TRILOBITE TESTING, L.L.C.

Computer Inventoried P.O. Box 362 • Hays, Kansas 67601

ORIGINAL

Drill-Stem Test Data

15-135-23840

Well Name HUMPHREY 2-18 Test No. 1 NOV. 8 1994 Date 11/3/94

Company GRAND MESA OPERATING Zone FORT SCOTT

Address 200 E FIRST STREET #307 WICHITA KS 67202 Elevation 2396

Co. Rep./Geo. LARRY FRIEND Cont. MALLARD #2 Est. Ft. of Pay

Location: Sec. 18 Twp. 17S Rge. 24W Co. NESS State KS

Interval Tested 4221-4270 Drill Pipe Size 4.5" XH

Anchor Length 49 Wt. Pipe I.D. - 2.7 Ft. Run

Top Packer Depth 4216 Drill Collar – 2.25 Ft. Run 250

Bottom Packer Depth 4221 Mud Wt. 9.2 lb/Gal.

Total Depth 4270 Viscosity 46 Filtrate 6

Tool Open @ 6:52PM Initial Blow WEAK - BUILDING TO 7" FAIR BLOW

Final Blow WEAK - BUILDING TO 7" FAIR BLOW

KCC

MAY 30 1996

Recovery - Total Feet 70 Flush Tool?

Rec. 70 Feet of SLIGHTLY OIL CUT GASSY MUD 10%GAS/5%OIL/85%MUD

Rec. Feet of

Rec. Feet of

Rec. Feet of

Rec. Feet of

BHT 113 °F Gravity °API @ °F Corrected Gravity °API

RW @ °F Chlorides ppm Recovery Chlorides 5000 ppm System

(A) Initial Hydrostatic Mud 2247.7 PSI AK1 Recorder No. 13754 Range 4000

(B) First Initial Flow Pressure 33.4 PSI @ (depth) 4225 w / Clock No. 25110

(C) First Final Flow Pressure 42.3 PSI AK1 Recorder No. 13849 Range 4375

(D) Initial Shut-in Pressure 588.9 PSI @ (depth) 4266 w / Clock No. 27501

(E) Second Initial Flow Pressure 56.1 PSI AK1 Recorder No. Range

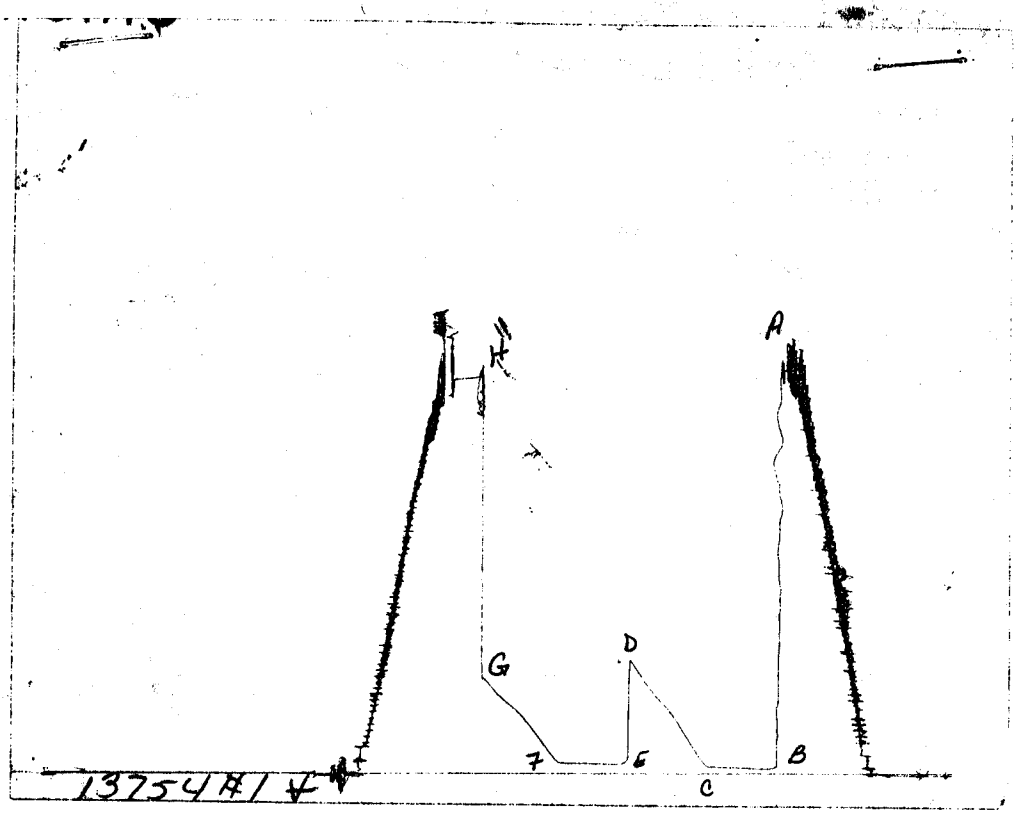
(F) Second Final Flow Pressure 64.9 PSI @ (depth) w / Clock No.

