

EXHIBITS FOR CASE NO. 2658

CABOT CORPORATION'S APPLICATION

FOR ORDER CREATING

TEMPORARY RULES AND 80-ACRE SPACING

CABOT CORPORATION

MARY ELLEN DALLAS WELL NO. 1

[illegible]

WELL HISTORY

CABOT CORPORATION
MARY ELLEN DALLAS WELL NO. 1

Location: 660' FSL and 660' FEL Section 15, T10S, R33E,
Lea County, New Mexico

Total Depth: 10,475'

Production String: 5-1/2" casing set at 9556'

Drill Stem Tests: Wolfcamp formation tested from 8650' to 8740'.
Open 1-1/2 hours. Good blow. Gas to surface in
7 minutes. Recovered 1,710' free oil.
Initial shut-in pressure - 2,720 psi/30 minutes
Initial flow pressure - 336 psi
Final flow pressure - 509 psi
Final shut-in pressure - 2,072 psi/45 minutes

Upper Penn formation tested from 9100' to 9160'.
Open 24 minutes. Gas to surface in 5 minutes.
Mud to surface in 8 minutes, oil to surface in
12 minutes. Flowed oil for 12 minutes, estimated
10 - 20 BOPH.
Initial shut-in pressure - 3,288 psi/30 minutes
Initial flow pressure - 953 psi
Final flow pressure - 1920 psi
Final shut-in pressure - 3,265 psi/45 minutes

Perforations: 9475' to 9484' (initial completion, later plugged off)
9143' to 9155' (completion on rework)

Formation Treatment: 9475' to 9484' - 500 gallons mud acid
9143' to 9155' - 1000 gallons acid

Potential Test: 9475' to 9484' - 204 BOPD + 36 BWPD flowing on
24/64" choke. (This zone died because of increasing
water production and was abandoned).

9143' to 9155' on June 28, 1962 - flowed 184 BO/24 hrs.,
GOR 1900 to 1, on 24/64" choke. Tubing pressure 200 psi.

Initial Reservoir Pressure: 3242 psi at 9100'

OIL RECOVERY CALCULATIONS
UPPER PENN FORMATION

CABOT CORPORATION
MARY ELLEN DALLAS WELL NO. 1

Reservoir Volume Calculations

	<u>9140' Zone</u>	<u>9470' Zone</u>
Assumed Porosity	4%	9%
Water Saturation	24%	50%
Net Pay	15 feet	7 feet
<u>Oil in Place (Bbls/Ac.Ft.)</u>		
$(7758 \text{ bbl/AF}) (0.04) (1 - 0.24) (\frac{1}{1.85}) =$	127.5	
$(7758 \text{ bbl/AF}) (0.09) (1 - 0.50) (\frac{1}{1.85}) =$		188.7
<u>Recoverable Oil (Bbls/Acre Foot)</u>		
$(127.5 \text{ bbl/Ac.Ft.}) (0.25) =$	31.9	
$(188.7 \text{ bbl/Ac.Ft.}) (0.40) =$		75.5
<u>Oil in Place (Bbls/Acre)</u>		
$(127.5 \text{ bbl/Ac.Ft.}) (15 \text{ ft.}) =$	1912.5	
$(188.7 \text{ bbl/Ac.Ft.}) (7 \text{ ft.}) =$		1320.9
Total Oil in Place (Bbl/Acre) =	3233.4	
<u>Recoverable Oil (Bbls/Acre)</u>		
$(1912.5 \text{ bbl/Acre}) (0.25) =$	478.1	
$(1320.9 \text{ bbl/Acre}) (0.4) =$		528.4
Total Recoverable Oil (Bbls/Acre)	1006.5	
	<u>40 Acres</u>	<u>80 Acres</u>
Oil in Place, Barrels	129,300	258,600
Recoverable Oil, Barrels	40,260	80,520

RESERVOIR ROCK AND FLUID PROPERTIES
UPPER PENN FORMATION

CABOT CORPORATION
MARY ELLEN DALLAS WELL NO. 1

Depth of Producing Formation:	9140'	9470'
Gross Pay, feet	17	11
Net Pay, feet	15	7
Porosity, percent (Sonic log)	4	9
Water Saturation, percent	24	50
Permeability, md. (from pressure buildup)	46	
Permeability, md. (from PI test)	174	
Original Reservoir Pressure, psig	3242	3297
Saturation Pressure, psig	3100	
Reservoir Temperature, °F.	164	154
Gas in Solution, cubic feet per barrel	1450	
Formation Volume Factor, Bbl/Bbl	1.85	
Oil Viscosity, cp.	0.18	
Tank Oil Gravity, °API	48	

