

**DOYLE HARTMAN**  
**DRILLING PROGNOSIS**

**I. WELL IDENTIFICATION**

Lease Name: Jack B-30  
Well No.: 3  
Location: 660' FNL & 660' FEL (A)  
Section 30, T-24-S, R-37-E  
County: Lea  
State: New Mexico  
Elevations: GL/KB 3275'/3288'

**II. DRILLING OBJECTIVE**

Zone: Yates/Seven-Rivers  
Total Depth: 3650'  
Pool Name: Jalmat (Oil)  
Productive Interval: Yates/Seven-Rivers

**III. FORMATION TOPS**

<u>ZONE</u>	<u>DRILLING DEPTH(KB)</u>	<u>SUBSEA DEPTH</u>	<u>GROSS INTERVAL DRILLED</u>	<u>PROBABLE FLUID PRODUCTION</u>
KB	3288			
Rustler	1138	2150	200	
Salado Salt	1338	1950	1465	
Cowden Anhydrite	---	---	---	
Tansill	2803	485	152	
Yates	2955	333	214	GAS
Seven Rivers	3169	119	344	OIL/GAS/WTR
CUQ Marker	3513	-225	60	OIL/GAS/WTR
Queen	3573	-285	77	
 TOTAL DEPTH	 3650	 -362		

#### IV. HOLE SIZE

<u>Hole</u>	<u>Bit Size</u>	<u>T.D.</u>	<u>Gross Interval</u>
Surface	12 1/4"	450'	450'
Production	8 3/4"	3650'	3650'

#### V. CASING PROGRAM

##### A. Casing Design

<u>Casing Size</u>						
<u>String</u>	<u>O.D.</u>	<u>Wt.</u>	<u>Grade</u>	<u>Thds</u>	<u>Amt.</u>	<u>Cond.</u>
Surface	9 5/8"	36	J55	8R ST&C	450	New
Production	7"	26	J55	8R LT&C	3650	New

##### B. Float Equipment

Surface Casing: 9 5/8-inch Texas Pattern guide shoe and 9 5/8-inch float collar. Wiper wooden plug to displace cement.

Production Casing: 7-inch super seal float shoe with latch down plug and baffle.

##### C. Centralizers

Surface Casing: One centralizer at the float collar and five centralizers every other joint thereafter.

Production Casing: Run a total of 18 centralizers. Place one centralizer at the guide-shoe with fifteen (15) centralizers being placed every 80 to 90 feet apart or every other joint in the case of 40-foot joint lengths thereafter. One centralizer inside the bottom of the surface casing and one near surface.

##### D. Wellhead Equipment

Larkin 9 5/8" x 7" slip type casinghead with bowl, slips and packoff. B & M Oil Tools 7" x 2 3/8" Type MR male-tubinghead complete with Mandrel, 3 inch outlets, stripper bowl and rubber and slip casing collar.

#### VI. MUD PROGRAM

- A. Drill the surface hole with a fresh water gel "spud mud" & paper (approximately 8.5 lb./gal) while maintaining a high enough viscosity to adequately clean the hole. Circulate through working pits and sweep for surface casing. Add paper as needed to control excess seepage.

Before drilling below the surface pipe, jet cuttings out of working pit into auxiliary pit and then switch from circulating through the working pit to circulating through the reserve pit with 10.1 ppg brine.

B. Production Hole

Prior to drilling the cement plug, add ASP-725 through the hopper over 1 to 2 circulations at the rate of 20 gallons per 1000 barrels of fluid. Make certain to mix and agitate ASP 725 prior to adding to brine. ASP-725 is a cationic, liquid polyacrylamide designed to prevent hydration and migration of clays. Due to its cationic nature, bentonite and attapulgite will not hydrate and are useless in this fluid. If additional viscosity is required, use XCD, or Drispac plus.

Since ASP-725 is depleted from the system, some maintenance is required. Recommended maintenance is 5-6 gallons per tour through the mud hopper.

Lime should be used to control pH at 9.0. Paper may be used to control seepage losses.

**Water flows** while drilling the Rustler, Salt, and Yates formations may require deviation from this program.

**Depth: 2750-3650'.** Weight: 10.0-10.1. Viscosity: 30-31. Filtrate: 6 or less.

At **2750'** begin to lower the fluid loss with starch. **Fluid loss to be 10 cc's or less at 2850'.**

Continue to add ASP-725 to the system at the rate of 5-6 gallons per hour. Caustic soda should be used to control pH at 9.0. Use paper and LCM to control seepage losses below 3550'.

At TD, sweep the hole using a high viscosity 100 barrel pill with Dynasweep and/or XCD or as recommended.

VII. **CEMENTING PROGRAM**

A. Surface Pipe

Cement surface pipe with approximately 350 sacks (or as required to circulate cement to surface) of API Class-C cement containing 2% Calcium Chloride. Before resuming drilling operations, allow cement to set for a sufficient time to gain a 500-psi compressive strength (18 hours). Nipple up 3000# 12" Shaffer Type E Double Ram BOP and test rams. Also before drilling the surface cementing plug, the pipe shall be tested to 1000 psi for 15 minutes.

