

# CHENEY TESTING COMPANY, INC.

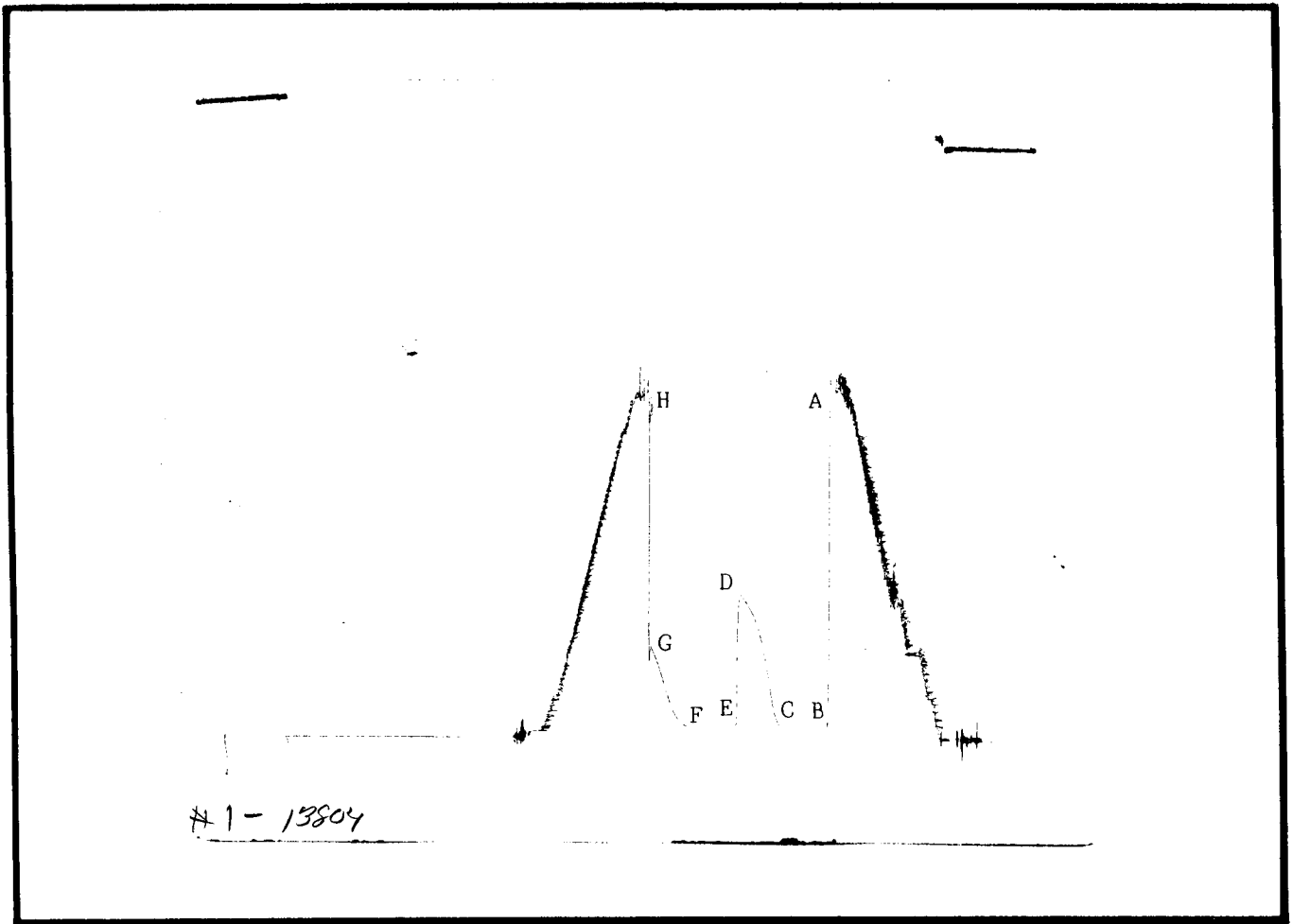
P. O. Box 367 HILL CITY, KANSAS 67642

## DRILL-STEM TEST DATA

Company <u>A.L. Abercrombie</u>	Test No. <u>1</u>
Well Name & Number <u>Mowry #2</u>	Zone Tested <u>Lansing 160</u>
Company Address <u>801 Union Center Wichita, Ks.</u>	Date <u>10/29/84</u>
Company Rep. <u>Bill Darrow</u>	Tester <u>Mike Finnesy</u>
Contractor <u>Abercrombie Drilling</u>	Elevation <u>2649 KB</u>
Location: Sec. <u>2</u> Twp. <u>16s</u> Rge. <u>29w</u> Co. <u>   </u> Lane <u>   </u> State <u>Ks.</u>	Est. Feet of Pay <u>   </u>

Recorder No. 13224 Type AK-1 Range 4350 PSI  
 Recorder Depth 4013 Clock # 22993  
 (A) Initial Hydrostatic Mud 1981 PSI  
 (B) First Initial Flow Pressure 42 PSI  
 (C) First Final Flow Pressure 52 PSI  
 (D) Initial Shut-in Pressure 829 PSI  
 (E) Second Initial Flow Pressure 52 PSI  
 (F) Second Final Flow Pressure 52 PSI  
 (G) Final Shut-in Pressure 529 PSI  
 (H) Final Hydrostatic Mud 1929 PSI  
 Temperature 102  
 Mud Weight 9.6 Viscosity 41  
 Fluid Loss 10.4  
 Interval Tested 3982-4018  
 Anchor Length 36  
 Top Packer Depth 3977  
 Bottom Packer Depth 3982  
 Total Depth 4018  
 Drill Pipe Size 4"  
 Wt. Pipe I. D. 2.7 Ft. Run 472  
 Recovery-Total Feet 10  
 Recovered 10 Feet Of Oil spotted mud.  
 Recovered     Feet Of      
 Recovered     Feet Of      
 Recovered     Feet Of      
 Recovered     Feet Of      
 Recovered     Feet Of      
 Extra Equipment     Price of Job    

Recorder No. 13804 Type AK-1 Range 4150 PSI  
 Recorder Depth 4010 Clock # 31197  
 Tool Open Before I.S.I. 30 Mins.  
 Initial Shut-in 45 Mins.  
 Flow Period 30 Mins.  
 Final Shut-in 30 Mins.  
 Top Choke Size 1" Hole Size 7 7/8"  
 Bottom Choke Size 3/4" Rubber Size 6 3/4"  
 Tool Open @ 11:45 PM  
 Blow Remarks 1st open: Weak 1 inch blow,  
decreased to very weak surface blow.  
2nd open: No blow.



This is an actual photograph of recorder chart.

