

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

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

1a. Type of work: <input checked="" type="checkbox"/> DRILL <input type="checkbox"/> REENTER		5. Lease Serial No. <b>NMSF-080384-B</b>	
1b. Type of Well: <input type="checkbox"/> Oil Well <input checked="" type="checkbox"/> Gas Well <input type="checkbox"/> Other <input type="checkbox"/> Single Zone <input checked="" type="checkbox"/> Multiple Zone		6. If Indian, Allottee or Tribe Name N/A	
2. Name of Operator <b>MERRION OIL &amp; GAS CORPORATION</b>		7. If Unit or CA Agreement, Name and No. N/A	
3a. Address <b>610 REILLY AVE. FARMINGTON, NM 87401</b>		8. Lease Name and Well No. <b>HICKMAN A 1 E</b>	
3b. Phone No. (include area code) <b>(505) 324-5300</b>		9. API Well No. <b>30-045- 33936</b>	
4. Location of Well (Report location clearly and in accordance with any State requirements *) At surface <b>1070' FSL &amp; 813' FEL</b> At proposed prod. zone <b>SAME</b>		10. Field and Pool, or Exploratory <b>GAL'GOS GAL'P &amp; BAS. DAK.</b>	
14. Distance in miles and direction from nearest town or post office* <b>15 AIR MILES SSE OF FARMINGTON</b>		11. Sec., T. R. M. or Blk. and Survey or Area <b>10-26N-12W NMPM</b>	
15. Distance from proposed* location to nearest property or lease line, ft. (Also to nearest drig. unit line, if any) <b>813'</b>		12. County or Parish <b>SAN JUAN</b>	
16. No. of acres in lease <b>957.92</b>		13. State <b>NM</b>	
17. Spacing Unit dedicated to this well <b>S2 DK 5/2 of 5/2 SE 4 G11P (80 AC.)</b>		18. Distance from proposed location* to nearest well, drilling, completed, applied for, on this lease, ft. <b>531' (Bunko 1)</b>	
19. Proposed Depth <b>6,300'</b>		20. BLM/BIA Bond No. on file <b>NM-0883</b>	
21. Elevations (Show whether DF, KDB, RT, GL, etc.) <b>6,157' GL</b>		22. Approximate date work will start* <b>04/01/2007</b>	
23. Estimated duration <b>2 WEEKS</b>		24. Attachments	

The following, completed in accordance with the requirements of Onshore Oil and Gas Order No.1, shall be attached to this form:

- Well plat certified by a registered surveyor.
- A Drilling Plan.
- A Surface Use Plan (if the location is on National Forest System Lands, the SUPO shall be filed with the appropriate Forest Service Office).
- Bond to cover the operations unless covered by an existing bond on file (see Item 20 above).
- Operator certification
- Such other site specific information and/or plans as may be required by the authorized officer.

**SEE ATTACHED FOR  
CONDITIONS OF APPROVAL**

25. Signature <i>Brian Wood</i>	Name (Printed/Typed) <b>BRIAN WOOD</b>	Date <b>09/07/2006</b>
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Title  
**CONSULTANT**

PHONE: (505) 466-8120

FAX: (505) 466-9682

Approved by (Signature)  
*[Signature]*

Name (Printed/Typed)

Date  
**8/17/07**

Title  
**AFM**

Office  
**FFO**

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.

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)

**HOLD 0104 FOR** *NSL - Gallup (oil)*

**RCVD AUG 17 '07  
OIL CONS. DIV.  
DIST. 3**

**NOTIFY AZTEC OCD 24 HRS.  
PRIOR TO CASING & CEMENT**

**OPERATOR**

*b*

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

Form C - 102

☐ AMENDED REPORT

WELL LOCATION AND ACREAGE DEDICATION PLAT

APA Number <b>30-045-33936</b>	Pool Code <b>26980 &amp; 71599</b>	Pool Name <b>GALLEGOS GALLUP (ASSOC.) &amp; BASIN DAKOTA</b>
Property Code <b>7803</b>	Property Name <b>HICKMAN A</b>	Well Number <b>1 E</b>
GRID No. <b>014634</b>	Operator Name <b>MERRION OIL &amp; GAS</b>	Elevation <b>6157'</b>

