CHENEY TESTING COMPANY

P. O. BOX 3 HILL CITY, KANSAS 67642

DRILL-STEM TEST DATA

Company	Abercrombie Drlg. Inc.	Test No.	1
Well Name & Number	Mitten #1	Zone Tested	Ft. Scott
Company Address	Wichta	Date	11-19-78
Comp. Rep.	Greg Cheney	Tester	Orman Bell
Contractor	Co. Tools	Elevation	2654 KB
Location: Sec. 28 Twp. 16 Rge. 26 Co. Ness State KS		Est. Feet of Pay	

Recorder No. 6730 Type AK-1 Range 4200 PSI

Recorder Depth 4483

(A) Initial Hydrostatic Mud 2280 PSI

(B) First Initial Flow Pressure 23 PSI

(C) First Final Flow Pressure 23 PSI

(D) Initial Closed-in Pressure 129 PSI

(E) Second Initial Flow Pressure 32 PSI

(F) Second Final Flow Pressure 32 PSI

(G) Final Closed-in Pressure 107 PSI

(H) Final Hydrostatic Mud 2270 PSI

Temperature 114

Mud Weight 9.6 Viscosity 40

Fluid Loss 17.0

Interval Tested 4440-4486

Anchor Length 46

Top Packer Depth 4435

Bottom Packer Depth 4440

Total Depth 4486

Drill Pipe Size 4½

Wt. Pipe I. D. 2.7 Ft. Run 505

Recovery—Total Feet 50

Recovered 50 Feet Of Heavy spotted thin mud

Recovered Feet Of

Recovered Feet Of

Recovered Feet Of

Extra Equipment None

Recorder No. 10216 Type AK-1 Range 4200 PSI

Recorder Depth 4480

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

Initial Shut-in 45 Mins.

Flow Period 60 Mins.

Final Shut-in 45 Mins.

Surface Choke Size 1"

Bottom Choke Size 3/4"

Main Hole Size 7 7/8"

Rubber Size 6 3/4"

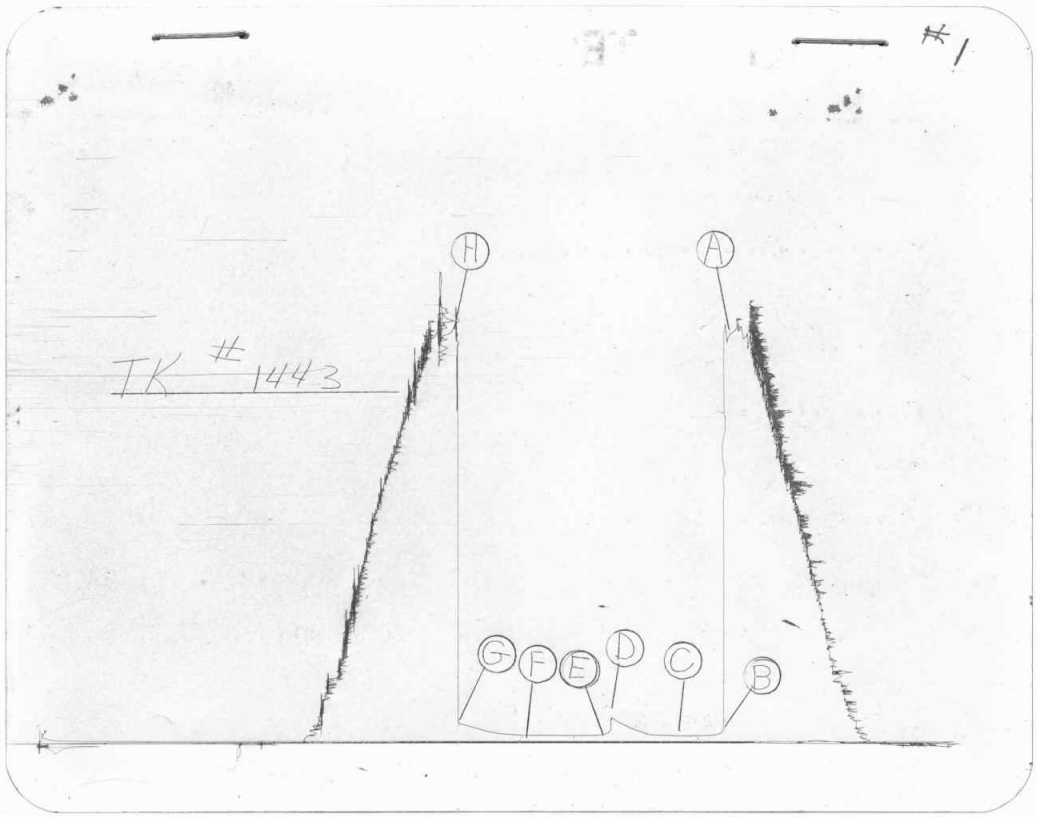
Tool Open @ 9:30

Blow Weak (1" in bucket)