POINT	PRESSURE	
	Field Reading	Office Reading
(A) Initial Hydrostatic Mud .....	1981	PSI
(B) First Initial Flow Pressure .....	42	PSI
(C) First Final Flow Pressure .....	52	PSI
(D) Initial Closed-in Pressure .....	829	PSI
(E) Second Initial Flow Pressure .....	52	PSI
(F) Second Final Flow Pressure .....	52	PSI
(G) Final Closed-in Pressure .....	529	PSI
(H) Final Hydrostatic Mud .....	1929	PSI

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P. O. Box 367

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## DRILL-STEM TEST DATA

Company <u>A.L. Abercrombie Inc.</u>	Test No. <u>2</u>
Well Name & Number <u>Mowry #2</u>	Zone Tested <u>Lansing "180" &amp; "200"</u>
Company Address <u>801 Union Center Wichita, Ks.</u>	Date <u>10/29/84</u>
Company Rep. <u>Bill Darrow</u>	Tester <u>Mike Finnesy</u>
Contractor <u>Abercrombie Drilling Company</u>	Elevation <u>2649 Kb</u>
Location: Sec. <u>2</u> Twp. <u>16s</u> Rge. <u>29w</u> Co. <u>    </u> Lane <u>    </u> State <u>Ks.</u>	Est. Feet of Pay <u>    </u>

Recorder No. 13224 Type AK-1 Range 4350 PSI

Recorder No. 13804 Type AK-1 Range 4150 PSI

Recorder Depth 4059 Clock # 22993

Recorder Depth 4056 Clock # 31197

(A) Initial Hydrostatic Mud 2012 PSI

Tool Open Before I.S.I. 30 Mins.

(B) First Initial Flow Pressure 52 PSI

Initial Shut-in 45 Mins.

(C) First Final Flow Pressure 74 PSI

Flow Period 60 Mins.

(D) Initial Shut-in Pressure 912 PSI

Final Shut-in 45 Mins.

(E) Second Initial Flow Pressure 105 PSI

Top Choke Size 1" Hole Size 7 7/8"

(F) Second Final Flow Pressure 137 PSI

Bottom Choke Size 3/4" Rubber Size 6 3/4"

(G) Final Shut-in Pressure 892 PSI

Tool Open @ 3:35 PM

(H) Final Hydrostatic Mud 1970 PSI

Blow Remarks 1st open: Fair blow, built to

Temperature 113

4 1/2 inches.

Mud Weight 9.5 Viscosity 50

2nd open: Fair blow, built to 5 inches.

Fluid Loss 8.8

Interval Tested 4011-4064

Anchor Length 53

Top Packer Depth 4006

Bottom Packer Depth 4011

Total Depth 4064

Drill Pipe Size 4"

Wt. Pipe I. D. 2.7 Ft. Run 472

Recovery-Total Feet 270

Recovered 30 Feet Of Slightly oil cut muddy water: 10% oil, 25% water & 65% mud.

Recovered 240 Feet Of Watery mud: 55% water & 45% mud.

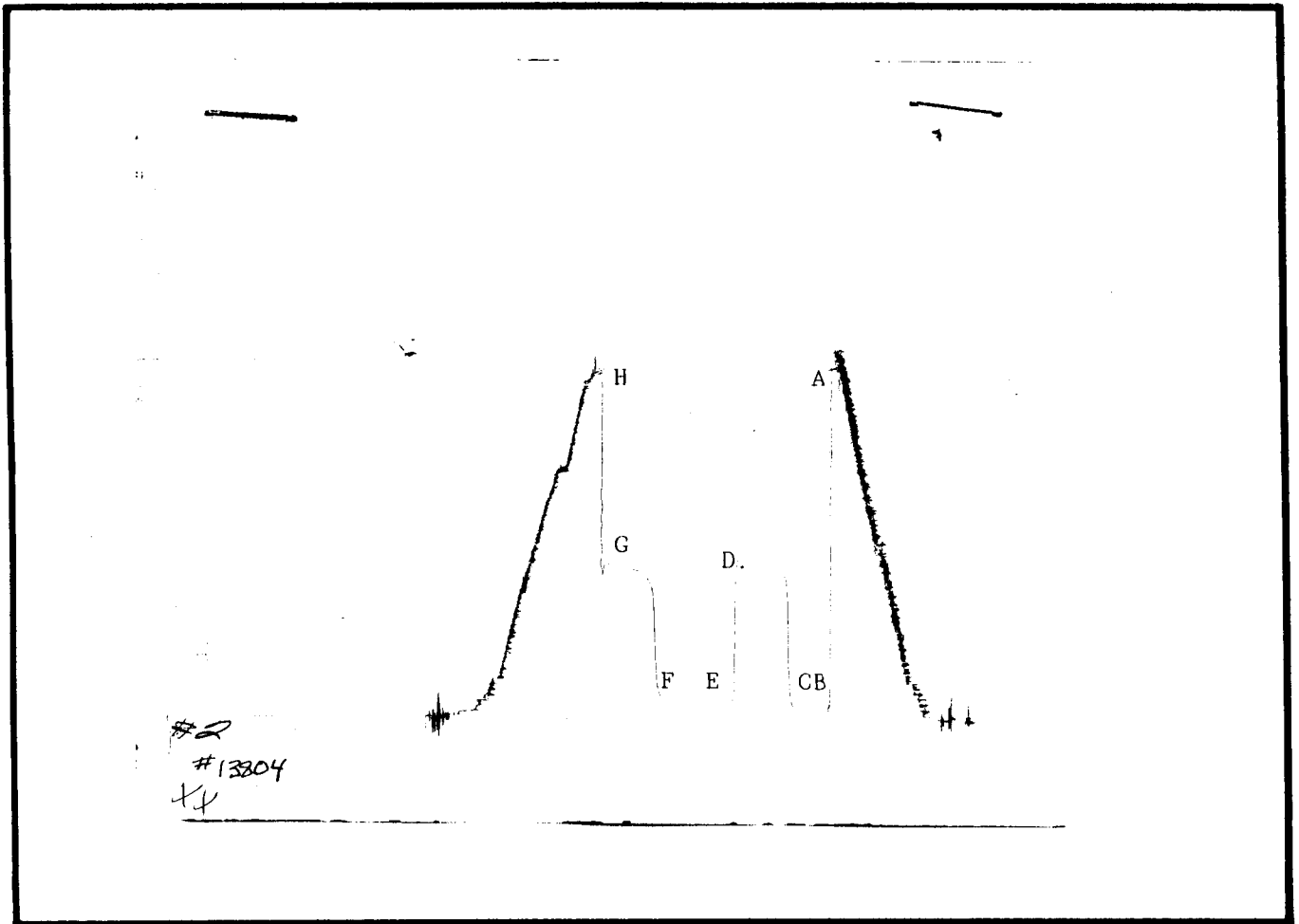
Recovered      Feet Of     

Recovered      Feet Of     

Recovered      Feet Of     

Recovered      Feet Of     

Extra Equipment      Price of Job \$675.00



This is an actual photograph of recorder chart.

