



DRILL STEM TEST REPORT

Prepared For: **King Production Service Inc.**

502 7th Ave
Yuma, CO 80759

ATTN: Richard Bell

James Dale #11-5

5-1s-36w Rawlins KS

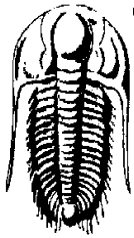
Start Date: 2019.11.17 @ 19:13:00

End Date: 2019.11.18 @ 03:09:30

Job Ticket #: 66459 DST #: 1

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

Printed: 2019.11.21 @ 15:39:46



**TRILOBITE
TESTING, INC.**

DRILL STEM TEST REPORT

King Production Service Inc.

5-1s-36w Rawlins KS

502 7th Ave
Yuma, CO 80759

James Dale #11-5

ATTN: Richard Bell

Job Ticket: 66459

DST#: 1

Test Start: 2019.11.17 @ 19:13:00

GENERAL INFORMATION:

Formation: **LKC " A "**

Deviated: No Whipstock: ft (KB)

Time Tool Opened: 21:34:10

Time Test Ended: 03:09:30

Test Type: Conventional Bottom Hole (Initial)

Tester: Ryan Nichols

Unit No: 71

Interval: 3968.00 ft (KB) To 4018.00 ft (KB) (TVD)

Reference Elevations: 3064.00 ft (KB)

Total Depth: 4018.00 ft (KB) (TVD)

3053.00 ft (CF)

Hole Diameter: 7.88 inches Hole Condition: Good

KB to GR/CF: 11.00 ft

Serial #: 8366 Outside

Press@RunDepth: 19.20 psig @ 3969.00 ft (KB)

Capacity: 8000.00 psig

Start Date: 2019.11.17 End Date: 2019.11.18

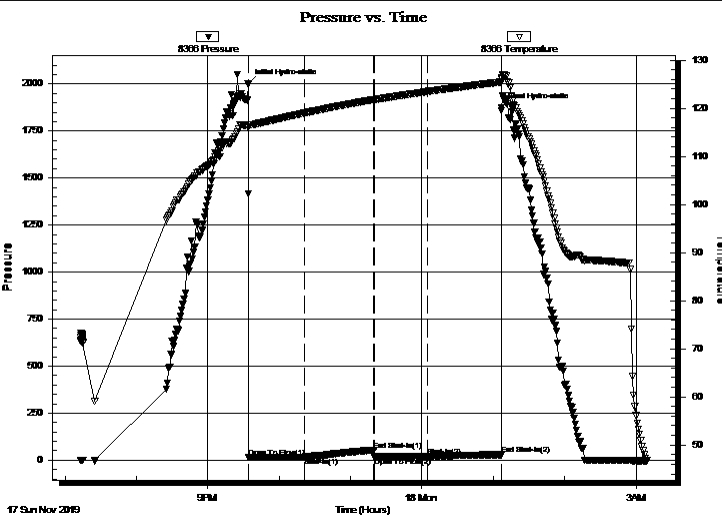
Last Calib.: 2019.11.18

Start Time: 19:13:01 End Time: 03:09:30

Time On Btm: 2019.11.17 @ 21:33:50

Time Off Btm: 2019.11.18 @ 01:06:50

TEST COMMENT: 45 IF - Blow built to 1"
60 ISI - No return
45 FF - Surface blow
60 FSI - No return



PRESSURE SUMMARY

Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	1999.63	116.62	Initial Hydro-static
1	14.75	116.00	Open To Flow (1)
48	16.17	118.99	Shut-In(1)
106	53.70	121.80	End Shut-In(1)
106	17.01	121.79	Open To Flow (2)
151	19.20	123.47	Shut-In(2)
213	28.44	125.46	End Shut-In(2)
214	1874.15	126.24	Final Hydro-static

Recovery

Length (ft)	Description	Volume (bbl)
5.00	OCM - 20%o - 80%M	0.02

Gas Rates

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



**TRILOBITE
TESTING, INC.**

DRILL STEM TEST REPORT

TOOL DIAGRAM

King Production Service Inc.

