

**TRILOBITE  
TESTING, INC.**

## DRILL STEM TEST REPORT

Prepared For: **Castle Resources Inc**

PO Box 583  
Russell, KS 67665+0583

ATTN: Jerry Green

**Patterson #1**

**32-7S-19W Rooks,KS**

Start Date: 2019.03.20 @ 04:44:00

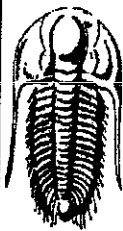
End Date: 2019.03.20 @ 12:57:00

Job Ticket #: 65103                      DST #: 1

Trilobite Testing, Inc  
1515 Commerce Parkway Hays, KS 67601  
ph: 785-625-4778 fax: 785-625-5620

Printed: 2019.03.21 @ 11:07:40

Castle Resources Inc    32-7S-19W Rooks,KS    Patterson #1    DST # 1    Arbuckle    2019.03.20



**TRILOBITE  
TESTING, INC.**

## DRILL STEM TEST REPORT

Castle Resources Inc  
PO Box 583  
Russell, KS 67665+0583  
ATTN: Jerry Green

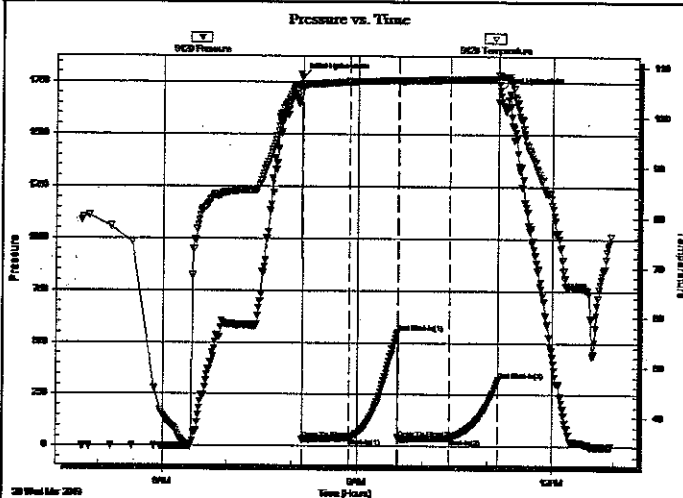
**32-7S-19W Rooks, KS**  
**Patterson #1**  
Job Ticket: 65103      **DST#: 1**  
Test Start: 2019.03.20 @ 04:44:00

### GENERAL INFORMATION:

Formation: **Arbuckle**  
Deviated: No      Whipstock:      ft (KB)  
Time Tool Opened: 08:09:15  
Time Test Ended: 12:57:00  
Interval: **3336.00 ft (KB) To 3402.00 ft (KB) (TVD)**  
Total Depth: **3470.00 ft (KB) (TVD)**  
Hole Diameter: **7.88 inches**      Hole Condition: Fair  
Test Type: Conventional Straddle (Initial)  
Tester: Spencer J Staab  
Unit No: 84  
Reference Elevations: 1932.00 ft (KB)  
1927.00 ft (CF)  
KB to GR/CF: 5.00 ft

**Serial #: 9120**      **Outside**  
Press@RunDepth: 39.91 psig @ 3373.00 ft (KB)      Capacity: 8000.00 psig  
Start Date: 2019.03.20      End Date: 2019.03.20      Last Calib.: 2019.03.20  
Start Time: 04:44:15      End Time: 12:57:00      Time On Btm: 2019.03.20 @ 08:09:00  
Time Off Btm: 2019.03.20 @ 11:11:00

TEST COMMENT: 45-IF-Weak; Built to 3"  
45-ISI-No Return  
45-FF-Weak; Built to 2"  
45-FSI-No Return



### PRESSURE SUMMARY

Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	1772.37	106.58	Initial Hydro-static
1	34.78	105.49	Open To Flow (1)
44	36.79	107.03	Shut-In(1)
88	549.51	107.33	End Shut-In(1)
89	36.46	107.19	Open To Flow (2)
136	39.91	107.51	Shut-In(2)
181	319.53	107.76	End Shut-In(2)
182	1710.99	108.24	Final Hydro-static

### Recovery

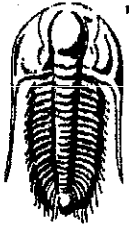
Length (ft)	Description	Volume (bbl)
10.00	OCM 10%O 90%M	0.14
15.00	MCO 10%M 90%O	0.21

### Gas Rates

	Choke (inches)	Pressure (psig)	Gas Rate (Mcf/d)







**TRILOBITE  
TESTING, INC.**

## DRILL STEM TEST REPORT

**TOOL DIAGRAM**

Castle Resources Inc  
PO Box 583  
Russell, KS 67665+0583  
ATTN: Jerry Green

**32-7S-19W Rooks, KS**  
**Patterson #1**  
Job Ticket: 65103      **DST#: 1**  
Test Start: 2019.03.20 @ 04:44:00

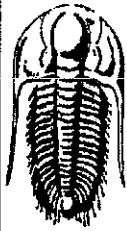
### Tool Information

Drill Pipe:	Length: 3332.00 ft	Diameter: 3.82 inches	Volume: 47.23 bbl	Tool Weight: 2000.00 lb
Heavy Wt. Pipe:	Length: ft	Diameter: 2.75 inches	Volume: - bbl	Weight set on Packer: 25000.00 lb
Drill Collar:	Length: 0.00 ft	Diameter: 2.25 inches	Volume: 0.00 bbl	Weight to Pull Loose: 50000.00 lb
			<u>Total Volume: - bbl</u>	Tool Chased ft
Drill Pipe Above KB:	17.00 ft			String Weight: Initial 48000.00 lb
Depth to Top Packer:	3336.00 ft			Final 48000.00 lb
Depth to Bottom Packer:	3471.00 ft			
Interval between Packers:	135.00 ft			
Tool Length:	156.00 ft			
Number of Packers:	1	Diameter: 6.75 inches		