POINT	PRESSURE	
	Field Reading	Office Reading
(A) Initial Hydrostatic Mud .....	2012	PSI
(B) First Initial Flow Pressure .....	52	PSI
(C) First Final Flow Pressure .....	74	PSI
(D) Initial Closed-in Pressure .....	912	PSI
(E) Second Initial Flow Pressure .....	105	PSI
(F) Second Final Flow Pressure .....	137	PSI
(G) Final Closed-in Pressure .....	892	PSI
(H) Final Hydrostatic Mud .....	1970	PSI

# CHENEY TESTING COMPANY, INC.

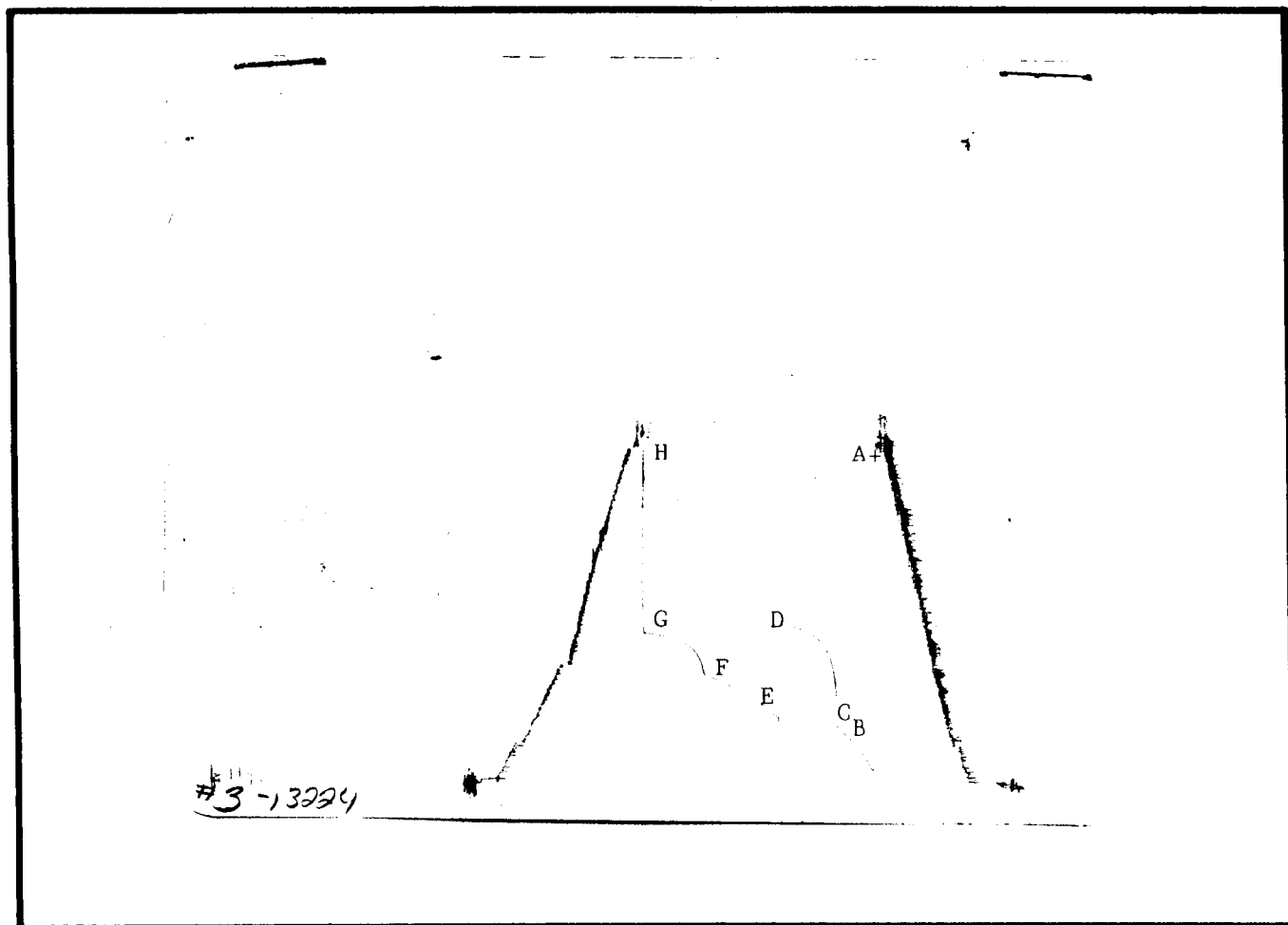
P. O. Box 367 HILL CITY, KANSAS 67642

## DRILL-STEM TEST DATA

Company A.L. Abercrombie Inc.	Test No. 3
Well Name & Number Mowry #2	Zone Tested Lansing "220"
Company Address 801 Union Center Wichita	Date 10/30/84
Company Rep. Bill Darrow	Tester Mike Finnesy
Contractor Abercrombie Drilling Company	Elevation 2649 KB
Location: Sec. 2 Twp. 16s Rge. 29w Co. Lane State Ks.	Est. Feet of Pay

Recorder No. 13224 Type AK-1 Range 4350 PSI  
 Recorder Depth 4109 Clock # 4350  
 (A) Initial Hydrostatic Mud 2173 PSI  
 (B) First Initial Flow Pressure 103 PSI  
 (C) First Final Flow Pressure 360 PSI  
 (D) Initial Shut-in Pressure 957 PSI  
 (E) Second Initial Flow Pressure 382 PSI  
 (F) Second Final Flow Pressure 666 PSI  
 (G) Final Shut-in Pressure 914 PSI  
 (H) Final Hydrostatic Mud 2086 PSI  
 Temperature 115  
 Mud Weight 9.5 Viscosity 50  
 Fluid Loss 8.8  
 Interval Tested 4077-4114  
 Anchor Length 37  
 Top Packer Depth 4072  
 Bottom Packer Depth 4077  
 Total Depth 4114  
 Drill Pipe Size 4"  
 Wt. Pipe I. D. 2.7 Ft. Run 472  
 Recovery-Total Feet 1380  
 Recovered 190 Feet Of Muddy water with scum of oil.  
 Recovered 190 Feet Of Salt water.  
 Recovered \_\_\_\_\_ Feet Of \_\_\_\_\_  
 Recovered \_\_\_\_\_ Feet Of \_\_\_\_\_  
 Recovered \_\_\_\_\_ Feet Of \_\_\_\_\_  
 Recovered \_\_\_\_\_ Feet Of \_\_\_\_\_  
 Extra Equipment \_\_\_\_\_ Price of Job \$675.00

Recorder No. 13804 Type AK-1 Range 4150 PSI  
 Recorder Depth 4106 Clock # 31197  
 Tool Open Before I.S.I. 30 Mins.  
 Initial Shut-in 45 Mins.  
 Flow Period 60 Mins.  
 Final Shut-in 45 Mins.  
 Top Choke Size 1" Hole Size 7 7/8"  
 Bottom Choke Size 3/4" Rubber Size 6 3/4"  
 Tool Open @ 8:15 AM  
 Blow Remarks 1st open: Strong Blow, off  
bottom of bucket in 4 minutes.  
2nd open: Strong blow, off bottom of  
bucket in 6 minutes.



