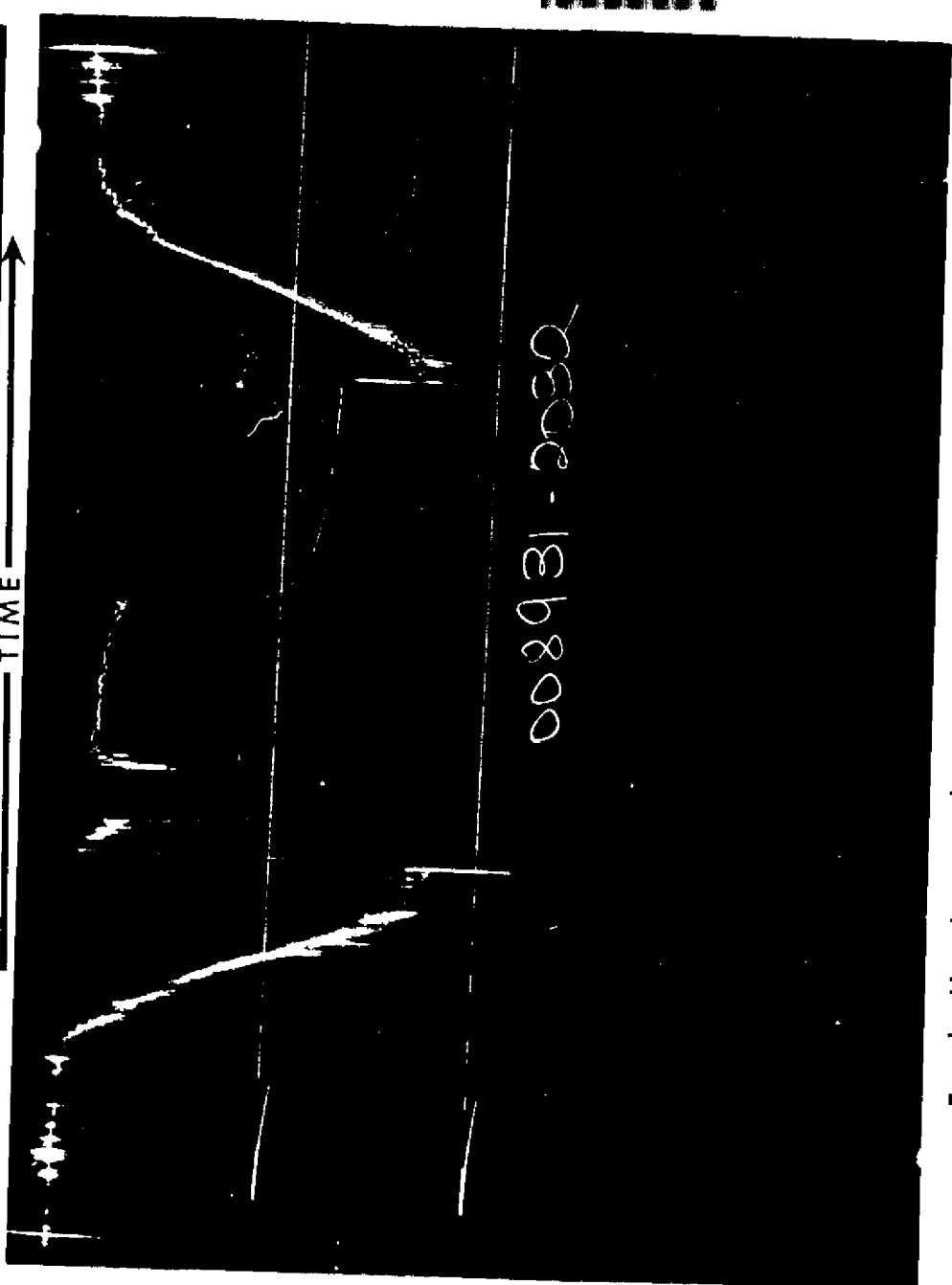