(G) Final Shut-in Pressure 500.1 PSI Initial Opening 45 Final Flow 45

(H) Final Hydrostatic Mud 2031.4 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	2259	2247.7
(B) FIRST INITIAL FLOW PRESSURE	39	33.4
(C) FIRST FINAL FLOW PRESSURE	39	42.3
(D) INITIAL CLOSED-IN PRESSURE	590	588.9
(E) SECOND INITIAL FLOW PRESSURE	49	56.1
(F) SECOND FINAL FLOW PRESSURE	49	64.9
(G) FINAL CLOSED-IN PRESSURE	492	500.1
(H) FINAL HYDROSTATIC MUD	2036	2031.4

TRILOBITE TESTING, L.L.C.

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Drill-Stem Test Data

ORIGINAL

Well Name HUMPHREY #2-18 Test No. 2 Date 11/4/94

Company GRAND MESA OPERATING CO Zone MISSISSIPPI

Address 200 E FIRST ST #307 WICHITA KS 67202 Elevation 2396

Co. Rep./Geo. LARRY FRIEND Cont. MALLARD #2 Est. Ft. of Pay 12

Location: Sec. 18 Twp. 17S Rge. 24W Co. NESS State KS

Interval Tested 4343-4356 Drill Pipe Size 4.5" XH

Anchor Length 13 Wt. Pipe I.D. - 2.7 Ft. Run

Top Packer Depth 4338 Drill Collar – 2.25 Ft. Run 250

Bottom Packer Depth 4343 Mud Wt. 9.3 lb/Gal.

Total Depth 4356 Viscosity 52 Filtrate 6.6

Tool Open @ 4:45PM Initial Blow WEAK - BUILDING TO STRONG BOTTOM OF BUCKET IN 20 MINUTES

Final Blow WEAK - BUILDING TO STRONG BOTTOM OF BUCKET IN 38 MINUTES

Recovery - Total Feet 526 Flush Tool?

Rec. 278 Feet of GAS IN PIPE

Rec. 340 Feet of CLEAN GASSY OIL 20%GAS/80%OIL

Rec. 186 Feet of MUD CUT OIL 70%OIL/30%MUD

Rec. Feet of

Rec. Feet of

BHT 116 °F Gravity °API @ °F Corrected Gravity 37 °API

RW @ °F Chlorides ppm Recovery Chlorides 9000 ppm System

(A) Initial Hydrostatic Mud 2175.1 PSI AK1 Recorder No. 13754 Range 4000

(B) First Initial Flow Pressure 65.9 PSI @ (depth) 4347 w / Clock No. 25110

(C) First Final Flow Pressure 143.7 PSI AK1 Recorder No. 13849 Range 4375

(D) Initial Shut-in Pressure 1102.9 PSI @ (depth) 4352 w / Clock No. 27501

(E) Second Initial Flow Pressure 168.3 PSI AK1 Recorder No. Range

(F) Second Final Flow Pressure 206.6 PSI @ (depth) w / Clock No.

