

TRILOBITE TESTING, L.L.C.

P.O. Box 362 • Hays, Kansas 67601

Drill-Stem Test Data

Well Name GROSE #4 Test No. 1 Date 10/26/92
Company MID CONTINENT RESOURCES INC. Zone CHEROKEE
Address P.O. BOX 399 GARDEN CITY KS 67845 Elevation 2194
Co. Rep./Geo. SCOTT CORSAIR Cont. EMPHASIS RIG #5 Est. Ft. of Pay _____
Location: Sec. 3 Twp. 19S Rge. 21W Co. NESS State KS

Interval Tested <u>4160-4187</u>	Drill Pipe Size <u>4.5" XH</u>
Anchor Length <u>27</u>	Wt. Pipe I.D. - 2.7 Ft. Run <u>636</u>
Top Packer Depth <u>4155</u>	Drill Collar - 2.25 Ft. Run _____
Bottom Packer Depth <u>4160</u>	Mud Wt. <u>9</u> lb/Gal.
Total Depth <u>4187</u>	Viscosity <u>46</u> Filtrate <u>10.8</u>

Tool Open @ 4:15 AM Initial Blow WEAK-BUILDING TO 3/4"

Final Blow NO BLOW-FLUSHED TOOL-NO HELP

Recovery - Total Feet 15 Flush Tool? YES

Rec. <u>15</u>	Feet of <u>DRILLING MUD</u>
Rec. _____	Feet of _____
Rec. _____	Feet of _____
Rec. _____	Feet of _____
Rec. _____	Feet of _____

BHT 116 °F Gravity _____ °API @ _____ °F Corrected Gravity _____ °API
RW _____ @ _____ °F Chlorides _____ ppm Recovery Chlorides _____ ppm System

(A) Initial Hydrostatic Mud 2131.6 PSI AK1 Recorder No. 13754 Range 4000

(B) First Initial Flow Pressure 35.1 PSI @ (depth) 4164 w / Clock No. 25828

(C) First Final Flow Pressure 35.1 PSI AK1 Recorder No. 7437 Range 4200

(D) Initial Shut-in Pressure 333.6 PSI @ (depth) 4183 w / Clock No. 8376

(E) Second Initial Flow Pressure 57.4 PSI AK1 Recorder No. _____ Range _____

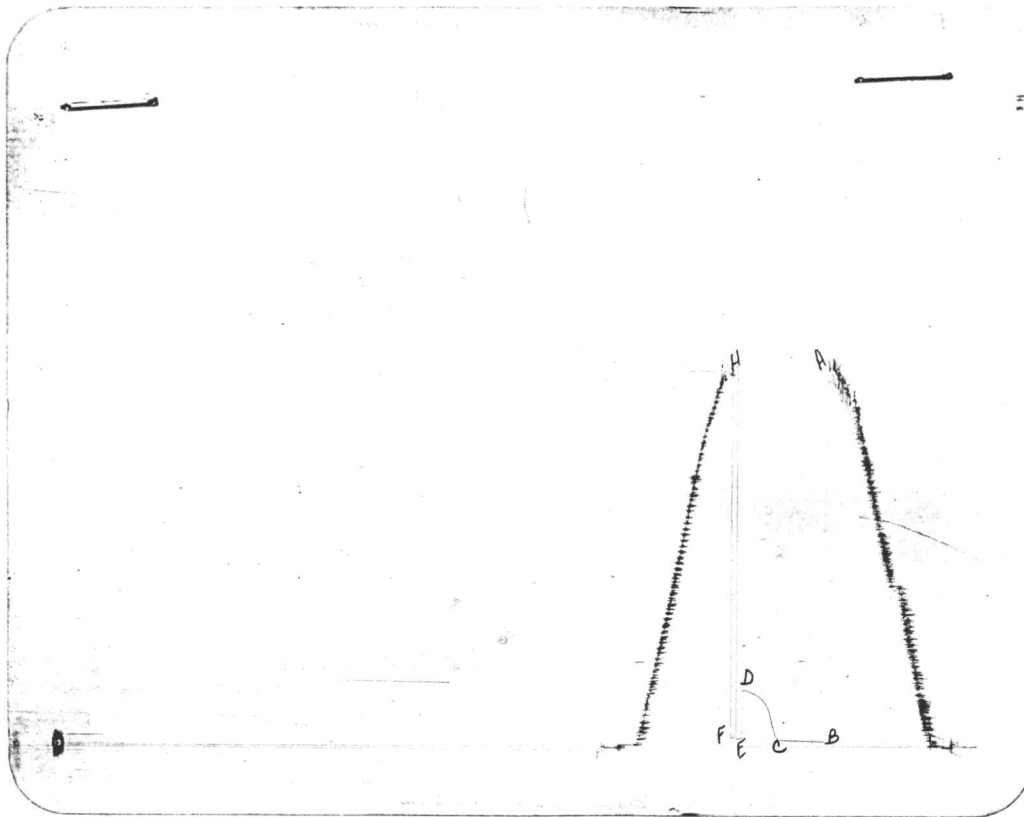
(F) Second Final Flow Pressure 57.4 PSI @ (depth) _____ w / Clock No. _____

