

Confidentiality Requested:

Yes No

**KANSAS CORPORATION COMMISSION
OIL & GAS CONSERVATION DIVISION**

Form ACO-1

January 2018

Form must be Typed

Form must be Signed

All blanks must be Filled

**WELL COMPLETION FORM
WELL HISTORY - DESCRIPTION OF WELL & LEASE**

OPERATOR: License # _____

Name: _____

Address 1: _____

Address 2: _____

City: _____ State: _____ Zip: _____ + _____

Contact Person: _____

Phone: (_____) _____

CONTRACTOR: License # _____

Name: _____

Wellsite Geologist: _____

Purchaser: _____

Designate Type of Completion:

New Well Re-Entry Workover

Oil WSW SWD

Gas DH EOR

OG GSW

CM (Coal Bed Methane)

Cathodic Other (Core, Expl., etc.): _____

If Workover/Re-entry: Old Well Info as follows:

Operator: _____

Well Name: _____

Original Comp. Date: _____ Original Total Depth: _____

Deepening Re-perf. Conv. to EOR Conv. to SWD

Plug Back Liner Conv. to GSW Conv. to Producer

Commingled Permit #: _____

Dual Completion Permit #: _____

SWD Permit #: _____

EOR Permit #: _____

GSW Permit #: _____

Spud Date or Recompletion Date	Date Reached TD	Completion Date or Recompletion Date
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API No.: _____

Spot Description: _____

_____ - _____ - _____ Sec. _____ Twp. _____ S. R. _____ East West

_____ Feet from North / South Line of Section

_____ Feet from East / West Line of Section

Footages Calculated from Nearest Outside Section Corner:

NE NW SE SW

GPS Location: Lat: _____, Long: _____
(e.g. xx.xxxxx) (e.g. -xxx.xxxxx)

Datum: NAD27 NAD83 WGS84

County: _____

Lease Name: _____ Well #: _____

Field Name: _____

Producing Formation: _____

Elevation: Ground: _____ Kelly Bushing: _____

Total Vertical Depth: _____ Plug Back Total Depth: _____

Amount of Surface Pipe Set and Cemented at: _____ Feet

Multiple Stage Cementing Collar Used? Yes No

If yes, show depth set: _____ Feet

If Alternate II completion, cement circulated from: _____

feet depth to: _____ w/ _____ sx cmt.

Drilling Fluid Management Plan

(Data must be collected from the Reserve Pit)

Chloride content: _____ ppm Fluid volume: _____ bbls

Dewatering method used: _____

Location of fluid disposal if hauled offsite:

Operator Name: _____

Lease Name: _____ License #: _____

Quarter _____ Sec. _____ Twp. _____ S. R. _____ East West

County: _____ Permit #: _____

AFFIDAVIT

I am the affiant and I hereby certify that all requirements of the statutes, rules and regulations promulgated to regulate the oil and gas industry have been fully complied with and the statements herein are complete and correct to the best of my knowledge.

Submitted Electronically

KCC Office Use ONLY

Confidentiality Requested

Date: _____

Confidential Release Date: _____

Wireline Log Received Drill Stem Tests Received

Geologist Report / Mud Logs Received

UIC Distribution

ALT I II III Approved by: _____ Date: _____

Operator Name: _____ Lease Name: _____ Well #: _____

Sec. _____ Twp. _____ S. R. _____ East West County: _____

INSTRUCTIONS: Show important tops of formations penetrated. Detail all cores. Report all final copies of drill stems tests giving interval tested, time tool open and closed, flowing and shut-in pressures, whether shut-in pressure reached static level, hydrostatic pressures, bottom hole temperature, fluid recovery, and flow rates if gas to surface test, along with final chart(s). Attach extra sheet if more space is needed.

Final Radioactivity Log, Final Logs run to obtain Geophysical Data and Final Electric Logs must be emailed to kcc-well-logs@kcc.ks.gov. Digital electronic log files must be submitted in LAS version 2.0 or newer AND an image file (TIFF or PDF).

Drill Stem Tests Taken <input type="checkbox"/> Yes <input type="checkbox"/> No <i>(Attach Additional Sheets)</i> Samples Sent to Geological Survey <input type="checkbox"/> Yes <input type="checkbox"/> No Cores Taken <input type="checkbox"/> Yes <input type="checkbox"/> No Electric Log Run <input type="checkbox"/> Yes <input type="checkbox"/> No Geologist Report / Mud Logs <input type="checkbox"/> Yes <input type="checkbox"/> No List All E. Logs Run: _____	<input type="checkbox"/> Log Formation (Top), Depth and Datum <input type="checkbox"/> Sample Name Top Datum
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CASING RECORD <input type="checkbox"/> New <input type="checkbox"/> Used							
Report all strings set-conductor, surface, intermediate, production, etc.							
Purpose of String	Size Hole Drilled	Size Casing Set (In O.D.)	Weight Lbs. / Ft.	Setting Depth	Type of Cement	# Sacks Used	Type and Percent Additives

ADDITIONAL CEMENTING / SQUEEZE RECORD				
Purpose:	Depth Top Bottom	Type of Cement	# Sacks Used	Type and Percent Additives
<input type="checkbox"/> Perforate <input type="checkbox"/> Protect Casing <input type="checkbox"/> Plug Back TD <input type="checkbox"/> Plug Off Zone				

1. Did you perform a hydraulic fracturing treatment on this well? Yes No *(If No, skip questions 2 and 3)*
2. Does the volume of the total base fluid of the hydraulic fracturing treatment exceed 350,000 gallons? Yes No *(If No, skip question 3)*
3. Was the hydraulic fracturing treatment information submitted to the chemical disclosure registry? Yes No *(If No, fill out Page Three of the ACO-1)*

Date of first Production/Injection or Resumed Production/Injection:	Producing Method: <input type="checkbox"/> Flowing <input type="checkbox"/> Pumping <input type="checkbox"/> Gas Lift <input type="checkbox"/> Other <i>(Explain)</i> _____			
Estimated Production Per 24 Hours	Oil Bbls.	Gas Mcf	Water Bbls.	Gas-Oil Ratio Gravity

DISPOSITION OF GAS: <input type="checkbox"/> Vented <input type="checkbox"/> Sold <input type="checkbox"/> Used on Lease <i>(If vented, Submit ACO-18.)</i>	METHOD OF COMPLETION: <input type="checkbox"/> Open Hole <input type="checkbox"/> Perf. <input type="checkbox"/> Dually Comp. <input type="checkbox"/> Commingled <i>(Submit ACO-5) (Submit ACO-4)</i>	PRODUCTION INTERVAL: Top Bottom
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Shots Per Foot	Perforation Top	Perforation Bottom	Bridge Plug Type	Bridge Plug Set At	Acid, Fracture, Shot, Cementing Squeeze Record <i>(Amount and Kind of Material Used)</i>

TUBING RECORD:	Size:	Set At:	Packer At:	
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Form	ACO1 - Well Completion
Operator	Chris Batchman Inc.
Well Name	HERTER 5
Doc ID	1570721

All Electric Logs Run

Dual induction
Dual Compensated
Micro log
Sonic log

Form	ACO1 - Well Completion
Operator	Chris Batchman Inc.
Well Name	HERTER 5
Doc ID	1570721

Tops

Name	Top	Datum
Anhydrite	509	+1275
Base Anhydrite	529	+1255
Topeka	2650	-866
Heebner	2918	-1134
Toronto	2935	-1151
Douglas	2920	-1166
Brown lime	3044	-1260
Lansing	3062	-1278
Arbuckle	3304	-1520
Rotary Total Depth	3400	-1616
Log Total Depth	3401	-1717



DRILL STEM TEST REPORT

Prepared For: **Chris Batchman Inc**

244 SE 120 Ave
Ellinwood KS 67526+9200

ATTN: Jim Musgrove

Herter #5

8-20s-11w Barton,KS

Start Date: 2021.04.26 @ 06:55:00

End Date: 2021.04.26 @ 14:58:41

Job Ticket #: 66881 DST #: 1

Trilobite Testing, Inc
PO Box 362 Hays, KS 67601
ph: 785-625-4778 fax: 785-625-5620

Printed: 2021.04.28 @ 11:21:06



TRILOBITE TESTING, INC

DRILL STEM TEST REPORT

Chris Batchman Inc
 244 SE 120 Ave
 Ellinwood KS 67526+9200
 ATTN: Jim Musgrove

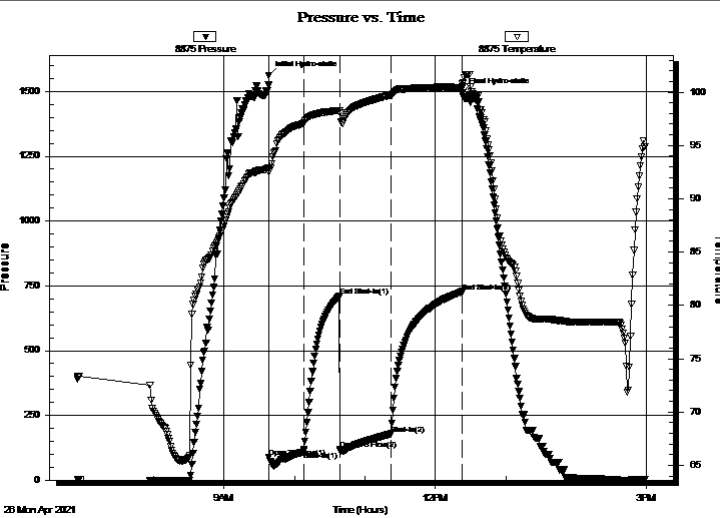
8-20s-11w Barton,KS
Herter #5
 Job Ticket: 66881 **DST#: 1**
 Test Start: 2021.04.26 @ 06:55:00

GENERAL INFORMATION:

Formation: **LKC F - G**
 Deviated: No Whipstock: ft (KB)
 Time Tool Opened: 09:38:02
 Time Test Ended: 14:58:41
 Interval: **3090.00 ft (KB) To 3147.00 ft (KB) (TVD)**
 Total Depth: 3147.00 ft (KB) (TVD)
 Hole Diameter: 7.88 inches Hole Condition: Fair
 Test Type: Conventional Bottom Hole (Initial)
 Tester: Spencer J Staab
 Unit No: 84
 Reference Elevations: 1784.00 ft (KB)
 1775.00 ft (CF)
 KB to GR/CF: 9.00 ft

Serial #: 8875 Outside
 Press@RunDepth: 178.83 psig @ 3093.00 ft (KB) Capacity: psig
 Start Date: 2021.04.26 End Date: 2021.04.26 Last Calib.: 2021.04.26
 Start Time: 06:55:01 End Time: 14:58:41 Time On Btm: 2021.04.26 @ 09:37:57
 Time Off Btm: 2021.04.26 @ 12:23:07

