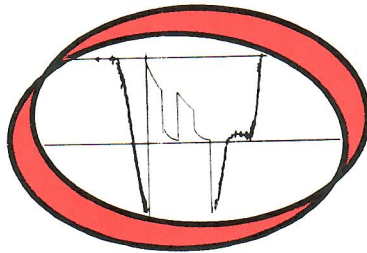


Formation Testing Service Report

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COLO. OIL & GAS CONS.



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BEST IMAGE
AVAILABLE

HALLIBURTON SERVICES

DUNCAN, OKLAHOMA

BEST IMAGE
AVAILABLE

PRESSURE

TIME

088361-6274

088361-6273

Each Horizontal Line Equal to 1000 p.s.i.

DUNCAN

Lease Name

1-32

Well No.

1

Test No.

3395-3528'

Tested Interval

TOM BROWN COMPANY, INCORPORATED

Lease Owner/Company Name

Legal Location
Sec. - Twp. - Rng.

32-25S-45W

Field
Area

BARRELL SPRING

County

PROMERS

State

COLORADO

FLUID SAMPLE DATA				Date 9-23-76		Ticket Number 088361	
Sampler Pressure _____ P.S.I.G. at Surface				Kind of Job OPEN HOLE		Halliburton District LIBERAL	
Recovery: Cu. Ft. Gas _____				Tester MR. KILPATRICK		Witness MR. RICHARDSON	
cc. Oil _____				Drilling Contractor MURFIN DRILLING COMPANY RIG # DRS			
cc. Water _____				EQUIPMENT & HOLE DATA			
cc. Mud _____				Formation Tested Topeka			
Tot. Liquid cc. _____				Elevation _____ Ft.			
Gravity _____ ° API @ _____ °F.				Net Productive Interval 12' Ft.			
Gas/Oil Ratio _____ cu. ft./bbl.				All Depths Measured From Kelly Bushing			
RESISTIVITY CHLORIDE CONTENT				Total Depth 3528' Ft.			
Recovery Water _____ @ _____ °F. _____ ppm				Main Hole/Casing Size 7 7/8-8 5/8"			
Recovery Mud _____ @ _____ °F. _____ ppm				Drill Collar Length 400' I.D. 2.25"			
Recovery Mud Filtrate _____ @ _____ °F. _____ ppm				Drill Pipe Length 3012' I.D. 3.826"			
Mud Pit Sample _____ @ _____ °F. _____ ppm				Packer Depth(s) 3389'-3395' Ft.			
Mud Pit Sample Filtrate _____ @ _____ °F. _____ ppm				Depth Tester Valve 3376' Ft.			
Mud Weight 9.4 vis 45 sec. cp							
TYPE		AMOUNT		Depth Back Pres. Valve		Surface Choke	
Cushion				Ft.		1/4"	
Recovered		1020		Feet of very watery mud			
Recovered				Feet of			
Recovered				Feet of			
Recovered				Feet of			
Recovered				Feet of			
Remarks SEE PRODUCTION TEST DATA SHEET							
BEST IMAGE AVAILABLE							
TEMPERATURE		Gauge No. 6274		Gauge No. 6273		Gauge No.	
		Depth: 3377 Ft.		Depth: 3525 Ft.		Depth: _____ Ft.	
		12 Hour Clock		12 Hour Clock		Hour Clock	
Est. 110 °F.		Blanked Off NO		Blanked Off YES		Blanked Off	
Actual _____ °F.		Pressures		Pressures		Pressures	
		Field Office		Field Office		Field Office	
Initial Hydrostatic		1675		1777		1748	
First Period	Flow Initial	26		78		102	
	Flow Final	227		157		296	
	Closed in	720		783		787	
Second Period	Flow Initial	243		300		311	
	Flow Final	459		522		527	
	Closed in	721		783		787	
Third Period	Flow Initial						
	Flow Final						
	Closed in						
Final Hydrostatic		1638		1777		1707	

Casing perms. _____ Bottom choke _____ Surf. temp _____ °F Ticket No. 088361
 Gas gravity _____ Oil gravity _____ GOR _____
 Spec. gravity _____ Chlorides _____ ppm Res. _____ @ _____ °F
 INDICATE TYPE AND SIZE OF GAS MEASURING DEVICE USED _____

[illegible]

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Gauge No. 6274			Depth 3377'			Clock No. 8090			12 hour	Ticket No. 088361					
First Flow Period			First Closed In Pressure			Second Flow Period		Second Closed In Pressure			Third Flow Period		Third Closed In Pressure		
	Time Defl. .000"	PSIG Temp. Corr.	Time Defl. .000"	$\text{Log} \frac{t + \theta}{\theta}$	PSIG Temp. Corr.	Time Defl. .000"	PSIG Temp. Corr.	Time Defl. .000"	$\text{Log} \frac{t + \theta}{\theta}$	PSIG Temp. Corr.	Time Defl. .000"	PSIG Temp. Corr.	Time Defl. .000"	$\text{Log} \frac{t + \theta}{\theta}$	PSIG Temp. Corr.
0	.000	26	.000		227	.000	243	.000		459					
1	.0135	55	.0265		686	.0668	276	.0201		688					
2	.0270	98	.0531		700	.1337	320	.0402		698					
3	.0405	134	.0796		707	.2005	360	.0604		703					
4	.0540	164	.1061		711	.2673	396	.0805		705					
5	.0675	192	.1327		715	.3342	429	.1006		708					
6	.0810	210	.1592		716	.4010	459	.1207		711					
7	.0945	218	.1857		717			.1408		712					
8	.1080	227	.2122		719			.1610		713					
9			.2388		720			.1811		715					
10			.2653		720			.2012		716					
11			.2918		720			.3353		717					
12			.3184		720			.4694		719					
13			.3449		720			.6036		720					
14			.3714		720			.7377		721					
15			.3980		720			.7980		721					

