

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

## OIL CONSERVATION DIVISION

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

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

API NO. (assigned by OCD on New Wells)

30-031-20955

5. Indicate Type of Lease

STATE ☐ FEE ☒

6. State Oil &amp; 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

East Hospah

8. Well No.

1

9. Pool name or Wildcat

Wildcat

4. Well Location

Unit Letter G : 1700 Feet From The North Line and 1650 Feet From The East Line

Section 14 Township 17N Range 8W NMPM McKinley County

10. Proposed Depth

2700 ft.

11. Formation

Dakota

12. Rotary or C.T.

Rotary

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

6905' GR

14. Kind &amp; Status Plug. Bond

Nationwide

15. Drilling Contractor

Not chosen

16. Approx. Date Work will start

July, 1991

## 17. PROPOSED CASING AND CEMENT PROGRAM

SIZE OF HOLE	SIZE OF CASING	WEIGHT PER FOOT	SETTING DEPTH	SACKS OF CEMENT	EST. TOP
9-1/4"	7"	23 lb/ft	100 ft.	50 sx	Surface
6-1/4"	4-1/2"	10.5 lb/ft	2700 ft.	300 sx	Surface

Propose to drill a vertical well into the Cretaceous Dakota. If productive, will set 4-1/2" casing thru and cement in place. Additional details are attached.

**RECEIVED**

JUL 03 1991

OIL CON. DIV.

DIST. 3

APPROVAL EXPIRES 1-8-92  
UNLESS DRILLING IS COMMENCED.  
SPUD NOTICE MUST BE SUBMITTED  
WITHIN 10 DAYS.

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 7/02/91

TYPE OR PRINT NAME

TELEPHONE NO.

(This space for State Use)

APPROVED BY

TITLE

DEPUTY OIL &amp; GAS INSPECTOR, DIST. #3

DATE

JUL 08 1991

CONDITIONS OF APPROVAL, IF ANY:

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-102  
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  
P.O. Drawer DD, Artesia, NM 88210

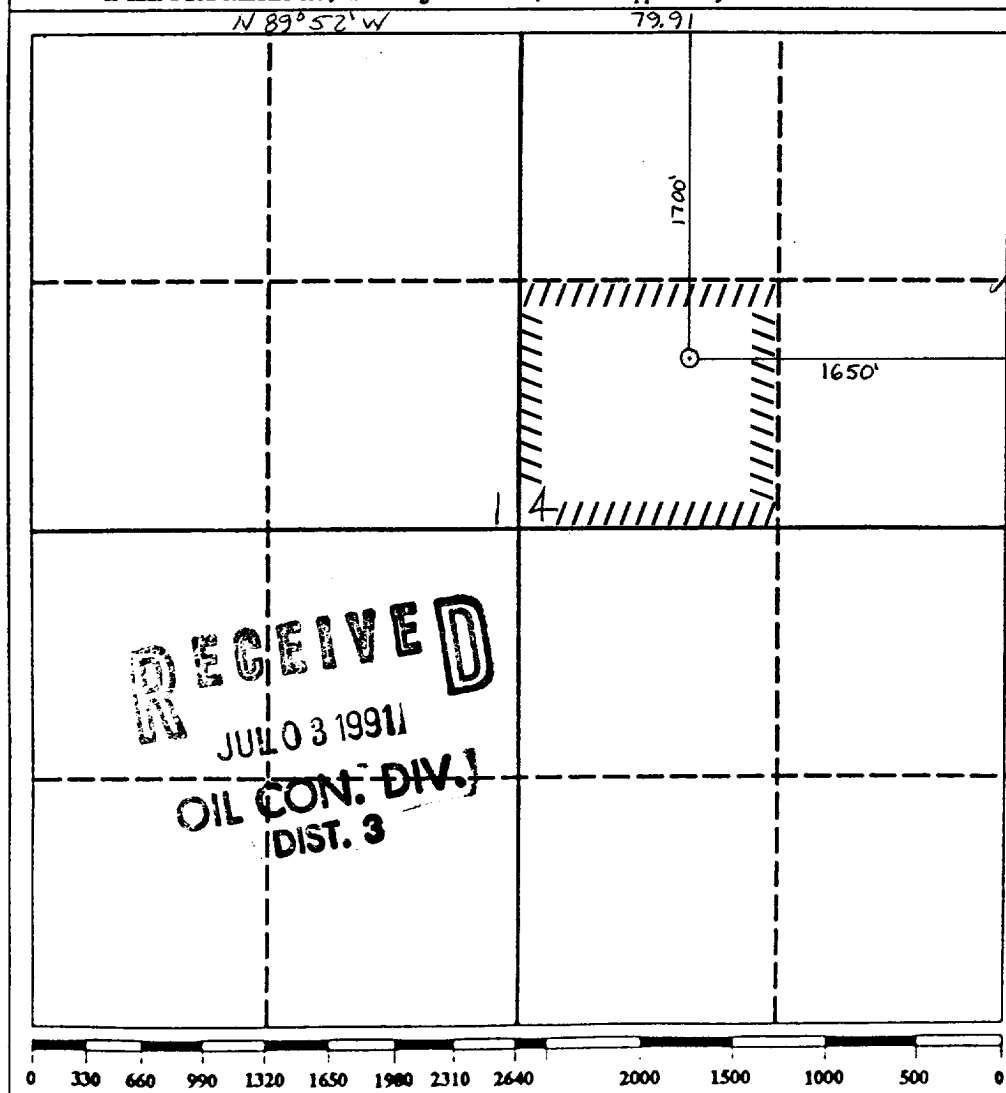
DISTRICT III  
1000 Rio Brazos Rd., Aztec, NM 87410

