

TRILOBITE TESTING, L.L.C.

P.O. Box 362 • Hays, Kansas 67601

Drill-Stem Test Data

Well Name GOODNIGHT #1-23 Test No. 1 Date 3/1/94
Company HALLIBURTON OIL PRODUCERS Zone MORROW
Address 525 CENTRAL PARK DR #1-210 OKLAHOMA CITY OK 73105 Elevation 2260
Co. Rep./Geo. H-40 DRLG RIG #2 Cont. 10-12 Est. Ft. of Pay 10-12
Location: Sec. 23 Twp. 34S Rge. 26W Co. MEADE State KS

Interval Tested <u>5828-5958</u>	Drill Pipe Size <u>4.5" XH</u>
Anchor Length <u>130</u>	Wt. Pipe I.D. - 2.7 Ft. Run <u>341</u>
Top Packer Depth <u>5823-5828</u>	Drill Collar - 2.25 Ft. Run <u>8.9</u>
Bottom Packer Depth <u>5958</u>	Mud Wt. <u>50</u> lb/Gal.
Total Depth <u>6115</u>	Viscosity <u>6.8</u> Filtrate <u>6.8</u>

Tool Open @ 7:10 AM Initial Blow 1/2" BLOW-BUILT TO BOTTOM OF BUCKET IN 20 MINUTES
ISI: bled off BLOW-SURFACE BLOW-BUILT TO BOTTOM OF BUCKET IN 15 MINUTES
Final Blow STRONG BLOW-BOTTOM OF BUCKET IN 15 SECONDS
GAS TO SURFACE IN 36 MINUTES-GAUGED @21.8 MCF

Recovery - Total Feet 120 Flush Tool? NO

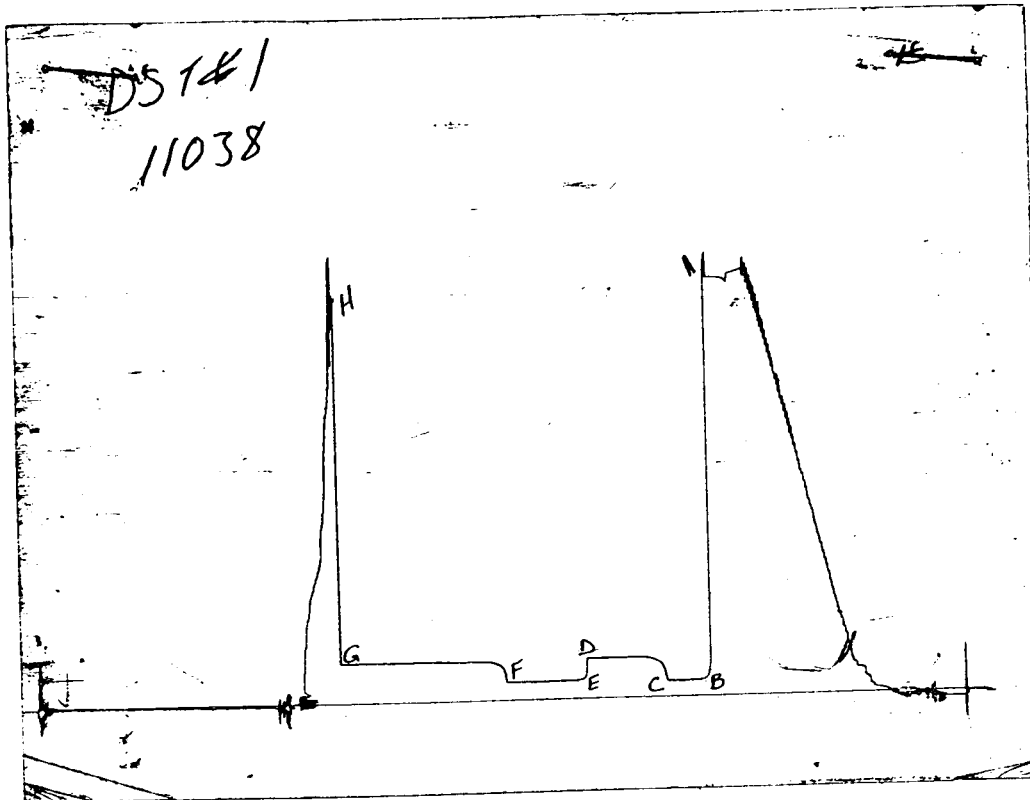
Rec. <u>120</u>	Feet of <u>GASSY DRILLING MUD</u>
Rec. _____	Feet of _____
Rec. _____	Feet of _____
Rec. _____	Feet of _____
Rec. _____	Feet of _____