Gauge No. 6273			Depth 3525'			Clock No. 3462			hour	12			
0	.000	102	.000		296	.000	311	.000		527			
1	.0135	128	.0264		752	.0663	342	.0199		754			
2	.0270	175	.0528		768	.1327	388	.0398		764			
3	.0405	210	.0792		774	.1990	428	.0598		769			
4	.0540	240	.1056		778	.2653	466	.0797		773			
5	.0675	266	.1320		781	.3317	496	.0996		774			
6	.0810	282	.1584		782	.3980	527	.1195		775			
7	.0945	290	.1848		783			.1394		778			
8	.1080	296	.2112		785			.1594		779			
9			.2376		786			.1793		781			
10			.2640		787			.1992		782			
11			.2904		787			.3320		785			
12			.3168		787			.4647		786			
13			.3432		787			.5975		787			
14			.3696		787			.7303		787			
15			.3960		787			.790		787			

Reading Interval 2 4 10 * Minutes

REMARKS: *-First 10 intervals equal to 3 minutes each; next 4 intervals equal to 20 minutes each; last interval equal to 9 minutes.

	O. D.	I. D.	LENGTH	DEPTH
Drill Pipe or Tubing				
Reversing Sub	6"	2.50"	1'	
Water Cushion Valve				
Drill Pipe	4½"	3.826"	3012'	
Drill Collars	6"	2.25"	400'	
Handling Sub & Choke Assembly				
Dual CIP Valve				
Dual CIP Sampler	5"	.85"	7'	3369'
Hydro-Spring Tester	5"	.75 "	5'	3376'
Multiple CIP Sampler				
Extension Joint				
AP Running Case	5"	3.06"	4'	3377'
Hydraulic Jar	5"	1.75 "	5'	
VR Safety Joint	5"	1.00"	3'	
Pressure Equalizing Crossover				
Packer Assembly	6 3/4"	1.53"	6'	3389'
Distributor				
Packer Assembly	6 3/4"	1.53"	6'	3395'
	5"		1' Change over	
Flush Joint Anchor				
Pressure Equalizing Tube				
Blanked-Off B.T. Running Case				
Drill Collars	6"	2.25"	91'	
Anchor Pipe Safety Joint	5"		1' Change over	
Packer Assembly				
Distributor				
Packer Assembly				
Anchor Pipe Safety Joint				
Side Wall Anchor				
Drill Collars				
Flush Joint Anchor	5"	2.37"	35'	
Blanked-Off B.T. Running Case	5"	3.06"	4'	3525'
Total Depth				3528'

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NOMENCLATURE

b	= Approximate Radius of Investigation	Feet
b₁	= Approximate Radius of Investigation (Net Pay Zone h ₁)	Feet
D.R.	= Damage Ratio	—
EI	= Elevation	Feet
GD	= B.T. Gauge Depth (From Surface Reference)	Feet
h	= Interval Tested	Feet
h₁	= Net Pay Thickness	Feet
K	= Permeability	md
K₁	= Permeability (From Net Pay Zone h ₁)	md
m	= Slope Extrapolated Pressure Plot (Psi ² /cycle Gas)	psi/cycle
OF₁	= Maximum Indicated Flow Rate	MCF/D
OF₂	= Minimum Indicated Flow Rate	MCF/D
OF₃	= Theoretical Open Flow Potential with/Damage Removed Max.	MCF/D
OF₄	= Theoretical Open Flow Potential with/Damage Removed Min.	MCF/D
P_s	= Extrapolated Static Pressure	Psig.
P_f	= Final Flow Pressure	Psig.
P_{or}	= Potentiometric Surface (Fresh Water *)	Feet
Q	= Average Adjusted Production Rate During Test	bbls/day
Q₁	= Theoretical Production w/Damage Removed	bbls/day
Q_g	= Measured Gas Production Rate	MCF/D
R	= Corrected Recovery	bbls
r_w	= Radius of Well Bore	Feet
t	= Flow Time	Minutes
t_o	= Total Flow Time	Minutes
T	= Temperature Rankine	°R
Z	= Compressibility Factor	—
μ	= Viscosity Gas or Liquid	CP
Log	= Common Log	

* Potentiometric Surface Reference to Rotary Table When Elevation Not Given, Fresh Water Corrected to 100° F.

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