TRILOBITE TESTING, L.L.C.

P.O. Box 362 • Hays, Kansas 67601

Drill-Stem Test Data

Well Name: RYAN #1 | Test No.: 1 | Date: 12/30/93

Company: CHARTER PRODUCTION COMPANY | Zone: CHEROKEE

Address: 224 EAST DOUGLAS #400 WICHITA KS 67202 | Elevation: 2300

Co. Rep./Geo.: TYLER SANDERS | Cont.: DUKE DRLG RIG #4 | Est. Ft. of Pay: 3

Location: Sec.: 13 | Twp.: 16S | Rge.: 21W | Co.: NESS | State: KS

Interval Tested: 4139-4169 | Drill Pipe Size: 4.5" XH

Anchor Length: 30 | Wt. Pipe I.D. - 2.7 Ft. Run:

Top Packer Depth: 4134 | Drill Collar – 2.25 Ft. Run:

Bottom Packer Depth: 4139 | Mud Wt.: 9.4 lb/Gal.

Total Depth: 4169 | Viscosity: 54 | Filtrate: 8.8

Tool Open @: 6:50 PM | Initial Blow: STRONG-BOTTOM OF BUCKET IN 11 MINUTES

Final Blow: STRONG-BOTTOM OF BUCKET IN 11 MINUTES

Recovery - Total Feet: 385 | Flush Tool?: NO

Rec. 541 | Feet of GAS IN PIPE

Rec. 308 | Feet of CLEAN GASSY OIL-10% GAS/ 90% OIL

Rec. 77 | Feet of HVY MUD CUT OIL-75% OIL/ 25% MUD

Rec. | Feet of

Rec. | Feet of

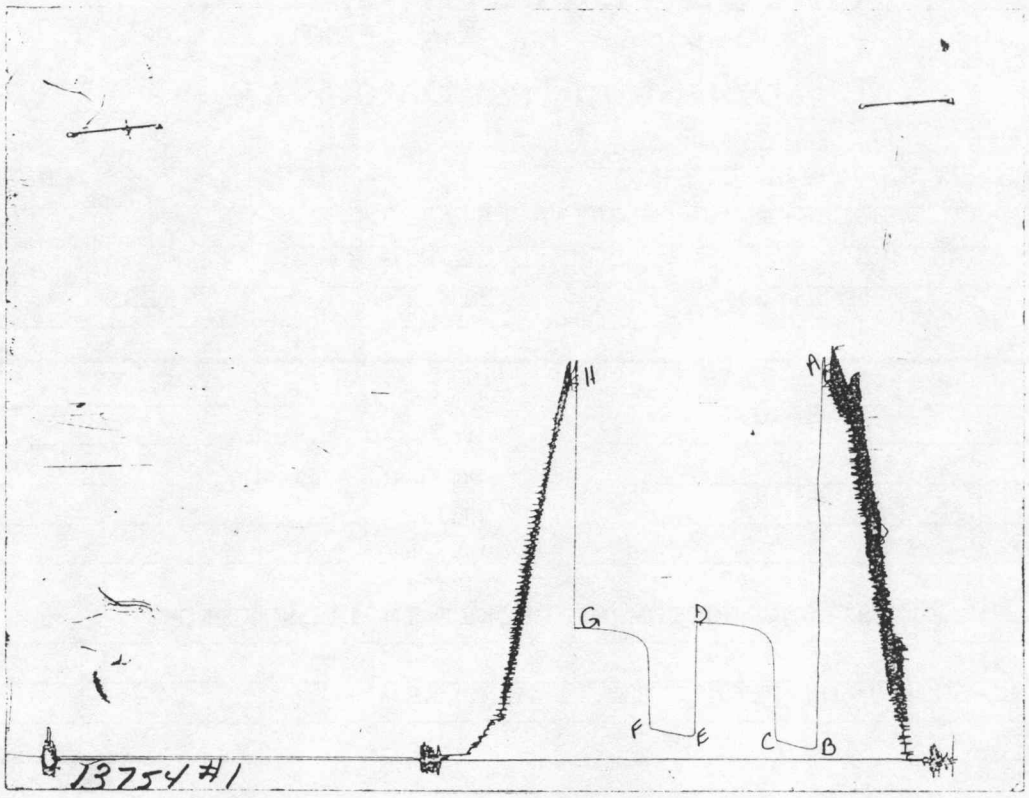
BHT: 116 °F | Gravity: °API | @ °F | Corrected Gravity: 32 °API

RW: @ °F | Chlorides: ppm Recovery | Chlorides: 6000 ppm System

(A) Initial Hydrostatic Mud: 2145.7 PSI	AK1 Recorder No.: 13754	Range: 4000
(B) First Initial Flow Pressure: 53.1 PSI	@ (depth): 4143	w / Clock No.: 8179
(C) First Final Flow Pressure: 93.5 PSI	AK1 Recorder No.: 7437	Range: 4200
(D) Initial Shut-in Pressure: 709.4 PSI	@ (depth): 4165	w / Clock No.: 27567
(E) Second Initial Flow Pressure: 123.0 PSI	AK1 Recorder No.:	Range:
(F) Second Final Flow Pressure: 163.3 PSI	@ (depth):	w / Clock No.:
(G) Final Shut-in Pressure: 685.7 PSI	Initial Opening: 30	Final Flow: 30
(H) Final Hydrostatic Mud: 2074.9 PSI	Initial Shut-in: 60	Final Shut-in: 60