BHT 132 °F Gravity _____ °API @ _____ °F Corrected Gravity 3100 °API
RW _____ @ _____ °F Chlorides _____ ppm Recovery Chlorides _____ ppm System

(A) Initial Hydrostatic Mud <u>2850.9</u> PSI	AK1 Recorder No. <u>13615</u> Range <u>4575</u>
(B) First Initial Flow Pressure <u>109.3</u> PSI	@ (depth) <u>5934</u> w / Clock No. <u>25813</u>
(C) First Final Flow Pressure <u>109.3</u> PSI	AK1 Recorder No. <u>11038</u> Range <u>5075</u>
(D) Initial Shut-in Pressure <u>281.1</u> PSI	@ (depth) <u>5949</u> w / Clock No. <u>25814</u>
(E) Second Initial Flow Pressure <u>122.8</u> PSI	AK1 Recorder No. <u>5495</u> Range <u>4200</u>
(F) Second Final Flow Pressure <u>122.8</u> PSI	@ (depth) <u>6112</u> w / Clock No. <u>3942</u>
(G) Final Shut-in Pressure <u>273.1</u> PSI	Initial Opening <u>30</u> Final Flow <u>60</u>
(H) Final Hydrostatic Mud <u>2722.2</u> PSI	Initial Shut-in <u>60</u> Final Shut-in <u>180</u>