Remarks

Drill Collar I. D. 2.7 Ft. Run 175

Price of Job $440.00



This is an actual photograph of recorder chart.

POINT		PRESSURE Field Reading	Office Reading	
(A)	Initial Hydrostatic Mud	2280		PSI
(B)	First Initial Flow Pressure	23		PSI
(C)	First Final Flow Pressure	23		PSI
(D)	Initial Closed-in Pressure	129		PSI
(E)	Second Initial Flow Pressure	32		PSI
(F)	Second Final Flow Pressure	32		PSI
(G)	Final Closed-in Pressure	107		PSI
(H)	Final Hydrostatic Mud	2270		PSI

COMPANY ABERCROMBIE DRLG. INC. LEASE AND WELL NO. MITTEN #1 SEC. 28 TWP. 16 RGE. 26 TEST NO. 1 DATE 11-19-78

CHENEY TESTING COMPANY

P. O. BOX 3 HILL CITY, KANSAS 67642

DRILL-STEM TEST DATA

Company	Abercrombie Drlg. Inc.	Test No.	2
Well Name & Number	Mitten #1	Zone Tested	Miss.
Company Address	Wichita	Date	11-21-78
Comp. Rep.	Greg Cheney	Tester	Orman Bell
Contractor	Co. Tools	Elevation	2654 KB
Location: Sec. 28 Twp. 16s Rge. 26w Co. Ness State KS		Est. Feet of Pay	

Recorder No. 6730 Type AK-1 Range 4200 PSI

Recorder Depth 4589

(A) Initial Hydrostatic Mud 2396 PSI

(B) First Initial Flow Pressure 140 PSI

(C) First Final Flow Pressure 161 PSI

(D) Initial Closed-in Pressure 1183 PSI

(E) Second Initial Flow Pressure 183 PSI

(F) Second Final Flow Pressure 192 PSI

(G) Final Closed-in Pressure 951 PSI

(H) Final Hydrostatic Mud 2386 PSI

Temperature 116

Mud Weight 9.6 Viscosity 49

Fluid Loss 12.4

Interval Tested 4573-4592

Anchor Length 19

Top Packer Depth 4568

Bottom Packer Depth 4573

Total Depth 4592

Drill Pipe Size 4½

Wt. Pipe I. D. 2.7 Ft. Run 505

Recovery—Total Feet 390

Recovered 15 Feet Of Clean oil

Recovered 375 Feet Of Oil cut mud 10% oil, 90% mud

Recovered Feet Of

Recovered Feet Of

Extra Equipment None

Recorder No. 10216 Type AK-1 Range 4200 PSI

Recorder Depth 4586

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

Initial Shut-in 45 Mins.

Flow Period 60 Mins.

Final Shut-in 45 Mins.

Surface Choke Size 1"

Bottom Choke Size 3/4"

Main Hole Size 7 7/8'

Rubber Size 6 3/4"