(G) Final Shut-in Pressure 1089.9 PSI Initial Opening 45 Final Flow 45

(H) Final Hydrostatic Mud 2077.9 PSI Initial Shut-in 45 Final Shut-in 60

Our Representative DAN BANGLE

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

GRAND MESA OPERATING CO

ORIGINAL

HUMPHREY #2-18 DST 2

18 17S 24W NESS KS

ELEVATION:	2396 KB	EST. PAY	12 FT
DATUM:	-1952	ZONE TESTED:	MISSISSIPPI
TEST INTERVAL:	4343-4356	TIME INTERVALS:	45-45-45-60
RECORDER DEPTH:	4347	VISCOSITY:	6.68 CP
BOTTOM HOLE TEMP:	116	HOLE SIZE:	7.875 IN

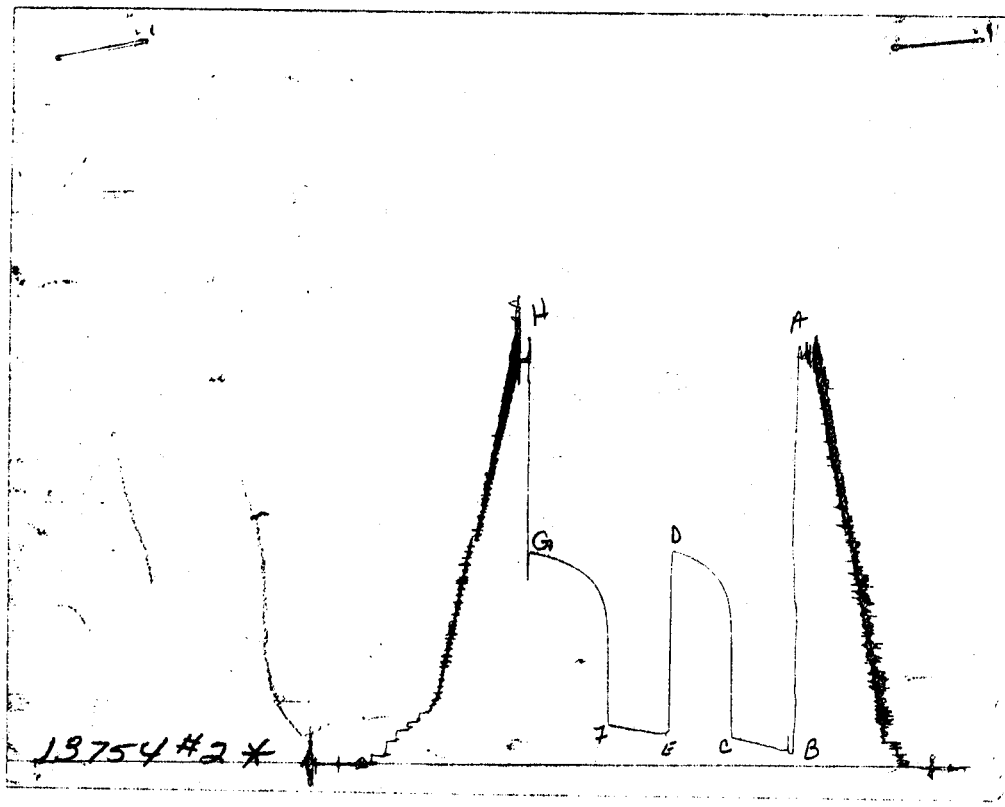
CUBIC FEET OF GAS IN PIPE:	22			
TOTAL FEET OF RECOVERY:	526.00	CORRECTED PIPE FILLUP:	567.582	
TOTAL BARRELS OF RECOVERY:	5.15	CORR. BARRELS OF RECOVERY:	5.739	BBL
BARRELS IN DRILL PIPE:	3.92	API GRAVITY:	37	
BARRELS IN WEIGHT PIPE:	0.00	FLUID GRADIENT:	0.364	
BARRELS IN DRILL COLLARS:	1.22			
GAS OIL RATIO:	4.31	CU.FT/BBL		
BUBBLE POINT PRESSURE:	40			

UNCORRECTED INITIAL PRODUCTION:	82.36	BBL
INITIAL PRODUCTION CORRECTED TO FINAL FLOW PRESSURE:	91.82	BBL/DAY
INITIAL PRODUCTION CORRECTED TO PSEUDO STEADY FLOW STATE:	62.924	