Our Representative TOM HORACEK

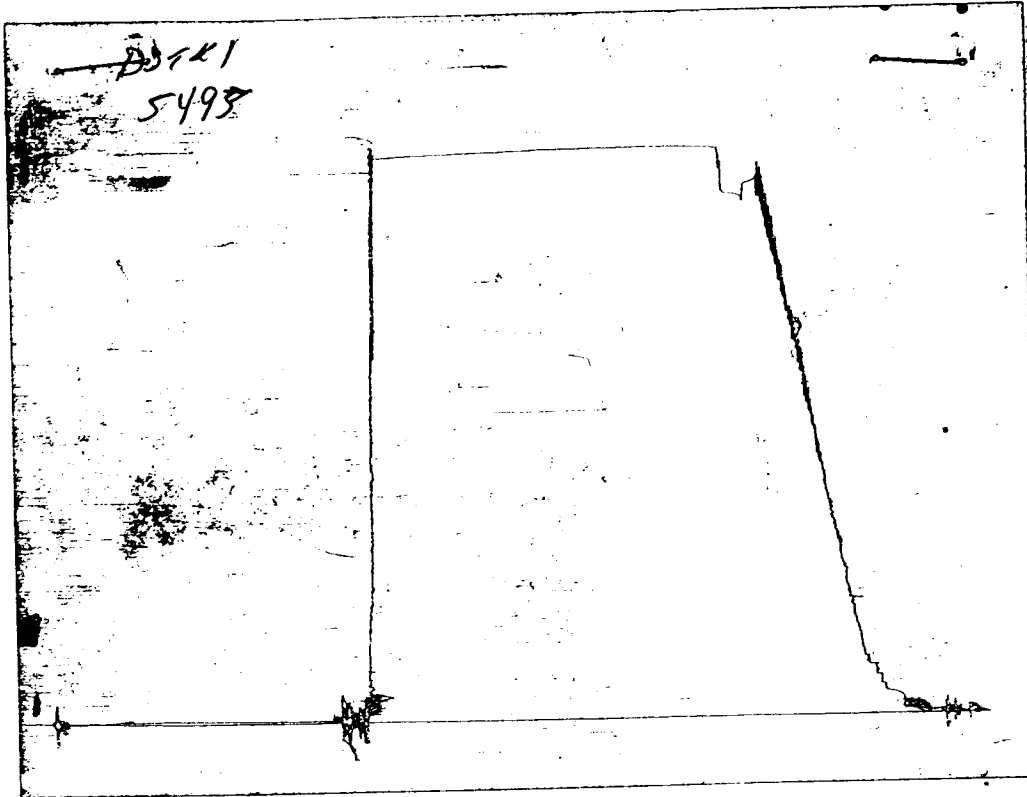
CHART PAGE



This is an actual photograph of recorder chart

	FIELD READING	OFFICE READING
(A) INITIAL HYDROSTATIC MUD	2838	2850.9
(B) FIRST INITIAL FLOW PRESSURE	109	109.3
(C) FIRST FINAL FLOW PRESSURE	109	109.3
(D) INITIAL CLOSED-IN PRESSURE	270	281.1
(E) SECOND INITIAL FLOW PRESSURE	122	122.8
(F) SECOND FINAL FLOW PRESSURE	122	122.8
(G) FINAL CLOSED-IN PRESSURE	270	273.1
(H) FINAL HYDROSTATIC MUD	2760	2722.2

CHART PAGE



This is an actual photograph of recorder chart

FIELD
READING

OFFICE
READING

- (A) INITIAL HYDROSTATIC MUD
- (B) FIRST INITIAL FLOW PRESSURE
- (C) FIRST FINAL FLOW PRESSURE
- (D) INITIAL CLOSED-IN PRESSURE
- (E) SECOND INITIAL FLOW PRESSURE
- (F) SECOND FINAL FLOW PRESSURE
- (G) FINAL CLOSED-IN PRESSURE
- (H) FINAL HYDROSTATIC MUD

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

HALLIBURTON OIL PRODUCERS

GOODNIGHT #1-23

DST 1

23 34S 26W

MEADE

KS

ELEVATION:	2260 KB	EST. PAY:	11 FT.
DATUM:	-3690	ZONE TESTED:	MORROW
TEST INTERVAL:	5828-5958	TIME INTERVALS:	30-60-60-180
RECORDER DEPTH:	5949	VISCOSITY:	0.01184 CP
BOTTOM HOLE TEMP:	132	HOLE SIZE:	7.875 IN
COMPRESSIBILITY:	0.9964	GAS GRAVITY:	0.7711

TEMPERATURE RANKINE:	592.00	&
TRANSMISSIBILITY:	29575.57	Kh/%
THEORITICAL FLOW CAPICITY:	350.28	Kh
AVERAGE EFFECTIVE PERMEABILITY:	31.84	K(md.)
RADIUS OF INVESTIGATION:	53.53	FT.
DAMAGE RATIO:	9.77	
ABSOLUTE OPEN FLOW(MAX)	27.26	MCFD
ABSOLUTE OPEN FLOW(MIN)	24.38	MCFD
THEORITICAL OPEN FLOW(MAX)	266.36	MCFD
THEORITICAL OPEN FLOW(MIN)	238.20	MCFD
POTENTIOMETRIC SURFACE	0.00	(FT.)

INITIAL SHUT-IN VALUES:

SLOPE	1320.94
THEORETICAL STATIC PRESSURE	283

FINAL SHUT-IN VALUES:

SLOPE	711.75
THEORETICAL STATIC PRESSURE	274

DRAWDOWN FACTOR:	3.19 (%)
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NATURAL GAS ANALYSIS REPORT

Sampled by:
Trilobite Testing, L.L.C.
Hays, Kansas
Scott City, Kansas
Phone: 800-728-5369
Fax: 913-625-5620

Analyzed by:
Caraway Analytical, L.L.C.
728 North Roosevelt
Liberal, Kansas 67901
Phone: 316-324-5389
Fax: 316-626-7108

Lab Number: 940099
Sample From: Goodnight #1-23 DST 1
Producer: Haliburton Oil
Date:
Time:
Sampler:
Source:

Analyzed: 03/02/94
Pressure:
Temperature:
Location: 23-34-26
County: Meade
State: Kansas
Formation: Morrow

	Mole %	GPM
Helium	He: 0.082	0.000
Oxygen	O2: 0.000	0.000
Nitrogen	N2: 5.900	0.000
Carbon Dioxide	CO2: 0.088	0.000
Methane	C1: 75.211	0.000
Ethane	C2: 7.045	1.884
Propane	C3: 6.359	1.752
Iso Butane	iC4: 1.115	0.365
Normal Butane	nC4: 2.127	0.671
Iso Pentane	iC5: 0.568	0.208
Normal Pentane	nC5: 0.611	0.221
Hexanes Plus	C6+: 0.894	0.390

