

5

# TRILOBITE TESTING, L.L.C.

P.O. Box 362 • Hays, Kansas 67601

## Drill-Stem Test Data

Well Name BOX RANCH "A" #1 Test No. 1 Date 9/17/94  
 Company CHARTER PRODUCTION COMPANY Zone TORONTO  
 Address 142 NORTH MOSLEY WICHITA KS 67202 Elevation 1799  
 Co. Rep./Geo. KITT NOAH Cont. EAGLE DRLG #1 Est. Ft. of Pay \_\_\_\_\_  
 Location: Sec. 4 Twp. 35S Rge. 20W Co. COMMANCHE State KS

Interval Tested 4350-4410 Drill Pipe Size 4.5" XH  
 Anchor Length 60 Wt. Pipe I.D. - 2.7 Ft. Run \_\_\_\_\_  
 Top Packer Depth 4345 Drill Collar - 2.25 Ft. Run 470  
 Bottom Packer Depth 4350 Mud Wt. \_\_\_\_\_ 9.1 lb/Gal.  
 Total Depth 4410 Viscosity 46 Filtrate 11.2

Tool Open @ 1:27 P.M. Initial Blow WEAK SURGING BLOW. (1-4" IN WATER) COMMENT: SLID TOOL  
15-20' TO BOTTOM  
 Final Blow WEAK BLOW (1-2") COMMENT: CHART SHOWS TOOL PLUGGING DURING  
INITIAL OPEN

Recovery - Total Feet 330 Flush Tool? NO

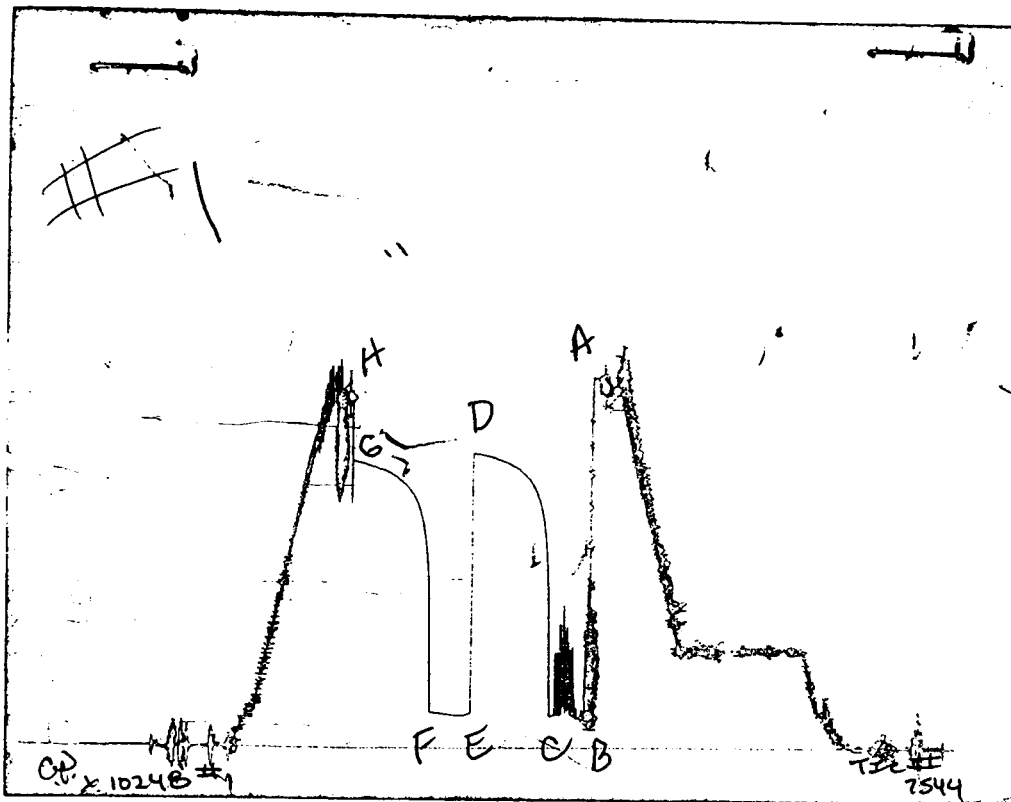
Rec. 270 Feet of DRILLING MUD 100%MUD  
 Rec. 60 Feet of WATERY MUD 9%WATER/91%MUD  
 Rec. \_\_\_\_\_ Feet of \_\_\_\_\_  
 Rec. \_\_\_\_\_ Feet of \_\_\_\_\_  
 Rec. \_\_\_\_\_ Feet of \_\_\_\_\_

BHT 112 °F Gravity \_\_\_\_\_ °API @ \_\_\_\_\_ °F Corrected Gravity \_\_\_\_\_ °API  
 RW 0.86 @ \_\_\_\_\_ °F Chlorides 12200 ppm Recovery Chlorides 8000 ppm System