TEST COMMENT: 30-IF-BOB 45 secs Built to 295"
 30-ISI-Very Weak Surface 10 mins to Bleed off
 45-FF-BOB 20 secs GTS 10 mins TSTM Built to 349"
 60-FSI-9 mins to bleed off Surface blow to 6 1/2" Died back to 1 1/2"



PRESSURE SUMMARY			
Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	1562.27	92.91	Initial Hydro-static
1	89.38	92.49	Open To Flow (1)
30	110.94	97.09	Shut-In(1)
61	710.04	98.26	End Shut-In(1)
61	117.61	98.07	Open To Flow (2)
105	178.83	99.69	Shut-In(2)
165	728.02	100.45	End Shut-In(2)
166	1496.07	100.80	Final Hydro-static

Recovery		
Length (ft)	Description	Volume (bbl)
60.00	GMCW 25%G 30%M 45%W	0.85
40.00	GWCMO 40%G 10%W 10%M 40%O	0.57
250.00	GO 75%G 25%O	3.54
90.00	GM w/oil spots 30%G 70%M	1.28
0.00	GTS	0.00

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



**TRILOBITE
TESTING, INC**

DRILL STEM TEST REPORT

TOOL DIAGRAM

Chris Batchman Inc
244 SE 120 Ave
Ellinwood KS 67526+9200
ATTN: Jim Musgrove

8-20s-11w Barton,KS
Herter #5
Job Ticket: 66881 **DST#: 1**
Test Start: 2021.04.26 @ 06:55:00

Tool Information

Drill Pipe:	Length: 3094.00 ft	Diameter: 3.82 inches	Volume: 43.86 bbl	Tool Weight:	2200.00 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:	45000.00 lb
			<u>Total Volume:</u>	Tool Chased	ft
Drill Pipe Above KB:	32.00 ft			String Weight: Initial	33000.00 lb
Depth to Top Packer:	3090.00 ft			Final	36000.00 lb
Depth to Bottom Packer:	ft				
Interval between Packers:	57.00 ft				
Tool Length:	85.00 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			3063.00	
Change Over Sub	1.00			3064.00	
Shut In Tool	5.00			3069.00	
Hydraulic tool	5.00		Fluid	3074.00	
Gap Sub	4.00			3078.00	
Safety Joint	3.00			3081.00	
Packer	5.00			3086.00	28.00 Bottom Of Top Packer
Packer	4.00			3090.00	
Stubb	1.00			3091.00	
Perforations	1.00			3092.00	
Change Over Sub	1.00			3093.00	
Recorder	0.00	6838	Inside	3093.00	
Recorder	0.00	8875	Outside	3093.00	
Drill Pipe	32.00			3125.00	
Change Over Sub	1.00			3126.00	
Perforations	18.00			3144.00	
Bullnose	3.00			3147.00	57.00 Bottom Packers & Anchor
Total Tool Length:	85.00				



**TRILOBITE
TESTING, INC**

DRILL STEM TEST REPORT

FLUID SUMMARY

Chris Batchman Inc
244 SE 120 Ave
Ellinwood KS 67526+9200
ATTN: Jim Musgrove

8-20s-11w Barton,KS
Herter #5
Job Ticket: 66881 **DST#: 1**
Test Start: 2021.04.26 @ 06:55:00

Mud and Cushion Information

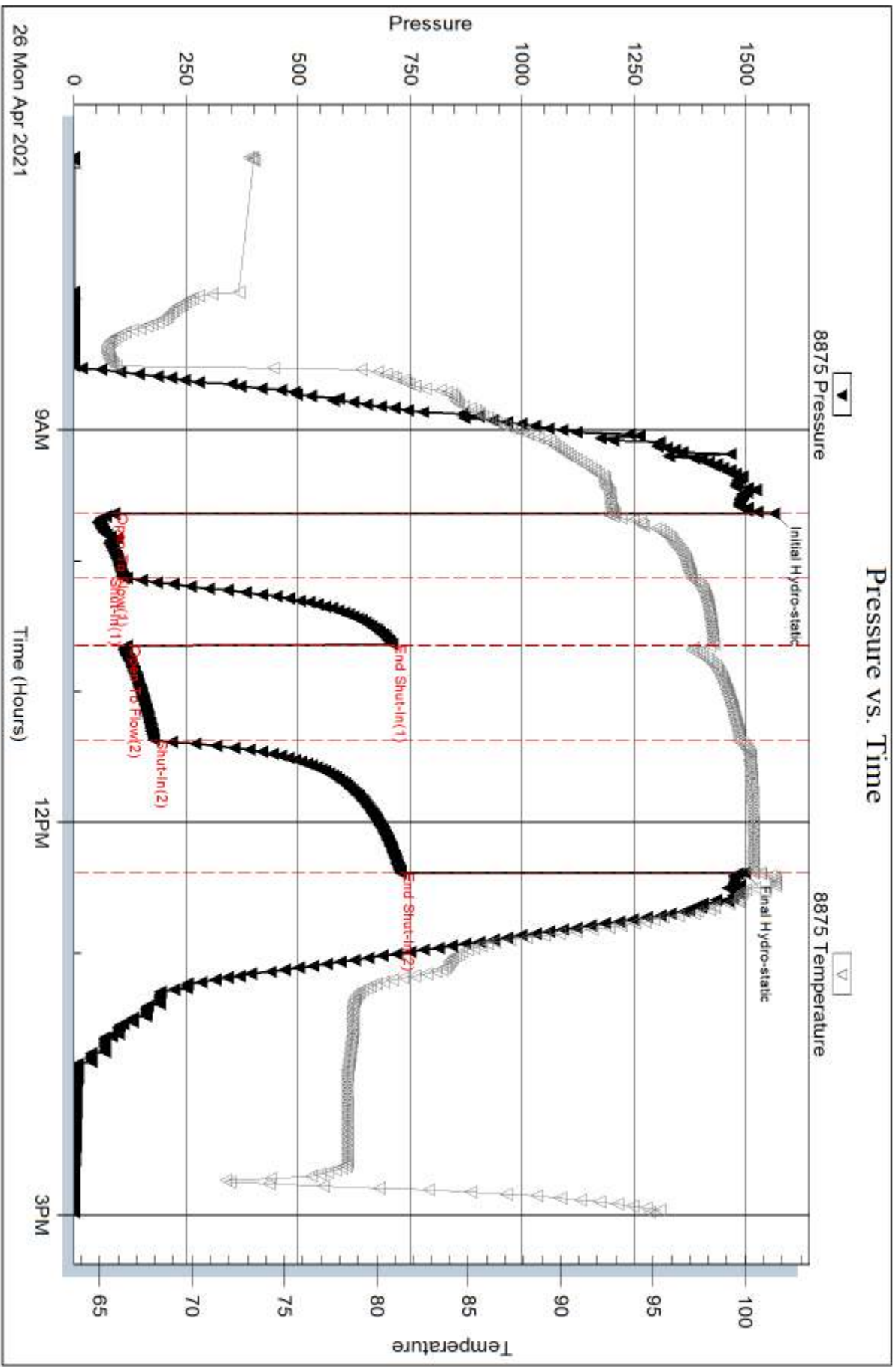
Mud Type: Gel Chem	Cushion Type:	Oil API: 36 deg API
Mud Weight: 8.00 lb/gal	Cushion Length: ft	Water Salinity: 61000 ppm
Viscosity: 63.00 sec/qt	Cushion Volume: bbl	
Water Loss: 8.77 in ³	Gas Cushion Type:	
Resistivity: ohm.m	Gas Cushion Pressure: psig	
Salinity: 2900.00 ppm		
Filter Cake: inches		

Recovery Information

Recovery Table

Length ft	Description	Volume bbl
60.00	GMCW 25%G 30%M 45%W	0.851
40.00	GWCMO 40%G 10%W 10%M 40%O	0.567
250.00	GO 75%G 25%O	3.544
90.00	GM w /oil spots 30%G 70%M	1.276
0.00	GTS	0.000

Total Length: 440.00 ft Total Volume: 6.238 bbl
 Num Fluid Samples: 0 Num Gas Bombs: 0 Serial #:
 Laboratory Name: Laboratory Location:
 Recovery Comments: 2#LCM
 RW=.112@80F