This is an actual photograph of recorder chart.

POINT	PRESSURE	
	Field Reading	Office Reading
(A) Initial Hydrostatic Mud .....	2173	PSI
(B) First Initial Flow Pressure .....	103	PSI
(C) First Final Flow Pressure .....	360	PSI
(D) Initial Closed-in Pressure .....	957	PSI
(E) Second Initial Flow Pressure .....	382	PSI
(F) Second Final Flow Pressure .....	666	PSI
(G) Final Closed-in Pressure .....	914	PSI
(H) Final Hydrostatic Mud .....	2086	PSI

# CHENEY TESTING COMPANY, INC.

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## DRILL-STEM TEST DATA

Company	A.L. Abercrombie Drilling Inc.	Test No.	4
Well Name & Number	Mowry #2	Zone Tested	Marmeton
Company Address	801 Union Center Wichita, Ks.	Date	10/31/84
Company Rep.	Bill Darrow	Tester	Mike Finnesy
Contractor	Abercrombie Drilling Company	Elevation	2649 KB
Location: Sec. 2 Twp. 16s Rge. 29w Co. Lane State Ks.		Est. Feet of Pay	

Recorder No. 13224 Type AK-1 Range 4380 PSI

Recorder Depth 4153 Clock # 22993

(A) Initial Hydrostatic Mud 2168 PSI

(B) First Initial Flow Pressure 74 PSI

(C) First Final Flow Pressure 105 PSI

(D) Initial Shut-in Pressure 954 PSI

(E) Second Initial Flow Pressure 137 PSI

(F) Second Final Flow Pressure 158 PSI

(G) Final Shut-in Pressure 622 PSI

(H) Final Hydrostatic Mud 2095 PSI

Temperature 117

Mud Weight 9.5 Viscosity 50

Fluid Loss 9.6

Interval Tested 4118-4162

Anchor Length 44

Top Packer Depth 4113

Bottom Packer Depth 4118

Total Depth 4162

Drill Pipe Size 4"

Wt. Pipe I. D. 2.7 Ft. Run 472

Recovery-Total Feet 275

Recovered 120 Feet Of Gas in pipe.

Recovered 125 Feet Of Clean Gassy oil: 34 Gravity API Corrected.

Recovered 150 Feet Of Oil cut mud: 65% mud & 35% oil.

Recovered Feet Of

Recovered Feet Of

Recovered Feet Of

Extra Equipment

Recorder No. 13804 Type AK-1 Range 4150 PSI

Recorder Depth 4157 Clock # 31197

Tool Open Before I.S.I. 30 Mins.

Initial Shut-in 45 Mins.

Flow Period 60 Mins.

Final Shut-in 45 Mins.

Top Choke Size 1" Hole Size 7 7/8"

Bottom Choke Size 3/4" Rubber Size 6 3/4"

Tool Open @ 2:50 AM

Blow Remarks 1st open: Strong blow, off bottom of bucket in 20 minutes.

2nd open: Strong blow, off bottom of bucket in 15 minutes.

Price of Job \$675.00

INITIAL SHUT-IN

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RECORDER NO: 13804 DEPTH: 4162 FT.  
INITIAL FLOW TIME (T): 30 MIN.

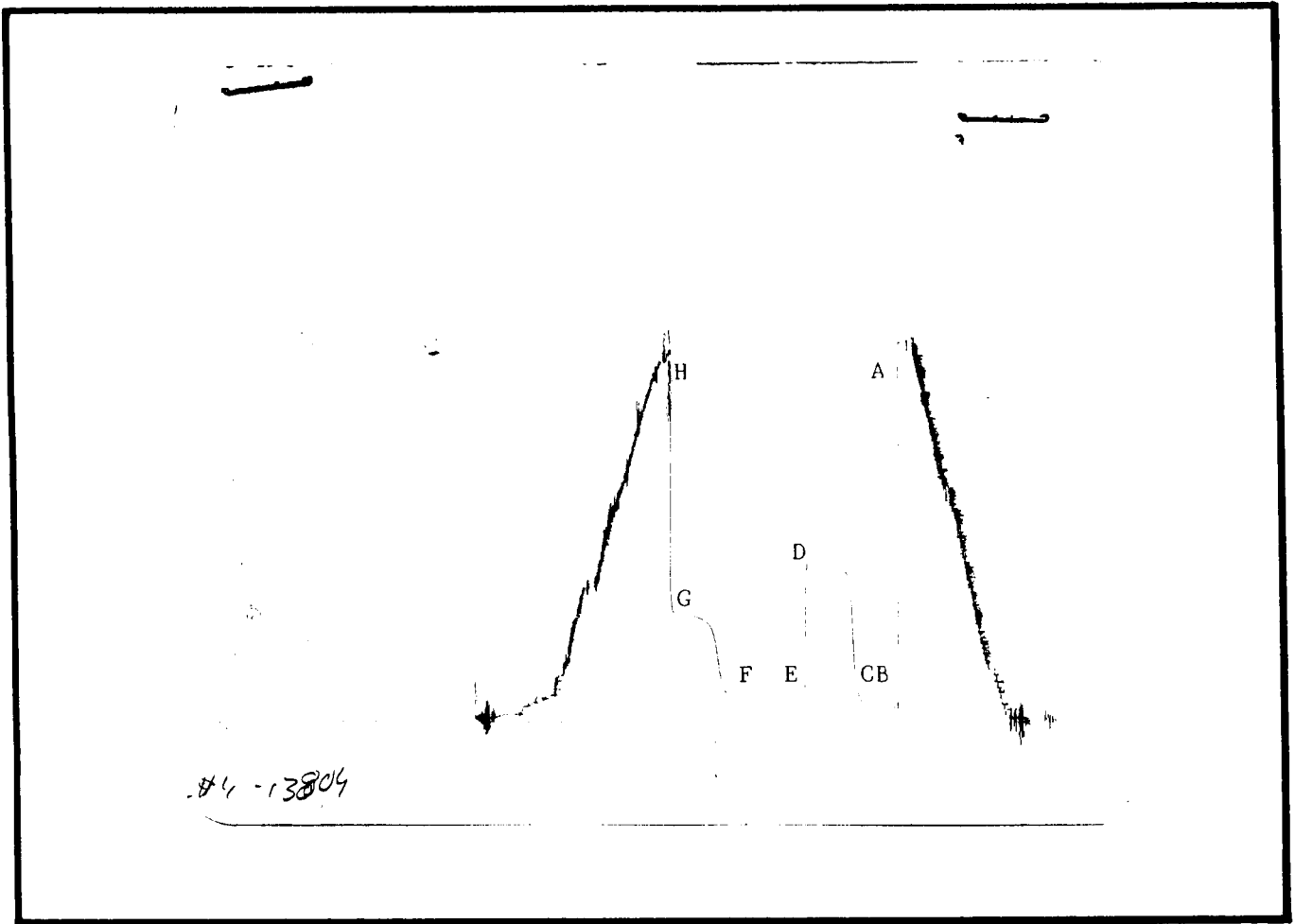
DT(MIN)	LOG((T+DT)/DT)	PRESSURE(P SIG)
0	0.000	115.3
5	0.845	219.0
10	0.602	693.5
15	0.477	867.3
20	0.398	898.8
25	0.342	922.9
30	0.301	935.4
35	0.269	944.9
40	0.243	951.1
45	0.222	955.3

