

TRILOBITE TESTING, L.L.C.

P.O. Box 362 • Hays, Kansas 67601

Drill-Stem Test Data

Well Name EARL SPLITTER #1 Test No. 1 Date 6/3/92
Company ABERCROMBIE DRILLING, INC. Zone LKC-160'
Address 801 UNION CNTR WICHITA KS 67202 Elevation 2824
Co. Rep./Geo. MICHEAL DIXON Cont. ABERCROMBIE DRLG #8 Est. Ft. of Pay 4
Location: Sec. 14 Twp. 19S Rge. 29W Co. LANE State KS

Interval Tested	<u>4224-4256</u>	Drill Pipe Size	<u>4.5 XH</u>
Anchor Length	<u>32</u>	Wt. Pipe I.D. - 2.7 Ft. Run	<u>619</u>
Top Packer Depth	<u>4219</u>	Drill Collar - 2.25 Ft. Run	<u> </u>
Bottom Packer Depth	<u>4224</u>	Mud Wt.	<u>9.3</u> lb/Gal.
Total Depth	<u>4256</u>	Viscosity	<u>48</u> Filtrate <u>10</u>

Tool Open @ 2:44 AM Initial Blow WEAK SURFACE BLOW SLOWLY BUILT TO 6"
ISI: BLED OFF BLOW-NO RETURN
Final Blow WEAK SURFACE BLOW SLOWLY BUILT TO 4"

Recovery - Total Feet 270 Flush Tool? NO

Rec. <u>250</u>	Feet of	<u>SLTLY GASSY OIL-5%GAS/95%OIL</u>
Rec. <u>20</u>	Feet of	<u>GASSY OIL CUT MUD-5%GAS/10%OIL/85%MUD</u>
Rec. <u> </u>	Feet of	<u> </u>
Rec. <u> </u>	Feet of	<u> </u>
Rec. <u> </u>	Feet of	<u> </u>

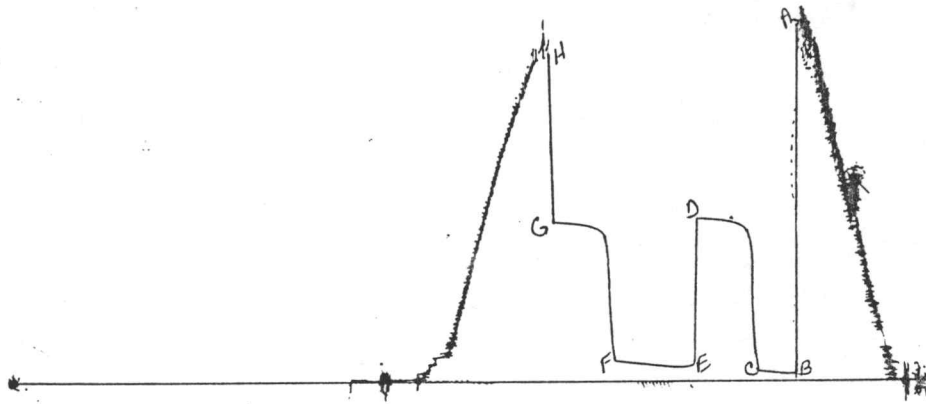
BHT 118 °F Gravity 35 °API @ 58 °F Corrected Gravity 35 °API
RW @ °F Chlorides ppm Recovery Chlorides 3000 ppm System

(A) Initial Hydrostatic Mud	<u>2192.3</u> PSI	AK1 Recorder No.	<u>13309</u>	Range	<u>4700</u>
(B) First Initial Flow Pressure	<u>46.8</u> PSI	@ (depth)	<u>4247</u>	w / Clock No.	<u>25810</u>
(C) First Final Flow Pressure	<u>61.3</u> PSI	AK1 Recorder No.	<u>13339</u>	Range	<u>4025</u>
(D) Initial Shut-in Pressure	<u>999.9</u> PSI	@ (depth)	<u>4251</u>	w / Clock No.	<u>27566</u>
(E) Second Initial Flow Pressure	<u>114.3</u> PSI	AK1 Recorder No.	<u> </u>	Range	<u> </u>
(F) Second Final Flow Pressure	<u>130.9</u> PSI	@ (depth)	<u> </u>	w / Clock No.	<u> </u>
(G) Final Shut-in Pressure	<u>976.9</u> PSI	Initial Opening	<u>30</u>	Final Flow	<u>60</u>
(H) Final Hydrostatic Mud	<u>2085.1</u> PSI	Initial Shut-in	<u>45</u>	Final Shut-in	<u>45</u>

Our Representative ROD STEINBRINK

CHART PAGE

DST#1
13309



This is an actual photograph of recorder chart

	FIELD READING	OFFICE READING
(A) INITIAL HYDROSTATIC MUD	2193	2192.3
(B) FIRST INITIAL FLOW PRESSURE	41	46.8
(C) FIRST FINAL FLOW PRESSURE	52	61.3
(D) INITIAL CLOSED-IN PRESSURE	989	999.9
(E) SECOND INITIAL FLOW PRESSURE	83	114.3
(F) SECOND FINAL FLOW PRESSURE	124	130.9
(G) FINAL CLOSED-IN PRESSURE	969	976.9
(H) FINAL HYDROSTATIC MUD	2113	2085.1

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

ABERCROMBIE DRILLING, EARL SPLITTER #1 DST 1

14 19S 29W LANE KS

ELEVATION:	2824	KB	EST. PAY	4 FT
DATUM:	-4252		ZONE TESTED:	LKC-160'
TEST INTERVAL:	4224-4256		TIME INTERVALS:	15-45-60-45
RECORDER DEPTH:	4251		VISCOSITY:	9.250 CP
BOTTOM HOLE TEMP:	118		HOLE SIZE:	7.875 IN

CUBIC FEET OF GAS IN PIPE:	0.39			
TOTAL FEET OF RECOVERY:	270.00	CORRECTED PIPE FILLUP:	355.707	
TOTAL BARRELS OF RECOVERY:	1.89	CORR. BARRELS OF RECOVERY:	2.485	BBL
BARRELS IN DRILL PIPE:	0.00	API GRAVITY:	35	
BARRELS IN WEIGHT PIPE:	1.89	FLUID GRADIENT:	0.368	
BARRELS IN DRILL COLLARS:	0.00			
GAS OIL RATIO:	0.2065	CU.FT/BBL		
BUBBLE POINT PRESSURE:	3.350			
UNCORRECTED INITIAL PRODUCTION:			30.24	BBL
INITIAL PRODUCTION CORRECTED TO FINAL FLOW PRESSURE:			39.76	BBL/DAY
INITIAL PRODUCTION CORRECTED TO PSEUDO STEADY FLOW STATE:			17.177	

INITIAL SLOPE	96.64	PSI/CYCLE	FINAL SLOPE	63.65	PSI/CYCLE
INITIAL P*	1021	PSI	FINAL P*	1007	PSI

TRANSMISSIBILITY	101.58	(MD.-FT./CP.)
PERMEABILITY	234.90	(MD.)
INDICATED FLOW CAPACITY	939.61)MD.FT)
PRODUCTIVITY INDEX	0.11	(BARRELS/DAY/PSI)
DAMAGE RATIO	2.52	
RADIUS OF INVESTIGATION	145.40	(FT,)
POTENTIOMETRIC SURFACE	-1915.15	(FT.)
DRAWDOWN FACTOR	1.378	(%)
THEORETICAL POTENTIAL FROM FINAL FLOW PRESSURE	100.19	
THEORETICAL POTENTIAL FROM PSEUDO STEADY FLOW STATE	43.28	

CALCULATED RECOVERY ANALYSIS

WEIGHT PIPE

DST #

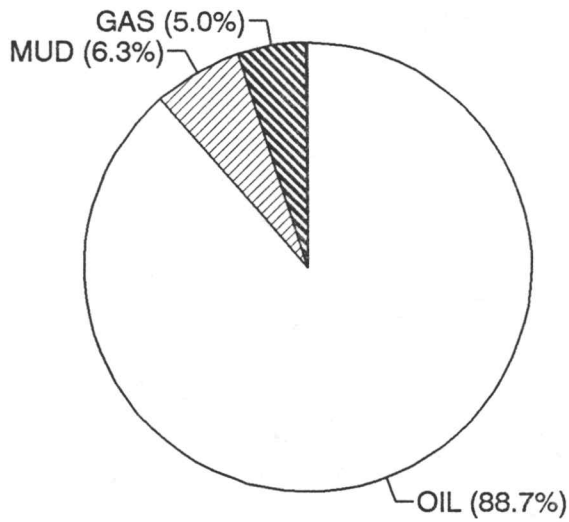
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TICKET #