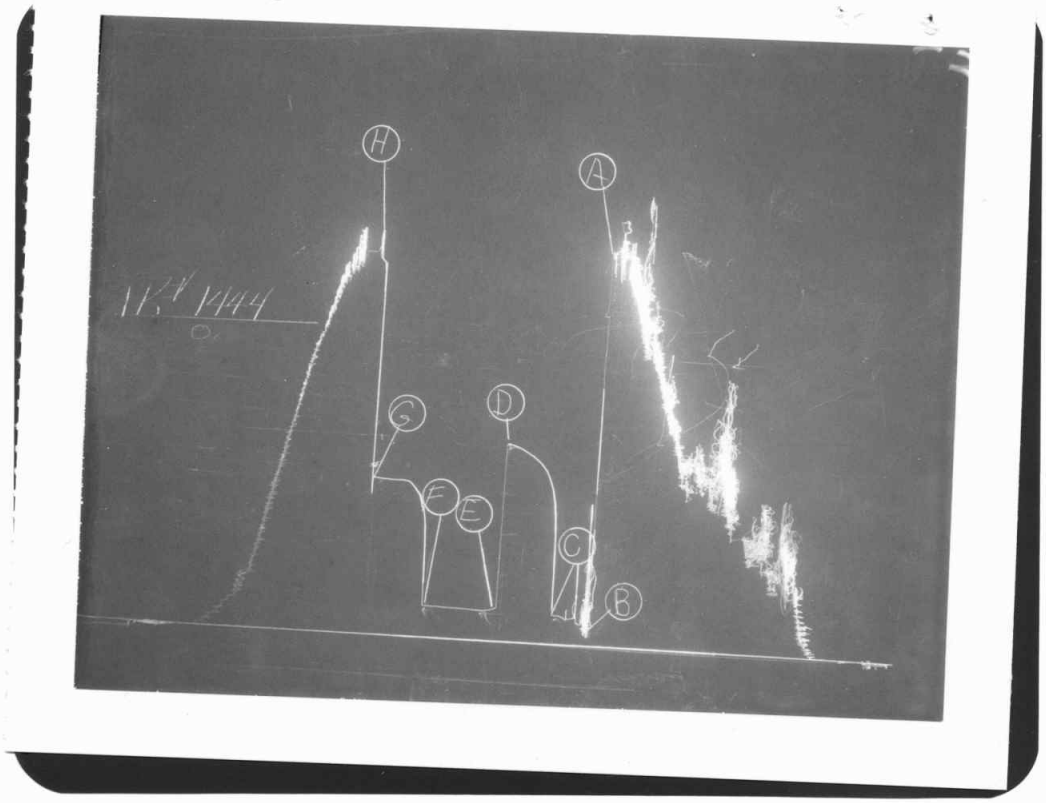
Tool Open @ 12:00 AM

Blow Strong Blow

Remarks Blow decreased down on 1st opening. 2" blow on 2nd opening

Drill Collar I. D. 2.7 Ft. Run 175

Price of Job $440.00



This is an actual photograph of recorder chart.

POINT		PRESSURE Field Reading	Office Reading	
(A)	Initial Hydrostatic Mud	2396		PSI
(B)	First Initial Flow Pressure	140		PSI
(C)	First Final Flow Pressure	161		PSI
(D)	Initial Closed-in Pressure	1183		PSI
(E)	Second Initial Flow Pressure	183		PSI
(F)	Second Final Flow Pressure	192		PSI
(G)	Final Closed-in Pressure	951		PSI
(H)	Final Hydrostatic Mud	2386		PSI

COMPANY ABERCROMBIE DRLG INC. LEASE AND WELL NO. MITTEN #1 SEC. 28 TWP. 16S RGE. 26W TEST NO. 2 DATE 11-21-78

CHENEY TESTING COMPANY

P. O. BOX 3 HILL CITY, KANSAS 67642

DRILL-STEM TEST DATA

Company	Abercrombie Drlg. Inc.	Test No.	3
Well Name & Number	Mitten #1	Zone Tested	Mississippi
Company Address	Wichita, Kan.	Date	11-21-78
Comp. Rep.	Greg Cheney	Tester	Orman Bell
Contractor	Co. Tools	Elevation	2654 K.B.
Location: Sec. 28 Twp. 16S Rge. 26W Co. Ness State Kan		Est. Feet of Pay	5

Recorder No. 6730 Type AK-1 Range 4200 PSI

Recorder Depth 4590

(A) Initial Hydrostatic Mud 2470 PSI

(B) First Initial Flow Pressure 21 PSI

(C) First Final Flow Pressure 21 PSI

(D) Initial Closed-in Pressure 1099 PSI

(E) Second Initial Flow Pressure 32 PSI

(F) Second Final Flow Pressure 49 PSI

(G) Final Closed-in Pressure 1004 PSI

(H) Final Hydrostatic Mud 2440 PSI

Temperature 119

Mud Weight 9.6 Viscosity 51

Fluid Loss 11.4 cc

Interval Tested 4583-4593

Anchor Length 10

Top Packer Depth 4578

Bottom Packer Depth 4583

Total Depth 4593

Drill Pipe Size 4½ EX.H.