5-1s-36w Rawlins KS

502 7th Ave
Yuma, CO 80759

James Dale #11-5

Job Ticket: 66459

DST#: 1

ATTN: Richard Bell

Test Start: 2019.11.17 @ 19:13:00

Tool Information

Drill Pipe:	Length: 3854.00 ft	Diameter: 3.80 inches	Volume: 54.06 bbl	Tool Weight: 2000.00 lb
Heavy Wt. Pipe:	Length: 0.00 ft	Diameter: 0.00 inches	Volume: 0.00 bbl	Weight set on Packer: 20000.00 lb
Drill Collar:	Length: 121.00 ft	Diameter: 2.25 inches	Volume: 0.60 bbl	Weight to Pull Loose: 75000.00 lb
			<u>Total Volume: 54.66 bbl</u>	Tool Chased 0.00 ft
Drill Pipe Above KB:	35.00 ft			String Weight: Initial 60000.00 lb
Depth to Top Packer:	3968.00 ft			Final 60000.00 lb
Depth to Bottom Packer:	ft			
Interval between Packers:	50.00 ft			
Tool Length:	78.00 ft			
Number of Packers:	2	Diameter: 6.75 inches		

Tool Comments:

Tool Description	Length (ft)	Serial No.	Position	Depth (ft)	Accum. Lengths
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Shut In Tool	5.00			3945.00	
Hydraulic tool	5.00			3950.00	
Jars	5.00			3955.00	
Safety Joint	3.00			3958.00	
Packer	5.00			3963.00	28.00 Bottom Of Top Packer
Packer	5.00			3968.00	
Stubb	1.00			3969.00	
Recorder	0.00	8353	Inside	3969.00	
Recorder	0.00	8366	Outside	3969.00	
Perforations	13.00			3982.00	
Blank Spacing	33.00			4015.00	
Bullnose	3.00			4018.00	50.00 Bottom Packers & Anchor

Total Tool Length: 78.00



**TRILOBITE
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DRILL STEM TEST REPORT

FLUID SUMMARY

King Production Service Inc.

5-1s-36w Rawlins KS

502 7th Ave
Yuma, CO 80759

James Dale #11-5

Job Ticket: 66459

DST#: 1

ATTN: Richard Bell

Test Start: 2019.11.17 @ 19:13:00

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: 69.00 sec/qt

Cushion Volume:

bbbl

Water Loss: 5.99 in³

Gas Cushion Type:

Resistivity: ohm.m

Gas Cushion Pressure:

psig

Salinity: 600.00 ppm

Filter Cake: 2.00 inches

Recovery Information

Recovery Table

Length ft	Description	Volume bbl
5.00	OCM - 20%o - 80%M	0.025

Total Length: 5.00 ft Total Volume: 0.025 bbl

Num Fluid Samples: 0

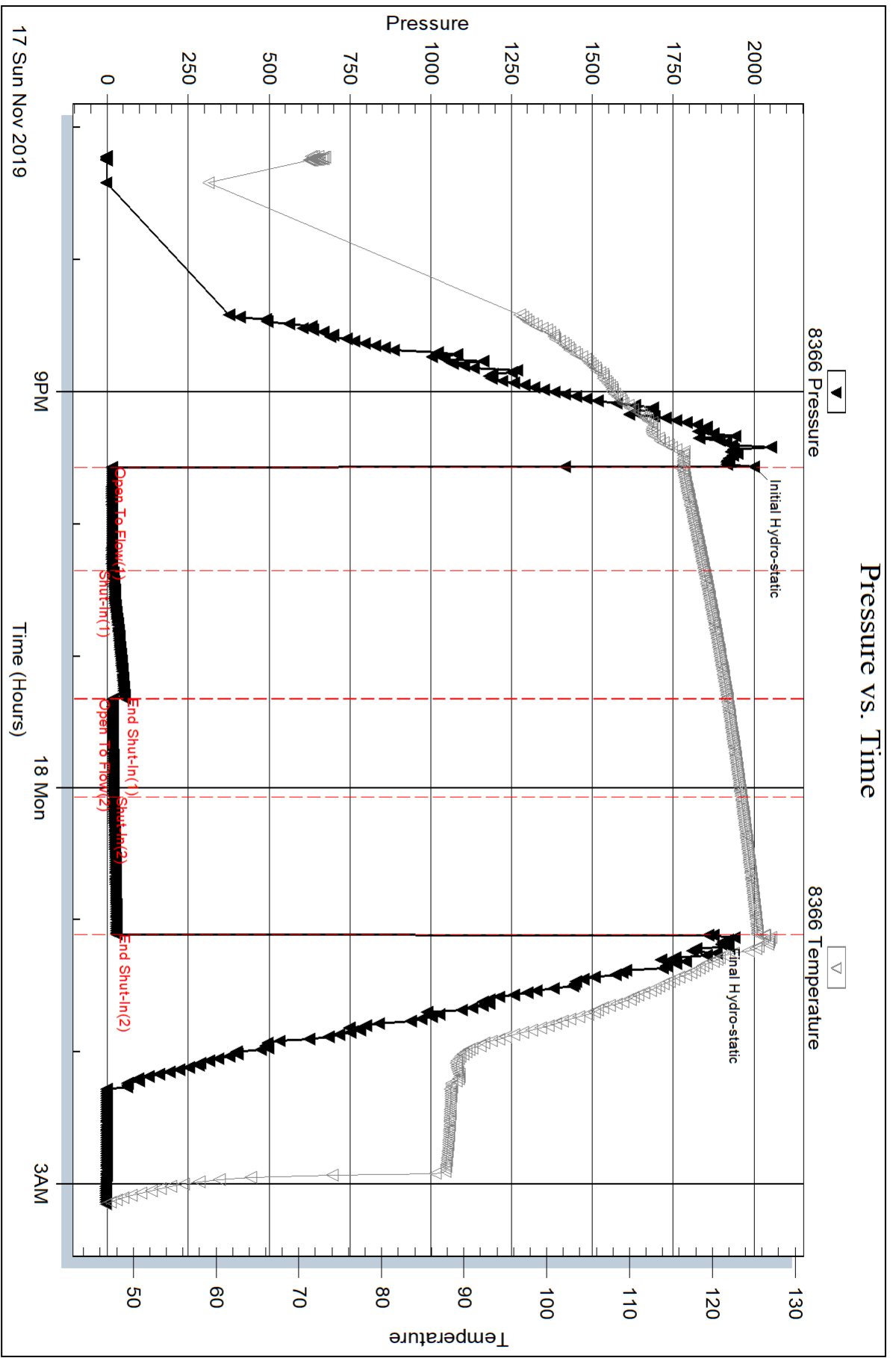
Num Gas Bombs: 0

Serial #:

Laboratory Name:

Laboratory Location:

Recovery Comments:



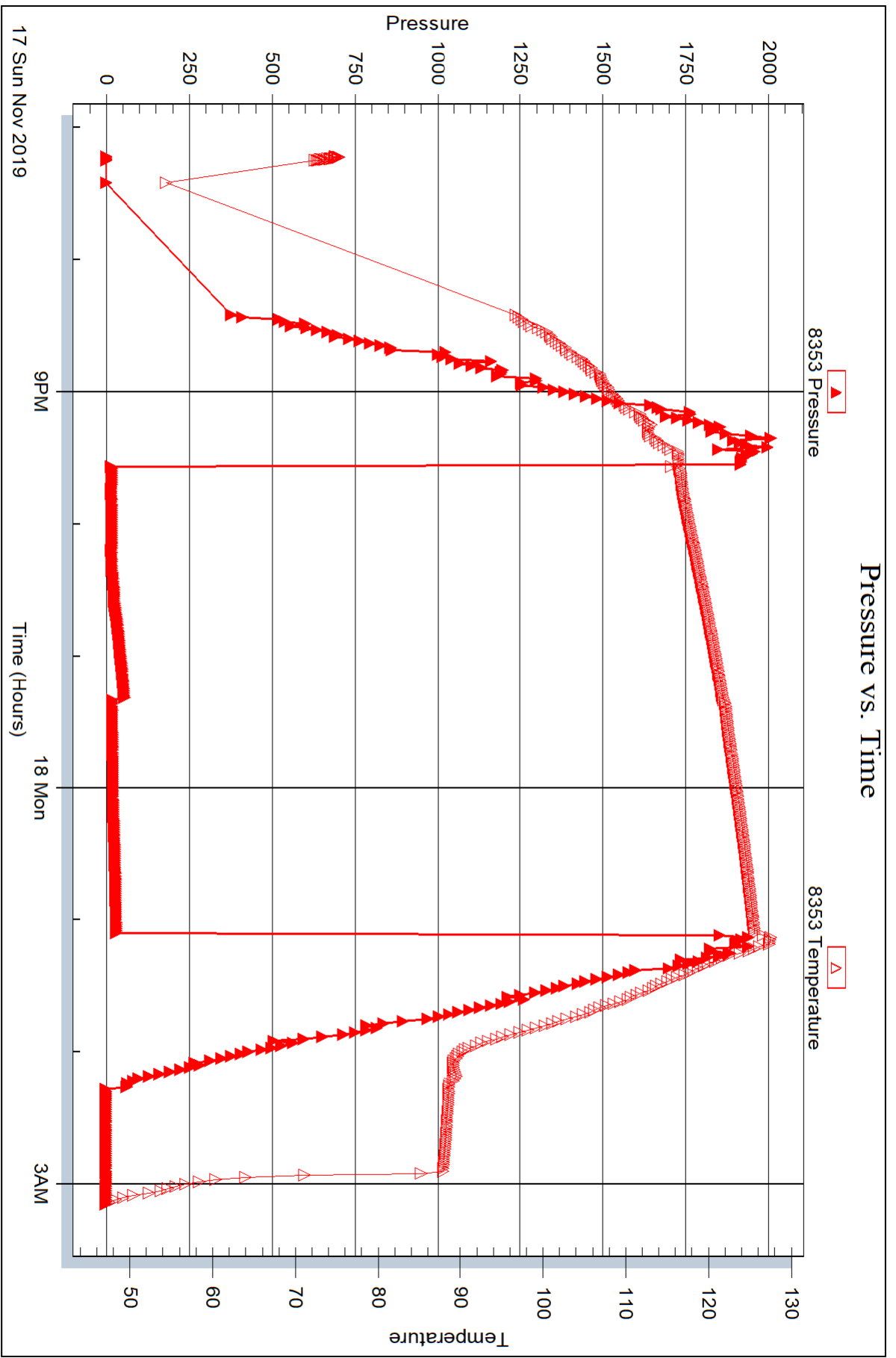
Serial #: 8353

Inside

King Production Service Inc.

James Dale #11-5

DST Test Number: 1





DRILL STEM TEST REPORT

Prepared For: **King Production Service Inc.**

502 7th Ave
Yuma, CO 80759

ATTN: Richard Bell

James Dale #11-5

5-1s-36w Rawlins KS

Start Date: 2019.11.18 @ 15:26:00

End Date: 2019.11.18 @ 23:02:09

Job Ticket #: 66460 DST #: 2

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

Printed: 2019.11.21 @ 15:39:22

King Production Service Inc.
5-1s-36w Rawlins KS
James Dale #11-5
DST # 2
LKC " B, B2, C "

2019.11.18



**TRILOBITE
TESTING, INC.**

DRILL STEM TEST REPORT

King Production Service Inc.

5-1s-36w Rawlins KS

502 7th Ave
Yuma, CO 80759

James Dale #11-5

ATTN: Richard Bell

Job Ticket: 66460

DST#: 2

Test Start: 2019.11.18 @ 15:26:00

GENERAL INFORMATION:

Formation: **LKC " B, B2, C "**

Deviated: No Whipstock: ft (KB)

Time Tool Opened: 17:29:50

Time Test Ended: 23:02:09

Test Type: Conventional Bottom Hole (Reset)

Tester: Ryan Nichols

Unit No: 71

Interval: 4023.00 ft (KB) To 4130.00 ft (KB) (TVD)

Reference Elevations: 3064.00 ft (KB)

Total Depth: 4018.00 ft (KB) (TVD)

3053.00 ft (CF)

Hole Diameter: 7.88 inches Hole Condition: Good

KB to GR/CF: 11.00 ft

Serial #: 8366

Outside

Press@RunDepth: 566.93 psig @ 4024.00 ft (KB)

Capacity: 8000.00 psig

Start Date: 2019.11.18

End Date: 2019.11.18

Last Calib.: 2019.11.18

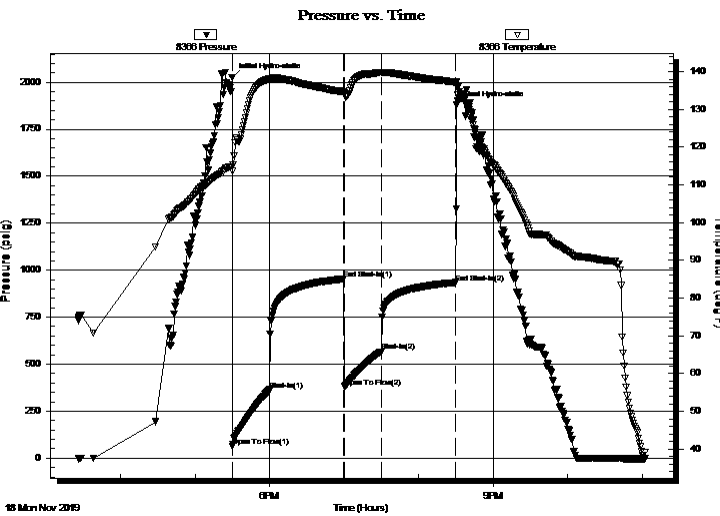
Start Time: 15:26:01

End Time: 23:02:10

Time On Btm: 2019.11.18 @ 17:29:30

Time Off Btm: 2019.11.18 @ 20:30:30

TEST COMMENT: 30 IF - BoB @ 3 1/2 mins
60 ISI - Surface return started @ 12 mins died @ 45 mins
30 FF - BoB @ 5 1/2 mins
60 FSI - No return



