FLUID SAMPLE DATA

Sampler Pressure 2400 P.S.I.G. at Surface
Recovery: Cu. Ft. Gas 6.8
cc. Oil
cc. Water
cc. Mud
Tot. Liquid cc. Very small trace
Gravity ° API @ °F.
Gas/Oil Ratio cu. ft./bbl.

	RESISTIVITY			CHLORIDE CONTENT
Recovery Water	@	°F.		ppm
Recovery Mud	@	°F.		ppm
Recovery Mud Filtrate	@	°F.		ppm
Mud Pit Sample	@	°F.		ppm
Mud Pit Sample Filtrate	@	°F.		ppm

Mud Weight 9.5 vis 36 sec.

Date 2-3-81 Ticket Number 116552
Kind of D.S.T. OPEN HOLE Halliburton Location HOBBS
Tester ROBERTS FULLER Witness STEVE MILLER
Drilling Contractor PARKER DRILLING CO. RIG # 34 DR

EQUIPMENT & HOLE DATA

Formation Tested Atoka
Elevation 4131.5' GL-4149.9' KB Ft.
Net Productive Interval 25' Ft.
All Depths Measured From Kelly Bushing
Total Depth 12,711' Ft.
Main Hole/Casing Size 7 7/8"
Drill Collar Length 712' I.D. 2.50"
Drill Pipe Length 11,886' I.D. 3.826"
Packer Depth(s) 12,641-12,649' Ft.
Depth Tester Valve 12,604' Ft.

Cushion TYPE 1500' AMOUNT Water Ft. Depth Back Pres. Valve
Surface Choke 1/4-3/8-1/2 Bottom Choke .75"

Recovered Est. 948 Feet of total fluid (water cushion)
Recovered Feet of
Recovered Feet of
Recovered Feet of
Recovered Feet of

Remarks See production test data sheet

UTR=Unable to read

TEMPERATURE	Gauge No. 1516	Gauge No. 1496	Gauge No.	TIME (00:00-24:00 hrs.)
	Depth: 12626 Ft.	Depth: 12708 Ft.	Depth: Ft.	
	24 Hour Clock	24 Hour Clock	Hour Clock	Tool Opened 0838
Est. °F.	Blanked Off No	Blanked Off Yes	Blanked Off	
Actual 178 °F.	Pressures	Pressures	Pressures	Opened Bypass 1205

		Field	Office	Field	Office	Field	Office	Reported Minutes	Computed Minutes
Initial Hydrostatic		6324	6365.8	6363	6394.2				
First Period	Flow Initial	2932	2883.2	3273	3283.8			—	—
	Flow Final	3704	3774.8	4005	4080.1			12	10
	Closed in	6102	6124.1	6118	6118.0			69	68
Second Period	Flow Initial	3174	3181.0	3628	3631.9			—	—
	Flow Final	4636	4648.8	4784	4763.9			18	19
	Closed in	6080	6115.2	6074	6111.3			108	110
Third Period	Flow Initial							—	—
	Flow Final								
	Closed in								
Final Hydrostatic		6324	UTR	6363	6358.5			—	—

Legal Location Sec. - Twp. - Rng. 30-16S-34E
Lease Name STATE "LF" 30
Well No. 1
Test No. 2
Tested Interval 12,649-12,711'
Lease Owner/Company Name TENNECO OIL COMPANY
Field Area
Meas. From Tester Valve
County LEA
State NEW MEXICO

FORM 181-R2 – PRINTED IN U.S.A.

FORMATION TEST DATA

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LITTLE'S 111033 75C 2/80

Gauge No.	1516	Depth	12626'	Clock No.	11954	24 hour	Ticket No.	116552

	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"	Log $\frac{t+\theta}{\theta}$	PSIG Temp. Corr.	Time Defl. .000"	PSIG Temp. Corr.	Time Defl. .000"	Log $\frac{t+\theta}{\theta}$	PSIG Temp. Corr.	Time Defl. .000"	PSIG Temp. Corr.	Time Defl. .000"	Log $\frac{t+\theta}{\theta}$	PSIG Temp. Corr.
0	.000	2883.2	.000		3774.8	.000	3181.0	.000		4648.8					
1	.0068	2984.5	.0099*		6026.6	.0126**	3487.8	.0393***		6075.3					
2	.0136	3097.1	.0266		6075.3	.0221	3759.3	.0622		6088.6					
3	.0204	3245.0	.0432		6095.3	.0316	4121.4	.0851		6095.3					
4	.0272	3412.8	.0598		6099.7	.0410	4317.8	.1080		6099.7					
5	.0340	3774.8	.0764		6106.4	.0505	4596.0	.1309		6101.9					
6			.0931		6108.6	.0600	4648.8	.1538		6104.2					
7			.1097		6110.8			.1767		6106.4					
8			.1263		6115.2			.1996		6108.6					
9			.1429		6117.5			.2225		6110.8					
10			.1595		6119.7			.2454		6113.0					
11			.1761		6121.9			.2684		6115.2					
12			.1928		6124.1			.2913		6115.2					
13			.2094		6124.1			.3142		6115.2					
14			.2260		6124.1			.3371		6115.2					
15								.3600		6115.2					

