TRILOBITE TESTING, L.L.C.

P.O. Box 362 • Hays, Kansas 67601

Drill-Stem Test Data

Well Name ENNS A-2 Test No. 1 Date 8-11-93

Company CHARTER PRODUCTION COMPANY Zone COUNCIL GROV

Address 224 EAST DOUGLAS #400 WICHITA KS 67202 Elevation 2282 GL

Co. Rep./Geo. TYLER SANDERS Cont. ABERCROMBIE #5 Est. Ft. of Pay 6

Location: Sec. 15 Twp. 34S Rge. 28W Co. MEADE State KS

Interval Tested 2899-2939

Anchor Length 40

Top Packer Depth 2894

Bottom Packer Depth 2899

Total Depth 2939

Drill Pipe Size 4.5" XH

Wt. Pipe I.D. - 2.7 Ft. Run 532

Drill Collar – 2.25 Ft. Run

Mud Wt. 9.1 lb/Gal.

Viscosity 43 Filtrate 24

Tool Open @ 10:36 PM Initial Blow BLOW OFF BOTTOM IN 10 SECONDS
GAS TO SURFACE IN 2 MINUTES

Final Blow OFF BOTTOM AS TOOL OPENED GAUGED 2140 MCF/DAY

Recovery - Total Feet 100 Flush Tool? NO

Rec. 2771 Feet of GAS IN PIPE

Rec. 100 Feet of MUD

Rec. Feet of

Rec. Feet of

Rec. Feet of

BHT °F Gravity °API @ °F Corrected Gravity °API

RW 0.13 @ 70 °F Chlorides 55000 ppm Recovery Chlorides 28000 ppm System

(A) Initial Hydrostatic Mud 1479.6 PSI AK1 Recorder No. 13337 Range 3975

(B) First Initial Flow Pressure 507.9 PSI @ (depth) 2904 w / Clock No. 17652

(C) First Final Flow Pressure 499.0 PSI AK1 Recorder No. 10332 Range 4010

(D) Initial Shut-in Pressure 543.2 PSI @ (depth) 2934 w / Clock No. 27566

(E) Second Initial Flow Pressure 513.8 PSI AK1 Recorder No. Range

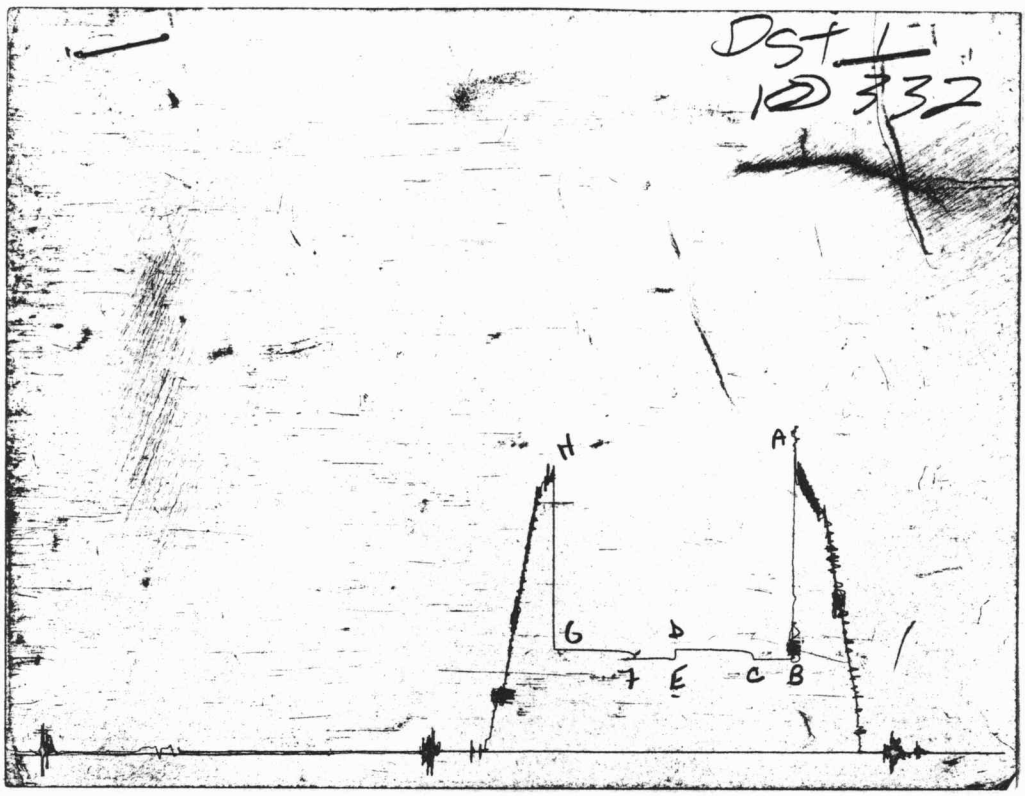
(F) Second Final Flow Pressure 505.9 PSI @ (depth) w / Clock No.

(G) Final Shut-in Pressure 538.3 PSI Initial Opening 30 Final Flow 30

(H) Final Hydrostatic Mud 1449.8 PSI Initial Shut-in 60 Final Shut-in 60

Our Representative MARK HERSKOWITZ

CHART PAGE



This is an actual photograph of recorder chart

	FIELD READING	OFFICE READING
(A) INITIAL HYDROSTATIC MUD	1464	1479.6
(B) FIRST INITIAL FLOW PRESSURE	484	507.9
(C) FIRST FINAL FLOW PRESSURE	484	499
(D) INITIAL CLOSED-IN PRESSURE	523	543.2
(E) SECOND INITIAL FLOW PRESSURE	484	513.8
(F) SECOND FINAL FLOW PRESSURE	484	505.9
(G) FINAL CLOSED-IN PRESSURE	523	538.3
(H) FINAL HYDROSTATIC MUD	1434	1449.8

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

CHARTER PRODUCTION COMPANY

ENNS A-2 DST 1

15 34S 28W MEADE KS

****

ELEVATION:	2282	EST. PAY:	6 FT.
DATUM:	-2905	ZONE TESTED:	COUNCIL GROVE
TEST INTERVAL:	2899-2939	TIME INTERVALS:	30-60-30-60
RECORDER DEPTH:	2904	VISCOSITY:	0.01219 CP
BOTTOM HOLE TEMP:		HOLE SIZE:	7.875 IN
COMPRESSIBILITY:	0.9975	GAS GRAVITY:	0.6643

****

TEMPERATURE RANKINE:	460.00	&
TRANSMISSIBILITY:	308458.40	Kh/%
THEORITICAL FLOW CAPICITY:	3760.85	Kh
AVERAGE EFFECTIVE PERMEABILITY:	626.81	K(md.)
RADIUS OF INVESTIGATION:	193.93	FT.
DAMAGE RATIO:	0.67	
ABSOLUTE OPEN FLOW(MAX)	16168.04	MCFD
ABSOLUTE OPEN FLOW(MIN)	5882.14	MCFD
THEORITICAL OPEN FLOW(MAX)	10784.11	MCFD
THEORITICAL OPEN FLOW(MIN)	3923.40	MCFD
POTENTIOMETRIC SURFACE	9180.74	(FT.)

