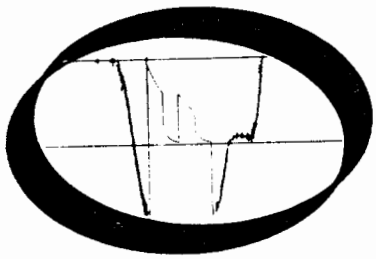
Formation Testing Service Report

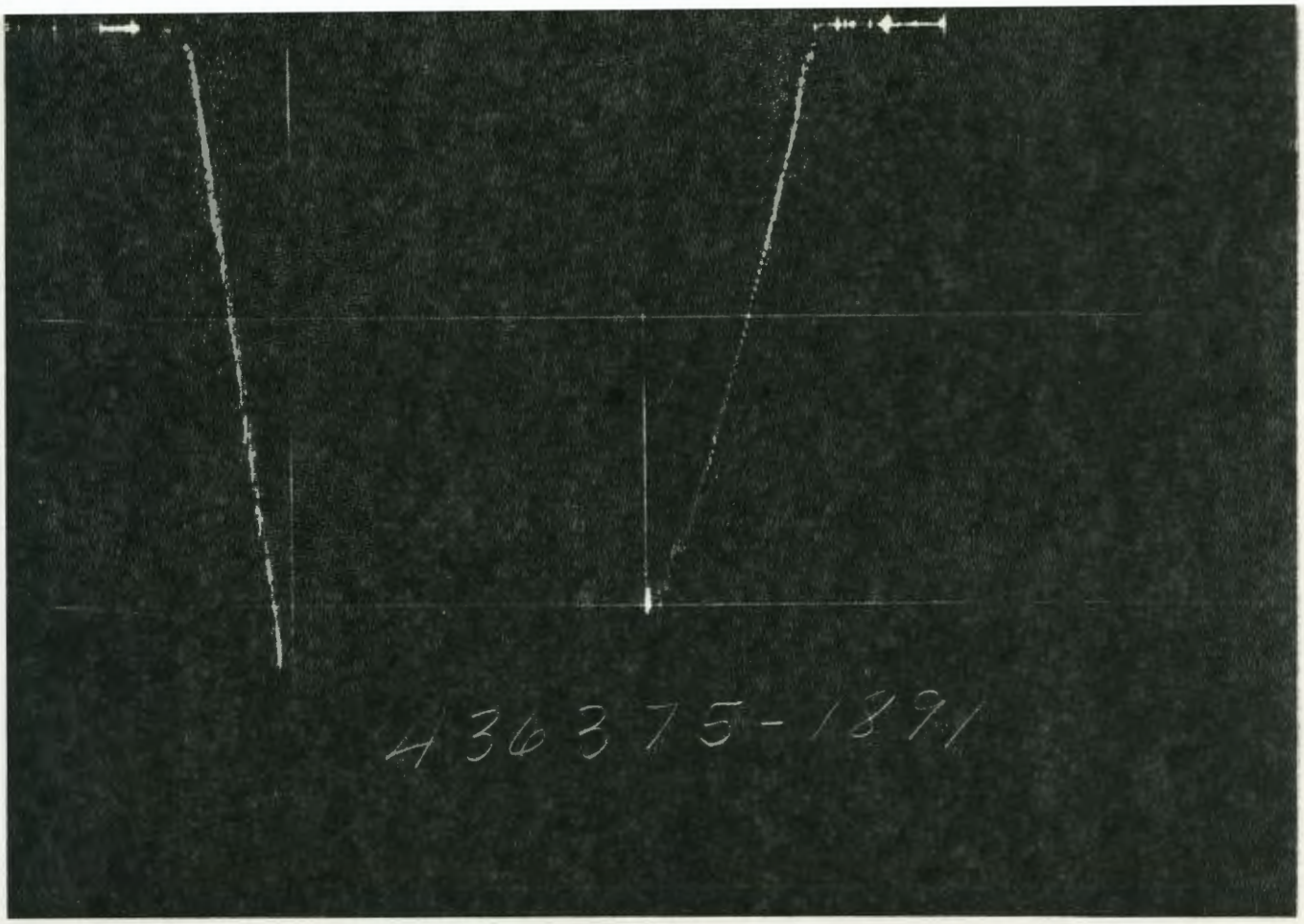
XTRA



HALLIBURTON SERVICES

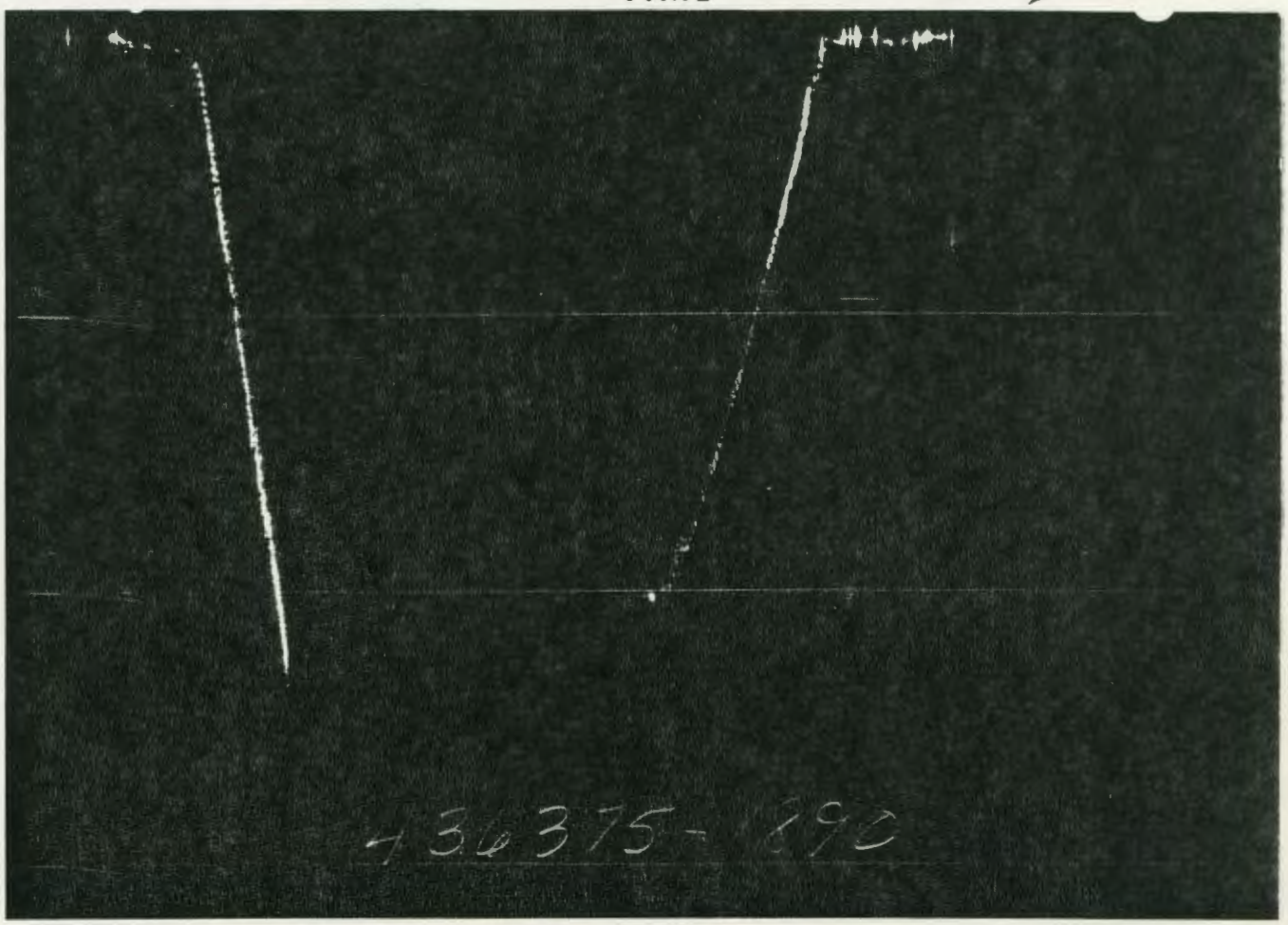
DUNCAN, OKLAHOMA

Lease Name	Well No.	Test No.	Tested Interval	Lease Owner/Company Name
BRUMM	4	1	4160-4240'	CONTINENTAL GAS AND TRANSMISSION COMPANY



PRESSURE

TIME



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

FLUID SAMPLE DATA

Sampler Pressure _____ P.S.I.G. at Surface
Recovery: Cu. Ft. Gas _____
cc. Oil _____
cc. Water _____
cc. Mud _____
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	@ °F.			ppm
Mud Pit Sample	@ °F.			ppm
Mud Pit Sample Filtrate	@ °F.			ppm

Mud Weight 9.4 vis 64 sec

Date 2-10-79 Ticket Number 436375
Kind of Job OPEN HOLE Halliburton District OBERLIN
Tester J. MONDERO Witness W. S. LARSON
Drilling Contractor MURFIN DRILLING # 7 DR

EQUIPMENT & HOLE DATA

Formation Tested Oread
Elevation 3375' Ft.
Net Productive Interval - Ft.
All Depths Measured From Kelly Bushing
Total Depth 4240' Ft.
Main Hole/Casing Size 7 7/8"
Drill Collar Length 118' I.D. 2.50"
Drill Pipe Length 954' WP-3057' I.D. 2.764"-3.826"
Packer Depth(s) 4154-4160' Ft.
Depth Tester Valve 4141' Ft.

Cushion TYPE AMOUNT Ft. Depth Back Pres. Valve
Surface Choke .25" Bottom Choke .75"

Recovered 375 Feet of oil cut watery mud
Recovered Feet of
Recovered Feet of
Recovered Feet of
Recovered Feet of

Remarks SEE PRODUCTION TEST DATA SHEET

TEMPERATURE	Gauge No. 1891	Gauge No. 1890	Gauge No.	TIME
	Depth: 4163 Ft.	Depth: 4237 Ft.	Depth: Ft.	
	12 Hour Clock	12 Hour Clock	Hour Clock	Tool A.M.
Est. °F.	Blanked Off No	Blanked Off Yes	Blanked Off	Opened 1410 P.M.
4235'				Opened A.M.
Actual 137 °F.	Pressures	Pressures	Pressures	Bypass 1740 P.M.

		Field	Office	Field	Office	Field	Office	Reported Minutes	Computed Minutes
Initial Hydrostatic			2073	2200	2114				
First Period Flow	Initial		58	90	99			———	———
	Final		119	144	157			30	29
	Closed in		1157	1185	1191			60	60
Second Period Flow	Initial		130	162	169			———	———
	Final		212	251	250			60	60
	Closed in		1062	1077	1100			60	61
Third Period Flow	Initial							———	———
	Final								
	Closed in								
Final Hydrostatic			1973	2018	2014			———	———

Legal Location Sec. - Twp. - Rng. 7-2S-36W
Lease Name BRUMM Well No. 4 Test No. 1
Tested Interval 4160-4240'
Lease Owner/Company Name CONTINENTAL GAS AND TRANSMISSION COMPANY