Our Representative: DAN BANGLE

CHART PAGE



This is an actual photograph of recorder chart

	FIELD READING	OFFICE READING
(A) INITIAL HYDROSTATIC MUD	2147	2145.7
(B) FIRST INITIAL FLOW PRESSURE	49	53.1
(C) FIRST FINAL FLOW PRESSURE	98	93.5
(D) INITIAL CLOSED-IN PRESSURE	689	709.4
(E) SECOND INITIAL FLOW PRESSURE	127	123
(F) SECOND FINAL FLOW PRESSURE	157	163.3
(G) FINAL CLOSED-IN PRESSURE	679	685.7
(H) FINAL HYDROSTATIC MUD	2087	2074.9

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

CHARTER PRODUCTION COMPANY

RYAN #1 DST 1

13 16S 21W NESS KS

ELEVATION:	2300	KB	EST. PAY	3	FT
DATUM:	-1844		ZONE TESTED:	CHEROKEE	
TEST INTERVAL:	4139-4169		TIME INTERVALS:	30-60-30-60	
RECORDER DEPTH:	4143		VISCOSITY:	8.66	CP
BOTTOM HOLE TEMP:	116		HOLE SIZE:	7.875	IN

CUBIC FEET OF GAS IN PIPE:	43			
TOTAL FEET OF RECOVERY:	385.00	CORRECTED PIPE FILLUP:	435.467	
TOTAL BARRELS OF RECOVERY:	5.47	CORR. BARRELS OF RECOVERY:	6.186	BBL
BARRELS IN DRILL PIPE:	5.47	API GRAVITY:	32	
BARRELS IN WEIGHT PIPE:	0.00	FLUID GRADIENT:	0.375	
BARRELS IN DRILL COLLARS:	0.00			
GAS OIL RATIO:	7.89	CU.FT/BBL		
BUBBLE POINT PRESSURE:	80			
UNCORRECTED INITIAL PRODUCTION:			67.96	BBL
INITIAL PRODUCTION CORRECTED TO FINAL FLOW PRESSURE:			76.79	BBL/DAY
INITIAL PRODUCTION CORRECTED TO PSEUDO STEADY FLOW STATE:			98.616	

INITIAL SLOPE	101.74	PSI/CYCL	FINAL SLOPE	76.24	PSI/CYCLE
INITIAL P*	727.32	PSI	FINAL P*	708.65	PSI

TRANSMISSIBILITY	163.76	(MD.-FT./CP.)
PERMEABILITY	472.69	(MD.)
INDICATED FLOW CAPACITY	1418.08	(MD.FT)
PRODUCTIVITY INDEX	0.19	(BARREL/DAY/PSI)
DAMAGE RATIO	1.31	
RADIUS OF INVESTIGATION	234.16	(FT,)
POTENTIOMETRIC SURFACE	-199.64	(FT.)
DRAWDOWN FACTOR	2.566	(%)
THEORETICAL POTENTIAL FROM FINAL FLOW PRESSURE	100.51	
THEORETICAL POTENTIAL FROM PSEUDO STEADY FLOW STATE	129.09	