(A) Initial Hydrostatic Mud 2108.9 PSI AK1 Recorder No. 13788 Range 4650  
 (B) First Initial Flow Pressure 99.0 PSI @ (depth) 4407 w / Clock No. 30410  
 (C) First Final Flow Pressure 179.7 PSI AK1 Recorder No. 10248 Range 4400  
 (D) Initial Shut-in Pressure 1687.8 PSI @ (depth) 4375 w / Clock No. 23858  
 (E) Second Initial Flow Pressure 184.2 PSI AK1 Recorder No. \_\_\_\_\_ Range \_\_\_\_\_  
 (F) Second Final Flow Pressure 203.4 PSI @ (depth) \_\_\_\_\_ w / Clock No. \_\_\_\_\_  
 (G) Final Shut-in Pressure 1640.7 PSI Initial Opening 30 Final Flow 30  
 (H) Final Hydrostatic Mud 2080.4 PSI Initial Shut-in 60 Final Shut-in 60

Our Representative GARY PEVOTEAUX

# CHART PAGE



This is an actual photograph of recorder chart 10248

	FIELD READING	OFFICE READING
(A) INITIAL HYDROSTATIC MUD	2107	2108.9
(B) FIRST INITIAL FLOW PRESSURE	87	99
(C) FIRST FINAL FLOW PRESSURE	166	179.7
(D) INITIAL CLOSED-IN PRESSURE	1677	1687.8
(E) SECOND INITIAL FLOW PRESSURE	173	184.2
(F) SECOND FINAL FLOW PRESSURE	196	203.4
(G) FINAL CLOSED-IN PRESSURE	1635	1640.7
(H) FINAL HYDROSTATIC MUD	2067	2080.4

# TRILOBITE TESTING, L.L.C.

P.O. Box 362 • Hays, Kansas 67601

## Drill-Stem Test Data

Well Name BOX RANCH "A" #1 Test No. 2 Date 9/20/94  
Company CHARTER PRODUCTION COMPANY Zone OSWEGO  
Address 142 NORTH MOSLEY WICHITA KS 67202 Elevation 1799  
Co. Rep./Geo. KITT NOAH Cont. EAGLE DRLG #1 Est. Ft. of Pay \_\_\_\_\_  
Location: Sec. 4 Twp. 35S Rge. 20W Co. COMMANCHE State KS

Interval Tested 5267-5310 Drill Pipe Size 4.5" XH  
Anchor Length 43 Wt. Pipe I.D. - 2.7 Ft. Run \_\_\_\_\_  
Top Packer Depth 4262 Drill Collar - 2.25 Ft. Run 496  
Bottom Packer Depth 4267 Mud Wt. \_\_\_\_\_ 9.2 lb/Gal.  
Total Depth 4310 Viscosity 48 Filtrate 8.0

Tool Open @ 6:05 A.M. Initial Blow WEAK TO FAIR BLOW (SLOW INCREASE TO 7" IN WATER)  
Final Blow WEAK BLOW (1/2-2" IN WATER)

Recovery - Total Feet 65 Flush Tool? NO

Rec. 65 Feet of GASSY DRILLING MUD 6%GAS/94%MUD  
Rec. \_\_\_\_\_ Feet of \_\_\_\_\_  
Rec. \_\_\_\_\_ Feet of \_\_\_\_\_  
Rec. \_\_\_\_\_ Feet of \_\_\_\_\_  
Rec. \_\_\_\_\_ Feet of \_\_\_\_\_

BHT 130 °F Gravity \_\_\_\_\_ °API @ \_\_\_\_\_ °F Corrected Gravity \_\_\_\_\_ °API  
RW \_\_\_\_\_ @ \_\_\_\_\_ °F Chlorides 7000 ppm Recovery Chlorides 6800 ppm System

(A) Initial Hydrostatic Mud 2632.3 PSI AK1 Recorder No. 13788 Range 4650

(B) First Initial Flow Pressure 47.0 PSI @ (depth) 5307 w / Clock No. 30401

(C) First Final Flow Pressure 62.9 PSI AK1 Recorder No. 10248 Range 4400

(D) Initial Shut-in Pressure 1838.9 PSI @ (depth) 5302 w / Clock No. 23858

(E) Second Initial Flow Pressure 67.5 PSI AK1 Recorder No. \_\_\_\_\_ Range \_\_\_\_\_

