

TRILOBITE TESTING COMPANY

P.O. Box 362 • Hays, Kansas 67601

Drill-Stem Test Data

Well name Computer Invented 6 Test No. 1 Date 2-14-88
Company Ensign Operation Company Zone Tested Atoka
Address 621 17th. Suite 1800 Denver, Colo 80293 Elevation 2972
Co. Rep./Geo. Duane Moredock cont. H-30 #8 Est. Ft. of Pay 5'
Location: Sec. 36 Twp. 30s Rge. 34w Co. Haskell state Ks.

Interval Tested 5156 - 5236 Drill Pipe Size 4 1/2" XH
Anchor Length 70 Top Choke — 1"
Top Packer Depth 5151 Bottom Choke — 3/4"
Bottom Packer Depth 5156 Hole Size — 7/8"
Total Depth 5236 Rubber Size — 6 3/4"
Wt. Pipe I.D. — 2.7 Ft. Run _____
Drill Collar — 2.25 Ft. Run 607
Mud Wt. _____ lb./gal. Viscosity _____ Filtrate _____

Tool Open @ 7:42 a.m. Initial Blow strong blow built to bottom of bucket in 45 seconds
gas to surface 11 minutes from opening

Final Blow strong blow

Recovery — Total Feet 330 Flush Tool? _____
Rec. 330 Feet of gassy slight oil specked mud
Rec. _____ Feet of _____
Rec. _____ Feet of _____
Rec. _____ Feet of _____
Rec. _____ Feet of _____

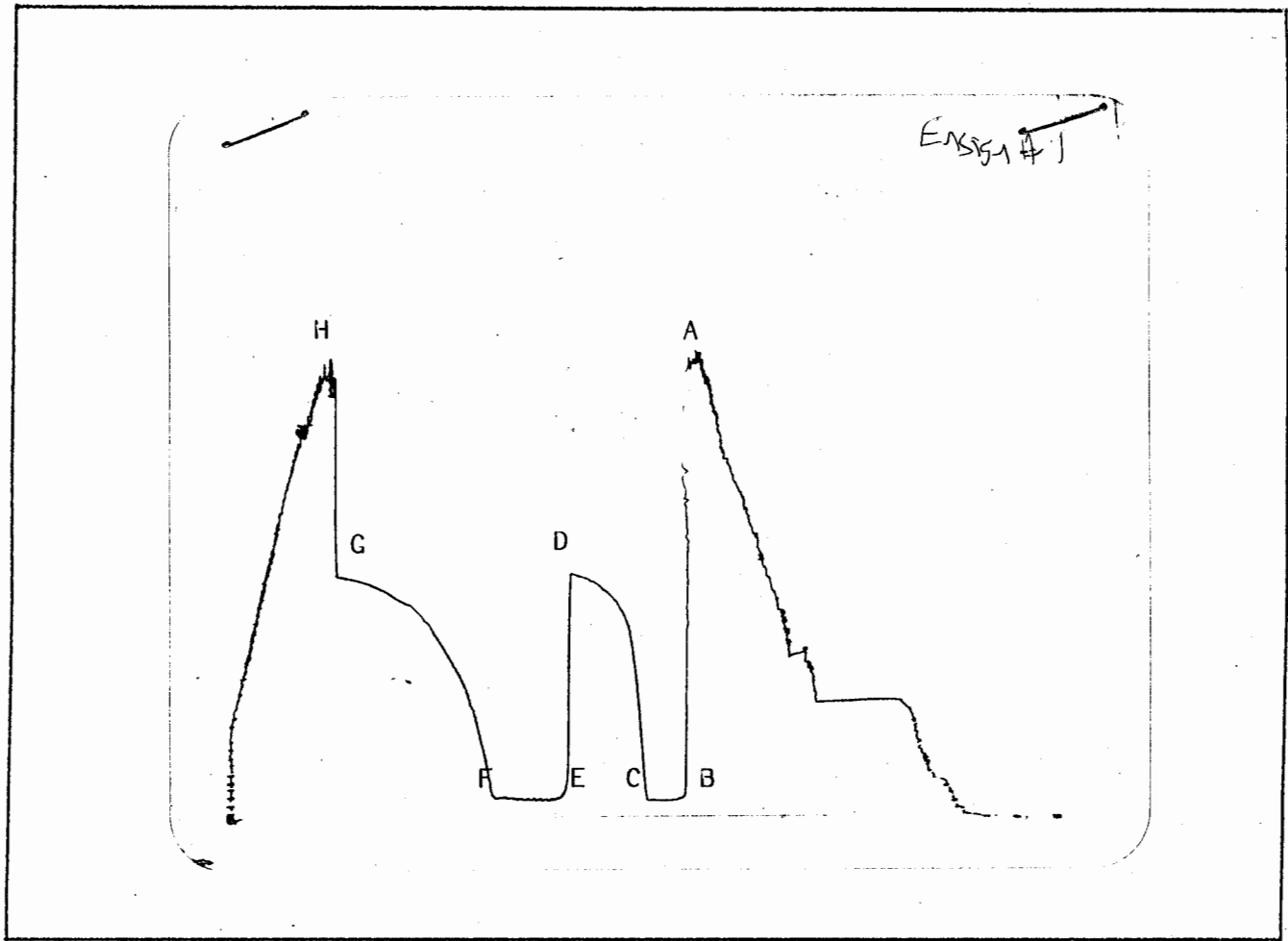
BHT 134 °F Gravity _____ °API @ _____ °F Corrected Gravity _____ °API