****

INITIAL SHUT-IN VALUES:

SLOPE	3879.51
THEORETICAL STATIC PRESSURE	547

FINAL SHUT-IN VALUES:

SLOPE	5211.19
THEORETICAL STATIC PRESSURE	543

DRAWDOWN FACTOR: 0.67 (%)

INITIAL FLOW

RECORDER 13337 DST # 1

TIME(MIN)	PRESSURE	<>PRESSURE
0	507.8	507.8
3	507.8	0.0
6	502.9	-4.9
9	502.9	0.0
12	502.9	0.0
15	499.1	-3.8
18	499.1	0.0
21	499.1	0.0
24	499.1	0.0
27	499.1	0.0
30	499.1	0.0

FINAL FLOW

RECORDER 13337 DST # 1

TIME(MIN)	PRESSURE	<> PRESSURE
0	513.7	513.7
3	513.7	0.0
6	511.7	-2.0
9	511.7	0.0
12	511.7	0.0
15	511.7	0.0
18	505.8	-5.9
21	505.8	0.0
24	505.8	0.0
30	505.8	0.0

ENNS A-2 DST #1
INITIAL SHUTIN

30 TOTAL FLOW TIME

Slope 3879.51 psi/cycle
P * 547 psi

	TIME(MIN)	Pws (psi)	Log Horn T	<> PRESSURE	Horn T
	3	510.8	1.041	510.8	11
	6	519.6	0.778	8.8	6
	9	526.5	0.637	6.9	4
	12	530.4	0.544	3.9	4
	15	530.4	0.477	0.0	3
	18	533.4	0.426	3.0	3
	21	537.3	0.385	3.9	2
	24	539.2	0.352	1.9	2
X	27	540.2	0.325	1.0	2
	30	543.2	0.301	3.0	2
	33	543.2	0.281	0.0	2
	36	543.2	0.263	0.0	2
	39	543.2	0.248	0.0	2
	42	543.2	0.234	0.0	2
	45	543.2	0.222	0.0	2
	48	543.2	0.211	0.0	2
	51	543.2	0.201	0.0	2
	54	543.2	0.192	0.0	2
	57	543.2	0.184	0.0	2
X	60	543.2	0.176	0.0	2

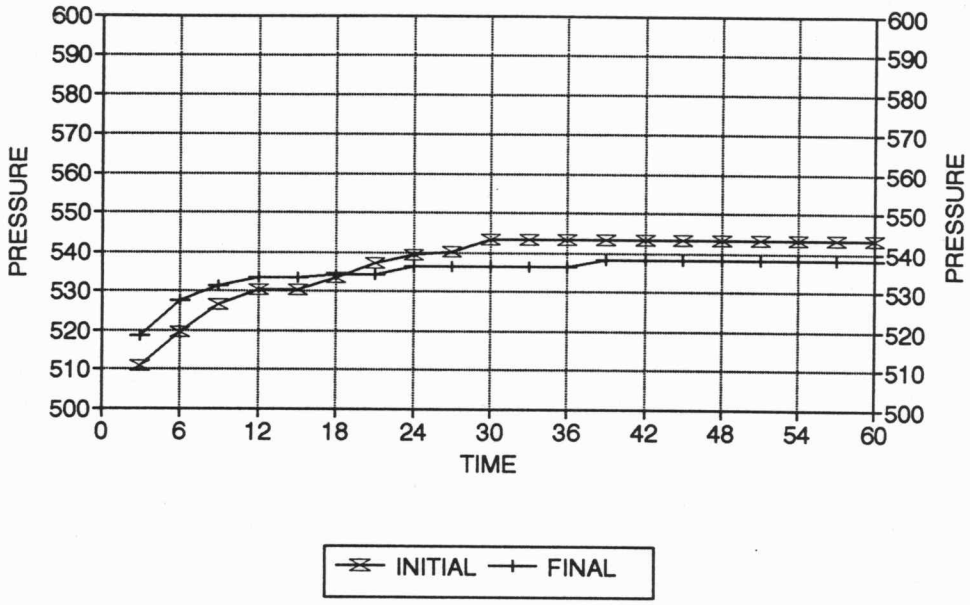
ENNS A-2
FINAL

DST #1
SHUTIN
60 TOTAL FLOW TIME

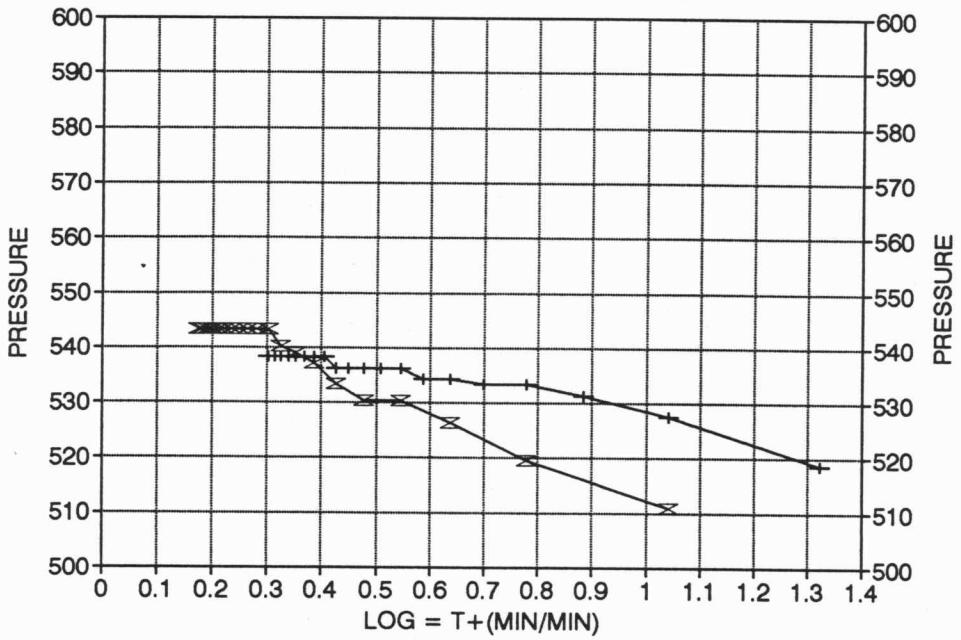
Slope 5211.19 psi/cycle
P * 543 psi

		Pws (psi)	Log Horn T	<> PRESSURE	Horn T
	3	518.6	1.322	518.6	21
	6	527.5	1.041	8.9	11
	9	531.4	0.885	3.9	8
	12	533.4	0.778	2.0	6
	15	533.4	0.699	0.0	5
	18	534.3	0.637	0.9	4
	21	534.3	0.586	0.0	4
	24	536.3	0.544	2.0	4
	27	536.3	0.508	0.0	3
	30	536.3	0.477	0.0	3
	33	536.3	0.450	0.0	3
X	36	536.3	0.426	0.0	3
	39	538.3	0.405	2.0	3
	42	538.3	0.385	0.0	2
	45	538.3	0.368	0.0	2
	48	538.3	0.352	0.0	2
	51	538.3	0.338	0.0	2
	54	538.3	0.325	0.0	2
	57	538.3	0.312	0.0	2
X	60	538.3	0.301	0.0	2

ENNS A-2 / DST #1
DELTA T DELTA P



HORNER PLOT



GAS VOLUME REPORT

CHARTER PRODUCTION COMPANY

ENNS A-2 DST # 1

MIN	PSIG	ORIFICE	MCF/D
2	3	1 1/2	654
5	15	1 1/2	1626
10	22	1 1/2	2075
15	23	1 1/2	2140
20	23	1 1/2	2140
25	23	1 1/2	2140
30	23	1 1/2	2140

MIN	INCHES OF WTR	ORIFICE	MCF/D
5	22	1 1/2	2075
10	23	1 1/2	2140
15	23	1 1/2	2140
20	23	1 1/2	2140
25	23	1 1/2	2140
30	23	1 1/2	2140