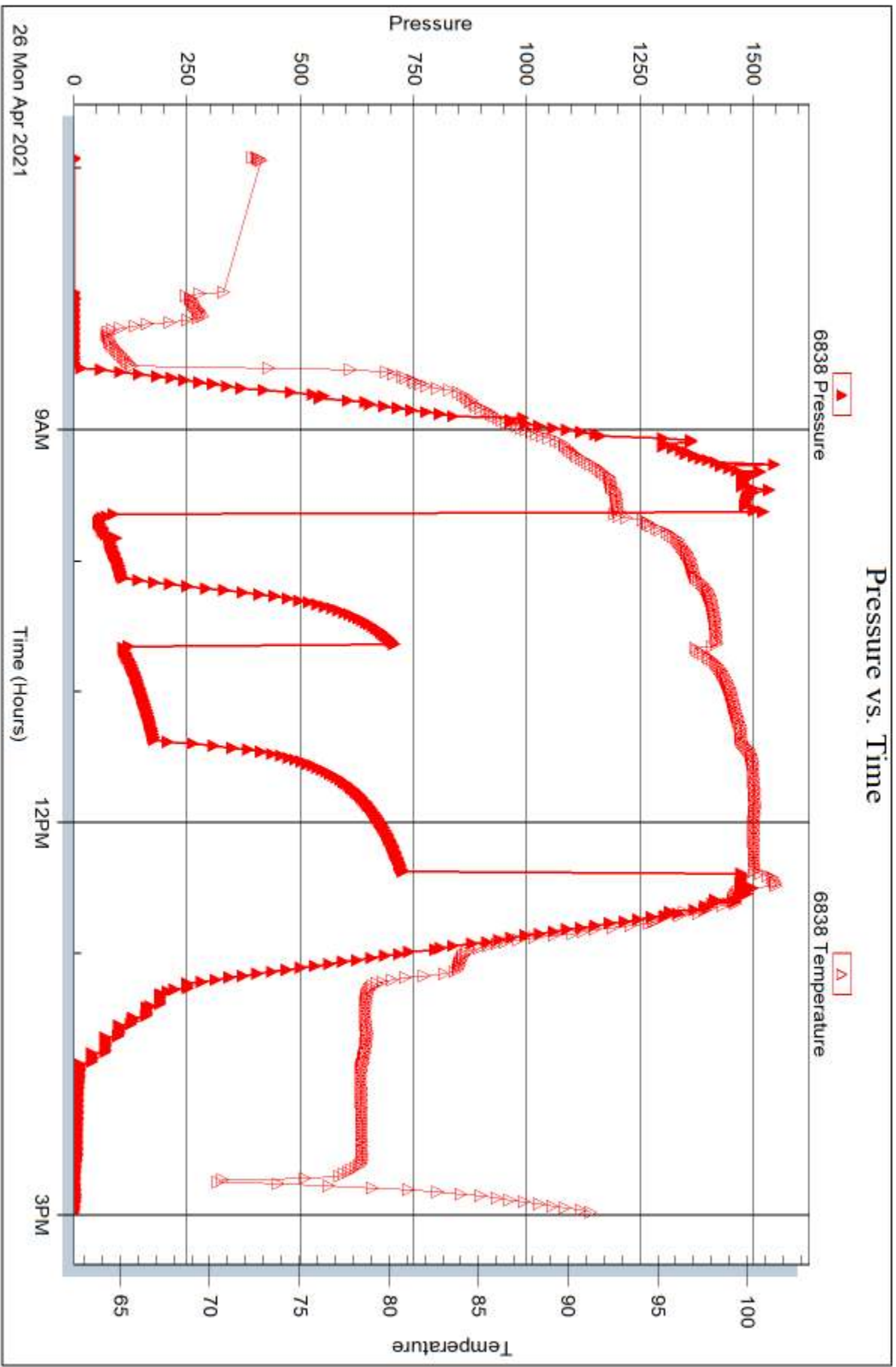
Serial #: 6838

Inside

Chris Batchman Inc

Header #5

DST Test Number: 1



Triobite Testing, Inc

Ref. No: 66881

Printed: 2021.04.28 @ 11:21:07



DRILL STEM TEST REPORT

Prepared For: **Chris Batchman Inc**

244 SE 120 Ave
Ellinwood KS 67526+9200

ATTN: Jim Musgrove

Herter #5

8-20s-11w Barton,KS

Start Date: 2021.04.27 @ 01:42:00

End Date: 2021.04.27 @ 06:21:17

Job Ticket #: 66882 DST #: 2

Trilobite Testing, Inc

PO Box 362 Hays, KS 67601

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

Printed: 2021.04.28 @ 11:20:21



**TRILOBITE
TESTING, INC**

DRILL STEM TEST REPORT

TOOL DIAGRAM

Chris Batchman Inc
244 SE 120 Ave
Ellinwood KS 67526+9200
ATTN: Jim Musgrove

8-20s-11w Barton,KS
Herter #5
Job Ticket: 66882 **DST#: 2**
Test Start: 2021.04.27 @ 01:42:00

Tool Information

Drill Pipe:	Length: 3192.00 ft	Diameter: 3.82 inches	Volume: 45.25 bbl	Tool Weight:	2200.00 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:	45000.00 lb
			<u>Total Volume:</u>	Tool Chased	ft
			- bbl	String Weight: Initial	35000.00 lb
Drill Pipe Above KB:	20.00 ft			Final	35000.00 lb
Depth to Top Packer:	3200.00 ft				
Depth to Bottom Packer:	ft				
Interval between Packers:	54.00 ft				
Tool Length:	82.00 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			3173.00	
Change Over Sub	1.00			3174.00	
Shut In Tool	5.00			3179.00	
Hydraulic tool	5.00		Fluid	3184.00	
Gap Sub	4.00			3188.00	
Safety Joint	3.00			3191.00	
Packer	5.00			3196.00	28.00 Bottom Of Top Packer
Packer	4.00			3200.00	
Stubb	1.00			3201.00	
Perforations	1.00			3202.00	
Change Over Sub	1.00			3203.00	
Recorder	0.00	6838	Inside	3203.00	
Recorder	0.00	8875	Inside	3203.00	
Drill Pipe	32.00			3235.00	
Change Over Sub	1.00			3236.00	
Perforations	15.00			3251.00	
Bullnose	3.00			3254.00	54.00 Bottom Packers & Anchor
Total Tool Length:	82.00				



**TRILOBITE
TESTING, INC**

DRILL STEM TEST REPORT

FLUID SUMMARY

Chris Batchman Inc
244 SE 120 Ave
Ellinwood KS 67526+9200
ATTN: Jim Musgrove

8-20s-11w Barton,KS
Herter #5
Job Ticket: 66882 **DST#: 2**
Test Start: 2021.04.27 @ 01:42:00

Mud and Cushion Information

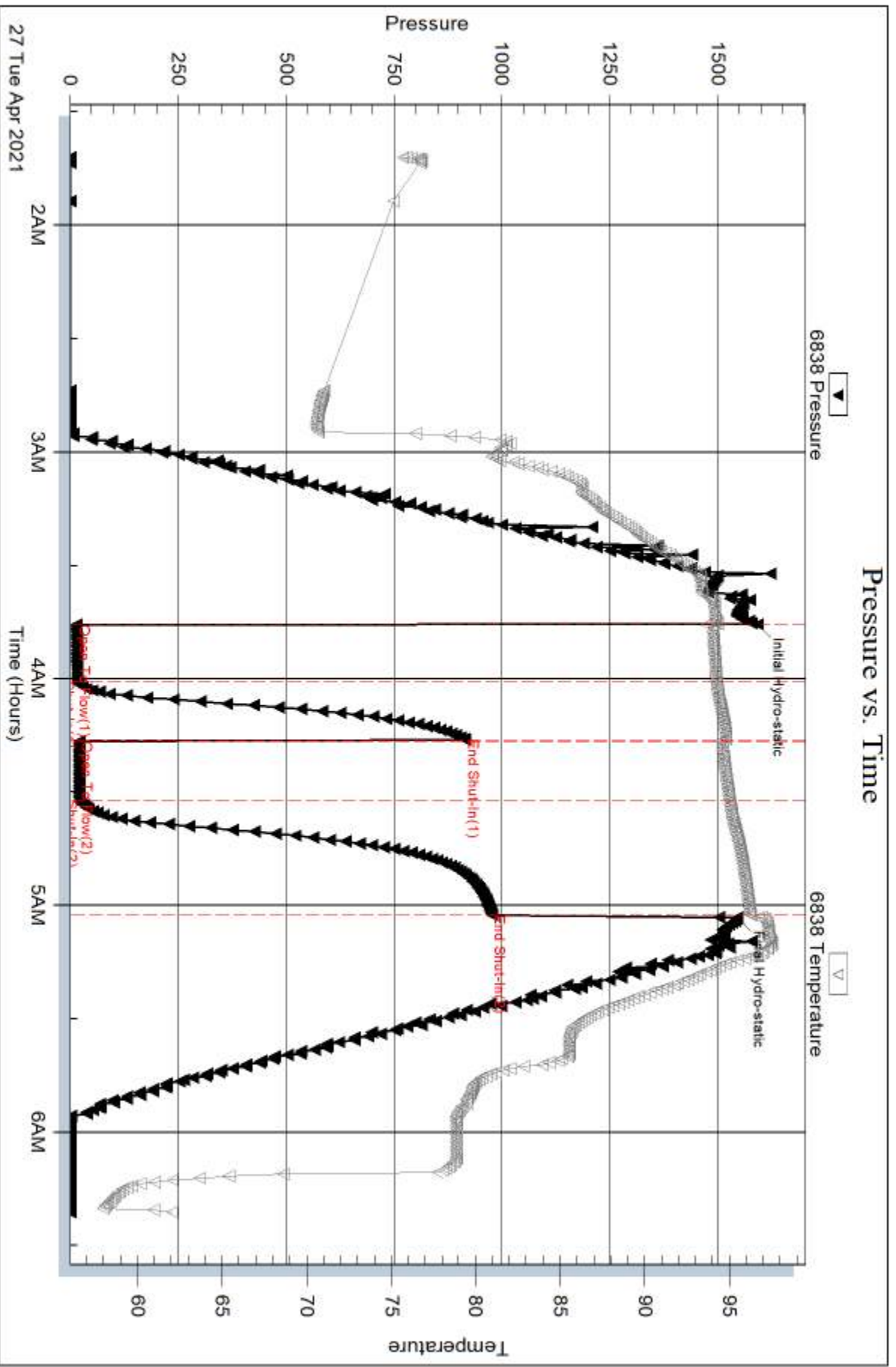
Mud Type: Gel Chem	Cushion Type:	Oil API:	deg API
Mud Weight: 9.00 lb/gal	Cushion Length: ft	Water Salinity:	ppm
Viscosity: 51.00 sec/qt	Cushion Volume: bbl		
Water Loss: 9.19 in ³	Gas Cushion Type:		
Resistivity: ohm.m	Gas Cushion Pressure: psig		
Salinity: 6200.00 ppm			
Filter Cake: inches			

Recovery Information

Recovery Table

Length ft	Description	Volume bbl
10.00	VSOCM 1%O 99%M	0.142

Total Length: 10.00 ft Total Volume: 0.142 bbl
Num Fluid Samples: 0 Num Gas Bombs: 0 Serial #:
Laboratory Name: Laboratory Location:
Recovery Comments: 2#LCM



