

# TRILOBITE TESTING, L.L.C.

P.O. Box 362 • Hays, Kansas 67601

## Drill-Stem Test Data

Well Name MICHAELIS #1 Test No. 1 Date 10/31/92  
Company ABERCROMBIE DRILLING INC Zone LANSING "E-F"  
Address 150 N MAIN SWT #801 WICHITA KS 67202-1383 Elevation 3105  
Co. Rep./Geo. MARK GALYON Cont. ABERCROMBIE RIG #5 Est. Ft. of Pay \_\_\_\_\_  
Location: Sec. 15 Twp. 12S Rge. 33W Co. LOGAN State KS

Interval Tested	<u>4127-4143</u>	Drill Pipe Size	<u>4.5" XH</u>
Anchor Length	<u>16</u>	Wt. Pipe I.D. - 2.7 Ft. Run	<u>470</u>
Top Packer Depth	<u>4122</u>	Drill Collar - 2.25 Ft. Run	_____
Bottom Packer Depth	<u>4127</u>	Mud Wt.	<u>9.1</u> lb/Gal.
Total Depth	<u>4143</u>	Viscosity	<u>47</u> Filtrate <u>9.6</u>

Tool Open @ 12:50 AM Initial Blow STRONG BLOW-BOTTOM OF BUCKET IN 3-4 MINUTES

Final Blow STRONG BLOW-BOTTOM OF BUCKET IN 7 1/2 MINUTES

Recovery - Total Feet 990 Flush Tool? NO

Rec. <u>30</u>	Feet of	<u>GAS IN PIPE</u>
Rec. <u>10</u>	Feet of	<u>CLEAN OIL</u>
Rec. <u>422</u>	Feet of	<u>SLTLY OIL CUT WATER-4%OIL/96%WTR</u>
Rec. <u>465</u>	Feet of	<u>SALT WATER WITH OIL SPECKS</u>
Rec. <u>93</u>	Feet of	<u>SALT WATER</u>

BHT 116 °F Gravity 33 °API @ 60 °F Corrected Gravity 33 °API  
RW 0.15 @ 74 °F Chlorides 73000 ppm Recovery Chlorides 3000 ppm System

(A) Initial Hydrostatic Mud 1945.6 PSI AK1 Recorder No. 13278 Range 4400

(B) First Initial Flow Pressure 45.7 PSI @ (depth) 4140 w / Clock No. 22993

(C) First Final Flow Pressure 305.2 PSI AK1 Recorder No. 10248 Range 4400

(D) Initial Shut-in Pressure 1277.8 PSI @ (depth) 4135 w / Clock No. 30410

(E) Second Initial Flow Pressure 330.4 PSI AK1 Recorder No. \_\_\_\_\_ Range \_\_\_\_\_

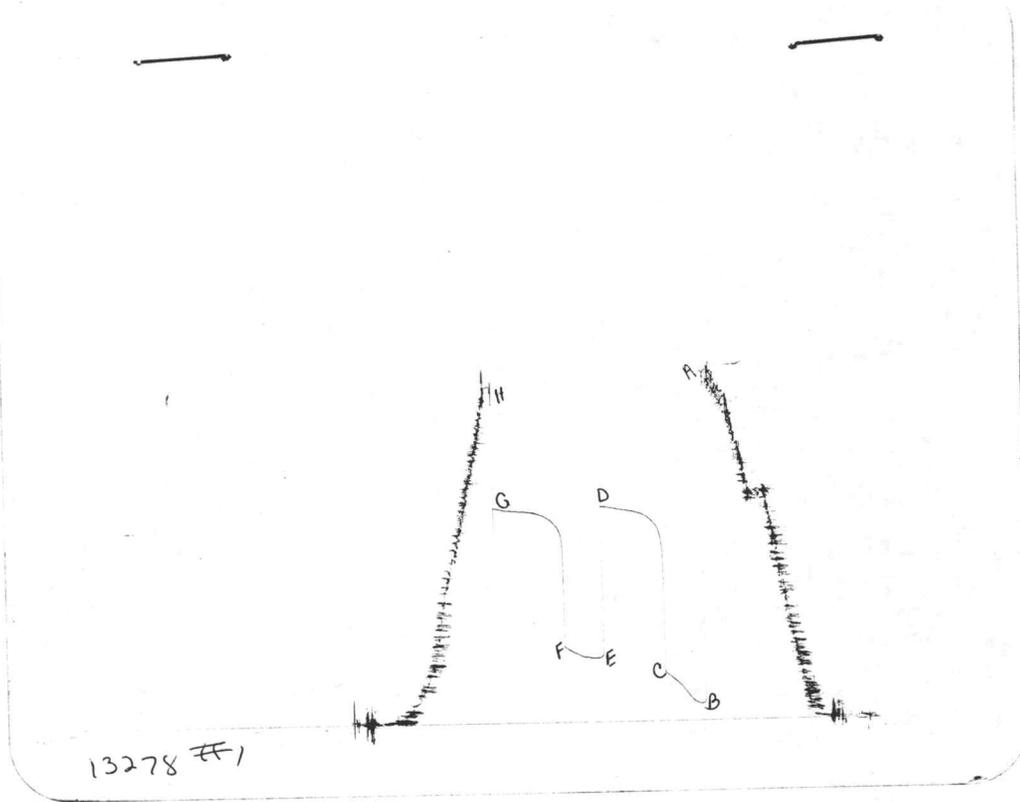
(F) Second Final Flow Pressure 465.9 PSI @ (depth) \_\_\_\_\_ w / Clock No. \_\_\_\_\_

(G) Final Shut-in Pressure 1270.5 PSI Initial Opening 30 Final Flow 30

(H) Final Hydrostatic Mud 1910.4 PSI Initial Shut-in 45 Final Shut-in 45

Our Representative GARY PEVOTEAUX

# CHART PAGE



This is an actual photograph of recorder chart

	FIELD READING	OFFICE READING
(A) INITIAL HYDROSTATIC MUD	1942	1945.6
(B) FIRST INITIAL FLOW PRESSURE	44	45.7
(C) FIRST FINAL FLOW PRESSURE	301	305.2
(D) INITIAL CLOSED-IN PRESSURE	1275	1277.8
(E) SECOND INITIAL FLOW PRESSURE	328	330.4
(F) SECOND FINAL FLOW PRESSURE	464	465.9
(G) FINAL CLOSED-IN PRESSURE	1272	1270.5
(H) FINAL HYDROSTATIC MUD	1902	1910.4

# TRILOBITE TESTING L.L.C.

P.O. Box 362 • Hays, Kansas 67601

## Test Ticket

No 5455

Well Name & No.	MICHAELIS #1	Test No.	1	Date	10-31-92
Company	ABERCROMBIE DRUG, INC.	Zone Tested	LAWS E-F		
Address	150 N. MAIN SUITE 801 WICHITA KS 67202	Elevation	3105 K.B.		
Co. Rep./Geo.	MARK GALYON	Cont.	Co. Tools #5	Est. Ft. of Pay	
Location: Sec.	15	Twp.	12 <sup>S</sup>	Rge.	33 <sup>W</sup>
Co.	LOGAN	State	KS.		
No. of Copies		Distribution Sheet	Yes	No	Turnkey
			Yes	No	Evaluation

Interval Tested	4127 - 4143'	Drill Pipe Size	4 1/2" X.H.
Anchor Length	16'	Top Choke - 1"	<input checked="" type="checkbox"/>
Top Packer Depth	4122'	Bottom Choke - 3/4"	<input checked="" type="checkbox"/>
Bottom Packer Depth	4127'	Hole Size - 7 7/8"	<input checked="" type="checkbox"/>
Total Depth	4143'	Rubber Size - 6 3/4"	<input checked="" type="checkbox"/>
Mud Wt.	9.1 lb/gal.	Wt. Pipe I.D. - 2.7 Ft. Run	470'
Tool Open @	12:50 A.M.	Drill Collar - 2.25 Ft. Run	None
Initial Blow	Strong below (bottom of bucket in 3-4 mins.)	Viscosity	47
Final Blow	Strong below (bottom of bucket in 7 1/2 mins.)	Filtrate	9.6 cc.

Recovery - Total Feet	990'	Feet of Gas in Pipe	30'	Flush Tool?	No
Rec.	10	Feet Of	Green Oil	% gas	100 % oil
Rec.	422	Feet Of	S.O.C.W.	% gas	4 % oil 96 % water
Rec.	465	Feet Of	Salt Water (Coal spec)	% gas	% oil 100 % water
Rec.	93	Feet Of	Salt Water	% gas	% oil 100 % water
Rec.		Feet Of		% gas	% oil % water % mud

BHT	116	°F Gravity	33	°API @	60	°F Corrected Gravity	33	°API
RW	0.15	@	74	°F Chlorides	73,000	ppm Recovery	Chlorides	3,000
(A) Initial Hydrostatic Mud	1942	PSI	AK1 Recorder No.	13278	Range	4400		
(B) First Initial Flow Pressure	44	PSI	@ (depth)	4140'	w/Clock No.	22993		
(C) First Final Flow Pressure	301	PSI	AK1 Recorder No.	10248	Range	4400		
(D) Initial Shut-In Pressure	1275	PSI	@ (depth)	4135'	w/Clock No.	30410		
(E) Second Initial Flow Pressure	328	PSI	AK1 Recorder No.		Range			
(F) Second Final Flow Pressure	464	PSI	@ (depth)		w/Clock No.			
(G) Final Shut-In Pressure	1272	PSI	Initial Opening	30	Test	<input checked="" type="checkbox"/>		
(H) Final Hydrostatic Mud	1902	PSI	Initial Shut-In	45	Jars			

TRILOBITE TESTING L.L.C. 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.