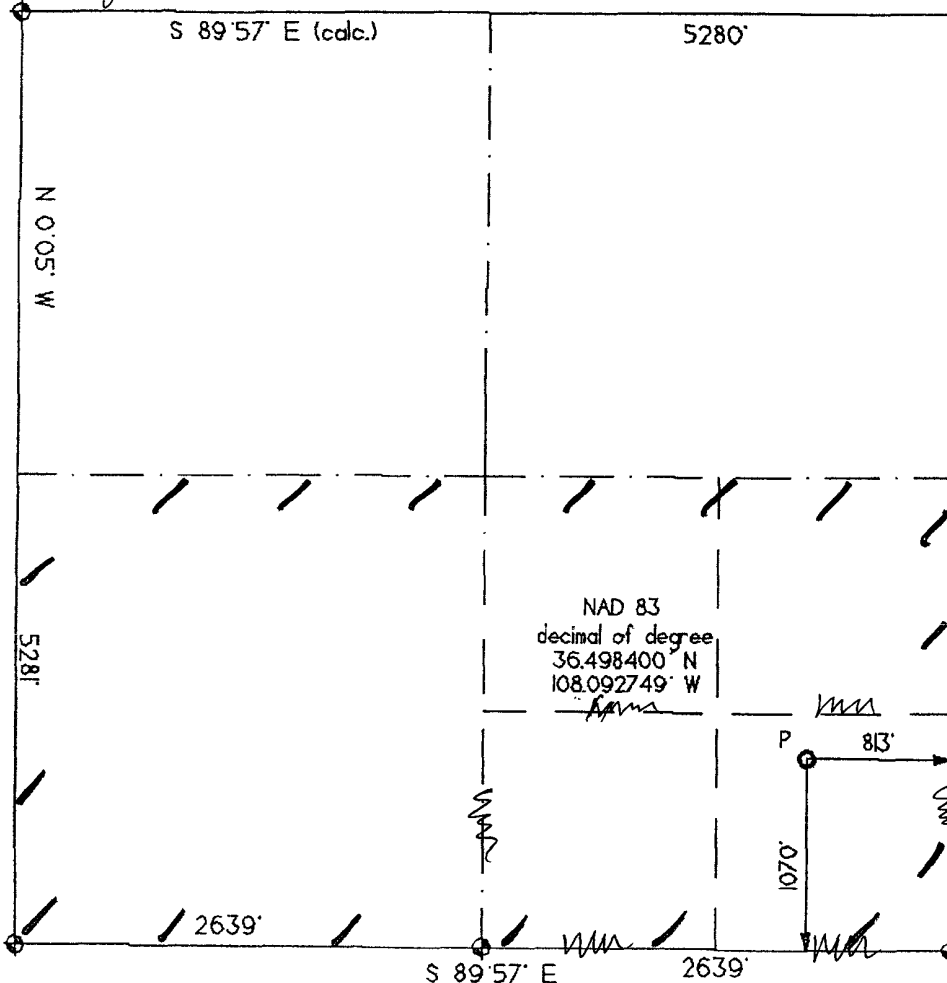
Surface Location									
UL or Lot <b>P</b>	Sec. <b>10</b>	Twp. <b>26 N.</b>	Rge. <b>12 W.</b>	Lot Lch.	Feet from>	North/South <b>SOUTH</b>	Feet from>	East/West <b>EAST</b>	County <b>SAN JUAN</b>

Bottom Hole Location If Different From Surface									
UL or Lot	Sec.	Twp.	Rge.	Lot Lch.	Feet from>	North/South	Feet from>	East/West	County

Dedication <b>320</b>	Joint ?	Consolidation	Order No.
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80. Gallup  
5/2 of SE/4

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	<i>Brian Wood</i>
Printed Name	<b>BRIAN WOOD</b>
Title	<b>CONSULTANT</b>
Date	<b>SEPT. 7, 2006</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	<b>07/13/06</b>
Signature and Seal of Professional Surveyor	<i>[Signature]</i>

Submit 3 Copies To Appropriate District Office  
District I  
1625 N. French Dr., Hobbs, NM 88240  
District II  
1301 W. Grand Ave., 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

Form C-103  
May 27, 2004

OIL CONSERVATION DIVISION  
1220 South St. Francis Dr.  
Santa Fe, NM 87505

WELL API NO. 30-045- <u>33936</u>
5. Indicate Type of Lease STATE <input type="checkbox"/> FEE <input type="checkbox"/>
6. <del>State</del> Oil & Gas Lease No. NMSF-080384-B
7. Lease Name or Unit Agreement Name  HICKMAN A
8. Well Number 1 E
9. OGRID Number 014634
10. Pool name or Wildcat GAL'GOS GALLUP & BASIN DAKOTA

