

CHENEY TESTING COMPANY, INC.

P. O. Box 367

HILL CITY, KANSAS 67642

DRILL-STEM TEST DATA

Company	Viking Resources Inc.	Test No.	1
Well Name & Number	Grau #1	Zone Tested	Kansas City
Company Address	105 S. Broadway #1040, Wichita, Kan.	Date	10-8-93
Company Rep.	Bill Peterson	Tester	Huck Smith
Contractor	Murfin Drlg. #8	Elevation	
Location: Sec. 26 Twp. 3S Rge. 19W Co. Phillips State Kansas		Est. Feet of Pay	

Recorder No. 13363 Type AK-1 Range 3800 PSI

Recorder Depth 3252 Clock # 25831

(A) Initial Hydrostatic Mud 1603 PSI

(B) First Initial Flow Pressure 31 PSI

(C) First Final Flow Pressure 42 PSI

(D) Initial Shut-in Pressure 601 PSI

(E) Second Initial Flow Pressure 52 PSI

(F) Second Final Flow Pressure 74 PSI

(G) Final Shut-in Pressure 591 PSI

(H) Final Hydrostatic Mud 1593 PSI

Temperature 103

Mud Weight 9.4 Viscosity 43

Fluid Loss 8.4 c.c.

Interval Tested 3216-3260

Anchor Length 44'

Top Packer Depth 3211

Bottom Packer Depth 3216

Total Depth 3260

Drill Pipe Size 4 1/2 EX.H.

Wt. Pipe I. D. Collars 2.25 Ft. Run 60

Recovery-Total Feet 90

Recovered 90 Feet Of O.C.M. (50% Oil 50% Mud)

Recovered Feet Of

Recovered Feet Of

Recovered Feet Of

Recovered Feet Of

Recovered Feet Of

Extra Equipment

Price of Job

Recorder No. 13770 Type AK-1 Range 4200 PSI

Recorder Depth 3255 Clock # 25559

Tool Open Before I.S.I. 45 Mins.

Initial Shut-in 45 Mins.

Flow Period 45 Mins.

Final Shut-in 60 Mins.

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

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

Tool Open @ 1:15 A.M.

Blow Remarks 1st open; Weak blow 4"

2nd open; 3" blow

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

FOR: VIKING RESOURCES INC.
GRAU #1
26-3S-19W
PHILLIPS CO., KANSAS

DST # 1
FORMATION: KANSAS CITY
ELEVATION: 2105 KB

TEST PARAMETERS

TEST INTERVAL: 3216 - 3260	EST PAY: 4
TIME INTERVAL: 45 - 45 - 45 - 60	VISCOSITY OF FLUID: 10
INITIAL FLOW PRESS: 36.0- 48.7	HOLE SIZE: 7.875
FINAL FLOW PRESS: 56.1- 63.5	D.C. CAPACITY: 0.00492
SHUT-IN PRESS(I-F): 600.6- 602.7	W.P. CAPACITY: 0.00000
BOTTOM HOLE TEMPERATURE: 103	D.P. CAPACITY: 0.01402
TOTAL FEET OF RECOVERY: 90	TOTAL BARRELS RECOVERY: 0.7155

EXTRAPOLATED INITIAL SHUT-IN PRESSURE (PSI): 620
SLOPE (PSI-CYCLE): 63 POINTS USED: 5

EXTRAPOLATED FINAL SHUT-IN PRESSURE (PSI): 619
SLOPE (PSI-CYCLE): 39 POINTS USED: 3

CALCULATIONS

PRODUCTION POTENTIAL (B/D)	: 11.45
TRANSMISSIBILITY (MD-FT/CP)	: 47.73
EFFECTIVE PERMEABILITY (MD)	: 119.33
PRODUCTIVITY INDEX (B/D/PSI)	: 0.0539
DAMAGE RATIO	: 2.607
APPROXIMATE RADIUS OF INVESTIGATION (FT)	: 103.6
DRAWDOWN FACTOR (%)	: 0.161
POTENTIOMETRIC SURFACE (FT)	: 280.46

INITIAL SHUT-IN

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RECORDER NO: 13770 DEPTH: 3260 FT.
INITIAL FLOW TIME (T): 45 MIN.

DT(MIN)	LOG((T+DT)/DT)	PRESSURE(PSIG)
=====		
0	0.000	48.7
5	1.000	140.7
10	0.740	432.8
15	0.602	546.1
20	0.512	576.5
25	0.447	586.9
30	0.398	593.2
35	0.359	596.4
40	0.327	598.5
45	0.301	600.6

FINAL SHUT-IN

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RECORDER NO: 13770 DEPTH: 3260 FT.
TOTAL FLOW*TIME: 90 MIN.