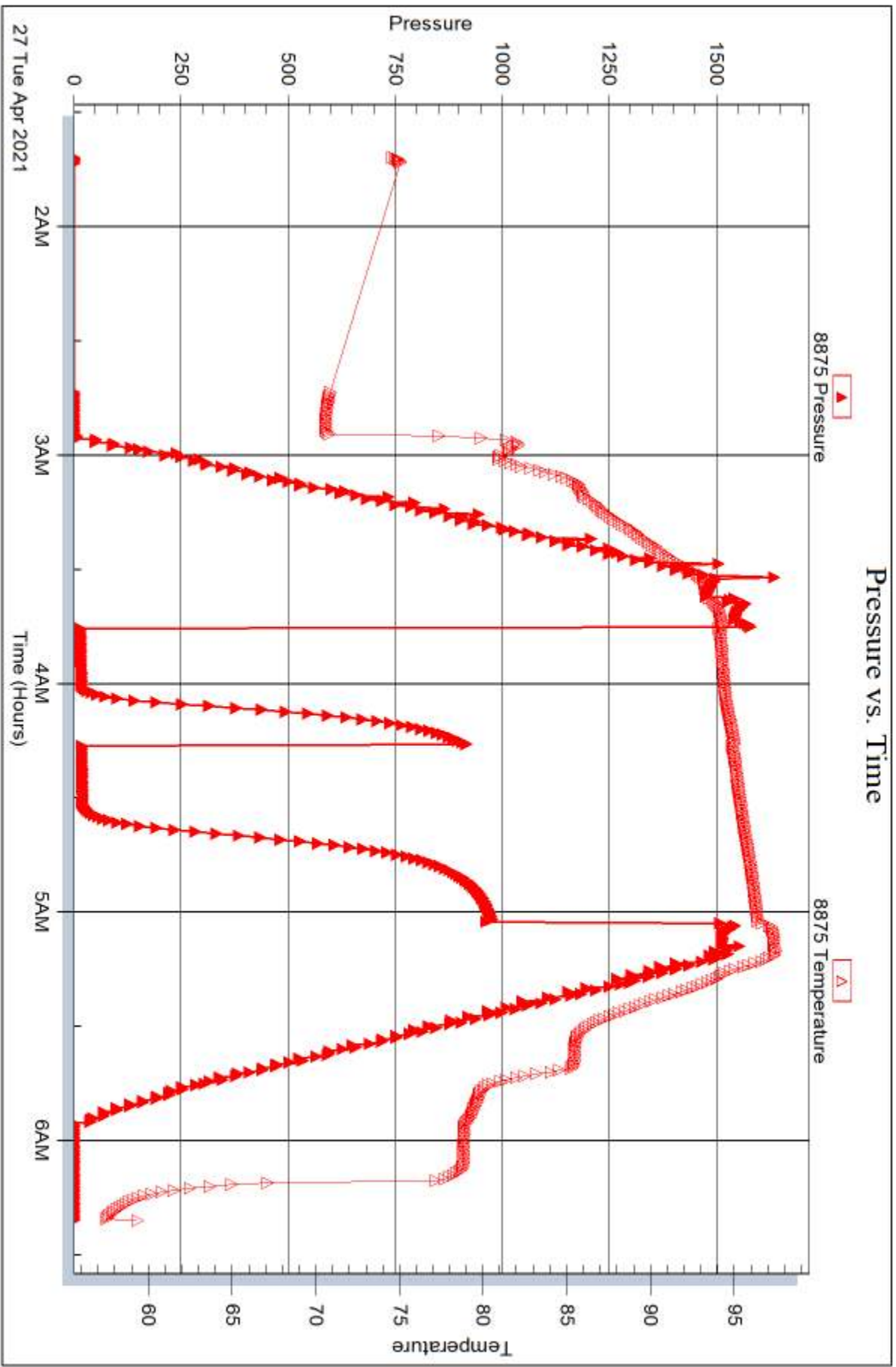
Serial #: 8875

Inside

Chris Batchman Inc

Herer #5

DST Test Number: 2





DRILL STEM TEST REPORT

Prepared For: **Chris Batchman Inc**

244 SE 120 Ave
Ellinwood KS 67526+9200

ATTN: Jim Musgrove

Herter #5

8-20s-11w Barton,KS

Start Date: 2021.04.27 @ 15:37:00

End Date: 2021.04.27 @ 21:57:32

Job Ticket #: 66883 DST #: 3

Trilobite Testing, Inc
PO Box 362 Hays, KS 67601
ph: 785-625-4778 fax: 785-625-5620

Printed: 2021.04.28 @ 11:19:44



**TRILOBITE
TESTING, INC**

DRILL STEM TEST REPORT

Chris Batchman Inc
244 SE 120 Ave
Ellinwood KS 67526+9200
ATTN: Jim Musgrove

8-20s-11w Barton,KS
Herter #5
Job Ticket: 66883 **DST#: 3**
Test Start: 2021.04.27 @ 15:37:00

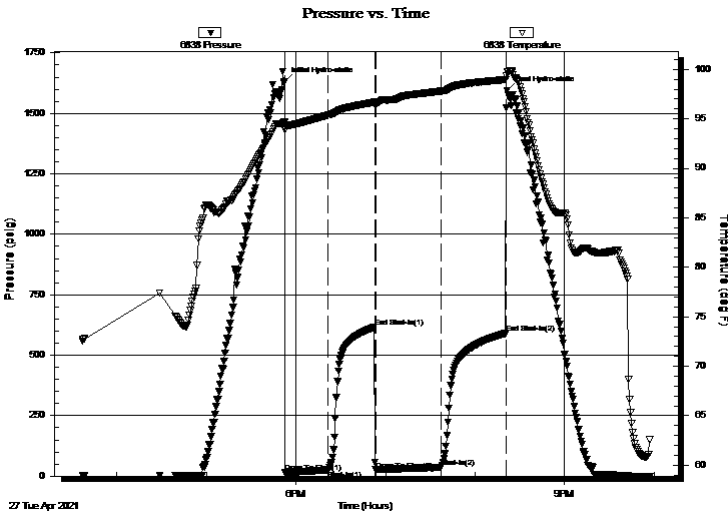
GENERAL INFORMATION:

Formation: **Arbuckle**
Deviated: No Whipstock: ft (KB)
Time Tool Opened: 17:52:22
Time Test Ended: 21:57:32
Interval: **3273.00 ft (KB) To 3320.00 ft (KB) (TVD)**
Total Depth: 3320.00 ft (KB) (TVD)
Hole Diameter: 7.88 inches Hole Condition: Fair
Test Type: Conventional Bottom Hole (Reset)
Tester: Spencer J Staab
Unit No: 84
Reference Elevations: 1784.00 ft (KB)
1775.00 ft (CF)
KB to GR/CF: 9.00 ft

Serial #: 6838 Inside
Press@RunDepth: 37.33 psig @ 3276.00 ft (KB) Capacity: psig
Start Date: 2021.04.27 End Date: 2021.04.27 Last Calib.: 2021.04.27
Start Time: 15:37:01 End Time: 21:57:32 Time On Btm: 2021.04.27 @ 17:52:17
Time Off Btm: 2021.04.27 @ 20:21:47

TEST COMMENT: 30-IF-Surface to 4 3/4"
30-ISI-Very Weak Surface Blow
45-FF-Surface to 3 1/2"
45-FSI-No Return

PRESSURE SUMMARY



Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	1631.93	94.66	Initial Hydro-static
1	16.23	93.86	Open To Flow (1)
30	25.59	95.37	Shut-In(1)
61	616.26	96.66	End Shut-In(1)
62	25.61	96.56	Open To Flow (2)
105	37.33	97.79	Shut-In(2)
149	590.88	99.00	End Shut-In(2)
150	1593.58	99.73	Final Hydro-static

Recovery

Length (ft)	Description	Volume (bbl)
40.00	MO 40%M 60%O	0.57
25.00	GO 5%G 95%O	0.35

* Recovery from multiple tests

Gas Rates

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



TRILOBITE TESTING, INC

DRILL STEM TEST REPORT

Chris Batchman Inc
 244 SE 120 Ave
 Ellinwood KS 67526+9200
 ATTN: Jim Musgrove

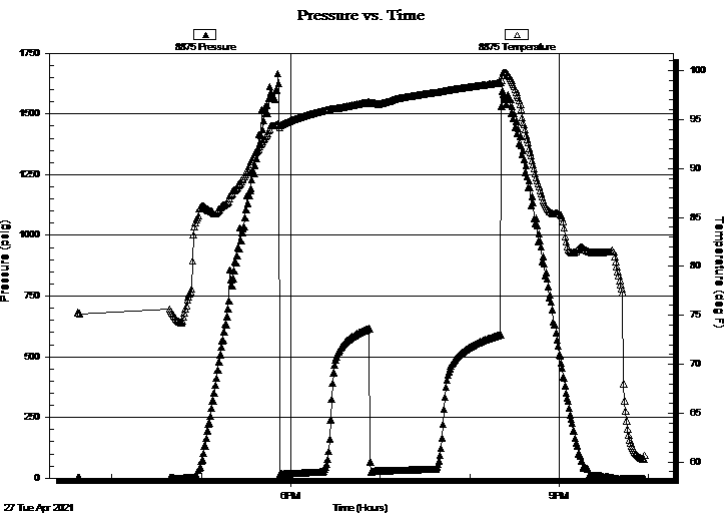
8-20s-11w Barton,KS
Herter #5
 Job Ticket: 66883 **DST#: 3**
 Test Start: 2021.04.27 @ 15:37:00

GENERAL INFORMATION:

Formation: **Arbuckle**
 Deviated: No Whipstock: ft (KB)
 Time Tool Opened: 17:52:22
 Time Test Ended: 21:57:32
 Interval: **3273.00 ft (KB) To 3320.00 ft (KB) (TVD)**
 Total Depth: 3320.00 ft (KB) (TVD)
 Hole Diameter: 7.88 inches Hole Condition: Fair
 Test Type: Conventional Bottom Hole (Reset)
 Tester: Spencer J Staab
 Unit No: 84
 Reference Elevations: 1784.00 ft (KB)
 1775.00 ft (CF)
 KB to GR/CF: 9.00 ft

Serial #: 8875 Inside
 Press@RunDepth: psig @ 3276.00 ft (KB) Capacity: psig
 Start Date: 2021.04.27 End Date: 2021.04.27 Last Calib.: 2021.04.27
 Start Time: 15:37:01 End Time: 21:57:32 Time On Btm:
 Time Off Btm:

TEST COMMENT: 30-IF-Surface to 4 3/4"
 30-ISI-Very Weak Surface Blow
 45-FF-Surface to 3 1/2"
 45-FSI-No Return



PRESSURE SUMMARY

Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation

Recovery

Length (ft)	Description	Volume (bbl)
40.00	MO 40%M 60%O	0.57
25.00	GO 5%G 95%O	0.35

Gas Rates

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

* Recovery from multiple tests



**TRILOBITE
TESTING, INC**

DRILL STEM TEST REPORT

TOOL DIAGRAM

Chris Batchman Inc
244 SE 120 Ave
Ellinwood KS 67526+9200
ATTN: Jim Musgrove

8-20s-11w Barton,KS
Herter #5
Job Ticket: 66883 **DST#: 3**
Test Start: 2021.04.27 @ 15:37:00

Tool Information

Drill Pipe:	Length: 3251.00 ft	Diameter: 3.82 inches	Volume: 46.08 bbl	Tool Weight:	2200.00 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:	40000.00 lb
			<u>Total Volume:</u>	Tool Chased	ft
				String Weight: Initial	35000.00 lb
Drill Pipe Above KB:	6.00 ft			Final	36000.00 lb
Depth to Top Packer:	3273.00 ft				
Depth to Bottom Packer:	ft				
Interval between Packers:	47.00 ft				
Tool Length:	75.00 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			3246.00	
Change Over Sub	1.00			3247.00	
Shut In Tool	5.00			3252.00	
Hydraulic tool	5.00		Fluid	3257.00	
Gap Sub	4.00			3261.00	
Safety Joint	3.00			3264.00	
Packer	5.00			3269.00	28.00 Bottom Of Top Packer
Packer	4.00			3273.00	
Stubb	1.00			3274.00	
Perforations	1.00			3275.00	
Change Over Sub	1.00			3276.00	
Recorder	0.00	6838	Inside	3276.00	
Recorder	0.00	8875	Inside	3276.00	
Drill Pipe	32.00			3308.00	
Change Over Sub	1.00			3309.00	
Perforations	8.00			3317.00	
Bullnose	3.00			3320.00	47.00 Bottom Packers & Anchor
Total Tool Length:	75.00				



**TRILOBITE
TESTING, INC**

DRILL STEM TEST REPORT

FLUID SUMMARY

Chris Batchman Inc
244 SE 120 Ave
Ellinwood KS 67526+9200
ATTN: Jim Musgrove

8-20s-11w Barton,KS
Herter #5
Job Ticket: 66883 **DST#: 3**
Test Start: 2021.04.27 @ 15:37:00