SUNDRY NOTICES AND REPORTS ON WELLS (DO NOT USE THIS FORM FOR PROPOSALS TO DRILL OR TO DEEPEN OR PLUG BACK TO A DIFFERENT RESERVOIR. USE "APPLICATION FOR PERMIT" (FORM C-101) FOR SUCH PROPOSALS.)	
1. Type of Well: Oil Well <input type="checkbox"/> Gas Well <input checked="" type="checkbox"/> Other	
2. Name of Operator MERRION OIL & GAS CORPORATION	
3. Address of Operator 610 REILLY AVE., FARMINGTON, NM 87401	
4. Well Location Unit Letter: P 1070' FSL & 813' FEL Section 10 Township 26 N Range 12 W NMPM SAN JUAN County	
11. Elevation (Show whether DR, RKB, RT, GR, etc.) 6,157' GL	
<input checked="" type="checkbox"/> Pit or Below-grade Tank Application <input type="checkbox"/> or Closure <input type="checkbox"/>	
Pit type: <u>DRILLING</u> Depth to Groundwater: <u>&gt;300'</u> Distance from nearest fresh water well: <u>&gt;1,000'</u> Distance from nearest surface water: <u>&gt;500'</u>	
Pit Liner Thickness: 12 mil	Below-Grade Tank: Volume bbls; Construction Material

12. Check Appropriate Box to Indicate Nature of Notice, Report or Other Data

NOTICE OF INTENTION TO:

PERFORM REMEDIAL WORK ☐ PLUG AND ABANDON ☐  
TEMPORARILY ABANDON ☐ CHANGE PLANS ☐  
PULL OR ALTER CASING ☐ MULTIPLE COMPL ☐

OTHER: DRILLING PIT ☒

SUBSEQUENT REPORT OF:

REMEDIAL WORK ☐ ALTERING CASING ☐  
COMMENCE DRILLING OPNS. ☐ P AND A ☐  
CASING/CEMENT JOB ☐

OTHER: ☐

13. Describe proposed or completed operations. (Clearly state all pertinent details, and give pertinent dates, including estimated date of starting any proposed work). SEE RULE 1103. For Multiple Completions: Attach wellbore diagram of proposed completion or recompletion.

I hereby certify that the information above is true and complete to the best of my knowledge and belief. I further certify that any pit or below-grade tank has been/will be constructed or closed according to NMOCD guidelines ☒ a general permit ☐ or an (attached) alternative OCD-approved plan ☐.

SIGNATURE Brian Wood TITLE: CONSULTANT DATE: SEPTEMBER 7, 2006

Type or print name: BRIAN WOOD E-mail address: brian@permitswest.com Telephone No.: (505) 466-8120

**For State Use Only**

Deputy Oil & Gas Inspector,  
District #3

APPROVED BY: [Signature] TITLE DATE AUG 20 2007

Conditions of Approval (if any):

Merrion Oil & Gas Corporation  
Hickman A 1 E  
1070' FSL & 813' FEL  
Sec. 10, T. 26 N., R. 12 W.  
San Juan County, New Mexico

PAGE 1

## Drilling Program

### 1. ESTIMATED FORMATION TOPS

<u>Formation</u>	<u>GL Depth</u>	<u>KB Depth</u>	<u>Elevation</u>
Nacimiento	0'	12'	+6,157'
Ojo Alamo Sandstone	307'	319'	+5,850'
Kirtland Shale	382'	394'	+5,775'
Fruitland	1,107'	1,119'	+5,050'
Main Fruitland	1,407'	1,419'	+4,750'
Pictured Cliffs	1,432'	1,444'	+4,725'
Lewis Shale	1,557'	1,569'	+4,600'
Cliffhouse Sandstone	2,257'	2,269'	+3,900'
Menefee Shale	2,957'	2,969'	+3,200'
Point Lookout Sandstone	3,907'	3,919'	+2,250'
Mancos Shale	4,132'	4,144'	+2,025'
Gallup Sandstone	4,982'	4,994'	+1,175'
Greenhorn Limestone	5,857'	5,859'	+300'
Dakota Sandstone	5,982'	5,994'	+175'
Total Depth (TD)	6,300'	6,312'	-143'

### 2. NOTABLE ZONES

<u>Gas &amp; Oil Zones</u>	<u>Water Zones</u>	<u>Coal Zones</u>
Fruitland	Nacimiento	Fruitland
Pictured Cliffs	Fruitland	
Gallup		
Dakota		

Water zones will be protected with casing, cement, and weighted mud. Fresh water found while drilling will be recorded.