(G) Final Shut-in Pressure _____ PSI Initial Opening 30 Final Flow 10

(H) Final Hydrostatic Mud 2040.9 PSI Initial Shut-in 30 Final Shut-in 0

Our Representative DAN BANGLE

CHART PAGE



This is an actual photograph of recorder chart

	FIELD READING	OFFICE READING
(A) INITIAL HYDROSTATIC MUD	2125	2131.6
(B) FIRST INITIAL FLOW PRESSURE	33	35.1
(C) FIRST FINAL FLOW PRESSURE	33	35.1
(D) INITIAL CLOSED-IN PRESSURE	330	333.6
(E) SECOND INITIAL FLOW PRESSURE	55	57.4
(F) SECOND FINAL FLOW PRESSURE	55	57.4
(G) FINAL CLOSED-IN PRESSURE		
(H) FINAL HYDROSTATIC MUD	2041	2040.9

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Drill-Stem Test Data

Well Name GROSE #4 Test No. 2 Date 10/26/92
Company MID CONTINENT RESOURCES INC. Zone CHEROKEE
Address P.O. BOX 399 GARDEN CITY KS 67845 Elevation 2194
Co. Rep./Geo. SCOTT CORSAIR Cont. EMPHASIS RIG #5 Est. Ft. of Pay 6
Location: Sec. 3 Twp. 19S Rge. 21W Co. NESS State KS

Interval Tested <u>4162-4216</u>	Drill Pipe Size <u>4.5" XH</u>
Anchor Length <u>54</u>	Wt. Pipe I.D. - 2.7 Ft. Run <u>636</u>
Top Packer Depth <u>4157</u>	Drill Collar - 2.25 Ft. Run <u> </u>
Bottom Packer Depth <u>4162</u>	Mud Wt. <u>9.5</u> lb/Gal.
Total Depth <u>4216</u>	Viscosity <u>42</u> Filtrate <u>11</u>

Tool Open @ 4:30 PM Initial Blow BOTTOM OF BUCKET IN 37 MINUTES

Final Blow WEAK-BUILDING TO 6" FAIR BLOW

Recovery - Total Feet 377 Flush Tool? NO

Rec. <u>180</u>	Feet of <u>GAS IN PIPE</u>
Rec. <u>67</u>	Feet of <u>CLEAN GASSY OIL-10%GAS/90%OIL</u>
Rec. <u>62</u>	Feet of <u>OIL CUT GSY MUD-10%GAS/30%OIL/60%MUD</u>
Rec. <u>248</u>	Feet of <u>OIL CUT GSY MUD-10%GAS/10%OIL/80%MUD</u>
Rec. <u> </u>	Feet of <u> </u>

BHT 118 °F Gravity °API @ °F Corrected Gravity 36 °API
RW @ °F Chlorides ppm Recovery Chlorides ppm System