FINAL SHUT-IN

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RECORDER NO: 13804 DEPTH: 4162 FT.  
TOTAL FLOW TIME: 90 MIN.

DT(MIN)	LOG((T+DT)/DT)	PRESSURE(P SIG)
0	0.000	166.1
5	1.279	194.7
10	1.000	377.7
15	0.845	542.6
20	0.740	581.4
25	0.663	597.1
30	0.602	608.6
35	0.553	615.9
40	0.512	623.3
45	0.477	627.5



This is an actual photograph of recorder chart.

POINT	PRESSURE		PSI
	Field Reading	Office Reading	
(A) Initial Hydrostatic Mud .....	2168	2163	PSI
(B) First Initial Flow Pressure .....	74	84.6	PSI
(C) First Final Flow Pressure .....	105	115.3	PSI
(D) Initial Closed-in Pressure .....	954	955.3	PSI
(E) Second Initial Flow Pressure .....	137	132.3	PSI
(F) Second Final Flow Pressure .....	158	166.1	PSI
(G) Final Closed-in Pressure .....	622	627.5	PSI
(H) Final Hydrostatic Mud .....	2095	2090	PSI

CHENEY TESTING CO, INC.  
CALCULATION OF FORMATION CHARACTERISTICS  
FROM DST DATA

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FOR: A.L. ABERCROMBIE INC. DST # 4  
MOWRY #2 FORMATION: MARMATON  
SEC 2-16S-29W ELEVATION: 2649 KB  
LANE COUNTY, KANSAS

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TEST PARAMETERS

TEST INTERVAL: 4118 - 4162	EST PAY: 8
TIME INTERVAL: 30 - 45 - 60 - 45	VISCOSITY OF FLUID: 3
INITIAL FLOW PRESS: 84.6- 115.3	HOLE SIZE: 7.875
FINAL FLOW PRESS: 132.3- 166.1	D.C. CAPACITY:0.00492
SHUT-IN PRESS(I-F): 955.3- 627.5	W.P. CAPACITY:0.00708
BOTTOM HOLE TEMPERATURE: 117	D.P. CAPACITY:0.01402
TOTAL FEET OF RECOVERY: 275	TOTAL BARRELS RECOVERY: 1.9465

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EXTRAPOLATED INITIAL SHUT-IN PRESSURE (PSI): 1013  
SLOPE (PSI-CYCLE): 281 POINTS USED: 5

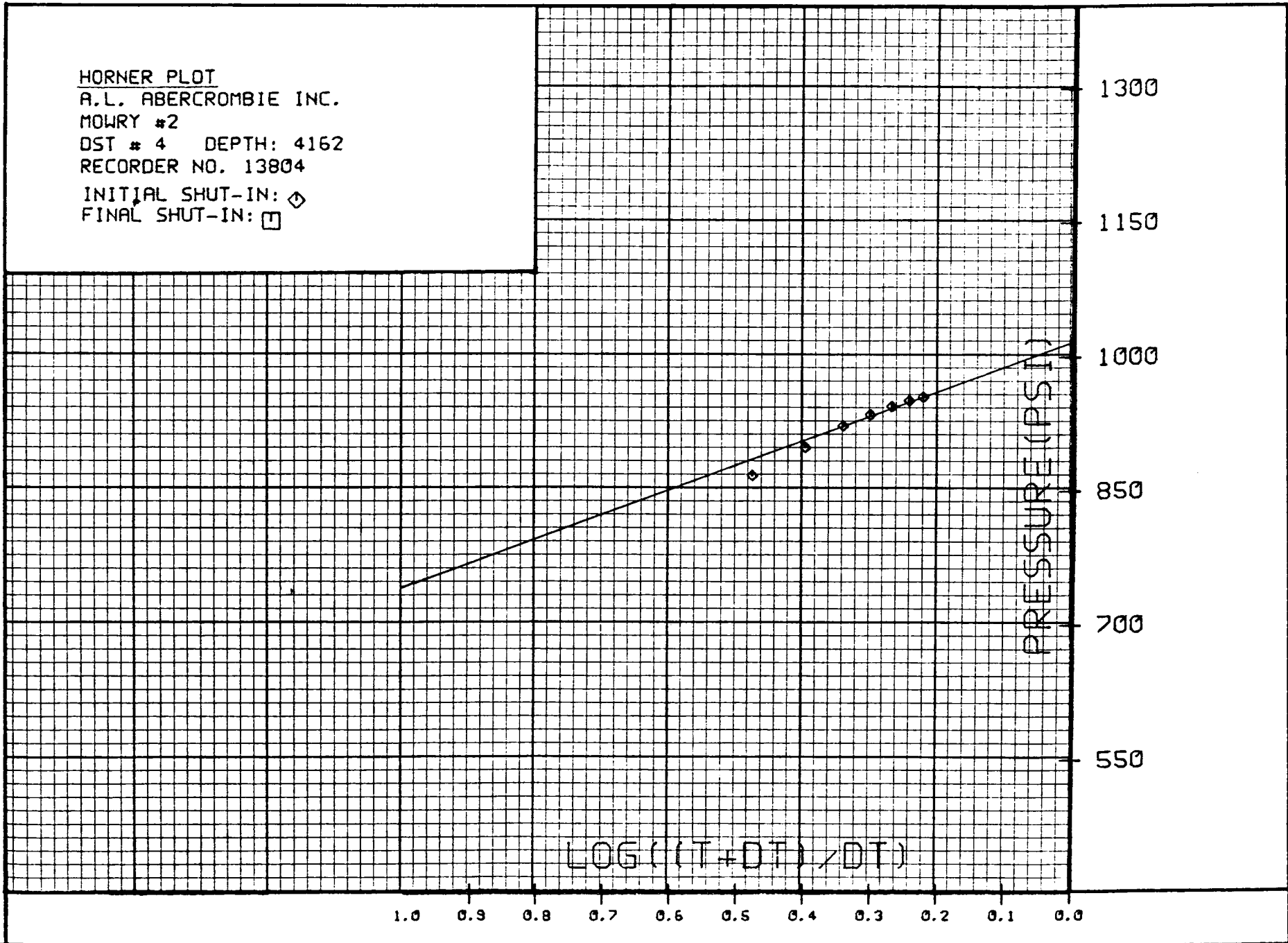
EXTRAPOLATED FINAL SHUT-IN PRESSURE (PSI): 703  
SLOPE (PSI-CYCLE): 155 POINTS USED: 4