PRODUCTIVITY INDEX AND PERMEABILITY CALCULATIONS
UPPER PENN FORMATION

CABOT CORPORATION
MARY ELLEN DALLAS WELL NO. 1

Productivity Index

Date of Test	9-8-62
Producing Rate (6 hours), Bbls/Day	286.0
Shut-in Reservoir Pressure, psig	2946
Flowing Bottomhole Pressure, psig	2896

$$P.I. = \frac{\text{Bbls/Day}}{\text{Drawdown, psig}} = \frac{286 \text{ Bbls/Day}}{2946 \text{ psig} - 2896 \text{ psig}} = \underline{5.72} \text{ BOPD/psi/psi}$$

Permeability Calculations from P.I.

$$K_o = \frac{(P.I.)(u_o)(\text{Log } r_e/r_w)(FVF)}{(0.00307)(h)} = \frac{(5.72)(0.18)(1.85)(\text{Log } 5280/0.328)}{(0.00307)(15)}$$
$$= \underline{\underline{174 \text{ md}}}$$

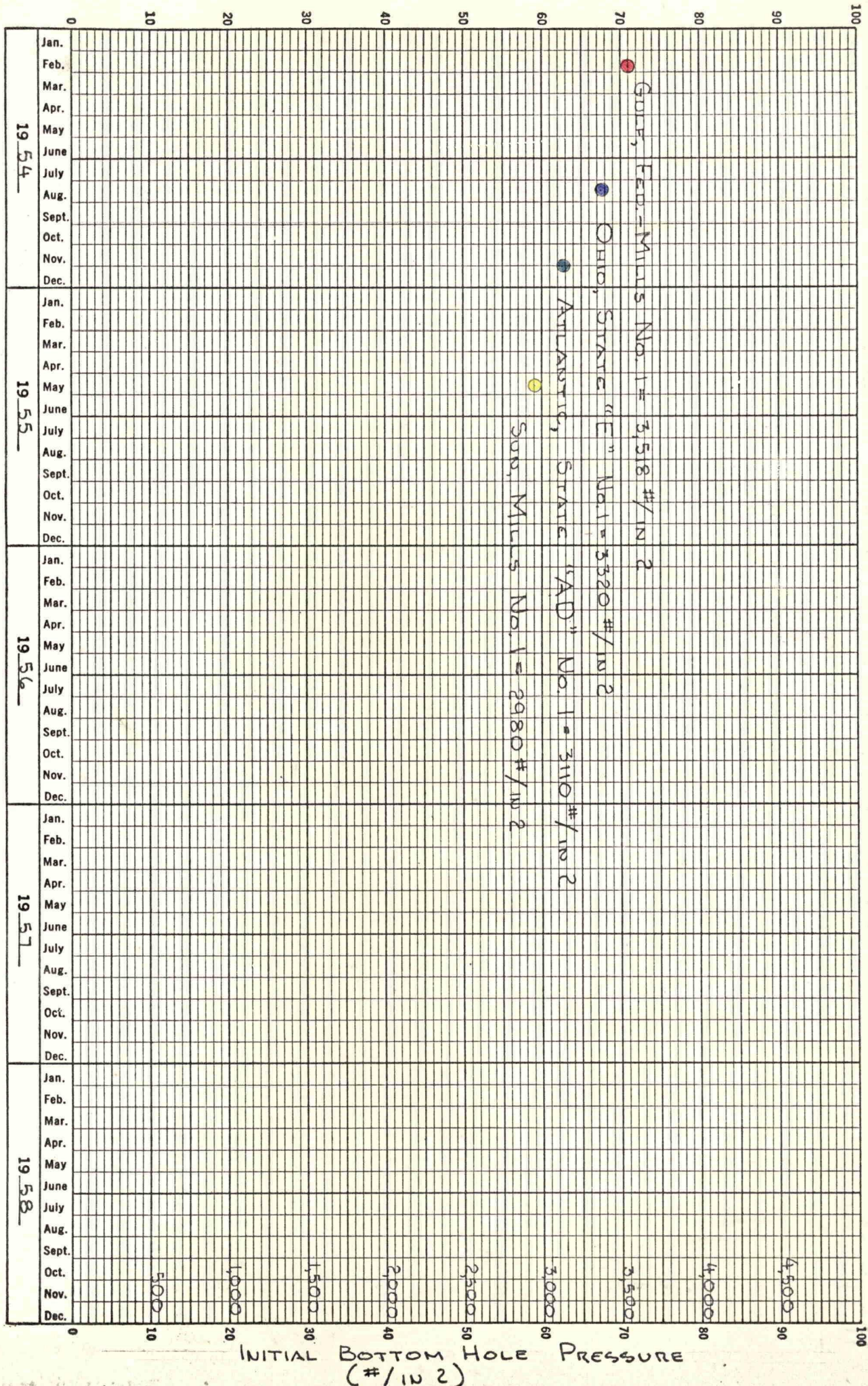
Permeability Calculations from Pressure Buildup

