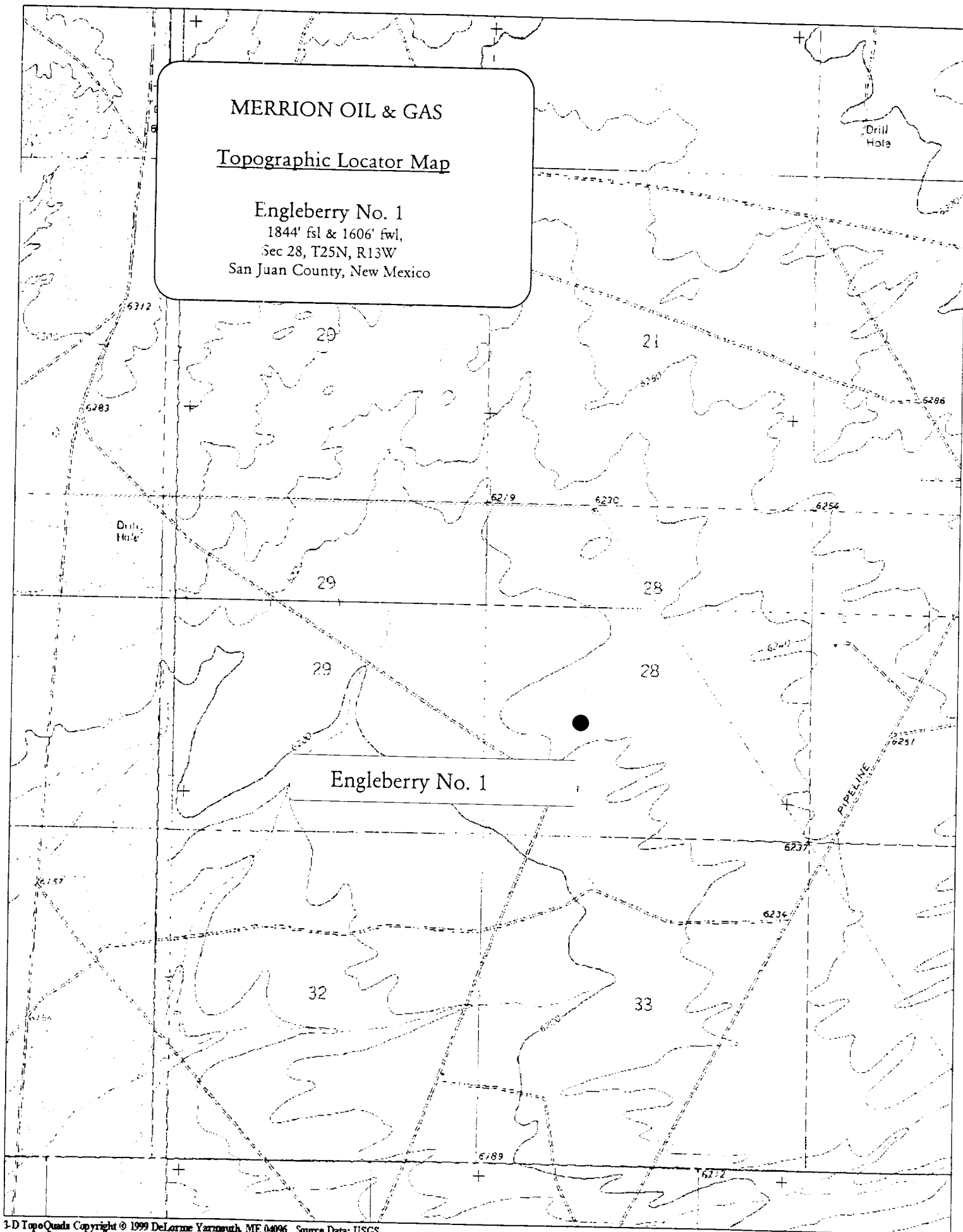


<b>OPERATOR CERTIFICATION</b>	
I hereby certify that the information contained herein is true and complete to the best of my knowledge and belief.	
Signature	
Printed Name <b>Connie S. Dinning</b>	
Title <b>Production Engineer</b>	
Date <b>September 23, 2001</b>	
<b>SURVEYOR CERTIFICATION</b>	
I hereby certify that the well location 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.	
Date of Survey	
Signature and Seal of Professional Surveyor 	

# MERRION OIL & GAS

## Topographic Locator Map

Engleberry No. 1  
1844' fsl & 1606' fwl,  
Sec 28, T25N, R13W  
San Juan County, New Mexico



# MERRION OIL & GAS CORPORATION

## DRILLING TECHNICAL PROGRAM

(Attachment to Form 3160-3)

### *Engleberry No. 1*

1844' fsl & 1606' fwl (ne sw)  
Section 28, T25N, R13W, NMPM  
San Juan County, New Mexico