Mud and Cushion Information

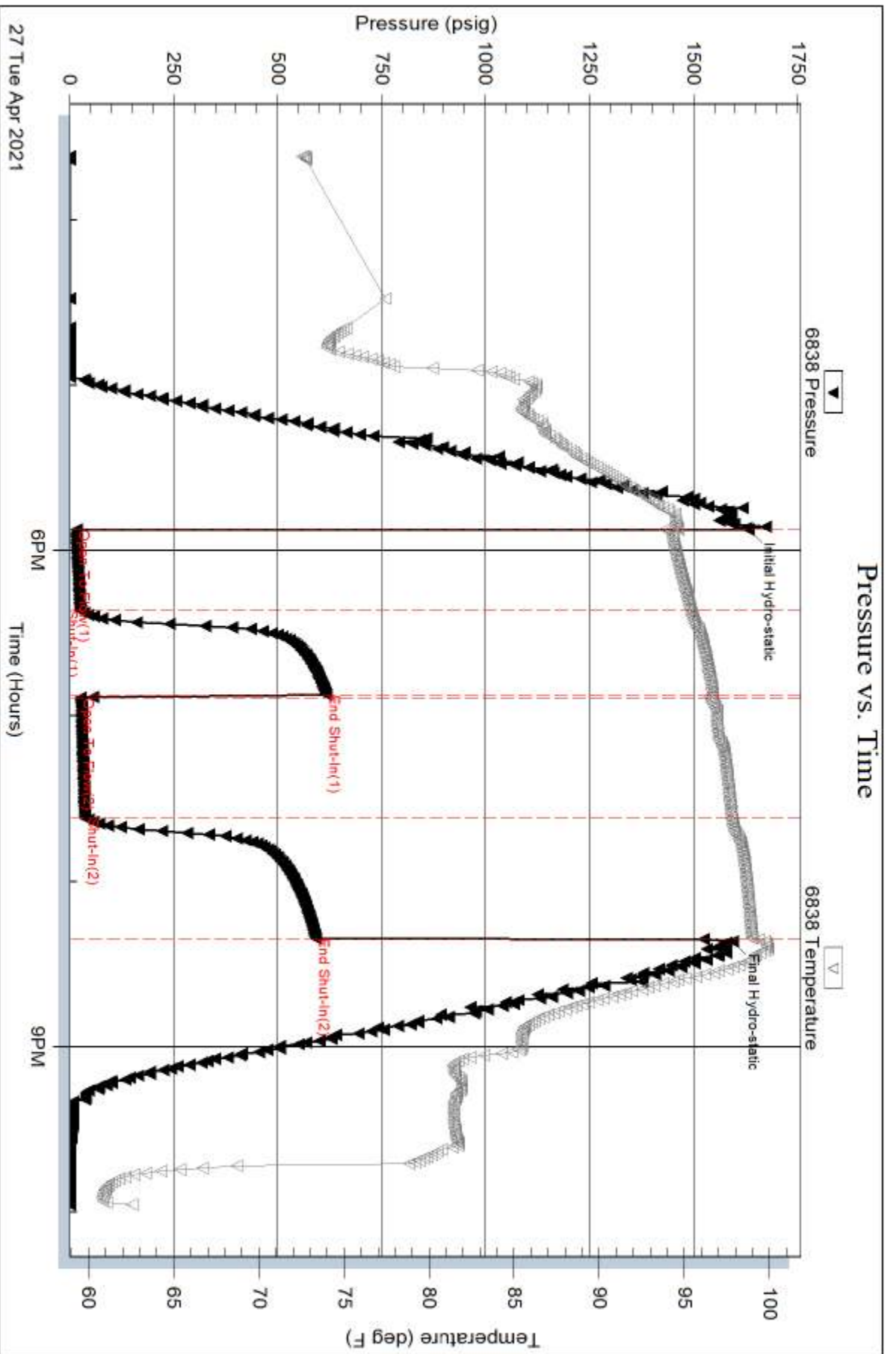
Mud Type: Gel Chem	Cushion Type:	Oil API: 42 deg API
Mud Weight: 9.00 lb/gal	Cushion Length: ft	Water Salinity: ppm
Viscosity: 46.00 sec/qt	Cushion Volume: bbl	
Water Loss: 9.99 in ³	Gas Cushion Type:	
Resistivity: ohm.m	Gas Cushion Pressure: psig	
Salinity: 9500.00 ppm		
Filter Cake: inches		

Recovery Information

Recovery Table

Length ft	Description	Volume bbl
40.00	MO 40%M 60%O	0.567
25.00	GO 5%G 95%O	0.354

Total Length: 65.00 ft Total Volume: 0.921 bbl
 Num Fluid Samples: 0 Num Gas Bombs: 0 Serial #:
 Laboratory Name: Laboratory Location:
 Recovery Comments: 1#LCM



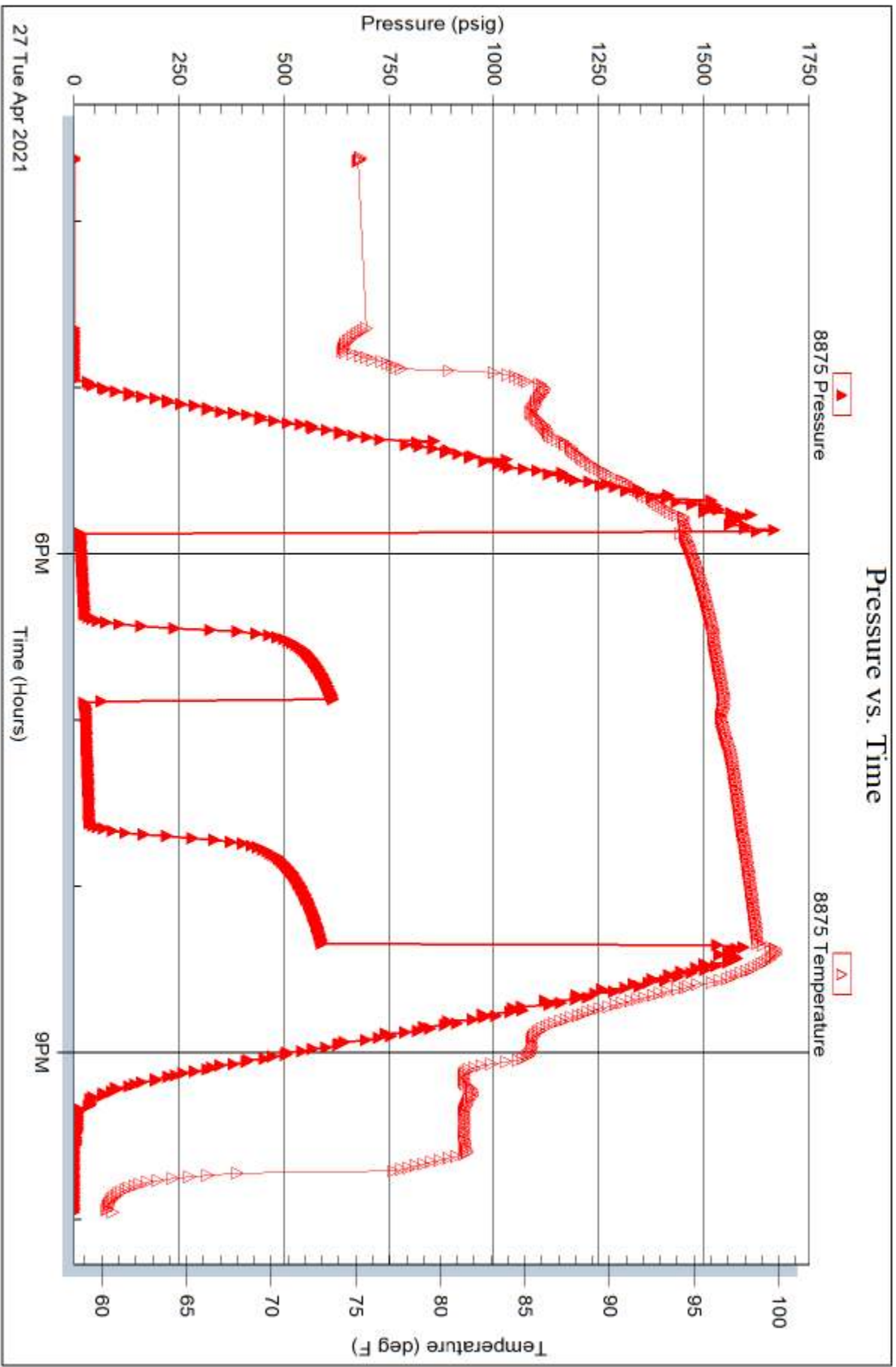
Serial #: 8875

Inside

Chris Batchman Inc

Header #5

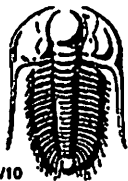
DST Test Number: 3



Triobite Testing, Inc

Ref. No: 66883

Printed: 2021.04.28 @ 11:19:45



TRILOBITE TESTING INC.

1515 Commerce Parkway • Hays, Kansas 67601

Test Ticket

NO. 66882

Well Name & No. Heater #5 Test No. 2 Date 04/27/2021
 Company Chris Batchman Inc Elevation 1784 KB 1775 GL
 Address 244 SE 120 Ave Ellinwood Mo 67526 + 9200
 Co. Rep / Geo. Jim Musgrove Rig Southwind #3
 Location: Sec. 8 Twp 20s Rge. 11w Co. Barton State Mo

Interval Tested 3200' - 3254' Zone Tested LRC
 Anchor Length 54' Drill Pipe Run _____ Mud Wt. 9.2
 Top Packer Depth 3195' Drill Collars Run - Vls 51
 Bottom Packer Depth 3200' Wt. Pipe Run - WL 9.2
 Total Depth 3254' Chlorides 6200 ppm System LCM 2H

Blow Description 7- Surface for 1/4"
75d - No Return
77 - Very Weak Surface
78d - No Return

Rec	Feet of	%gas	%oil	%water	%mud
<u>10'</u>	<u>VSOCM</u>	<u>1</u>		<u>99</u>	
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 _____

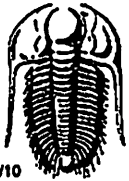
Rec Total 10' BHT 96° Gravity - API RW - @ - °F Chlorides - ppm

(A) Initial Hydrostatic 1591 Test 1200 T-On Location 01:18
 (B) First Initial Flow 14 Jars _____ T-Started 01:42
 (C) First Final Flow 17 Safety Joint _____ T-Open 03:43
 (D) Initial Shut-In 916 Circ Sub _____ T-Pulled 04:58
 (E) Second Initial Flow 20 Hourly Standby _____ T-Out 06:19
 (F) Second Final Flow 82 Mileage 154 RT 118rt 147.50
 (G) Final Shut-In 977 Sampler _____
 (H) Final Hydrostatic 1545 Straddle _____

Initial Open 15 EM Tool _____
 Initial Shut-In 15 Ruined Shale Packer _____
 Final Flow 15 Ruined Packer _____
 Final Shut-In 30 Extra Packer _____
 Extra Recorder _____
 Day Standby _____
 Accessibility _____
 Sub Total 1347.50 Sub Total 0
 Total 1347.50 MP/DST Disc't _____