Approved By Mark P. Galyon  
Our Representative Gary P. Puntigam

Final Flow 30 Safety Joint \_\_\_\_\_  
Final Shut-In 45 Straddle \_\_\_\_\_  
Circ. Sub \_\_\_\_\_  
Sampler \_\_\_\_\_  
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 MICHAELIS #1 Test No. 2 Date 10/31/92  
Company ABERCROMBIE DRILLING INC Zone LANSING "H"  
Address 150 N MAIN SWT #801 WICHITA KS 67202-1383 Elevation 3105  
Co. Rep./Geo. MARK GALYON Cont. ABERCROMBIE RIG #5 Est. Ft. of Pay \_\_\_\_\_  
Location: Sec. 15 Twp. 12S Rge. 33W Co. LOGAN State KS

Interval Tested 4201-4230 Drill Pipe Size 4.5" XH  
Anchor Length 29 Wt. Pipe I.D. - 2.7 Ft. Run 470  
Top Packer Depth 4196 Drill Collar - 2.25 Ft. Run \_\_\_\_\_  
Bottom Packer Depth 4201 Mud Wt. 9 lb/Gal.  
Total Depth 4230 Viscosity 50 Filtrate 9.6

Tool Open @ 4:35 PM Initial Blow STRONG BLOW-BOTTOM OF BUCKET IN 4 MINUTES

Final Blow FAIR TO STRONG BLOW - BOTTOM OF BUCKET IN 31 MINUTES

Recovery - Total Feet 775 Flush Tool? NO

Rec. 5 Feet of CLEAN OIL  
Rec. 211 Feet of SALT WATER WITH OIL SPECKS  
Rec. 559 Feet of SALT WATER WITH A FEW OIL SPECKS  
Rec. \_\_\_\_\_ Feet of \_\_\_\_\_  
Rec. \_\_\_\_\_ Feet of \_\_\_\_\_

BHT 119 °F Gravity \_\_\_\_\_ °API @ \_\_\_\_\_ °F Corrected Gravity \_\_\_\_\_ °API  
RW 0.19 @ 62 °F Chlorides 64000 ppm Recovery Chlorides 4000 ppm System

(A) Initial Hydrostatic Mud 1990.6 PSI AK1 Recorder No. 13278 Range 4400

(B) First Initial Flow Pressure 81.2 PSI @ (depth) 4227 w / Clock No. 22993

(C) First Final Flow Pressure 294.5 PSI AK1 Recorder No. 10248 Range 4400

(D) Initial Shut-in Pressure 401.3 PSI @ (depth) 4222 w / Clock No. 30410

(E) Second Initial Flow Pressure 315.6 PSI AK1 Recorder No. \_\_\_\_\_ Range \_\_\_\_\_

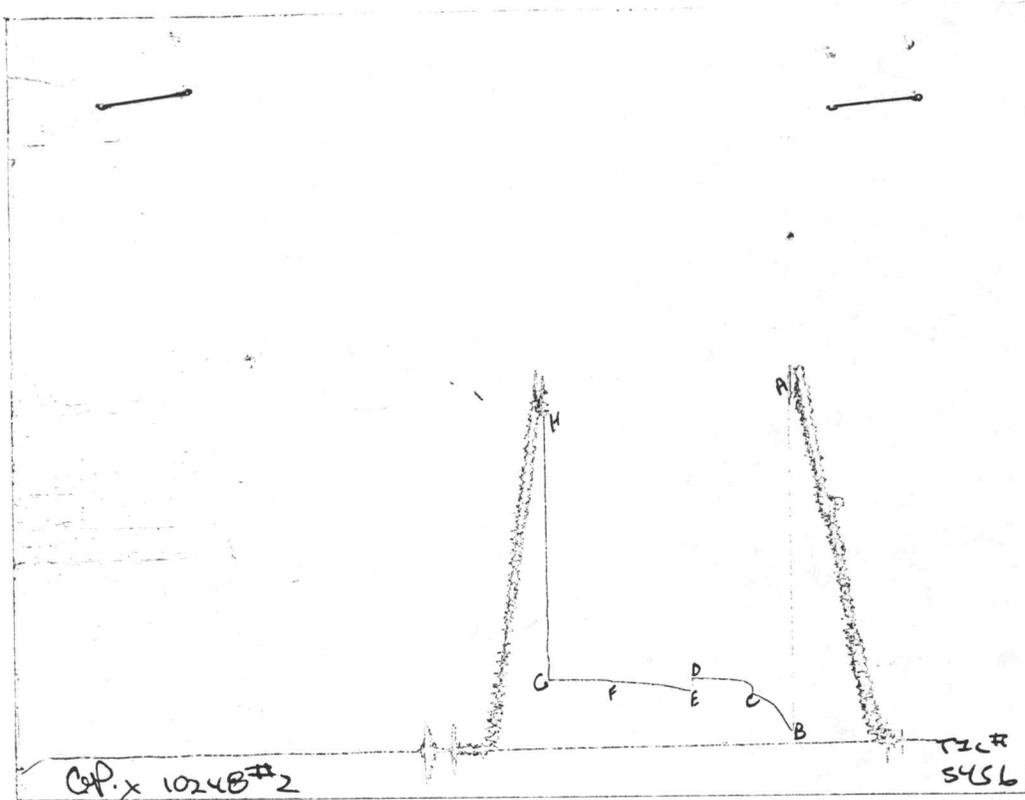
(F) Second Final Flow Pressure 388.7 PSI @ (depth) \_\_\_\_\_ w / Clock No. \_\_\_\_\_

(G) Final Shut-in Pressure 401.3 PSI Initial Opening 30 Final Flow 60

(H) Final Hydrostatic Mud 1933.6 PSI Initial Shut-in 45 Final Shut-in 45

Our Representative GARY PEVOTEAUX

CHART PAGE



This is an actual photograph of recorder chart

	FIELD READING	OFFICE READING
(A) INITIAL HYDROSTATIC MUD	1999	1990.6
(B) FIRST INITIAL FLOW PRESSURE	75	81.2
(C) FIRST FINAL FLOW PRESSURE	290	294.5
(D) INITIAL CLOSED-IN PRESSURE	395	401.3
(E) SECOND INITIAL FLOW PRESSURE	312	315.6
(F) SECOND FINAL FLOW PRESSURE	383	388.7
(G) FINAL CLOSED-IN PRESSURE	395	401.3
(H) FINAL HYDROSTATIC MUD	1931	1933.6

# TRILOBITE TESTING L.L.C.

P.O. Box 362 • Hays, Kansas 67601

## Test Ticket

N<sub>2</sub> 5456

Well Name & No.	MICHAELIS #1	Test No.	2	Date	10-31-92
Company	ABERCROMBIE DRUG, INC.	Zone Tested	LANE "H"		
Address	150 N. MAIN SUITE 801 WICHITA KS 67202	Elevation	3105 K.B.		
Co. Rep./Geo.	MARK GALYON	cont.	Co. TOOLS #5	Est. Ft. of Pay	
Location: Sec.	15	Twp.	12 <sup>S</sup>	Rge.	33 <sup>W</sup>
				Co.	LOGAN
				State	KS
No. of Copies		Distribution Sheet	Yes	No	Turnkey
			Yes	No	Evaluation

Interval Tested	4201-4230'	Drill Pipe Size	4 1/2" X. H
Anchor Length	29'	Top Choke - 1"	<input checked="" type="checkbox"/>
Top Packer Depth	4196'	Bottom Choke - 3/4"	<input checked="" type="checkbox"/>
Bottom Packer Depth	4201'	Hole Size - 7 7/8"	<input checked="" type="checkbox"/>
Total Depth	4230'	Rubber Size - 6 3/4"	<input checked="" type="checkbox"/>
Mud Wt.	9.0	Wt. Pipe I.D. - 2.7 Ft. Run	470'
	lb/gal.	Drill Collar - 2.25 Ft. Run	None
Tool Open @	4:35 PM	Viscosity	50
Initial Blow	Strong blow (blow of bucket in 4 mins)	Filtrate	96cc
Final Blow	Fair to strong blow (blow of bucket in 31 mins)		

Recovery - Total Feet	775'	Feet of Gas in Pipe		Flush Tool?	No
Rec.	5'	Feet Of	Clean Oil	%gas	100%
				%oil	
				%water	
				%mud	
Rec.	211'	Feet Of	S.W. @ oil spec.	%gas	
				%oil	100
				%water	
				%mud	
Rec.	559'	Feet Of	S.W. @ oil spec.	%gas	
				%oil	100
				%water	
				%mud	
Rec.		Feet Of		%gas	
				%oil	
				%water	
				%mud	

BHT	119	°F Gravity	N.A.	°API @		°F Corrected Gravity	N.A.	°API
RW	0.19	@	62	°F Chlorides	4,000	ppm Recovery	Chlorides	4,000
				ppm System				
(A) Initial Hydrostatic Mud	1999	PSI	AK1 Recorder No.	13278	Range	4400		
(B) First Initial Flow Pressure	75	PSI	@ (depth)	4227'	w/Clock No.	22993		
(C) First Final Flow Pressure	290	PSI	AK1 Recorder No.	10248	Range	4400		
(D) Initial Shut-In Pressure	395	PSI	@ (depth)	4222'	w/Clock No.	30410		
(E) Second Initial Flow Pressure	312	PSI	AK1 Recorder No.		Range			
(F) Second Final Flow Pressure	383	PSI	@ (depth)		w/Clock No.			
(G) Final Shut-In Pressure	395	PSI	Initial Opening	30	Test	<input checked="" type="checkbox"/>		
(H) Final Hydrostatic Mud	1931	PSI	Initial Shut-In	45	Jars			

TRILOBITE TESTING L.L.C. 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	
		Sampler	

Approved By \_\_\_\_\_

Our Representative \_\_\_\_\_

Printcraft Printers - Hays, KS

TOTAL PRICE \$  550.00

# TRILOBITE TESTING, L.L.C.

P.O. Box 362 • Hays, Kansas 67601

## Drill-Stem Test Data

Well Name MICHAELIS #1 Test No. 3 Date 11/1/92  
Company ABERCROMBIE DRILLING INC Zone LANSING "I"  
Address 150 N MAIN SWT #801 WICHITA KS 67202-1383 Elevation 3105  
Co. Rep./Geo. MARK GALYON Cont. ABERCROMBIE RIG #5 Est. Ft. of Pay \_\_\_\_\_  
Location: Sec. 15 Twp. 12S Rge. 33W Co. LOGAN State KS