RW _____ @ _____ °F Chlorides _____ ppm Recovery Chlorides _____ ppm System

(A) Initial Hydrostatic Mud 2476.3 PSI AK1 Recorder No. 13337 Range 3975
(B) First Initial Flow Pressure 118.5 PSI @ (depth) 5235 w/Clock No. 25814
(C) First Final Flow Pressure 126.8 PSI AK1 Recorder No. 13339 Range 4000
(D) Initial Shut-In Pressure 1367.4 PSI @ (depth) 5200 w/Clock No. 25813
(E) Second Initial Flow Pressure 122.7 PSI Initial Opening 30
(F) Second Final Flow Pressure 145.5 PSI Initial Shut-In 60
(G) Final Shut-In Pressure 1358.4 PSI Final Flow 60
(H) Final Hydrostatic Mud 2387.3 PSI Final Shut-In 120

Our Representative Paul Simpson

TOTAL PRICE \$ 650.00



This is an actual photograph of recorder chart.

POINT	PRESSURE		
	Field Reading	Office Reading	
(A) Initial Hydrostatic Mud.....	2524	2476.3	PSI
(B) First Initial Flow Pressure.....	94	118.5	PSI
(C) First Final Flow Pressure.....	104	126.8	PSI
(D) Initial Closed-in Pressure.....	1331	1367.4	PSI
(E) Second Initial Flow Pressure.....	104	122.7	PSI
(F) Second Final Flow Pressure.....	114	145.5	PSI
(G) Final Closed-in Pressure.....	1331	1358.4	PSI
(H) Final Hydrostatic Mud.....	2434	2387.3	PSI

COMPUTER EVALUATION BY TRILOBITE TESTING
ENSIGN OPERATING COMPANY
REPORT FOR DST#1FOR THE FAIR 3-36
SEC 36 30S 34W HASKELL KS

TEST PARAMETERS

ELEVATION:	2972 KB	EST. PAY:	5 FT
DATUM:	-2229	ZONE TESTED:	ATOKA
TEST INTERVAL:	5156-5236	TIME INTERVALS:	30-60-60-120
RECORDER DEPTH:	5200	VISCOSITY:	.019 CP
BOTTOM HOLE TEMP:	134	HOLE SIZE:	7.875 IN
COMPRESSIBILITY :	.79	GAS GRAVITY:	.65

CALCULATIONS

TEMPERATURE RANKINE	594 °
TRANSMISSIBILITY	68.9633 Kh/ μ
THEORITICAL FLOW CAPICITY	1.3103 Kh
AVERAGE EFFECTIVE PERMEABILITY	.26206 K(md.)
RADIUS OF INVESTIGATION	4.85648 FT.
DAMAGE RATIO	.929683
ABSOLUTE OPEN FLOW(MAX)	63.8298 MCFD
ABSOLUTE OPEN FLOW(MIN)	63.5644 MCFD
POTENTIOMETRIC SURFACE	1475.4 (FT.)