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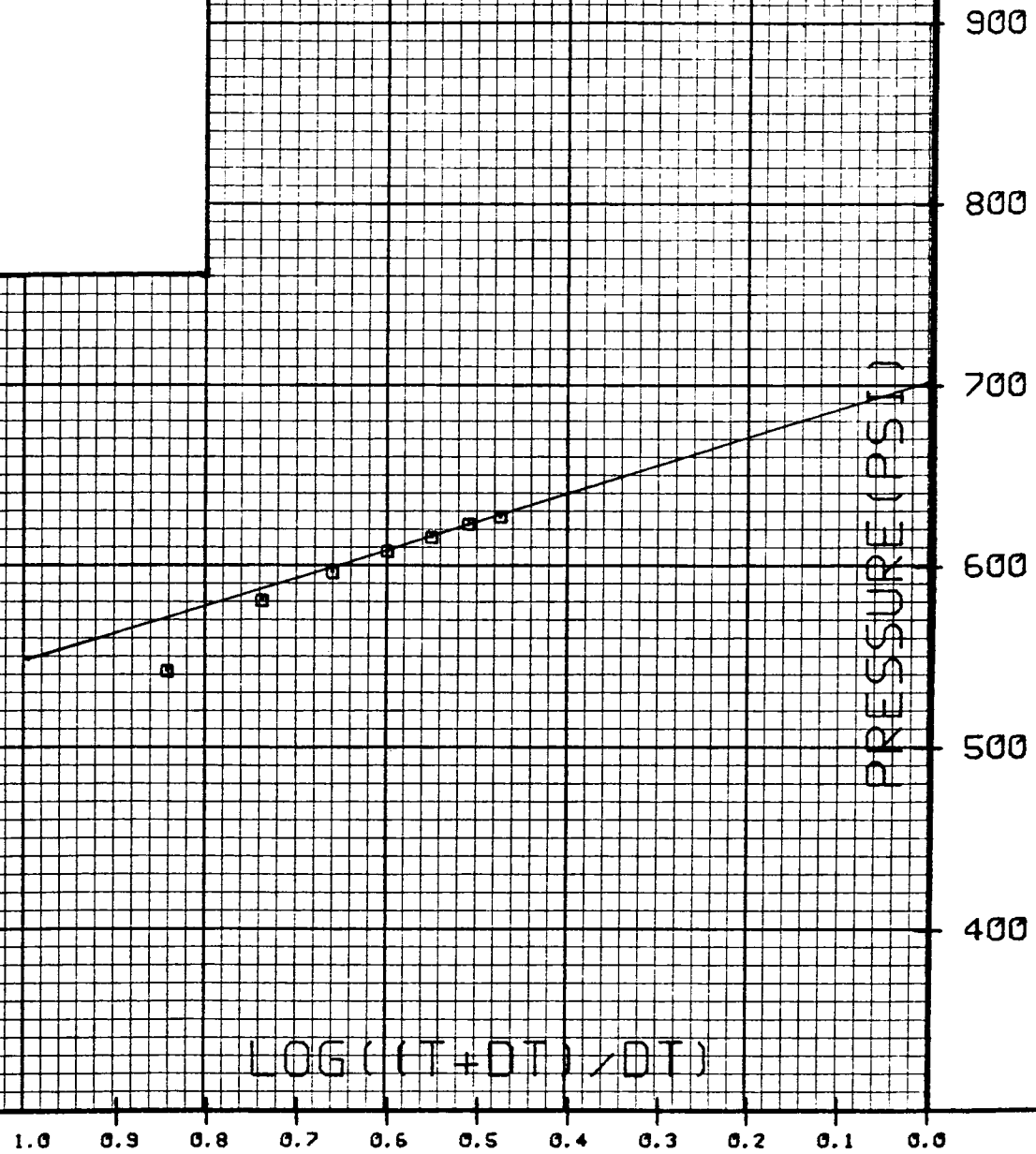
CALCULATIONS

AVERAGE PRODUCTION RATE (B/D)	: 31.14
TRANSMISSIBILITY (MD-FT/CP)	: 32.67
PERMEABILITY (MD)	: 12.25
PRODUCTIVITY INDEX (B/D/PSI)	: 0.0443
DAMAGE RATIO	: 0.634
APPROXIMATE RADIUS OF INVESTIGATION (FT)	: 33.2
DRAWDOWN FACTOR (%)	: 30.602
POTENTIOMETRIC SURFACE (FT)	: 117.26

HORNER PLOT  
A.L. ABERCROMBIE INC.  
MOWRY #2  
DST # 4 DEPTH: 4162  
RECORDER NO. 13804  
INITIAL SHUT-IN:  $\diamond$   
FINAL SHUT-IN:  $\square$



HORNER PLOT  
A.L. ABERCROMBIE INC.  
MOWRY #2  
DST # 4 DEPTH: 4162  
RECORDER NO. 13804  
INITIAL SHUT-IN:  $\diamond$   
FINAL SHUT-IN:  $\square$



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P. O. Box 367

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## DRILL-STEM TEST DATA

Company <u>A.L. Abercrombie Inc.</u>	Test No. <u>5</u>
Well Name & Number <u>Mowry #2</u>	Zone Tested <u>Marometon</u>
Company Address <u>801 Union Center Wichita, Ks.</u>	Date <u>10/31/84</u>
Company Rep. <u>Bill Darrow</u>	Tester <u>Mike Finnesy</u>
Contractor <u>Abercrombie Drilling Company</u>	Elevation <u>2649</u>
Location: Sec. <u>2</u> Twp. <u>16s</u> Rge. <u>29w</u> Co. <u>    </u> Lane <u>    </u> State <u>Ks.</u>	Est. Feet of Pay <u>    </u>