Tool Comments:

Tool Description	Length (ft)	Serial No.	Position	Depth (ft)	Accum. Lengths
Change Over Sub	1.00			3316.00	
Shut In Tool	5.00			3321.00	
Hydraulic tool	5.00			3326.00	
Packer	5.00			3331.00	21.00      Bottom Of Top Packer
Packer	5.00			3336.00	
Stubb	1.00			3337.00	
Perforations	2.00			3339.00	
Change Over Sub	1.00			3340.00	
Drill Pipe	32.00			3372.00	
Change Over Sub	1.00			3373.00	
Recorder	0.00	8934	Inside	3373.00	
Recorder	0.00	9120	Outside	3373.00	
Perforations	24.00			3397.00	
Blank Off Sub	1.00			3398.00	
Top S. Packer	4.00			3402.00	
Straddle Packer	1.00			3403.00	
Stubb	1.00			3404.00	
Perforations	2.00			3406.00	
Change Over Sub	1.00			3407.00	
Recorder	0.00	8352	Below	3407.00	
Drill Pipe	64.00			3471.00	135.00      Bottom Packers & Anchor

**Total Tool Length: 156.00**



**TRILOBITE**  
TESTING, INC

# DRILL STEM TEST REPORT

**FLUID SUMMARY**

Castle Resources Inc

32-7S-19W Rooks,KS

PO Box 583  
Russell,KS 67665+0583

Patterson #1

Job Ticket: 65103

DST#: 1

ATTN: Jerry Green

Test Start: 2019.03.20 @ 04:44:00

## Mud and Cushion Information

Mud Type: Gel Chem

Cushion Type:

Oil API:

27 deg API

Mud Weight: 9.00 lb/gal

Cushion Length:

ft

Water Salinity:

ppm

Viscosity: 47.00 sec/qt

Cushion Volume:

bbl

Water Loss: 6.99 in<sup>3</sup>

Gas Cushion Type:

Resistivity: ohm.m

Gas Cushion Pressure:

psig

Salinity: 3000.00 ppm

Filter Cake: inches

## Recovery Information

Recovery Table

Length ft	Description	Volume bbl
10.00	OCM 10%O 90%M	0.142
15.00	MCO 10%M 90%O	0.213

Total Length: 25.00 ft

Total Volume: 0.355 bbl

Num Fluid Samples: 0

Num Gas Bombs: 0

Serial #:

Laboratory Name:

Laboratory Location:

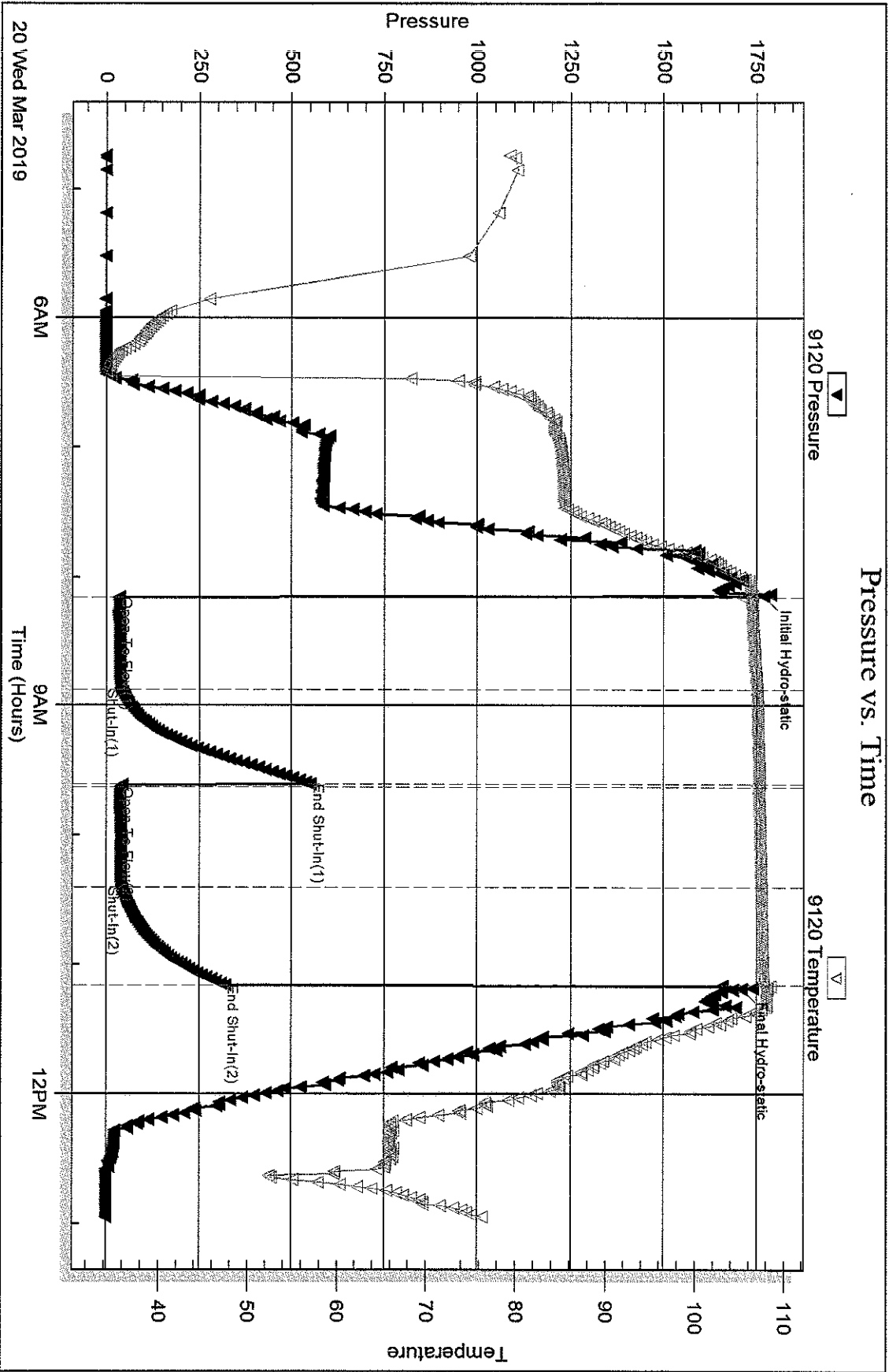
Recovery Comments: 2#LCM

Serial #: 9120

Outside Castle Resources Inc

Patterson #1

DST Test Number: 1



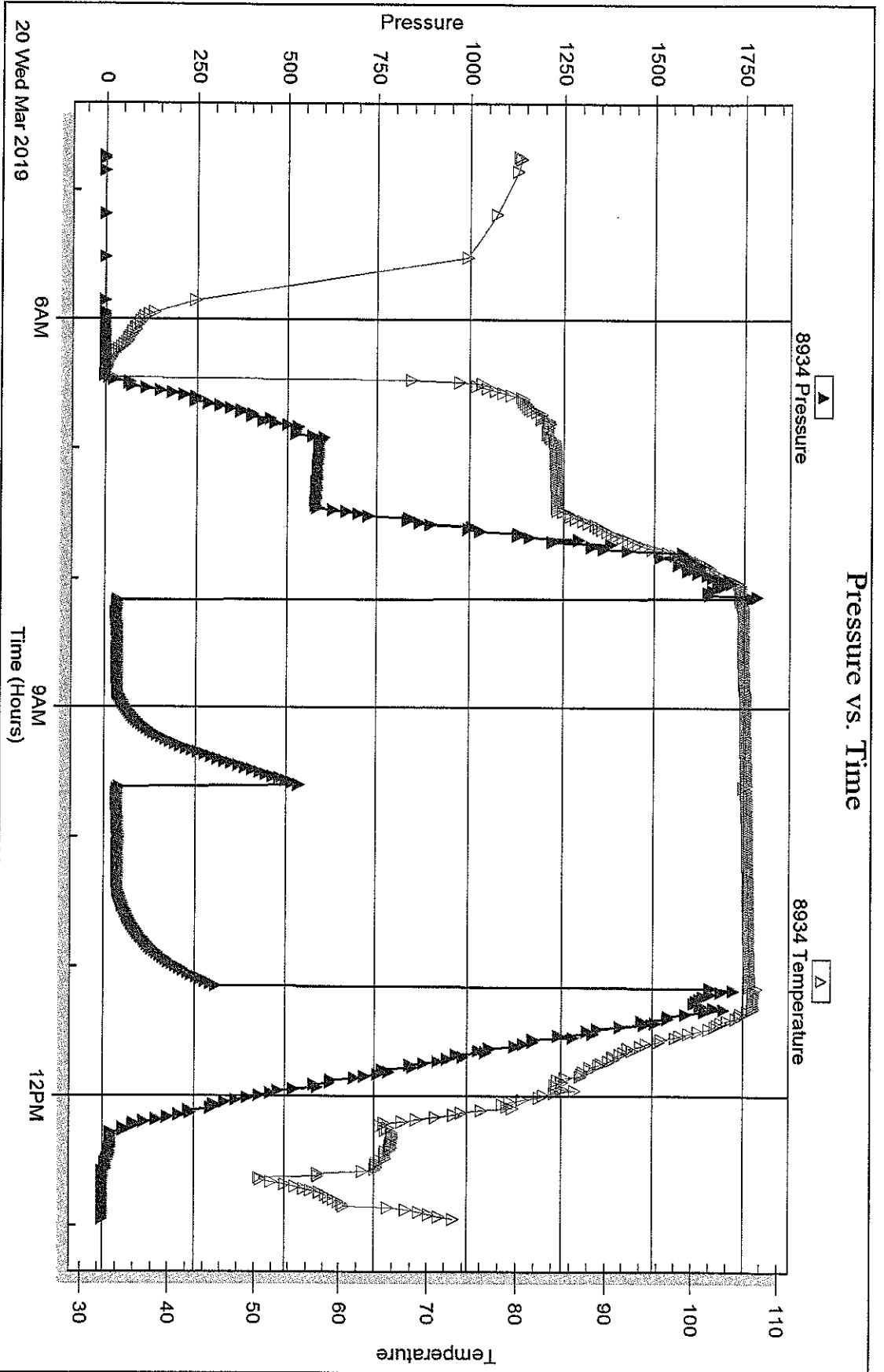
Serial #: 8934

Inside

Castle Resources Inc

Patterson #1

DST Test Number: 1



Triobite Testing, Inc

Ref. No: 65103

Printed: 2019.03.21 @ 11:07:42

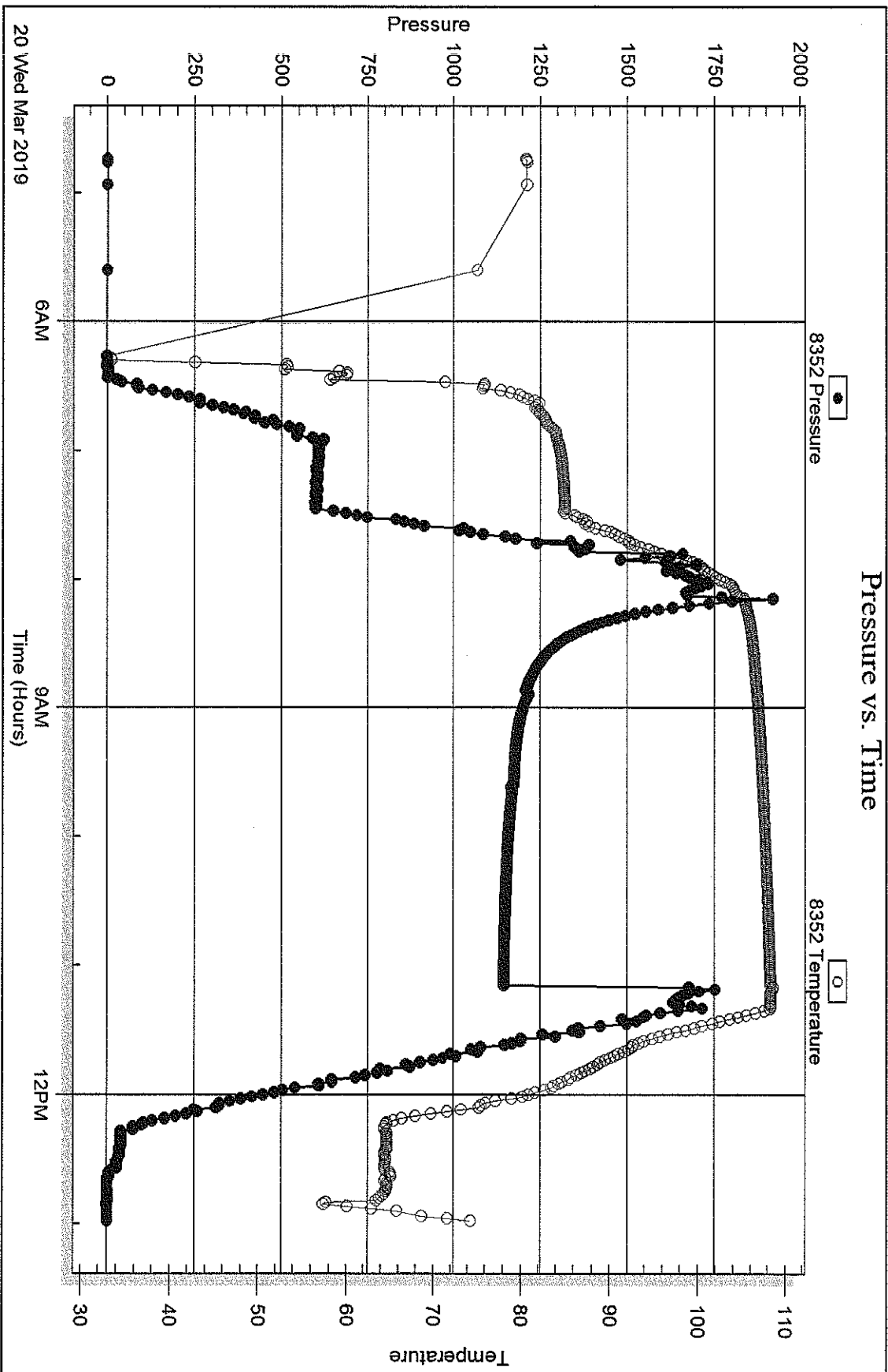


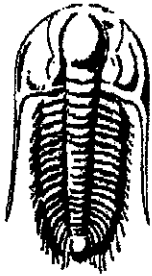
Serial #: 8352

Below (Stratified) Resources Inc

Patterson #1

DST Test Number: 1





**TRILOBITE  
TESTING, INC.**

## DRILL STEM TEST REPORT

Prepared For: **Castle Resources Inc**

PO Box 583  
Russell, KS 67665+0583

ATTN: Jerry Green