Approved By _____ Our Representative _____

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

NO. 66881

Well Name & No. Herten #5 Test No. 1 Date 04/26/2021
 Company Chris Batchman Inc Elevation 1784 KB 1775 GL
 Address 244 SE 120 ave Ellinwood Ks 67526 + 9200
 Co. Rep / Geo. Jim Musgrove Rig Southwind #3
 Location: Sec. 8 Twp 20s Rge. 11w Co. Barton State Ks

Interval Tested 3090' - 3147' Zone Tested LAC '7+D'
 Anchor Length 57' Drill Pipe Run 3094' Mud Wt. 8.5
 Top Packer Depth 3085' Drill Collars Run - Vis 63
 Bottom Packer Depth 3090' Wt. Pipe Run - WL 8.8
 Total Depth 3147' Chlorides 2900 ppm System LCM 2#

Blow Description 7-BOB 45 secs; Built to 295"
1SD - Very Weak Surface; 10 mins to bleed off
77-BOB 20 secs; 27S 10 mins 757M; Built to 349"
7SD - Surface to 6 1/2"; Died back to 1 1/2"

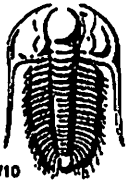
Rec <u>60</u>	Feet of <u>GMC9W</u>	<u>25</u> %gas	%oil <u>45</u>	%water <u>30</u>	%mud
Rec <u>40</u>	Feet of <u>GWCMA</u>	<u>40</u> %gas	<u>40</u> %oil	<u>10</u> %water	<u>10</u> %mud
Rec <u>25098</u>	Feet of <u>GO</u>	<u>75</u> %gas	<u>25</u> %oil	%water	%mud
Rec <u>90'</u>	Feet of <u>GM oil spots</u>	<u>30</u> %gas	%oil	%water <u>70</u>	%mud
Rec	Feet of <u>GTS</u>	<u>100</u> %gas	%oil	%water	%mud

Rec Total 440' BHT 100° Gravity 36° API RW 112 @ 80° F Chlorides 61000 ppm

(A) Initial Hydrostatic 1562 Test 1200 T-On Location 06:23
 (B) First Initial Flow 89 Jars _____ T-Started 06:55
 (C) First Final Flow 110 Safety Joint _____ T-Open 09:34
 (D) Initial Shut-In 710 Circ Sub _____ T-Pulled 12:19
 (E) Second Initial Flow 117 Hourly Standby _____ T-Out 14:55
 (F) Second Final Flow 178 Mileage 15427 147.50 Comments _____
 (G) Final Shut-In 728 Sampler _____
 (H) Final Hydrostatic 1496 Straddle _____

Initial Open 30 Shale Packer _____ EM Tool _____
 Initial Shut-In 30 Extra Packer _____ Ruined Shale Packer _____
 Final Flow 45 Extra Recorder _____ Ruined Packer _____
 Final Shut-In 60 Day Standby _____ Extra Copies _____
 Sub Total 1347.50 Accessibility _____ Sub Total 0
 Total 1347.50 MP/DST Disc't _____

Approved By _____ Our Representative James J. [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.
 785-259-0058



TRILOBITE TESTING INC.

1515 Commerce Parkway • Hays, Kansas 67601

Test Ticket

NO. 66883

Well Name & No. Heater #5 Test No. 3 Date 04/27/2021
 Company Chris Batchman Inc Elevation 1784 KB 1775 GL
 Address 244 SE 120 Ave Ellinwood, KS 67526 +9200
 Co. Rep / Geo. Jim Musgrove Rig Southwind #3
 Location: Sec. 8 Twp 20s Rge. 11w Co. Barton State KS

Interval Tested 3273' - 3320' Zone Tested Arbuckle
 Anchor Length 47' Drill Pipe Run 3251' Mud Wt. 8.9
 Top Packer Depth 3268' Drill Collars Run — Vis 46
 Bottom Packer Depth 3273' Wt. Pipe Run — WL 10.0
 Total Depth 3320' Chlorides 9500 ppm System LCM 1#

Blow Description 17-Surface to 4 3/4"
1SD - Very Weak Surface
77-Surface to 3 1/2"
9SD - No Return

Rec	Feet of	%gas	%oil	%water	%mud
<u>40'</u>	<u>MLO</u>	<u>60</u>		<u>40</u>	
<u>25'</u>	<u>GO</u>	<u>5</u>	<u>95</u>		
Rec	Feet of	%gas	%oil	%water	%mud
Rec	Feet of	%gas	%oil	%water	%mud
Rec	Feet of	%gas	%oil	%water	%mud

Rec Total 65' BHT 90° Gravity 42° API RW — @ — °F Chlorides — ppm
 Test 1200
 Jars
 Safety Joint
 Circ Sub
 Hourly Standby
 Mileage 15427 147.50
 Sampler
 Straddle
 Shale Packer
 Extra Packer
 Extra Recorder
 Day Standby
 Accessibility

(A) Initial Hydrostatic 1631
 (B) First Initial Flow 16
 (C) First Final Flow 25
 (D) Initial Shut-In 616
 (E) Second Initial Flow 25
 (F) Second Final Flow 37
 (G) Final Shut-In 590
 (H) Final Hydrostatic 1593

Initial Open 30
 Initial Shut-In 30
 Final Flow 45
 Final Shut-In 45

T-On Location 15:13
 T-Started 15:37
 T-Open 17:50
 T-Pulled 20:20
 T-Out 21:56
 Comments Loaded after test

EM Tool
 Ruined Shale Packer
 Ruined Packer
 Extra Copies

Sub Total 0
 Total 1347.50
 Sub Total 1347.50 MP/DST Disc't

Approved By _____ Our Representative Spencer J. Smith 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

COPELAND

Acid & Cement

BURRTON, KS ♦ GREAT BEND, KS
 (620) 463-5161 (620) 793-3366
 FAX (620) 463-2104 FAX (620) 793-3536

POST OFFICE BOX 438
 HAYSVILLE, KS 67060
 (316) 524-1225
 (316) 524-1027 FAX

Invoice

ALL

INVOICE NUMBER:
C60290-IN

BILL TO:
CHRIS BATCHMAN, INC.
244 SE 120 AVE
ELLINWOOD, KS 67526

LEASE: HERTER #5

DATE	ORDER	SALESMAN	ORDER DATE	PURCHASE ORDER	SPECIAL INSTRUCTIONS	
04/26/2021	60290		04/22/2021	HERTER #5	NET 30	
QUANTITY	U/M	ITEM NO./DESCRIPTION		D/C	PRICE	EXTENSION
10.00	MI	MILEAGE PICKUP		20.00	2.00	16.00
10.00	MI	MILEAGE CEMENT PUMP TRUCK		20.00	4.00	32.00
1.00	EA	PUMP CHARGE SURFACE		20.00	1,100.00	880.00
300.00	SK	60/40 POZ MIX 2% GEL		20.00	11.25	2,700.00
16.00	SK	CALCIUM CHLORIDE		20.00	40.00	512.00
316.00	EA	BULK CHARGE		20.00	1.25	316.00
139.04	MI	BULK TRUCK - TON MILES		20.00	1.10	122.36
REMIT TO: P.O. BOX 438 HAYSVILLE, KS 67060		COP		Net Invoice:		4,578.36
RECEIVED BY _____		NET 30 DAYS		BATCO Sales Tax:		343.38
				Invoice Total:		4,921.74

There will be a charge of 1.5% "per month" (18% annual rate) on all accounts over 30 days pas

Copeland Acid & Cement is a subsidiary of Gressel Oil Field Service

Gressel Oil Field Service reserves a security interest in the goods sold until the same are paid for in full and reserve all the rights of a secured party under the Uniform Commercial Code.



TREATMENT REPORT

Acid Stage No. _____

Date 4/28/2021 District GB F.O. No. 50413
 Company Chris Batchman Inc.
 Well Name & No. Herter #5
 Location _____ Field _____
 County Barton State KS

Type Treatment: Amt. Type Fluid Sand Size Pounds of Sand
 Bkdown _____ Bbl./Gal. _____
 _____ Bbl./Gal. _____
 _____ Bbl./Gal. _____
 _____ Bbl./Gal. _____
 Flush _____ Bbl./Gal. _____

Casing: Size 5.5" Type & Wt. 15.5#/17# Set at _____ ft.
 Formation: _____ Perf. _____ to _____
 Formation: _____ Perf. _____ to _____
 Formation: _____ Perf. _____ to _____

Treated from _____ ft. to _____ ft. No. ft. 0
 from _____ ft. to _____ ft. No. ft. 0
 from _____ ft. to _____ ft. No. ft. 0

Uner: Size _____ Type & Wt. _____ Top at _____ ft. Bottom at _____ ft.
 Cemented: Yes No Perforated from _____ ft. to _____ ft.
 Tubing: Size & Wt. _____ Swung at _____ ft.
 Perforated from _____ ft. to _____ ft.

Actual Volume of Oil / Water to Load Hole: _____ Bbl./Gal.

Pump Trucks. No. Used: Std. 365 Sp. _____ Twin _____

Auxiliary Equipment 327

Personnel Nathan Greg Jim Clarence

Auxiliary Tools _____

Plugging or Sealing Materials: Type _____ Gals. _____ lb.

Open Hole Size _____ T.D. _____ ft. P.B. to _____ ft.

Company Representative Chris B. Treater Nathan W.