Recorder No. 13224 Type AK-1 Range 4350 PSI  
 Recorder Depth 4193 Clock # 22993

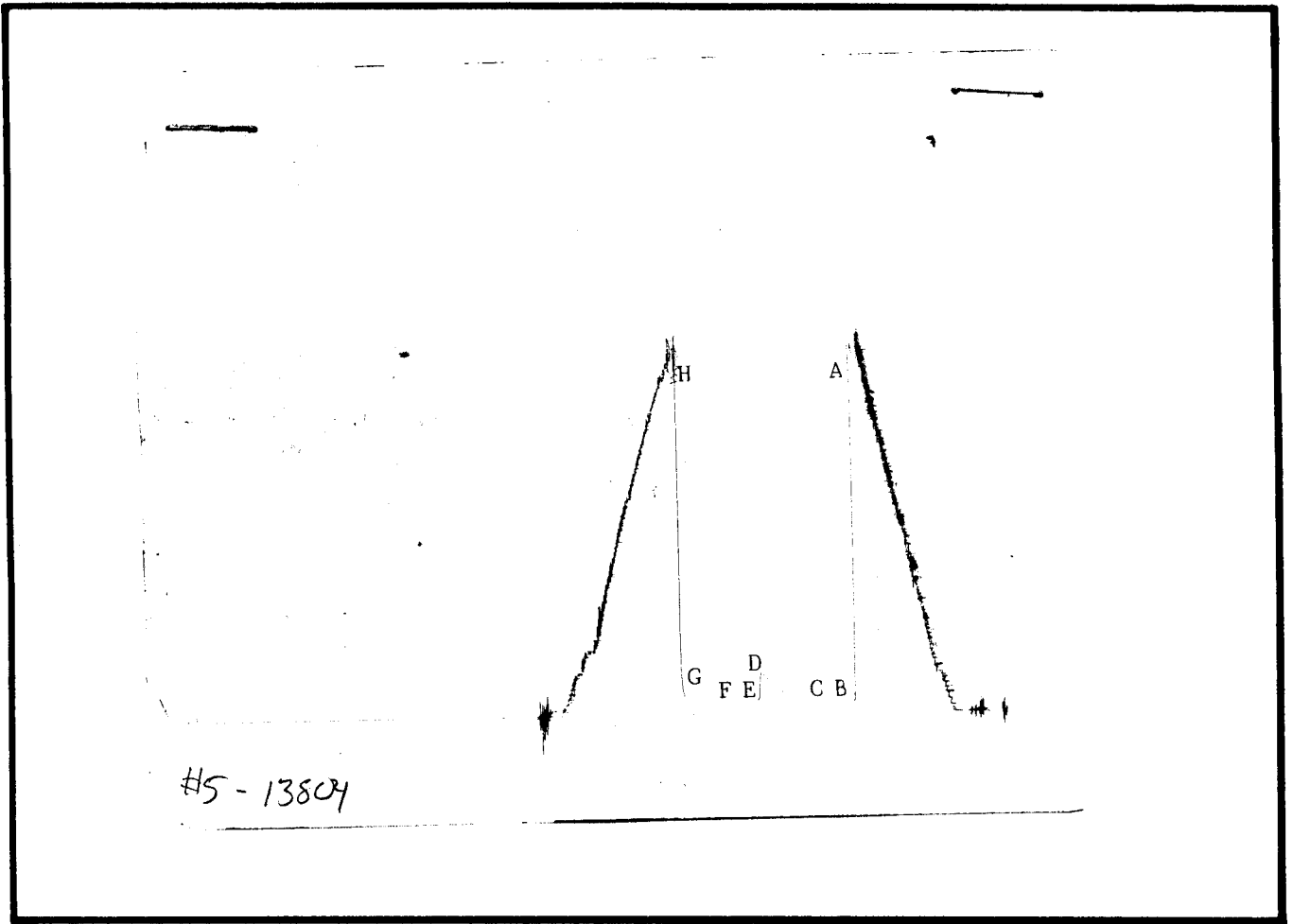
(A) Initial Hydrostatic Mud 2147 PSI  
 (B) First Initial Flow Pressure 42 PSI  
 (C) First Final Flow Pressure 52 PSI  
 (D) Initial Shut-in Pressure 243 PSI  
 (E) Second Initial Flow Pressure 52 PSI  
 (F) Second Final Flow Pressure 52 PSI  
 (G) Final Shut-in Pressure 105 PSI  
 (H) Final Hydrostatic Mud 2064 PSI

Temperature 116  
 Mud Weight 9.2 Viscosity 53  
 Fluid Loss 8.0  
 Interval Tested 4159-4198  
 Anchor Length 39  
 Top Packer Depth 4154  
 Bottom Packer Depth 4159  
 Total Depth 4198  
 Drill Pipe Size 4"  
 Wt. Pipe I. D. 2.7 Ft. Run 472  
 Recovery-Total Feet 20

Recorder No. 13804 Type AK-1 Range 4150 PSI  
 Recorder Depth 4190 Clock # 31197

Tool Open Before I.S.I. 30 Mins.  
 Initial Shut-in 45 Mins.  
 Flow Period 30 Mins.  
 Final Shut-in 30 Mins.  
 Top Choke Size 1" Hole Size 7 7/8"  
 Bottom Choke Size 3/4" Rubber Size 6 3/4"  
 Tool Open @ 7:30 PM  
 Blow Remarks 1st open: Weak blow, built to 1 1/2 inches .  
2nd open: No blow.

Recovered 20 Feet Of Slightly Oil cut mud: 5% oil & 95% mud.  
 Recovered      Feet Of       
 Recovered      Feet Of       
 Recovered      Feet Of       
 Recovered      Feet Of       
 Recovered      Feet Of       
 Extra Equipment      Price of Job \$675.00



This is an actual photograph of recorder chart.

POINT	PRESSURE		PSI
	Field Reading	Office Reading	
(A) Initial Hydrostatic Mud .....	2147		PSI
(B) First Initial Flow Pressure .....	42		PSI
(C) First Final Flow Pressure .....	52		PSI
(D) Initial Closed-in Pressure .....	243		PSI
(E) Second Initial Flow Pressure .....	52		PSI
(F) Second Final Flow Pressure .....	52		PSI
(G) Final Closed-in Pressure .....	105		PSI
(H) Final Hydrostatic Mud .....	2064		PSI

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P. O. Box 367

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## DRILL-STEM TEST DATA

Company <u>A.L. Abercrombie Inc.</u>	Test No. <u>6</u>
Well Name & Number <u>Mowry #2</u>	Zone Tested <u>Johnson</u>
Company Address <u>801 Union Center Wichita</u>	Date <u>11/2/84</u>
Company Rep. <u>Bill Darrow</u>	Tester <u>Mike Finnesy</u>
Contractor <u>Abercrombie Drilling Company</u>	Elevation <u>2649 KB</u>
Location: Sec. <u>2</u> Twp. <u>16s</u> Rge. <u>29w</u> Co. <u>    </u> Lane <u>    </u> State <u>Ks.</u>	Est. Feet of Pay <u>    </u>