**Patterson #1**

**32-7S-19W Rooks,KS**

Start Date: 2019.03.20 @ 13:30:00

End Date: 2019.03.20 @ 18:31:15

Job Ticket #: 65104                      DST #: 2

Trilobite Testing, Inc

1515 Commerce Parkway Hays, KS 67601

ph: 785-625-4778 fax: 785-625-5620

Printed: 2019.03.21 @ 11:06:55

Castle Resources Inc  
32-7S-19W Rooks,KS  
Patterson #1  
Job # 2  
2019.03.20



**TRILOBITE TESTING, INC.**

# DRILL STEM TEST REPORT

Castle Resources Inc  
 PO Box 583  
 Russell, KS 67665+0583  
 ATTN: Jerry Green

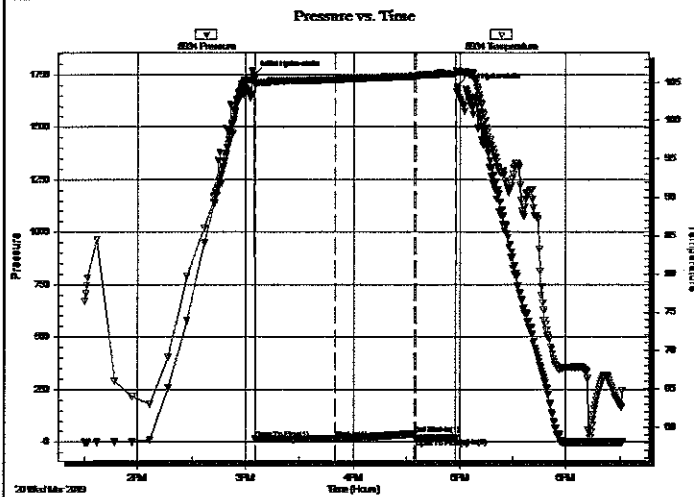
**32-7S-19W Rooks, KS**  
**Patterson #1**  
 Job Ticket: 65104      **DST#: 2**  
 Test Start: 2019.03.20 @ 13:30:00