TOTAL: 100.000 5.491
Z Fact: 0.9964
SP.GR.: 0.7711
BTU (SAT): 1228.6 @ 14.73 psia
BTU (DRY): 1250.4 @ 14.73 psia

COMMENTS:

GOODNIGHT #1-23 DST #1
INITIAL SHUTIN

30 INITIAL FLOW TIME Slope 1320.94 psi/cycle
P * 283 psi

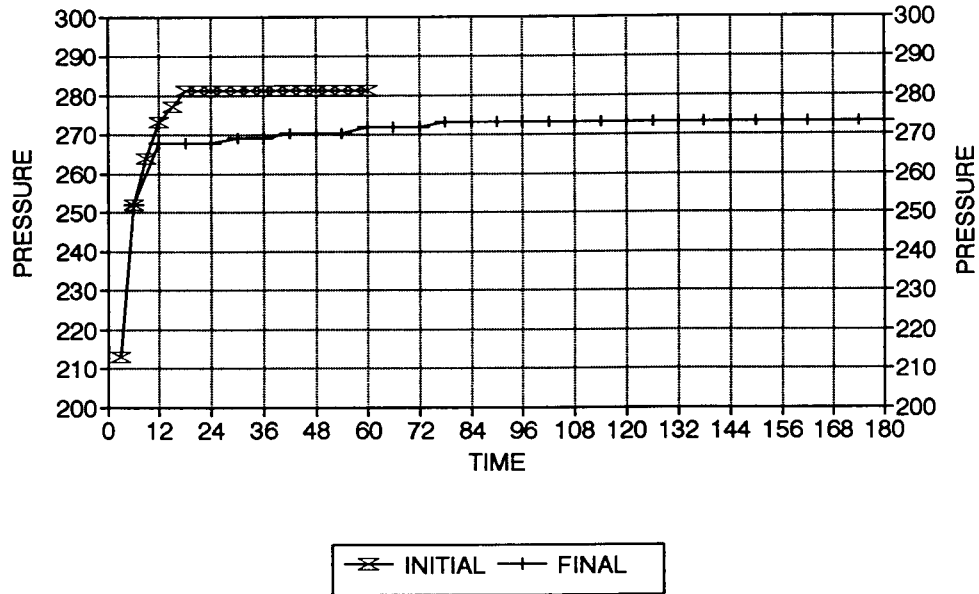
	TIME(MIN)	Pws (psi)	Log Horn T	<> PRESSURE	Horn T
	3	213.0	1.041	213.0	11
	6	251.8	0.778	38.8	6
	9	263.8	0.637	12.0	4
	12	273.1	0.544	9.3	4
X	15	277.1	0.477	4.0	3
	18	281.1	0.426	4.0	3
	21	281.1	0.385	0.0	2
	24	281.1	0.352	0.0	2
	27	281.1	0.325	0.0	2
	30	281.1	0.301	0.0	2
	33	281.1	0.281	0.0	2
	36	281.1	0.263	0.0	2
	39	281.1	0.248	0.0	2
	42	281.1	0.234	0.0	2
	45	281.1	0.222	0.0	2
	48	281.1	0.211	0.0	2
	51	281.1	0.201	0.0	2
	54	281.1	0.192	0.0	2
	57	281.1	0.184	0.0	2
X	60	281.1	0.176	0.0	2