INITIAL FLOW

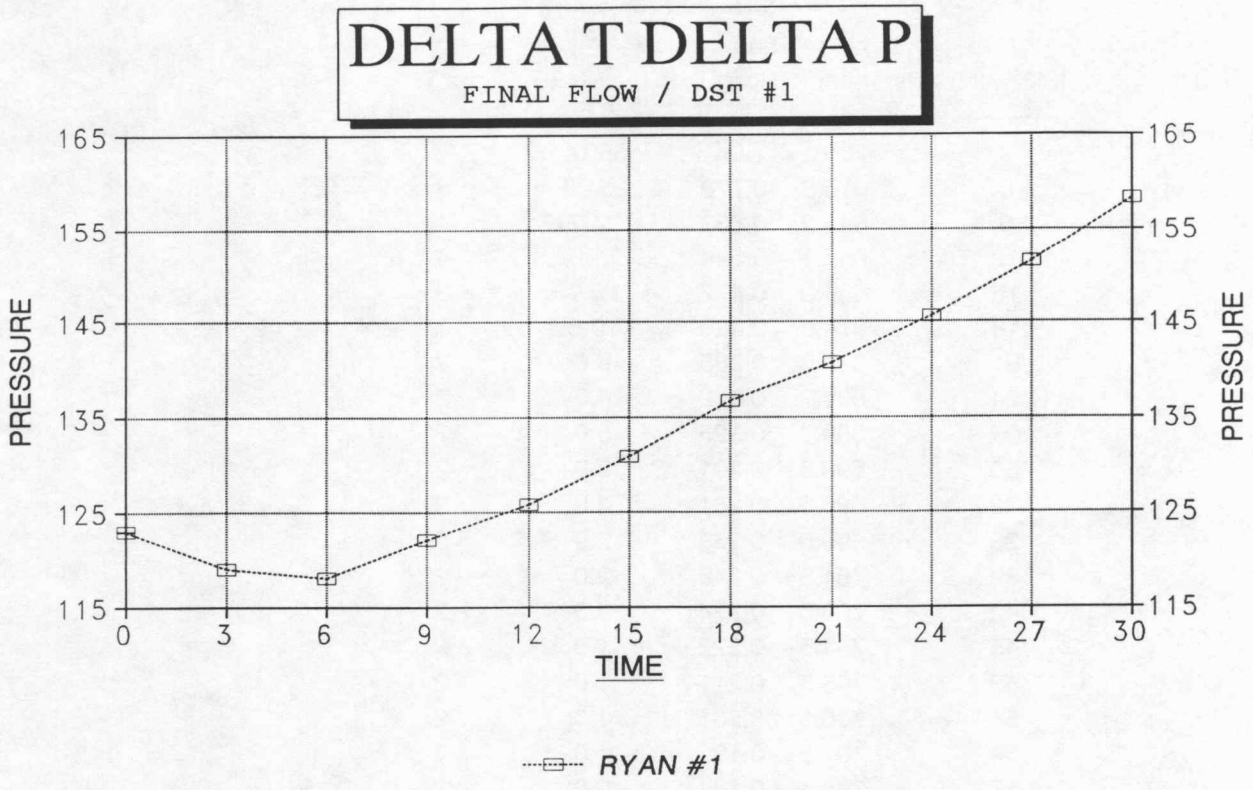
RECORDER 13754 DST # 1

TIME(MIN)	PRESSURE	<> PRESSURE
0	53.1	53.1
3	53.1	0.0
6	53.1	0.0
9	55.1	2.0
12	59.0	3.9
15	65.9	6.9
18	69.8	3.9
21	76.7	6.9
24	83.6	6.9
27	88.5	4.9
30	93.5	5.0

FINAL FLOW

RECORDER 13754 DST # 1

TIME(MIN)	PRESSURE	<> PRESSURE
0	123.0	123.0
3	119.0	-4.0
6	118.1	-0.9
9	122.1	4.0
12	125.9	3.8
15	130.9	5.0
18	136.8	5.9
21	140.7	3.9
24	145.6	4.9
27	151.5	5.9
30	158.4	6.9
33	163.3	4.9



INITIAL PRODUCTION CORRECTED TO PSEUDO STEADY FLOW STATE: 98.616

RYAN #1 DST #1
INITIAL SHUTIN

30 INITIAL FLOW TIME

SLOPE 101.7 PSI/CYCLE
P* 727.32 PSI

	TIME(MIN)	Pws (psi)	Log Horn T	<> PRESSURE	Horn T
	3	365.1	1.041	365.1	11
	6	616.5	0.778	251.4	6
	9	641.2	0.637	24.7	4
	12	653.1	0.544	11.9	4
	15	664.0	0.477	10.9	3
	18	674.8	0.426	10.8	3
	21	679.8	0.385	5.0	2
	24	684.7	0.352	4.9	2
	27	689.7	0.325	5.0	2
	30	693.6	0.301	3.9	2
	33	696.6	0.281	3.0	2
	36	699.5	0.263	2.9	2
	39	701.5	0.248	2.0	2
X	42	703.5	0.234	2.0	2
	45	704.5	0.222	1.0	2
	48	705.5	0.211	1.0	2
	51	706.5	0.201	1.0	2
	54	707.5	0.192	1.0	2
	57	708.4	0.184	0.9	2
X	60	709.4	0.176	1.0	2