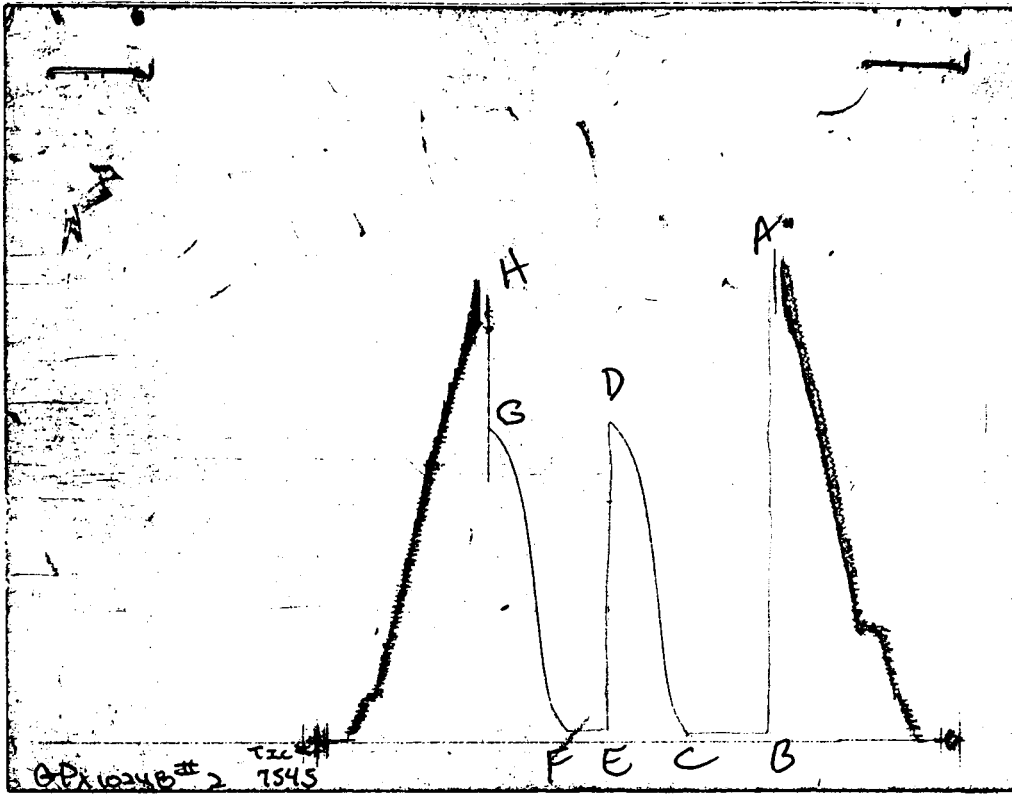
(F) Second Final Flow Pressure 75.3 PSI @ (depth) \_\_\_\_\_ w / Clock No. \_\_\_\_\_

(G) Final Shut-in Pressure 1801.7 PSI Initial Opening 30 Final Flow 30

(H) Final Hydrostatic Mud 2497.7 PSI Initial Shut-in 60 Final Shut-in 60

Our Representative GARY PEVOTEAUX

CHART PAGE



This is an actual photograph of recorder chart 10248

	FIELD READING	OFFICE READING
(A) INITIAL HYDROSTATIC MUD	2646	2632.3
(B) FIRST INITIAL FLOW PRESSURE	30	47
(C) FIRST FINAL FLOW PRESSURE	37	62.9
(D) INITIAL CLOSED-IN PRESSURE	1843	1838.9
(E) SECOND INITIAL FLOW PRESSURE	41	67.5
(F) SECOND FINAL FLOW PRESSURE	48	75.3
(G) FINAL CLOSED-IN PRESSURE	1793	1801.7
(H) FINAL HYDROSTATIC MUD	2492	2497.7

# TRILOBITE TESTING, L.L.C.

P.O. Box 362 • Hays, Kansas 67601

## Drill-Stem Test Data

Well Name BOX RANCH "A" #1 Test No. 3 Date 9/21/94  
Company CHARTER PRODUCTION COMPANY Zone MORROW  
Address 142 NORTH MOSLEY WICHITA KS 67202 Elevation 1799  
Co. Rep./Geo. KITT NOAH Cont. EAGLE DRLG #1 Est. Ft. of Pay \_\_\_\_\_  
Location: Sec. 4 Twp. 35S Rge. 20W Co. COMMANCHE State KS

Interval Tested	<u>5471-5567</u>	Drill Pipe Size	<u>4.5" XH</u>
Anchor Length	<u>96</u>	Wt. Pipe I.D. - 2.7 Ft. Run	_____
Top Packer Depth	<u>5466</u>	Drill Collar - 2.25 Ft. Run	<u>434</u>
Bottom Packer Depth	<u>5471</u>	Mud Wt.	<u>9.2</u> lb/Gal.
Total Depth	<u>5567</u>	Viscosity	<u>54</u>
		Filtrate	<u>10.2</u>

Tool Open @ 2:45 P.M. <sup>Initial</sup> Blow STRONG BLOW (BOTTOM OF BUCKET IJN 20-30 SEC)  
Final Blow STRONG BLOW GAS TO SURFACE IN 2 MIN INTO FINAL BLOW  
SEE GAS VOLUME REPORT