WELL LOCATION AND ACREAGE DEDICATION PLAT

All Distances must be from the outer boundaries of the section

Operator Merrion Oil & Gas Corporation			Lease East Hospah		Well No. 1
Unit Letter G	Section 14	Township 17N	Range 8W	County McKinley	
Actual Footage Location of Well: 1700 feet from the North line and 1650 feet from the East line					
Ground level Elev. 6905'	Producing Formation Dakota/Gallup		Pool Wildcat		Dedicated Acreage: 40 Acres

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.



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 Corp.

Date

7/02/91

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.

3-06-91

Date Surveyed

Roy A. Rush

Signature & Seal of  
Professional Surveyor

Certificate No.

8894

**MERRION OIL & GAS CORPORATION**

**DRILLING TECHNICAL PROGRAM**

**ATTACHMENT TO FORM C-101**

**EAST HOSPAH NO. 1**  
1700' FNL & 1650' FEL  
Section 14, T17N, R8W  
McKinley County, New Mexico

1. SUMMARY INFORMATION Attached
2. PROJECT OVERVIEW: Attached
3. DETAILED OPERATIONS PLAN: Attached
4. ESTIMATED FORMATION TOPS Attached
5. WELL CONTROL SYSTEM
  - A. Proposed blowout preventer system is series 600 double ram with choke and kill manifold.
  - B. Minimum required working pressure rating for BOP stack is 2000 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.
6. DRILLING MUD PROGRAM
  - A. Surface hole will be drilled with fresh water - gel system, lime added to provide viscosity as needed.
  - B. 6-1/4" hole will be drilled into the Dakota 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>
Vert 0 - 100'	GEL-LIME	9.0	35-45	NA
Vert 100'-2700'±	GEL-WTR ND	8.4-9.0	28-45	≤ 12

C. Mud trip monitoring will be done visually.

7. HAZARDS

- A. No abnormal pressure is anticipated. However, 2M BOPs will be used under surface casing to total depth.
- B. Lost circulation is not expected. However, lost circulation materials will be stocked on location.
- C. No H<sub>2</sub>S is expected to be encountered. 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.

8. 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. Drill stem tests may be run to test the Dakota and Gallup formations.
- C. No core is anticipated.
- D. Plans call for using a mud logging unit during drilling.

## **I. SUMMARY INFORMATION**

Well Name	:	East Hospah No. 1
Surface Location	:	1700'fnl & 1650'fel (SWNE) Sec 14, T17N, R8W McKinley Co., NewMexico
Elevations	:	6,910' RKB 6,905' GL
Total Depth	:	2,700' MD RKB
Well Objective	:	Gallup Sandstone...Primary Dakota Sand...Secondary
Rigs		
Drilling	:	Unknown
Completion	:	Ram Rig No. 1
Estimated Rig Arrivals		
Drilling	:	Summer, 1991
Completion	:	Summer, 1991
Estimated Time on Well		
Build Access & Location	:	2 days
Drill Vertical	:	7.5 days
Completion	:	7 days

## **II. PROJECT OVERVIEW**

The project objective is to drill the East Hospah No. 1 well to develop the Gallup & Dakota formations on a seismically delineated structure.