INITIAL SLOPE	413.74	PSI/CYCL	FINAL SLOPE	339.75	PSI/CYCLE
INITIAL P*	1221.74	PSI	FINAL P*	1220.82	PSI

TRANSMISSIBILITY	43.94	(MD.-FT./CP.)
PERMEABILITY	24.47	(MD.)
INDICATED FLOW CAPACITY	293.66	(MD.FT)
PRODUCTIVITY INDEX	0.05	(BARREL/DAY/PSI)
DAMAGE RATIO	0.55	
RADIUS OF INVESTIGATION	46.93	(FT,)
POTENTIOMETRIC SURFACE	880.09	(FT.)
DRAWDOWN FACTOR	0.075	(%)
THEORETICAL POTENTIAL FROM FINAL FLOW PRESSURE	0.00	
THEORETICAL POTENTIAL FROM PSEUDO STEADY FLOW STATE	0.00	

CHART PAGE



This is an actual photograph of recorder chart

		FIELD READING	OFFICE READING
(A)	INITIAL HYDROSTATIC MUD	2238	2175.1
(B)	FIRST INITIAL FLOW PRESSURE	68	65.9
(C)	FIRST FINAL FLOW PRESSURE	147	143.7
(D)	INITIAL CLOSED-IN PRESSURE	1106	1102.9
(E)	SECOND INITIAL FLOW PRESSURE	177	168.3
(F)	SECOND FINAL FLOW PRESSURE	216	206.6
(G)	FINAL CLOSED-IN PRESSURE	1086	1089.9
(H)	FINAL HYDROSTATIC MUD	2117	2077.9

INITIAL FLOW

DST # 2

RECORDER 13754

TIME(MIN)	PRESSURE	<> PRESSURE
0	65.9	65.9
3	83.6	17.7
6	83.6	0.0
9	88.5	4.9
12	96.4	7.9
15	100.3	3.9
18	105.3	5.0
21	110.2	4.9
24	116.1	5.9
27	121.1	5.0
30	125.9	4.8
33	128.9	3.0
36	133.8	4.9
39	137.7	3.9
42	141.7	4.0
45	143.7	2.0