4648

SAMPLE #	TOTAL FEET	GAS		OIL		WATER		MUD	
		%	FEET	%	FEET	%	FEET	%	FEET
1	250	5	12.5	95	237.5	0	0	0	0
2	20	5	1	10	2	0	0	85	17
3			0		0		0		0
4			0		0		0		0
5			0		0		0		0
TOTAL	270	5	13.5	88.703704	239.5	0	0	6.2963	17

	BBL OIL=	BBL WATER=	BBL MUD=	BBL GAS=	HRS OPEN	BBL/DAY
	1.6765	0	0.119	0.0945	1.5	26.824
		*				0



INITIAL FLOW

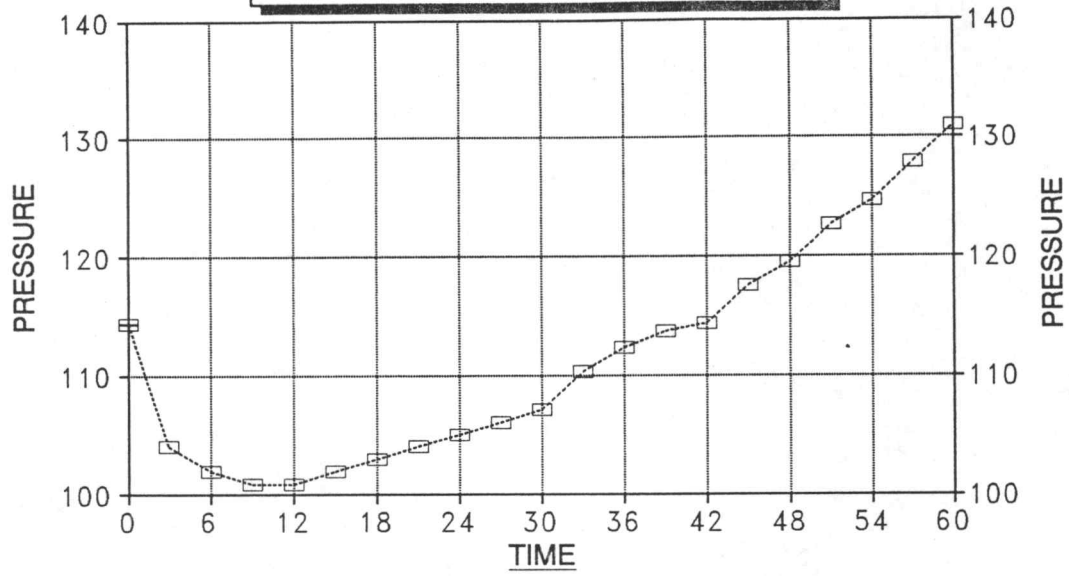
RECORDER #	13339	DST # 1
TIME(MIN)	PRESSURE	<>PRESSURE
0	46.8	46.8
3	45.7	-1.1
6	46.8	1.1
9	50.9	4.1
12	52	1.1
15	53	1
18	55.1	2.1
21	56.1	1
24	59.2	3.1
27	60.3	1.1
30	61.3	1

FINAL FLOW

RECORDER #	13339	DST # 1
TIME(MIN)	PRESSURE	<> PRESSURE
0	114.3	114.3
3	104	-10.3
6	101.9	-2.1
9	100.8	-1.1
12	100.8	0
15	101.9	1.1
18	102.9	1
21	104	1.1
24	105	1
27	106	1
30	107.1	1.1
33	110.2	3.1
36	112.3	2.1
39	113.6	1.3
42	114.3	0.7
45	117.5	3.2
48	119.5	2
51	122.6	3.1
54	124.7	2.1
57	127.8	3.1
60	130.9	3.1
		3.2

DELTA T DELTA P

FINAL FLOW - DST #1



INITIAL PRODUCTION CORRECTED TO PSEUDO STEADY FLOW STATE:

17.177

EARL SPLITTER #1DST #1
INITIAL SHUTIN

30 TOTAL FLOW TIME

Slope 96.64 psi/cycle
P * 1021 psi

TIME(MIN)	Pws (psi)	Horn T	Log <> PRESSURE	Horn T
3	812.6	1.041	812.6	11
6	919.8	0.778	107.2	6
9	943.8	0.637	24.0	4
12	957.9	0.544	14.1	4
15	966.9	0.477	9.0	3
18	974.9	0.426	8.0	3
21	977.9	0.385	3.0	2
24	983.9	0.352	6.0	2
27	986.9	0.325	3.0	2
30	989.9	0.301	3.0	2
33	992.9	0.281	3.0	2
X 36	995.9	0.263	3.0	2
39	997.9	0.248	2.0	2
42	998.9	0.234	1.0	2
X 45	999.9	0.222	1.0	2