Merrion Oil & Gas Corporation  
Hickman A 1 E  
1070' FSL & 813' FEL  
Sec. 10, T. 26 N., R. 12 W.  
San Juan County, New Mexico

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### 3. PRESSURE CONTROL

The drilling contract has not been awarded. Thus, the exact BOP model to be used is not yet known. (A typical double ram 2,000 psi model is on PAGE 3.) Minimum working pressure will be 2,000 psi. Pressure calculations are:

$$\begin{aligned} 0.29 \text{ psi/foot} \times 6,300' &= 1,827 \text{ psi maximum expected bottom hole pressure} \\ - 0.22 \text{ psi/foot} \times 6,300' &= 1,386 \text{ psi gas cut column} \\ 441 \text{ psi} &\text{ maximum expected surface pressure} \end{aligned}$$

BOP pressure tests will be conducted at time of installation and before drilling out the surface casing shoe. Ram type preventer will be tested to  $\approx 1,000$  psi. The BOP will be activated on each bit trip and the activation recorded in the driller's log. A 2,000 psi working pressure choke manifold, kill line from the mud pump, and kelly cock valve will be installed. Stabbing valves for drill pipe and drill collars will be available on the rig floor.

### 4. CASING & CEMENT

<u>Hole Size</u>	<u>O. D.</u>	<u>Pounds/Foot</u>	<u>Grade</u>	<u>Age</u>	<u>Connections</u>	<u>Depth Set</u>
12-1/4"	8-5/8"	24	J-55	New	ST & C	320'
7-7/8"	4-1/2"	11.6	J-55	New	LT & C	6,300'

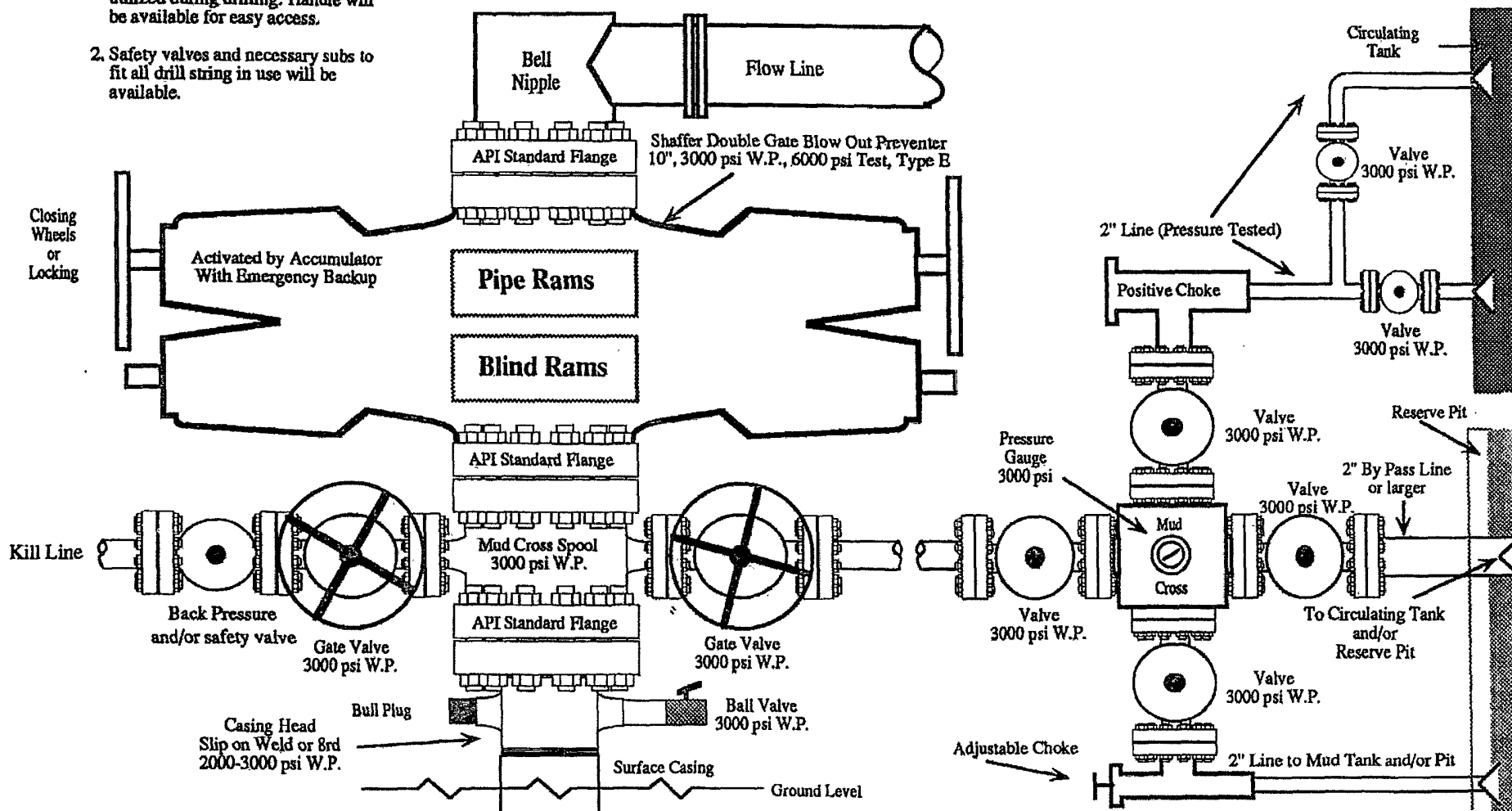
Surface casing will be cemented to surface with  $\approx 264$  cubic feet ( $\approx 224$  sacks) Class B neat + 1/4 pound per sack cello-flake + 2% to 4% CaCl<sub>2</sub>. Yield = 1.18 cubic feet per sack. Weight = 15.6 pounds per gallon. Excess = 100%. A centralizer will be placed on the bottom joint.