Interval Tested 4235-4263 Drill Pipe Size 4.5" XH  
Anchor Length 28 Wt. Pipe I.D. - 2.7 Ft. Run 470  
Top Packer Depth 4230 Drill Collar - 2.25 Ft. Run \_\_\_\_\_  
Bottom Packer Depth 4235 Mud Wt. 9 lb/Gal.  
Total Depth 4263 Viscosity 50 Filtrate 10.4

Tool Open @ 5:50 AM Initial Blow FAIR BLOW-SLOW INCREASE TO 9" IN WATER

Final Blow FAIR BLOW-SLOW INCREASE TO 9" IN WATER

Recovery - Total Feet 370 Flush Tool? NO

Rec. 370 Feet of MUDDY WATER  
Rec. \_\_\_\_\_ Feet of \_\_\_\_\_  
Rec. \_\_\_\_\_ Feet of \_\_\_\_\_  
Rec. \_\_\_\_\_ Feet of \_\_\_\_\_  
Rec. \_\_\_\_\_ Feet of \_\_\_\_\_

BHT 119 °F Gravity \_\_\_\_\_ °API @ \_\_\_\_\_ °F Corrected Gravity \_\_\_\_\_ °API  
RW 0.53 @ 65 °F Chlorides 22000 ppm Recovery Chlorides 5000 ppm System

(A) Initial Hydrostatic Mud 2030.4 PSI AK1 Recorder No. 13278 Range 4400

(B) First Initial Flow Pressure 35.7 PSI @ (depth) 4260 w / Clock No. 22993

(C) First Final Flow Pressure 90.6 PSI AK1 Recorder No. 10248 Range 4400

(D) Initial Shut-in Pressure 401.3 PSI @ (depth) 4255 w / Clock No. 30410

(E) Second Initial Flow Pressure 110.2 PSI AK1 Recorder No. \_\_\_\_\_ Range \_\_\_\_\_

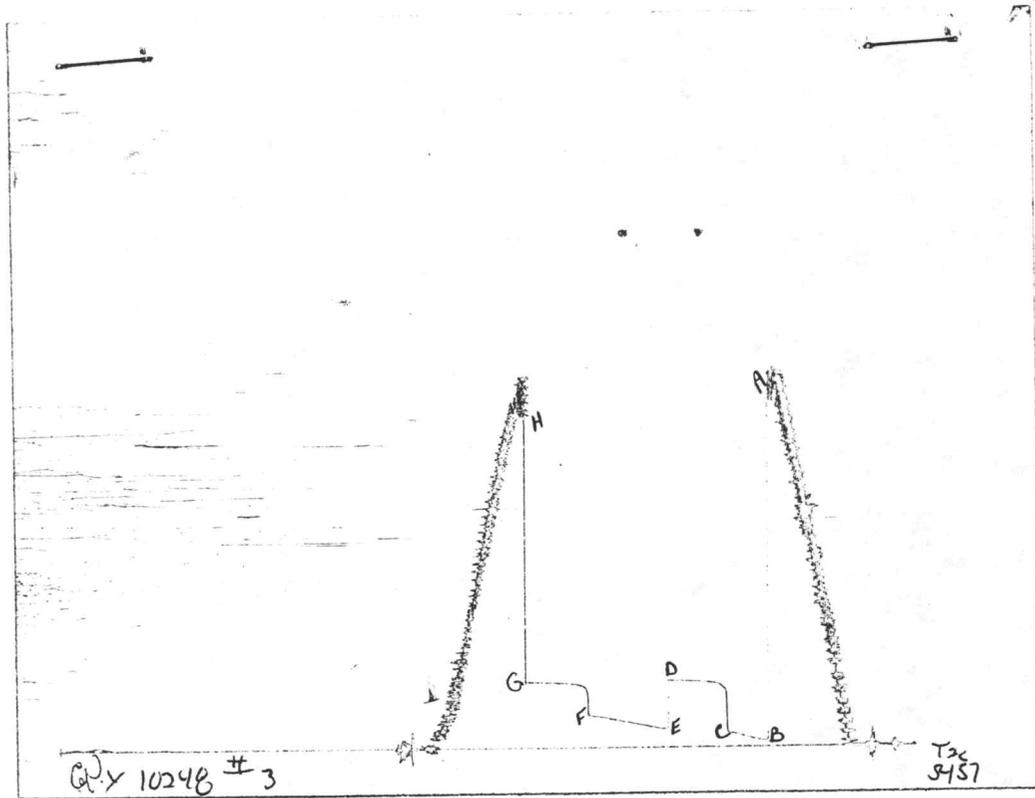
(F) Second Final Flow Pressure 185.6 PSI @ (depth) \_\_\_\_\_ w / Clock No. \_\_\_\_\_

(G) Final Shut-in Pressure 396.2 PSI Initial Opening 30 Final Flow 60

(H) Final Hydrostatic Mud 1944.8 PSI Initial Shut-in 45 Final Shut-in 45

Our Representative GARY PEVOTEAUX

# CHART PAGE



	FIELD READING	OFFICE READING
(A) INITIAL HYDROSTATIC MUD	2027	2030.4
(B) FIRST INITIAL FLOW PRESSURE	34	35.7
(C) FIRST FINAL FLOW PRESSURE	87	90.6
(D) INITIAL CLOSED-IN PRESSURE	395	401.3
(E) SECOND INITIAL FLOW PRESSURE	107	110.2
(F) SECOND FINAL FLOW PRESSURE	182	185.6
(G) FINAL CLOSED-IN PRESSURE	390	396.2
(H) FINAL HYDROSTATIC MUD	1942	1944.8

# TRILOBITE TESTING L.L.C.

P.O. Box 362 • Hays, Kansas 67601

## Test Ticket

No 5457

Well Name & No.	MICHAELIS #1	Test No.	3	Date	11-1-92
Company	ABERROMBIE DRUG, INC.	Zone Tested	LANS "I"		
Address	150 N. MAIN SUITE 801 WICHITA, KS 67202	Elevation	3105 K.B.		
Co. Rep./Geo.	MARK GALLON cont.	Co. Tools	#5	Est. Ft. of Pay	
Location: Sec.	15	Twp.	12 <sup>S</sup>	Rge.	33 <sup>W</sup>
				Co.	LOGAN
				State	KS
No. of Copies	Distribution Sheet	Yes	No	Turnkey	Yes
					No
				Evaluation	

Interval Tested	4235-4263'	Drill Pipe Size	4 1/2" X 14'
Anchor Length	28'	Top Choke - 1"	<input checked="" type="checkbox"/>
Top Packer Depth	4230'	Bottom Choke - 3/4"	<input checked="" type="checkbox"/>
Bottom Packer Depth	4235'	Hole Size - 7 7/8"	<input checked="" type="checkbox"/>
Total Depth	4263'	Rubber Size - 6 3/4"	<input checked="" type="checkbox"/>
Mud Wt.	9.0 lb/gal.	Wt. Pipe I.D. - 2.7 Ft. Run	470'
Tool Open @	5:50 A.M.	Drill Collar - 2.25 Ft. Run	NONE
Initial Blow	Fair blow - slow increase to 9" in H <sub>2</sub> O	Viscosity	50
Final Blow	Fair blow - slow increase to 9" in H <sub>2</sub> O	Filtrate	10.4 cc.

Recovery - Total Feet	Feet of Gas in Pipe	Flush Tool?
370'	NONE	No
Rec. 370 Feet Of Muddy Water	%gas	%oil 97
	%water 3	%mud
Rec. Feet Of	%gas	%oil
	%water	%mud
Rec. Feet Of	%gas	%oil
	%water	%mud
Rec. Feet Of	%gas	%oil
	%water	%mud

BHT 119 °F Gravity N.A. °API @ ~ °F Corrected Gravity N.A. °API  
 RW 0.53 @ 65 °F Chlorides 22,000 ppm Recovery Chlorides 5,000 ppm System

(A) Initial Hydrostatic Mud	2027	PSI	AK1 Recorder No.	13278	Range	4400
(B) First Initial Flow Pressure	34	PSI	@ (depth)	4260'	w/Clock No.	22993
(C) First Final Flow Pressure	87	PSI	AK1 Recorder No.	10248	Range	4400
(D) Initial Shut-In Pressure	395	PSI	@ (depth)	4255'	w/Clock No.	30410
(E) Second Initial Flow Pressure	107	PSI	AK1 Recorder No.	~	Range	~
(F) Second Final Flow Pressure	182	PSI	@ (depth)	~	w/Clock No.	~
(G) Final Shut-In Pressure	390	PSI	Initial Opening	30	Test	<input checked="" type="checkbox"/>
(H) Final Hydrostatic Mud	1942	PSI	Initial Shut-In	45	Jars	

TRILOBITE TESTING L.L.C. 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	
		Sampler	

Approved By [Signature]  
 Our Representative [Signature]

Extra Packer \_\_\_\_\_  
 Other \_\_\_\_\_  
 TOTAL PRICE \$ 600.00

# TRILOBITE TESTING, L.L.C.

P.O. Box 362 • Hays, Kansas 67601

## Drill-Stem Test Data

Well Name MICHAELIS #1 Test No. 4 Date 11/1/92  
Company ABERCROMBIE DRILLING INC Zone LANSING "J"  
Address 150 N MAIN SWT #801 WICHITA KS 67202-1383 Elevation 3105  
Co. Rep./Geo. MARK GALYON Cont. ABERCROMBIE RIG #5 Est. Ft. of Pay \_\_\_\_\_  
Location: Sec. 15 Twp. 12S Rge. 33W Co. LOGAN State KS

Interval Tested 4264-4280 Drill Pipe Size 4.5" XH  
Anchor Length 16 Wt. Pipe I.D. - 2.7 Ft. Run 470  
Top Packer Depth 4259 Drill Collar - 2.25 Ft. Run \_\_\_\_\_  
Bottom Packer Depth 4264 Mud Wt. 9 lb/Gal.  
Total Depth 4280 Viscosity 52 Filtrate 10.4