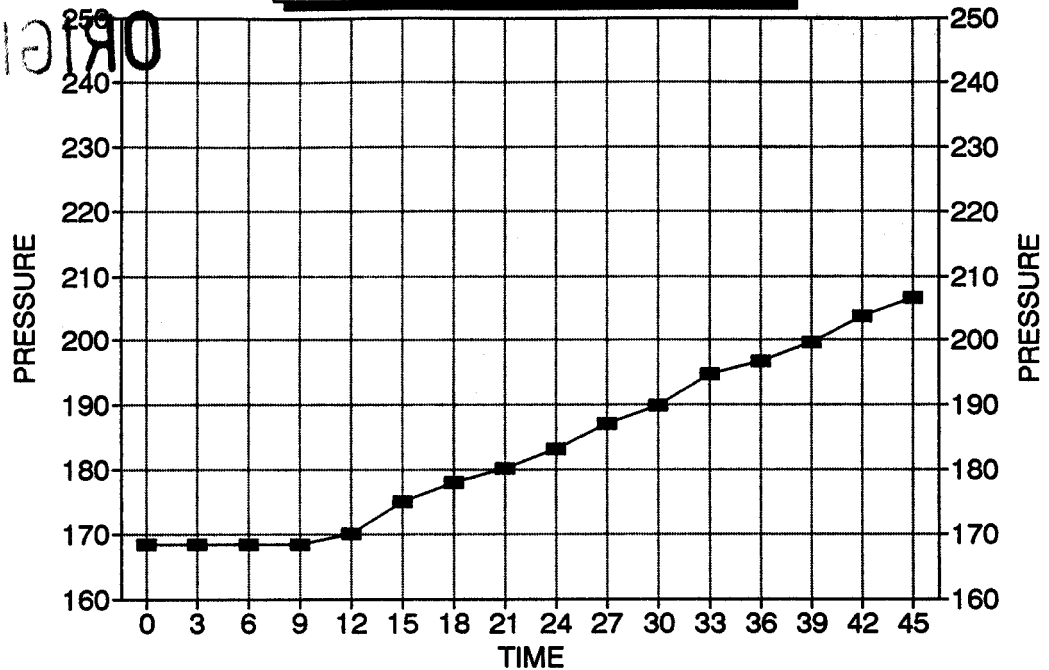
FINAL FLOW

DST # 2

RECORDER 13754

TIME(MIN)	PRESSURE	<> PRESSURE
0	168.3	168.3
3	168.3	0.0
6	168.3	0.0
9	168.3	0.0
12	170.2	1.9
15	175.1	4.9
18	178.1	3.0
21	180.1	2.0
24	183.1	3.0
27	187.1	4.0
30	189.9	2.8
33	194.8	4.9
36	196.8	2.0
39	199.8	3.0
42	203.7	3.9
45	206.6	2.9

DELTA T DELTA P
FINAL FLOW / DST #2



INITIAL PRODUCTION CORRECTED TO PSEUDO STEADY FLOW STATE: 62.924

INITIAL SHUT-IN

HUMPHREY #2-18

DST # 2

INITIAL FLOW TIME 45

			SLOPE	413.7	PSI/CYCLE
			P*	1221.74	PSI

	TIME(MIN)	Pws (psi)	Log Horn T	<> PRESSURE	Horn T
	3	803.3	1.204	803.3	16
	6	883.3	0.929	80	9
	9	933.7	0.778	50.4	6
	12	961.4	0.677	27.7	5
	15	984.1	0.602	22.7	4
	18	1003.1	0.544	19	4
	21	1021.1	0.497	18	3
	24	1037.1	0.459	16	3
	27	1048.1	0.426	11	3
X	30	1057.1	0.398	9	3
	33	1068.1	0.374	11	2
	36	1077.1	0.352	9	2
	39	1086	0.333	8.9	2
	42	1093.9	0.316	7.9	2
	45	1097.9	0.301	4	2
X	48	1102.9	0.287	5	2