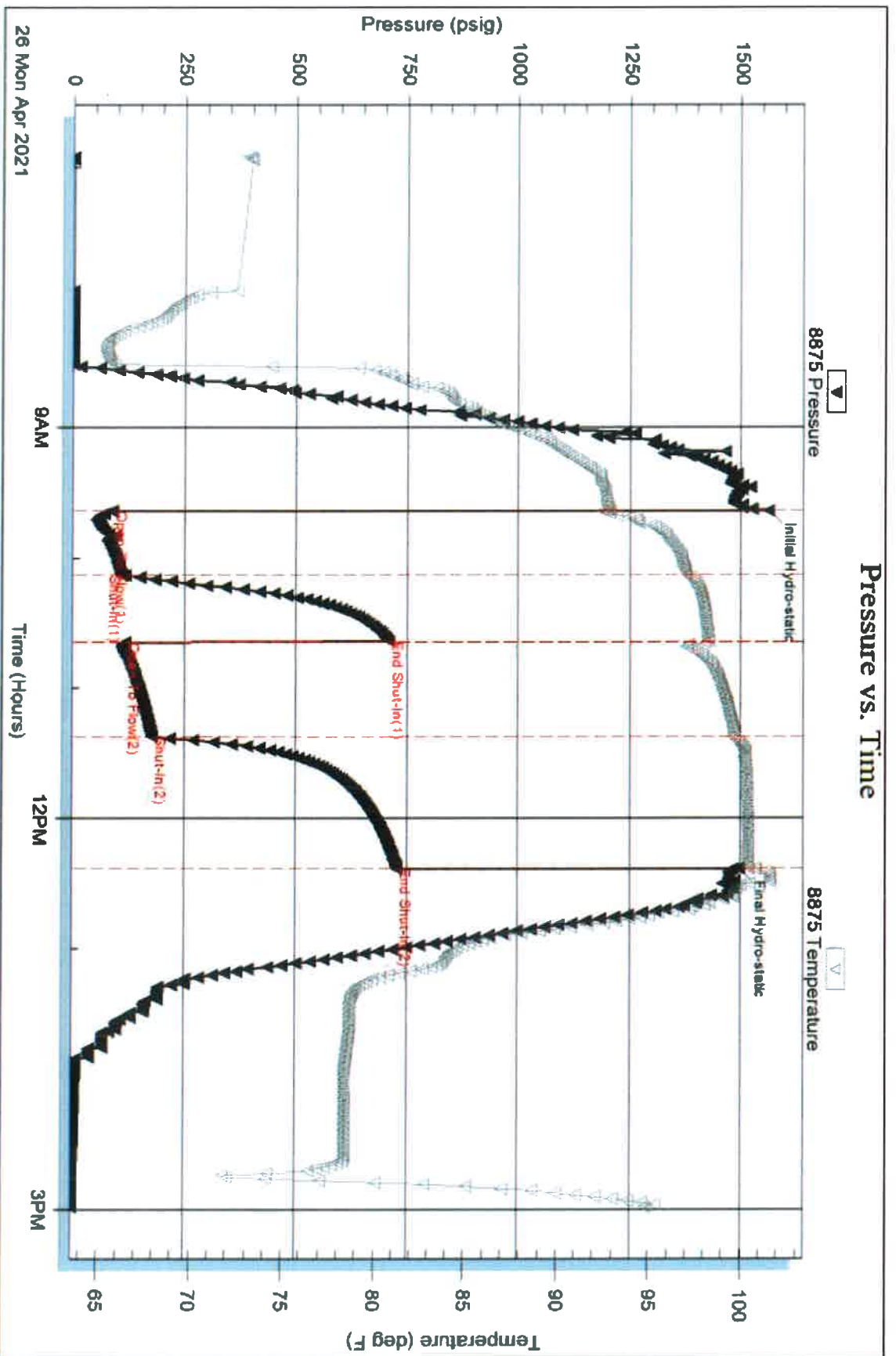
TIME	PRESSURES		Total Fluid Pumped	REMARKS
	a.m./p.m.	Tubing Casing		
4:00		5.5"		On Location. Rig rigging up to run casing.
				TD-3400' Centralizers-1,3,5,7,9
				Pipe-3394' Baskets-4,8
				Baffle-3373'
				Tag bottom and pick collar up to ground level.
				Break circulation with mud pump. Circulate for 30 minutes.
				Pump 600gal of Mud Flush.
				Plug Rat Hole with 30sk.
				Mix 150sk 60/40poz 2%gel 12%Salt .75%C-37 .75%C-41p .25%C-12 5#/sk Gilsonite.
7:30				Wash out pump and lines.
7:45				Displace with 80.2bbbls at 5.5bpm-700# Plug landed at 1000# Pressure up to 1400# Held. Release pressure. Float Held.
				Thank You! Nathan W.