Slope of Pressure Buildup Curve, (M)	- 27.5
Flow Rate, (Q) (BOPD)	- 352

$$K_o = \frac{(162.5)(Q)(u_o)(F)}{(M)(h)} = \frac{(162.5)(352)(0.18)(1.85)}{(27.5)(15)} = \underline{\underline{46 \text{ md.}}}$$

COMPARISON OF ROCK AND FLUID PROPERTIES
ALLISON PENN POOL VS. MARY ELLEN DALLAS WELL NO. 1
PENN FORMATION

<u>Type Data</u>	Allison Penn Pool	Cabot Mary E. Dallas <u>No. 1</u>
Depth of Producing Formation	9660	9140-9470'
Gross Pay, feet	30 - 50	28
Net Pay, feet	9	22
Porosity, percent	5.15	4 - 9
Water Saturation, percent	25	24 - 50
Permeability, md.	107.2	46
Productivity Index	5.01	5.72
Original Reservoir Pressure, psig	3,518	3,242
Saturation Pressure, psig	3,150	3,100
Original Gas in Solution, cu.ft./bbl	1,517	1,450
Reservoir Temperature, °F.	156	164
Formation Volume Factor, Bbl/Bbl	1.821	1.85
Oil Viscosity, cp.	0.19	0.18
Oil Gravity, °API	48	48