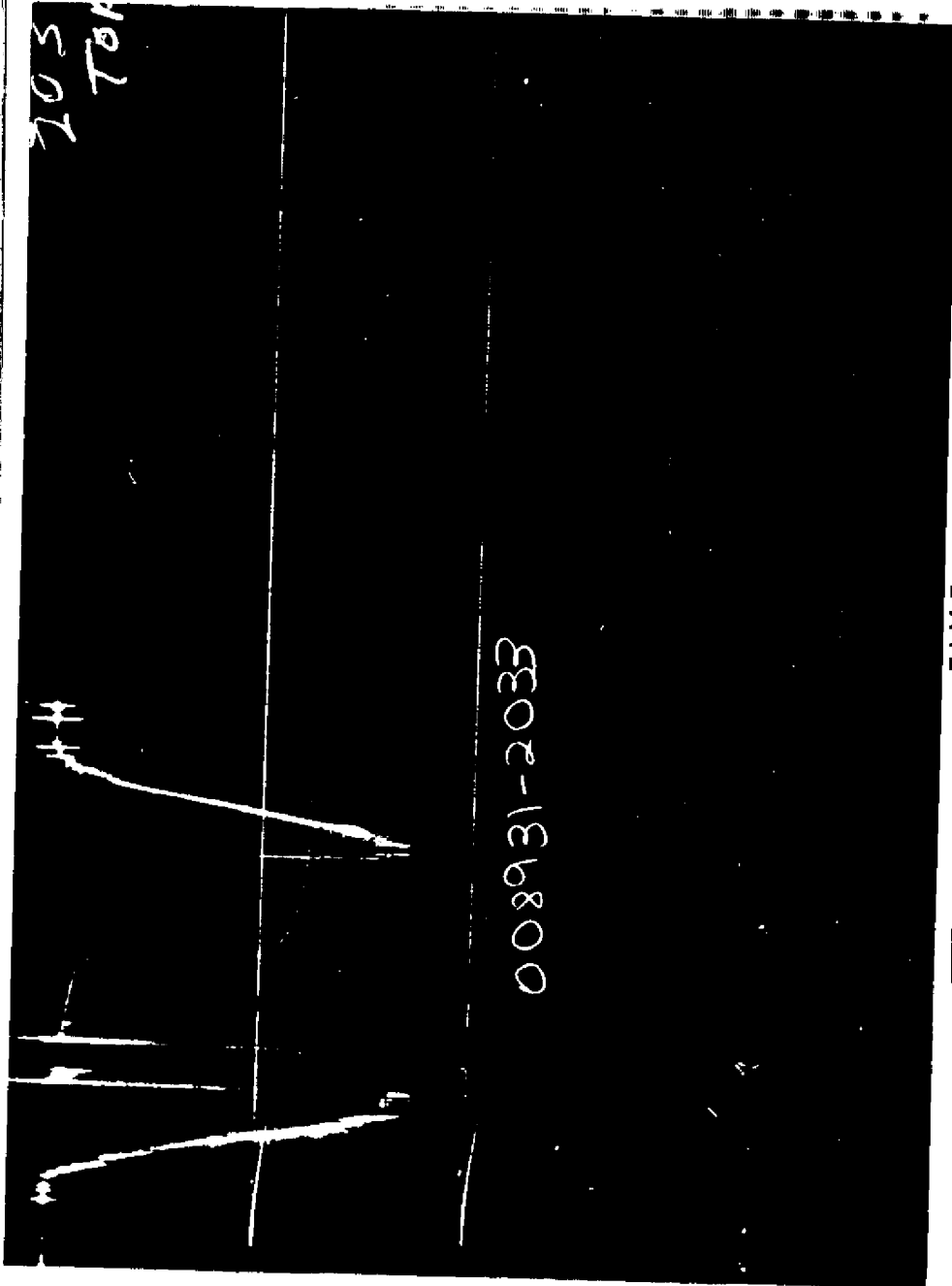