Field Area
County RAWLINS
State KANSAS
Mea. From Tester Valve

FORM 181-R2—PRINTED IN U.S.A.

FORMATION TEST DATA

LITTLE'S 102548 SM 9/76

5

436375

Casing perfs. _____ Bottom choke _____ Surf. temp. _____ °F Ticket No. _____

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
0215					Called out
0400					On location
					Rig crew mixing mud, planned job.
1000					Started out for DST #1
1215					Unloaded and made up tools
1245					Tool in table
1300					Went in hole
1410					Opened tool with a good blow increasing
					to 10"
1440					Closed tool
1540					Opened tool with a fair blow increasing
					to 7"
1640					Closed tool
1740					Off bottom
1950					Tool in table
2030					Tool laid down
					Read charts

FORM 182-R1—PRINTED IN U.S.A.

PRODUCTION TEST DATA

LITTLE'S 96672 SM 8/74

Gauge No.	1891	Depth	4163'	Clock No.	7105	12 hour	Ticket No.	436375

	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	58	.000		119	.000	130	.000		212					
1	.0269	74*	.0267		810	.0662	144	.0328		797**					
2	.0605	86	.0533		957	.1323	161	.0590		882					
3	.0941	97	.0800		1017	.1985	175	.0853		927					
4	.1278	104	.1067		1052	.2647	189	.1115		957					
5	.1614	112	.1333		1074	.3309	199	.1378		976					
6	.1950	119	.1600		1089	.3970	212	.1639		992					
7			.1867		1103			.1902		1005					
8			.2133		1114			.2164		1017					
9			.2400		1123			.2426		1026					
10			.2667		1130			.2689		1034					
11			.2933		1137			.2951		1041					
12			.3200		1142			.3213		1047					
13			.3467		1146			.3476		1053					
14			.3733		1151			.3738		1059					
15			.4000		1157			.4000		1062					

Gauge No.	1890	Depth	4237'	Clock No.	3000	hour	12

0	.000	99	.000		157	.000	169	.000		250					
1	.0269	114*	.0267		868	.0668	183	.0332		828**					
2	.0605	124	.0533		996	.1337	198	.0598		915					
3	.0941	135	.0800		1053	.2005	213	.0863		961					
4	.1278	143	.1067		1087	.2673	227	.1129		992					
5	.1614	149	.1333		1110	.3342	238	.1394		1014					
6	.1950	157	.1600		1124	.4010	250	.1660		1031					
7			.1867		1138			.1926		1044					
8			.2133		1149			.2191		1055					
9			.2400		1158			.2457		1064					
10			.2667		1165			.2722		1073					
11			.2933		1171			.2988		1079					
12			.3200		1177			.3254		1086					
13			.3467		1181			.3519		1091					
14			.3733		1185			.3785		1095					
15			.4000		1191			.4050		1100					
Reading Interval	5		4			10		4							Minutes

REMARKS: *-4 minutes **-5 minutes.