Tool Open @ 5:54 PM Initial Blow STRONG BLOW-BOTTOM OF BUCKET IN 4 SECONDS

Final Blow STRONG BLOW-BOTTOM OF BUCKET IN 1.5 TO 2 MINUTES  
GAS TO SURFACE IN 1 MINUTE INTO FSI

Recovery - Total Feet 2740 Flush Tool? NO

Rec. 1510 Feet of GAS IN PIPE  
Rec. 2710 Feet of CLEAN GASSY OIL-10%GAS/90%OIL  
Rec. 30 Feet of GASSY OIL CUT MUD-20%GAS/20%OIL/60%MUD  
Rec. \_\_\_\_\_ Feet of \_\_\_\_\_  
Rec. \_\_\_\_\_ Feet of \_\_\_\_\_

BHT 122 °F Gravity 39 °API @ 56 °F Corrected Gravity 40 °API  
RW \_\_\_\_\_ @ \_\_\_\_\_ °F Chlorides 5000 ppm Recovery Chlorides 5000 ppm System

(A) Initial Hydrostatic Mud 2056.9 PSI AK1 Recorder No. 13278 Range 4400

(B) First Initial Flow Pressure 240.6 PSI @ (depth) 4277 w / Clock No. 22993

(C) First Final Flow Pressure 603.3 PSI AK1 Recorder No. 10248 Range 4400

(D) Initial Shut-in Pressure 1132.5 PSI @ (depth) 4272 w / Clock No. 30410

(E) Second Initial Flow Pressure 721.5 PSI AK1 Recorder No. \_\_\_\_\_ Range \_\_\_\_\_

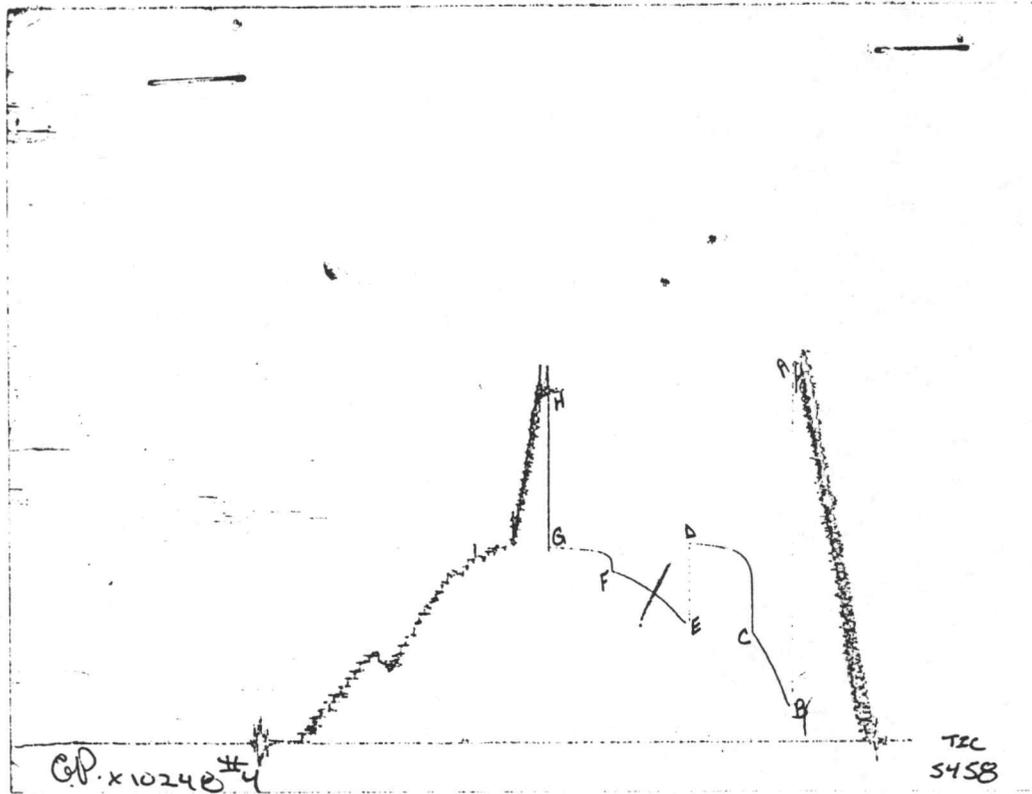
(F) Second Final Flow Pressure 979.4 PSI @ (depth) \_\_\_\_\_ w / Clock No. \_\_\_\_\_

(G) Final Shut-in Pressure 1115.4 PSI Initial Opening 30 Final Flow 60

(H) Final Hydrostatic Mud 2044.7 PSI Initial Shut-in 45 Final Shut-in 45

Our Representative GARY PEVOTEAUX

CHART PAGE



This is an actual photograph of recorder chart

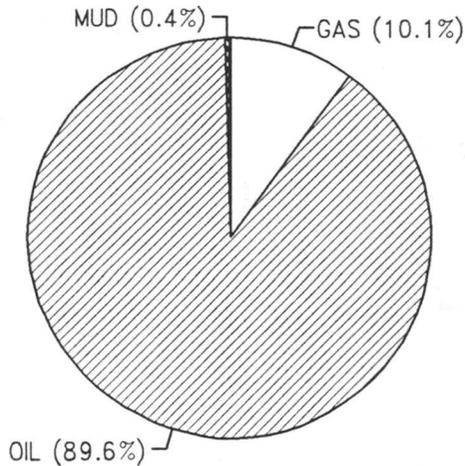
	FIELD READING	OFFICE READING
(A) INITIAL HYDROSTATIC MUD	2043	2056.9
(B) FIRST INITIAL FLOW PRESSURE	195	240.6
(C) FIRST FINAL FLOW PRESSURE	617	603.3
(D) INITIAL CLOSED-IN PRESSURE	1130	1132.5
(E) SECOND INITIAL FLOW PRESSURE	672	721.5
(F) SECOND FINAL FLOW PRESSURE	966	979.4
(G) FINAL CLOSED-IN PRESSURE	1111	1115.4
(H) FINAL HYDROSTATIC MUD	2038	2044.7

CALCULATED RECOVERY ANALYSIS

DST # 4 TICKET # 5273

SAMPLE #	TOTAL FEET	GAS		OIL		WATER		MUD	
		%	FEET	%	FEET	%	FEET	%	FEET
DRILL 1	2270	10	227	90	2043	0	0	0	0
PIPE 2			0		0		0		0
3			0		0		0		0
4			0		0		0		0
5			0		0		0		0
6			0		0		0		0
WEIGHT 1	440	10	44	90	396	0	0	0	0
PIPE 2	30	20	6	20	6	0	0	60	18
3			0		0		0		0
4			0		0		0		0
DRILL 1			0		0		0		0
COLLAR 2			0		0		0		0
3			0		0		0		0
4			0		0		0		0
5			0		0		0		0
TOTAL	2740		277		2445		0		18

	HRS OPEN	BBL/DAY
BBL OIL=	31.86546 *	1.5 509.84736
BBL WATER=	0 *	0
BBL MUD=	0.1404	
BBL GAS =	3.57794	



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

ABERCROMBIE DRILLING MICHAELIS #1

DST 4

15 12S 33W LOGAN KS

\*\*\*\*\*

ELEVATION:	3105	KB	EST. PAY	5	FT
DATUM:	-1173		ZONE TESTED:	LANSING "J"	
TEST INTERVAL:	4264-4280		TIME INTERVALS:	30-45-60-45	
RECORDER DEPTH:	4277		VISCOSITY:	4.539	CP
BOTTOM HOLE TEMP:	122		HOLE SIZE:	7.875	IN

\*\*\*\*\*

CUBIC FEET OF GAS IN PIPE:	120.56				
TOTAL FEET OF RECOVERY:	2740.00	CORRECTED PIPE FILLUP:	2743.417		
TOTAL BARRELS OF RECOVERY:	35.57	CORR. BARRELS OF RECOVERY:	35.612	BBL	
BARRELS IN DRILL PIPE:	32.28	API GRAVITY:	40		
BARRELS IN WEIGHT PIPE:	3.29	FLUID GRADIENT:	0.357		
BARRELS IN DRILL COLLARS:	0.00				
GAS OIL RATIO:	3.3894	CU.FT/BBL			
BUBBLE POINT PRESSURE:	30.021				
UNCORRECTED INITIAL PRODUCTION:			569.11	BBL	
INITIAL PRODUCTION CORRECTED TO FINAL FLOW PRESSURE:			569.79	BBL/DAY	
INITIAL PRODUCTION CORRECTED TO PSEUDO STEADY FLOW STATE:			273.253		

\*\*\*\*\*

INITIAL SLOPE	193.72	PSI/CYCLE	FINAL SLOPE	67.22	PSI/CYCLE
INITIAL P*	1173	PSI	FINAL P*	1147	PSI

\*\*\*\*\*

TRANSMISSIBILITY	1378.34	(MD.-FT./CP.)
PERMEABILITY	1251.12	(MD.)
INDICATED FLOW CAPACITY	6255.59	)MD.FT)
PRODUCTIVITY INDEX	1.56	(BARRELS/DAY/PSI)
DAMAGE RATIO	0.46	
RADIUS OF INVESTIGATION	335.56	(FT,)
POTENTIOMETRIC SURFACE	1488.99	(FT.)
DRAWDOWN FACTOR	2.205	(%)

INITIAL FLOW

RECORDER # 13278

DST # DST #4

TIME(MIN)	PRESSURE	<> PRESSURE
-----	-----	-----
0	240.6	240.6
3	238.2	-2.4
6	262.9	24.7
9	315.8	52.9
12	367.4	51.6
15	408.4	41
18	458.8	50.4
21	497.3	38.5
24	535.8	38.5
27	573	37.2
30	603.3	30.3