INITIAL SHUT-IN VALUES:
THEORETICAL STATIC PRESSURE 1539.6
SLOPE 500585

FINAL SHUT-IN VALUES
THEORETICAL STATIC PRESSURE 1596.98
SLOPE 705095

DRAWDOWN FACTOR -3.72694 (%)

INITIAL SHUT-IN BUILDUP
DST #1

RECORDER # 13339
INITIAL FLOW TIME (MIN.): 30

MIN	LOG(T+MIN/MIN)	PRESSURE	<> PRESSURE
0	0	126.8	126.8
3	1.04121	375.3	248.5
6	.778011	653.2	277.9
9	.636707	852.7	199.5
12	.54397	979.9	127.2
15	.477035	1064.2	84.3
18	.425892	1119.4	55.2
21	.385281	1166.6	47.2
24	.352119	1198.8	32.2
27	.324453	1227.9	29.1
30	.300976	1250	22.1
33	.280776	1271	21
36	.263194	1289.1	18.1
39	.24774	1304.2	15.1
42	.234041	1316.2	12
45	.221809	1326.3	10.1
48	.210815	1337.3	11
51	.200879	1347.4	10.1
54	.191851	1354.4	7
57	.183611	1361.4	7
60	.17606	1367.4	6

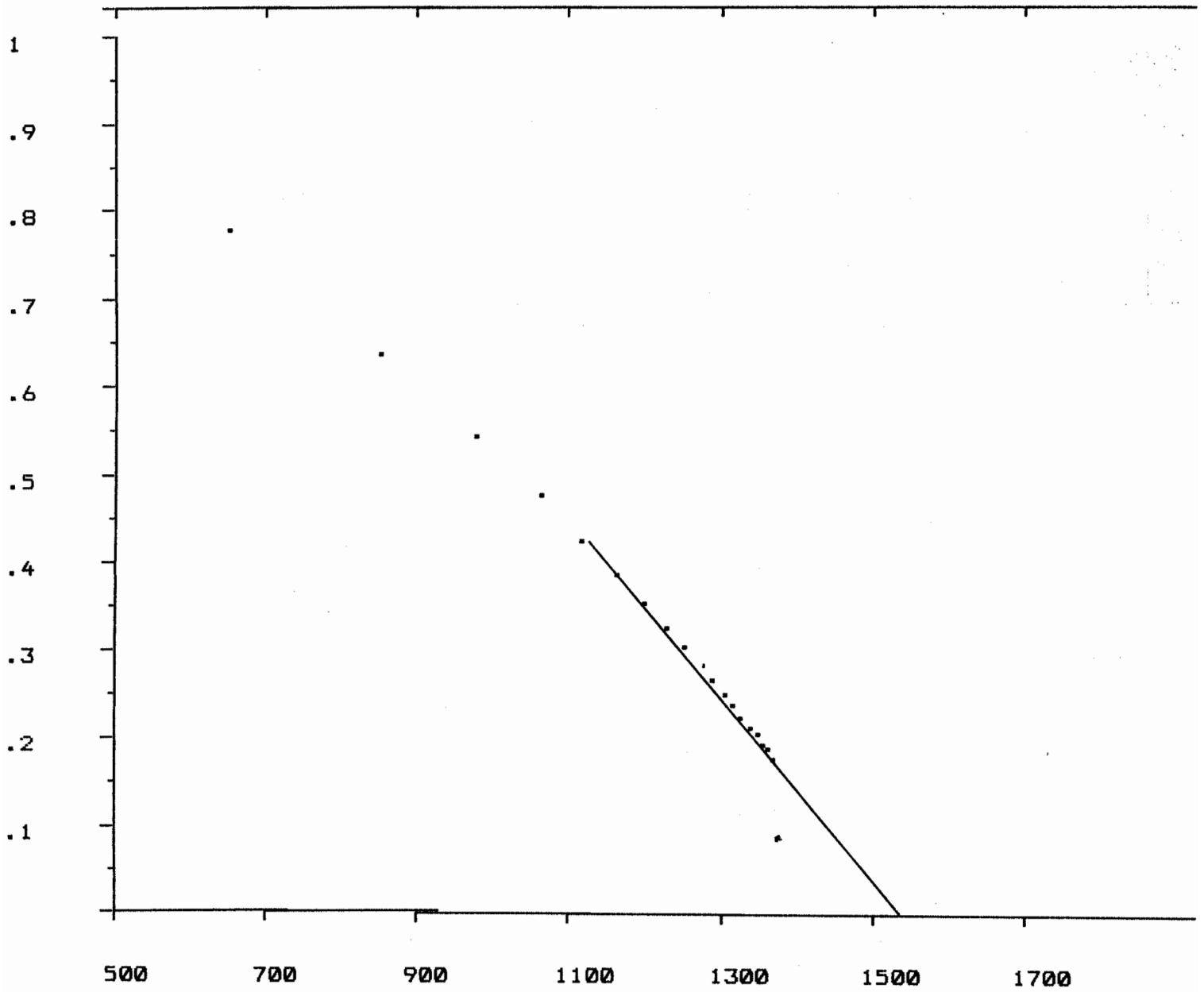
FINAL SHUT-IN BUILDUP
DST #1

RECORDER # 13339
TOTAL FLOW TIME (MIN.): 90

MIN	LOG(T+MIN/MIN)	PRESSURE	<> PRESSURE
0	0	145.5	145.5
6	1.2039	336.8	191.3
12	.929251	518	181.2
18	.778011	669.3	151.3
24	.676572	775.5	106.2
30	.601952	853.7	78.2
36	.54397	915.8	62.1
42	.497235	993	77.2
48	.458555	1054.2	61.2
54	.425892	1106.4	52.2
60	.397868	1152.6	46.2
66	.373513	1191.7	39.1
72	.352119	1222.9	31.2
78	.333155	1250	27.1
84	.316213	1273.1	23.1
90	.300976	1289.1	16
96	.28719	1306.2	17.1
102	.274652	1320.2	14
108	.263194	1333.3	13.1
114	.25268	1341.3	8
120	.242994	1351.4	10.1
126	.234041	1358.4	7