Remarks: GAS TO SURFACE IN 2 MINUTES

NATURAL GAS ANALYSIS REPORT

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

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

Lab Number:	93103	Analyzed:	08/12/93
Sample From:	Enns A-2 Dst 1	Pressure:	
Producer:	Charter Production	Temperature:	
Date:	08/12/93	Location:	15-34-28
Time:		County:	Meade
Sampler:		State:	Kansas
Source:		Formation:	Council Grove

		Mole %	GPM
Helium	He:	0.214	0.000
Oxygen	O2:	0.000	0.000
Nitrogen	N2:	5.920	0.000
Carbon Dioxide	CO2:	0.125	0.000
Methane	C1:	83.813	0.000
Ethane	C2:	5.698	1.524
Propane	C3:	2.380	0.656
Iso Butane	iC4:	0.264	0.086
Normal Butane	nC4:	0.698	0.220
Iso Pentane	iC5:	0.162	0.059
Normal Pentane	nC5:	0.225	0.081
Hexanes Plus	C6+:	0.501	0.219
	TOTAL:	100.000	2.846
	Z Fact:	0.9975	
	SP.GR.:	0.6643	
	BTU (SAT):	1066.1 @ 14.73 psia	
	BTU (DRY):	1085.0 @ 14.73 psia	

COMMENTS:
2899-2939
Zone 'A' Pax 6
Elevation 2282 GL

TRILOBITE TESTING

P.O. Box 362 • Hays, Kansas 67601 • (913) 625-4778

GAS VOLUME REPORT

CHARTER PROD COM (OPERATOR) ENNS (WELL NAME AND NO.) A-2 (DST NO.) 1

Min.	~~Ins of Water~~ PSIG	Orifice Size	MCF/D	Min.	~~Ins of Water~~ PSIG	Orifice Size	MCF/D
2	3	1 1/2	654.	5	22	1 1/2	2075.
5	15	1 1/2	1626.	10	23	1 1/2	2140.
10	22	1 1/2	2075.	15	23	1 1/2	2140.
15	23	1 1/2	2140.	20	23	1 1/2	2140.
20	23	1 1/2	2140.	25	23	1 1/2	2140.
25	23	1 1/2	2140.	30	23	1 1/2	2140.
30	23	1 1/2	2140.				

GAS TO SUR. IN 2 MIN

Remarks:

TRILOBITE TESTING L.L.C.

P.O. Box 362 • Hays, Kansas 67601

Test Ticket

№ 6396

Well Name & No. ENNS A-2 Test No. 1 Date 8-11-93

Company CHARTER PRODUCTION COM Zone Tested COUNCIL GROVE "A"

Address 224 E Douglas STE 400 WICHITA Elevation 2282 GL

Co. Rep./Geo. TYLER SANDERS Cont. A.L.A. RIG 5 Est. Ft. of Pay 6

Location: Sec. 15 Twp. 34 Rge. 28 Co. MEADE State KS

No. of Copies ____ Distribution Sheet ____ Yes ____ No Turnkey ____ Yes ____ No ____ Evaluation

Interval Tested 2899 - 2939 Drill Pipe Size 4½ XH

Anchor Length 40 Top Choke — 1" ____ Bottom Choke — ¾" ____

Top Packer Depth 2894 Hole Size — 7⅞" ____ Rubber Size — 6¾" ____

Bottom Packer Depth 2899 Wt. Pipe I.D. — 2.7 Ft. Run 532

Total Depth 2939 Drill Collar — 2.25 Ft. Run ____

Mud Wt. 9.1 LCM 1 lb / gal. Viscosity 43 Filtrate 24.0

Tool Open @ 10:36 PM Initial Blow BLOW OFF BOTTOM 10 SEC GAS to SUR IN 2 MIN

Final Blow OFF BOTTOM ON OPEN OF TOOL 23 P.S.I. ON 1½ ORIFICE = 2140. MCF/DAY

Recovery — Total Feet 100 Feet of Gas in Pipe 2771 Flush Tool? ____

Rec. 100	Feet Of MUD	%gas	%oil	%water	100	%mud
Rec. ____	Feet Of ____	%gas	%oil	%water		%mud
Rec. ____	Feet Of ____	%gas	%oil	%water		%mud
Rec. ____	Feet Of ____	%gas	%oil	%water		%mud
Rec. ____	Feet Of ____	%gas	%oil	%water		%mud

BHT ____ °F Gravity ____ °API @ ____ °F Corrected Gravity ____ °API

RW 0.13 @ 70 °F. Chlorides 55,000 ppm Recovery Chlorides 28,000 ppm System

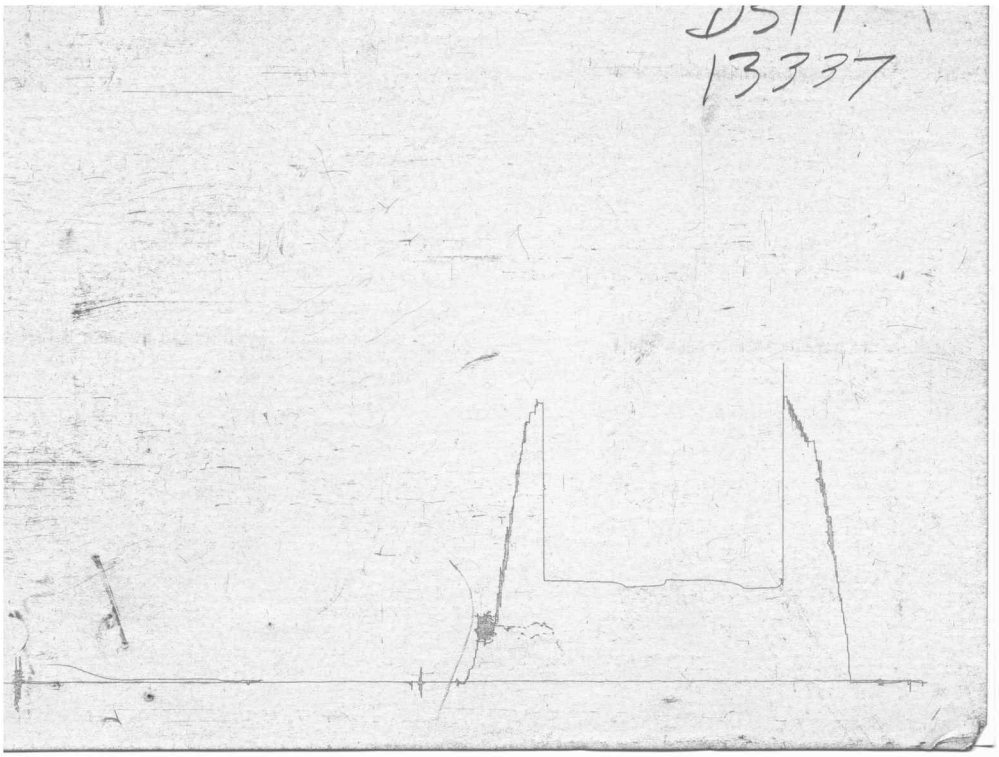
(A) Initial Hydrostatic Mud	1464 PSI	AK1 Recorder No.	13337	Range	3975
(B) First Initial Flow Pressure	484 PSI	@ (depth)	2904	w/Clock No.	17652
(C) First Final Flow Pressure	484 PSI	AK1 Recorder No.	10332	Range	4050
(D) Initial Shut-In Pressure	523 PSI	@ (depth)	2934	w/Clock No.	27566
(E) Second Initial Flow Pressure	484 PSI	AK1 Recorder No.	____	Range	____
(F) Second Final Flow Pressure	484 PSI	@ (depth)	____	w/Clock No.	____
(G) Final Shut-In Pressure	523 PSI	Initial Opening	30	Test ✓	600
(H) Final Hydrostatic Mud	1484 PSI	Initial Shut-In	40	Jars ✓	200
		Final Flow	30	Safety Joint ✓	50
		Final Shut-In	60	Straddle	____
				Circ. Sub	INC
				Sampler	____
				Extra Packer	____
				Other wel	50
				TOTAL PRICE $	900