FINAL FLOW

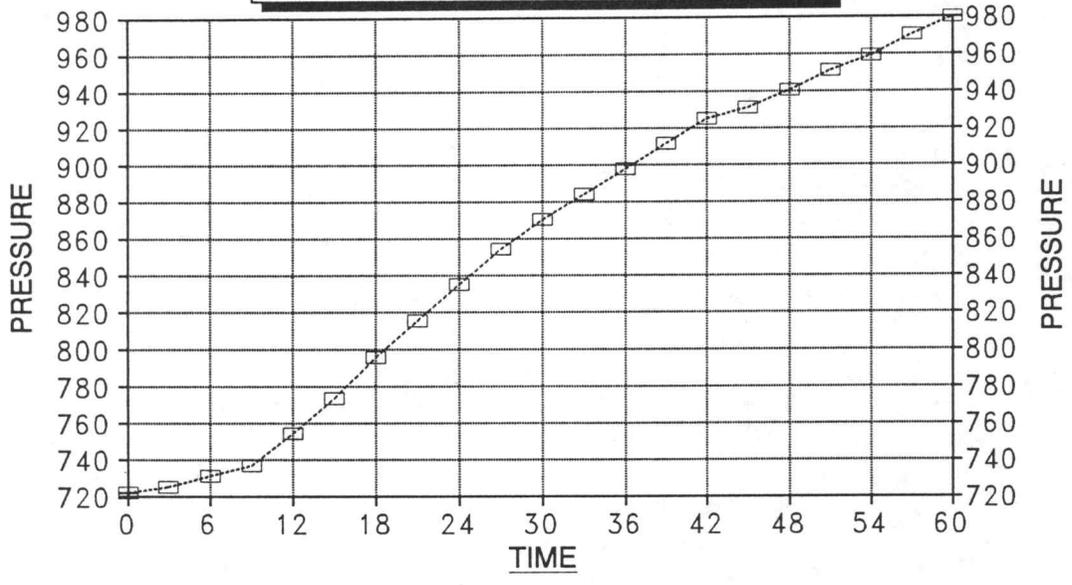
RECORDER # 13278

DST # DST #4

TIME(MIN)	PRESSURE	<> PRESSURE
-----	-----	-----
0	721.5	721.5
3	725	3.5
6	730.8	5.8
9	736.6	5.8
12	753.9	17.3
15	773.5	19.6
18	795.5	22
21	815.1	19.6
24	834.7	19.6
27	854.2	19.5
30	870.3	16.1
33	884.1	13.8
36	897.9	13.8
39	911.7	13.8
42	924.4	12.7
45	931.2	6.8
48	940.4	9.2
51	950.7	10.3
54	958.8	8.1
57	970.2	11.4
60	979.4	9.2

# DELTA T DELTA P

FINAL FLOW - DST #4



---□--- MICHAELIS #1

INITIAL PRODUCTION CORRECTED TO PSEUDO STEADY FLOW STATE:

273.253

MICHAELIS #1 DST #4  
 INITIAL SHUTIN

30 TOTAL FLOW TIME Slope 193.72 psi/cycle  
 P \* 1173 psi

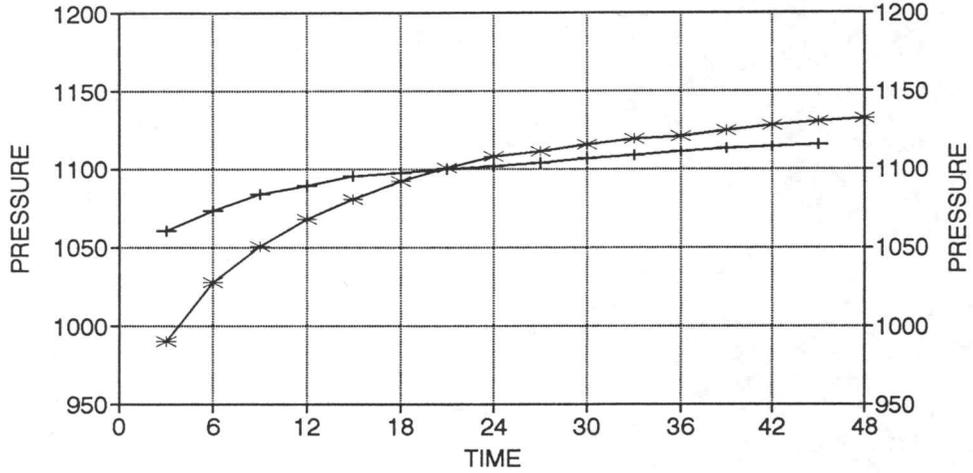
	TIME(MIN)	Pws (psi)	Log Horn T	<> PRESSURE	Horn T
	3	989.7	1.041	989.7	11
	6	1027.5	0.778	37.8	6
	9	1050.3	0.637	22.8	4
	12	1067.5	0.544	17.2	4
	15	1080.1	0.477	12.6	3
	18	1091.5	0.426	11.4	3
	21	1100.6	0.385	9.1	2
	24	1107.4	0.352	6.8	2
	27	1110.9	0.325	3.5	2
	30	1115.4	0.301	4.5	2
	33	1118.8	0.281	3.4	2
	36	1121.1	0.263	2.3	2
	39	1124.5	0.248	3.4	2
X	42	1128.0	0.234	3.5	2
	45	1130.2	0.222	2.2	2
X	48	1132.5	0.211	2.3	2

MICHAELIS #1 DST #4  
 FINAL SHUTIN

90 TOTAL FLOW TIME Slope 67.22 psi/cycle  
 P \* 1147 psi

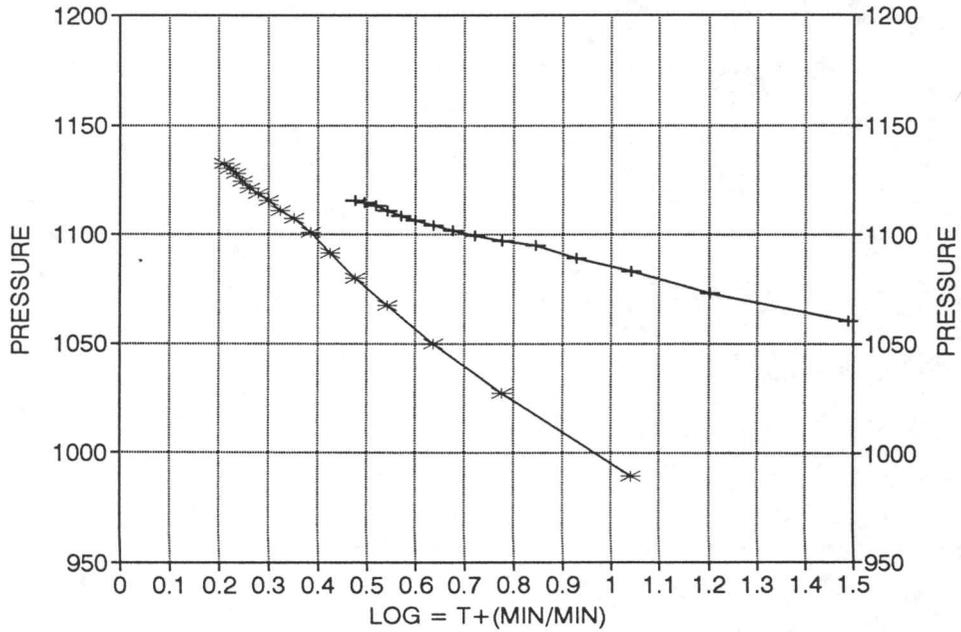
	TIME(MIN)	Pws (psi)	Log Horn T	<> PRESSURE	Horn T
	3	1060.6	1.491	1060.6	31
	6	1073.2	1.204	12.6	16
	9	1083.5	1.041	10.3	11
	12	1089.2	0.929	5.7	9
	15	1094.9	0.845	5.7	7
	18	1097.2	0.778	2.3	6
	21	1099.5	0.723	2.3	5
	24	1101.7	0.677	2.2	5
	27	1104.0	0.637	2.3	4
	30	1106.3	0.602	2.3	4
	33	1108.6	0.571	2.3	4
X	36	1110.9	0.544	2.3	4
	39	1113.1	0.520	2.2	3
	42	1114.3	0.497	1.2	3
X	45	1115.4	0.477	1.1	3

# MICHAELIS #1 / DST #4 DELTA T DELTA P



—\*— INITIAL —+— FINAL

# HORNER PLOT



# TRILOBITE TESTING, L.L.C.

P.O. Box 362 • Hays, Kansas 67601

## Drill-Stem Test Data

Well Name MICHAELIS #1 Test No. 5 Date 11/2/92  
Company ABERCROMBIE DRILLING INC Zone LANSING "K"  
Address 150 N MAIN SWT #801 WICHITA KS 67202-1383 Elevation 3105  
Co. Rep./Geo. MARK GALYON Cont. ABERCROMBIE RIG #5 Est. Ft. of Pay \_\_\_\_\_  
Location: Sec. 15 Twp. 12S Rge. 33W Co. LOGAN State KS

Interval Tested 4285-4309 Drill Pipe Size 4.5" XH  
Anchor Length 24 Wt. Pipe I.D. - 2.7 Ft. Run 470  
Top Packer Depth 4280 Drill Collar - 2.25 Ft. Run \_\_\_\_\_  
Bottom Packer Depth 4285 Mud Wt. 9.1 lb/Gal.  
Total Depth 4309 Viscosity 55 Filtrate 8.8

Tool Open @ 9:38 AM Initial Blow WEAK BLOW-1/2" - 4" IN WATER

Final Blow WEAK BLOW/ 1/2" - 3.5" IN WATER

Recovery - Total Feet 120 Flush Tool? NO

Rec. 120 Feet of MUDDY WATER WITH OIL SPECKS  
Rec. \_\_\_\_\_ Feet of \_\_\_\_\_  
Rec. \_\_\_\_\_ Feet of \_\_\_\_\_  
Rec. \_\_\_\_\_ Feet of \_\_\_\_\_  
Rec. \_\_\_\_\_ Feet of \_\_\_\_\_

BHT 122 °F Gravity \_\_\_\_\_ °API @ \_\_\_\_\_ °F Corrected Gravity \_\_\_\_\_ °API  
RW 0.23 @ 64 °F Chlorides 48000 ppm Recovery Chlorides 6500 ppm System

(A) Initial Hydrostatic Mud 2105.6 PSI AK1 Recorder No. 13278 Range 4400

(B) First Initial Flow Pressure 30.1 PSI @ (depth) 4306 w / Clock No. 22993

(C) First Final Flow Pressure 50.6 PSI AK1 Recorder No. 10248 Range 4400

(D) Initial Shut-in Pressure 560.1 PSI @ (depth) 4301 w / Clock No. 30410

(E) Second Initial Flow Pressure 58.4 PSI AK1 Recorder No. \_\_\_\_\_ Range \_\_\_\_\_