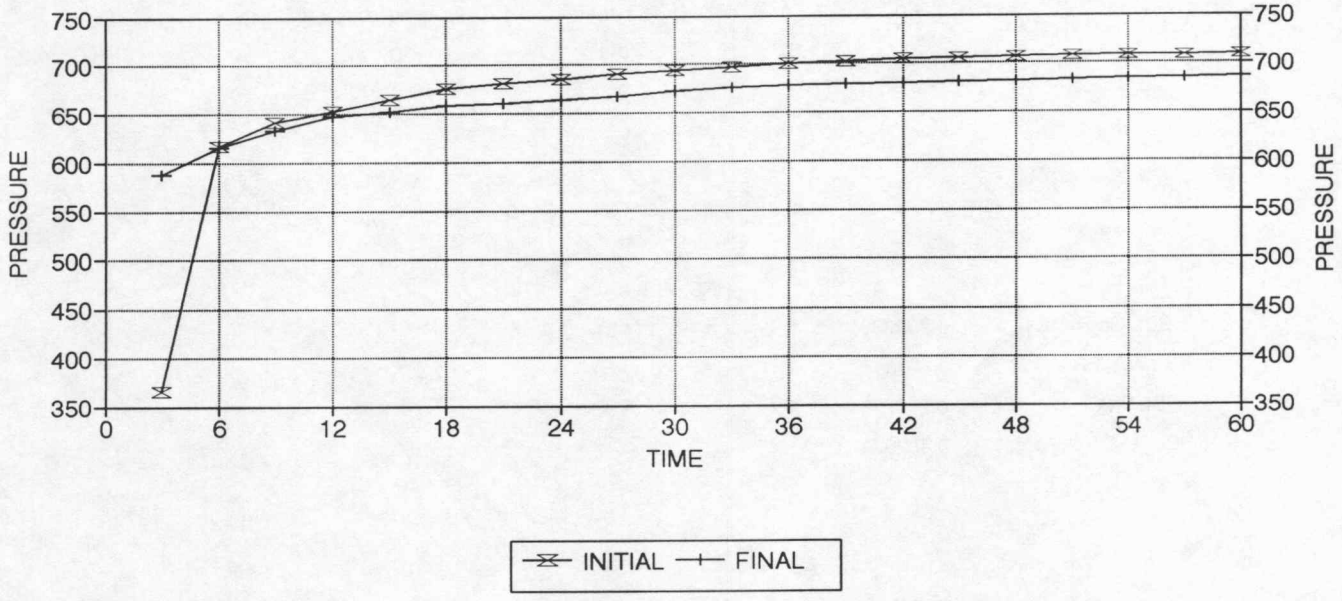
RYAN #1 DST #1
FINAL SHUTIN

60 TOTAL FLOW TIME

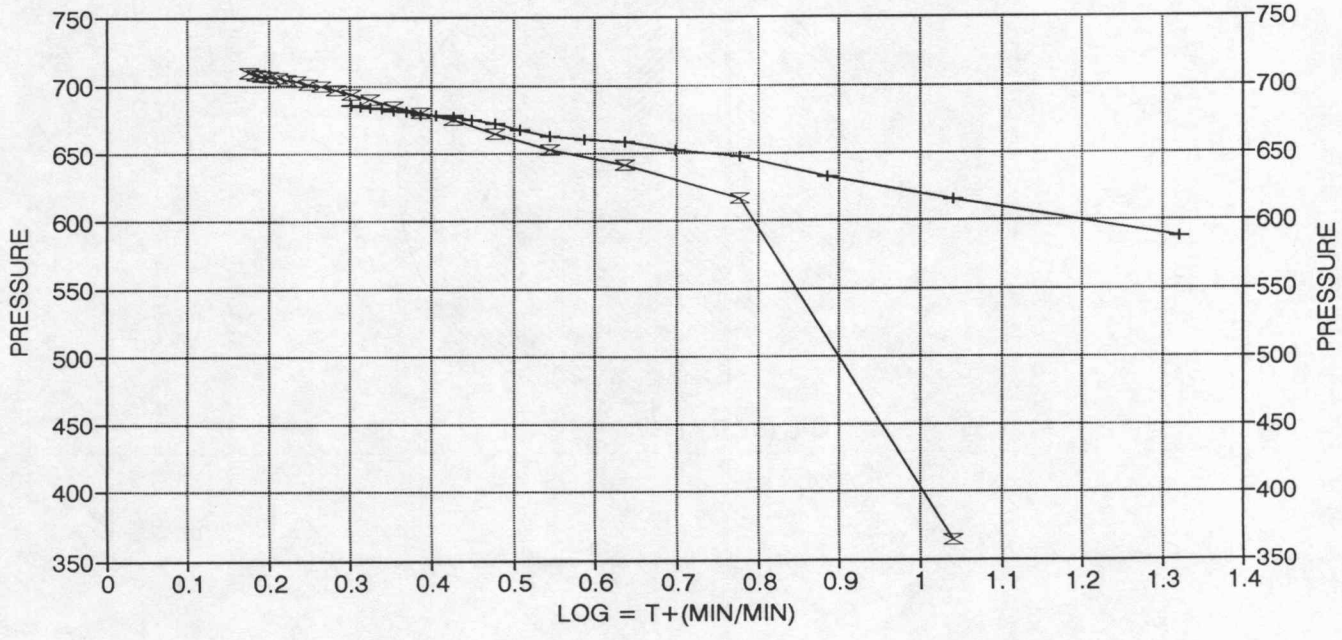
SLOPE 76.2 PSI/CYCLE
P* 708.7 PSI

			Log Horn T	<> PRESSURE	Horn T
	3	587.9	1.322	587.9	21
	6	615.6	1.041	27.7	11
	9	632.3	0.885	16.7	8
	12	647.2	0.778	14.9	6
	15	652.1	0.699	4.9	5
	18	658.1	0.637	6.0	4
	21	660.1	0.586	2.0	4
	24	663.0	0.544	2.9	4
	27	666.9	0.508	3.9	3
	30	671.9	0.477	5.0	3
	33	674.8	0.450	2.9	3
	36	676.8	0.426	2.0	3
	39	677.8	0.405	1.0	3
	42	678.8	0.385	1.0	2
	45	680.8	0.368	2.0	2
X	48	681.8	0.352	1.0	2
	51	682.8	0.338	1.0	2
	54	683.7	0.325	0.9	2
	57	684.7	0.312	1.0	2
X	60	685.7	0.301	1.0	2

RYAN #1 / DST #1
DELTA T DELTA P



HORNER PLOT

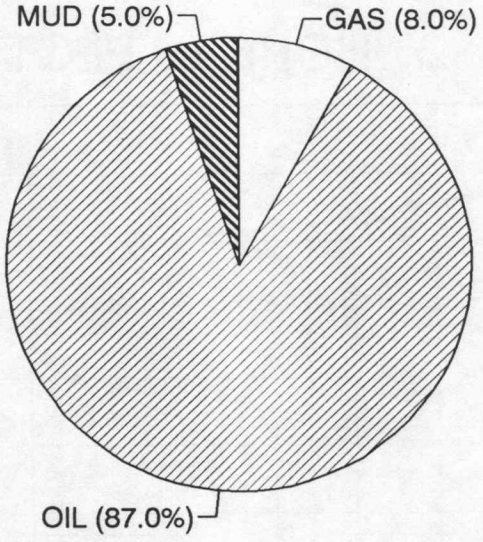


CALCULATED RECOVERY ANALYSIS DRILL PIPE

DST # 1 TICKET 6504

SAMPLE	TOTAL	GAS		OIL		WATER		MUD	
#	FEET	%	FEET	%	FEET	%	FEET	%	FEET
1	308	10	30.8	90	277.2	0	0	0	0
2	77	0	0	75	57.75	0	0	25	19.25
3			0		0		0		0
4			0		0		0		0
5			0		0		0		0
6			0		0		0		0
TOTAL	385	8	30.8	87	334.95	0	0	5	19.25

			HRS	BBL/DAY
BBL OIL=	4.762989	*	1	114.31
BBL WATER=	0	*		0
BBL MUD=	0.273735			
BBL GAS	0.437976			



TRILOBITE TESTING L.L.C.

P.O. Box 362 • Hays, Kansas 67601

Test Ticket

№ 6504

Well Name & No. Ryan #1 Test No. 1 Date 12-30-93

Company Charter Prod. Co. Zone Tested Cher. Sd

Address 224 E. Douglas, Wichita, Ks. 67202 Elevation 2300 K.B.