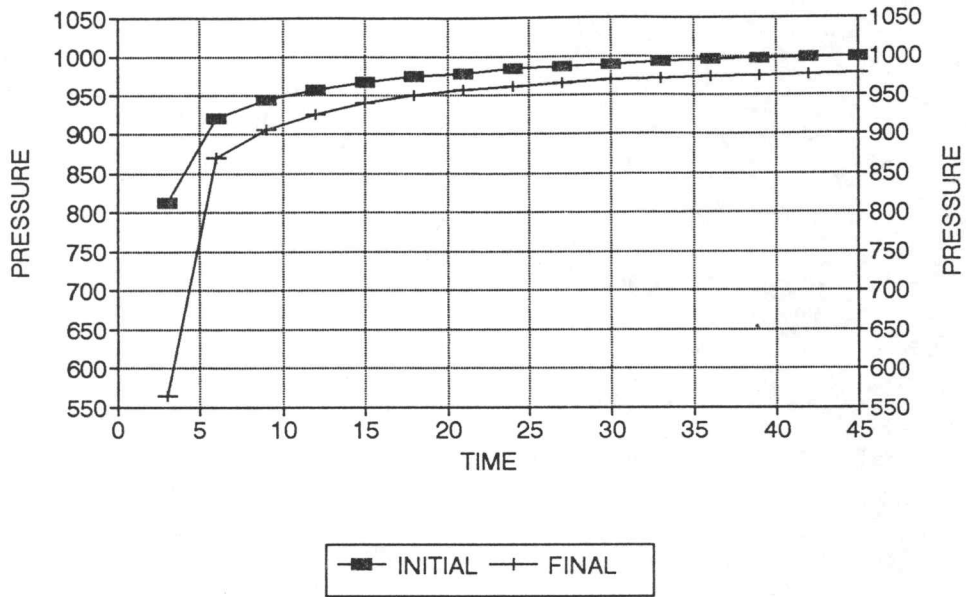
EARL SPLITTER DST #1
FINAL SHUTIN

90 TOTAL FLOW TIME

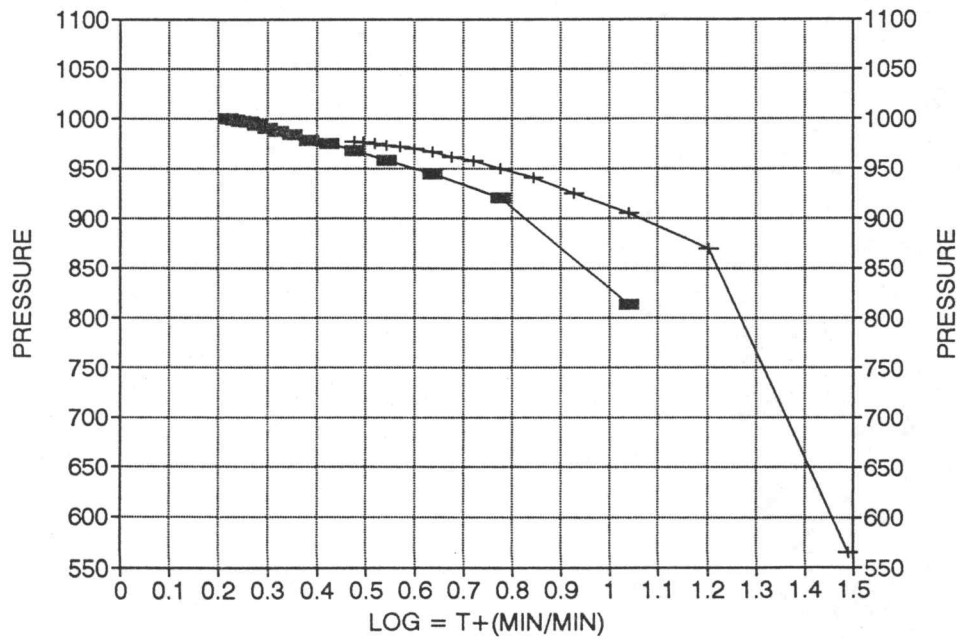
Slope 63.65 psi/cycle
P * 1007 psi

TIME(MIN)	Pws (psi)	Horn T	Log <> PRESSURE	Horn T
3	564.2	1.491	564.2	31
6	869.7	1.204	305.5	16
9	904.8	1.041	35.1	11
12	924.8	0.929	20.0	9
15	939.8	0.845	15.0	7
18	949.9	0.778	10.1	6
21	956.9	0.723	7.0	5
24	960.9	0.677	4.0	5
27	965.9	0.637	5.0	4
30	968.9	0.602	3.0	4
X 33	970.9	0.571	2.0	4
36	972.9	0.544	2.0	4
39	974.9	0.520	2.0	3
42	975.9	0.497	1.0	3
X 45	976.9	0.477	1.0	3

EARL SPLITTER #1 DELTA T DELTA P



HORNER PLOT



1	0.045	46.8
2	0.044	45.76
3	0.045	46.8
4	0.049	50.96
5	0.05	52
6	0.051	53.04
7	0.053	55.12
8	0.054	56.16
9	0.057	59.28
10	0.058	60.32
11	0.059	61.36

1	0.11	114.3853
2	0.1	104
3	0.098	101.92
4	0.097	100.88
5	0.097	100.88
6	0.098	101.92
7	0.099	102.96
8	0.1	104
9	0.101	105.0387
10	0.102	106.0773
11	0.103	107.1159
12	0.106	110.2315
13	0.108	112.3085
14	0.109	113.3469
15	0.11	114.3853
16	0.113	117.5004
17	0.115	119.577
18	0.118	122.6917
19	0.12	124.768
20	0.123	127.8823
21	0.126	130.9963
22	0.129	134.1101

1	0.059	61.36
2	0.793	812.6069
3	0.9	919.8
4	0.924	943.8845
5	0.938	957.9231
6	0.947	966.9438
7	0.955	974.9595
8	0.958	977.9647
9	0.964	983.9741
10	0.967	986.9782
11	0.97	989.982
12	0.973	992.9854
13	0.976	995.9885
14	0.978	997.9903
15	0.979	998.9912
16	0.98	999.992

1	0.129	134.1101
2	0.545	564.2385
3	0.85	869.7625
4	0.885	904.8019
5	0.905	924.8195
6	0.92	939.872
7	0.93	949.902
8	0.937	956.9206
9	0.941	960.9304
10	0.946	965.9417
11	0.949	968.948
12	0.951	970.952
13	0.953	972.9558
14	0.955	974.9595
15	0.956	975.9613
16	0.957	976.963

TRILOBITE TESTING COMPANY L.L.C.

P.O. Box 362 • Hays, Kansas 67601

Test Ticket

No 4648

Well Name & No.	Earl Splitter #1	Test No.	1	Date	6-3-92								
Company	Abercrombie Drilling, Inc.	Zone Tested	L/KC	160'									
Address	801 Union Center Wichita, KS. 67202	Elevation	2824	(KB)									
Co. Rep./Geo.	Michael Dixon	cont.	Abercrombie #8	Est. Ft. of Pay	4'								
Location: Sec.	14	Twp.	19 S	Rge.	29 W	co.	Lane	State	KS.				
No. of Copies		Distribution Sheet		Yes		No	Turnkey		Yes		No	Evaluation	

Interval Tested	4224 - 4256	Drill Pipe Size	4 1/2" XH			
Anchor Length	32'	Top Choke — 1"	Bottom Choke — 3/4"			
Top Packer Depth	4219	Hole Size — 7 7/8"	Rubber Size — 6 3/4"			
Bottom Packer Depth	4224	Wt. Pipe I.D. — 2.7 Ft. Run	619'			
Total Depth	4256	Drill Collar — 2.25 Ft. Run				
Mud Wt.	9.3	lb/gal.	Viscosity	48	Filtrate	10.0
Tool Open @	2:44 am	Initial Blow	Weak surface blow slowly built to 6".			
ISI:	Bled off blow - no return.					
Final Blow	Weak surface blow slowly built to 4".					

Recovery — Total Feet	270'	Feet of Gas in Pipe		Flush Tool?	No				
Rec.		Feet Of		%gas	%oil	%water	%mud		
Rec.	250'	Feet Of	SGO	5 %gas	95 %oil	— %water	— %mud		
Rec.		Feet Of		%gas	%oil	%water	%mud		
Rec.	20'	Feet Of	GOCM	5 %gas	10 %oil	— %water	85 %mud		
Rec.		Feet Of		%gas	%oil	%water	%mud		
BHT	118°	°F Gravity	35	°API @	58°	°F Corrected Gravity	35.2	°API	
RW		@		°F Chlorides		ppm Recovery	Chlorides	3,000	ppm System
(A) Initial Hydrostatic Mud	2193	PSI	Ak1 Recorder No.	13309	Range	4700			
(B) First Initial Flow Pressure	41	PSI	@(depth)	4247	w/Clock No.	25810			
(C) First Final Flow Pressure	52	PSI	Ak1 Recorder No.	13339	Range	4025			
(D) Initial Shut-In Pressure	989	PSI	@(depth)	4251	w/Clock No.	27566			
(E) Second Initial Flow Pressure	83	PSI	Ak1 Recorder No.		Range				
(F) Second Final Flow Pressure	124	PSI	@(depth)		w/Clock No.				
(G) Final Shut-In Pressure	969	PSI	Initial Opening	30	Test				
(H) Final Hydrostatic Mud	2113	PSI	Initial Shut-In	45	Jars				

TRILOBITE TESTING COMPANY SHALL NOT BE LIABLE FOR DAMAGE OF ANY KIND OF THE PROPERTY OR PERSONNEL OF THE ONE/FOR WHOM A TEST IS MADE, OR FOR ANY LOSS SUFFERED OR SUSTAINED, DIRECTLY OR INDIRECTLY, THROUGH THE USE OF ITS EQUIPMENT, OR ITS STATEMENTS OR OPINION CONCERNING THE RESULTS OF ANY TEST. TOOLS LOST OR DAMAGED IN THE HOLE SHALL BE PAID FOR AT COST BY THE PARTY FOR WHOM THE TEST IS MADE.

Final Flow	60	Safety Joint	
Final Shut-In	45	Straddle	
		Circ. Sub	X n/c
		Sampler	
		Extra Packer	
		Other	

Approved By [Signature]
Our Representative Rod Steinbrink

TRILOBITE TESTING, L.L.C.