Production casing hole will be cemented in two stages to the surface with  $\approx 2,172$  cubic feet. Excess = 50% (actual volumes will be based on caliper survey). DV tool will be  $\approx 50'$  below the top of the Mancos shale. Thus, DV tool will be set at  $\approx 4,200'$ . Will install 2 centralizers to bracket DV tool, 6 centralizers over Dakota, and 8 centralizers over Gallup.

# 2,000 PSI BOP SYSTEM

Note: 1. An upper Kelly cock valve will be utilized during drilling. Handle will be available for easy access.

2. Safety valves and necessary subs to fit all drill string in use will be available.



Note: This equipment is designed to meet requirements for a 2-M rating standard per 43 CFR part 3160 (amended). Proper operation and testing of equipment will be carried out per standard. 2,000 psi equipment can be substituted in the drawing to meet minimum requirements per standard.

Merrion Oil & Gas Corporation  
Hickman A 1 E  
1070' FSL & 813' FEL  
Sec. 10, T. 26 N., R. 12 W.  
San Juan County, New Mexico

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First stage ( $\approx 2,100'$ ) of long string cement will cover Gallup and Dakota zones. Lead with  $\approx 250$  sacks Premium light high strength with 2% KCl + 0.2% CD-32 + 0.5% FL-52 + 1/2 pound per sack cello flake + 2% pheno seal (= 2.01 cubic feet per sack & 12.5 pounds per gallon. Tail with  $\approx 150$  sacks Type III + 0.3% CD-32 + 0.2% FL-52 + 5% A-10 + 1/4 pound per sack cello flake 2% pheno seal (= 1.54 cubic feet per sack & 14.2 pounds per gallon).

Second stage of cement will cover  $\approx 4,200'$  from DV tool to surface. Lead with  $\approx 500$  sacks Type III + 1/4 pound per sack flake + 8% gel + 2% pheno seal (= 2.60 cubic feet per sack & 11.9 pounds per gallon). Tail with  $\approx 100$  sacks Type III neat (= 1.39 cubic feet per sack & 14.5 pounds per gallon).

#### 5. MUD PROGRAM

Surface hole will be drilled with fresh water based spud mud at  $\approx 8.4$  pounds per gallon. Lime and gel will be added as needed for viscosity. Production hole will be drilled with a fresh water based low solids non dispersed mud with a weight of  $< 9.0$  pounds per gallon and water loss of  $< 10$  cc. Starch will be added as needed. Producing or sensitive zones will be air drilled.

#### 6. CORES, TESTS, & LOGS

No cores or drill stem tests are planned. DIL-FDC-GR logs will be run from TD to the base of the surface casing.

#### 7. DOWN HOLE CONDITIONS

No abnormal pressures, temperatures, nor hydrogen sulfide are expected.

Merrion Oil & Gas Corporation  
Hickman A 1 E  
1070' FSL & 813' FEL  
Sec. 10, T. 26 N., R. 12 W.  
San Juan County, New Mexico

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8. OTHER INFORMATION

The anticipated spud date is upon approval. It is expected it will take about  $\approx$ 2 weeks to drill and  $\approx$ 2 weeks to complete the well.



## **DRILLING CONDITIONS OF APPROVAL**

**Operator:** Merrion Oil and Gas Corp.  
**Lease No.:** NMSF 080384B  
**Well Name:** Hickman A #1E  
**Well Location:** sec. 10, T26N, R12W; 1070' FSL & 813' FEL

1. Centralizers will be run on the surface casing according to Onshore Order No. 2 *Casing and Cementing Requirements* and NTL –FRA 90-1 *Requirements to Operate on Federal and Indian Leases: Casing and Cementing Requirements*.

Hickman A #1 E  
well pad & section