Co. Rep./Geo. Tyler Sanders Cont. Duke #4 Est. Ft. of Pay 3

Location: Sec. 13 Twp. 16 Rge. 21 Co. Ness State Ks.

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

Interval Tested 4139-4169 Drill Pipe Size 4.5 XH

Anchor Length 30 Top Choke — 1" ____ Bottom Choke — ¾" ____

Top Packer Depth 4134 Hole Size — 7⅞" ____ Rubber Size — 6¾" ____

Bottom Packer Depth 4139 Wt. Pipe I.D. — 2.7 Ft. Run ____

Total Depth 4169 Drill Collar — 2.25 Ft. Run ____

Mud Wt. 9.4 lb/gal. Viscosity 54 Filtrate 8.8

Tool Open @ 6:50 p.m. Initial Blow Strong - B.O.B. in 11 min.

Final Blow Strong - B.O.B. in 11 min.

Recovery — Total Feet 385 Feet of Gas in Pipe 541 Flush Tool? ____

Rec. 308	Feet Of CGSY O	10 %gas	90 %oil	%water	%mud
Rec. 77	Feet Of HMCO	%gas	75 %oil	%water	25 %mud
Rec. ____	Feet Of ____	%gas	%oil	%water	%mud
Rec. ____	Feet Of ____	%gas	%oil	%water	%mud
Rec. ____	Feet Of ____	%gas	%oil	%water	%mud

BHT 116 °F Gravity ____ °API @ ____ °F Corrected Gravity 32 °API

RW ____ @ ____ °F Chlorides ____ ppm Recovery Chlorides 6,000 ppm System

(A) Initial Hydrostatic Mud	2147 PSI	AK1 Recorder No.	13754	Range	4000
(B) First Initial Flow Pressure	49 PSI	@ (depth)	4143	w/Clock No.	8179
(C) First Final Flow Pressure	98 PSI	AK1 Recorder No.	7437	Range	4200
(D) Initial Shut-In Pressure	689 PSI	@ (depth)	4165	w/Clock No.	27567
(E) Second Initial Flow Pressure	127 PSI	AK1 Recorder No.	____	Range	____
(F) Second Final Flow Pressure	157 PSI	@ (depth)	____	w/Clock No.	____
(G) Final Shut-In Pressure	679 PSI	Initial Opening	30	Test	____
(H) Final Hydrostatic Mud	2087 PSI	Initial Shut-In	60	Jars	X
		Final Flow	30	Safety Joint	X
		Final Shut-In	60	Straddle	____
				Circ. Sub	____
				Sampler	____
				Extra Packer	____
				Other	____
				TOTAL PRICE $	____

Approved By John H. Sanders

Our Representative Dan Rample

Printcraft Printers - Hays, KS

WELL NAME Charter DST # 1 RECORDER # 13754

INIT. HYD. MUD. 2.158 2145.7 FINAL HYD. MUD 2.088 2074.9

INITIAL FLOW MINUTES 30 INTERVAL		INITIAL SHUTIN MINUTES 60 INTERVAL			FINAL FLOW MINUTES 30 INTERVAL		FINAL SHUTIN MINUTES 60 INTERVAL	
.054	53.1	—	—	1	.125	123.0		
.054		.371		2	.121		.597	
.054		.626		3	.120		.625	
.056		.651		4	.125		.642	
.060		.663		5	.128		.657	
.067		.674		6	.133		.662	
.071		.685		7	.139		.668	
.078		.690		8	.143		.670	
.085		.695		9	.148		.673	
.090		.700		10	.154		.677	
.095	93.5	.704		11	.161		.682	
		.707		12	.166	163.3	.685	
		.710		13			.687	
		.712		14			.688	
		.714		15			.689	
		.715		16			.691	
		.716		17			.692	
		.717		18			.693	
		.718		19			.694	
		.719		20			.695	
		.720	709.4	21			.696	685.7
				22				
				23				
				24				
				25				
				26				
				27				

1	0.054	53.14968
2	0.054	53.14968
3	0.054	53.14968
4	0.056	55.11968
5	0.06	59.06
6	0.067	65.94838
7	0.071	69.88441
8	0.078	76.77215
9	0.085	83.66231
10	0.09	88.58475
11	0.095	93.50731

1	0.125	123.0354
2	0.121	119.0986
3	0.12	118.1144
4	0.124	122.0512
5	0.128	125.988
6	0.133	130.909
7	0.139	136.8141
8	0.143	140.7508
9	0.148	145.6717
10	0.154	151.5769
11	0.161	158.4663
12	0.166	163.3874

1	0.371	365.1585
2	0.626	616.5917
3	0.651	641.2915
4	0.663	653.1495
5	0.674	664.0205
6	0.685	674.8926
7	0.69	679.8348
8	0.695	684.7773
9	0.7	689.72
10	0.704	693.6714
11	0.707	696.6351
12	0.71	699.5988
13	0.712	701.5746
14	0.714	703.5505
15	0.715	704.5384
16	0.716	705.5264
17	0.717	706.5143
18	0.718	707.5023
19	0.719	708.4902
20	0.72	709.4782