Approved By ____

Our Representative Mark Kershaw

Printcraft Printers - Hays, KS

DST
13337



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1	0.514	507.8604
2	0.514	507.8604
3	0.509	502.9465
4	0.509	502.9465
5	0.509	502.9465
6	0.505	499.0149
7	0.505	499.0149
8	0.505	499.0149
9	0.505	499.0149
10		0
11	0.52	513.7565
12	0.52	513.7565
13	0.518	511.7913
14	0.518	511.7913
15	0.518	511.7913
16	0.518	511.7913
17	0.512	505.8949
18	0.512	505.8949
19	0.512	505.8949
20	0.512	505.8949

1	0.517	510.8086
2	0.526	519.6519
3	0.533	526.5288
4	0.537	530.4581
5	0.537	530.4581
6	0.54	533.4048
7	0.544	537.3335
8	0.546	539.2977
9	0.547	540.2797
10	0.55	543.2258
11	0.55	543.2258
12	0.55	543.2258
13	0.55	543.2258
14	0.55	543.2258
15	0.55	543.2258
16	0.55	543.2258
17	0.55	543.2258
18	0.55	543.2258
19	0.55	543.2258
20	0.55	543.2258

Mark
finished DST #3
100' ✱ log.
170' GIP
100' mud

1	0.525	518.6694
2	0.534	527.5112
3	0.538	531.4403
4	0.54	533.4048
5	0.54	533.4048
6	0.541	534.387
7	0.541	534.387
8	0.543	536.3513
9	0.543	536.3513
10	0.543	536.3513
11	0.543	536.3513
12	0.543	536.3513
13	0.545	538.3156
14	0.545	538.3156
15	0.545	538.3156
16	0.545	538.3156
17	0.545	538.3156
18	0.545	538.3156
19	0.545	538.3156
20	0.545	538.3156

WELL NAME_____ DST #_____ RECORDER #_____13337_____

INIT. HYD. MUD._____ _____ FINAL HYD. MUD _____ _____

	INITIAL FLOW MINUTES 30 INTERVAL		INITIAL SHUTIN MINUTES 60 INTERVAL			FINAL FLOW MINUTES 30 INTERVAL		FINAL SHUTIN MINUTES 60 INTERVAL	
1	.514	507.9			1	.520	513.8	—	
2	.514		.517		2	.520		.525	
3	.509		.526		3	.518		.534	
4	.509		.533		4	.518		.538	
5	.509		.537		5	.518		.540	
6	.505		.537		6	.518		.540	
7	.505		.540		7	.512		.541	
8	.505		.544		8	.512		.541	
9	.505	499.0	.546		9	.512		.543	
10			.547		10	.512	505.9	.543	
11			.550		11			.543	
12			.550		12			.543	
13			.550		13			.543	
14			.550		14			.545	
15			.550		15			.545	
16			.550		16			.545	
17			.550		17			.545	
18			.550		18			.545	
19			.550		19			.545	
20			.550	543.2	20			.545	538.3
21					21				
22					22				
23					23				
24					24				
25					25				
26					26				
27					27				

TRILOBITE TESTING, L.L.C.

P.O. Box 362 • Hays, Kansas 67601

Drill-Stem Test Data

Well Name ENNS A-2 Test No. 2 Date 8-12-93

Company CHARTER PRODUCTION COMPANY Zone COUNCIL GROV

Address 224 EAST DOUGLAS #400 WICHITA KS 67202 Elevation 2282 GL

Co. Rep./Geo. TYLER SANDERS Cont. ABERCROMBIE #5 Est. Ft. of Pay 4

Location: Sec. 15 Twp. 34S Rge. 28W Co. MEADE State KS

Interval Tested 2938-2961 Drill Pipe Size 4.5" XH

Anchor Length 23 Wt. Pipe I.D. - 2.7 Ft. Run 532

Top Packer Depth 2933 Drill Collar – 2.25 Ft. Run

Bottom Packer Depth 2938 Mud Wt. 9.1 lb/Gal.

Total Depth 2961 Viscosity 43 Filtrate 8.8

Tool Open @ 8:26 AM Initial Blow OFF BOTTOM IN 5 SECONDS GAS TO SURFACE IN 3 MINUTES

Final Blow OFF BOTTOM AS TOOL OPENED GAUGED 1559 MCF/DAY

Recovery - Total Feet 60 Flush Tool? NO

Rec. 2850 Feet of GAS IN PIPE

Rec. 60 Feet of GASSY MUD 1%GAS/99%MUD

Rec. Feet of

Rec. Feet of

Rec. Feet of

BHT 108 °F Gravity °API @ °F Corrected Gravity °API

RW 0.25 @ 73 °F Chlorides 26000 ppm Recovery Chlorides 30000 ppm System

(A) Initial Hydrostatic Mud 1493.1 PSI AK1 Recorder No. 13337 Range 3975

(B) First Initial Flow Pressure 245.1 PSI @ (depth) 2940 w / Clock No. 17652

(C) First Final Flow Pressure 297.4 PSI AK1 Recorder No. 10332 Range 4050

(D) Initial Shut-in Pressure 580.6 PSI @ (depth) 2956 w / Clock No. 27566

(E) Second Initial Flow Pressure 322.1 PSI AK1 Recorder No. Range

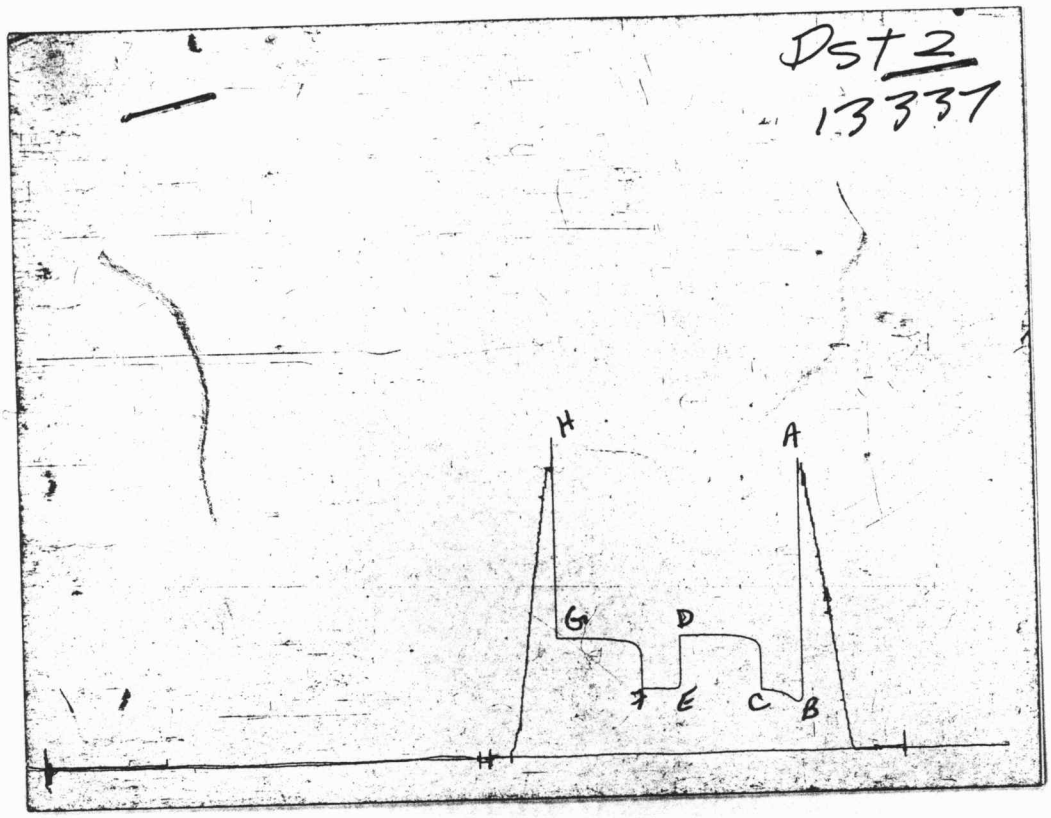
(F) Second Final Flow Pressure 322.1 PSI @ (depth) w / Clock No.