PRESSURE SUMMARY

Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	2026.11	114.83	Initial Hydro-static
1	63.44	113.61	Open To Flow (1)
31	363.69	138.03	Shut-In(1)
91	953.71	134.70	End Shut-In(1)
91	379.35	134.35	Open To Flow (2)
121	566.93	139.70	Shut-In(2)
181	934.41	137.16	End Shut-In(2)
181	1878.06	137.05	Final Hydro-static

Recovery

Length (ft)	Description	Volume (bbl)
60.00	WCM - 40%W - 60%M	0.30
1075.00	MCW - 5%M - 95%W	14.52
126.00	OMCW - 5%o - 10%M - 85%W	1.77
252.00	OMCW - 10%o - 30%M - 60%W	3.53
2.00	Free Oil 100%o	0.03

* Recovery from multiple tests

Gas Rates

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



**TRILOBITE
TESTING, INC.**

DRILL STEM TEST REPORT

TOOL DIAGRAM

King Production Service Inc.

5-1s-36w Rawlins KS

502 7th Ave
Yuma, CO 80759

James Dale #11-5

Job Ticket: 66460

DST#: 2

ATTN: Richard Bell

Test Start: 2019.11.18 @ 15:26:00

Tool Information

Drill Pipe:	Length: 3885.00 ft	Diameter: 3.80 inches	Volume: 54.50 bbl	Tool Weight: 2000.00 lb
Heavy Wt. Pipe:	Length: 0.00 ft	Diameter: 0.00 inches	Volume: 0.00 bbl	Weight set on Packer: 20000.00 lb
Drill Collar:	Length: 121.00 ft	Diameter: 2.25 inches	Volume: 0.60 bbl	Weight to Pull Loose: 65000.00 lb
			<u>Total Volume: 55.10 bbl</u>	Tool Chased 0.00 ft
Drill Pipe Above KB:	11.00 ft			String Weight: Initial 60000.00 lb
Depth to Top Packer:	4023.00 ft			Final 64000.00 lb
Depth to Bottom Packer:	ft			
Interval between Packers:	107.00 ft			
Tool Length:	135.00 ft			
Number of Packers:	2	Diameter: 6.75 inches		

Tool Comments:

Tool Description	Length (ft)	Serial No.	Position	Depth (ft)	Accum. Lengths
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Shut In Tool	5.00			4000.00	
Hydraulic tool	5.00			4005.00	
Jars	5.00			4010.00	
Safety Joint	3.00			4013.00	
Packer	5.00			4018.00	28.00 Bottom Of Top Packer
Packer	5.00			4023.00	
Stubb	1.00			4024.00	
Recorder	0.00	8353	Inside	4024.00	
Recorder	0.00	8366	Outside	4024.00	
Perforations	7.00			4031.00	
Blank Spacing	96.00			4127.00	
Bullnose	3.00			4130.00	107.00 Bottom Packers & Anchor

Total Tool Length: 135.00



**TRILOBITE
TESTING, INC.**

DRILL STEM TEST REPORT

FLUID SUMMARY

King Production Service Inc.

5-1s-36w Rawlins KS

502 7th Ave
Yuma, CO 80759

James Dale #11-5

Job Ticket: 66460

DST#: 2

ATTN: Richard Bell

Test Start: 2019.11.18 @ 15:26:00

Mud and Cushion Information

Mud Type: Gel Chem

Cushion Type:

Oil API:

30 deg API

Mud Weight: 9.00 lb/gal

Cushion Length:

ft

Water Salinity:

30000 ppm

Viscosity: 63.00 sec/qt

Cushion Volume:

bbbl

Water Loss: 6.39 in³

Gas Cushion Type:

Resistivity: ohm.m

Gas Cushion Pressure:

psig

Salinity: 1400.00 ppm

Filter Cake: 2.00 inches

Recovery Information

Recovery Table

Length ft	Description	Volume bbl
60.00	WCM - 40%W - 60%M	0.295
1075.00	MCW - 5%M - 95%W	14.524
126.00	OMCW - 5%o - 10%M - 85%W	1.767
252.00	OMCW - 10%o - 30%M - 60%W	3.535
2.00	Free Oil 100%o	0.028

Total Length: 1515.00 ft Total Volume: 20.149 bbl

Num Fluid Samples: 0

Num Gas Bombs: 0

Serial #:

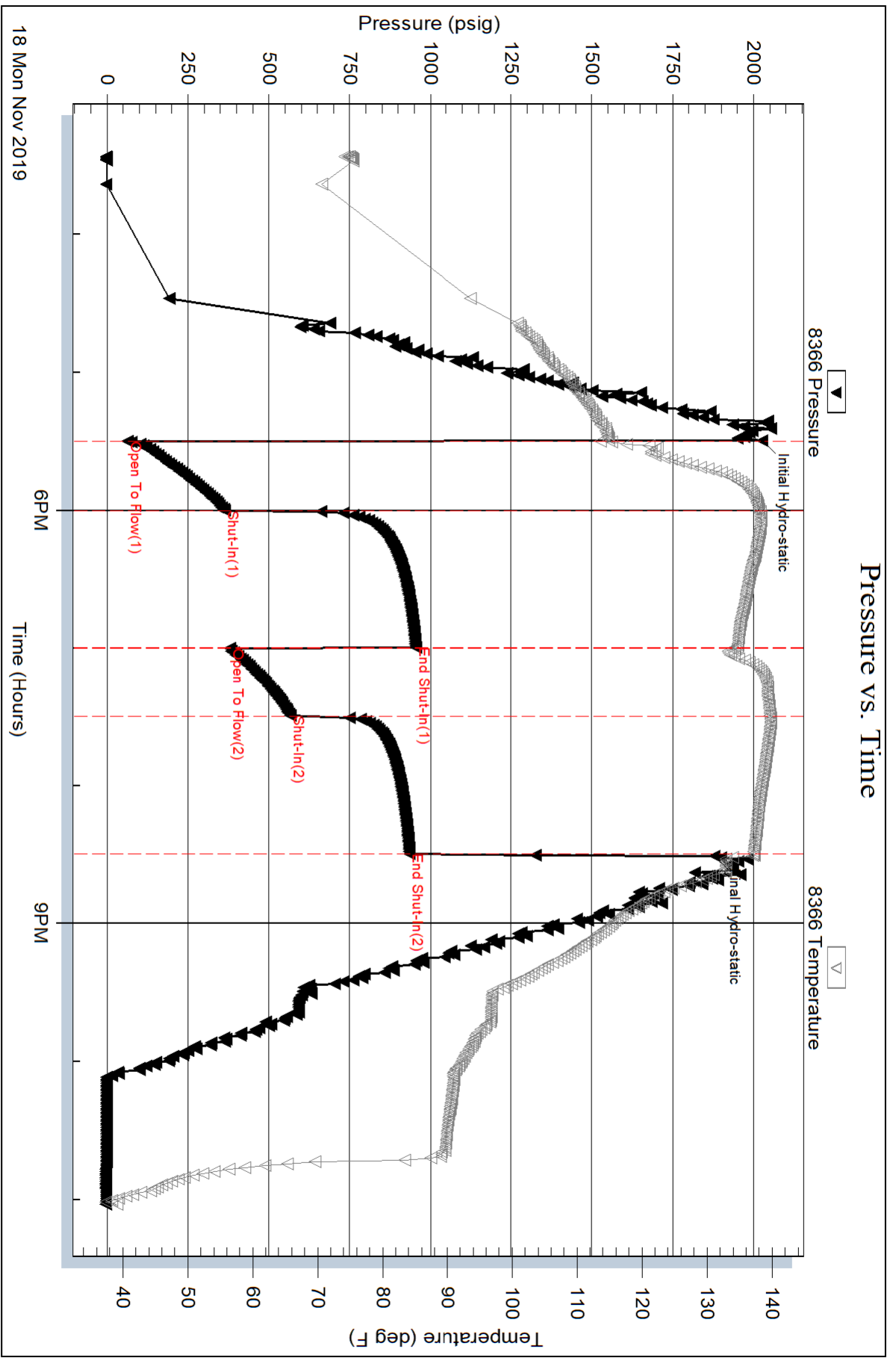
Laboratory Name:

Laboratory Location:

Recovery Comments: Gravity = 28 @ 40 DEG F = 30 COR 60 DEG F

RW = .445 @ 35 DEG F

Chlorides = 30,000 ppm



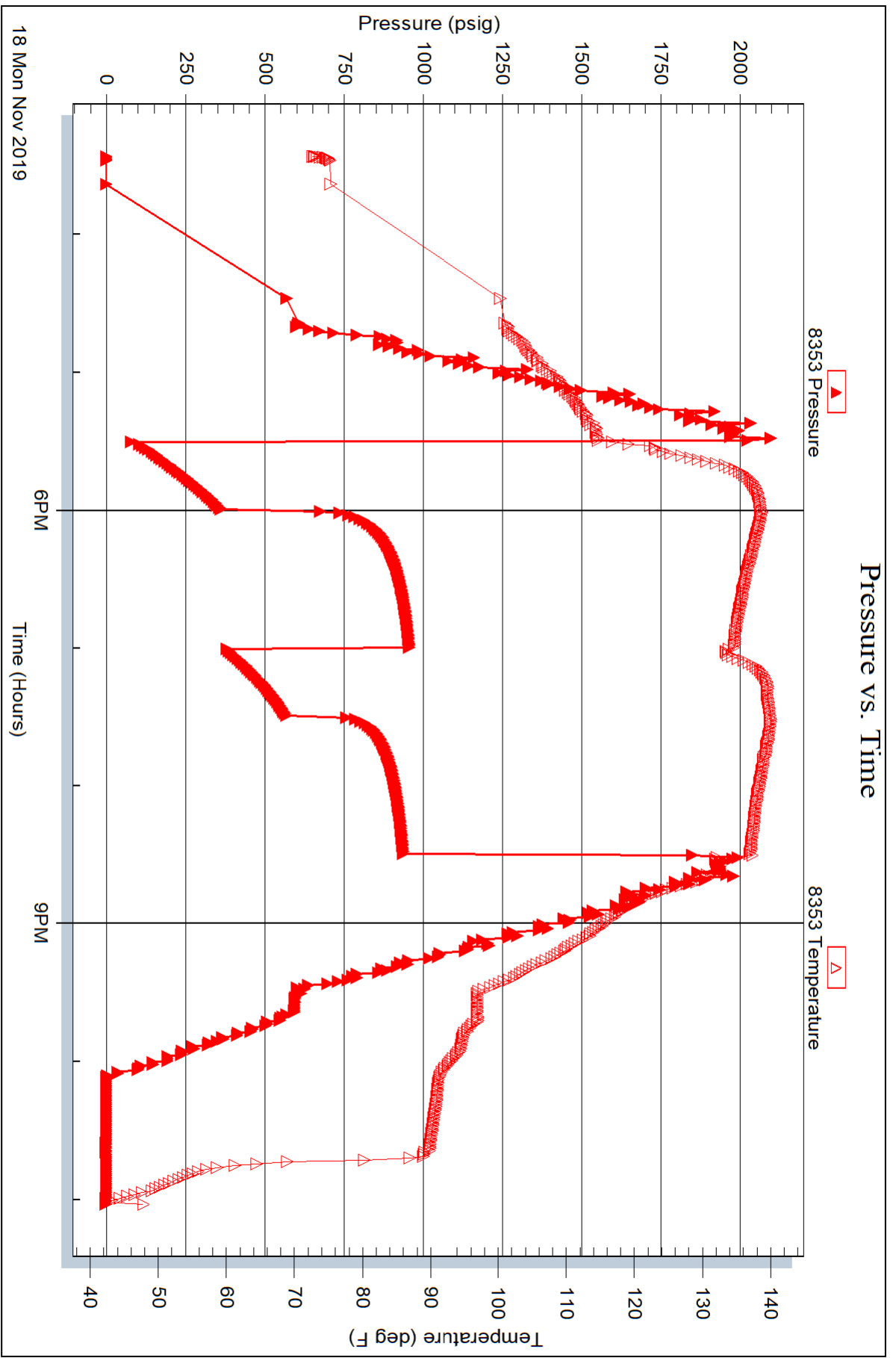
Serial #: 8353

Inside

King Production Service Inc.

James Dale #11-5

DST Test Number: 2





TRILOBITE TESTING INC.

1515 Commerce Parkway • Hays, Kansas 67601

Test Ticket 66459

NO.

Well Name & No. James Dale # 11-5 Test No. 1 Date 11/17/19
 Company King Production Service Inc. Elevation 3064 KB 3053 GL
 Address 502 7th Ave Yuma Co 80759
 Co. Rep / Geo. Richard Bell Rig STP
 Location: Sec. 9 Twp 15 Rge. 36 W Co. Rawlins State KS

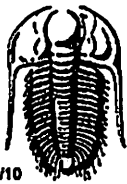
Interval Tested 3968 - 4018 Zone Tested LKC "A"
 Anchor Length 50' Drill Pipe Run 3854' Mud Wt. 8.6
 Top Packer Depth 3963 Drill Collars Run 121' Vis 69
 Bottom Packer Depth 3968 Wt. Pipe Run 0' WL 6.0
 Total Depth 4018 Chlorides 600 ppm System LCM 2
 Blow Description 45 FF - Blow built to 1"
60 ISI - No retur
45 FF - Surface blow
60 FSI - No return

Rec	Feet of	%gas	%oil	%water	%mud
<u>5'</u>	<u>OCM</u>	<u>20</u>	<u>80</u>		
Rec	Feet of	%gas	%oil	%water	%mud
Rec	Feet of	%gas	%oil	%water	%mud
Rec	Feet of	%gas	%oil	%water	%mud

