

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 Date Reached TD Completion Date or Recompletion Date

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)</i> <i>(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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QUALITY OILWELL CEMENTING, INC.

Federal Tax I.D.# 20-2886107

Phone 785-483-1071
Cell 785-324-1041

Home Office P.O. Box 32 Russell, KS 67665

No. 1848

Date	12-4-19	Sec.	Twp.	Range	County	State	On Location	Finish
					Ellis	KS		9:00 AM
Lease					Location			
Younger					Gardner 3rd Ward 25 Winto			
Contractor					Well No.	Owner		
Express					3	To Quality Oilwell Cementing, Inc.		
Type Job					You are hereby requested to rent cementing equipment and furnish cementer and helper to assist owner or contractor to do work as listed.			
Port Collar								
Hole Size					T.D.	Charge To		
7 7/8						Mustang Energy		
Csg.					Depth	Street		
5 1/2								
Tbg. Size					Depth	City		
2 7/8						State		
Tool					Depth	The above was done to satisfaction and supervision of owner agent or contractor.		
Port Collar					1460			
Cement Left in Csg.					Shoe Joint	Cement Amount Ordered		
						300 50/20 QMDC 1/4 AFFD		
Meas Line					Displace	Legal		
					78L	Common		
EQUIPMENT								
Pumptrk	No.	Cementer			Common			
20		Helper	Cris		Poz. Mix			
Bulktrk	No.	Driver	Tim		Gel.			
		Driver			Calcium			
Bulktrk	No.	Driver	Lance		Hulls			
9		Driver			Salt			
JOB SERVICES & REMARKS								
Remarks:					KCC Pat Stand			
Rat Hole					Flowseal			
Mouse Hole					Kol-Seal			
Centralizers					Mud CLR 48			
Baskets					CFL-117 or CD110 CAF 38			
D/V or Port Collar					Sand			
Test 5/2 to 800*					Handling			
5 gal 3 gal Open Tool Mix					Mileage			
3 gal 1 200 lb Cement Circulated					FLOAT EQUIPMENT			
Close Tool Test to 800*					Guide Shoe			
Run 5 gals & Wash Clean					Centralizer			
(Used) 200 lb legal					Baskets			
					AFU Inserts			
					Float Shoe			
					Latch Down			
					Pumptrk Charge			
					Mileage			
					Tax			
					Discount			
X Signature					Total Charge			
D.B.								

QUALITY OILWELL CEMENTING, INC.

Federal Tax I.D.# 20-2886107

Phone 785-483-1071
Cell 785-324-1041

Home Office P.O. Box 32 Russell, KS 67665

No. 1749

Date	11-16-19	Sec.	25	Twp.	13	Range	20	County	Ellis	State	Ks	On Location		Finish	12:00 AM
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Lease **Younger** Location **Yocemento - 3w to 160 Rd, 25**

Well No. **3** Owner **w/into 2 tanks, 5 to Rig**

Contractor **Discovery #4** To Quality Oilwell Cementing, Inc.
You are hereby requested to rent cementing equipment and furnish cementer and helper to assist owner or contractor to do work as listed.

Type Job **Surface** Charge To **Mustang Energy**

Hole Size **12 1/4"** T.D. **220'**

Csg. **8 5/8"** Depth **220'** Street

Tbg. Size Depth City State

Tool Depth The above was done to satisfaction and supervision of owner agent or contractor.

Cement Left in Csg. **15'** Shoe Joint **15'** Cement Amount Ordered **150 80/20 3%CC 2% Gal**

Meas Line Displace **13 BLS**

EQUIPMENT

Pumptrk	17	No.	Cementer	Tom	Common	120
			Helper		Poz. Mix	30

Bulktrk	19	No.	Driver	Doug	Gel.	3
			Driver		Calcium	6

Bulktrk	p.u.	No.	Driver	Rick		
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JOB SERVICES & REMARKS

Remarks: **Cement did Circulate**

Rat Hole

Mouse Hole

Centralizers

Baskets

D/V or Port Collar

Handling **159**

Mileage

FLOAT EQUIPMENT

Guide Shoe

Centralizer

Baskets

AFU Inserts

Float Shoe

Latch Down

Pumptrk Charge **Surface**

Mileage **15**

Tax

Discount

Total Charge

X Signature **John J. ...**

Thanks

QUALITY OILWELL CEMENTING, INC.

Federal Tax I.D.# 20-2886107

Phone 785-483-1071

Home Office P.O. Box 32 Russell, KS 67665

No. 1838

Cell 785-324-1041

Date	11-22-19	Sec.	25	Twp.	13	Range	20	County	Ellis	State	KS	On Location		Finish	4:30
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Location *Wacomento x Hwy 40 w to 1600 2/15*

Lease *Younger* Well No. *3* Owner *Winto*

Contractor *Discovery #4* To Quality Oilwell Cementing, Inc.
 Type Job *Production String* You are hereby requested to rent cementing equipment and furnish cements and helper to assist owner or contractor to do work as listed.