PLOT OF INITIAL BOTTOM HOLE PRESSURE VS. TIME
ALLISON POOL, LEA AND ROOSEVELT COUNTIES, NEW MEXICO

W. Walker Eastern Nat. Gas 7-1-59 069302	Magnolia, 1/2 Western Nat. Gas 1-1-59 069300	Atlantic 1/2 11-17-63 E-7579	Sunray Mid-Cont 6-10-58 E-4940	Magnolia, 069300	Warren 9-1-58 062937	Secoy Magnolia, MI W.R. Bilbrey, S	Magnolia 8-1-60 (2) Warren Pat. Hoop Oil 12-1-60 (2) U.S., MI Edith Jane Bilbrey, S Dich. Fed.	D.
U.S., MI J.N. Laughlin, S	U.S., MI Geo. M. Daman, S	Adco Oil E-19	Ohio E-6859	U.S., MI Thas. F. Adams, (S)	Jack Gribble	Santa Fe Ry. W.R. Bilbrey, S	Santa Fe Ry., MI W.R. Bilbrey, S	Santa Fe
R.H. Davis 7-1-59 067770	J.E. Warren 7-1-59 067771	Warren Pat. 6-20-57	Magnolia Western Nat. Gas 069300 1-1-59	Magnolia 1-1-59 069300	Warren 02006	Lone Star 02006A	Don G. McCormick 6-20-60 (2) 01744	Don G. McCormick 6-20-60 (2) 01744
U.S., MI O.L. Kiker, S	U.S., MI O.L. Kiker, S	Bob Merrill et al F-14 7-1-59	Warren Pat. 6-20-57	Magnolia 1-1-59 069300	Warren 02006	Lone Star 02006A	Don G. McCormick 6-20-60 (2) 01744	Don G. McCormick 6-20-60 (2) 01744
U.S., MI O.L. Kiker, S	U.S., MI O.L. Kiker, S	Bob Merrill et al F-14 7-1-59	Warren Pat. 6-20-57	Magnolia 1-1-59 069300	Warren 02006	Lone Star 02006A	Don G. McCormick 6-20-60 (2) 01744	Don G. McCormick 6-20-60 (2) 01744
Atlantic 2-10-63 E-6915	Ohio 1-10-63 E-6859	Gulf HBP E-11	State	U.S., MI U.D. Sawyer, S	U.S., MI U.D. Sawyer, S	U.S., MI U.D. Sawyer, S	U.S., MI U.D. Sawyer, S	U.S., MI U.D. Sawyer, S
(Magnolia) HBP E-11	State	U.S., MI U.D. Sawyer, S	U.S., MI U.D. Sawyer, S	U.S., MI U.D. Sawyer, S	U.S., MI U.D. Sawyer, S	U.S., MI U.D. Sawyer, S	U.S., MI U.D. Sawyer, S	U.S., MI U.D. Sawyer, S
State	U.S., MI U.D. Sawyer, S	U.S., MI U.D. Sawyer, S	U.S., MI U.D. Sawyer, S	U.S., MI U.D. Sawyer, S	U.S., MI U.D. Sawyer, S	U.S., MI U.D. Sawyer, S	U.S., MI U.D. Sawyer, S	U.S., MI U.D. Sawyer, S
State	U.S., MI U.D. Sawyer, S	U.S., MI U.D. Sawyer, S	U.S., MI U.D. Sawyer, S	U.S., MI U.D. Sawyer, S	U.S., MI U.D. Sawyer, S	U.S., MI U.D. Sawyer, S	U.S., MI U.D. Sawyer, S	U.S., MI U.D. Sawyer, S
State	U.S., MI U.D. Sawyer, S	U.S., MI U.D. Sawyer, S	U.S., MI U.D. Sawyer, S	U.S., MI U.D. Sawyer, S	U.S., MI U.D. Sawyer, S	U.S., MI U.D. Sawyer, S	U.S., MI U.D. Sawyer, S	U.S., MI U.D. Sawyer, S
State	U.S., MI U.D. Sawyer, S	U.S., MI U.D. Sawyer, S	U.S., MI U.D. Sawyer, S	U.S., MI U.D. Sawyer, S	U.S., MI U.D. Sawyer, S	U.S., MI U.D. Sawyer, S	U.S., MI U.D. Sawyer, S	U.S., MI U.D. Sawyer, S
State	U.S., MI U.D. Sawyer, S	U.S., MI U.D. Sawyer, S	U.S., MI U.D. Sawyer, S	U.S., MI U.D. Sawyer, S	U.S., MI U.D. Sawyer, S	U.S., MI U.D. Sawyer, S	U.S., MI U.D. Sawyer, S	U.S., MI U.D. Sawyer, S
State	U.S., MI U.D. Sawyer, S	U.S., MI U.D. Sawyer, S	U.S., MI U.D. Sawyer, S	U.S., MI U.D. Sawyer, S	U.S., MI U.D. Sawyer, S	U.S., MI U.D. Sawyer, S	U.S., MI U.D. Sawyer, S	U.S., MI U.D. Sawyer, S
State	U.S., MI U.D. Sawyer, S	U.S., MI U.D. Sawyer, S	U.S., MI U.D. Sawyer, S	U.S., MI U.D. Sawyer, S	U.S., MI U.D. Sawyer, S	U.S., MI U.D. Sawyer, S	U.S., MI U.D. Sawyer, S	U.S., MI U.D. Sawyer, S
State	U.S., MI U.D. Sawyer, S	U.S., MI U.D. Sawyer, S	U.S., MI U.D. Sawyer, S	U.S., MI U.D. Sawyer, S	U.S., MI U.D. Sawyer, S	U.S., MI U.D. Sawyer, S	U.S., MI U.D. Sawyer, S	U.S., MI U.D. Sawyer, S
State	U.S., MI U.D. Sawyer, S	U.S., MI U.D. Sawyer, S	U.S., MI U.D. Sawyer, S	U.S., MI U.D. Sawyer, S	U.S., MI U.D. Sawyer, S	U.S., MI U.D. Sawyer, S	U.S., MI U.D. Sawyer, S	U.S., MI U.D. Sawyer, S
State	U.S., MI U.D. Sawyer, S	U.S., MI U.D. Sawyer, S	U.S., MI U.D. Sawyer, S	U.S., MI U.D. Sawyer, S	U.S., MI U.D. Sawyer, S	U.S., MI U.D. Sawyer, S	U.S., MI U.D. Sawyer, S	U.S., MI U.D. Sawyer, S
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State	U.S., MI U.D. Sawyer, S	U.S., MI U.D. Sawyer, S	U.S., MI U.D. Sawyer, S	U.S., MI U.D. Sawyer, S	U.S., MI U.D. Sawyer, S	U.S., MI U.D. Sawyer, S	U.S., MI U.D. Sawyer, S	U.S., MI U.D. Sawyer, S
State	U.S., MI U.D. Sawyer, S	U.S., MI U.D. Sawyer, S	U.S., MI U.D. Sawyer, S	U.S., MI U.D. Sawyer, S	U.S., MI U.D. Sawyer, S	U.S., MI U.D. Sawyer, S	U.S., MI U.D. Sawyer, S	U.S., MI U.D. Sawyer, S
State	U.S., MI U.D. Sawyer, S	U.S., MI U.D. Sawyer, S	U.S., MI U.D. Sawyer, S	U.S., MI U.D. Sawyer, S	U.S., MI U.D. Sawyer, S	U.S., MI U.D. Sawyer, S	U.S., MI U.D. Sawyer, S	U.S., MI U.D. Sawyer, S
State	U.S., MI U.D. Sawyer, S	U.S., MI U.D. Sawyer, S	U.S., MI U.D. Sawyer, S	U.S., MI U.D. Sawyer, S	U.S., MI U.D. Sawyer, S	U.S., MI U.D. Sawyer, S	U.S., MI U.D. Sawyer, S	U.S., MI U.D. Sawyer, S
State	U.S., MI U.D. Sawyer, S	U.S., MI U.D. Sawyer, S	U.S., MI U.D. Sawyer, S	U.S., MI U.D. Sawyer, S	U.S., MI U.D. Sawyer, S	U.S., MI U.D. Sawyer, S	U.S., MI U.D. Sawyer, S	U.S., MI U.D. Sawyer, S
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State	U.S., MI U.D. Sawyer, S	U.S., MI U.D. Sawyer, S	U.S., MI U.D. Sawyer, S	U.S., MI U.D. Sawyer, S	U.S., MI U.D. Sawyer, S	U.S., MI U.D. Sawyer, S	U.S., MI U.D. Sawyer, S	U.S., MI U.D. Sawyer, S
State	U.S., MI U.D. Sawyer, S	U.S., MI U.D. Sawyer, S	U.S., MI U.D. Sawyer, S	U.S., MI U.D. Sawyer, S	U.S., MI U.D. Sawyer, S	U.S., MI U.D. Sawyer, S	U.S., MI U.D. Sawyer, S	U.S., MI U.D. Sawyer, S
State	U.S., MI U.D. Sawyer, S							