(G) Final Shut-in Pressure 584.5 PSI Initial Opening 30 Final Flow 30

(H) Final Hydrostatic Mud 1446.8 PSI Initial Shut-in 60 Final Shut-in 60

Our Representative MARK HERSKOWITZ

CHART PAGE



This is an actual photograph of recorder chart

	FIELD READING	OFFICE READING
(A) INITIAL HYDROSTATIC MUD	1484	1493.1
(B) FIRST INITIAL FLOW PRESSURE	247	245.1
(C) FIRST FINAL FLOW PRESSURE	316	297.4
(D) INITIAL CLOSED-IN PRESSURE	592	580.6
(E) SECOND INITIAL FLOW PRESSURE	326	322.1
(F) SECOND FINAL FLOW PRESSURE	326	322.1
(G) FINAL CLOSED-IN PRESSURE	602	584.5
(H) FINAL HYDROSTATIC MUD	1434	1446.8

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

CHARTER PRODUCTION COMPANY

ENNS A-2 DST 2

15 34S 28W MEADE KS

****

ELEVATION:	2282	EST. PAY:	4 FT.
DATUM:	-659	ZONE TESTED:	COUNCIL GROVE
TEST INTERVAL:	2938-2961	TIME INTERVALS:	30-60-30-60
RECORDER DEPTH:	2940	VISCOSITY:	0.01225 CP
BOTTOM HOLE TEMP:	108	HOLE SIZE:	7.875 IN
COMPRESSIBILITY:	0.9975	GAS GRAVITY:	0.6655

****

TEMPERATURE RANKINE:	568.00	&
TRANSMISSIBILITY:	525527.50	Kh/%
THEORITICAL FLOW CAPICITY:	6440.19	Kh
AVERAGE EFFECTIVE PERMEABILITY:	1610.05	K(md.)
RADIUS OF INVESTIGATION:	310.81	FT.
DAMAGE RATIO:	7.14	
ABSOLUTE OPEN FLOW(MAX)	2234.74	MCFD
ABSOLUTE OPEN FLOW(MIN)	1866.54	MCFD
THEORITICAL OPEN FLOW(MAX)	15966.48	MCFD
THEORITICAL OPEN FLOW(MIN)	13335.79	MCFD
POTENTIOMETRIC SURFACE	0.00	(FT.)

****

INITIAL SHUT-IN VALUES:		
SLOPE	1162.00	
THEORETICAL STATIC PRESSURE	582	
FINAL SHUT-IN VALUES:		
SLOPE	2751.44	
THEORETICAL STATIC PRESSURE	586	
DRAWDOWN FACTOR:	-0.73	(%)

INITIAL FLOW

RECORDER 13337 DST # 2

TIME(MIN)	PRESSURE	<>PRESSURE
0	322.1	322.1
3	322.1	0.0
6	322.1	0.0
9	322.1	0.0
12	322.1	0.0
15	322.1	0.0
18	322.1	0.0
21	322.1	0.0
24	322.1	0.0
27	322.1	0.0
30	322.1	0.0

FINAL FLOW

RECORDER 13337 DST # 2

TIME(MIN)	PRESSURE	<> PRESSURE
0	245.1	245.1
3	248.9	3.8
6	257.8	8.9
9	269.7	11.9
12	277.6	7.9
15	286.5	8.9
18	289.4	2.9
21	291.4	2.0
24	296.4	5.0
30	297.3	0.9

ENNS A-2
INITIAL

DST #2
SHUTIN
30 TOTAL FLOW TIME

Slope 1162.00 psi/cycle
P * 582 psi

	TIME(MIN)	Pws (psi)	Log Horn T	<> PRESSURE	Horn T
	3	536.3	1.041	536.3	11
	6	550.1	0.778	13.8	6
	9	557.9	0.637	7.8	4
	12	563.8	0.544	5.9	4
	15	567.7	0.477	3.9	3
	18	571.6	0.426	3.9	3
	21	577.5	0.385	5.9	2
X	24	579.5	0.352	2.0	2
	27	580.5	0.325	1.0	2
	30	580.5	0.301	0.0	2
	33	580.5	0.281	0.0	2
	36	580.5	0.263	0.0	2
	39	580.5	0.248	0.0	2
	42	580.5	0.234	0.0	2
	45	580.5	0.222	0.0	2
	48	580.5	0.211	0.0	2
	51	580.5	0.201	0.0	2
	54	580.5	0.192	0.0	2
	57	580.5	0.184	0.0	2
X	60	580.5	0.176	0.0	2