#### 1. *Estimated Formation Tops:*

<u>Formation</u>	<u>Depth KB</u>
Undif. Tertiary	Surface
Fruitland	550'
Main Fruitland Coal	877'
Pictured Cliffs	940'
La Ventana	1732'
Cliffhouse	2084'
Menefee	2192'
Pt. Lookout	3364'
Gallup	4334'
Greenhorn Lime	5264'
Dakota	5454'
Total Depth	~5700'

#### 2. *Well Control System*

- A. We propose to use a double-ram type blowout preventer system in 2000 psi service (schematic drawings attached).
- B. Minimum required working pressure rating for BOP stack is 2000 psi. Maximum anticipated bottomhole pressure = 1539 psi. Well Control Anticipated Surface Pressure (ASP) = 1539 psi -  $(0.22 * 6250') = 285$  psi, assuming a partially gas cut column per BLM guidelines.
- C. BOP pressure testing will be conducted at time of installation and prior to drillout of surface casing shoe. Ram type preventer will be tested to 1000 psi. The BOPs will be activated on each trip for a bit and recorded in the driller's log. A choke manifold will be installed (Refer to schematic drawing). Working pressure for choke manifold is greater than 2000 psi. In addition, a kill line from the mud pump will be installed.

- D. Stabbing valves for drill pipe and drill collars will be available on the rig floor. A kelly cock valve will be installed.
- E. Anticipated formation pressures average 0.27 psi/ft gradient and formation fracture pressures are anticipated to exceed the maximum mud weight of 9.2 ppg.

### 3. *Drilling Mud Program*

- A. A 12  $\frac{1}{4}$ " surface hole will be drilled with fresh water system, lime and gel added to provide viscosity as needed.
- B. A 8  $\frac{3}{4}$ " hole will be drilled to total depth utilizing a low solids non-dispersed mud system. Additives such as starch, cmc, and others will be used to control mud characteristics as necessary. No materials of a hazardous nature will be added to the drilling fluid in hazardous quantities.

Lost circulation materials will not be stored on location unless required.

Mud weighting materials will not be stored on location unless required.

<u>Interval</u>	<u>Mud System</u>	<u>Weight #/Gal</u>	<u>Viscosity Sec/Qt</u>	<u>Water Loss cc</u>
0 - 320'	Native	< 9.0	35-55	NA
320' - 5700'±	LSND	8.6-9.2	28-45	NA

Maximum anticipated mud weight is 9.2 lb./gal (0.48 psi/ft).

- C. Mud trip monitoring will be done visually.

### 4. *Hazards*

- A. Abnormal Pressure is not expected to be a problem in this area.
- B. Lost circulation is not expected to be a problem in this area. Although many years of production have taken place at shallow depths in this area, we anticipate that rock strengths and reservoir pressures are adequate to maintain circulation to total depth.
- C. No H<sub>2</sub>S is expected. However, should H<sub>2</sub>S 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 on the vertical well.

### 5. *Logging and Testing*

- A. An Induction, Neutron, Density Log will be run from TD across zones of interest..

- B. Drill stem tests may be run.
- C. Core samples may be taken.
- D. A mud logging unit will be used during drilling.

## 6. Casing Program

- A. Casing:

	Description	Top	Bottom
1	8 $\frac{5}{8}$ " 24# J55	Surface	320 ft $\pm$
2	4 $\frac{1}{2}$ " 10.5 J55	Surface	5700 ft $\pm$

Merrion requests that a variance be granted to allow us to set surface casing at the proposed depth of  $\pm 320'$  because this setting depth has been shown to be adequate as demonstrated by the innumerable wells that have been previously drilled in the area without incident. In addition, the potential for a gas kick is very low.

Estimated formation pore pressure gradient is  $\sim 0.27$  psi/ft.

- B. A proposed wellbore schematic is attached.

# Merrion Oil & Gas Corporation Wellbore Schematic

Engleberry No. 1

Proposed Wellbore Configuration

Location: 1844' fsl & 1606' fwl (ne sw)  
Sec 28, T25N, R13W NMPM  
San Juan Co, New Mexico

Elevation: 6222' GL  
6235' KB

Prepared: September 21, 2001

By: Connie S. Dinning

Cretaceous

Kirtland - Surface

Top of Cement @ Surface, all strings

Bit Size 12-1/4"

9 5/8", 36#, J-55 Surface Csg @ 320' KB w/ 152 sx 'B' (179 cuft)

Fruitland -550'

Main Fruitland Coal - 877'

Pictured Cliffs -940'

LaVentana-1732'

Bit Size 8-3/4"

Cliffhouse -2084'

Menefee-2192'

Pt Lookout-3364'

Stage tool @ 3500' KB w/ 466sx (961 cf) Class B w/ 2%SMS,  
Tail 139 sx 'H' (170 cuft)

Top of Cement @ ~~3500'~~ *DV 4001*

Gallup-4334'

Greenhorn-5264'

Dakota-5454'

Proposed Perforations: 5454' - 5474'

7" 23#J55 Prod Csg @ 5700' w/ 114sx (235 cf) Class B w/ 2% SMS,  
Tail 268 sx 'H' (327 cf)

TD @ 5700' KB

PBTD @ 5660'KB