Recovery - Total Feet 125 Flush Tool? NO

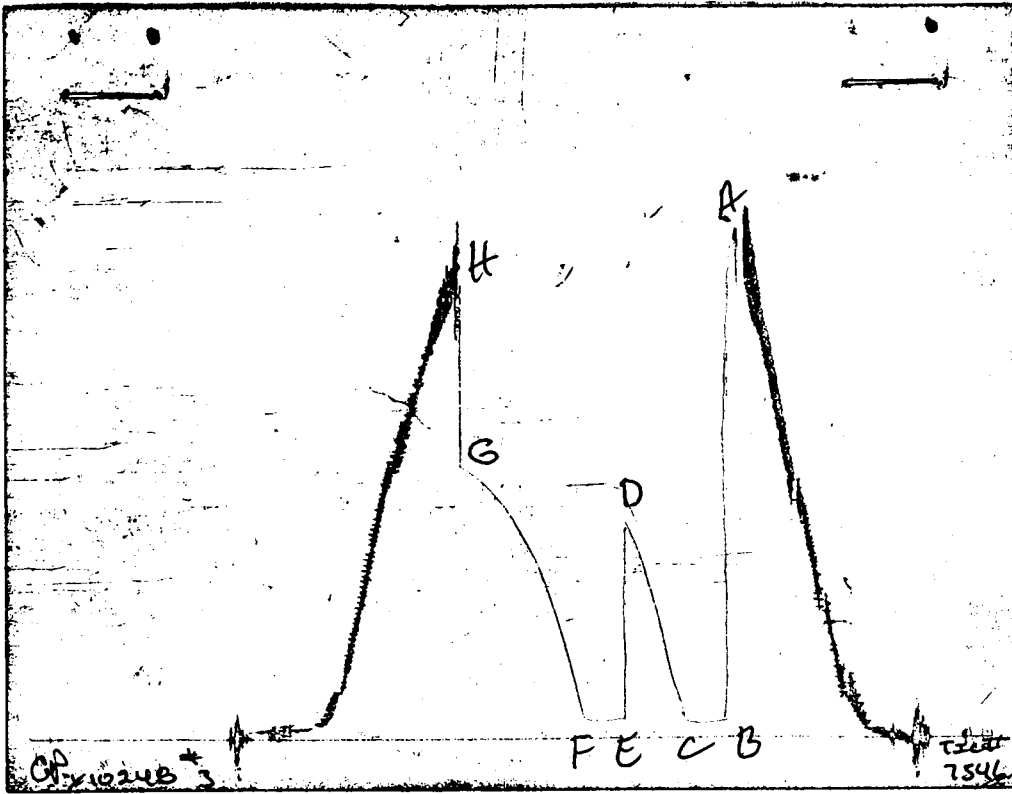
Rec. <u>5290</u>	Feet of	<u>GAS IN PIPE</u>
Rec. <u>125</u>	Feet of	<u>DRILLING MUD</u>
Rec. _____	Feet of	_____
Rec. _____	Feet of	_____
Rec. _____	Feet of	_____

BHT 134 °F Gravity \_\_\_\_\_ °API @ \_\_\_\_\_ °F Corrected Gravity \_\_\_\_\_ °API  
RW \_\_\_\_\_ @ \_\_\_\_\_ °F Chlorides 6500 ppm Recovery Chlorides 6000 ppm System

(A) Initial Hydrostatic Mud	<u>2806.6</u> PSI	AK1 Recorder No.	<u>13788</u>	Range	<u>4650</u>
(B) First Initial Flow Pressure	<u>101.4</u> PSI	@ (depth)	<u>5564</u>	w / Clock No.	<u>30401</u>
(C) First Final Flow Pressure	<u>106.0</u> PSI	AK1 Recorder No.	<u>10248</u>	Range	<u>4400</u>
(D) Initial Shut-in Pressure	<u>1228.7</u> PSI	@ (depth)	<u>5559</u>	w / Clock No.	<u>23858</u>
(E) Second Initial Flow Pressure	<u>108.3</u> PSI	AK1 Recorder No.	_____	Range	_____
(F) Second Final Flow Pressure	<u>111.7</u> PSI	@ (depth)	_____	w / Clock No.	_____
(G) Final Shut-in Pressure	<u>1555.4</u> PSI	Initial Opening	<u>30</u>	Final Flow	<u>30</u>
(H) Final Hydrostatic Mud	<u>2770.2</u> PSI	Initial Shut-in	<u>45</u>	Final Shut-in	<u>90</u>

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CHART PAGE



This is an actual photograph of recorder chart 10248

	FIELD READING	OFFICE READING
(A) INITIAL HYDROSTATIC MUD	2807	2806.6
(B) FIRST INITIAL FLOW PRESSURE	80	101.4
(C) FIRST FINAL FLOW PRESSURE	87	106
(D) INITIAL CLOSED-IN PRESSURE	1233	1228.7
(E) SECOND INITIAL FLOW PRESSURE	87	108.3
(F) SECOND FINAL FLOW PRESSURE	89	111.7
(G) FINAL CLOSED-IN PRESSURE	1563	1555.4
(H) FINAL HYDROSTATIC MUD	2768	2770.2

# GAS VOLUME REPORT

CHARTER PRODUCTION COMPANY

BOX RANCH "A" #1

DST # 3

MIN	INCHES	ORIFICE	MCF/D	MIN	INCHES	ORIFICE	MCF/D
	OF WTR				OF WTR		
				2	GAS	TO	SURFACE
				5	50" WT	0.25	11.9
				10	42"WTR	0.25	10.9
				20	30"WTR	0.25	9.2
				25	21"WTR	0.25	7.75

Remarks:

BOX RANCH "A" #1  
INITIAL

DST #3  
SHUTIN

30 INITIAL FLOW TIME

-----  
SLOPE 2222461.09 PSI/CYCLE  
P\* 1931.88 PSI  
-----

	TIME(MIN)	Pws (psi)	Log Horn T	<> PRESSURE	Horn T
	-----	-----	-----	-----	-----
	3	119.7	1.041	119.7	11
	6	194.4	0.778	74.7	6
	9	312.3	0.637	117.9	4
	12	448.4	0.544	136.1	4
	15	535.0	0.477	86.6	3
	18	613.5	0.426	78.5	3
	21	725.9	0.385	112.4	2
	24	800.7	0.352	74.8	2
	27	887.3	0.325	86.6	2
	30	983.8	0.301	96.5	2
	33	1041.8	0.281	58.0	2
X	36	1097.5	0.263	55.7	2
	39	1143.5	0.248	46.0	2
	42	1190.5	0.234	47.0	2
X	45	1228.7	0.222	38.2	2

BOX RANCH "A" #1  
FINAL

DST #3  
SHUTIN

30 TOTAL FLOW TIME

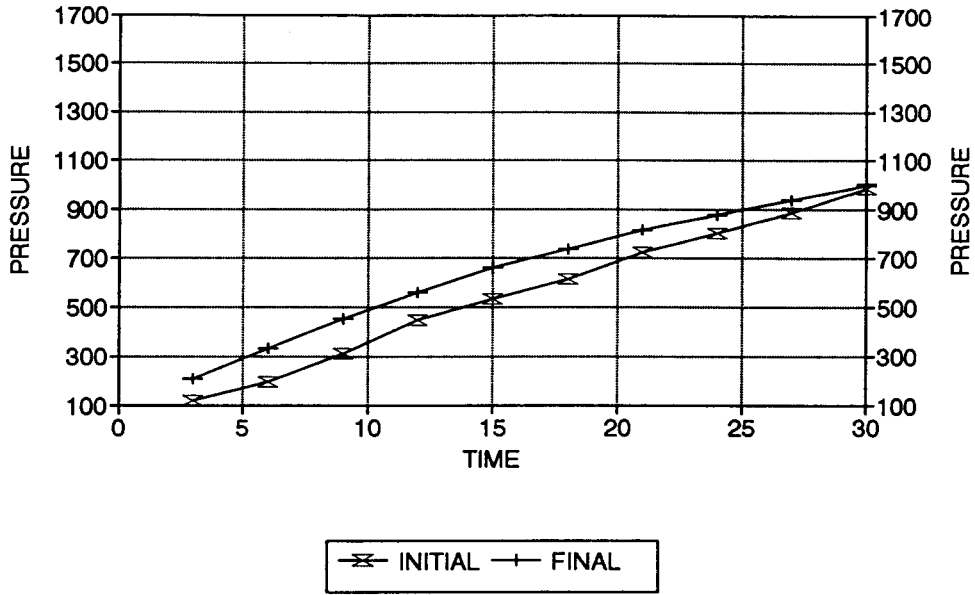
SLOPE  
P\*

1298337.99  
1928.11

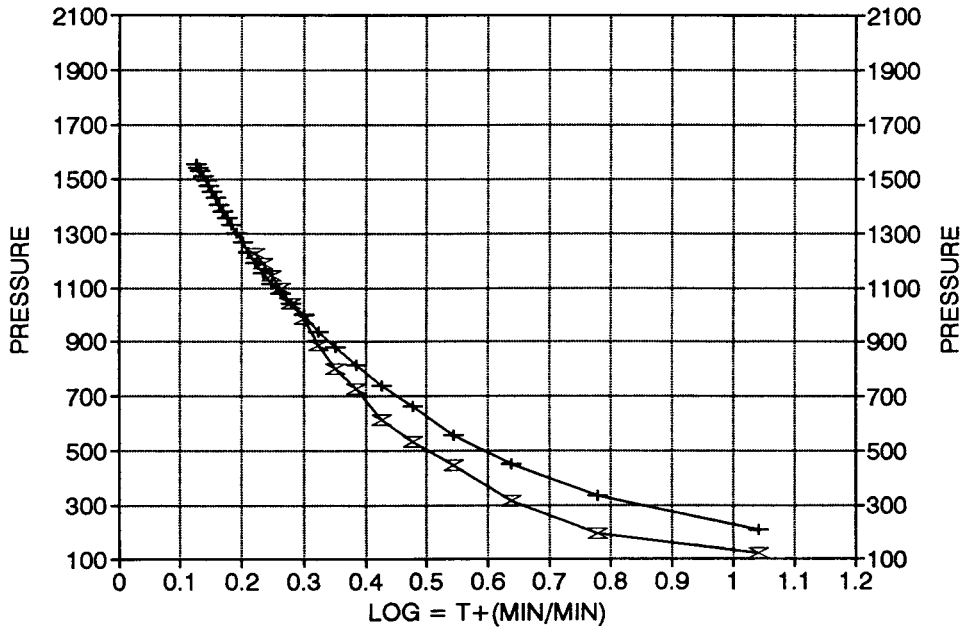
PSI/CYCLE  
PSI

			Log	<>	
	TIME(MIN)	Pws(psi)	Horn T	PRESSURE	Horn T
	3	207.9	1.041	207.9	11
	6	333.6	0.778	125.7	6
	9	450.0	0.637	116.4	4
	12	558.2	0.544	108.2	4
	15	662.0	0.477	103.8	3
	18	739.1	0.426	77.1	3
	21	813.9	0.385	74.8	2
X	24	877.5	0.352	63.6	2
	27	936.7	0.325	59.2	2
	30	998.0	0.301	61.3	2
	33	1040.7	0.281	42.7	2
	36	1079.0	0.263	38.3	2
	39	1115.0	0.248	36.0	2
	42	1156.6	0.234	41.6	2
	45	1191.5	0.222	34.9	2
	48	1229.8	0.211	38.3	2
	51	1270.2	0.201	40.4	2
	54	1304.1	0.192	33.9	2
	57	1331.4	0.184	27.3	2
	60	1359.8	0.176	28.4	2
	63	1382.7	0.169	22.9	1
	66	1405.7	0.163	23.0	1
	69	1430.8	0.157	25.1	1
	72	1455.9	0.151	25.1	1