Each Horizontal Line Equal to 1000 p.s.i.

NOMENCLATURE

b	=	Approximate Radius of Investigation	Feet
b_1	=	Approximate Radius of Investigation (Net Pay Zone h_1)	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_1)	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_{or}	=	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.

FLUID SAMPLE DATA				Date 12-16-76		Ticket Number 008931			
Sampler Pressure _____ P.S.I.G. at Surface Recovery: Cu. Ft. Gas _____ cc. Oil _____ cc. Water _____ cc. Mud 2000 Tot. Liquid cc. _____ Gravity _____ ° API @ _____ °F. Gas/Oil Ratio _____ cu. ft./bbl. RESISTIVITY CHLORIDE CONTENT Recovery Water _____ @ _____ °F. _____ ppm Recovery Mud _____ @ _____ °F. _____ ppm Recovery Mud Filtrate 2.80 @ 57 °F. _____ ppm Mud Pit Sample _____ @ _____ °F. _____ ppm Mud Pit Sample Filtrate 4.64 @ 68 °F. _____ ppm Mud Weight 9.1 vis 72 Sec. sp				Kind of Job OPEN HOLE TEST Halliburton District FARMINGTON Tester G.K. SMITH Witness C.D. MOORE Drilling Contractor 4 CORNERS PW		Legal Location N - 3 - 21 N - 6 W Lease Name _____ Well No. 1 Test No. 2 Tested Interval _____ County SANDOVAL State NEW MEXICO			
				EQUIPMENT & HOLE DATA					
				Formation Tested Mesa Verda Elevation 6903' Ft. Net Productive Interval 52' Ft. All Depths Measured From Rotary Kelly Bushing Total Depth 3495' Ft. Main Hole/Casing Size 8 3/4" Drill Collar Length 591' I.D. 2 1/4" Drill Pipe Length 2814' I.D. 3.826" Packer Depth(s) 3437' - 3443' Ft. Depth Tester Valve 3421' Ft.					
TYPE		AMOUNT		Depth Back Pres. Valve		Surface Choke		Bottom Choke	
Cushion				Ft.		3/4" Adj.		3/4"	
Recovered		210		Feet of drilling mud.					
Recovered				Feet of					
Recovered				Feet of					
Recovered				Feet of					
Recovered				Feet of					
Remarks		Charts indicate partial plugging of anchor perforations during flow periods.							
		SEE PRODUCTION TEST DATA SHEET.....							
		TIGHT HOLE.....							
TEMPERATURE		Gauge No. 2033 Depth: 3425 Ft.		Gauge No. 2032 Depth: 3491 Ft.		Gauge No. _____ Depth: _____ Ft.		TIME	
Est. °F.		Blanked Off no		Blanked Off yes		Blanked Off _____		Tool _____ A.M. Opened 0630 P.M. Opened _____ A.M. Bypass 1045 P.M.	
Actual 104 °F.		Pressures		Pressures		Pressures			
		Field Office		Field Office		Field Office		Reported Computed Minutes Minutes	
Initial Hydrostatic		1334 1624		1657					
First Period	Flow Initial	27 15		110					
	Flow Final	53 38		236				15 17	
Closed in		1240 1200		1245				30 29	
Second Period	Flow Initial	53 42		269					
	Flow Final	132 128		210				90 89	
Closed in		1240 1214		1241				120 120	
Third Period	Flow Initial								
	Flow Final								
Closed in									
Final Hydrostatic		1603 1603		1632					

008931

INDICATE TYPE AND SIZE OF GAS MEASURING DEVICE USED

[illegible]

Gauge No. 2033		Depth 3425'		Clock No. 9756		24 hour		Ticket No. 008931	
First Flow Period		First Closed In Pressure		Second Flow Period		Second Closed In Pressure		Third Flow Period	
Time Defl. .000"	PSIG Temp. Corr.	Time Defl. .000"	$\log \frac{t + \theta}{\theta}$	Time Defl. .000"	PSIG Temp. Corr.	Time Defl. .000"	$\log \frac{t + \theta}{\theta}$	Time Defl. .000"	PSIG Temp. Corr.
0	.000	15		.000	38	.000		.000	128
1	.0570	38		.0067*	595	.0470**	65	.0267	941
2				.0167	879	.0974	75	.0535	1033
3				.0268	997	.1478	89	.0802	1082
4	PLUGGING			.0368	1064	.1982	102	.1069	1113
5				.0468	1104	.2486	116	.1337	1136
6				.0568	1136	.2990	128	.1604	1151
7				.0669	1158			.1871	1164
8				.0769	1179			.2138	1174
9				.0869	1192			.2406	1183
10				.0970	1200			.2673	1191
11								.2940	1197
12								.3208	1201
13								.3475	1207
14								.3742	1211
15								.4010	1214