Plans call for drilling a vertical 6 1/4" hole to a depth of 2,600' or below the top of the Dakota formation. The Dakota may be drill stem tested if drilling and mudlog shows warrant. Finally, the well will continue to TD at 2,700'RKB, and open hole surveys will be run. If the Gallup or Dakota is productive, 4 1/2" casing will be run to total depth and cemented in place. Once the 4 1/2" casing is set, the drilling rig will be released.

A completion rig will move on, clean out the well. The pay interval will be perforated and fracture stimulated if necessary. The well will be tested to clean up, then the required production equipment will be run in the well.

## **III. THE PROSPECT**

The East Hospah Gallup prospect is located in Sec. 14, T17N, R8W, McKinley County, New Mexico.

The primary objective is the Cretaceous Gallup with a secondary objective in the Cretaceous Dakota. To test both objectives it would require a well be drilled to 2,700'.

## **IV. DETAILED OPERATIONS PLAN**

### **A. WELL DRILLING**

#### **1. General Remarks**

The well drilling phase will be conducted by drilling with conventional mud to total depth. A drillstem test of the Dakota formation may be conducted prior to drilling the necessary rathole, after which logs will be run and 4 1/2" casing will be cemented in place.

#### **2. Formation Tops**

Formation	Depth-MD	AMSL
Menefee sand	Surface	+6,917'
Mancos shale	367'	+6,550'
Gallup massive	1,435'	+5,482'
Greenhorn lime	2,190'	+4,727'
Dakota sand	2,545'	+4,372'
<b>Total Depth</b>	<b>2,700'</b>	<b>+4,217'</b>

### **3. Hazards**

No unusual drilling hazards are anticipated in this area.

### **4. Casing & Hole Program**

<u>Interval</u>	<u>Hole Size</u>	<u>Csg OD</u>	<u>Wt lb/ft</u>	<u>Grade</u>
I ) Surf- 100'	9 3/4"	7"	23	J-55
II) 100-TD	6 1/4"	4 1/2"	10.5	J-55

### **5. Procedure**

1. Blade existing access. Build small location, line reserve pit if required.
2. MIRU Drilling rig.
3. Spud 9 3/4" hole. Drill to 100'KB. Condition hole. Take a survey.
4. Run 6 Jts of 7" 23lb/ft J-55 casing to 100'KB. Cement in place with 50 sx class "G", 1% CaCl<sub>2</sub> (TOC @ surface w/ 100% excess in gage hole). WOCT 10 hours, nipple up BOPs. Pressure test to 600 psi for 30 min after 8 hours WOCT.
5. Drill out with 6 1/4" bit, DCs and remaining drill string assembly. circulating fluid is non-dispersed gel base fluid with fluid loss control < 12cc.
6. Run SS surveys on bit trips minimum every 500 ft. If rate of build is 1° per 100 ft or more, run SS surveys minimum of 100 ft intervals.
7. RU mud logging unit out from under surface to provide hydrocarbon measurement and sample descriptions.
8. Stop drilling ~ 2,600'KB, if Dakota DST warranted.
9. Run DST test of Entrada if desired as follows:

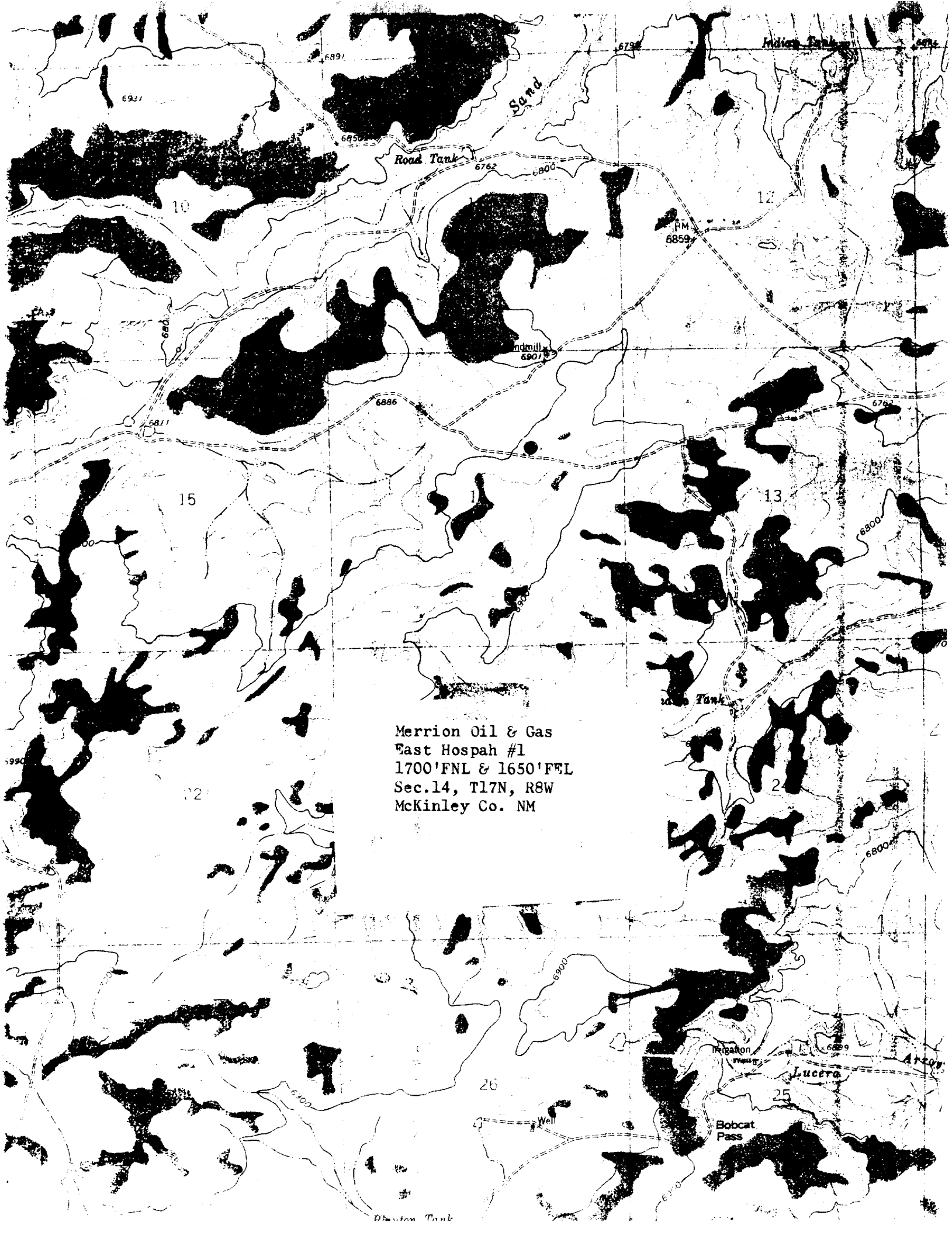
10-15 Min	Initial Flow Period
60 Minute	Initial Shut-in Period
60 Minute	Final Flow Period
120 Minute	Final Shut-in Period

POH with DST string.

10. RIH, drill to TD @ ~2,700'KB. Condition for logs. POH.
13. Run OH IES Induction and Formation Density surveys. RD loggers.
14. Deliver 4 1/2" 10.5lb/ft J-55 casing to location. Tally and drift all casing upon arrival. Clean all pins and collars with diesel and wire brush.
15. Pickup 4 1/2" casing shoe. Make it up to one 4 1/2" shoe joint. Install one casing centralizer on the shoe jt. Set assembly in the slips.
16. Pick up a self fill or equivalent float collar and make it up to the shoe joint.
17. RIH w/ 4 1/2" 10.5lb casing, place centralizers on every other collar. Use total 6 centralizers.
18. Circulate last joint down. Circulate minimum 1 full circulation prior to cementing.
19. RU cementers and cement while reciprocating 4 1/2" csg slowly. Pump 300sx class 'G', 2% gel, yield 1.22 cuft/sx (366 cuft). Actual cement volumes will be adjusted using hole caliper log to bring cement to surface.
20. Bump plug. Release pressure.