P.O. Box 362 • Hays, Kansas 67601

Drill-Stem Test Data

Well Name EARL SPLITTER #1 Test No. 2 Date 6/3/92
Company ABERCROMBIE DRILLING, INC. Zone LKC
Address 801 UNION CNTR WICHITA KS 67202 Elevation 2824
Rep./Geo. MICHEAL DIXON Cont. ABERCROMBIE DRLG #8 Est. Ft. of Pay 5
Location: Sec. 14 Twp. 19S Rge. 29W Co. LANE State KS

Interval Tested 4253-4263 Drill Pipe Size 4.5 XH
Chor Length 10 Wt. Pipe I.D. - 2.7 Ft. Run 619
Packer Depth 4248 Drill Collar - 2.25 Ft. Run 9.3
Bottom Packer Depth 4253 Mud Wt. 49 lb/Gal.
Total Depth 4263 Viscosity 49 Filtrate 11.2

Time of Open @ 3:00 PM Initial Blow WEAK SURFACE BLOW SLOWLY BUILT TO 7"
SI: BLED OFF BLOW-NO RETURN
Initial Blow WEAK SURFACE RETURN SLOWLY BUILT TO 9"
SI: BLED OFF BLOW-NO RETURN

Recovery - Total Feet 390 Flush Tool? NO

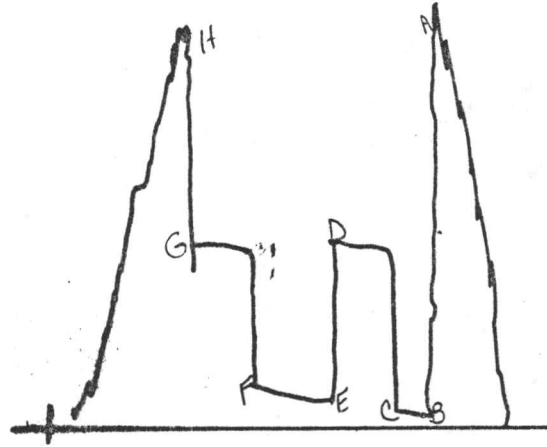
60 Feet of GAS IN PIPE ABOVE FLUID
40 Feet of SLTLY GASSY HEAVY OIL-5%GAS/95%OIL
350 Feet of WATER
Feet of _____
Feet of _____

IFT 124 °F Gravity 22 °API @ 50 °F Corrected Gravity 23 °API
V 0.37 @ 74 °F Chlorides 17000 ppm Recovery Chlorides 3000 ppm System

) Initial Hydrostatic Mud 2174.6 PSI AK1 Recorder No. 13309 Range 4700
) First Initial Flow Pressure 34.5 PSI @ (depth) 4254 w / Clock No. 25810
) First Final Flow Pressure 77.9 PSI AK1 Recorder No. 13339 Range 4025
) Initial Shut-in Pressure 952.4 PSI @ (depth) 4258 w / Clock No. 27566
) Second Initial Flow Pressure 126.9 PSI AK1 Recorder No. _____ Range _____
) Second Final Flow Pressure 204.5 PSI @ (depth) _____ w / Clock No. _____
) Final Shut-in Pressure 944.8 PSI Initial Opening 30 Final Flow 60
) Final Hydrostatic Mud 2066.3 PSI Initial Shut-in 45 Final Shut-in 45

Sur Representative ROD STEINBRINK

CHART PAGE



This is an actual photograph of recorder chart

	FIELD READING	OFFICE READING
(A) INITIAL HYDROSTATIC MUD	2173	2174.6
(B) FIRST INITIAL FLOW PRESSURE	31	34.5
(C) FIRST FINAL FLOW PRESSURE	72	77.9
(D) INITIAL CLOSED-IN PRESSURE	959	952.4
(E) SECOND INITIAL FLOW PRESSURE	124	126.9
(F) SECOND FINAL FLOW PRESSURE	197	204.5
(G) FINAL CLOSED-IN PRESSURE	949	944.8
(H) FINAL HYDROSTATIC MUD	2063	2066.3

TRILOBITE TESTING COMPANY L.L.C.

P.O. Box 362 • Hays, Kansas 67601

Test Ticket

No 4649

Well Name & No.	Earl Splitter #1	Test No.	2	Date	6-3-92						
Company	Abercrombie Drilling, Inc.	Zone Tested	L/KC.								
Address	801 Union Center Wichita, KS. 67202	Elevation	2824	(KB)							
Co. Rep./Geo.	Micheal Dixon	Cont.	Abercrombie #8	Est. Ft. of Pay	5'						
Location: Sec.	14	Twp.	19 S	Rge.	29 W	Co.	Lane	State	KS.		
No. of Copies	Normal	Distribution Sheet	Yes	X	No	Turnkey	Yes	X	No	Evaluation	

Interval Tested	4253 - 4263	Drill Pipe Size	4 1/2" XH	
Anchor Length	10'	Top Choke - 1"	Bottom Choke - 3/4"	
Top Packer Depth	4248	Hole Size - 7 7/8"	Rubber Size - 6 3/4"	
Bottom Packer Depth	4253	Wt. Pipe I.D. - 2.7 Ft. Run	619'	
Total Depth	4263	Drill Collar - 2.25 Ft. Run		
Mud Wt.	9.3	lb/gal.	Viscosity 49	Filtrate 11.2

Tool Open @ 3:00 pm Initial Blow Weak surface blow slowly built to 7".
ISI: Bled off blow - no return.

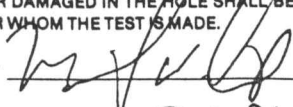
Final Blow Weak surface return slowly built to 9".
FSI: Bled off blow - no return.

Recovery - Total Feet		Feet of Gas in Pipe	60'	Flush Tool?	No
Rec.		Feet Of	%gas %oil %water %mud		
Rec.	40'	Feet Of	SGHO 5 %gas 95 %oil - %water - %mud		
Rec.		Feet Of	%gas %oil %water %mud		
Rec.	350'	Feet Of	Water - %gas - %oil 100 %water - %mud		
Rec.		Feet Of	%gas %oil %water %mud		

BHT	124°	°F Gravity	22	°API @	50°	°F Corrected Gravity	23	°API	
RW	.37	@	74°	°F Chlorides	17,000	ppm Recovery	Chlorides	3,000	ppm System
(A) Initial Hydrostatic Mud	2173	PSI	AK1 Recorder No.	13309	Range	4700			
(B) First Initial Flow Pressure	31	PSI	@ (depth)	4254	w/Clock No.	25810			
(C) First Final Flow Pressure	72	PSI	AK1 Recorder No.	13339	Range	4025			
(D) Initial Shut-In Pressure	959	PSI	@ (depth)	4258	w/Clock No.	27566			
(E) Second Initial Flow Pressure	124	PSI	AK1 Recorder No.		Range				
(F) Second Final Flow Pressure	197	PSI	@ (depth)		w/Clock No.				
(G) Final Shut-In Pressure	949	PSI	Initial Opening	30	Test				
(H) Final Hydrostatic Mud	2063	PSI	Initial Shut-In	45	Jars				

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Final Flow	60	Safety Joint	
Final Shut-In	45	Straddle	
		Circ. Sub	X n/c
		Sampler	

Approved By 
Our Representative Rod Steinbrink

Extra Packer
Other
TOTAL PRICE \$ 550.00

TRILOBITE TESTING, L.L.C.

P.O. Box 362 • Hays, Kansas 67601

Drill-Stem Test Data

Well Name EARL SPLITTER #1 Test No. 3 Date 6/4/92
Company ABERCROMBIE DRILLING, INC. Zone LKC-180'
Address 801 UNION CNTR WICHITA KS 67202 Elevation 2824
Co. Rep./Geo. MICHEAL DIXON Cont. ABERCROMBIE DRLG #8 Est. Ft. of Pay _____
Location: Sec. 14 Twp. 19S Rge. 29W Co. LANE State KS

Interval Tested 4274-4286 Drill Pipe Size 4.5 XH
Anchor Length 12 Wt. Pipe I.D. - 2.7 Ft. Run 619
Top Packer Depth 4269 Drill Collar - 2.25 Ft. Run _____
Bottom Packer Depth 4274 Mud Wt. 9.3 lb/Gal.
Total Depth 4286 Viscosity 47 Filtrate 11.2

Tool Open @ 4:57 AM Initial Blow WEAK SURFACE BLOW DIED IN 3 MINUTES

Final Blow NO RETURN-FLUSHED TOOL/GOT GOOD SURGE-NO HELP-(MADE A SECOND ATTEMPT/STILL NO HELP)

Recovery - Total Feet 1 Flush Tool? YES

Rec. 1 Feet of DRILLING MUD W/ SPECKS OF OIL IN TOOL
Rec. _____ Feet of _____
Rec. _____ Feet of _____
Rec. _____ Feet of _____
Rec. _____ Feet of _____

BHT 110 °F Gravity _____ °API @ _____ °F Corrected Gravity _____ °API
RW _____ @ _____ °F Chlorides _____ ppm Recovery Chlorides 3000 ppm System