Serial #: 8875

Outside Chris Batchman Inc

Header #5

DST Test Number: 1



Triobite Testing, Inc

Ref. No: 66881

Printed: 2021.04.26 @ 16:06:23

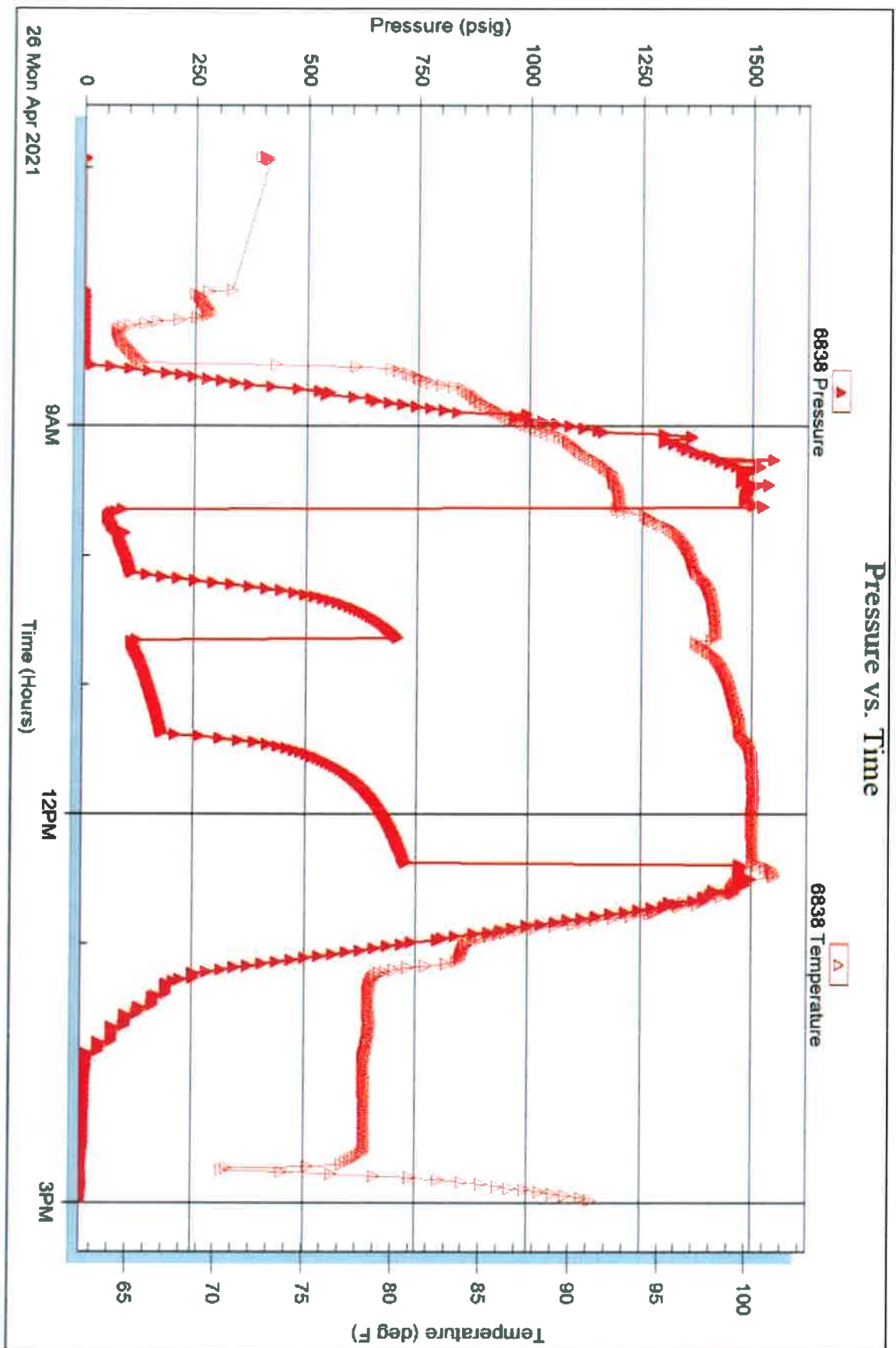
Serial #: 6838

Inside

Chris Batchman Inc

Header #5

DST Test Number: 1

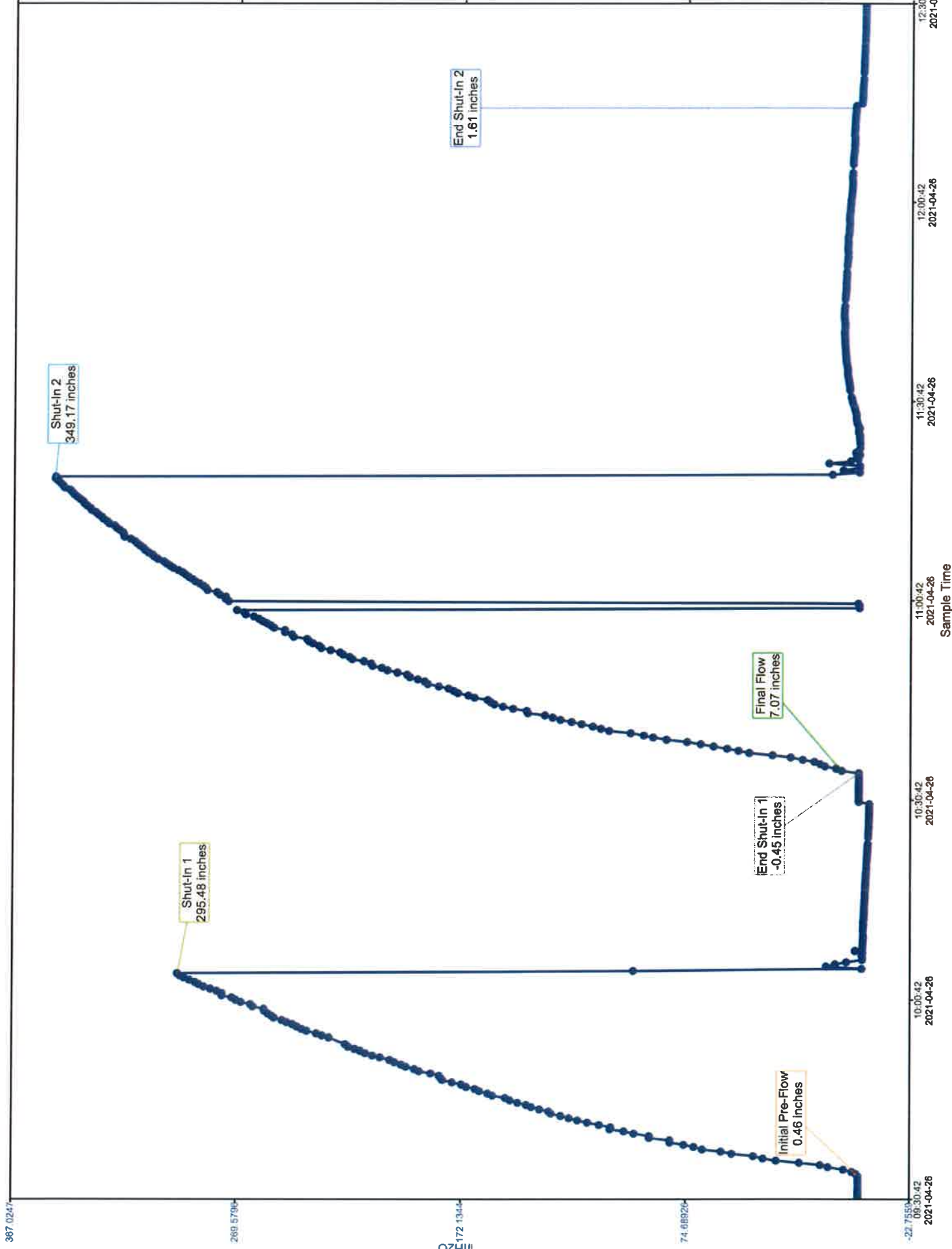


Trickle Testing, Inc

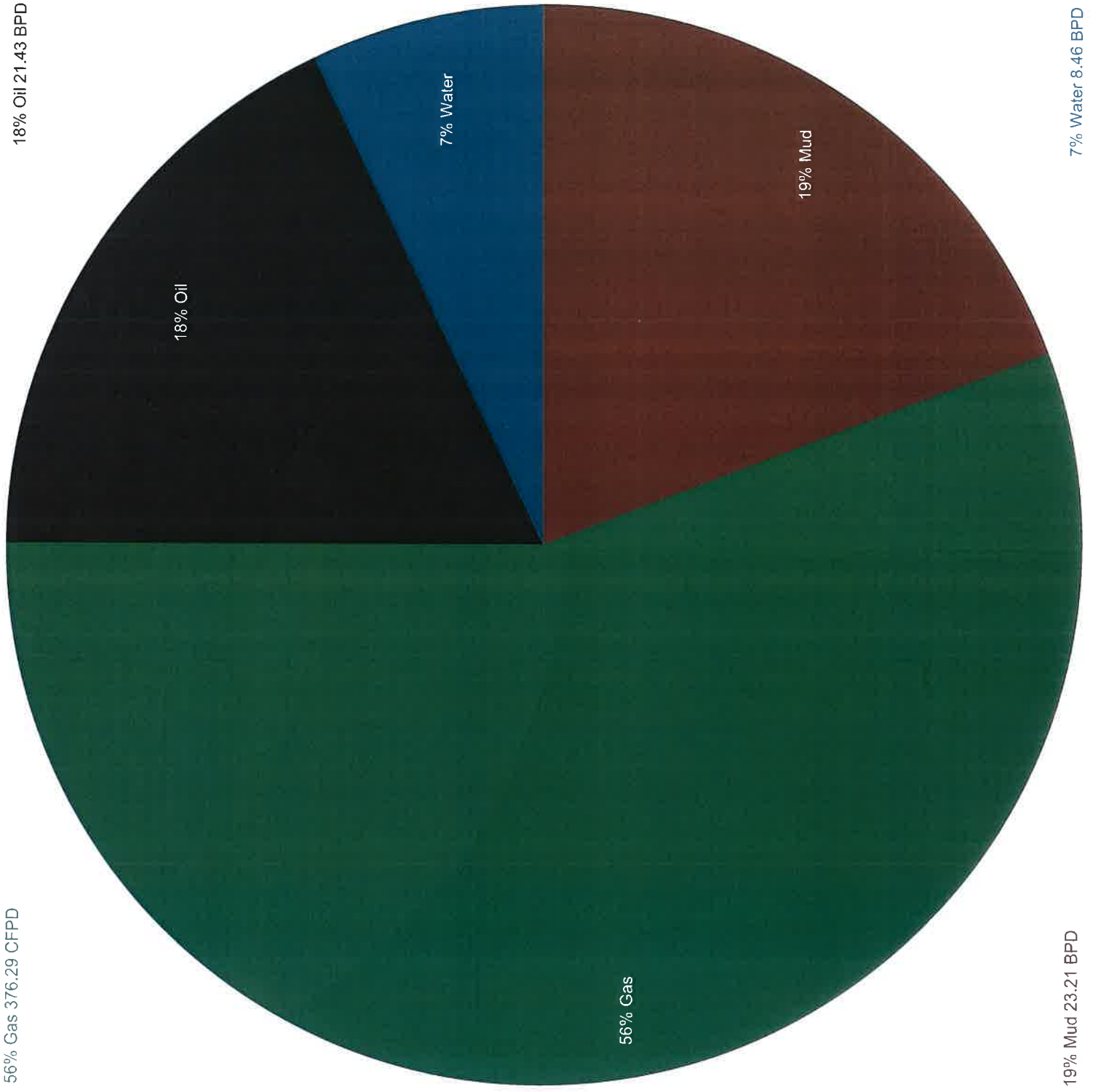
Ref. No: 66881

Printed: 2021.04.26 @ 16:06:23

Chris Batchman Inc. - Herter #5 - DST #1



Calculated Recovery Analysis - Chris Batchman Inc. - Herter #5 - DST #1



Office (620) 588-4250

Chris Batchman Inc.
Herter #5
SE-NE-SE-SE (710' FSL & 890' FEL)
Section 8-20s-11w
Barton County, Kansas

Page 1

5 1/2" Production Casing Set

Contractor: Southwind Drilling Co. (rig #3)

Commenced: April 22, 2021

Completed: April 28, 2021

Elevation: 1784 K.B., 1782' D.F., 1775' G.L.

Casing program: Surface; 8 5/8" @ 265'
Production, 5 1/2" @ 3398'

Sample: Samples saved and examined 2800' to the Rotary Total Depth.

Drilling time: One (1) foot drilling time recorded and kept 2800' to the Rotary Total Depth.

Measurements: All depths measured from the Kelly Bushing.

Drill Stem Tests: There were three (3) Drill Stem Tests ran by Trilobite Testing Co.

Electric Log: By Midwest Wireline; Dual Induction, Dual Compensated Porosity Log;
Micro and Sonic Logs

<u>Formation</u>	<u>Log Depth</u>	<u>Sub-Sea Datum</u>
Anhydrite	509	+1275
Base Anhydrite	529	+1255
Topoka	2650	-866
Heebner	2918	-1134
Toronto	2935	-1151
Douglas	2920	-1166
Brown Lime	3044	-1260
Lansing	3062	-1278
Arbuckle	3304	-1520
Rotary Total Depth	3400	-1616
Log Total Depth	3401	-1617

(All tops and zone(s) corrected to Electric Log Measurements)

SAMPLE ANALYSIS, SHOWS OF OIL, TESTING DATA, ETC.

TOPEKA SECTION

2842-2850' Limestone, white/gray, finely crystalline, granular in part, chalky; no shows.

- 2860-2865' Limestone, as above, increase in porosity; questionable stain, no free oil and no odor in fresh samples.
- 2868-2874' Limestone, tan, gray, fossiliferous, sub-oomoldic, fair porosity, no shows.
- 2890-2910' Limestone, tan, gray, finely crystalline, slightly fossiliferous, chalky, plus gray chert; no shows.

TORONTO SECTION

- 2934-2948' Limestone, white and cream, finely crystalline, fossiliferous, chalky; black tarry stain, no free oil and no odor in fresh samples.

LANSING SECTION

- 3063-3068' Limestone, white, tan, finely crystalline, chalky, scattered pinpoint type porosity; fair brown stain and saturation, trace of free oil and faint odor in fresh samples.
- 3079-3085' Limestone, tan, fossiliferous, fair fossil cast porosity; light brown to golden brown stain, no show of free oil and faint odor in fresh samples.
- 3100-3108' Limestone, tan, fossiliferous, slightly cherty, poor visible porosity, trace brown stain, no free oil and faint to fair odor in fresh samples.
- 3115-3122' Limestone, gray, oolitic, poor porosity; trace stain, no free oil and no odor in fresh samples.
- 3125-3131' Limestone, tan, oolitic, scattered porosity, dark brown/light brown stain, show of free oil and fair odor in fresh samples.
- 3138-3147' Limestone, tan, oomoldic, fair oomoldic porosity; brown stain and saturation, show of free oil and fair odor in fresh samples.

Drill Stem Test #1

Log Measurement **3091-3147**
3091-3148

Times: **30-30-45-60**

Blow: **Strong, gas to surface**
10 mins to final flow; T.S.T.M.

Recovery: **90' slightly oil cut mud**
250' gassy oil
40' gassy water cut muddy oil
(40% gas; 10% water; 10% mud; 40% oil)
60' gassy mud cut water
(25% gas; 30% mud; 45% water)

Pressures: **ISIP** **710** **psi**
FSIP **728** **psi**
IFP **89-110** **psi**
FFP **117-178** **psi**
HSH **1562-1496** **psi**

- 3196-3206 Limestone, tan, brown, finely crystalline, oomoldic, fair oomoldic porosity (barren)
- 3210-3215' Limestone, gray, white, fossiliferous/oolitic, chalky, poor visible porosity, no shows.
- 3226-3234' Limestone, white, oolitic, poorly developed porosity, brown and golden brown stain, no free oil and faint odor in fresh samples
- 3253-3256' Limestone, white, gray, slightly fossiliferous; chalky, brown stain, trace of free oil and faint to fair odor in fresh samples.

Drill Stem Test #2

3200-3254

Log Measurement 3201-3255

Times: 15-15-15-30

Blow: Very weak

Recovery: 10' very slightly oil cut mud
(1% oil)

Pressures: ISIP 916 psi
FSIP 977 psi
IFP 14-17 psi
FFP 20-22 psi
HSH 1591-1545 psi

- 3262-3270' Limestone, as above, no shows.
- 3290-3295' Limestone, white, tan, fossiliferous, chalky, trace brown stain, no show of free oil and faint odor in fresh samples.

ARBUCKLE SECTION

- 3304-3310' Dolomite, white, cream, medium crystalline, poor visible porosity, chalky luster, trace stain, no free oil and faint odor in fresh samples.
- 3310-3320' Dolomite, tan, buff, finely crystalline, sucrosic, fair pinpoint type porosity, fair brown stain and saturation, show of free oil and fair odor in fresh samples.

Drill Stem Test #3

3273-3321

Log Measurement 3274-3322

Times: 30-30-45-45

Blow: Weak to fair

Recovery: 25' clean oil
40' muddy oil
(60% oil; 40% mud)

Pressures:

ISIP	616	psi
FSIP	591	psi
IFP	16-26	psi
FFP	26-37	psi
HSH	1632-1544	psi

3322-3328' Dolomite, as above, brown stain, show of free oil and fair odor n fresh samples.

3331-3340' Dolomite, white, gray, medium crystalline, fair inter-crystalline porosity, dark brown to black stain, trace of free oil and faint to fair odor in samples.

3340-3360' Dolomite, as above, sandy in part; trace stain, trace of free oil and faint odor in fresh samples.

3360-3380' Dolomite, white/tan, fine to medium crystalline, fair inter-crystalline porosity, brown and black stain, no free oil and fair odor.

3380-3390' Dolomite, as above, plus chert; white, boney and gray, oolitic opaque chert, no shows.

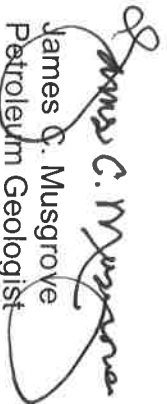
3390-3400' Dolomite, white and gray, fine and medium crystalline, slightly cherty; poor porosity, no shows.

Rotary Total Depth: 3400 (-1616)
Log Total Depth: 3401 (-1617)

Recommendations:

5 1/2" production casing was set and cemented on the Chris Batchman Inc., Herter #5.

Respectfully yours,


James D. Musgrove
Petroleum Geologist