SPECIAL PRESSURE DATA

TICKET NO. 436375

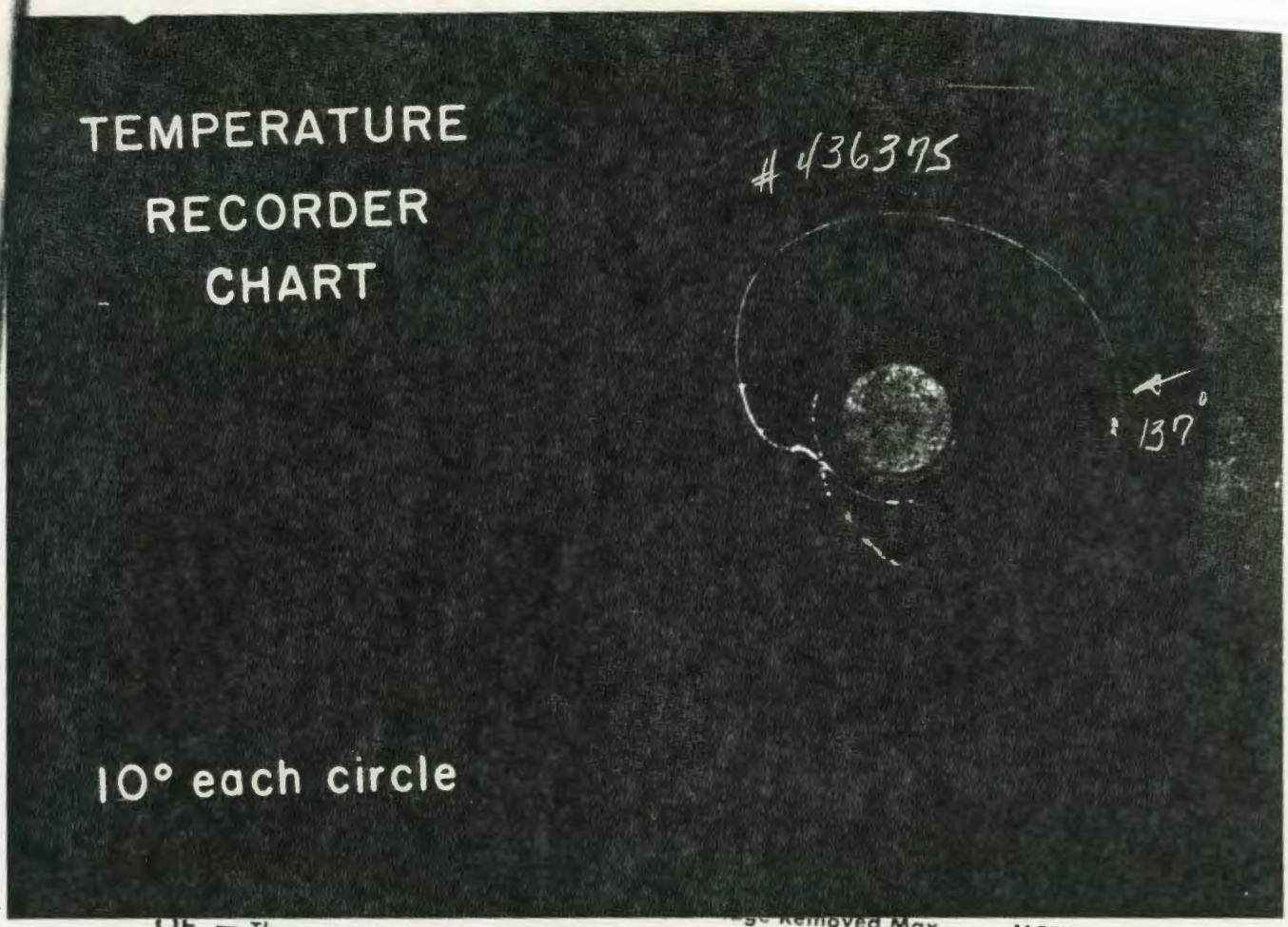
	O. D.	I. D.	LENGTH	DEPTH
Drill Pipe or Tubing				4012'
Reversing Sub		2.62"	1'	
Water Cushion Valve	4 1/2"	2.764"	954' WP	
Drill Pipe	4 1/2"	3.826"	3057'	
Drill Collars	6.25"	2.50 "	118'	
Handling Sub & Choke Assembly				4131'
Dual CIP Valve	5"	.87"	6'	
Dual CIP Sampler				4141'
Hydro-Spring Tester	5"	.75"	5'	
Multiple CIP Sampler				
Extension Joint				
AP Running Case				
Hydraulic Jar	5"	1.75'	5'	
VR Safety Joint	5"	1"	3'	
Pressure Equalizing Crossover				
Packer Assembly	6.75"	1.53 "	6'	4154'
Distributor				
Packer Assembly	6.75"	1.53 "	4'	4160'
Flush Joint Anchor				
Pressure Equalizing Tube				
Blanked-Off B.T. Running Case	5"	2.25 "	4'	4163'
Drill Collars				
Anchor Pipe Safety Joint				
Packer Assembly				
Distributor				
Packer Assembly				
Anchor Pipe Safety Joint				
	5.75"		2' 4½ FH x 3 1/2 FH x over	
Side Wall Anchor				1 set
Drill Collars	5.75"	2.76"	31' Wp 4 1/2 FH	
Flush Joint Anchor	5"	2.37 "	38'	
HT-500	5"	2.25"	1'	4235'
Blanked-Off B.T. Running Case	5"	2.44"	4'	4237'
Total Depth				4240'

FORM 187-R1—PRINTED IN U.S.A.