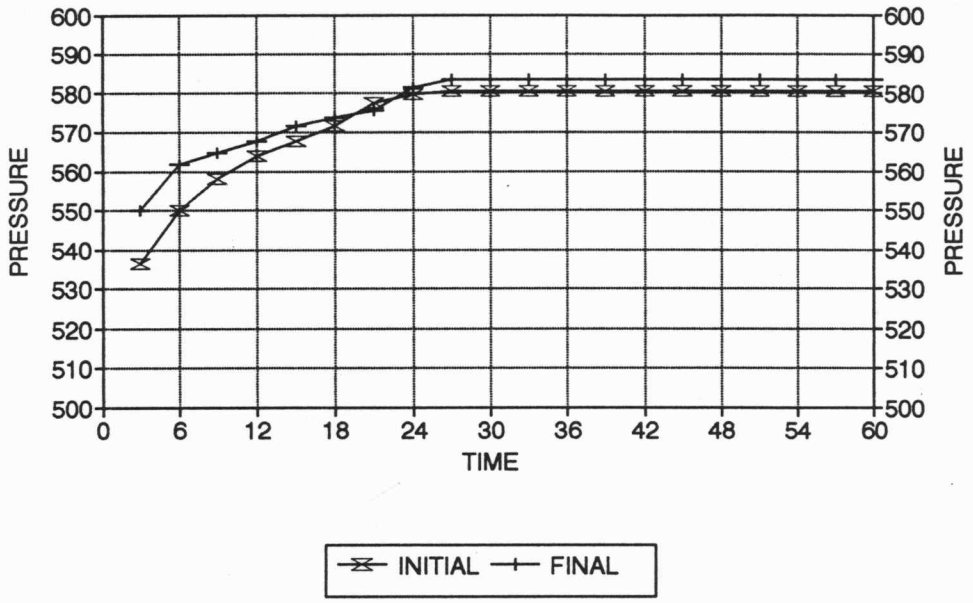
ENNS A-2
FINAL

DST #2
SHUTIN
60 TOTAL FLOW TIME

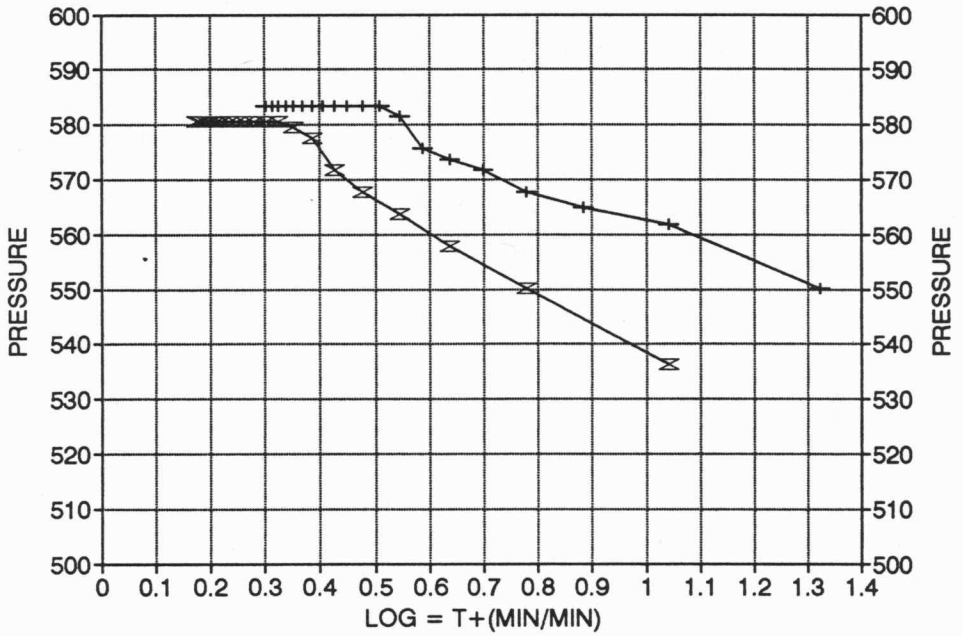
Slope	2751.44	psi/cycle
P *	586	psi

		Pws (psi)	Log Horn T	<> PRESSURE	Horn T
	3	550.1	1.322	550.1	21
	6	561.8	1.041	11.7	11
	9	564.8	0.885	3.0	8
	12	567.7	0.778	2.9	6
	15	571.6	0.699	3.9	5
	18	573.6	0.637	2.0	4
	21	575.6	0.586	2.0	4
X	24	581.5	0.544	5.9	4
	27	583.4	0.508	1.9	3
	30	583.4	0.477	0.0	3
	33	583.4	0.450	0.0	3
	36	583.4	0.426	0.0	3
	39	583.4	0.405	0.0	3
	42	583.4	0.385	0.0	2
	45	583.4	0.368	0.0	2
	48	583.4	0.352	0.0	2
	51	583.4	0.338	0.0	2
	54	583.4	0.325	0.0	2
	57	583.4	0.312	0.0	2
X	60	583.4	0.301	0.0	2

ENNS A-2 / DST #2
DELTA T DELTA P



HORNER PLOT



GAS VOLUME REPORT

CHARTER PRODUCTION COMPANY

ENNS A-2 DST # 2

MIN	PSIG	ORIFICE	MCF/D
3	3	1 1/2	654
5	9	1 1/2	1198
10	11	1 1/2	1348
15	12	1 1/2	1420
20	13	1 1/2	1490
25	13	1 1/2	1490
30	13	1 1/2	1490

MIN	INCHES OF WTR	ORIFICE	MCF/D
5	10	1 1/2	1274
10	14	1 1/2	1559
15	14	1 1/2	1559
20	14	1 1/2	1559
25	14	1 1/2	1559
30	14	1 1/2	1559

Remarks: GAS TO SURFACE IN 3 MINUTES

NATURAL GAS ANALYSIS REPORT

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

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

Lab Number:	93102	Analyzed:	08/12/93
Sample From:	Enns A-2 Dst 2	Pressure:	
Producer:	Charter Production	Temperature:	
Date:	08/12/93	Location:	15-34-28
Time:		County:	Meade
Sampler:		State:	Kansas
Source:		Formation:	Council Grove

		Mole %	GPM
Helium	He:	0.358	0.000
Oxygen	O2:	0.000	0.000
Nitrogen	N2:	5.907	0.000
Carbon Dioxide	CO2:	0.139	0.000
Methane	C1:	83.771	0.000
Ethane	C2:	5.623	1.504
Propane	C3:	2.284	0.629
Iso Butane	iC4:	0.247	0.081
Normal Butane	nC4:	0.605	0.191
Iso Pentane	iC5:	0.135	0.049
Normal Pentane	nC5:	0.215	0.078
Hexanes Plus	C6+:	0.716	0.312
	TOTAL:	100.000	2.844
	Z Fact:	0.9975	
	SP.GR.:	0.6655	
	BTU (SAT):	1067.9 @ 14.73 psia	
	BTU (DRY):	1086.8 @ 14.73 psia	

COMMENTS:
2938-2961
Zone 'B' Pax 4

TRILOBITE TESTING

P.O. Box 362 • Hays, Kansas 67601 • (913) 625-4778

GAS VOLUME REPORT

CHARTER — OPERATOR

ENNS A-2 — WELL NAME AND NO.

2 — DST NO.

Min.	~~Inches of Water~~ PSIG	Orifice Size	MCF/D	Min.	~~Inches of Water~~ PSIG	Orifice Size	MCF/D
3	3	1 1/2	654.	5	10	1 1/2	1274.
5	9	1 1/2	1198.	10	14	1 1/2	1559.
10	11	1 1/2	1348.	15	14	1 1/2	1559.
15	12	1 1/2	1420.	20	14	1 1/2	1559.
20	13	1 1/2	1490.	25	14	1 1/2	1559.
25	13	1 1/2	1490.	30	14	1 1/2	1559
30	13	1 1/2	1490.				

GAS TO SURF IN 3 MIN

Remarks:

P.O. Box 362 • Hays, Kansas 67601

Test Ticket

№ 6397

Well Name & No. ENNS A-2 Test No. 2 Date 8-12-93

Company CHARTER PROD COM Zone Tested COUNCIL GROVE (B)

Address 224 E Douglas STE 400 Wichita Elevation 2282 GL

Co. Rep./Geo. TYLER SANDERS Cont. A.L.A. Rig 5 Est. Ft. of Pay 4

Location: Sec. 15 Twp. 34 Rge. 28 Co. MEADE State KS

No. of Copies _____ Distribution Sheet _____ Yes _____ No Turnkey _____ Yes _____ No _____ Evaluation

Interval Tested 2938 - 2961 Drill Pipe Size 4½ XH

Anchor Length 23 Top Choke — 1" _____ Bottom Choke — ¾" _____

Top Packer Depth 2933 Hole Size — 7⅞" _____ Rubber Size — 6¾" _____

Bottom Packer Depth 2938 Wt. Pipe I.D. — 2.7 Ft. Run 532

Total Depth 2961 Drill Collar — 2.25 Ft. Run _____

Mud Wt. 9.1 LCM 1# lb / gal. Viscosity 43 Filtrate 8.8

Tool Open @ 8:26 AM Initial Blow OFF BOTTOM 5 SECS GAS to SURF IN 3 MIN

Final Blow OFF BOTTOM ON OPEN OF TOOL 14 P.S.I. ON 1½ ORIFICE = 1559. MCF/DAY

Recovery — Total Feet 60 Feet of Gas in Pipe 2850 Flush Tool? _____

Rec. 60	Feet Of GAS MUD	%gas	%oil	%water 9	9	%mud
Rec. _____	Feet Of _____	%gas	%oil	%water		%mud
Rec. _____	Feet Of _____	%gas	%oil	%water		%mud
Rec. _____	Feet Of _____	%gas	%oil	%water		%mud
Rec. _____	Feet Of _____	%gas	%oil	%water		%mud