Gauge No.	1496	Depth	12,708'	Clock No.	20674	hour	24

0	.000	3283.8	.000		4080.1	.000	3631.9	.000		4763.9					
1	.0068	3512.1	.0098*		6040.0	.0133**	3791.5	.0393***		6069.0					
2	.0136	3623.0	.0261		6075.7	.0232	3982.2	.0622		6082.4					
3	.0204	3745.0	.0424		6091.3	.0332	4269.4	.0851		6086.8					
4	.0272	4008.9	.0588		6097.9	.0431	4467.7	.1080		6093.5					
5	.0340	4080.1	.0751		6102.4	.0531	4623.6	.1310		6097.9					
6			.0914		6104.6	.0630	4763.9	.1538		6100.2					
7			.1077		6106.9			.1767		6102.4					
8			.1241		6109.1			.1996		6104.6					
9			.1404		6111.3			.2225		6106.9					
10			.1567		6113.5			.2455		6109.1					
11			.1730		6115.8			.2684		6111.3					
12			.1893		6118.0			.2913		6111.3					
13			.2057		6118.0			.3142		6111.3					
14			.2220		6118.0			.3371		6111.3					
15								.3600		6111.3					

Reading Interval	2	5	3	7	Minutes

REMARKS: *-3 minutes **-4 minutes ***-12 minutes

FORM 183 R1—PRINTED IN U.S.A.

SPECIAL PRESSURE DATA

LITTLE'S 96673 75C 8/74

Casing perfs.____ Bottom choke .75" Surf. temp.____ °F Ticket No. 116552

Gas gravity____ Oil gravity____ GOR____

Spec. gravity____ Chlorides____ ppm Res.____ @ ____ °F

INDICATE TYPE AND SIZE OF GAS MEASURING DEVICE USED____

Date Time a.m. p.m.	Choke Size	Surface Pressure psi	Gas Rate MCF	Liquid Rate BPD	Remarks
0115					Picked up tools
0226					Went in hole
0838	Bh				Opened tool, slid 6', closed tool
0839	"				Opened tool, slid 4' with a fair
					increasing blow.
0845					Good blow, bottom of bucket
0848	1/4"	1250			Opened choke
0850	"	1500			Closed tool
0858					Gas to surface
0959	3/8	575			Opened on choke
1004	1/2	1450			Change choke
1009	"	2050			Increasing-fluid to surface
1014	"	2400			Increasing
1017		2800	18,000		Closed tool
1205					By pass tool
1215					Loaded drill pipe
1310					Pump out circulating disc.
1315					Reversed out
1505					Pulled out of hole.
0300					Job completed

	O. D.	I.	LENGTH	DEPTH
Drill Pipe or Tubing	4.50"	3.826"	11886'	
Drill Collars				
Reversing Sub	6.625"	2.875"	1'	12509'
Water Cushion Valve				
Drill Pipe				
Drill Collars	6.25"	2.50"	712'	
Handling Sub & Choke Assembly	5.75"	2"	1' Change over	
Dual CIP Valve	6.375"	2.875"	1' Change over	
Dual CIP Sampler				
Hydro-Spring Tester	5"	.75"	4'	12,604'
Multiple CIP Sampler	5"	.75"	5'	
Extension Joint	5"	.87"	15'	
AP Running Case	5"	3.50"	4'	12,626'
Hydraulic Jar	5"	1.75 "	5' Big John	
VR Safety Joint	5"	1.00"	3'	
Pressure Equalizing Crossover				
Packer Assembly	7"	1.68"	6'	12,641'
Distributor	5"	1.68"	2'	
Packer Assembly	7"	1.68"	6'	12,649'
Flush Joint Anchor				
Pressure Equalizing Tube				
Blanked-Off B.T. Running Case				
Drill Collars				
Anchor Pipe Safety Joint				
Packer Assembly				
Distributor				
Packer Assembly				
Anchor Pipe Safety Joint	5.75" 6.375"	1.50 " 2.50 "	4' 1' X over	
Side Wall Anchor				
Drill Collars	6.25" 6.325"	2.50 " 2.50 "	30' 1' Change over	
Flush Joint Anchor	5.75"	2.87"	20'	
Blanked-Off B.T. Running Case	5 .75"	2.50 "	4'	12,708'
Total Depth				12,711'

NOMENCLATURE

b	= Approximate Radius of Investigation	Feet
b_1	= Approximate Radius of Investigation (Net Pay Zone h)	Feet
D.R.	= Damage Ratio	——
El	= Elevation	Feet
GD	= B.T. Gauge Depth (From Surface Reference)	Feet
h	= Interval Tested	Feet
h_1	= Net Pay Thickness	Feet
K	= Permeability	md
K_1	= Permeability (From Net Pay Zone h)	md
m	= Slope Extrapolated Pressure Plot (Psi^2/cycle Gas)	psi/cycle
OF_1	= Maximum Indicated Flow Rate	MCF/D
OF_2	= Minimum Indicated Flow Rate	MCF/D
OF_3	= Theoretical Open Flow Potential with/Damage Removed Max.	MCF/D
OF_4	= Theoretical Open Flow Potential with/Damage Removed Min.	MCF/D
P_s	= Extrapolated Static Pressure	Psig.
P_F	= Final Flow Pressure	Psig.
P_{ot}	= Potentiometric Surface (Fresh Water *)	Feet
Q	= Average Adjusted Production Rate During Test	bbls/day
Q_1	= 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.