Rec Total 5' BHT 126° Gravity — API RW — @ — F Chlorides — ppm

(A) Initial Hydrostatic <u>2000</u>	<input checked="" type="checkbox"/> Test <u>1300</u>	T-On Location <u>18:45</u>
(B) First Initial Flow <u>15</u>	<input checked="" type="checkbox"/> Jars <u>250</u>	T-Started <u>19:13</u>
(C) First Final Flow <u>16</u>	<input checked="" type="checkbox"/> Safety Joint <u>75</u>	T-Open <u>21:34</u>
(D) Initial Shut-In <u>54</u>	<input type="checkbox"/> Circ Sub	T-Pulled <u>01:06</u>
(E) Second Initial Flow <u>17</u>	<input type="checkbox"/> Hourly Standby	T-Out <u>03:00</u>
(F) Second Final Flow <u>19</u>	<input checked="" type="checkbox"/> Mileage <u>124 RT</u> 124	Comments
(G) Final Shut-In <u>38</u>	<input type="checkbox"/> Sampler	
(H) Final Hydrostatic <u>1874</u>	<input type="checkbox"/> Straddle	
Initial Open <u>45</u>	<input type="checkbox"/> Shale Packer	<input type="checkbox"/> EM Tool
Initial Shut-In <u>60</u>	<input type="checkbox"/> Extra Packer	<input type="checkbox"/> Ruined Shale Packer
Final Flow <u>45</u>	<input type="checkbox"/> Extra Recorder	<input type="checkbox"/> Ruined Packer
Final Shut-In <u>60</u>	<input type="checkbox"/> Day Standby	<input type="checkbox"/> Extra Copies
	<input type="checkbox"/> Accessibility	Sub Total <u>0</u>
	Sub Total <u>1749</u>	Total <u>1749</u>

Approved By _____ Our Representative [Signature]
 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.



TRILOBITE TESTING INC.

1515 Commerce Parkway • Hays, Kansas 67601

Test Ticket 66460

NO.

Well Name & No. James Dale #11-5 Test No. 2 Date 11/18/19
 Company King Production Service Inc. Elevation 3064 KB 3053 GL
 Address 502 7th Ave Yuma Co 80759
 Co. Rep / Geo. Richard Bell Rig STP
 Location: Sec. 5 Twp 1S Rge. 36W Co. Rawlins State KS

Interval Tested 4033 - 4130 Zone Tested LKC "B, B2, C"
 Anchor Length 107' Drill Pipe Run 3885' Mud Wt. 8.9
 Top Packer Depth 4018 Drill Collars Run 121' Vis 63
 Bottom Packer Depth 4023 Wt. Pipe Run 0' WL 6.4
 Total Depth 4130 Chlorides 1400 ppm System LCM 2

Blow Description 30 IF - BoB @ 3 1/2 mins
60 ISI - Surface blow started @ 12 mins died @ 45 mins
30 FF - BoB @ 5 1/2 mins
60 FSI - No return

Rec	Feet of	%gas	%oil	%water	%mud
<u>2'</u>	<u>FO</u>	<u>100</u>			
<u>252'</u>	<u>OMCW</u>	<u>10</u>	<u>60</u>	<u>30</u>	
<u>126'</u>	<u>OMCW</u>	<u>5</u>	<u>85</u>	<u>10</u>	
<u>1075'</u>	<u>MCW</u>		<u>95</u>	<u>5</u>	
<u>60'</u>	<u>WCM</u>		<u>40</u>	<u>60</u>	

Rec Total 1515' BHT 137° Gravity 30.00 @ 60° API RW .445 @ 35° F Chlorides 30,000 ppm

- (A) Initial Hydrostatic 2026
- (B) First Initial Flow 63
- (C) First Final Flow 364
- (D) Initial Shut-In 954
- (E) Second Initial Flow 379
- (F) Second Final Flow 567
- (G) Final Shut-In 934
- (H) Final Hydrostatic 1878

- Initial Open 30
- Initial Shut-In 60
- Final Flow 30
- Final Shut-In 60

- Test 1300
- Jars 250
- Safety Joint 75
- Circ Sub
- Hourly Standby
- Mileage 124 RTX 2
124+124
- Sampler
- Straddle
- Shale Packer
- Extra Packer
- Extra Recorder
- Day Standby 1.5d 14.5h
- Accessibility
- Sub Total 1873

- T-On Location 15:00
- T-Started 15:26
- T-Open 17:30
- T-Pulled 20:30
- T-Out 23:00

Comments loaded tools @ 01:30 on 11/21/19

- EM Tool
- Ruined Shale Packer
- Ruined Packer
- Extra Copies
- Sub Total 800
- Total 2673
- MP/DST Disc't

Approved By _____ Our Representative [Signature]

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.