	75	1476.7	0.146	20.8	1
	78	1496.4	0.141	19.7	1
	81	1510.6	0.137	14.2	1
	84	1528.1	0.133	17.5	1
	87	1540.1	0.129	12.0	1
X	90	1555.4	0.125	15.3	1

# BOX RANCH "A" #1 DST #3 DELTA T DELTA P



# HORNER PLOT



# TRILOBITE TESTING, L.L.C.

P.O. Box 362 • Hays, Kansas 67601

## Drill-Stem Test Data

Well Name BOX RANCH "A" #1 Test No. 4 Date 9/23/94  
Company CHARTER PRODUCTION COMPANY Zone MISS/CHESTER  
Address 142 NORTH MOSLEY WICHITA KS 67202 Elevation 1799  
Co. Rep./Geo. KITT NOAH Cont. EAGLE DRLG #1 Est. Ft. of Pay 4  
Location: Sec. 4 Twp. 35S Rge. 20W Co. COMMANCHE State KS

Interval Tested 5546-5595 Drill Pipe Size 4.5" XH  
Anchor Length 49 Wt. Pipe I.D. - 2.7 Ft. Run \_\_\_\_\_  
Top Packer Depth 5541-5546 Drill Collar - 2.25 Ft. Run 434  
Bottom Packer Depth 5595 Mud Wt. 8.8 lb/Gal.  
Total Depth 5643 Viscosity 74 Filtrate 12.8

Tool Open @ 12:12 P.M. Initial Blow STRONG BLOW GAS TO SURFACE IN 1 MIN (SEE GAS VOLUME REPORT)

Final Blow STRONG BLOW (SEE GAS VOLUME REPORT)

Recovery - Total Feet 40 Flush Tool? NO

Rec. 5430 Feet of GAS IN PIPE  
Rec. 40 Feet of MUD & WATER 82%WATER/18%MUD  
Rec. \_\_\_\_\_ Feet of \_\_\_\_\_  
Rec. \_\_\_\_\_ Feet of \_\_\_\_\_  
Rec. \_\_\_\_\_ Feet of \_\_\_\_\_

BHT 135 °F Gravity \_\_\_\_\_ °API @ \_\_\_\_\_ °F Corrected Gravity \_\_\_\_\_ °API  
RW 0.45 @ 72 °F Chlorides 25000 ppm Recovery Chlorides 10000 ppm System