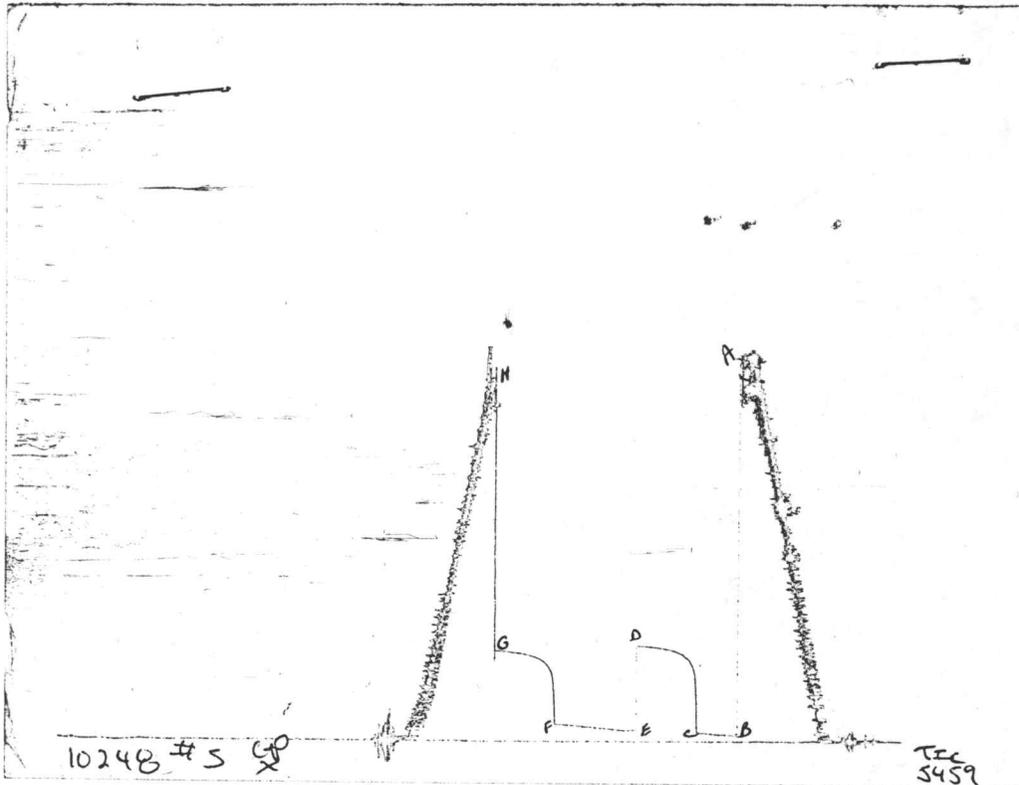
(F) Second Final Flow Pressure 89.6 PSI @ (depth) \_\_\_\_\_ w / Clock No. \_\_\_\_\_

(G) Final Shut-in Pressure 537.9 PSI Initial Opening 30 Final Flow 60

(H) Final Hydrostatic Mud 2055.1 PSI Initial Shut-in 45 Final Shut-in 45

Our Representative GARY PEVOTEAUX

CHART PAGE



This is an actual photograph of recorder chart.

	FIELD READING	OFFICE READING
(A) INITIAL HYDROSTATIC MUD	2095	2105.6
(B) FIRST INITIAL FLOW PRESSURE	27	30.1
(C) FIRST FINAL FLOW PRESSURE	46	50.6
(D) INITIAL CLOSED-IN PRESSURE	557	560.1
(E) SECOND INITIAL FLOW PRESSURE	57	58.4
(F) SECOND FINAL FLOW PRESSURE	85	89.6
(G) FINAL CLOSED-IN PRESSURE	533	537.9
(H) FINAL HYDROSTATIC MUD	2052	2055.1

# TRILOBITE TESTING L.L.C.

P.O. Box 362 • Hays, Kansas 67601

## Test Ticket

No 5459

Well Name & No.	<u>MICHAELIS #1</u>	Test No.	<u>5</u>	Date	<u>11-2-92</u>
Company	<u>ABERCROMBIE DRILG. INC.</u>	Zone Tested	<u>LANO "K"</u>		
Address	<u>150 N. MAIN SUITE 801 WICHITA KS 67202</u>	Elevation	<u>3105 K.B.</u>		
Co. Rep./Geo.	<u>MARK GALYON cont.</u>	Co. Tools	<u>#5</u>	Est. Ft. of Pay	
Location: Sec.	<u>15</u>	Twp.	<u>12S</u>	Rge.	<u>33W</u>
		Co.	<u>LOGAN</u>	State	<u>KS</u>
No. of Copies		Distribution Sheet	Yes <input type="checkbox"/> No <input type="checkbox"/>	Turnkey	Yes <input type="checkbox"/> No <input type="checkbox"/>
		Evaluation			

Interval Tested	<u>4285 - 4309'</u>	Drill Pipe Size	<u>4 1/2" X. H.</u>
Anchor Length	<u>24'</u>	Top Choke - 1"	<input checked="" type="checkbox"/>
Top Packer Depth	<u>4280'</u>	Bottom Choke - 3/4"	<input checked="" type="checkbox"/>
Bottom Packer Depth	<u>4285'</u>	Hole Size - 7 7/8"	<input checked="" type="checkbox"/>
Total Depth	<u>4309'</u>	Rubber Size - 6 3/4"	<input checked="" type="checkbox"/>
Mud Wt.	<u>9.1</u>	Wt. Pipe I.D. - 2.7 Ft. Run	<u>470'</u>
lb/gal.		Drill Collar - 2.25 Ft. Run	<u>NONE</u>
Tool Open @	<u>9:38 A.M.</u>	Viscosity	<u>SS</u>
Initial Blow	<u>Weak below. (1/2" - 4" in H<sub>2</sub>O)</u>	Filtrate	<u>8.8cc</u>

Final Blow Weak below. (1/2" - 3 1/2" in H<sub>2</sub>O)

Recovery - Total Feet	<u>120</u>	Feet of Gas in Pipe	<u>NONE</u>	Flush Tool?	<u>No</u>
Rec.	<u>120</u>	Feet Of	<u>M.W. Coil specs.</u>	%gas	<u>85</u>
Rec.		Feet Of		%oil	<u>15</u>
Rec.		Feet Of		%water	<u>15</u>
Rec.		Feet Of		%mud	
Rec.		Feet Of		%gas	
Rec.		Feet Of		%oil	
Rec.		Feet Of		%water	
Rec.		Feet Of		%mud	

BHT 122 °F Gravity N.A. °API @ ~ °F Corrected Gravity N.A. °API

RW 0.23 @ 64 °F Chlorides 48,000 ppm Recovery Chlorides 6,500 ppm System

- (A) Initial Hydrostatic Mud 2095 PSI AK1 Recorder No. 13278 Range 4400
- (B) First Initial Flow Pressure 27 PSI @ (depth) 4306' w/Clock No. 22993
- (C) First Final Flow Pressure 46 PSI AK1 Recorder No. 10248 Range 4400
- (D) Initial Shut-In Pressure 557 PSI @ (depth) 4301' w/Clock No. 30410
- (E) Second Initial Flow Pressure 57 PSI AK1 Recorder No. ~ Range ~
- (F) Second Final Flow Pressure 85 PSI @ (depth) ~ w/Clock No. ~
- (G) Final Shut-In Pressure 533 PSI Initial Opening 30 Test
- (H) Final Hydrostatic Mud 2052 PSI Initial Shut-In 45 Jars

TRILOBITE TESTING L.L.C. 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

Sampler

Extra Packer

Other

TOTAL PRICE \$ 550.00

Approved By Mark Galyon

Our Representative Cony [Signature]

# TRILOBITE TESTING, L.L.C.

P.O. Box 362 • Hays, Kansas 67601

## Drill-Stem Test Data

Well Name MICHAELIS #1 Test No. 6 Date 11/4/92  
Company ABERCROMBIE DRILLING INC Zone FT SCOTT/MYR  
Address 150 N MAIN SWT #801 WICHITA KS 67202-1383 Elevation 3105  
Co. Rep./Geo. MARK GALYON Cont. ABERCROMBIE RIG #5 Est. Ft. of Pay \_\_\_\_\_  
Location: Sec. 15 Twp. 12S Rge. 33W Co. LOGAN State KS

Interval Tested	<u>4514-4560</u>	Drill Pipe Size	<u>4.5" XH</u>
Anchor Length	<u>46</u>	Wt. Pipe I.D. - 2.7 Ft. Run	<u>470</u>
Top Packer Depth	<u>4509</u>	Drill Collar - 2.25 Ft. Run	_____
Bottom Packer Depth	<u>4514</u>	Mud Wt.	<u>8.9</u> lb/Gal.
Total Depth	<u>4560</u>	Viscosity	<u>47</u> Filtrate <u>9.6</u>

Tool Open @ 12:01 AM Initial Blow WEAK BLOW - (1/2" TO 3.5" IN WATER)

Final Blow WEAK BLOW - SLOW INCREASE TO 4" IN WATER

Recovery - Total Feet 95 Flush Tool? NO

Rec. 95 Feet of SLTLY OIL CUT WATER MUD-1%OIL/14%WTR/85%MUD  
Rec. \_\_\_\_\_ Feet of \_\_\_\_\_  
Rec. \_\_\_\_\_ Feet of \_\_\_\_\_  
Rec. \_\_\_\_\_ Feet of \_\_\_\_\_  
Rec. \_\_\_\_\_ Feet of \_\_\_\_\_

BHT 124 °F Gravity \_\_\_\_\_ °API @ \_\_\_\_\_ °F Corrected Gravity \_\_\_\_\_ °API  
RW \_\_\_\_\_ @ \_\_\_\_\_ °F Chlorides 8000 ppm Recovery Chlorides 5000 ppm System

(A) Initial Hydrostatic Mud 2233.6 PSI AK1 Recorder No. 13278 Range 4400

(B) First Initial Flow Pressure 50.6 PSI @ (depth) 4557 w / Clock No. 22993

(C) First Final Flow Pressure 66.9 PSI AK1 Recorder No. 10248 Range 4400

(D) Initial Shut-in Pressure 653.7 PSI @ (depth) 4552 w / Clock No. 30410

(E) Second Initial Flow Pressure 65.2 PSI AK1 Recorder No. \_\_\_\_\_ Range \_\_\_\_\_