(A) Initial Hydrostatic Mud 2201.3 PSI AK1 Recorder No. 13309 Range 4700

(B) First Initial Flow Pressure 19.8 PSI @ (depth) 4278 w / Clock No. 25814

(C) First Final Flow Pressure 19.8 PSI AK1 Recorder No. 13339 Range 4025

(D) Initial Shut-in Pressure 19.8 PSI @ (depth) 4281 w / Clock No. 27566

(E) Second Initial Flow Pressure 19.8 PSI AK1 Recorder No. _____ Range _____

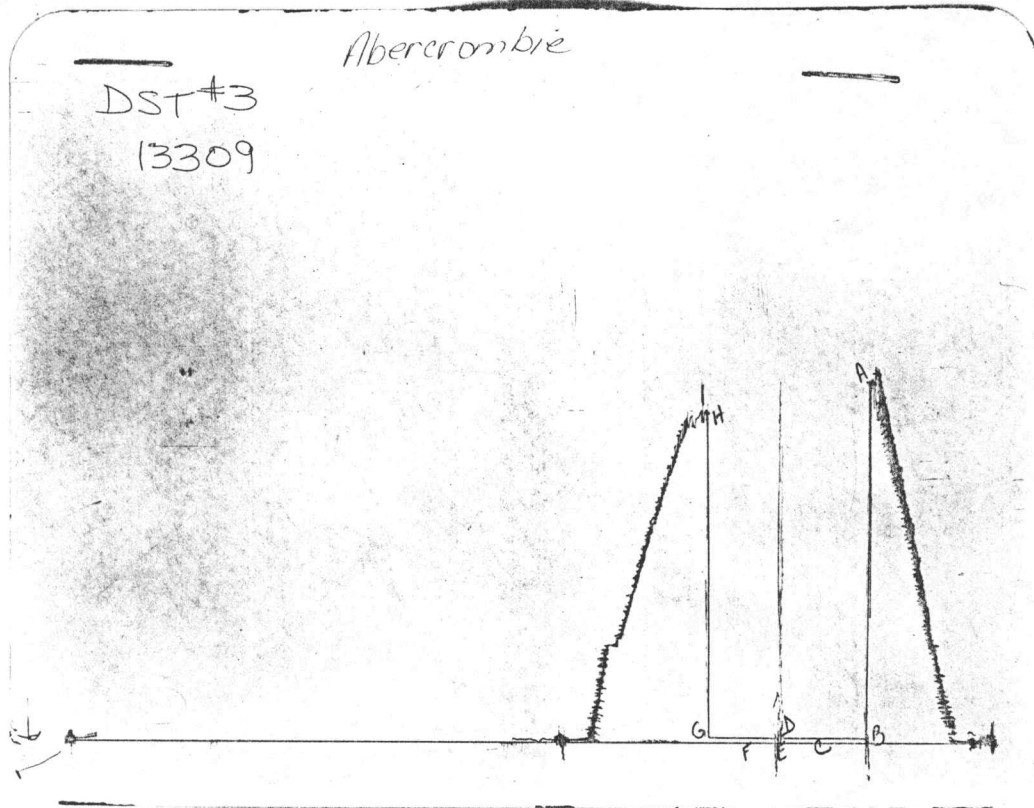
(F) Second Final Flow Pressure 19.8 PSI @ (depth) _____ w / Clock No. _____

(G) Final Shut-in Pressure 34.5 PSI Initial Opening 30 Final Flow 30

(H) Final Hydrostatic Mud 2077.6 PSI Initial Shut-in 30 Final Shut-in 30

Our Representative ROD STEINBRINK

CHART PAGE



This is an actual photograph of recorder chart

	FIELD READING	OFFICE READING
(A) INITIAL HYDROSTATIC MUD	2203	2201.3
(B) FIRST INITIAL FLOW PRESSURE	20	19.8
(C) FIRST FINAL FLOW PRESSURE	20	19.8
(D) INITIAL CLOSED-IN PRESSURE	20	19.8
(E) SECOND INITIAL FLOW PRESSURE	20	19.8
(F) SECOND FINAL FLOW PRESSURE	20	19.8
(G) FINAL CLOSED-IN PRESSURE	31	34.5
(H) FINAL HYDROSTATIC MUD	2073	2077.6

TRILOBITE TESTING COMPANY L.L.C.

P.O. Box 362 • Hays, Kansas 67601

Test Ticket

No 4650

Well Name & No.	Earl Splitter #1	Test No.	3	Date	6-4-92				
Company	Abercrombie Drilling, Inc.	Zone Tested	L/KC	180'					
Address	801 Union Center Wichita, KS. 67202	Elevation	2824	(KB)					
Co. Rep./Geo.	Michael Dixon	cont.	Abercrombie #8	Est. Ft. of Pay					
Location: Sec.	14	Twp.	19 S	Rge.	29 W	co.	Lane	state	KS.
No. of Copies	Normal	Distribution Sheet	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	Turnkey	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	Evaluation	

Interval Tested	4274 - 4286	Drill Pipe Size	4 1/2" XH	
Anchor Length	12'	Top Choke - 1"	Bottom Choke - 3/4"	
Top Packer Depth	4269	Hole Size - 7 7/8"	Rubber Size - 6 3/4"	
Bottom Packer Depth	4274	Wt. Pipe I.D. - 2.7 Ft. Run	619'	
Total Depth	4286	Drill Collar - 2.25 Ft. Run		
Mud Wt.	9.3	lb/gal.	Viscosity 47	Filtrate 11.2
Tool Open @	4:57 am.	Initial Blow	Weak surface blow died in 3 mins.	

Final Blow No return - Flushed tool / good surge - no help (made second attempt still no help)

Recovery - Total Feet 1' Feet of Gas in Pipe — Flush Tool? YES

Rec.	Feet Of		%gas	%Oil	%water	%mud
Rec.	1'	Feet Of <u>Drlg. Mud</u>	%gas	%oil	%water	%mud
Rec.		Feet Of <u>w/ specks of oil</u>	%gas	%oil	%water	%mud
Rec.		Feet Of <u>in tool</u>	%gas	%oil	%water	%mud
Rec.		Feet Of	%gas	%oil	%water	%mud

BHT 110° °F Gravity _____ °API @ _____ °F Corrected Gravity _____ °API

RW _____ @ _____ °F Chlorides _____ ppm Recovery Chlorides 3,000 ppm System

(A) Initial Hydrostatic Mud	2203	PSI	Ak1 Recorder No.	13309	Range	4700
(B) First Initial Flow Pressure	20	PSI	@ (depth)	4278	w/Clock No.	25814
(C) First Final Flow Pressure	20	PSI	Ak1 Recorder No.	13339	Range	4025
(D) Initial Shut-In Pressure	20	PSI	@ (depth)	4281	w/Clock No.	27566
(E) Second Initial Flow Pressure	20	PSI	Ak1 Recorder No.		Range	
(F) Second Final Flow Pressure	20	PSI	@ (depth)		w/Clock No.	
(G) Final Shut-In Pressure	31	PSI	Initial Opening	30	Test	
(H) Final Hydrostatic Mud	2073	PSI	Initial Shut-In	30	Jars	

TRILOBITE TESTING COMPANY SHALL NOT BE LIABLE FOR DAMAGE OF ANY KIND OF THE PROPERTY OR PERSONNEL OF THE ONE FOR WHOM A TEST IS MADE, OR FOR ANY LOSS SUFFERED OR SUBSTAINED, DIRECTLY OR INDIRECTLY, THROUGH THE USE OF ITS EQUIPMENT, OR ITS STATEMENTS OR OPINION CONCERNING THE RESULTS OF ANY TEST. TOOLS LOST OR DAMAGED IN THE HOLE SHALL BE PAID FOR AT COST BY THE PARTY FOR WHOM THE TEST IS MADE.

Approved By [Signature]

Our Representative Rod Steinbrink

Final Flow 30 Safety Joint _____

Final Shut-In 30 Straddle _____

Circ. Sub

Sampler _____

Extra Packer _____

Other _____

50511

TRILOBITE TESTING, L.L.C.