DRILLING ECONOMICS
UPPER PENN FORMATION

CABOT CORPORATION
MARY ELLEN DALLAS WELL NO. 1

Income

	<u>40 acres</u>	<u>80 acres</u>
1. Recoverable Oil, bbls	40,260	80,520
2. Operator's Net Recoverable Oil (7/8 X 1) (Bbls)	35,228	70,455
3. Operator's Gross Income (\$2.98 X 2)*	\$104,979	\$209,956

Cost

1. Drilling and Completing Dallas No. 1**	\$144,930
2. Flow Lines and Tank Battery	<u>13,158</u>
Total Costs***	\$158,088

* Crude Price (including casinghead gas sale) = \$3.08 - taxes
 = \$3.08 - \$0.16
 = \$2.92/bbl

** Estimated for total depth of 9550 feet.

*** Total cost does not include operating costs or income taxes.

SCHLUMBERGER**SONIC LOG**SCHLUMBERGER WELL SURVEYING CORPORATION
Houston, Texas

COUNTY LEA FIELD or LOCATION WILDCAT WELL DALLAS - 1 COMPANY CABOT CORPORATION	COMPANY CABOT CORPORATION		Other Surveys LL MLL ☒	
	WELL DALLAS - 1		Location of Well 660' FROM S/I 660' FROM E/L	
	FIELD WILDCAT		<i>Water</i> Elevation: K.B.: 4261 D.F.: 4260 or G.L.: 4249	
	LOCATION SEC. 15 T1S-33E			
COUNTY LEA				
STATE NEW MEXICO				

Log Depths Measured From		KB	12'	Ft. above	GL
RUN No.	ONE	TWO			
Date	5-28-62	7-7-62			
First Reading	10735	11217			
Last Reading	0	10735			
Feet Measured	10735	102			
Csg. Schlum.					
Csg. Driller	3797	3797			
Depth Reached	10742	11220			
Bottom Driller	10745	11218			
Mud Nat.	SALT	SALT-CHEM			
Dens. Visc.	9.8 42	9.8 43			
Mud Resist.	.16 @ 73 °F	.16 @ 72 °F		@	°F
" Res. BHT	.082 @ 150 °F	.081 @ 154 °F		@	°F
" pH	6 @ °F	@ °F		@	°F
" Wtr. Loss	10.6 CC 30 min	10.6 CC 30 min			CC 30 min
" Rmf	.11 @ 71 °F	.10 @ 73 °F		@	°F
Bit Size	7 7/8"	7 7/8"			
Spacing:					
T ₁ R ₁ I.R.	CSG. To TD	11217 To 10735		To	
T ₂ R ₂ R ₂	To	To		To	
Opr. Rig Time	6 HOURS	4 HOURS			
Truck No.	2526-HOBBS	2522-BROWNFIELD			
Recorded By	WILSON	OWEN			
Witness	MORRISON	OPPEL			