Wt. Pipe I. D. 2.7 Ft. Run 505

Recovery—Total Feet

Recovered 100 Feet Of Clean Oil

Recovered 75 Feet Of OCM 10% Oil

Recovered Feet Of

Recovered Feet Of

Recorder No. 10216 Type AK-1 Range 4200 PSI

Recorder Depth 4587

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

Initial Shut-in 60 Mins.

Flow Period 90 Mins.

Final Shut-in 60 Mins.

Surface Choke Size 1"

Bottom Choke Size 3/4"

Main Hole Size 7 7/8"

Rubber Size 6 3/4"

Tool Open @ 11:00 P.M.

Blow Fair

Remarks

Drill Collar I. D. 2.7 Ft. Run 175

Extra Equipment None Price of Job $440.00

CHENEY TESTING COMPANY
Pressure Data

Date 11-21-78 Test Ticket No. 1445

Recorder No. 6730 Capacity 4200 Location 4590 Ft.

Clock No. 10413 Elevation 2654 K.B. Well Temperature 119 °F

Point		Pressure	
A	Initial Hydrostatic Mud	2475	P.S.I.
B	First Initial Flow Pressure	23	P.S.I.
C	First Final Flow Pressure	36	P.S.I.
D	Initial Closed-in Pressure	1131	P.S.I.
E	Second Initial Flow Pressure	43	P.S.I.
F	Second Final Flow Pressure	69	P.S.I.
G	Final Closed-in Pressure	1000	P.S.I.
H	Final Hydrostatic Mud	2422	P.S.I.

	Time Given	Time Computed
Open Tool	11:00 P.M	
First Flow Pressure	30 Mins.	30 Mins.
Initial Closed-in Pressure	60 Mins.	60 Mins.
Second Flow Pressure	90 Mins.	90 Mins.
Final Closed-in Pressure	60 Mins.	60 Mins.

PRESSURE BREAKDOWN

First Flow Pressure
Breakdown: 6 Inc. of 5 mins. and a final inc. of 0 Min.

Point	Mins.	Press.
P 1	0	23
P 2	5	23
P 3	10	23
P 4	15	26
P 5	20	28
P 6	25	32
P 7	30	36
P 8		
P 9		
P10		
P11		
P12		
P13		
P14		
P15		
P16		
P17		
P18		
P19		
P20		

Initial Shut-In
Breakdown: 20 Inc. of 3 mins. and a final inc. of 0 Min.

Point	Minutes	Press.
	0	25
	3	107
	6	439
	9	601
	12	792
	15	882
	18	936
	21	978
	24	1002
	27	1028
	30	1044
	33	1059
	36	1069
	39	1079
	42	1088
	45	1098
	48	1109
	51	1116
	54	1122
	57	1128
	60	1131

Second Flow Pressure
Breakdown: 18 Inc. of 5 mins. and a final inc. of 0 Min.

Point	Minutes	Press.
	0	43
	5	43
	10	43
	15	43
	20	44
	25	46
	30	46
	35	48
	40	50
	45	52
	50	53
	55	53
	60	56
	65	60
	70	64
	75	65
	80	67
	85	68
	90	69

Final Shut-In
Breakdown: 21 Inc. of 3 mins. and a final inc. of 0 Min.

Point	Minutes	Press.
	0	69
	3	103
	6	243
	9	582
	12	688
	15	773
	18	808
	21	842
	24	864
	27	883
	30	897
	33	913
	36	920
	39	938
	42	948
	45	958
	48	964
	51	971
	54	977
	57	985
	60	993
	63	1000

CHENEY TESTING CO.

FIELD EVALUATIONS

Ticket No. 1445

Date 11-21-78

To Abercrombie Drlg. Inc.

801 Union Center

Wichita, Kan.

These calculations are based upon information furnished by you and taken from drill stem test pressure charts and are furnished for your information. In furnishing such calculations and evaluations, Cheney Testing Co. is merely expressing its opinion. You agree that The Testing Company makes no warranty as to the accuracy of such calculations or opinions and the Testing Company shall not be liable for any loss or damage, whether due to negligence or otherwise in connection with such calculations and opinions.