## GENERAL INFORMATION:

Formation: **LKC 'J'**  
 Deviated: No Whipstock: ft (KB)  
 Test Type: Conventional Straddle (Reset)  
 Time Tool Opened: 15:05:15  
 Tester: Spencer J Staab  
 Time Test Ended: 18:31:15  
 Unit No: 84  
 Interval: **3300.00 ft (KB) To 3335.00 ft (KB) (TVD)**  
 Reference Elevations: 1932.00 ft (KB)  
 Total Depth: 3470.00 ft (KB) (TVD)  
 1927.00 ft (CF)  
 Hole Diameter: 7.88 inches Hole Condition: Fair  
 KB to GR/CF: 5.00 ft

**Serial #: 8934**      Inside  
 Press@RunDepth: 16.49 psig @ 3306.00 ft (KB)      Capacity: 8000.00 psig  
 Start Date: 2019.03.20      End Date: 2019.03.20      Last Calib.: 2019.03.20  
 Start Time: 13:30:15      End Time: 18:31:15      Time On Btm: 2019.03.20 @ 15:05:00  
 Time Off Btm: 2019.03.20 @ 16:58:30

TEST COMMENT: 45-IF-Weak; Built to 1/2"; Died back to 1/4"  
 45-IS-No Return  
 20-FF-No Blow; Flushed; No Help



## PRESSURE SUMMARY

Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	1749.03	105.38	Initial Hydro-static
1	14.91	104.59	Open To Flow (1)
45	16.49	105.34	Shut-In(1)
90	39.78	105.75	End Shut-In(1)
90	17.04	105.80	Open To Flow (2)
113	18.06	106.06	Shut-In(2)
114	1691.81	106.41	Final Hydro-static

## Recovery

Length (ft)	Description	Volume (bbl)
8.00	OSM 100%M	0.11

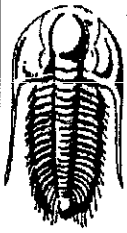
\* Recovery from multiple tests

## Gas Rates

Choke (inches)	Pressure (psig)	Gas Rate (Mcf/d)







**TRILOBITE  
TESTING, INC.**

## DRILL STEM TEST REPORT

TOOL DIAGRAM

Castle Resources Inc

32-7S-19W Rooks, KS

PO Box 583  
Russell, KS 67665+0583

Patterson #1

Job Ticket: 65104

DST#: 2

ATTN: Jerry Green

Test Start: 2019.03.20 @ 13:30:00

### Tool Information

Drill Pipe:	Length: 3295.00 ft	Diameter: 3.82 inches	Volume: 46.71 bbl	Tool Weight: 2000.00 lb
Heavy Wt. Pipe:	Length: ft	Diameter: 2.75 inches	Volume: - bbl	Weight set on Packer: 25000.00 lb
Drill Collar:	Length: 0.00 ft	Diameter: 2.25 inches	Volume: 0.00 bbl	Weight to Pull Loose: 49000.00 lb
			<u>Total Volume: - bbl</u>	Tool Chased ft
Drill Pipe Above KB:	16.00 ft			String Weight: Initial 48000.00 lb
Depth to Top Packer:	3300.00 ft			Final 48000.00 lb
Depth to Bottom Packer:	3471.00 ft			
Interval between Packers:	171.00 ft			
Tool Length:	192.00 ft			
Number of Packers:	1	Diameter: 6.75 inches		

Tool Comments:

Tool Description	Length (ft)	Serial No.	Position	Depth (ft)	Accum. Lengths
Change Over Sub	1.00			3280.00	
Shut In Tool	5.00			3285.00	
Hydraulic tool	5.00			3290.00	
Packer	5.00			3295.00	21.00 Bottom Of Top Packer
Packer	5.00			3300.00	
Stubb	1.00			3301.00	
Perforations	5.00			3306.00	
Recorder	0.00	8934	Inside	3306.00	
Recorder	0.00	9120	Outside	3306.00	
Perforations	24.00			3330.00	
Blank Off Sub	1.00			3331.00	
Top S. Packer	4.00			3335.00	
Straddle Packer	1.00			3336.00	
Stubb	1.00			3337.00	
Perforations	2.00			3339.00	
Change Over Sub	1.00			3340.00	
Recorder	0.00	8352	Below	3340.00	
Drill Pipe	127.00			3467.00	
Change Over Sub	1.00			3468.00	
Bullnose	3.00			3471.00	171.00 Bottom Packers & Anchor
<b>Total Tool Length:</b>	<b>192.00</b>				



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# DRILL STEM TEST REPORT

**FLUID SUMMARY**

Castle Resources Inc  
PO Box 583  
Russell, KS 67665+0583  
ATTN: Jerry Green

**32-7S-19W Rooks, KS**  
**Patterson #1**  
Job Ticket: 65104      **DST#: 2**  
Test Start: 2019.03.20 @ 13:30:00

## Mud and Cushion Information

Mud Type: Gel Chem	Cushion Type:	Oil API:	deg API
Mud Weight: 9.00 lb/gal	Cushion Length: ft	Water Salinity:	ppm
Viscosity: 47.00 sec/qt	Cushion Volume: bbl		
Water Loss: 6.99 in <sup>3</sup>	Gas Cushion Type:		
Resistivity: ohm.m	Gas Cushion Pressure: psig		
Salinity: 3000.00 ppm			
Filter Cake: inches			

## Recovery Information

Recovery Table

Length ft	Description	Volume bbl
8.00	OSM 100%M	0.113

Total Length: 8.00 ft      Total Volume: 0.113 bbl

Num Fluid Samples: 0      Num Gas Bombs: 0      Serial #:

Laboratory Name:      Laboratory Location:

Recovery Comments: 23LCM

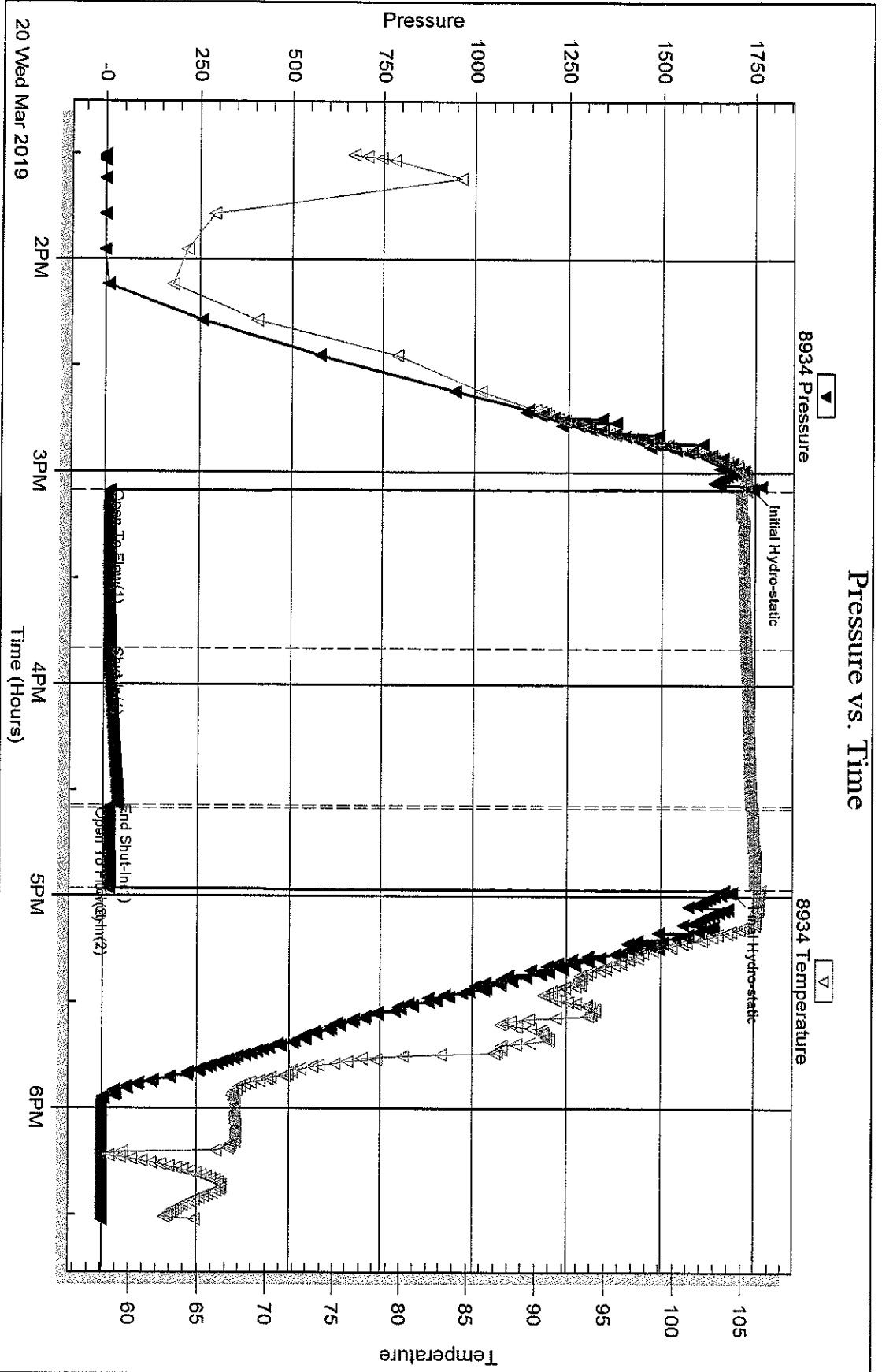
Serial #: 8934

Inside

Castle Resources Inc

Patterson #1

DST Test Number: 2



20 Wed Mar 2019

2PM

3PM

4PM

5PM

6PM

Time (Hours)