DST#1
INITIAL SHUT-IN
HORNER PLOT
PRESSURE

LOG(T+MIN/MIN)



STATIC PRESSURE 1539.6
SLOPE 500585
POINTS USED 17

TRILOBITE TESTING COMPANY

P. O. Box 362 • Hays, Kansas 67601

No 1081

TEST TICKET

Well Name & No. <u>Fair 3-36</u>	Test No. <u>1</u>	Date <u>2/14/88</u>
Company <u>Ensign Operating Company</u>	Zone Tested <u>A Joka</u>	
Address <u>621 17th Suite 1800 Denver Colo 80293</u>	Elevation <u>2972</u>	
Co. Rep./Geo. <u>Duane Mondlock</u>	Cont. <u>H-30 H-8</u>	Est. Ft. of Pay <u>5</u>
Location: Sec. <u>36</u>	Twp. <u>30s</u>	Rge. <u>34w</u> Co. <u>Haskell</u> State <u>Ks</u>

Interval Tested <u>5156-5236</u>	Drill Pipe Size <u>4 1/2 XH</u>
Anchor Length <u>70</u>	Top Choke — 1" _____
Top Packer Depth <u>8151</u>	Bottom Choke — 3/4" _____
Bottom Packer Depth <u>6156</u>	Hole Size — 7 7/8" _____
Total Depth <u>5236</u>	Rubber Size — 6 3/4" _____
Wt. Pipe I.D. — 2.7 _____	Ft. Run _____
Drill Collar — 2.25 _____	Ft. Run <u>607</u>
Mud Wt. _____ lb./gal.	Viscosity _____ Filtrate _____
Tool Open @ <u>9:42 AM</u>	Initial Blow <u>strong blow built to bottom of bucket in</u>
<u>45 seconds</u>	<u>GTS 11 minutes from opening</u>
Final Blow <u>strong blow</u>	

Recovery — Total Feet <u>330</u>	Flush Tool? _____
Rec. <u>330</u> Feet of <u>gassy sl oil specked mud</u>	
Rec. _____ Feet of _____	
Rec. _____ Feet of _____	
Rec. _____ Feet of _____	
Rec. _____ Feet of _____	