P.O. Box 362 • Hays, Kansas 67601

Drill-Stem Test Data

Well Name EARL SPLITTER #1 Test No. 4 Date 6/5/92
Company ABERCROMBIE DRILLING, INC. Zone PLEAS/MARMAT
Address 801 UNION CNTR WICHITA KS 67202 Elevation 2824
Co. Rep./Geo. MICHEAL DIXON Cont. ABERCROMBIE DRLG #8 Est. Ft. of Pay _____
Location: Sec. 14 Twp. 19S Rge. 29W Co. LANE State KS

Interval Tested 4368-4405 Drill Pipe Size 4.5 XH
Anchor Length 37 Wt. Pipe I.D. - 2.7 Ft. Run 619
Top Packer Depth 4363 Drill Collar - 2.25 Ft. Run _____
Bottom Packer Depth 4368 Mud Wt. 9.3 lb/Gal.
Total Depth 4405 Viscosity 56 Filtrate 12

Tool Open @ 4:36 AM Initial Blow WEAK SURFACE BLOW BUILT TO 1"

Final Blow SURFACE RETURN IN 4 MINUTES-STAYED STEADY THROUGHOUT

Recovery - Total Feet 70 Flush Tool? NO

Rec. 70 Feet of DRILLING MUD
Rec. _____ Feet of _____
Rec. _____ Feet of _____
Rec. _____ Feet of _____
Rec. _____ Feet of _____

BHT 109 °F Gravity _____ °API @ _____ °F Corrected Gravity _____ °API
RW _____ @ _____ °F Chlorides _____ ppm Recovery Chlorides 4000 ppm System

(A) Initial Hydrostatic Mud 2285.6 PSI AK1 Recorder No. 13309 Range 4700

(B) First Initial Flow Pressure 65.3 PSI @ (depth) 4395 w / Clock No. 25814

(C) First Final Flow Pressure 65.3 PSI AK1 Recorder No. 13339 Range 4025

(D) Initial Shut-in Pressure 210.4 PSI @ (depth) 4400 w / Clock No. 27566

(E) Second Initial Flow Pressure 84.3 PSI AK1 Recorder No. _____ Range _____

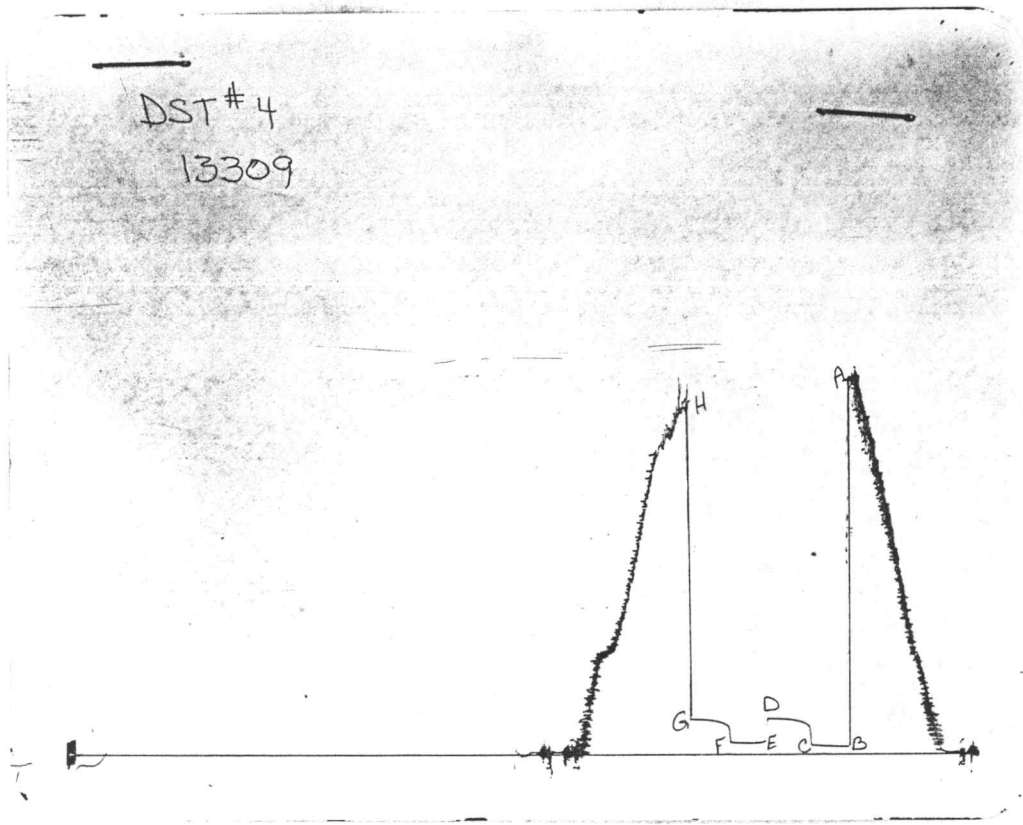
(F) Second Final Flow Pressure 84.3 PSI @ (depth) _____ w / Clock No. _____

(G) Final Shut-in Pressure 210.4 PSI Initial Opening 30 Final Flow 30

(H) Final Hydrostatic Mud 2225.6 PSI Initial Shut-in 30 Final Shut-in 30

Our Representative ROD STEINBRINK

CHART PAGE



This is an actual photograph of recorder chart

	FIELD READING	OFFICE READING
(A) INITIAL HYDROSTATIC MUD	2283	2285.6
(B) FIRST INITIAL FLOW PRESSURE	62	65.3
(C) FIRST FINAL FLOW PRESSURE	62	65.3
(D) INITIAL CLOSED-IN PRESSURE	207	210.4
(E) SECOND INITIAL FLOW PRESSURE	83	84.3
(F) SECOND FINAL FLOW PRESSURE	83	84.3
(G) FINAL CLOSED-IN PRESSURE	207	210.4
(H) FINAL HYDROSTATIC MUD	2223	2225.6

TRILOBITE TESTING L.L.C.

P.O. Box 362 • Hays, Kansas 67601

Test Ticket

N^o 5001

Well Name & No.	Earl Splitter #1	Test No.	4	Date	6-5-92					
Company	Abercrombie Drilling, Inc.	Zone Tested	Pleasanton / Marmaton							
Address	801 Union Center Wichita, KS. 67202	Elevation	2824 (KB)							
Co. Rep./Geo.	Micheal Dixon	cont.	Abercrombie #8	Est. Ft. of Pay						
Location: Sec.	14	Twp.	19 S	Rge.	19 S	Co.	Lane	State	KS.	
No. of Copies	Normal	Distribution Sheet	Yes	X	No	Turnkey	Yes	X	No	Evaluation

Interval Tested 4368 - 4405 Drill Pipe Size 4 1/2" XH
Anchor Length 31' Top Choke - 1" Bottom Choke - 3/4"
Top Packer Depth 4363 Hole Size - 7 7/8" Rubber Size - 6 3/4"
Bottom Packer Depth 4368 Wt. Pipe I.D. - 2.7 Ft. Run 619'
Total Depth 4405 Drill Collar - 2.25 Ft. Run
Mud Wt. 9.3 lb/gal. Viscosity 56 Filtrate 12.0
Tool Open @ 4:36 am Initial Blow Weak surface blow built to 1"

Final Blow Surface return in 4 mins stayed steady throughout.

Recovery - Total Feet 70' Feet of Gas in Pipe _____ Flush Tool? No

Rec.	Feet of	%gas	%oil	%water	%mud
Rec. <u>70'</u>	Feet of <u>Drlg. Mud</u>				
Rec. _____	Feet of _____				
Rec. _____	Feet of _____				
Rec. _____	Feet of _____				

BHT 109° °F Gravity _____ °API @ _____ °F Corrected Gravity _____ °API

RW _____ @ _____ °F Chlorides _____ ppm Recovery Chlorides 4,000 ppm System

(A) Initial Hydrostatic Mud 2283 PSI Ak1 Recorder No. 13309 Range 4700

(B) First Initial Flow Pressure 62 PSI @ (depth) 4395 w/Clock No. 25814

(C) First Final Flow Pressure 62 PSI AK1 Recorder No. 13339 Range 4025

(D) Initial Shut-In Pressure 207 PSI @ (depth) 4400 w/Clock No. 27566

(E) Second Initial Flow Pressure 83 PSI AK1 Recorder No. _____ Range _____

(F) Second Final Flow Pressure 83 PSI @ (depth) _____ w/Clock No. _____

(G) Final Shut-In Pressure 207 PSI Initial Opening 30 Test _____

(H) Final Hydrostatic Mud 2223 PSI Initial Shut-In 30 Jars _____

Final Flow 30 Safety Joint _____

Final Shut-In 30 Straddle _____

Circ. Sub X n/c

Sampler _____

Approved By _____ Extra Packer _____

Our Representative Rod Steinbrink Other _____

Printcraft Printers - Hays, KS TOTAL PRICE \$ 550.00

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TRILOBITE TESTING, L.L.C.