BHT 108 °F Gravity _____ °API @ _____ °F Corrected Gravity _____ °API

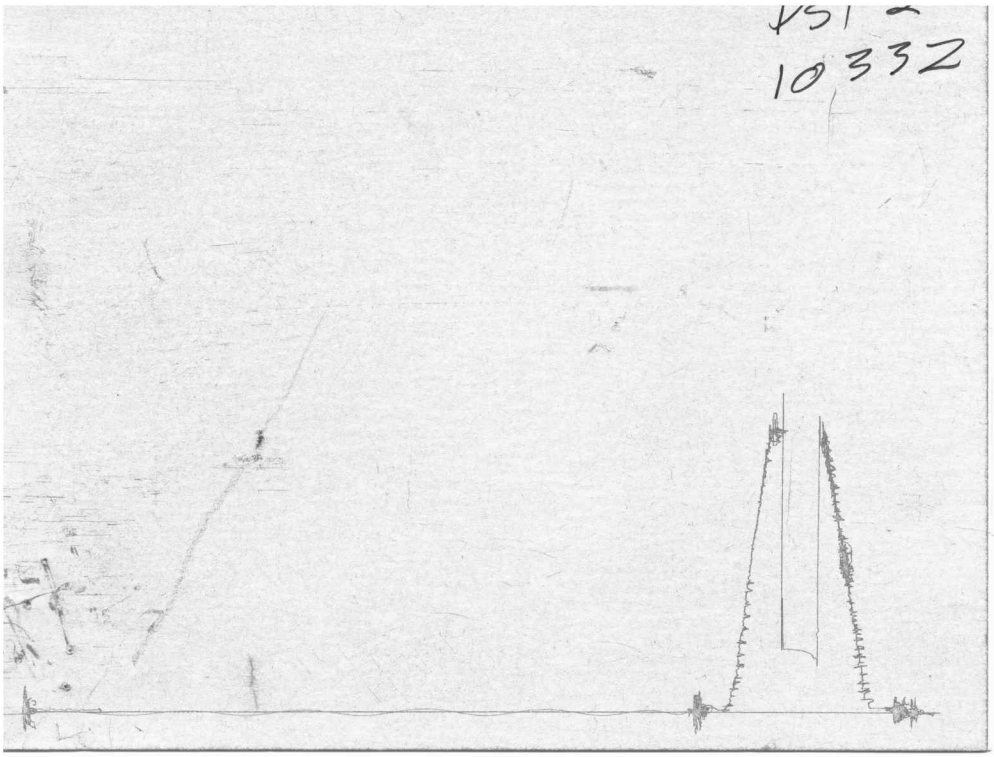
RW 0.25 @ 73 °F Chlorides 26 000 ppm Recovery Chlorides 30000 ppm System

(A) Initial Hydrostatic Mud	1484 PSI	Ak1 Recorder No.	13337	Range	3975
(B) First Initial Flow Pressure	247 PSI	@ (depth)	2940	w/Clock No.	17452
(C) First Final Flow Pressure	316 PSI	AK1 Recorder No.	10332	Range	4050
(D) Initial Shut-In Pressure	592 PSI	@ (depth)	2956	w/Clock No.	27566 (STOP)
(E) Second Initial Flow Pressure	326 PSI	AK1 Recorder No.	_____	Range	_____
(F) Second Final Flow Pressure	326 PSI	@ (depth)	_____	w/Clock No.	_____
(G) Final Shut-In Pressure	602 PSI	Initial Opening	30	Test ✓	600
(H) Final Hydrostatic Mud	1434 PSI	Initial Shut-In	60	Jars ✓	200
		Final Flow	30	Safety Joint ✓	50
		Final Shut-In	60	Straddle	_____
				Circ. Sub ✓	NC
				Sampler	_____
				Extra Packer	_____
				Other	Wal. 50
				TOTAL PRICE $	900

Approved By _____

Our Representative Mark Hershberger

Printcraft Printers - Hays, KS



1	0.248	245.024
2	0.252	248.976
3	0.261	257.868
4	0.273	269.724
5	0.281	277.628
6	0.29	286.52
7	0.293	289.484
8	0.295	291.46
9	0.3	296.4
10	0.301	297.3888
11		0
12	0.326	322.1092

1	0.543	536.3513
2	0.557	550.0993
3	0.565	557.9535
4	0.571	563.8433
5	0.575	567.7694
6	0.579	571.6951
7	0.585	577.5832
8	0.587	579.5457
9	0.588	580.5269
10	0.588	580.5269
11		0
12	0.557	550.0993
13	0.569	561.8801
14	0.572	564.8248
15	0.575	567.7694
16	0.579	571.6951
17	0.581	573.6579
18	0.583	575.6206
19	0.589	581.5081
20	0.591	583.4705
21	0.591	583.4705
22	0.592	584.4516

WELL NAME Enns DST # 2 RECORDER # 13337

INIT. HYD. MUD. _____ _____ FINAL HYD. MUD _____ _____

INITIAL FLOW MINUTES 30 INTERVAL		INITIAL SHUTIN MINUTES 60 INTERVAL			FINAL FLOW MINUTES 30 INTERVAL		FINAL SHUTIN MINUTES 60 INTERVAL	
.248	245.1	—		1	.326	322.1	—	
.252		.543		2			.557	
.261		.557		3			.569	
.273		.565		4			.572	
.281		.571		5			.575	
.290		.575		6			.579	
.293		.579		7			.581	
.295		.585		8			.583	
.300		.587		9			.589	
.301	297.4	.588		10	.326	322.1	.591	
		.588		11			.591	
				12			.592	
				13			.592	
				14			.592	
				15			.592	
				16			.592	
				17			.592	
				18			.592	
				19				
		.588	580.6	20			.592	584.5
				21				
				22				
				23				
				24				
				25				
				26				
				27				

TRILOBITE TESTING, L.L.C.

P.O. Box 362 • Hays, Kansas 67601

Drill-Stem Test Data

Well Name ENNS A-2 Test No. 3 Date 8-13-93

Company CHARTER PRODUCTION COMPANY Zone COUNCIL GROV

Address 224 EAST DOUGLAS #400 WICHITA KS 67202 Elevation 2282

Co. Rep./Geo. TYLER SANDERS Cont. ABERCROMBIE #5 Est. Ft. of Pay

Location: Sec. 15 Twp. 34S Rge. 28W Co. MEADE State KS

Interval Tested 3103-3167

Anchor Length 60

Top Packer Depth 3098

Bottom Packer Depth 3103

Total Depth 3167

Drill Pipe Size 4.5" XH

Wt. Pipe I.D. - 2.7 Ft. Run 500

Drill Collar – 2.25 Ft. Run

Mud Wt. 9 lb/Gal.