Triobite Testing, Inc

Ref. No: 65104

Printed: 2019.03.21 @ 11:06:57

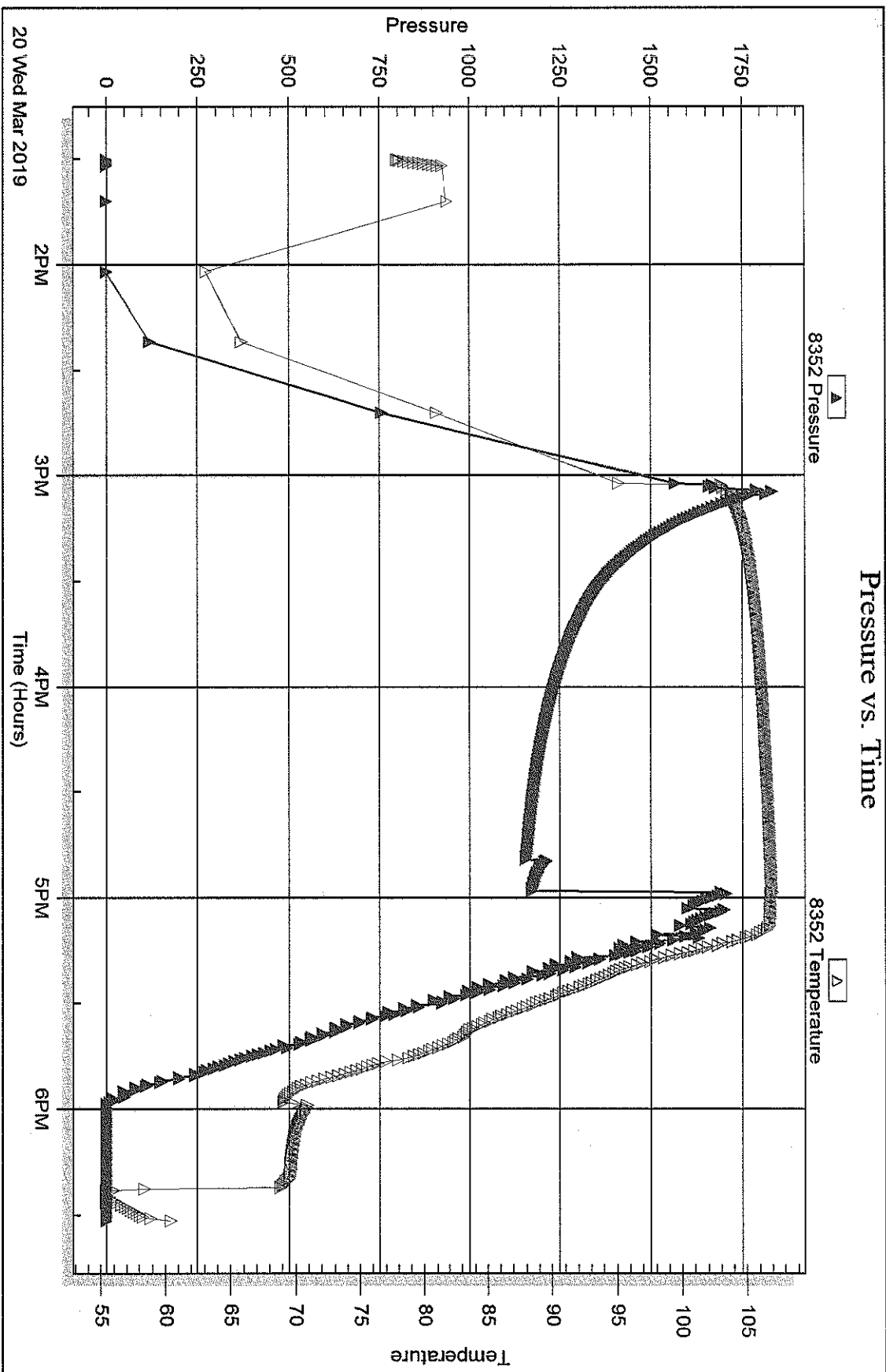


Serial #: 8352

Below (Str ~~Adding~~) Resources Inc

Patterson #1

DST Test Number: 2

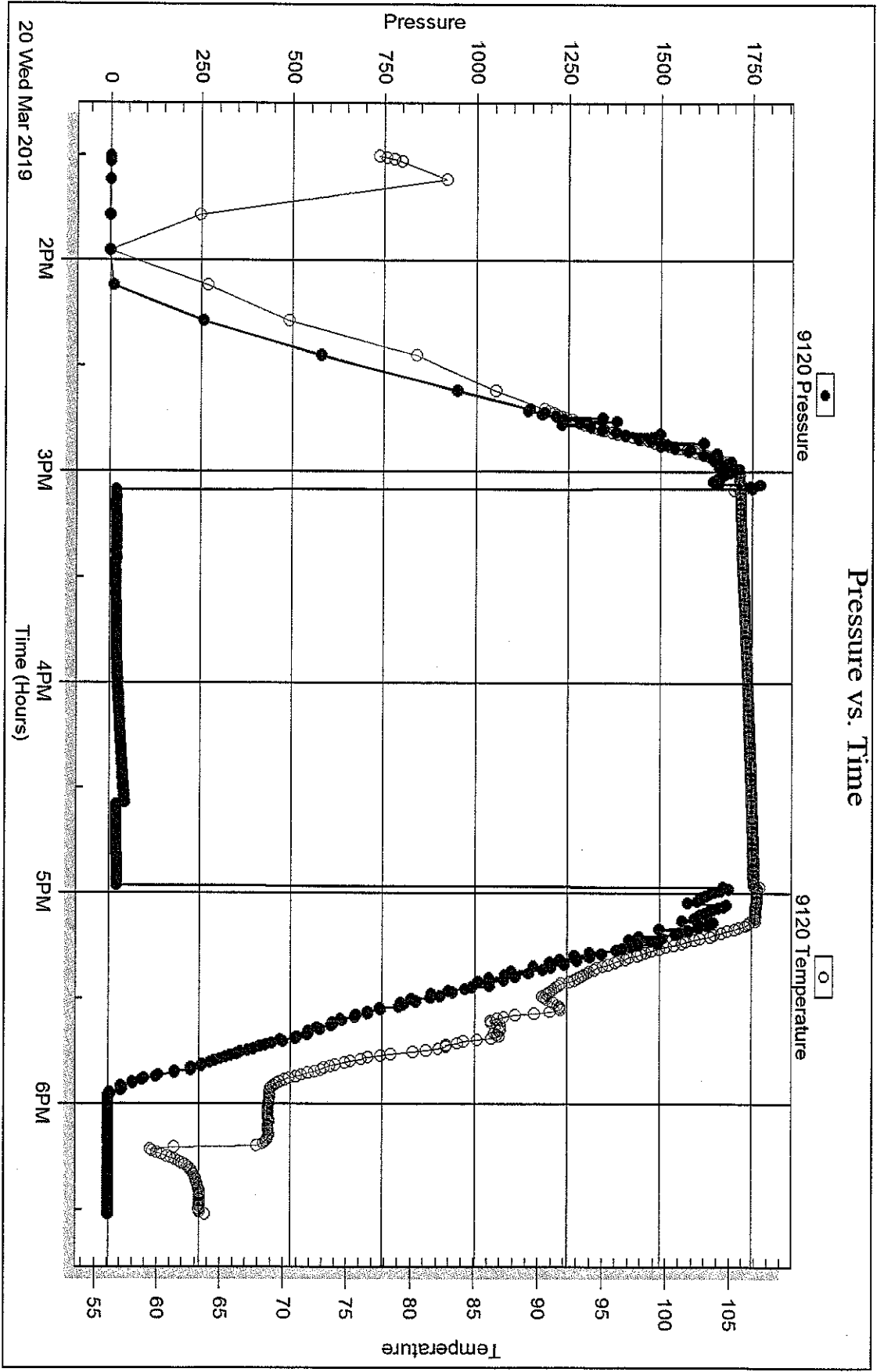


Serial #: 9120

Outside Castle Resources Inc

Paterson #1

DST Test Number: 2



20 Wed Mar 2019

Triobite Testing, Inc

Ref. No: 65104

Printed: 2019.03.21 @ 11:06:57



# TRILOBITE TESTING INC.

1515 Commerce Parkway • Hays, Kansas 67601

## Test Ticket

NO. 65103

Well Name & No. Patterson #1 Test No. 1 Date 03/20/2019  
 Company Castle Resources Inc Elevation 1927 KB 1932 GL  
 Address PO Box 583 Russell KS 67665-10583  
 Co. Rep / Geo. Jerry Green Rig White Knight  
 Location: Sec. 32 Twp 7s Rge. 19W Co. Rocks State KS

Interval Tested 3386' - 3402' Zone Tested Arbuckle  
 Anchor Length 66 68' tail Drill Pipe Run 3332' Mud Wt. 9.0  
 Top Packer Depth 3336' Drill Collars Run — Vls 47  
 Bottom Packer Depth 3402' Wt. Pipe Run — WL 7.0  
 Total Depth 3400' Chlorides 3000 ppm System LCM 2H

Blow Description 17- Wash Built to 3"  
150- No Return  
79- Wash Built to 2"  
78- No Return

Rec	Feet of	%gas	%oil	%water	%mud
<u>10</u>	<u>OCM</u>	<u>10</u>		<u>76</u>	
<u>15</u>	<u>FO</u>	<u>90</u>		<u>10</u>	
Rec	Feet of	%gas	%oil	%water	%mud
Rec	Feet of	%gas	%oil	%water	%mud

Rec Total 25' BHT 107° Gravity 27° API RW — @ — °F Chlorides — ppm

(A) Initial Hydrostatic 1772  Test 1200 T-On Location 03:25  
 (B) First Initial Flow 34  Jars — T-Started 04:44  
 (C) First Final Flow 38  Safety Joint — T-Open 08:05  
 (D) Initial Shut-In 549  Circ Sub — T-Pulled 11:05  
 (E) Second Initial Flow 36  Hourly Standby X1 T-Out 12:55  
 (F) Second Final Flow 39  Mileage 106 Comments —  
 (G) Final Shut-In 319  Sampler —  
 (H) Final Hydrostatic 1710  Straddle 600  EM Tool —  
 Shale Packer —  Ruined Shale Packer —  
 Extra Packer —  Ruined Packer —  
 Extra Recorder —  Extra Copies —

Initial Open 45  
 Initial Shut-In 45  
 Final Flow 45  