J - [illegible]. 727.3

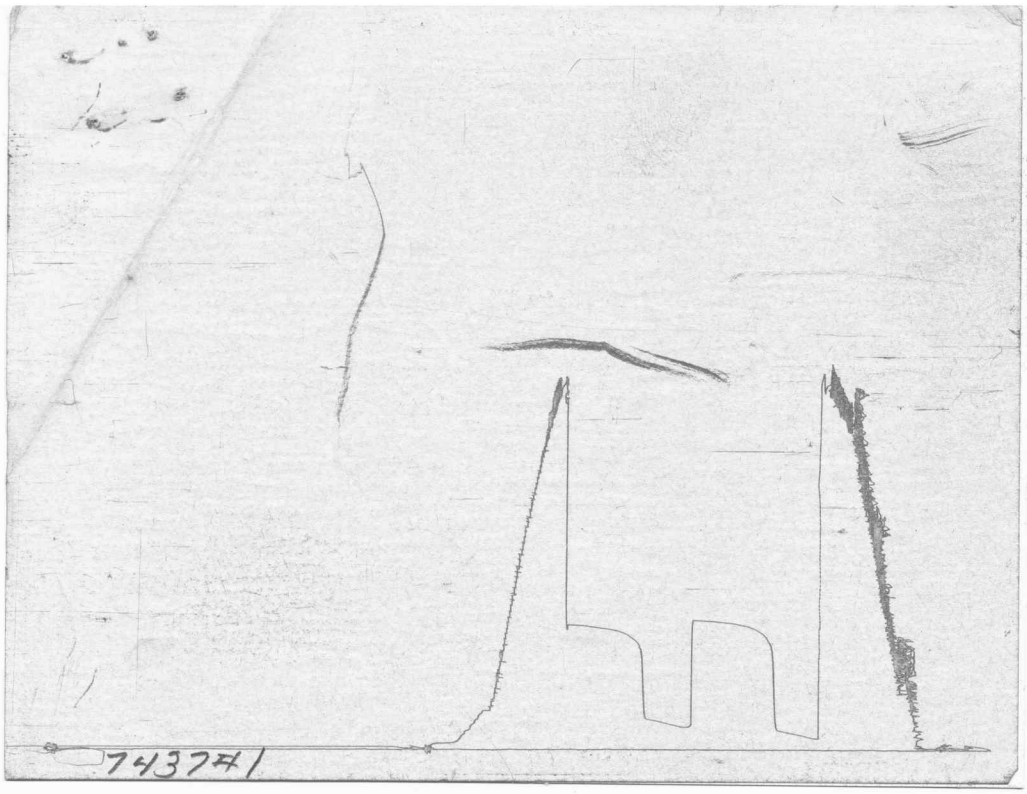
F

C - 21

A25 .. A44

D1 .. D40

1	0.597	587.9449
2	0.625	615.6038
3	0.642	632.3989
4	0.657	647.2203
5	0.662	652.1613
6	0.668	658.0907
7	0.67	660.0673
8	0.673	663.0321
9	0.677	666.9855
10	0.682	671.9273
11	0.685	674.8926
12	0.687	676.8694
13	0.688	677.8579
14	0.689	678.8464
15	0.691	680.8233
16	0.692	681.8118
17	0.693	682.8003
18	0.694	683.7888
19	0.695	684.7773
20	0.696	685.7658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TRILOBITE TESTING, L.L.C.

P.O. Box 362 • Hays, Kansas 67601

Drill-Stem Test Data

Well Name: RYAN #1 | Test No.: 2 | Date: 12/31/93

Company: CHARTER PRODUCTION COMPANY | Zone: CHEROKEE

Address: 224 EAST DOUGLAS #400 WICHITA KS 67202 | Elevation: 2300

Co. Rep./Geo.: TYLER SANDERS | Cont.: DUKE DRLG RIG #4 | Est. Ft. of Pay:

Location: Sec.: 13 | Twp.: 16S | Rge.: 21W | Co.: NESS | State: KS

Interval Tested: 4170-4179 | Drill Pipe Size: 4.5" XH

Anchor Length: 9 | Wt. Pipe I.D. - 2.7 Ft. Run:

Top Packer Depth: 4165 | Drill Collar – 2.25 Ft. Run:

Bottom Packer Depth: 4170 | Mud Wt.: 9.3 lb/Gal.

Total Depth: 4179 | Viscosity: 54 | Filtrate: 12

Tool Open @: 7:40 AM | Initial Blow: WEAK-BUILDING TO 1/2"

Final Blow: WEAK-BUILDING TO 1.5"

Recovery - Total Feet: 25 | Flush Tool?: NO

Rec. 15 | Feet of CLEAN OIL

Rec. 10 | Feet of OIL CUT MUD-20%OIL/ 80% MUD

Rec. | Feet of

Rec. | Feet of

Rec. | Feet of

BHT: 116 °F | Gravity: °API | @ °F | Corrected Gravity: 32 °API

RW: @ °F | Chlorides: ppm Recovery | Chlorides: 5000 ppm System

(A) Initial Hydrostatic Mud: 1988.1 PSI | AK1 Recorder No.: 13754 | Range: 4000

(B) First Initial Flow Pressure: 38.3 PSI | @ (depth): 4171 | w / Clock No.: 8179

(C) First Final Flow Pressure: 41.3 PSI | AK1 Recorder No.: 7437 | Range: 4200

(D) Initial Shut-in Pressure: 515.8 PSI | @ (depth): 4175 | w / Clock No.: 27567

(E) Second Initial Flow Pressure: 37.4 PSI | AK1 Recorder No.: | Range:

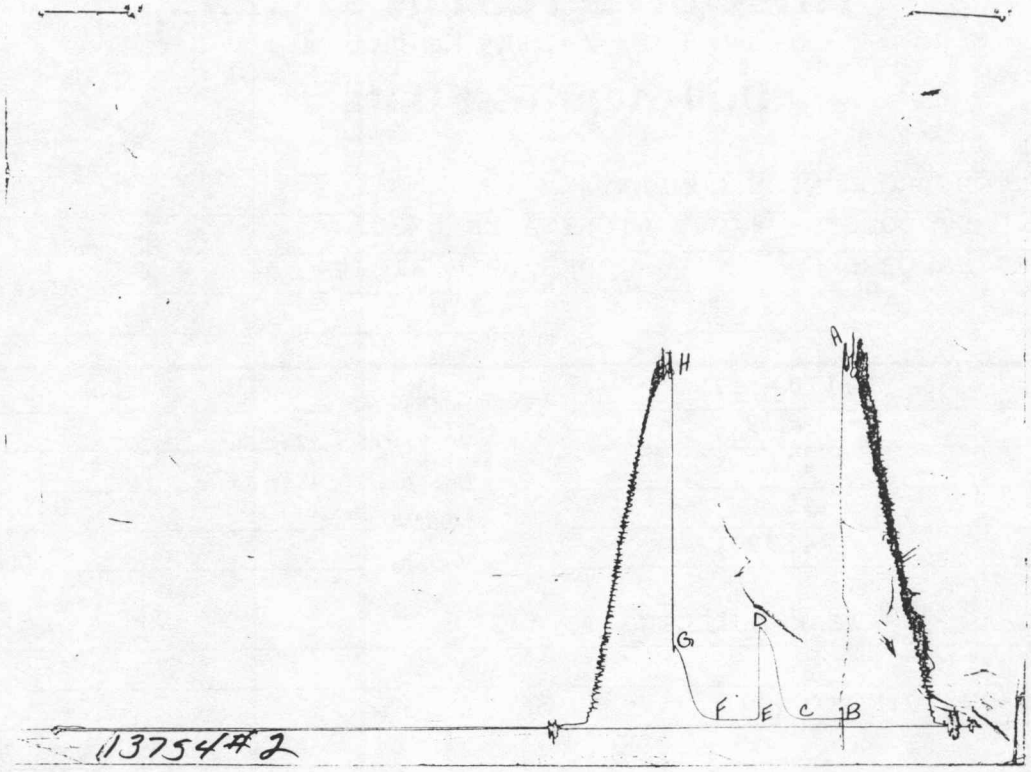
(F) Second Final Flow Pressure: 40.3 PSI | @ (depth): | w / Clock No.:

(G) Final Shut-in Pressure: 419.2 PSI | Initial Opening: 30 | Final Flow: 30

(H) Final Hydrostatic Mud: 1959.9 PSI | Initial Shut-in: 30 | Final Shut-in: 30

Our Representative: DAN BANGLE

CHART PAGE



This is an actual photograph of recorder chart

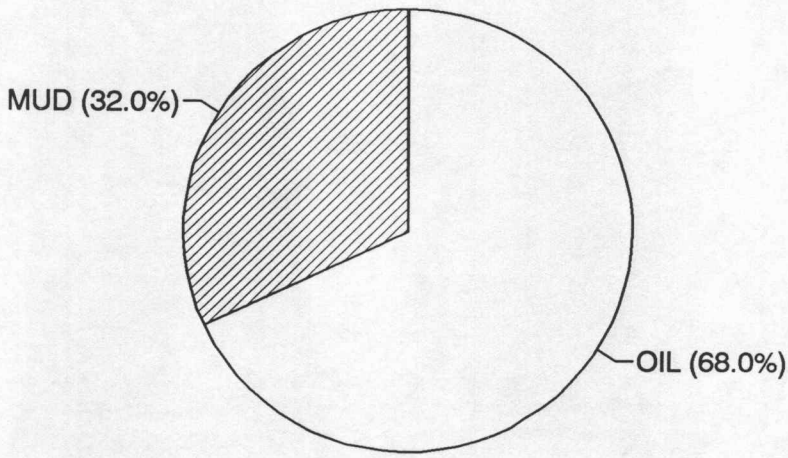
	FIELD READING	OFFICE READING
(A) INITIAL HYDROSTATIC MUD	1992	1988.1
(B) FIRST INITIAL FLOW PRESSURE	49	38.3
(C) FIRST FINAL FLOW PRESSURE	49	41.3
(D) INITIAL CLOSED-IN PRESSURE	511	515.8
(E) SECOND INITIAL FLOW PRESSURE	49	37.4
(F) SECOND FINAL FLOW PRESSURE	49	40.3
(G) FINAL CLOSED-IN PRESSURE	462	419.2
(H) FINAL HYDROSTATIC MUD	1956	1959.9

CALCULATED RECOVERY ANALYSIS DRILL PIPE

DST # 2 TICKET 6505

SAMPLE	TOTAL	GAS		OIL		WATER		MUD	
#	FEET	%	FEET	%	FEET	%	FEET	%	FEET
1	15	0	0	100	15	0	0	0	0
2	10	0	0	20	2	0	0	80	8
3			0		0		0		0
4			0		0		0		0
5			0		0		0		0
6			0		0		0		0
TOTAL	25	0	0	68	17	0	0	32	8

			HRS	BBL/DAY
BBL OIL=	0.24174	*	1	5.8018
BBL WATER=	0	*		0
BBL MUD=	0.11376			
BBL GAS	0			



TRILOBITE TESTING L.L.C.

P.O. Box 362 • Hays, Kansas 67601

Test Ticket

№ 6505

Well Name & No. Ryan #1 Test No. 2 Date 12-31-93

Company Charter Prod. Co. Zone Tested Cher Sd

Address _____ Elevation 2300 K.B.

Co. Rep./Geo. Tyler Sanders Cont. Duke #4 Est. Ft. of Pay _____

Location: Sec. 13 Twp. 16 Rge. 21 Co. Ness State Ks.