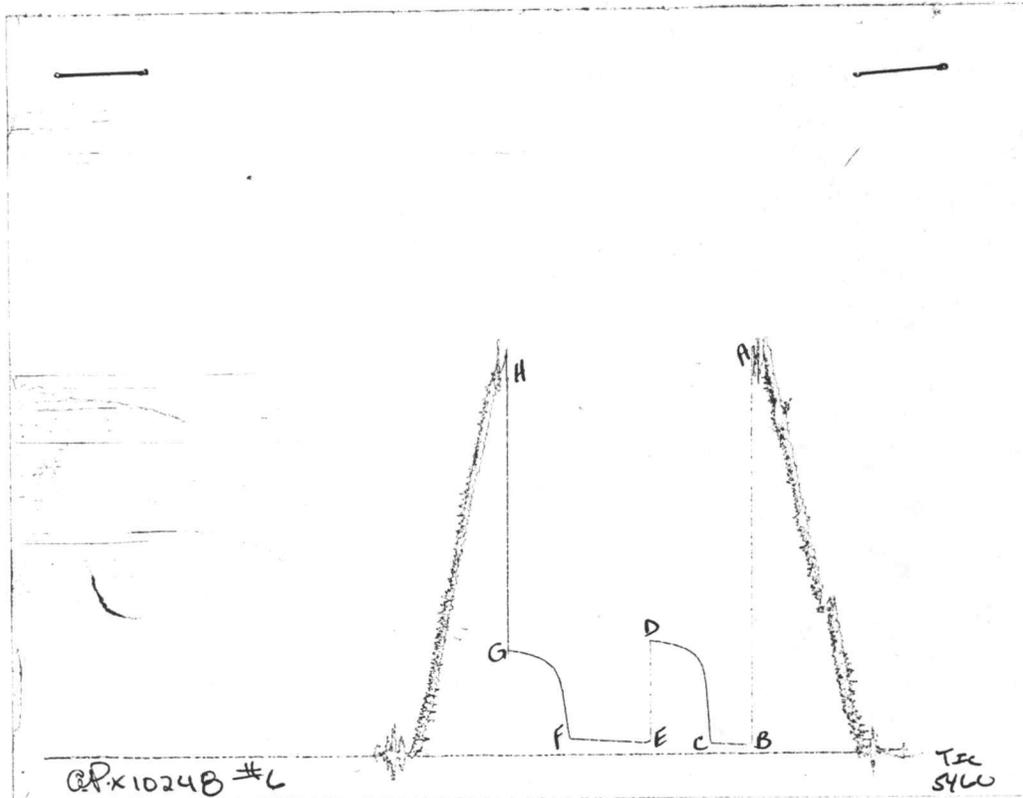
(F) Second Final Flow Pressure 85.6 PSI @ (depth) \_\_\_\_\_ w / Clock No. \_\_\_\_\_

(G) Final Shut-in Pressure 601.9 PSI Initial Opening 30 Final Flow 60

(H) Final Hydrostatic Mud 2220.8 PSI Initial Shut-in 45 Final Shut-in 45

Our Representative GARY PEVOTEAUX

# CHART PAGE



This is an actual photograph of recorder chart

	FIELD READING	OFFICE READING
(A) INITIAL HYDROSTATIC MUD	2228	2233.6
(B) FIRST INITIAL FLOW PRESSURE	46	50.6
(C) FIRST FINAL FLOW PRESSURE	59	66.9
(D) INITIAL CLOSED-IN PRESSURE	650	653.7
(E) SECOND INITIAL FLOW PRESSURE	64	65.2
(F) SECOND FINAL FLOW PRESSURE	84	85.6
(G) FINAL CLOSED-IN PRESSURE	597	601.9
(H) FINAL HYDROSTATIC MUD	2219	2220.8

# TRILOBITE TESTING L.L.C.

P.O. Box 362 • Hays, Kansas 67601

## Test Ticket

No 5460

Well Name & No. <u>MICHAELIS #1</u>	Test No. <u>6</u>	Date <u>11-4-92</u>
Company <u>ABLECROMBIE DRILG INC.</u>	Zone Tested <u>FT. SCOTT-MYRIK STA.</u>	
Address <u>150N. MAIN SUITE 801 WICHITA KS. 67202</u>	Elevation <u>3105 K.B.</u>	
Co. Rep./Geo. <u>MARK GALKON</u>	cont. <u>Co. TOOLS #5</u>	Est. Ft. of Pay _____
Location: Sec. <u>15</u>	Twp. <u>12<sup>S</sup></u>	Rge. <u>33<sup>W</sup></u> Co. <u>LOGAN</u> State <u>KS.</u>
No. of Copies _____	Distribution Sheet _____	Yes _____ No _____ Turnkey _____ Yes _____ No _____ Evaluation _____

Interval Tested <u>4514 - 4560'</u>	Drill Pipe Size <u>4 1/2" x.H</u>
Anchor Length <u>46'</u>	Top Choke — 1" <input checked="" type="checkbox"/> Bottom Choke — 3/4" <input checked="" type="checkbox"/>
Top Packer Depth <u>4509'</u>	Hole Size — 77/8" <input checked="" type="checkbox"/> Rubber Size — 63/4" <input checked="" type="checkbox"/>
Bottom Packer Depth <u>4514'</u>	Wt. Pipe I.D. — 2.7 Ft. Run <u>470'</u>
Total Depth <u>4560'</u>	Drill Collar — 2.25 Ft. Run <u>NONE</u>
Mud Wt. <u>8.9</u> lb/gal.	Viscosity <u>47</u> Filtrate <u>9.6 cc.</u>
Tool Open @ <u>12:01 A.M.</u>	Initial Blow <u>Weak blow (1/2" to 3 1/2" in H<sub>2</sub>O)</u>

Final Blow Weak blow (slow increase to 4" in H<sub>2</sub>O)

Recovery — Total Feet <u>95'</u>	Feet of Gas in Pipe <u>NONE</u>	Flush Tool? <u>No</u>
Rec. <u>95</u> Feet Of <u>S.O.C.W.M.</u>	%gas <u>1</u> %oil <u>14</u> %water <u>85</u> %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 124 °F Gravity N.A. °API @ \_\_\_\_\_ °F Corrected Gravity N.A. °API  
RW NA @ \_\_\_\_\_ °F Chlorides 8,000 ppm Recovery Chlorides 5,000 ppm System

(A) Initial Hydrostatic Mud <u>2228</u> PSI	AK1 Recorder No. <u>13278</u>	Range <u>4400</u>
(B) First Initial Flow Pressure <u>46</u> PSI	@ (depth) <u>4557'</u>	w/Clock No. <u>22993</u>
(C) First Final Flow Pressure <u>59</u> PSI	AK1 Recorder No. <u>10248</u>	Range <u>4400</u>
(D) Initial Shut-In Pressure <u>650</u> PSI	@ (depth) <u>4552'</u>	w/Clock No. <u>30410</u>
(E) Second Initial Flow Pressure <u>64</u> PSI	AK1 Recorder No. <u>2</u>	Range <u>2</u>
(F) Second Final Flow Pressure <u>84</u> PSI	@ (depth) <u>2</u>	w/Clock No. <u>2</u>
(G) Final Shut-In Pressure <u>597</u> PSI	Initial Opening <u>30</u>	Test <input checked="" type="checkbox"/>
(H) Final Hydrostatic Mud <u>2219</u> PSI	Initial Shut-In <u>45</u>	Jars _____

TRILOBITE TESTING L.L.C. 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 <u>60</u>	Safety Joint _____
Final Shut-In <u>45</u>	Straddle _____
	Circ. Sub _____
	Sampler _____
	Extra Packer _____
	Other _____

Approved By \_\_\_\_\_

Our Representative Gary P. [Signature]

TOTAL PRICE \$ 600.00

# TRILOBITE TESTING, L.L.C.

P.O. Box 362 • Hays, Kansas 67601

## Drill-Stem Test Data

Well Name MICHAELIS #1 Test No. 7 Date 11/4/92  
Company ABERCROMBIE DRILLING INC Zone JOHNSON  
Address 150 N MAIN SWT #801 WICHITA KS 67202-1383 Elevation 3105  
Co. Rep./Geo. MARK GALYON Cont. ABERCROMBIE RIG #5 Est. Ft. of Pay \_\_\_\_\_  
Location: Sec. 15 Twp. 12S Rge. 33W Co. LOGAN State KS

Interval Tested	<u>4590-4639</u>	Drill Pipe Size	<u>4.5" XH</u>
Anchor Length	<u>49</u>	Wt. Pipe I.D. - 2.7 Ft. Run	<u>470</u>
Top Packer Depth	<u>4585</u>	Drill Collar - 2.25 Ft. Run	_____
Bottom Packer Depth	<u>4590</u>	Mud Wt.	<u>8.9</u> lb/Gal.
Total Depth	<u>4639</u>	Viscosity	<u>61</u> Filtrate <u>10.4</u>

Tool Open @ 3:50 PM Initial Blow STRONG BLOW - BOTTOM OF BUCKET IN 10-15 SECONDS

Final Blow STRONG BLOW-BOTTOM OF BUCKET IN 25 SECONDS  
GAS TO SURFACE IN 30 MINUTES INTO FINAL FLOW PERIOD

Recovery - Total Feet 2185 Flush Tool? NO

Rec. <u>2385</u>	Feet of	<u>GAS IN PIPE</u>
Rec. <u>1815</u>	Feet of	<u>CLEAN GASSY OIL-15%GAS/85%OIL</u>
Rec. <u>370</u>	Feet of	<u>MUDDY SALT WATER WITH OIL SPECKS-90%WTR/10%MUD</u>
Rec. _____	Feet of	<u>CLEAN OIL AT TOP OF TOOL</u>
Rec. _____	Feet of	_____

BHT 127 °F Gravity 33 °API @ 74 °F Corrected Gravity 32 °API  
RW 0.29 @ 63 °F Chlorides 44000 ppm Recovery Chlorides 6500 ppm System