BHT <u>134</u> °F	Gravity _____ °API @ _____ °F	Corrected Gravity _____ °API
RW _____ @ _____ °F	Chlorides _____ ppm	Recovery Chlorides _____ ppm System
(A) Initial Hydrostatic Mud <u>2524</u>	PSI	AK1 Recorder No. <u>13337</u> Range <u>3925</u>
(B) First Initial Flow Pressure <u>94</u>	PSI	@ (depth) <u>5235</u> w/Clock No. <u>25814</u>
(C) First Final Flow Pressure <u>104</u>	PSI	AK1 Recorder No. <u>13339</u> Range <u>4000</u>
(D) Initial Shut-In Pressure <u>1331</u>	PSI	@ (depth) <u>5200</u> w/Clock No. <u>25813</u>
(E) Second Initial Flow Pressure <u>104</u>	PSI	Initial Opening <u>30</u>
(F) Second Final Flow Pressure <u>114</u>	PSI	Initial Shut-In <u>60</u>
(G) Final Shut-In Pressure <u>1331</u>	PSI	Final Flow <u>60</u>
(H) Final Hydrostatic Mud <u>2434</u>	PSI	Final Shut-In <u>120</u>

Approved by Duane E. Mondlock

Our Representative Ron Simpson

Test \$ 400

Extra Equip ... gas ... 200

Extra Equip ... jt ... 50

TOTAL PRICE \$ 650

TRILOBITE TESTING COMPANY

P.O. Box 362 • Hays, Kansas 67601

Drill-Stem Test Data

Well Name & No.	Fair 3-36	Test No.	2	Date	2-15-88				
Company	Ensign Operating Company	Zone Tested	Morrow						
Address	621 17th. Suite 1800 Denver, Colo 80293	Elevation	2972						
Co. Rep./Geo.	Duane Moredock	Cont.	H=30 #8	Est. Ft. of Pay					
Location: Sec.	36	Twp.	30s	Rge.	34w	Co.	Haskell	State	Ks.

Interval Tested	5290 - 5400	Drill Pipe Size	4 1/2" XH				
Anchor Length	110	Top Choke - 1"					
Top Packer Depth	5285	Bottom Choke - 3/4"					
Bottom Packer Depth	5290	Hole Size - 7 7/8"					
Total Depth	5400	Rubber Size - 6 3/4"					
Wt. Pipe I.D. - 2.7		Ft. Run					
Drill Collar - 2.25		Ft. Run	547				
Mud Wt.		lb./gal.		Viscosity		Filtrate	
Tool Open @	5:52 a.m.	Initial Blow	weak 1/2" blow decreased to weak surface				
			blow at end of opening				
Final Blow	weak 1/8" blow died in 15 minutes						

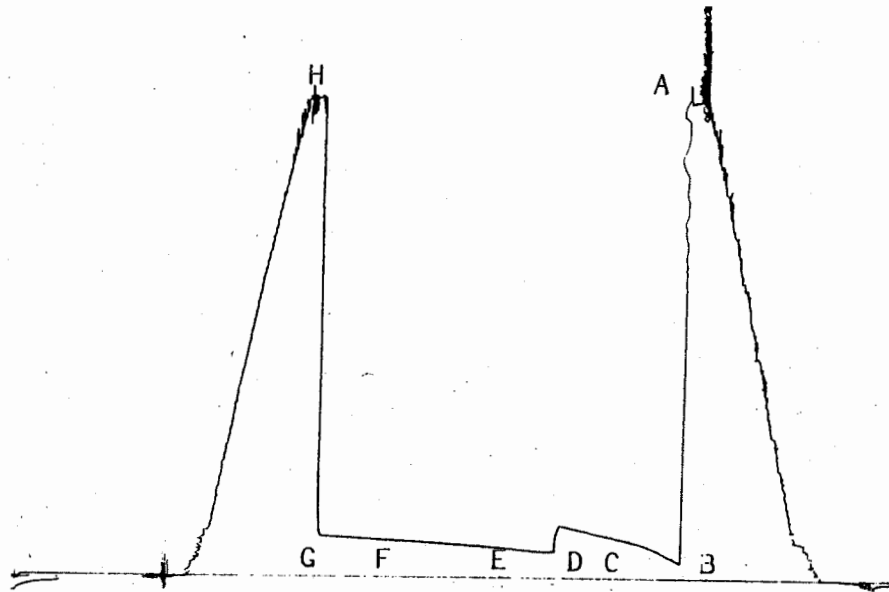
Recovery - Total Feet	10	Flush Tool?										
Rec.	10	Feet of	mud with oil specks in tool									
Rec.		Feet of										
Rec.		Feet of										
Rec.		Feet of										
Rec.		Feet of										
BHT	136	°F	Gravity		°API @		°F	Corrected Gravity		°API		
RW		@		°F	Chlorides		ppm	Recovery	Chlorides		ppm	System
(A) Initial Hydrostatic Mud	2637.6	PSI	AK1 Recorder No.	13337	Range	3975						
(B) First Initial Flow Pressure	122.7	PSI	@ (depth)	5399	w/Clock No.	25813						
(C) First Final Flow Pressure	249.5	PSI	AK1 Recorder No.	13339	Range	4000						
(D) Initial Shut-In Pressure	353.4	PSI	@ (depth)	5300	w/Clock No.	27585						
(E) Second Initial Flow Pressure	176.7	PSI	Initial Opening	30								
(F) Second Final Flow Pressure	234.9	PSI	Initial Shut-In	60								
(G) Final Shut-In Pressure	291.1	PSI	Final Flow	60								
(H) Final Hydrostatic Mud	2574.2	PSI	Final Shut-In	120								