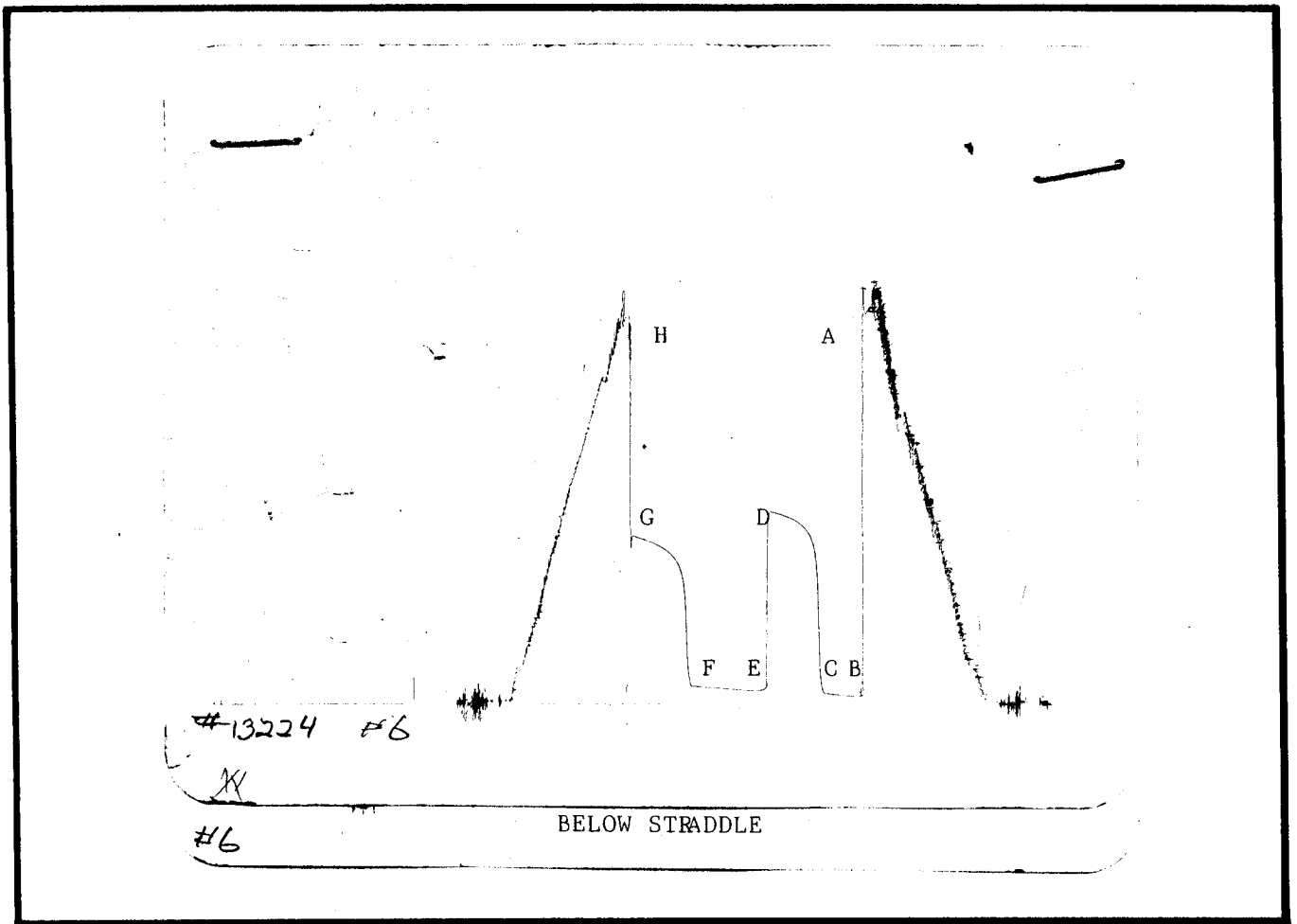
Recorder No. 13804 Type AK-1 Range 4150 PSI  
 Recorder Depth 4370 Clock # 31197  
 (A) Initial Hydrostatic Mud 2478 PSI  
 (B) First Initial Flow Pressure 46 PSI  
 (C) First Final Flow Pressure 69 PSI  
 (D) Initial Shut-in Pressure 1160 PSI  
 (E) Second Initial Flow Pressure 80 PSI  
 (F) Second Final Flow Pressure 114 PSI  
 (G) Final Shut-in Pressure 1021 PSI  
 (H) Final Hydrostatic Mud 2303 PSI  
 Temperature 117  
 Mud Weight 9.0 Viscosity 50  
 Fluid Loss 10.4  
 Interval Tested 4341-4376  
 Anchor Length 35  
 Top Packer Depth 4336-4341  
 Bottom Packer Depth 4376  
 Total Depth 4441  
 Drill Pipe Size 4"XH  
 Wt. Pipe I. D. 2.7 Ft. Run 410  
 Recovery-Total Feet 120

Recorder No. 13224 Type AK-1 Range 4350 PSI  
 Recorder Depth 4367 Clock # 22993  
 Tool Open Before I.S.I. 30 Mins.  
 Initial Shut-in 45 Mins.  
 Flow Period 60 Mins.  
 Final Shut-in 45 Mins.  
 Top Choke Size 1" Hole Size 7 7/8"  
 Bottom Choke Size 3/4" Rubber Size 6 3/4"  
 Tool Open @ 3:30 PM

Blow Remarks 1st open: Weak blow, built to 3 1/2 inches.  
2nd open: Weak blow built to 2 inches.

Recovered 120 Feet Of Drilling mud with few specks of oil in top of tool.  
 Recovered \_\_\_\_\_ Feet Of \_\_\_\_\_  
 Recovered \_\_\_\_\_ Feet Of \_\_\_\_\_  
 Recovered \_\_\_\_\_ Feet Of \_\_\_\_\_  
 Recovered \_\_\_\_\_ Feet Of \_\_\_\_\_  
 Recovered \_\_\_\_\_ Feet Of \_\_\_\_\_

Extra Equipment Straddle, Extra Packer & Circulating Sub Price of Job \$1100.00



This is an actual photograph of recorder chart.

POINT	PRESSURE		PSI
	Field Reading	Office Reading	
(A) Initial Hydrostatic Mud .....	2478		PSI
(B) First Initial Flow Pressure .....	46		PSI
(C) First Final Flow Pressure .....	69		PSI
(D) Initial Closed-in Pressure .....	1160		PSI
(E) Second Initial Flow Pressure .....	80		PSI
(F) Second Final Flow Pressure .....	114		PSI
(G) Final Closed-in Pressure .....	1021		PSI
(H) Final Hydrostatic Mud .....	2303		PSI