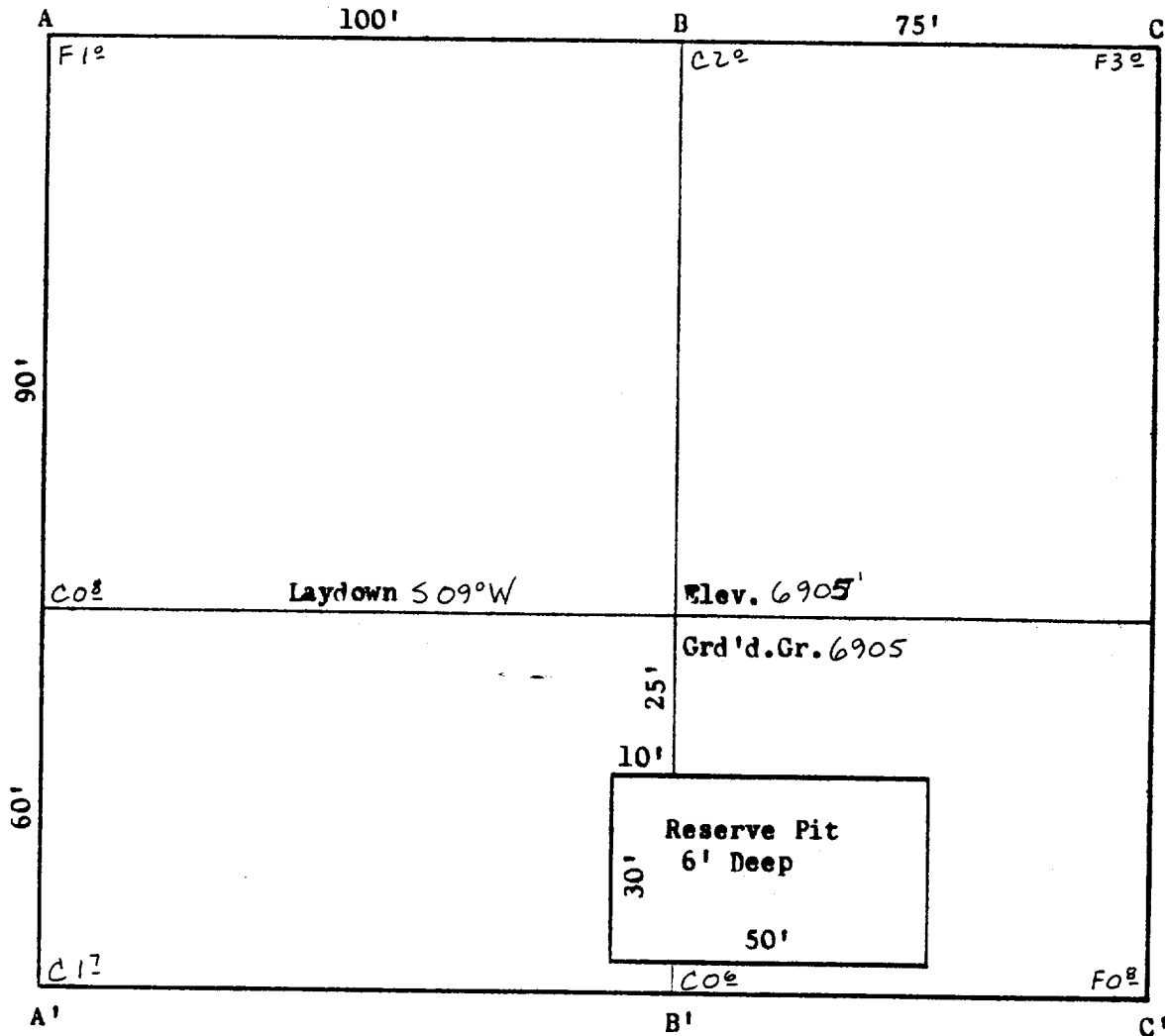
21. Set casing in the slips as cemented. Cut off and place a protective cover over the casing stub.
22. Release drilling rig.





Merrion Oil & Gas  
East Hospah #1  
1700'FNL & 1650'FNL  
Sec.14, T17N, R8W  
McKinley Co. NM

Merrion Oil & Gas Corp.  
 East Hospah #1  
 1700' FNL & 1650' FEL  
 Sec. 14, T17N, R8W  
 McKinley Co. NM



A-A'		Vert.: 1" = 30'		Horiz.: 1" = 100'		C/L	
6910'							
6900'							

B-B'		Vert.: 1" = 30'		Horiz.: 1" = 100'		C/L	
6910'							
6900'							

C-C'		Vert.: 1" = 30'		Horiz.: 1" = 100'		C/L	
6910'							
6900'							