(A) Initial Hydrostatic Mud 2147.8 PSI AK1 Recorder No. 13754 Range 4000

(B) First Initial Flow Pressure 61.0 PSI @ (depth) 4166 w / Clock No. 25828

(C) First Final Flow Pressure 133.8 PSI AK1 Recorder No. 7437 Range 4200

(D) Initial Shut-in Pressure 417.3 PSI @ (depth) 4212 w / Clock No. 8376

(E) Second Initial Flow Pressure 146.6 PSI AK1 Recorder No. Range

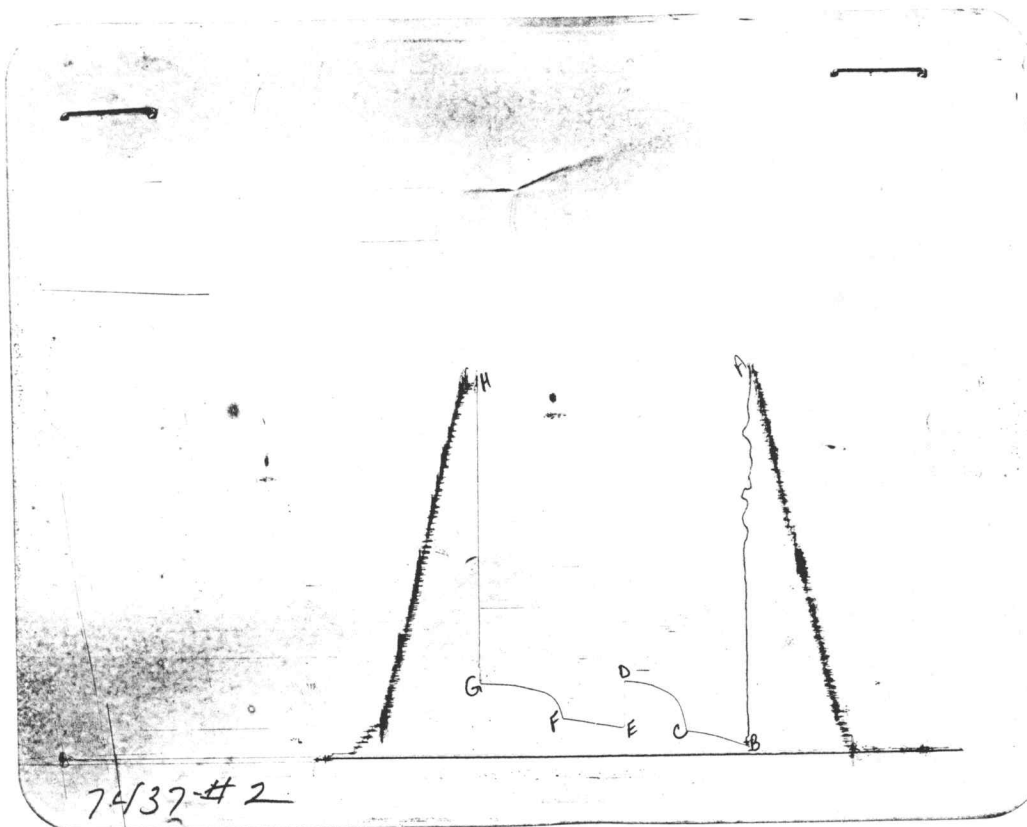
(F) Second Final Flow Pressure 205.7 PSI @ (depth) w / Clock No.

(G) Final Shut-in Pressure 412.4 PSI Initial Opening 45 Final Flow 45

(H) Final Hydrostatic Mud 2086.6 PSI Initial Shut-in 45 Final Shut-in 60

Our Representative DAN BANGLE

CHART PAGE



This is an actual photograph of recorder chart

	FIELD READING	OFFICE READING
(A) INITIAL HYDROSTATIC MUD	2137	2147.8
(B) FIRST INITIAL FLOW PRESSURE	68	61
(C) FIRST FINAL FLOW PRESSURE	127	133.8
(D) INITIAL CLOSED-IN PRESSURE	413	417.3
(E) SECOND INITIAL FLOW PRESSURE	157	146.6
(F) SECOND FINAL FLOW PRESSURE	196	205.7
(G) FINAL CLOSED-IN PRESSURE	403	412.4
(H) FINAL HYDROSTATIC MUD	2087	2086.6

CALCULATED RECOVERY ANALYSIS

WEIGHT PIPE

DST #

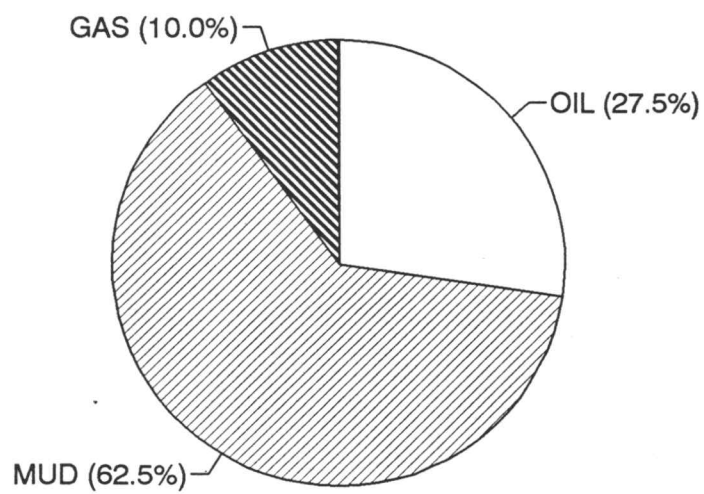
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TICKET #

5553

SAMPLE #	TOTAL FEET	GAS %	FEET	OIL %	FEET	WATER %	FEET	MUD %	FEET
1	67	10	6.7	90	60.3	0	0	0	0
2	62	10	6.2	30	18.6	0	0	60	37.2
3	248	10	24.8	10	24.8	0	0	80	198.4
4			0		0		0		0
5			0		0		0		0
TOTAL	377	10	37.7	27.506631	103.7	0	0	62.493	235.6

			HRS OPEN	BBL/DAY
BBL OIL=	0.7259	*	1.5	11.6144
BBL WATER=	0	*		0
BBL MUD=	1.6492			
BBL GAS=	0.2639			



COMPUTER EVALUATION BY TRILOBITE TESTING, L.L.C.