P.O. Box 362 • Hays, Kansas 67601

Drill-Stem Test Data

Well Name EARL SPLITTER #1 Test No. 5 Date 6/5/92
Company ABERCROMBIE DRILLING, INC. Zone ALTAMONT
Address 801 UNION CNTR WICHITA KS 67202 Elevation 2824
Co. Rep./Geo. MICHEAL DIXON Cont. ABERCROMBIE DRLG #8 Est. Ft. of Pay 4
Location: Sec. 14 Twp. 19S Rge. 29W Co. LANE State KS

Interval Tested 4436-4452 Drill Pipe Size 4.5 XH
Anchor Length 16 Wt. Pipe I.D. - 2.7 Ft. Run 619
Top Packer Depth 4431 Drill Collar - 2.25 Ft. Run _____
Bottom Packer Depth 4436 Mud Wt. 9.4 lb/Gal.
Total Depth 4452 Viscosity 50 Filtrate 11.2

Tool Open @ 10:14 PM ^{Initial Blow} SURFACE BLOW BUILT TO BOTTOM OF BUCKET IN 20 MIN
ISI: BLED OFF BLOW-NO RETURN
Final Blow WEAK SURFACE BLOW SLOWLY BUILT TO BOTTOM OF BUCKET
IN 26 MINUTES / FSI: BLED OFF BLOW-NO RETURN

Recovery - Total Feet 370 Flush Tool? NO

Rec. 360 Feet of GAS IN PIPE ABOVE FLUID
Rec. 200 Feet of CLEAN GASSY OIL-10%GAS/90%OIL
Rec. 60 Feet of GSY OIL CUT MUD-25%GAS/15%OIL/60%MUD
Rec. 50 Feet of GAS, OIL, & MUD CUT WATER-10%GAS/5%OIL/55%WTR/30%MUD
Rec. 60 Feet of MUDDY WATER-90%WTR/10%MUD

BHT 123 °F Gravity 35 °API @ 68 °F Corrected Gravity 34 °API
RW 0.55 @ 49 °F Chlorides 17000 ppm Recovery Chlorides 4000 ppm System

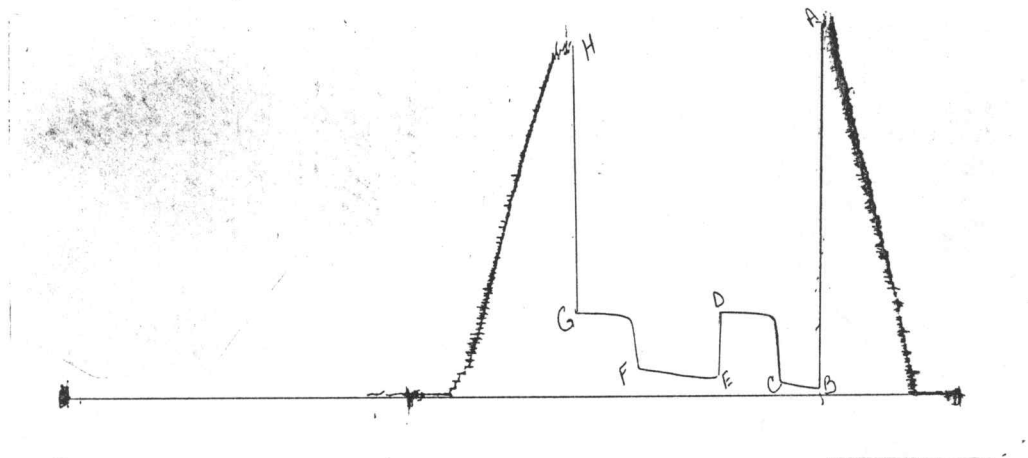
(A) Initial Hydrostatic Mud 2298.6 PSI AK1 Recorder No. 13309 Range 4700
(B) First Initial Flow Pressure 16.6 PSI @ (depth) 4442 w / Clock No. 25814
(C) First Final Flow Pressure 57.1 PSI AK1 Recorder No. 13339 Range 4025
(D) Initial Shut-in Pressure 508.0 PSI @ (depth) 4447 w / Clock No. 27566
(E) Second Initial Flow Pressure 140.3 PSI AK1 Recorder No. _____ Range _____
(F) Second Final Flow Pressure 160.1 PSI @ (depth) _____ w / Clock No. _____
(G) Final Shut-in Pressure 509.0 PSI Initial Opening 30 Final Flow 60
(H) Final Hydrostatic Mud 2172.3 PSI Initial Shut-in 45 Final Shut-in 45

Our Representative ROD STEINBRINK

CHART PAGE

DST # 5

13309



This is an actual photograph of recorder chart

	FIELD READING	OFFICE READING
(A) INITIAL HYDROSTATIC MUD	2253	2298.6
(B) FIRST INITIAL FLOW PRESSURE	20	16.6
(C) FIRST FINAL FLOW PRESSURE	52	57.1
(D) INITIAL CLOSED-IN PRESSURE	499	508
(E) SECOND INITIAL FLOW PRESSURE	114	140.3
(F) SECOND FINAL FLOW PRESSURE	155	160.1
(G) FINAL CLOSED-IN PRESSURE	499	509
(H) FINAL HYDROSTATIC MUD	2133	2172.3

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

ABERCROMBIE DRILLING, EARL SPLITTER #1

DST 5

14 19S 29W LANE KS

ELEVATION:	2824	KB	EST. PAY	4 FT
DATUM:	-4448		ZONE TESTED:	ALTAMONT
TEST INTERVAL:	4436-4452		TIME INTERVALS:	15-45-60-45
RECORDER DEPTH:	4447		VISCOSITY:	5.728 CP
BOTTOM HOLE TEMP:	123		HOLE SIZE:	7.875 IN

CUBIC FEET OF GAS IN PIPE:	18.58			
TOTAL FEET OF RECOVERY:	370.00	CORRECTED PIPE FILLUP:	432.432	
TOTAL BARRELS OF RECOVERY:	2.59	CORR. BARRELS OF RECOVERY:	3.024	BBL
BARRELS IN DRILL PIPE:	0.00	API GRAVITY:	34	
BARRELS IN WEIGHT PIPE:	2.59	FLUID GRADIENT:	0.370	
BARRELS IN DRILL COLLARS:	0.00			
GAS OIL RATIO:	7.1731	CU.FT/BBL		
BUBBLE POINT PRESSURE:	69.616			
UNCORRECTED INITIAL PRODUCTION:			41.44	BBL
INITIAL PRODUCTION CORRECTED TO FINAL FLOW PRESSURE:			48.38	BBL/DAY
INITIAL PRODUCTION CORRECTED TO PSEUDO STEADY FLOW STATE:			24.973	

INITIAL SLOPE	49.40	PSI/CYCLE	FINAL SLOPE	16.01	PSI/CYCLE
INITIAL P*	519	PSI	FINAL P*	517	PSI

TRANSMISSIBILITY	491.46	(MD.-FT./CP.)
PERMEABILITY	703.74	(MD.)
INDICATED FLOW CAPACITY	2814.97)MD.FT)
PRODUCTIVITY INDEX	0.56	(BARRELS/DAY/PSI)
DAMAGE RATIO	4.08	
RADIUS OF INVESTIGATION	251.67	(FT,)
POTENTIOMETRIC SURFACE	-3248.92	(FT.)
DRAWDOWN FACTOR	0.447	(%)
THEORETICAL POTENTIAL FROM FINAL FLOW PRESSURE	197.26	
THEORETICAL POTENTIAL FROM PSEUDO STEADY FLOW STATE	101.82	