FINAL SHUT-IN

HUMPHREY #2-18

DST # 2

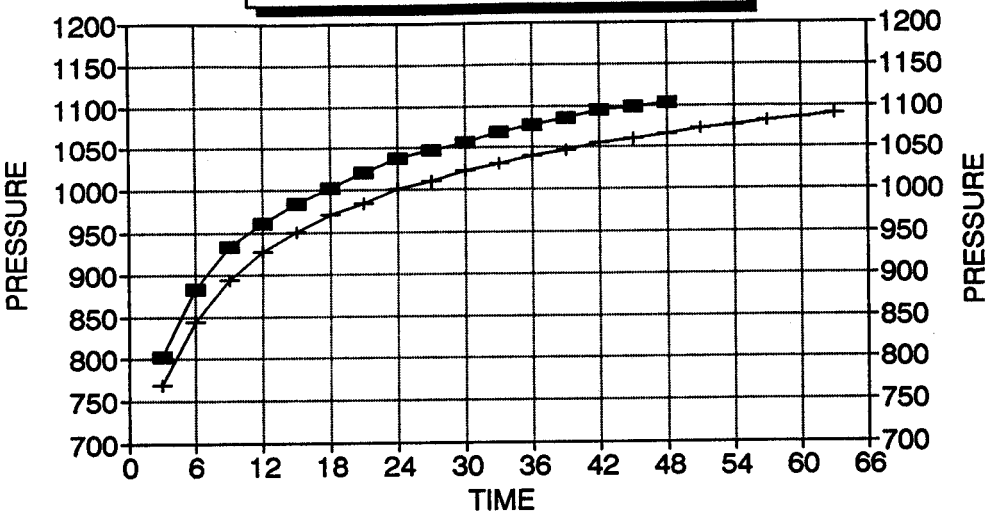
TOTAL FLOW TIME 90

SLOPE 339.8 PSI/CYCLE

P* 1220.82 PSI

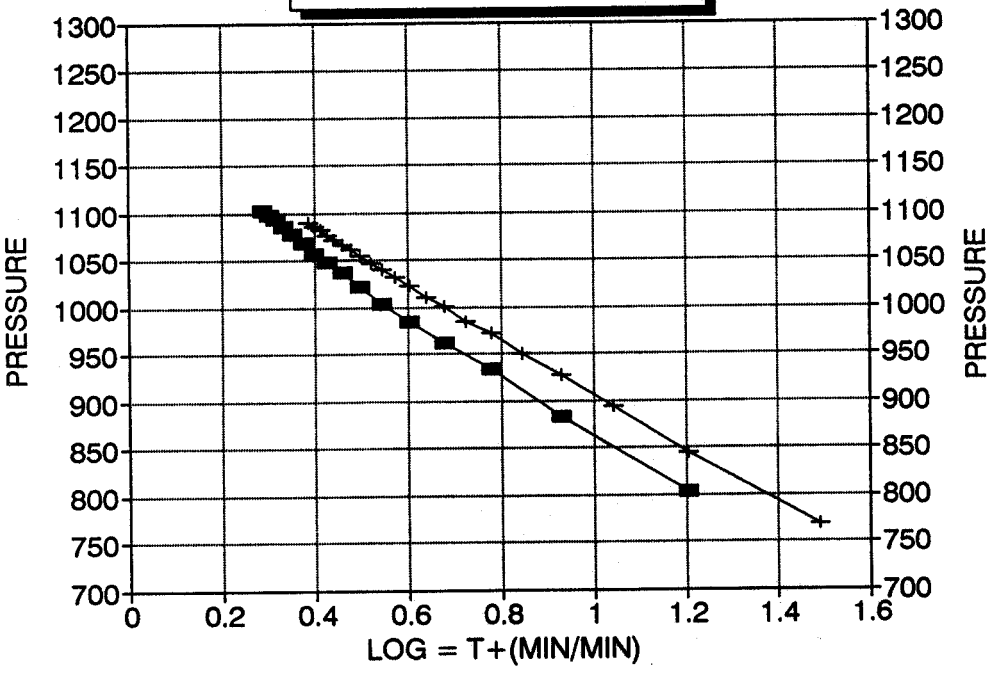
	TIME(MIN)	Pws (psi)	Log Horn T	<> PRESSURE	Horn T
	3	768.7	1.491	768.7	31
	6	844.8	1.204	76.1	16
	9	894.2	1.041	49.4	11
	12	926.8	0.929	32.6	9
	15	950.5	0.845	23.7	7
	18	971.3	0.778	20.8	6
	21	984.1	0.723	12.8	5
	24	1001.1	0.677	17	5
	27	1010.1	0.637	9	4
	30	1022.1	0.602	12	4
	33	1031.1	0.571	9	4
	36	1040.1	0.544	9	4
	39	1046.1	0.520	6	3
	42	1055.1	0.497	9	3
	45	1061.1	0.477	6	3
	48	1066.1	0.459	5	3
	51	1072.1	0.442	6	3
X	54	1076.1	0.426	4	3
	57	1082.1	0.411	6	3
	60	1086	0.398	3.9	3
X	63	1089.9	0.385	3.9	2

DELTA T DELTA P
HUMPHREY 2-18 / DST #2



INITIAL — FINAL

HORNER PLOT



CALCULATED RECOVERY ANALYSIS

DST # 2 TICKET # 7650

SAMPLE	#	TOTAL FEET	%	GAS FEET	%	OIL FEET	%	WATER FEET	%	MUD FEET
DRILL PIPE	1	278	100	278		0		0		0
	2	276	20	55.2	80	220.8		0		0
	3			0		0		0		0
	4			0		0		0		0
	5			0		0		0		0
	6			0		0		0		0
WEIGHT PIPE	1			0		0		0		0
	2			0		0		0		0
	3			0		0		0		0
	4			0		0		0		0
DRL COLLAR	1	64	20	12.8	80	51.2		0		0
	2	186		0	70	130.2		0	30	55.8
	3			0		0		0		0
	4			0		0		0		0
	5			0		0		0		0
TOTAL		804		0		0		0		0

			HRS OPE	BBL/DAY
BBL OIL=	4.026822	*	1.5	64.429152
BBL WATER=	0	*		0
BBL MUD=	0.272862			
BBL GAS =	4.800696