MID CONTINENT RESOUR GROSE #4

DST 2

3 19S 21W NESS KS

ELEVATION:	2194 KB	EST. PAY	6 FT
DATUM:	-1973	ZONE TESTED:	CHEROKEE
TEST INTERVAL:	4162-4216	TIME INTERVALS:	45-45-45-60
RECORDER DEPTH:	4166	VISCOSITY:	5.468 CP
BOTTOM HOLE TEMP:	118	HOLE SIZE:	7.875 IN

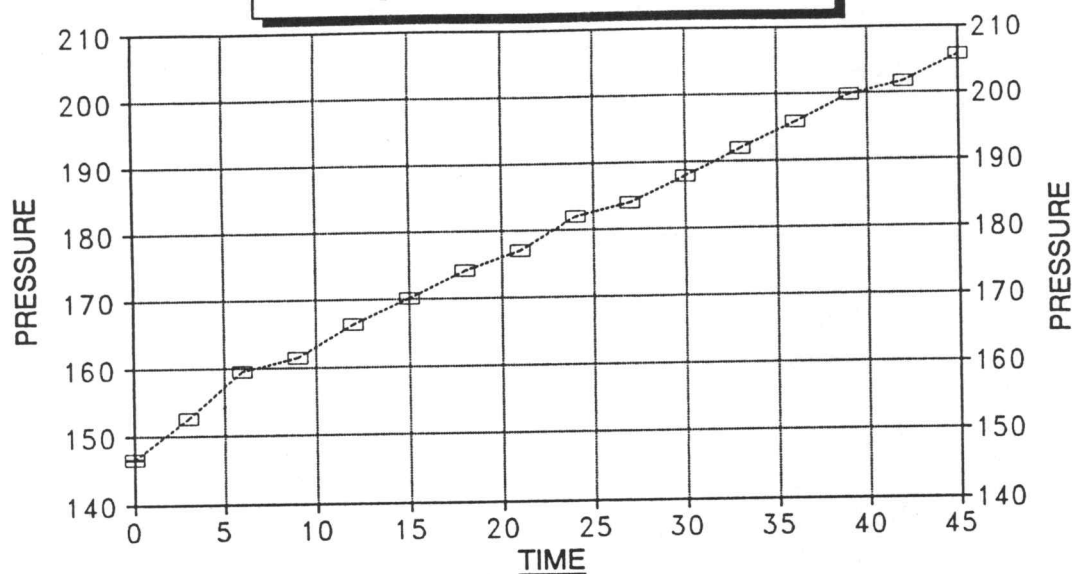
CUBIC FEET OF GAS IN PIPE:	7.02		
TOTAL FEET OF RECOVERY:	377.00	CORRECTED PIPE FILLUP:	562.022
TOTAL BARRELS OF RECOVERY:	2.64	CORR. BARRELS OF RECOVERY:	3.934 BBL
BARRELS IN DRILL PIPE:	0.00	API GRAVITY:	36
BARRELS IN WEIGHT PIPE:	2.64	FLUID GRADIENT:	0.366
BARRELS IN DRILL COLLARS:	0.00		
GAS OIL RATIO:	2.6615	CU.FT/BBL	
BUBBLE POINT PRESSURE:	27.882		
UNCORRECTED INITIAL PRODUCTION:			42.22 BBL
INITIAL PRODUCTION CORRECTED TO FINAL FLOW PRESSURE:			62.94 BBL/DAY
INITIAL PRODUCTION CORRECTED TO PSEUDO STEADY FLOW STATE:			32.696

INITIAL SLOPE	183.00 PSI/CYCLE	FINAL SLOPE	74.06 PSI/CYCLE
INITIAL P*	470 PSI	FINAL P*	442 PSI

TRANSMISSIBILITY	138.19 (MD.-FT./CP.)
PERMEABILITY	125.95 (MD.)
INDICATED FLOW CAPACITY	755.71)MD.FT)
PRODUCTIVITY INDEX	0.16 (BARRELS/DAY/PSI)
DAMAGE RATIO	0.58
RADIUS OF INVESTIGATION	106.47 (FT,)
POTENTIOMETRIC SURFACE	-947.30 (FT.)
DRAWDOWN FACTOR	5.958 (%)