CALCULATED RECOVERY ANALYSIS

WEIGHT PIPE

DST #, 5

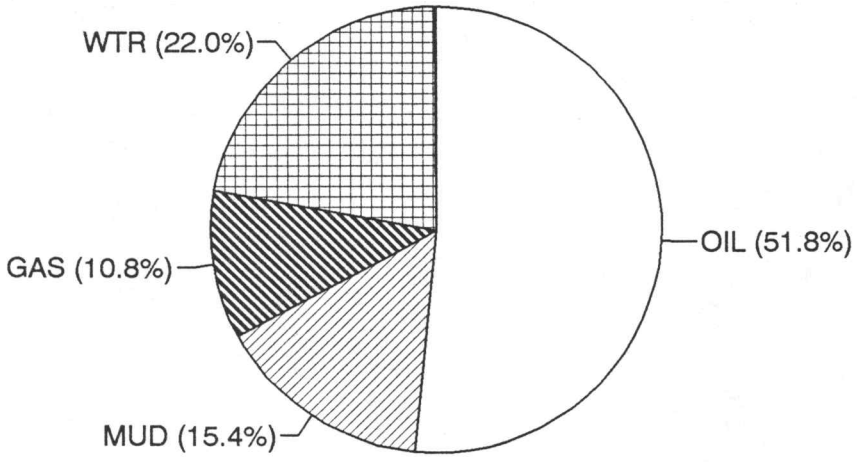
TICKET #

5002

SAMPLE #	TOTAL FEET	GAS		OIL		WATER		MUD	
		%	FEET	%	FEET	%	FEET	%	FEET
1	200	10	20	90	180	0	0	0	0
2	60	25	15	15	9	0	0	60	36
3	50	10	5	5	2.5	55	27.5	30	15
4	60	0	0	0	0	90	54	10	6
5			0		0		0		0
TOTAL	370	10.81	40	51.756757	191.5	22.027	81.5	15.405	57

	BBL OIL=	BBL WATER=	BBL MUD=	BBL GAS=
	1.3405	0.5705	0.399	0.28
	*	*		

HRS OPEN BBL/DAY
 1.5 21.448
 9.128



INITIAL FLOW

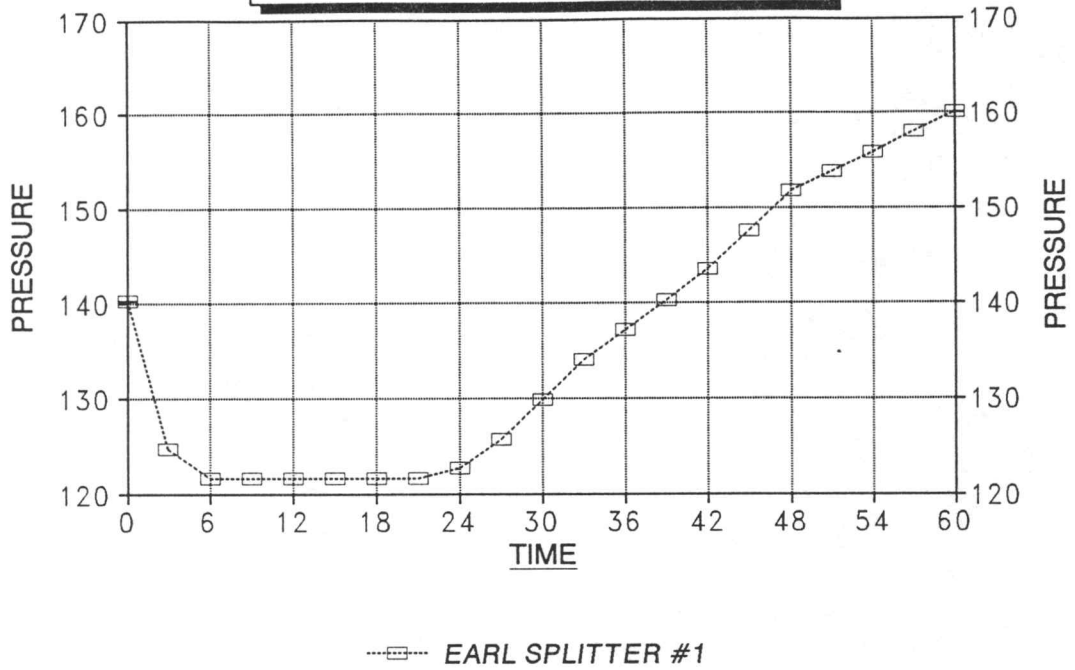
RECORDER #	13339	DST # 5
TIME(MIN)	PRESSURE	<>PRESSURE
0	16.6	16.6
3	18.7	2.1
6	21.8	3.1
9	25.9	4.1
12	30.1	4.2
15	34.3	4.2
18	40.5	6.2
21	43.7	3.2
24	47.8	4.1
27	53	5.2
30	57.1	4.1

FINAL FLOW

RECORDER #	13339	DST # 5
TIME(MIN)	PRESSURE	<> PRESSURE
0	140.3	140.3
3	124.7	-15.6
6	121.6	-3.1
9	121.6	0
12	121.6	0
15	121.6	0
18	121.6	0
21	121.6	0
24	122.7	1.1
27	125.7	3
30	129.9	4.2
33	134.1	4.2
36	137.2	3.1
39	140.3	3.1
42	143.5	3.2
45	147.6	4.1
48	151.8	4.2
51	153.8	2
54	155.9	2.1
57	158	2.1
60	160.1	2.1

DELTA T DELTA P

FINAL FLOW - DST #5



INITIAL PRODUCTION CORRECTED TO PSEUDO STEADY FLOW STATE:

24.973

3

EARL SPLITTER #1DST #5
INITIAL SHUTIN

30 TOTAL FLOW TIME

Slope 49.40 psi/cycle
P * 519 psi

Log <>

TIME(MIN) Pws (psi) Horn T PRESSURE Horn T

	3	427.2	1.041	427.2	11
	6	476.1	0.778	48.9	6
X	9	487.5	0.637	11.4	4
	12	495.8	0.544	8.3	4
	15	502.0	0.477	6.2	3
	18	505.0	0.426	3.0	3
	21	507.0	0.385	2.0	2
	24	508.0	0.352	1.0	2
	27	508.0	0.325	0.0	2
	30	508.0	0.301	0.0	2
	33	508.0	0.281	0.0	2
	36	508.0	0.263	0.0	2
	39	508.0	0.248	0.0	2
	42	508.0	0.234	0.0	2
X	45	508.0	0.222	0.0	2

EARL SPLITTER DST #5
FINAL SHUTIN

90 TOTAL FLOW TIME

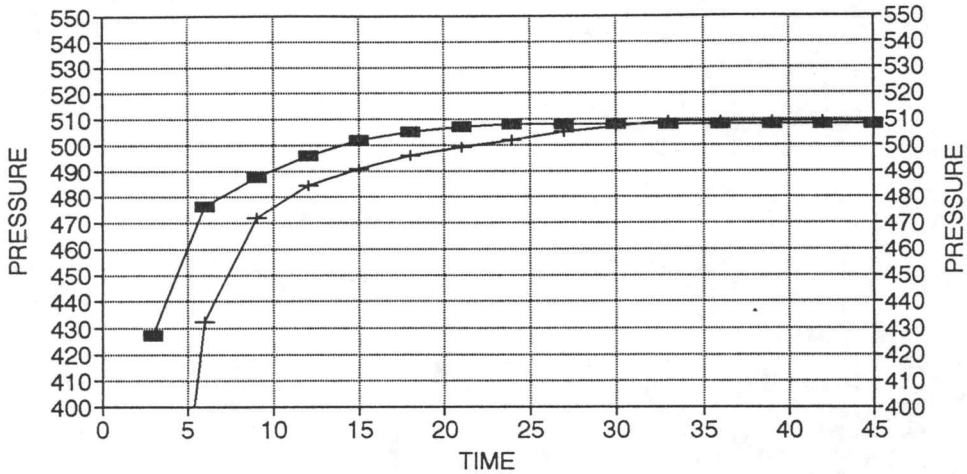
Slope 16.01 psi/cycle
P * 517 psi

Log <>

TIME(MIN) Pws (psi) Horn T PRESSURE Horn T

	3	257.8	1.491	257.8	31
	6	432.4	1.204	174.6	16
	9	471.9	1.041	39.5	11
	12	484.4	0.929	12.5	9
	15	490.6	0.845	6.2	7
	18	495.8	0.778	5.2	6
	21	499.0	0.723	3.2	5
	24	502.0	0.677	3.0	5
	27	505.0	0.637	3.0	4
X	30	507.0	0.602	2.0	4
	33	509.0	0.571	2.0	4
	36	509.0	0.544	0.0	4
	39	509.0	0.520	0.0	3
	42	509.0	0.497	0.0	3
X	45	509.0	0.477	0.0	3

EARL SPLITTER #5 DELTA T DELTA P



■ INITIAL + FINAL

HORNER PLOT