Viscosity 44 Filtrate 8.8

Tool Open @ 6:16 AM Initial Blow SURFACE BLOW TO BOTTOM IN 24 MINUTES

Final Blow WEAK SURFACE BLOW TO 6" IN 30 MINUTES

Recovery - Total Feet 100 Flush Tool? NO

Rec. 100 Feet of MUD

Rec. Feet of

Rec. Feet of

Rec. Feet of

Rec. Feet of

BHT °F Gravity °API @ °F Corrected Gravity °API

RW 0.2 @ 80 °F Chlorides 32000 ppm Recovery Chlorides 30000 ppm System

(A) Initial Hydrostatic Mud 1596.2 PSI AK1 Recorder No. 13337 Range 3975

(B) First Initial Flow Pressure 67.5 PSI @ (depth) 3105 w / Clock No. 17652

(C) First Final Flow Pressure 78.4 PSI AK1 Recorder No. 10332 Range 4050

(D) Initial Shut-in Pressure 806.1 PSI @ (depth) 3160 w / Clock No. 7452

(E) Second Initial Flow Pressure 98.6 PSI AK1 Recorder No. Range

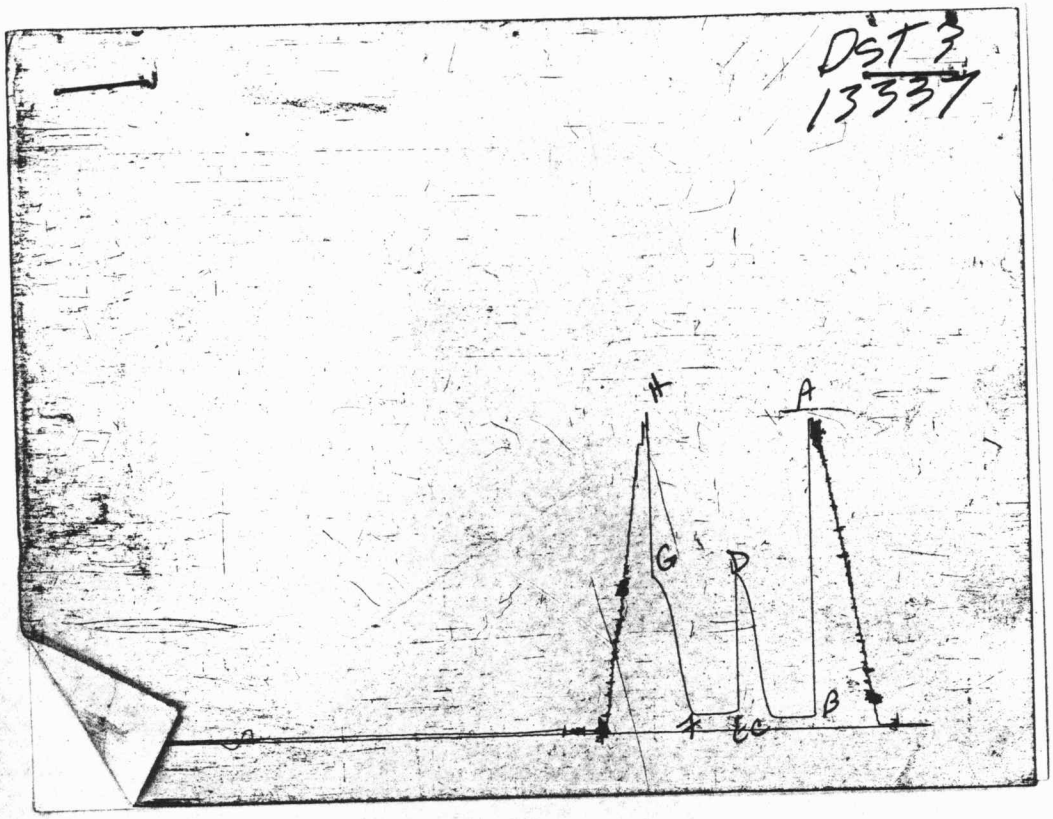
(F) Second Final Flow Pressure 98.6 PSI @ (depth) w / Clock No.

(G) Final Shut-in Pressure 806.1 PSI Initial Opening 30 Final Flow 30

(H) Final Hydrostatic Mud 1579.5 PSI Initial Shut-in 30 Final Shut-in 30

Our Representative MARK HERSKOWITZ

CHART PAGE



This is an actual photograph of recorder chart

	FIELD READING	OFFICE READING
(A) INITIAL HYDROSTATIC MUD	1582	1596.2
(B) FIRST INITIAL FLOW PRESSURE	59	67.5
(C) FIRST FINAL FLOW PRESSURE	69	78.4
(D) INITIAL CLOSED-IN PRESSURE	798	806.1
(E) SECOND INITIAL FLOW PRESSURE	88	98.6
(F) SECOND FINAL FLOW PRESSURE	88	98.6
(G) FINAL CLOSED-IN PRESSURE	798	806.1
(H) FINAL HYDROSTATIC MUD	1562	1579.5

TRILOBITE TESTING L.L.C.

P.O. Box 362 • Hays, Kansas 67601

Test Ticket

№ 6398

Well Name & No. ENNS A-2 Test No. 3 Date 8-13-93

Company CHARTER PROD COM Zone Tested COUNCIL GROVE

Address 224 E Douglas STE 400 Wichita Elevation 2282 GL

Co. Rep./Geo. TYLER SANDERS Cont. A.L.A. Rig 5 Est. Ft. of Pay

Location: Sec. 15 Twp. 34S Rge. 28W Co. MEADE State KS

No. of Copies Distribution Sheet Yes No Turnkey Yes No Evaluation

Interval Tested 3103 - 3167 Drill Pipe Size 4½ X H

Anchor Length 60 Top Choke — 1" Bottom Choke — ¾"

Top Packer Depth 3098 Hole Size — 7⅞" Rubber Size — 6¾"

Bottom Packer Depth 3103 Wt. Pipe I.D. — 2.7 Ft. Run 500

Total Depth 3167 Drill Collar — 2.25 Ft. Run —

Mud Wt. 9.0 LCM 2 lb / gal. Viscosity 44 Filtrate 8.8

Tool Open @ 6:16 AM Initial Blow SUB to Bottom IN 24 MIN

Final Blow WEAK SUB TO 6" IN 30 MIN

Recovery — Total Feet 100 Feet of Gas in Pipe ~~[redacted]~~ 170 Flush Tool? —

Rec. 100	Feet Of Mud	%gas	%oil	%water 100	%mud
Rec.	Feet Of	%gas	%oil	%water	%mud
Rec.	Feet Of	%gas	%oil	%water	%mud
Rec.	Feet Of	%gas	%oil	%water	%mud
Rec.	Feet Of	%gas	%oil	%water	%mud

BHT °F Gravity °API @ °F Corrected Gravity °API

RW 0.20 @ 80 °F Chlorides 32000 ppm Recovery Chlorides 30000 ppm System

(A) Initial Hydrostatic Mud	1582 PSI	AK1 Recorder No. 13337	Range 3975
(B) First Initial Flow Pressure	54 PSI	@ (depth) 3105	w/Clock No. 17652
(C) First Final Flow Pressure	69 PSI	AK1 Recorder No. 10332	Range 4050
(D) Initial Shut-In Pressure	798 PSI	@ (depth) 3162	w/Clock No. 7452
(E) Second Initial Flow Pressure	88 PSI	AK1 Recorder No.	Range
(F) Second Final Flow Pressure	88 PSI	@ (depth)	w/Clock No.
(G) Final Shut-In Pressure	798 PSI	Initial Opening 30	Test ✓ 600
(H) Final Hydrostatic Mud	1562 PSI	Initial Shut-In 30	Jars ✓ 200
		Final Flow 30	Safety Joint ✓ 50
		Final Shut-In 30	Straddle
			Circ. Sub ✓ NC
			Sampler
			Extra Packer
			Other
			TOTAL PRICE $ 850

Approved By

Our Representative Mark Kelley

Printcraft Printers - Hays, KS

DST 5
10357