EQUIPMENT DATA

LITTLE'S 96676 75C 6/74

5



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

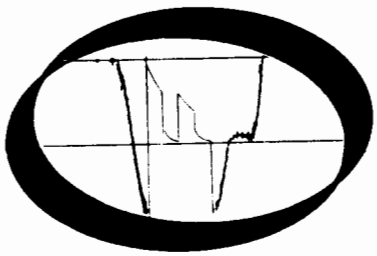
Z = Compressibility Factor ..... ——

μ = Viscosity Gas or Liquid ..... CP

Log = Common Log

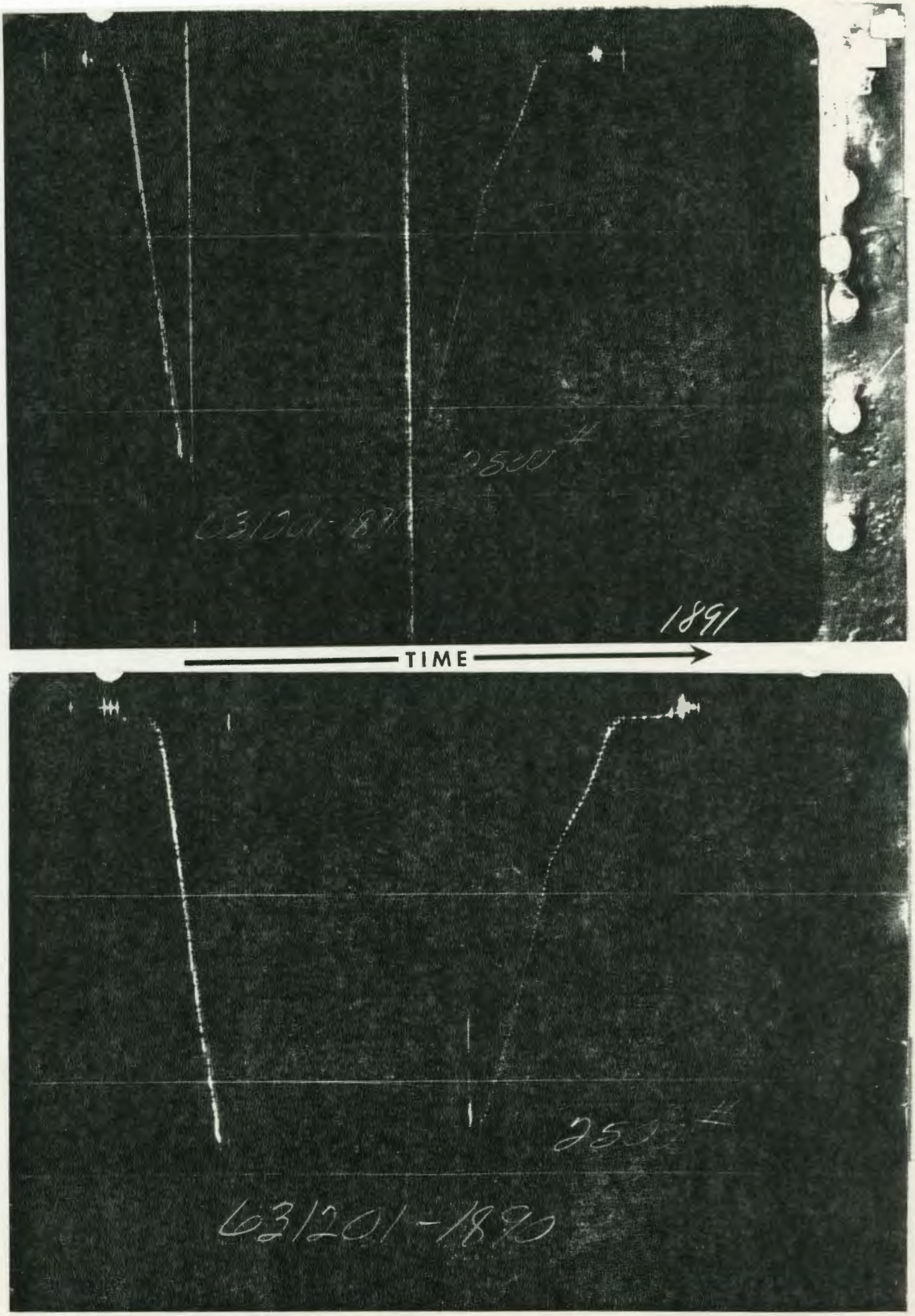
* Potentiometric Surface Reference to Rotary Table When Elevation Not Given, Fresh Water Corrected to 100° F.

Formation Testing Service Report



HALLIBURTON SERVICES
DUNCAN, OKLAHOMA

BRUMM	4	2	4292' - 4390'	CONTINENTAL GAS & TRANSMISSION COMPANY
Lease Name	Well No.	Test No.	Tested Interval	Lease Owner/Company Name



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

FLUID SAMPLE DATA

Sampler Pressure _____ P.S.I.G. at Surface
Recovery: Cu. Ft. Gas _____
cc. Oil _____
cc. Water _____
cc. Mud _____
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	@	°F.		ppm
Mud Pit Sample	@	°F.		ppm
Mud Pit Sample Filtrate	@	°F.		ppm

Mud Weight 9.5 vis 60 cp

Date 2-11-79 Ticket Number 631201
Kind of Job OPEN HOLE TEST Halliburton District OBERLIN
Tester J. MONDERO Witness W. S. LARSON
Drilling Contractor MURFIN DRILLING COMPANY #7 TJB S

EQUIPMENT & HOLE DATA

Formation Tested Lower Kansas City "A & B"
Elevation 3375' Ft.
Net Productive Interval _____ Ft.
All Depths Measured From Kelly Bushing
Total Depth 4390' Ft.
Main Hole/Casing Size 7 7/8"
Drill Collar Length 118' I.D. 2.50"
Drill Pipe Length 891' WP-3252' I.D. 2.764"WP-3.826"
Packer Depth(s) 4286' - 4292' Ft.
Depth Tester Valve 4273' Ft.

Cushion TYPE _____ AMOUNT _____ Ft. Depth Back Pres. Valve _____ Surface Choke .25" Bottom Choke .75"

Recovered 1515 Feet of muddy saltwater.
Recovered _____ Feet of _____
Recovered _____ Feet of _____
Recovered _____ Feet of _____
Recovered _____ Feet of _____

MAILED
FEB 21 1979
Halliburton Company
Denver, Colorado

Remarks SEE PRODUCTION TEST DATA SHEET . . .