Our Representative Paul Simpson

TOTAL PRICE \$ 650.00

Printcraft Printers - Hays, KS

Ensign #2



This is an actual photograph of recorder chart.

PRESSURE

POINT	Field Reading	Office Reading	
(A) Initial Hydrostatic Mud.....	2583	2637.6	PSI
(B) First Initial Flow Pressure.....	104	122.7	PSI
(C) First Final Flow Pressure.....	208	249.5	PSI
(D) Initial Closed-in Pressure.....	322	353.4	PSI
(E) Second Initial Flow Pressure.....	156	176.7	PSI
(F) Second Final Flow Pressure.....	197	234.9	PSI
(G) Final Closed-in Pressure.....	260	291.1	PSI
(H) Final Hydrostatic Mud.....	2524	2574.2	PSI

TRILOBITE TESTING COMPANY

P. O. Box 362 • Hays, Kansas 67601

No 1082

TEST TICKET

Well Name & No. fair 3-36 Test No. 2 Date 2/15/88
Company Ensign Operating Company Zone Tested Morrow
Address 221 17th Suite 1800 Denver Colo 80293 Elevation 2972
Co. Rep./Geo. Duane Moredock cont. H-30 #8 Est. Ft. of Pay _____
Location: Sec. 36 Twp. 30s Rge. 34w Co. Haskell State Ks

Interval Tested 5290-5400 Drill Pipe Size 4 1/2 x H
Anchor Length 110 Top Choke — 1" _____
Top Packer Depth 5285 Bottom Choke — 3/4" _____
Bottom Packer Depth 5290 Hole Size — 7 7/8" _____
Total Depth 5400 Rubber Size — 6 3/4" _____
Wt. Pipe I.D. — 2.7 _____ Ft. Run _____
Drill Collar — 2.25 _____ Ft. Run 547
Mud Wt. _____ lb./gal. Viscosity _____ Filtrate _____
Tool Open @ 5:52 AM Initial Blow weak 1/2" blow decreased to weak surface
blow at end of opening
Final Blow weak 1/2" blow died in 15 minutes

Recovery — Total Feet 10 Flush Tool? _____
Rec. 10 Feet of mud w/ oil specks in tool
Rec. _____ Feet of _____
Rec. _____ Feet of _____
Rec. _____ Feet of _____
Rec. _____ Feet of _____

BHT 136 °F Gravity _____ °API @ _____ °F Corrected Gravity _____ °API
RW _____ @ _____ °F Chlorides _____ ppm Recovery Chlorides _____ ppm System
(A) Initial Hydrostatic Mud 2583 PSI AK1 Recorder No. 13337 Range 3975
(B) First Initial Flow Pressure 104 PSI @ (depth) 5374 w/Clock No. 25813
(C) First Final Flow Pressure 208 PSI AK1 Recorder No. 13337 Range 4000
(D) Initial Shut-In Pressure 322 PSI @ (depth) 5300 w/Clock No. 27585
(E) Second Initial Flow Pressure 156 PSI Initial Opening 30
(F) Second Final Flow Pressure 197 PSI Initial Shut-In 60
(G) Final Shut-In Pressure 260 PSI Final Flow 60
(H) Final Hydrostatic Mud 2524 PSI Final Shut-In 120

Approved by Duane E. Moredock
Our Representative Paul Simpson

Test \$ 400
Extra Equip. jes \$ 200
Extra Equip. jt \$ 50
TOTAL PRICE \$ 650