No. of Copies 10 Distribution Sheet _____ Yes _____ No Turnkey _____ Yes _____ No _____ Evaluation

Interval Tested 4170 - 4179 Drill Pipe Size 4.5 XH

Anchor Length 9 Top Choke — 1" _____ Bottom Choke — ¾" _____

Top Packer Depth 4165 Hole Size — 7⅞" _____ Rubber Size — 6¾" _____

Bottom Packer Depth 4170 Wt. Pipe I.D. — 2.7 Ft. Run _____

Total Depth 4179 Drill Collar — 2.25 Ft. Run _____

Mud Wt. 9.3 lb/gal. Viscosity 54 Filtrate 12

Tool Open @ 7:40 a.m. Initial Blow Weak - building to ½"

Final Blow Weak - building to 1½"

Recovery — Total Feet 25 Feet of Gas in Pipe _____ Flush Tool? _____

Rec. 15	Feet Of	C.O.	%gas 100	%oil	%water	%mud
Rec. 10	Feet Of	O.C.M.	%gas 20	%oil	%water 80	%mud
Rec.	Feet Of		%gas	%oil	%water	%mud
Rec.	Feet Of		%gas	%oil	%water	%mud
Rec.	Feet Of		%gas	%oil	%water	%mud

BHT 116 °F Gravity _____ °API @ _____ °F Corrected Gravity 32 °API

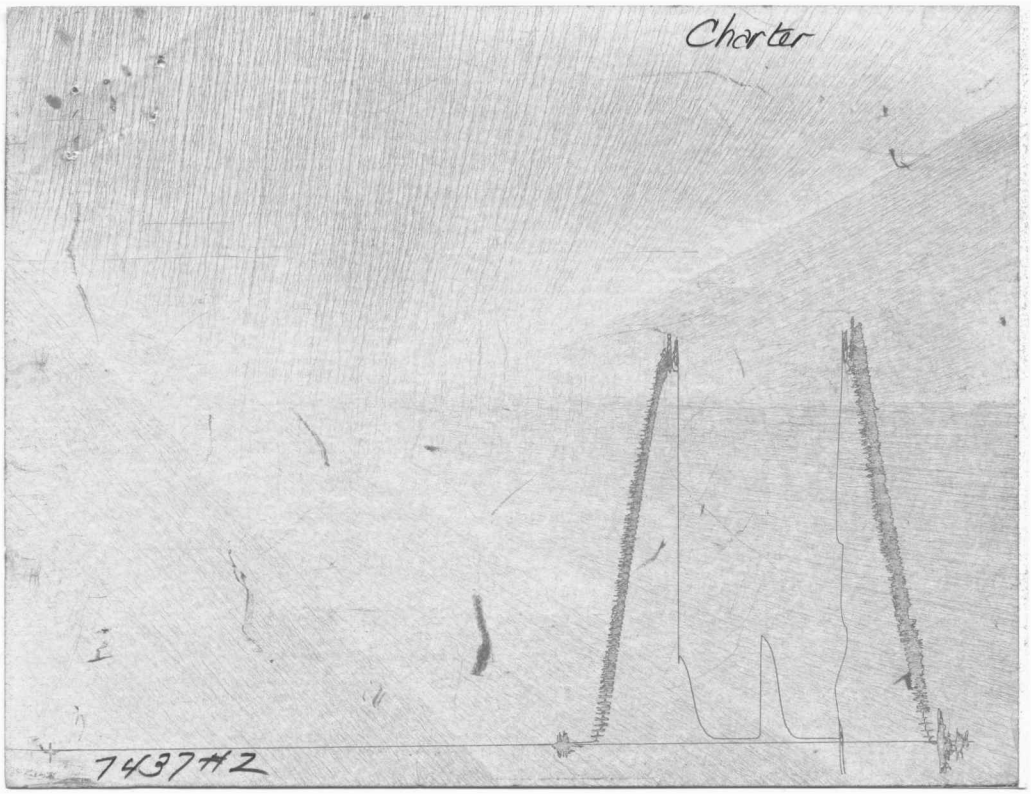
RW _____ @ _____ °F Chlorides _____ ppm Recovery Chlorides 5,000 ppm System

(A) Initial Hydrostatic Mud	1992 PSI	Ak1 Recorder No.	13754	Range	4000
(B) First Initial Flow Pressure	49 PSI	@ (depth)	4171	w/Clock No.	8179
(C) First Final Flow Pressure	49 PSI	AK1 Recorder No.	7497	Range	4200
(D) Initial Shut-In Pressure	511 PSI	@ (depth)	4175	w/Clock No.	27567
(E) Second Initial Flow Pressure	49 PSI	AK1 Recorder No.		Range	
(F) Second Final Flow Pressure	49 PSI	@ (depth)		w/Clock No.	
(G) Final Shut-In Pressure	462 PSI	Initial Opening	30	Test	600
(H) Final Hydrostatic Mud	1956 PSI	Initial Shut-In	30	Jars X	200
		Final Flow	30	Safety Joint X	50
		Final Shut-In	30	Straddle	
				Circ. Sub	
				Sampler	
				Extra Packer	
				Other	
				TOTAL PRICE $	850.00

Approved By Tyler H. Sanders

Our Representative Dan Bangle

Printcraft Printers - Hays, KS



CHARTER – DST #2 – Ryan #1

ECORDER #_13754_____ 30-30-30-30

L HYD. MUD _____ _____

FINAL FLOW MINUTES_____ INTERVAL_____		FINAL SHUTIN MINUTES_____ INTERVAL_____	
A	2.002	1988.1	
B	.039	38.3	
C	.042	41.3	
D	.524	515.8	
E	~~.042~~ .038	37.4	
F	.041	40.3	
G	.426	419.2	
H	1.974	1959.9	