TEMPERATURE	Gauge No. 1891		Gauge No. 1890		Gauge No.		TIME	
	Depth: 4295 Ft.		Depth: 4386 Ft.		Depth: Ft.			
	12 Hour Clock		12 Hour Clock		Hour Clock		Tool Opened	1300 A.M. P.M.
Est. °F.	Blanked Off NO		Blanked Off YES		Blanked Off			
4385 Actual 137 °F.	Pressures		Pressures		Pressures		Opened Bypass	1630 A.M. P.M.
	Field	Office	Field	Office	Field	Office	Reported Minutes	Computed Minutes
Initial Hydrostatic		2173	2200	2216				
First Period Flow Initial		29	90	82			—	—
First Period Flow Final		415	458	460			30	30
First Period Closed in		1036	1077	1078			60	60
Second Period Flow Initial		430	458	473			—	—
Second Period Flow Final		694	736	736			60	60
Second Period Closed in		1025	1059	1065			60	60
Third Period Flow Initial							—	—
Third Period Flow Final								
Third Period Closed in								
Final Hydrostatic		2158	2182	2198			—	—

Legal Location Sec. - Twp. - Rng. 7 - 2S - 36W
Lease Name BRUMM
Well No. 4
Test No. 2
Tested Interval 4292' - 4390'
Lease Owner/Company Name CONTINENTAL GAS & TRANSMISSION COMPANY
Field Area
Mea. From Tester Valve
County RAWLS
State KANSAS

FORM 161-R1—PRINTED IN U.S.A.

FORMATION TEST DATA

LITTLE'S 96671 10M 9/74

5

Casing perfs_____ Bottom choke_____ Surf. temp_____ °F Ticket No. 631201

Gas gravity_____ Oil gravity_____ GOR_____

Spec. gravity_____ Chlorides_____ ppm Res._____ @_____ °F

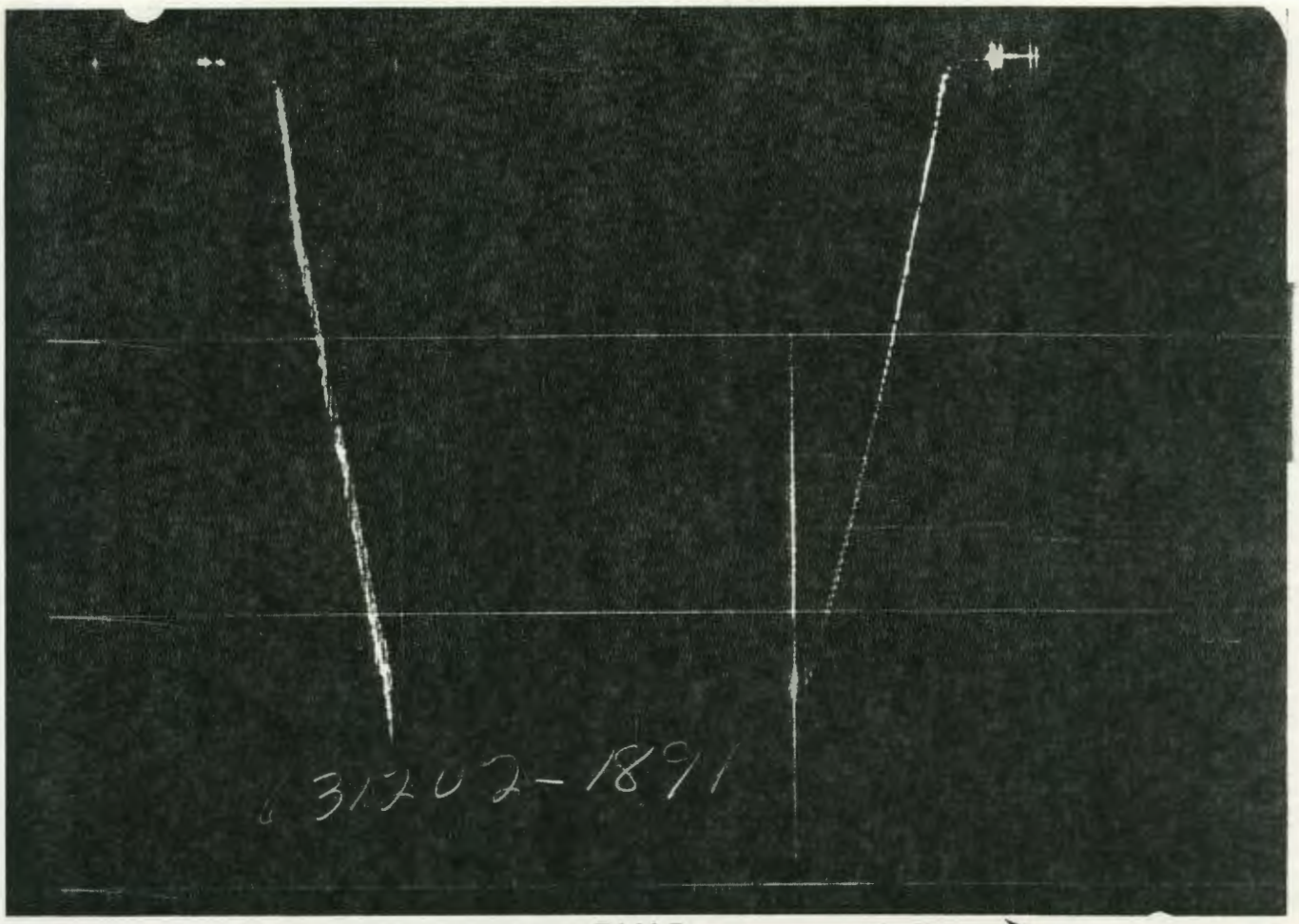
INDICATE TYPE AND SIZE OF GAS MEASURING DEVICE USED_____

Date Time a.m. p.m.	Choke Size	Surface Pressure psi	Gas Rate MCF	Liquid Rate BPD	Remarks
0910					Called out.
1030					On location.
					Rig pulling drill pipe.
					Planned job.
1100					Picked up and made up tool.
1120					Tool in table.
1140					Ran in hole.
1300					Opened tool with a strong blow off
					bottom of 12" bucket in 6 minutes.
1330					Closed tool.
1430					Opened tool with a strong blow off
					bottom of bucket in 8 minutes.
1530					Closed tool.
1630					Off bottom.
1845					Tool in table.
1945					Tool laid down.
					Read charts.

FORM 182-RI—PRINTED IN U.S.A.