DELTA T DELTA P

FINAL FLOW - DST #2



--- GROSE #4

INITIAL PRODUCTION CORRECTED TO PSEUDO STEADY FLOW STATE:

32.696

FINAL FLOW

RECORDER # 13754

DST # DST #2

TIME(MIN)	PRESSURE	<> PRESSURE
0	146.6	146.6
3	152.5	5.9
6	159.4	6.9
9	161.4	2
12	166.3	4.9
15	170.2	3.9
18	174.2	4
21	177.1	2.9
24	182	4.9
27	184	2
30	187.9	3.9
33	191.9	4
36	195.8	3.9
39	199.8	4
42	201.7	1.9
45	205.7	4

GROSE #4
INITIAL

DST #2
SHUTIN
45 TOTAL FLOW TIME

Slope 183.00 psi/cycle
P * 470 psi

TIME(MIN)	Pws (psi)	Log Horn T	<> PRESSURE	Horn T
3	229.3	1.204	229.3	16
6	294.2	0.929	64.9	9
9	321.8	0.778	27.6	6
12	340.5	0.677	18.7	5
15	353.3	0.602	12.8	4
18	364.1	0.544	10.8	4
21	374.0	0.497	9.9	3
24	382.8	0.459	8.8	3
27	390.7	0.426	7.9	3
30	396.6	0.398	5.9	3
X 33	401.5	0.374	4.9	2
36	405.5	0.352	4.0	2
39	408.4	0.333	2.9	2
42	411.4	0.316	3.0	2
45	414.3	0.301	2.9	2
X 48	417.3	0.287	3.0	2

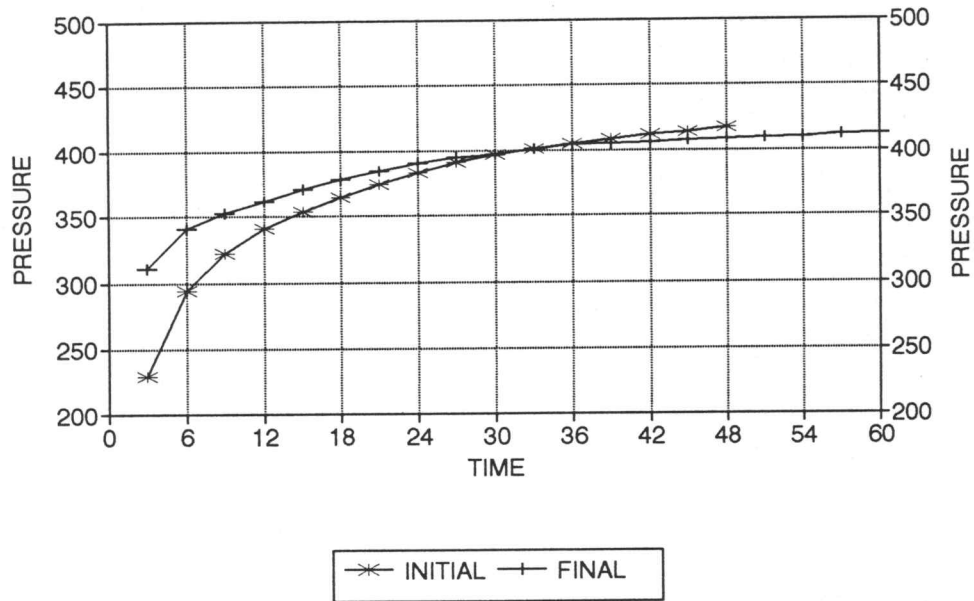
GROSE #4
FINAL

DST #2
SHUTIN
90 TOTAL FLOW TIME

Slope 74.06 psi/cycle
P * 442 psi

Pws (psi)	Log Horn T	<> PRESSURE	Horn T
3	1.491	311.0	31
6	1.204	29.5	16
9	1.041	11.8	11
12	0.929	8.9	9
15	0.845	9.8	7
18	0.778	6.9	6
21	0.723	6.9	5
24	0.677	4.9	5
27	0.637	4.9	4
30	0.602	2.0	4
33	0.571	4.9	4
36	0.544	3.0	4
39	0.520	1.0	3
42	0.497	0.9	3
45	0.477	1.0	3
48	0.459	1.0	3
51	0.442	1.0	3
X 54	0.426	1.0	3
57	0.411	1.0	3
60	0.398	1.0	3

GROSE #4 / DST #2 DELTA T DELTA P



HORNER PLOT