DT(MIN)	LOG((T+DT)/DT)	PRESSURE(PSIG)
=====		
0	0.000	63.5
5	1.279	142.8
10	1.000	390.4
15	0.845	532.4
20	0.740	563.9
25	0.663	575.4
30	0.602	583.8
35	0.553	586.9
40	0.512	590.1
45	0.477	593.2
50	0.447	597.4
55	0.421	600.6
60	0.398	602.7

HORNER PLOT
 VIKING RESOURCES INC.
 GRAU #1
 DST # 1 DEPTH: 3260
 RECORDER NO. 13770
 INITIAL SHUT-IN: $\diamond$
 FINAL SHUT-IN: $\square$

LOG ((T+DT)/DT)

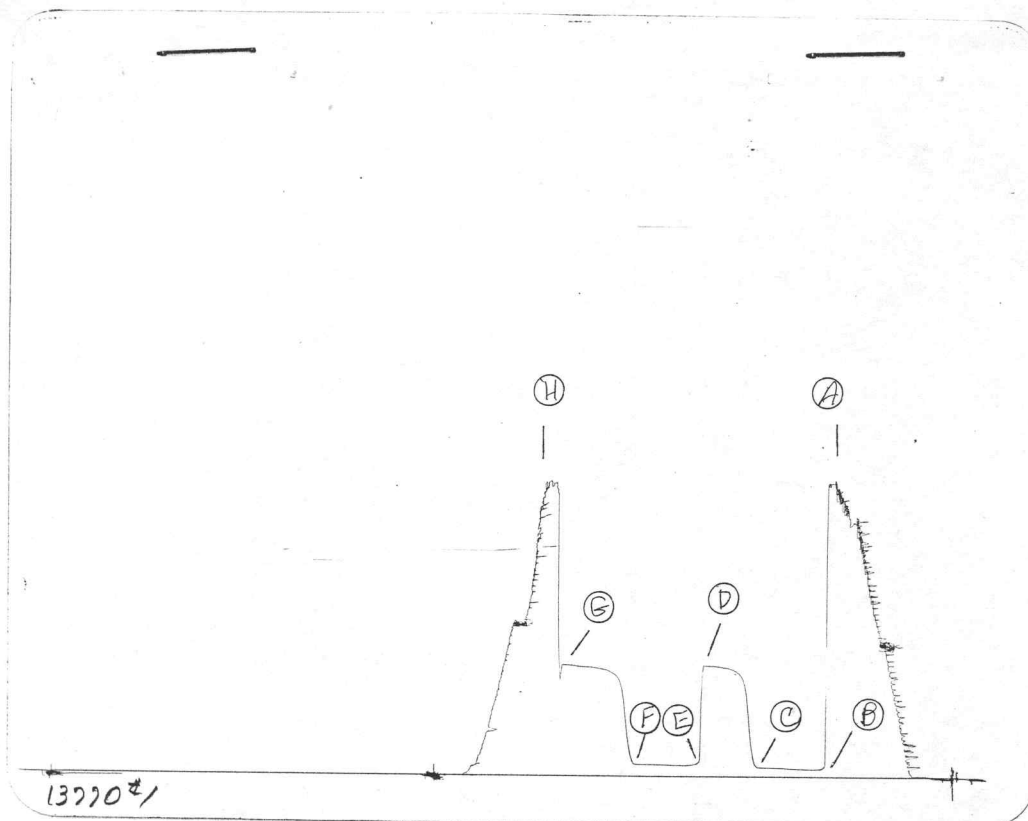
PRESSURE (PSI)

$620 \frac{T}{F}$
 $619 F$

T 557
 t 580

1.0
0.9
0.8
0.7
0.6
0.5
0.4
0.3
0.2
0.1
0.0

800
700
600
500
400
300



POINT	PRESSURE	
	FIELD READING	OFFICE READING
(A) Initial Hydrostatic Mud	1603	1588.98 PSI
(B) First Initial Flow Pressure	31	36 PSI
(C) First Final Flow Pressure	42	48.7 PSI
(D) Initial Closed-in Pressure	601	600.6 PSI
(E) Second Initial Flow Pressure	52	56.1 PSI
(F) Second Final Flow Pressure	74	63.5 PSI
(G) Final Closed-in Pressure	591	602.7 PSI
(H) Final Hydrostatic Mud	1593	1582 PSI