(A) Initial Hydrostatic Mud 2336.9 PSI AK1 Recorder No. 13278 Range 4400

(B) First Initial Flow Pressure 355.7 PSI @ (depth) 4636 w / Clock No. 22993

(C) First Final Flow Pressure 638.1 PSI AK1 Recorder No. 10248 Range 4400

(D) Initial Shut-in Pressure 1143.9 PSI @ (depth) 4631 w / Clock No. 30410

(E) Second Initial Flow Pressure 795.5 PSI AK1 Recorder No. \_\_\_\_\_ Range \_\_\_\_\_

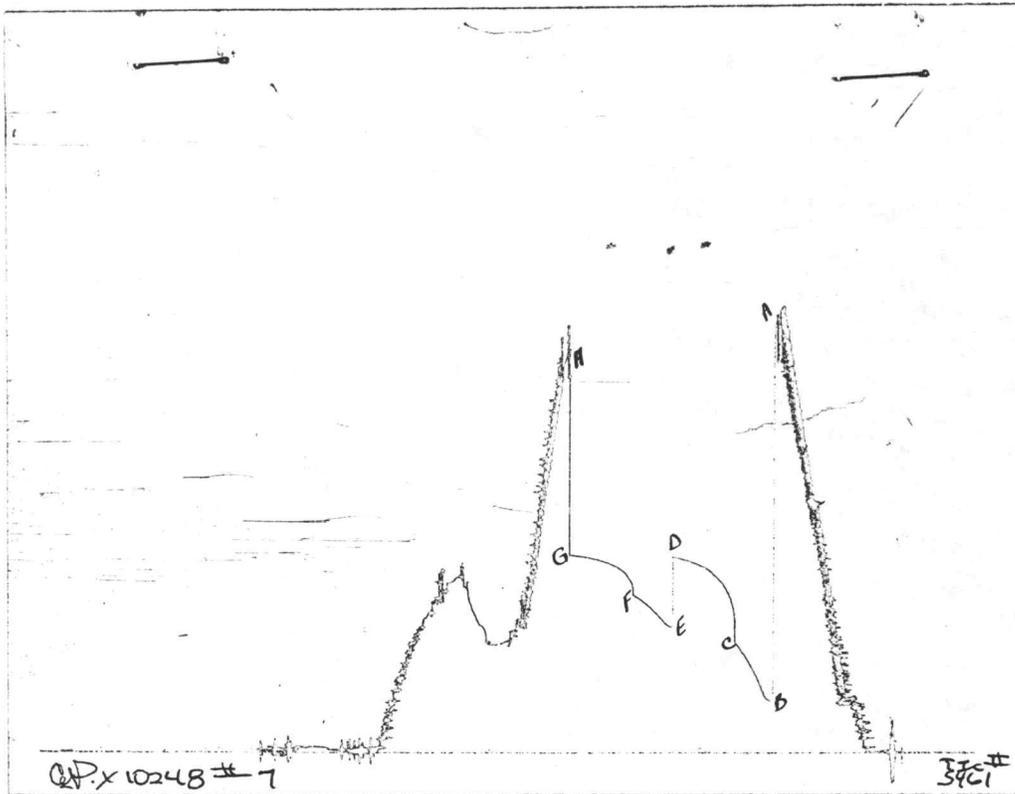
(F) Second Final Flow Pressure 919.2 PSI @ (depth) \_\_\_\_\_ w / Clock No. \_\_\_\_\_

(G) Final Shut-in Pressure 1158.7 PSI Initial Opening 30 Final Flow 30

(H) Final Hydrostatic Mud 2250.9 PSI Initial Shut-in 45 Final Shut-in 45

Our Representative GARY PEVOTEAUX

# CHART PAGE



This is an actual photograph of recorder chart.

	FIELD READING	OFFICE READING
(A) INITIAL HYDROSTATIC MUD	2315	2336.9
(B) FIRST INITIAL FLOW PRESSURE	299	355.7
(C) FIRST FINAL FLOW PRESSURE	617	638.1
(D) INITIAL CLOSED-IN PRESSURE	1115	1143.9
(E) SECOND INITIAL FLOW PRESSURE	716	795.5
(F) SECOND FINAL FLOW PRESSURE	892	919.2
(G) FINAL CLOSED-IN PRESSURE	1130	1158.7
(H) FINAL HYDROSTATIC MUD	2239	2250.9

CALCULATED RECOVERY ANALYSIS

DST #

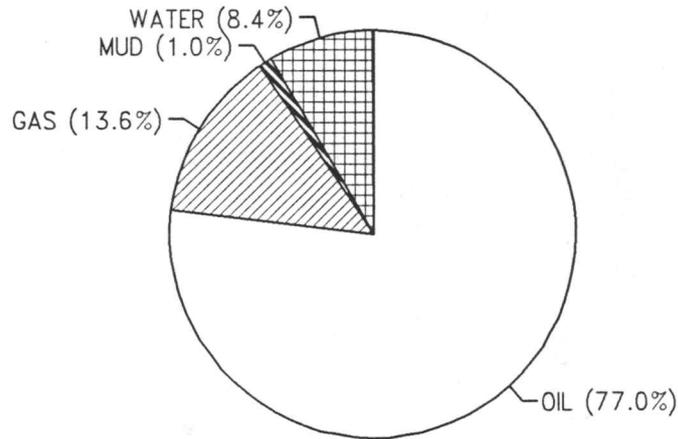
7

TICKET #

5461

SAMPLE #	TOTAL FEET	GAS		OIL		WATER		MUD	
		%	FEET	%	FEET	%	FEET	%	FEET
DRILL 1	1715	15	257.25	85	1457.75	0	0	0	0
PIPE 2			0		0		0		0
3			0		0		0		0
4			0		0		0		0
5			0		0		0		0
6			0		0		0		0
WEIGHT 1	100	15	15	85	85	0	0	0	0
PIPE 2	370	0	0	0	0	90	333	10	37
3			0		0		0		0
4			0		0		0		0
DRILL 1			0		0		0		0
COLLAR 2			0		0		0		0
3			0		0		0		0
4			0		0		0		0
5			0		0		0		0
TOTAL	2185		272.25		1542.75		333		37

		HRS OPEN	BBL/DAY
BBL OIL=	21.324205	*	1 511.78092
BBL WATER=	2.331	*	55.944
BBL MUD=	0.2886		
BBL GAS =	3.763095		



# TRILOBITE TESTING L.L.C.

P.O. Box 362 • Hays, Kansas 67601

## Test Ticket

No 5451

Well Name & No. MICHAELIS #1 Test No. 7 Date 11-4-92  
Company ABERCROMBIE DRUG, INC. Zone Tested JOHNSON  
Address 150N. MAIN SUITE 801 WICHITA, KS. 67202 Elevation 3105 K.B.  
Co. Rep./Geo. MARK GALYON Cont. Co. Tools Est. Ft. of Pay \_\_\_\_\_  
Location: Sec. 15 Twp. 12S Rge. 33W Co. LOGAN State KS.  
No. of Copies \_\_\_\_\_ Distribution Sheet \_\_\_\_\_ Yes \_\_\_\_\_ No \_\_\_\_\_ Turnkey \_\_\_\_\_ Yes \_\_\_\_\_ No \_\_\_\_\_ Evaluation \_\_\_\_\_

Interval Tested 4590 - 4639' Drill Pipe Size 4 1/2" X.H.  
Anchor Length 49' Top Choke - 1"  Bottom Choke - 3/4"   
Top Packer Depth 4585' Hole Size - 77/8"  Rubber Size - 63/4"   
Bottom Packer Depth 4590' Wt. Pipe I.D. - 2.7 Ft. Run 470'  
Total Depth 4639' Drill Collar - 2.25 Ft. Run None  
Mud Wt. 8.9 lb/gal. Viscosity 61 Filtrate 10.4 cc.

Tool Open @ 3:50 P.M. Initial Blow Strong blow (litm. of bucket in 10-15 seconds.)

Final Blow Strong blow (litm. of bucket in 25 seconds.)  
G.I.S. 30 minutes in to F.F.P.

Recovery - Total Feet 2185 Feet of Gas in Pipe 2,385' Flush Tool? No

Rec.	Feet Of	Clean	Gas	Oil	Water	Mud
<u>1815'</u>		<u>Clean</u>	<u>15%</u>	<u>85%</u>	<u>~</u>	<u>~</u>
<u>370</u>		<u>M.S.W. (w/ oil spec.)</u>	<u>~</u>	<u>~</u>	<u>90%</u>	<u>10%</u>
			<u>%</u>	<u>%</u>	<u>%</u>	<u>%</u>
		<u>Clean Oil @ top</u>	<u>%</u>	<u>%</u>	<u>%</u>	<u>%</u>
		<u>of tool</u>	<u>%</u>	<u>%</u>	<u>%</u>	<u>%</u>

BHT 127 °F Gravity 33 °API @ 74 °F Corrected Gravity 32.1 °API

RW 0.29 @ 63 °F Chlorides 44,000 ppm Recovery Chlorides 6,500 ppm System

- (A) Initial Hydrostatic Mud 2315 PSI Ak1 Recorder No. 13278 Range 4400
- (B) First Initial Flow Pressure 299 PSI @ (depth) 4636' w/Clock No. 22993
- (C) First Final Flow Pressure 617 PSI AK1 Recorder No. 10248 Range 4400
- (D) Initial Shut-In Pressure 1115 PSI @ (depth) 4631' w/Clock No. 30410
- (E) Second Initial Flow Pressure 716 PSI AK1 Recorder No. ~ Range ~
- (F) Second Final Flow Pressure 892 PSI @ (depth) ~ w/Clock No. ~
- (G) Final Shut-In Pressure 1130 PSI Initial Opening 30 Test  600W
- (H) Final Hydrostatic Mud 2239 PSI Initial Shut-In 45 Jars \_\_\_\_\_

TRILOBITE TESTING L.L.C. 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 30 ~~45~~ Safety Joint \_\_\_\_\_  
Final Shut-In 45 Straddle \_\_\_\_\_  
Circ. Sub \_\_\_\_\_  
Sampler \_\_\_\_\_

Approved By [Signature]  
Our Representative [Signature]

Extra Packer \_\_\_\_\_  
Other \_\_\_\_\_  
TOTAL PRICE \$ 552.00  600.00