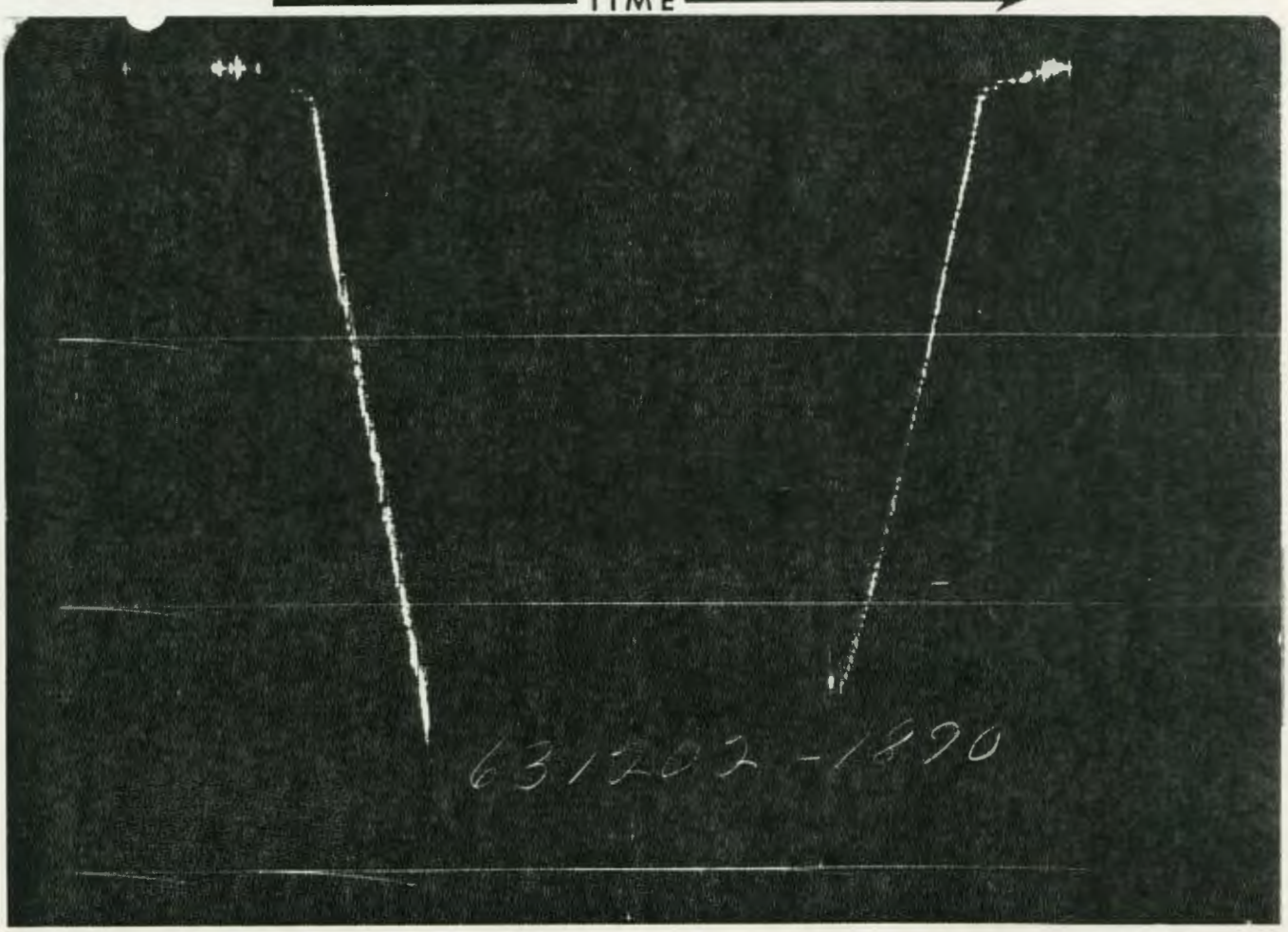
PRODUCTION TEST DATA

LITTLE'S 96672 SM 8/



PRESSURE

TIME



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

Gauge No. 1891			Depth 4295			Clock No. 7105			12 hour	Ticket No. 631201				
	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	.0000	29	.0000		415	.0000	430	.0000		694					
1	.0335	113	.0264		945	.0662	504	.0265		954					
2	.0670	188	.0528		973	.1323	550	.0529		974					
3	.1005	250	.0792		989	.1985	590	.0794		984					
4	.1340	311	.1056		1000	.2646	628	.1058		992					
5	.1675	363	.1320		1008	.3308	662	.1323		998					
6	.2010	415	.1584		1014	.3970	694	.1588		1003					
7			.1848		1018			.1852		1006					
8			.2112		1022			.2117		1011					
9			.2376		1025			.2381		1013					
10			.2640		1027			.2646		1015					
11			.2904		1030			.2911		1018					
12			.3168		1032			.3175		1019					
13			.3432		1033			.3440		1021					
14			.3696		1035			.3704		1023					
15			.3960		1036			.3970		1025					
Gauge No. 1890					Depth 4386			Clock No. 3000			12 hour				
0	.0000	82	.0000		460	.0000	473	.0000		736					
1	.0332	165	.0265		980	.0666	547	.0269		995					
2	.0663	234	.0531		1011	.1333	593	.0537		1014					
3	.0995	297	.0796		1028	.2000	634	.0806		1025					
4	.1326	358	.1061		1041	.2666	671	.1074		1034					
5	.1658	410	.1327		1048	.3333	704	.1343		1040					
6	.1990	460	.1592		1054	.4000	736	.1612		1044					
7			.1857		1059			.1880		1048					
8			.2122		1063			.2149		1051					
9			.2388		1066			.2417		1054					
10			.2653		1069			.2686		1057					
11			.2918		1071			.2955		1059					
12			.3184		1074			.3223		1060					
13			.3449		1076			.3492		1062					
14			.3714		1077			.3760		1064					
15			.3980		1078			.4030		1065					
Reading Interval	5		4			10		4							Minutes

REMARKS:

FORM 183-R1—PRINTED IN U.S.A.