(A) Initial Hydrostatic Mud 2792.2 PSI AK1 Recorder No. 10248 Range 4400

(B) First Initial Flow Pressure 1783.0 PSI @ (depth) 5549 w / Clock No. 23858

(C) First Final Flow Pressure 1783.0 PSI AK1 Recorder No. 13224 Range 4350

(D) Initial Shut-in Pressure 1978.2 PSI @ (depth) 5588 w / Clock No. 27785

(E) Second Initial Flow Pressure 1773.2 PSI AK1 Recorder No. 13788 Range 4650

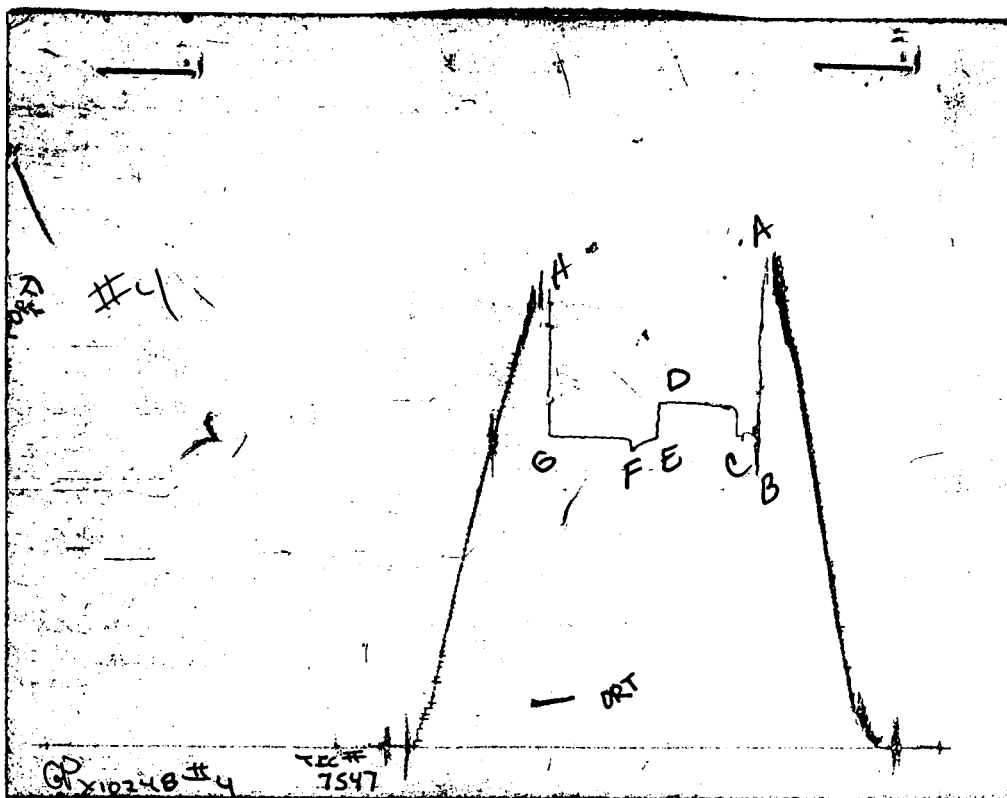
(F) Second Final Flow Pressure 1702.0 PSI @ (depth) 5640 w / Clock No. 30401

(G) Final Shut-in Pressure 1786.3 PSI Initial Opening 15 Final Flow 20

(H) Final Hydrostatic Mud 2706.2 PSI Initial Shut-in 60 Final Shut-in 60

Our Representative GARY PEVOTEAUX

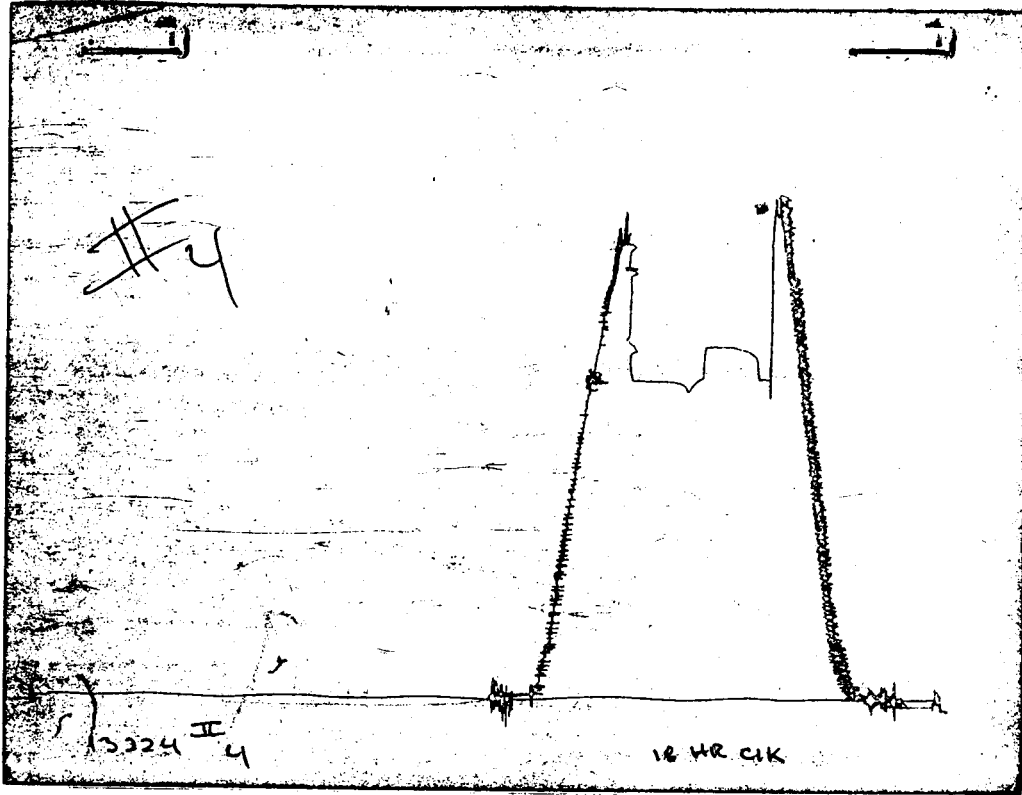
# CHART PAGE



This is an actual photograph of recorder chart 10248

	FIELD READING	OFFICE READING
(A) INITIAL HYDROSTATIC MUD	2785	2792.2
(B) FIRST INITIAL FLOW PRESSURE	1797	1783
(C) FIRST FINAL FLOW PRESSURE	1797	1783
(D) INITIAL CLOSED-IN PRESSURE	1981	1978.2
(E) SECOND INITIAL FLOW PRESSURE	1777	1773.2
(F) SECOND FINAL FLOW PRESSURE	1701	1702
(G) FINAL CLOSED-IN PRESSURE	1786	1786.3
(H) FINAL HYDROSTATIC MUD	2702	2706.2