 Final Shut-In 45  
 Sub Total 1906 Total 1906

Approved By \_\_\_\_\_ Our Representative Spencer J. Stark Thanks!  
 MP/DST Disc'l \_\_\_\_\_

Tribolite Testing Inc. shall not be liable for damaged 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.

785-259-0056



# TRILOBITE TESTING INC.

1515 Commerce Parkway • Hays, Kansas 67601

## Test Ticket

NO. 65104

Well Name & No. Patterson #1 Test No. 2 Date 03/20/2019  
 Company Castle Resources Inc Elevation 1927 KB 1932 GL  
 Address PO BOX 583 Russell KS 67665 +0583  
 Co. Rep / Geo. Jerry Green Rig White Knight  
 Location: Sec. 32 Twp 7A Rge. 19W Co. Rock State KS

Interval Tested 3306' - 3335' Zone Tested LKC  
 Anchor Length 35' 135' tail Drill Pipe Run 3295' Mud Wt. 9.0  
 Top Packer Depth 3306' Drill Collars Run - Vls 47  
 Bottom Packer Depth 3335' Wt. Pipe Run - WL 7.0  
 Total Depth 3470' Chlorides 3000 ppm System LCM 2H

Blow Description 77- Weak; built to 1/2, died back to 1/4"  
75J- No Return  
77- No Blow; Flushed; No help  
75J- - - -

Rec	Feet of	%gas	%oil	%water	%mud
8'	OSM			100	

Rec Total 8' BHT 106° Gravity - API RW - @ - °F Chlorides - ppm

(A) Initial Hydrostatic 1749  Test 1200 T-On Location 13:00  
 (B) First Initial Flow 14  Jars - T-Started 13:30  
 (C) First Final Flow 16  Safety Joint - T-Open 14:52  
 (D) Initial Shut-In 39  Circ Sub - T-Pulled 16:42  
 (E) Second Initial Flow 17  Hourly Standby - T-Out 18:19  
 (F) Second Final Flow 18  Mileage 106.27 Comments -  
 (G) Final Shut-In -  Sampler -  
 (H) Final Hydrostatic 1691  Straddle 600

Initial Open 45  Shale Packer -  EM Tool -  
 Initial Shut-In 45  Extra Packer -  Ruined Shale Packer -  
 Final Flow 30 ↑  Extra Recorder -  Ruined Packer -  
 Final Shut-In -  Day Standby -  Extra Copies -  
 Sub Total 0  Accessibility - Total 1800  
 Sub Total 1800 MP/DST Disc't -

Approved By - Our Representative Jerry Green Thanks!  
 Trilobite Testing Inc. shall not be liable for damaged 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.

785-259-0056