SPECIAL PRESSURE DATA

LITTLE'S 96679 75C 6/74

TICKET NO. 631201

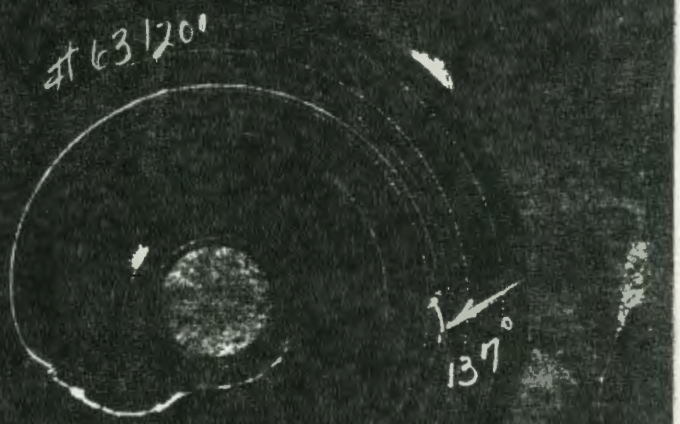
	O. D.	I. D.	LENGTH	DEPTH
Drill Pipe or Tubing				
Reversing Sub	6.50"	2.62"	1'	4144'
Water Cushion Valve				
Drill Pipe	4 1/2"	3.826"	3252'	
Drill Collars	6.25"	2.50"	118'	
Handling Sub & Choke Assembly	4 1/2"	2.764"	891' WEIGHT PIPE	
Dual CIP Valve	5"	.87"	6'	4263'
Dual CIP Sampler				
Hydro-Spring Tester	5"	.75"	5'	4273'
Multiple CIP Sampler				
Extension Joint				
AP Running Case				
Hydraulic Jar	5"	1.75"	5'	
VR Safety Joint	5"	1"	3'	
Pressure Equalizing Crossover				
Packer Assembly	6.75"	1.53"	6'	4286'
Distributor				
Packer Assembly	6.75"	1.53"	4'	4292'
Flush Joint Anchor				
Pressure Equalizing Tube				
~~XXXXXX-XX~~ B.T. Running Case	5"	2.25"	4'	4295'
Drill Collars				
Anchor Pipe Safety Joint				
Packer Assembly				
Distributor				
Packer Assembly				
Anchor Pipe Safety Joint				
4 1/2" X 3 1/2" X OVERS	5.75"		2'	
Side Wall Anchor				
WEIGHT PIPE	5.75"	2.764"	63'	
Drill Collars				
Flush Joint Anchor	5"	2.37"	24'	
HT-500	5"	2.25"	1'	4385'
Blanked-Off B.T. Running Case	5"	2.44"	4'	4386'
Total Depth				4390'

FORM 187-R1—PRINTED IN U.S.A.

EQUIPMENT DATA

LITTLE'S 96676 75

TEMPERATURE RECORDER CHART



10° each circle

OF_3 = Theoretical Open Flow Potential with/Damage Removed ...

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

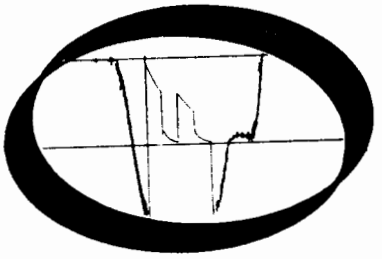
Z = Compressibility Factor ..... ——

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.

Formation Testing Service Report



HALLIBURTON SERVICES
DUNCAN, OKLAHOMA

BRUMM	4	3	4400-4485'	CONTINENTAL GAS AND TRANSMISSION COMPANY
Lease Name	Well No.	Test No.	Tested Interval	Lease Owner/Company Name

FLUID SAMPLE DATA

Sampler Pressure _____ P.S.I.G. at Surface
Recovery: Cu. Ft. Gas _____
cc. Oil _____
cc. Water _____
cc. Mud _____
Tot. Liquid cc. _____
Gravity 32 ° API @ 60 °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 9.6 vis 50 sec

Date 2-12-79 Ticket Number 631202
Kind of Job OPEN HOLE Halliburton District OBERLIN
Tester J. MONDERO Witness W. S. LARSON
Drilling Contractor MURFIN DRILLING # 7 DR

EQUIPMENT & HOLE DATA

Formation Tested Lower Kansas City C & O
Elevation 3375' Ft.
Net Productive Interval - Ft.
All Depths Measured From Kelly Bushing
Total Depth 4485' Ft.
Main Hole/Casing Size 7 7/8"
Drill Collar Length 118' I.D. 2.50"
Drill Pipe Length 954' WP-3297' I.D. 2.764"-3.826"
Packer Depth(s) 4394-4400' Ft.
Depth Tester Valve 4381' Ft.

Cushion TYPE AMOUNT Ft. Depth Back Pres. Valve
Surface Choke .25" Bottom Choke .75"

Recovered 20 Feet of clean oil
Recovered 80 Feet of oil cut mud 50% oil, no water
Recovered Feet of
Recovered Feet of
Recovered Feet of

Meas. From Tester Valve

Remarks SEE PRODUCTION TEST DATA SHEET

TEMPERATURE	Gauge No. 1891	Gauge No. 1890	Gauge No.	TIME
	Depth: 4403 Ft.	Depth: 4482 Ft.	Depth: Ft.	
	12 Hour Clock	12 Hour Clock	Hour Clock	Tool Opened A.M.
Est. °F.	Blanked Off No	Blanked Off Yes	Blanked Off	11:30 P.M.
4480'				Opened A.M.
Actual 137 °F.	Pressures	Pressures	Pressures	Bypass 15:30 P.M.

		Field	Office	Field	Office	Field	Office	Reported Minutes	Computed Minutes
Initial Hydrostatic			2267	2292	2305				
First Period	Flow Initial		19	54	63			—	—
	Flow Final		29	72	72			30	29
	Closed in		1311	1347	1350			60	59
Second Period	Flow Initial		43	72	86			—	—
	Flow Final		54	90	100			60	60
	Closed in		1293	1329	1332			90	91
Third Period	Flow Initial							—	—
	Flow Final								
	Closed in								
Final Hydrostatic			2227	2273	2266			—	—

Legal Location Sec. - Twp. - Rng. 7-2S-36W
Lease Name BRUMM
Well No. 4
Test No. 3
Tested Interval 4400-4485'
Field Area
County RAWLINS
State KANSAS
Lease Owner/Company Name CONTINENTAL GAS AND TRANSMISSION COMPANY

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FORMATION TEST DATA

LITTLE'S 102548 5M 9/76

5

Casing perfs._____ Bottom choke_____ Surf. temp._____ °F Ticket No. 631202

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
0630					Called out
0815					On location, rig pulling drill pipe,
					Planned job.
0910					Picked up and made up tool
0935					Tool in table
1000					Went in hole
1130					Opened tool with a weak blow increasing
					to 2"
1200					Closed tool
1300					Opened tool with a weak blow increasing
					to 2"
1400					Closed tool
1530					Off bottom
1720					Tool in table
1800					Laid tool down
					Read charts

Gauge No.	1891	Depth	4403'	Clock No.	7105	12 hour	Ticket No.	631202

	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	19	.000		29	.000	43	.000		54					
1	.0275	23*	.0201		55**	.0667	40	.0467		109***					
2	.0618	25	.0470		137	.1333	43	.0867		226					
3	.0961	25	.0738		423	.2000	45	.1267		544					
4	.1304	27	.1007		773	.2667	51	.1668		873					
5	.1647	28	.1275		997	.3334	52	.2068		1063					
6	.1990	29	.1544		1116	.4000	54	.2468		1159					
7			.1812		1186			.2868		1191					
8			.2081		1228			.3268		1238					
9			.2349		1255			.3669		1257					
10			.2618		1273			.4069		1270					
11			.2886		1286			.4469		1278					
12			.3155		1296			.4869		1284					
13			.3423		1302			.5269		1288					
14			.3692		1307			.5670		1292					
15			.3960		1311			.6070		1293					