B. Production String

Cement the long string with approximately 450 sacks (or as required) of API Class-C cement containing 3% Halliburton Econolite, 5 lbs/sx Gilsonite and 1/2 lb./sx Floseal mixed to a slurry weight of 11.2 lb./gal followed by 250 sacks of a 50-50 blend of Pozmix "A" and API Class-C cement containing 18% salt, 2% gel, 1/4 lb./gal Floseal and a slurry weight of 14.1 lb./gal. Pump 30 barrels of water ahead of the cement to help remove the mud filter cake.

Once the plug has been bumped and latched, pressure test the casing to 1500 psig.

The total estimated cement volume of 700 sacks provides for an excess that should be sufficient to bring the cement top back to the surface. Before the cement job is actually performed, the required cement volume shall be checked against the open hole caliper log to determine the actual amount of cement necessary to bring the cement back to the surface.

1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20  
AUG 2000  
Receiver  
Hobbs  
OC

## VIII. FORMATION EVALUATION

### A. Drilling Rate

1. The drilling rate shall be monitored with a geograph from the surface to total depth.
2. Doyle Hartman requires that the penetration rate be tabulated in 10 feet increments over the entire hole.

### B. Well Cutting Samples

One set of wet cutting samples shall be gathered every ten (10) feet from 940' to total depth. Five foot (5') samples may be required during the Queen-Penrose interval as specified. **Two sets of dried cuttings** cleaned, bagged, tagged, and then grouped into bundles of ten samples per bundle with one bundle representing each 100 feet drilled.

After the cutting samples have been reviewed by the well site geologist, they shall be delivered to the Midland Sample Cut, 704 S. Pecos Street, Midland, Texas.

If required by the well site geologist, a second set of samples shall be gathered over the entire Yates & Seven Rivers.

### C. Mud Logging

On at **2900'** prepared to catch samples and monitor gas with calibrated instruments. Logs will be distributed as noted with Electric Logs. **Need two (2) sets of dry samples. Fax field mud logs by segments twice (2) daily to (214) 520-1434 or (915)694-2350.**

### D. Drill-Stem Testing

None

### E. Coring

None

### F. Well Logging

Well Logging information is now available on diskette and tape format. Both formats are to be requested on all work performed.

#### Open Hole Logs

<u>Log</u>	<u>Interval</u>	
	<u>2" = 100'</u>	<u>5" = 100'</u>
SDL-DSN-GR*	T.D. - Surface	T.D. - 1800
Dual Laterlog-	T.D. - 1800	T.D. - 1800
Microguard-GR-MST	As Instructed	

\*Log and process on both lime and dolomite matrix base

### Cased Hole Logs

<u>Log</u>	<u>Interval</u>	
GR-Neutron	T.D. - 2100	T.D. - 2100

### Log Distribution

	<u>No. of Copies</u>				
	<u>Field</u> <u>Prints</u>	<u>Final</u> <u>B/W</u> <u>Prints</u>	<u>Final</u> <u>Color</u> <u>Prints</u>	<u>Field</u> <u>Mud</u> <u>Logs**</u>	<u>Final</u> <u>Mud</u> <u>Logs</u>
Doyle Hartman Post Office Box 10426 Midland, Texas 79702	5	3	6	3	3
Doyle Hartman 3811 Turtle Creek Blvd. Suite 200 Dallas, Texas 75219	2	0	6	3	3
NMOCD District I Office Post Office Box 1980 Hobbs, New Mexico 88240	0	1	0	0	0

**\*\* Fax field mud logs by segments twice daily to (214) 520-1434 or (915)694-2350**

#### **IX. BLOWOUT PREVENTER SYSTEM**

Before drilling out from under the surface pipe, the well will be equipped with a 3000-psi 10 inch series 900 double-ram hydraulic blowout preventer. The blowout preventer shall be used through the running of the production string.

#### **X. HAZARDOUS ZONES**

**Note:** Be cautious of water flows while drilling below the Rustler formation. Check for water flows on each connection, during surveys and monitor pit gain/loss. Do not leave drill string on bottom and/or stationary while drilling through the porosity zones in the Queen-Penrose. This is to avoid differential sticking. Be cautious of lost circulation while drilling the Grayburg-SA formation at TD. Should circulation cease pump a standby 50 bbl LCM/XCD mix to regain circulation.

#### **XI. AUXILIARY EQUIPMENT**

Upper Kelly cock, full opening stabbing valve, rotating head as required.

**XII. COMPLETION**

Perforations, acid job, and additional stimulation to be determined after completion.

**XIII. DURATION OF OPERATIONS**

The total elapsed time required for drilling and completing the subject well is expected to be fifteen (15) days.

**Distribution**

BLM	NMOC
DH	DM
SH	MUD CO.
SP	File
Morco	