CHART PAGE

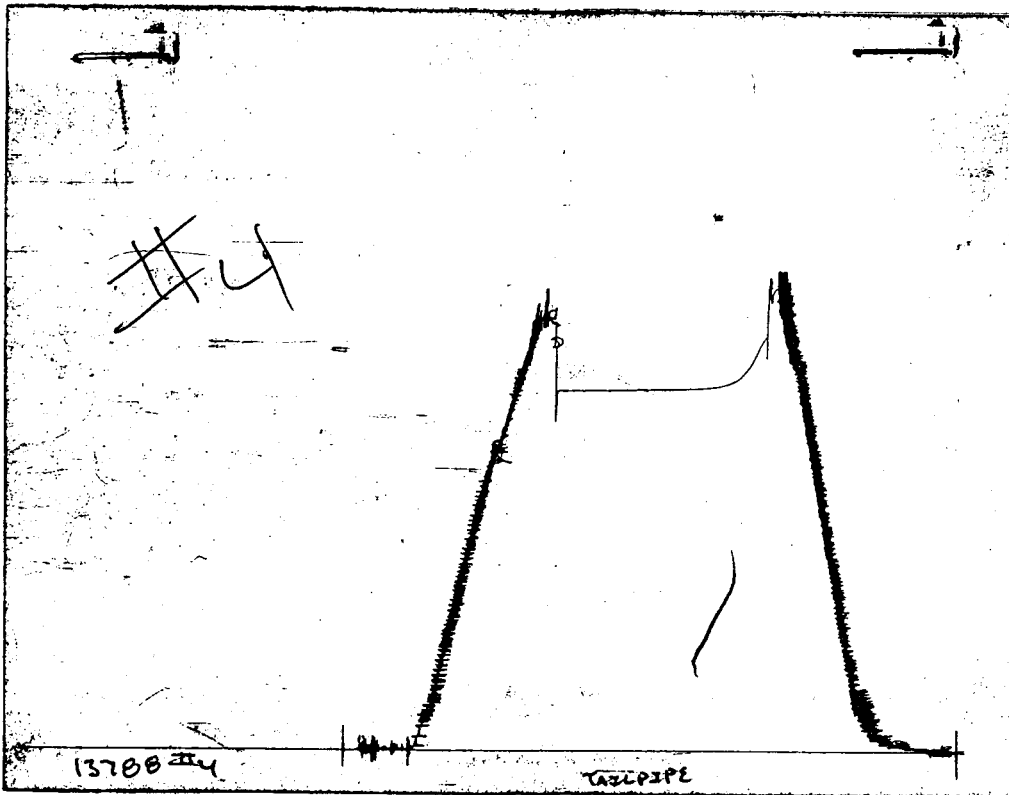


FIELD  
READING

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

CHART PAGE



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

# GAS VOLUME REPORT

CHARTER PRODUCTION COMPANY

BOX RANCH "A" #1

DST # 4

MIN	PSIG	ORIFICE	MCF/D	MIN	PSIG	ORIFICE	MCF/D
1	100 PSI	1.5	G.T.S.	5	26 PSI	2	7136
5	100 PSI	1.5	6737	10	32 PSI	2	8204
10	100 PSI	1.5	6737	15	32 PSI	2	8204
15	100 PSI	1.5	6737	20	30 PSI	2	7819

Remarks:

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: 316-624-5389  
 Fax: 316-626-7108

Lab Number: 940496  
 Sample From: Box Ranch "A" #1 DST 4  
 Producer: Charter Production Co.  
 Date:  
 Time:  
 Sampler:  
 Source:

Analyzed: 09/27/94  
 Pressure:  
 Temperature:  
 Location: 4-32S-20W  
 County: Comanche  
 State: Kansas  
 Formation: Mississippi  
 Chester

	Mole %	GPM
Helium	He: 0.158	0.000
Oxygen	O2: 0.000	0.000
Nitrogen	N2: 4.607	0.000
Carbon Dioxide	CO2: 0.311	0.000
Methane	C1: 87.335	0.000
Ethane	C2: 4.336	1.160
Propane	C3: 1.575	0.434
Iso Butane	iC4: 0.212	0.069
Normal Butane	nC4: 0.503	0.159
Iso Pentane	iC5: 0.116	0.042
Normal Pentane	nC5: 0.188	0.068
Hexanes Plus	C6+: 0.659	0.288

TOTAL: 100.000 2.220  
 Z Fact: 0.9976  
 SP.GR.: 0.6469  
 BTU (SAT): 1054.1 @ 14.73 psia  
 BTU (DRY): 1072.7 @ 14.73 psia  
 OCTANE RATING: 120.5

COMMENTS: Sample contained liquids