Gauge No.	1890	Depth	4482'	Clock No.	3000	hour	12

0	.000	63	.000		72	.000	86	.000		100					
1	.0273	66*	.0203		92**	.0677	83	.0470		156***					
2	.0615	68	.0473		171	.1353	86	.0873		288					
3	.0956	68	.0744		458	.2030	90	.1276		620					
4	.1297	69	.1014		798	.2707	94	.1679		935					
5	.1639	71	.1285		1020	.3384	95	.2081		1113					
6	.1980	72	.1555		1149	.4060	100	.2484		1203					
7			.1826		1220			.2887		1251					
8			.2096		1266			.3290		1280					
9			.2367		1294			.3693		1298					
10			.2637		1313			.4096		1310					
11			.2908		1325			.4499		1317					
12			.3178		1335			.4901		1323					
13			.3449		1341			.5304		1327					
14			.3719		1347			.5707		1330					
15			.3990		1350			.6110		1332					
Reading Interval		5		4			10		6						Minutes

REMARKS: *-4 minutes **-3 minutes ***-7 minutes.

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SPECIAL PRESSURE DATA

LITTLE'S 96673 75C 8/74

TICKET NO. 631202

	O. D.	I. D.	LENGTH	DEPTH
Drill Pipe or Tubing				
Reversing Sub	6.50"	2.62'	1'	4252'
~~Water Cushion Valve~~	4 1/2"	2.764"	954' Weight Pipe	
Drill Pipe	4 1/2"	3.826"	3297'	
Drill Collars	6.25'	2.50"	118'	
Handling Sub & Choke Assembly				
Dual CIP Valve	5"	.87"	6'	4371'
Dual CIP Sampler				
Hydro-Spring Tester	5"	.75"	5'	4381'
Multiple CIP Sampler				
Extension Joint				
AP Running Case				
Hydraulic Jar	5"	1.75'	5'	
VR Safety Joint	5"	1"	3'	
Pressure Equalizing Crossover				
Packer Assembly	6.75"	1.53"	6'	4394'
Distributor				
Packer Assembly	6.75"	1.53 "	4'	4400'
Flush Joint Anchor				
Pressure Equalizing Tube				
Blanked-Off B.T. Running Case	5"	2.25 "	4'	4403'
Drill Collars				
Anchor Pipe Safety Joint				
Packer Assembly				
Distributor				
Packer Assembly				
Anchor Pipe Safety Joint				
4½ x 3½" X overs-1 set	5.75"		2'	
Side Wall Anchor	5.75"	2.76"	31' WP 4 1/2 FH	
Drill Collars				
Flush Joint Anchor	5"	2.37"	43'	
HT-500	5"	2.25"	1'	4480'
Blanked-Off B.T. Running Case	5"	2.44"	4'	4482'
Total Depth				4485'

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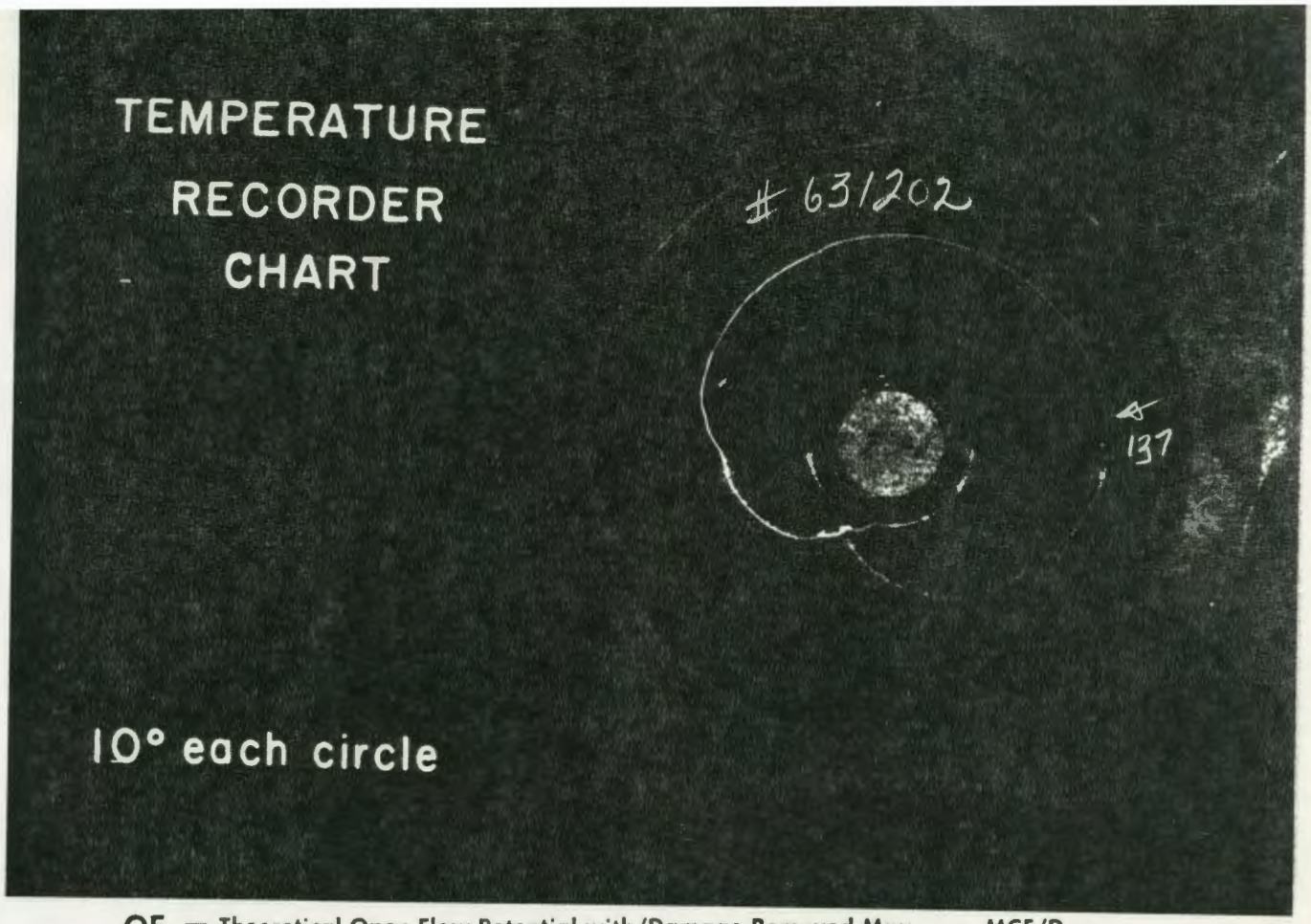
EQUIPMENT DATA

LITTLE'S 96676 75C 8/74



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.