GOODNIGHT #1-23 DST #1
FINAL SHUTIN

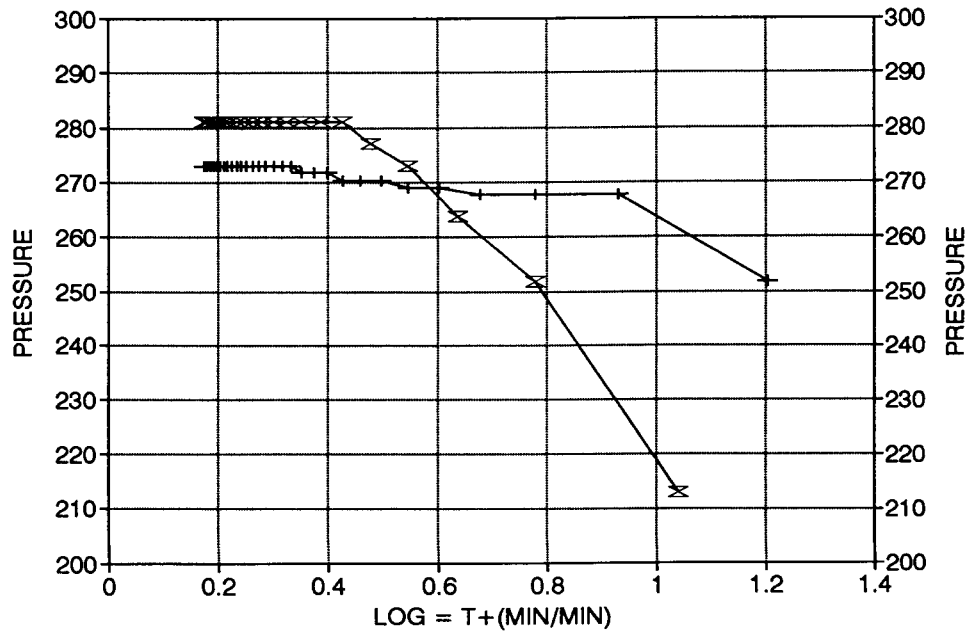
90 TOTAL FLOW TIME Slope 711.75 psi/cycle
P * 274 psi

	Pws (psi)	Log Horn T	<> PRESSURE	Horn T	
	6	251.8	1.204	251.8	16
	12	267.8	0.929	16.0	9
	18	267.8	0.778	0.0	6
	24	267.8	0.677	0.0	5
	30	269.1	0.602	1.3	4
	36	269.1	0.544	0.0	4
	42	270.4	0.497	1.3	3
	48	270.4	0.459	0.0	3
	54	270.4	0.426	0.0	3
	60	271.8	0.398	1.4	3
	66	271.8	0.374	0.0	2
X	72	271.8	0.352	0.0	2
	78	273.1	0.333	1.3	2
	84	273.1	0.316	0.0	2
	90	273.1	0.301	0.0	2
	96	273.1	0.287	0.0	2
	102	273.1	0.275	0.0	2
	108	273.1	0.263	0.0	2
	114	273.1	0.253	0.0	2
	120	273.1	0.243	0.0	2
	126	273.1	0.234	0.0	2
	132	273.1	0.226	0.0	2
	138	273.1	0.218	0.0	2
	144	273.1	0.211	0.0	2
	150	273.1	0.204	0.0	2
	156	273.1	0.198	0.0	2
	162	273.1	0.192	0.0	2
	168	273.1	0.186	0.0	2
	174	273.1	0.181	0.0	2
X	180	273.1	0.176	0.0	2

GOODNIGHT #1-23 / DST #1 DELTA T DELTA P



HORNER PLOT



GAS VOLUME REPORT

HALLIBURTON OIL PRODUCERS

GOODNIGHT #1-23

DST # 1

MIN	PSIG	ORIFICE	MCF/D	MIN	PSIG	ORIFICE	MCF/D
				35	3	0.25	15.7
				40	3.5	0.25	17.1
				45	3.5	0.25	17.1
				50	4	0.25	18.5
				55	5	0.25	21.8
				60	5	0.25	21.8

Remarks: GAS TO SURFACE IN 36 MINUTES SECOND OPEN/ GAS WILL BURN



GAS VOLUME REPORT

Goodnight # 1-23

2/

DST NO.

2nd open

Remarks:

• GTS in 36 min. 2nd open
Gas will burn.

WELL NAME Goodnight #1-23 DST # 1 RECORDER # 11038

INIT. HYD. MUD. 2220 2830.7 FINAL HYD. MUD 2120 2122.2

INITIAL FLOW	INITIAL SHUTIN	FINAL FLOW	FINAL SHUTIN
MINUTES <u>.30</u>	MINUTES <u>60</u>	MINUTES <u>60</u>	MINUTES <u>180</u>
INTERVAL <u>3</u>	INTERVAL <u>3</u>	INTERVAL <u>3</u>	INTERVAL <u>6</u>

[illegible]

G-283.0
F-274.0

C-21

A25... A54
D1... D50