Gauge No. 2032		Depth 3491'		Clock No. 10445		12 hour	
Time Defl. .000"	PSIG Temp. Corr.	Time Defl. .000"	$\log \frac{t + \theta}{\theta}$	Time Defl. .000"	PSIG Temp. Corr.	Time Defl. .000"	$\log \frac{t + \theta}{\theta}$
0	.000	110		.000	236	.000	269
1	.118	236		.0137*	716	.618	210
2				.0341	946		
3				.0546	1050		
4				.0751	1109		
5	PLUGGING			.0956	1150	PLUGGING	
6				.1161	1179		
7				.1365	1201		
8				.1570	1220		
9				.1775	1236		
10				.1980	1245		
11							
12							
13							
14							
15							

Reading Interval		3		15		8		Minutes	
REMARKS: *		2 minutes		**		14 minutes			



	O. D.	I. D.	LENGTH	DEPTH
Drill Pipe or Tubing	6"	3"	1'	
Reversing Sub				
Water Cushion Valve				
Drill Pipe	4 1/2"	3.826"	2814'	
Drill Collars	6"	2 1/4"	591'	
Handling Sub & Choke Assembly				
Dual CIP Valve	5"	3/4"	6'	3416'
Dual CIP Sampler	5"	3/4"	5'	3421'
Hydro-Spring Tester				
Multiple CIP Sampler				
Extension Joint				
AP Running Case	5"		4'	3425'
Hydraulic Jar	5"	1"	6'	
VR Safety Joint	5"	1"	3'	
Pressure Equalizing Crossover				
Packer Assembly	7 1/2"	1 1/2"	6'	3437'
Distributor				
Packer Assembly	7 1/2"	1 1/2"	6'	3443'
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				
Side Wall Anchor				
Drill Collars	6"	2 1/4"	30'	
Flush Joint Anchor	5 3/4"	2 1/4"	16'	
Blanked-Off B.T. Running Case	5 3/4"		4'	3491'
Total Depth				3495'

DST RESULTS

DST #1 1485'-1611'

Preflow 15 min. Weak blow increasing to good blow.

ISI 30 min.

FFP 60 min. Fair to good blow throughout.

FSI 120 min.

Recovered: 516' mud.

IHH 755 psi

IFP 83/159 psi

ISI 447 psi

FFP 213/278 psi

FSI 453 psi

FHH 754 psi

Sampler: 2100cc mud at 30 psi.

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DST #2 3443'-3495'

Preflow 15 min. Opened w/weak blow.

ISI 30 min.

FFP 60 min. Opened w/weak blow, increased slightly thru test.

FSI 120 min.

Recovered: 210' drilling mud.

IHH 1662 psi

IFP 106/212 psi

ISI 1215 psi

FFP 212 psi

FSI 1241 psi

FHH 1636 psi

Sampler: 2000cc mud at 0 psi.

DST #3 4594'-4636'

Preflow 15 min. Weak increasing to good blow in 2 min.

ISI 30 min.

FFP 60 min. Fair blow throughout.

FSI 120 min.

Recovered: 20' mud. No shows.

IHH 2194 psi

IFP 79 psi

ISI 105 psi

FFP 79 psi

FSI 105 psi

FHH 2180 psi

Sampler: 2200cc mud at 0 psi

DST #4 6303'-6618'

Preflow 15 min. Good blow throughout.

ISI 30 min.

FFP 60 min. Open w/good blow, decreased to fair blow in 5 min. Increased to good blow in 10 min. for remainder of test.

FSI 60 min.

Recovered: 5230' fluid; 186' WCM, 5044' water.

IHH 3183 psi

IFP 2299/2892 psi

ISI 2892 psi

FFP 2892 psi

FSI 2892 psi

FHH 3143 psi

Sampler: 2250cc water at 0 psi