We Give Below Results of Drill Stem Evaluation

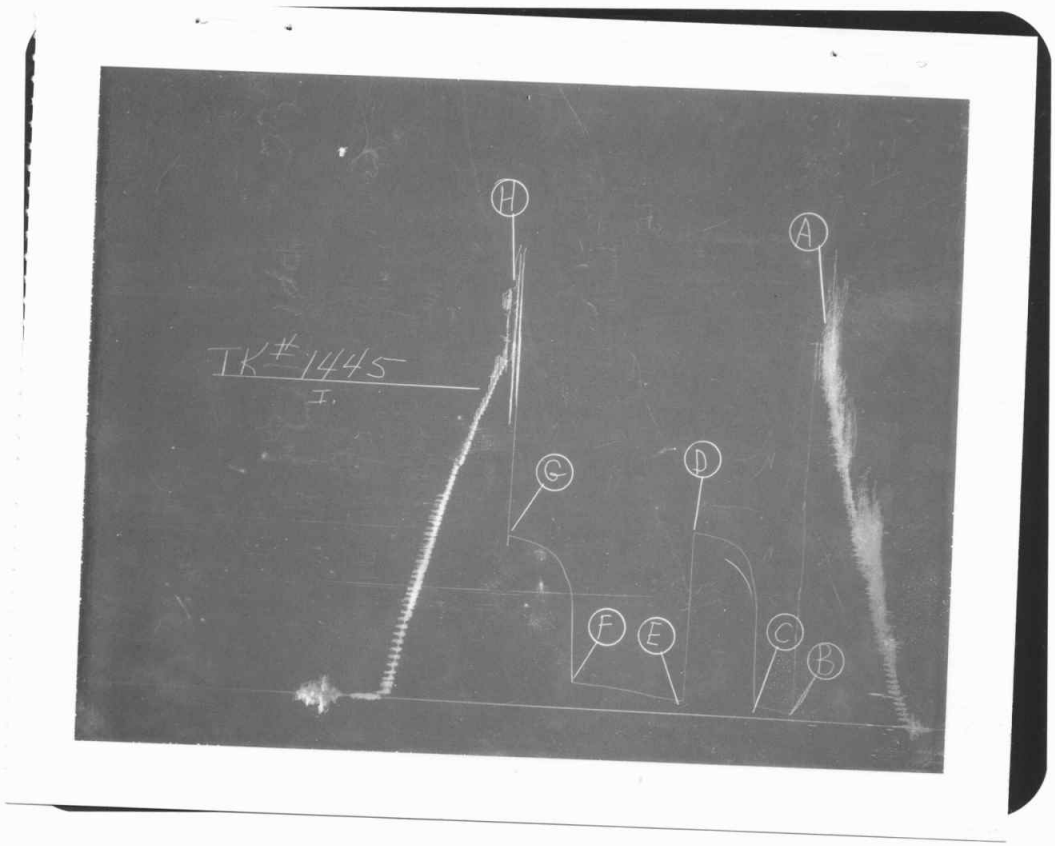
Lease Mitten #1 Sec. 28 Twp. 16S Rge. 26W

County Ness Test Interval 4583-4593

FINAL

P.S.I. Slope Cycle	$M = \frac{Pisi - Pfsi}{\text{Log } \frac{T + t}{t}}$	420	
Damage Ratio	$DR = .183 \frac{Ps - Pf}{M}$	.75	
Production	$Q = \frac{1440\ R}{t}$	.80	Bbls./Hr.
		19.2	Bbls./Day
Effective Pay	$K_1 = \frac{Kh}{hl}$	10	Md. Ft.
Theoretical Potential With Damage Removed	$Q_1 = Q\ DR$	19.2	Bbls./Day

ICIP 1178 # PSI
OFCIP 1062 # PSI
DIETZGEN CORPORATION
MADE IN U.S.A.
NO. 341-L210 DIETZGEN GRAPH PAPER
SEMI-LOGARITHMIC
2 CYCLES X 10 DIVISIONS PER INCH



This is an actual photograph of recorder chart.

POINT		PRESSURE Field Reading	Office Reading	
(A)	Initial Hydrostatic Mud	2470	2475	PSI
(B)	First Initial Flow Pressure	21	23	PSI
(C)	First Final Flow Pressure	21	36	PSI
(D)	Initial Closed-in Pressure	1099	1131	PSI
(E)	Second Initial Flow Pressure	32	43	PSI
(F)	Second Final Flow Pressure	49	69	PSI
(G)	Final Closed-in Pressure	1004	1000	PSI
(H)	Final Hydrostatic Mud	2440	2422	PSI

COMPANY ABERCROMBIE DRLG. INC. LEASE AND WELL NO. MITTEN #1 SEC. 28 TWP. 16S RGE. 26W TEST NO. 3 DATE 11-21-78