Hole Size *7 7/8* T.D. *3925* Charge To *Mustang Energy*

Csg. *5 1/2* Depth *3918* Street

Tbg. Size Depth City State

Tool *Port Collar #60* Depth *1462* The above was done to satisfaction and supervision of owner agent or contractor.

Cement Left in Csg. *41.85* Shoe Joint *41.85* Cement Amount Ordered *175com 10/ Salt*

Meas Line Displace *92 1/4 BCL* *51- Gilsnite 500gal Mud Clear*

EQUIPMENT Common *175*

Pumptrk	<i>17</i>	No.	Cement Helper <i>Spig</i>	Poz. Mix
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Bulktrk		No.	Driver <i>T.M</i>	Gel.
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Bulktrk	<i>3</i>	No.	Driver <i>Michael</i>	Calcium
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JOB SERVICES & REMARKS Halls

Remarks: Salt *14*

Rat Hole *30SK* Flowseal

Mouse Hole *15SK* Kol-Seal *750 #*

Centralizers Mud CLR 48 *500 gal*

Baskets CFL-117 or CD110 CAF 38

D/V or Port Collar Sand

5 1/2 set @ 3918. Barler 3876. Handling *196*

Est. Circulation - Pump 500gal Mileage

Mud Clear Plug Rathole & mousehole.

Cement 5 1/2 with 130SK Guide Shoe

Clear lines & Displace Plug. Centralizer *2*

Plug land'ed @ 1500ft. Hold - Release Baskets *6*

Pressure Dyl. AFU Inserts *Port Collar*

Left pressure 725# Float Shoe *1*

Latch Down *1*

Pumptrk Charge *prod string*

Mileage *22*

Tax

Discount

Signature *Rd B* Total Charge



DRILL STEM TEST REPORT

Prepared For: **Mustang Energy Corporation**

PO Box 1121
Hays KS 67601+1121

ATTN: Cameron Brin

Younger #3

25-13s-20w Ellis,KS

Start Date: 2019.11.20 @ 09:37:00

End Date: 2019.11.20 @ 15:56:00

Job Ticket #: 65710 DST #: 1

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

Printed: 2019.11.22 @ 09:59:33



TRILOBITE TESTING, INC.

DRILL STEM TEST REPORT

Mustang Energy Corporation

25-13s-20w Ellis,KS

PO Box 1121
Hays KS 67601+1121

Younger #3

Job Ticket: 65710

DST#: 1

ATTN: Cameron Brin

Test Start: 2019.11.20 @ 09:37:00

GENERAL INFORMATION:

Formation: **Arbuckle**

Deviated: No Whipstock: ft (KB)

Time Tool Opened: 11:29:00

Time Test Ended: 15:56:00

Test Type: Conventional Bottom Hole (Initial)

Tester: Benny Mulligan

Unit No: 67

Interval: 3774.00 ft (KB) To 3815.00 ft (KB) (TVD)

Reference Elevations: 2200.00 ft (KB)

Total Depth: 3815.00 ft (KB) (TVD)

2192.00 ft (CF)

Hole Diameter: 7.88 inches Hole Condition: Fair

KB to GR/CF: 8.00 ft

Serial #: 6772 Inside

Press@RunDepth: 97.08 psig @ 3775.00 ft (KB)

Capacity: 8000.00 psig

Start Date: 2019.11.20 End Date: 2019.11.20

Last Calib.: 2019.11.20

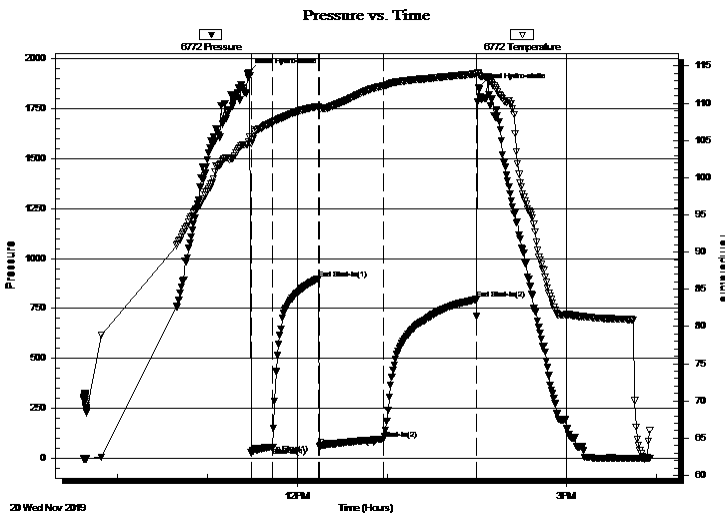
Start Time: 09:37:01 End Time: 15:56:00

Time On Btm: 2019.11.20 @ 11:27:30

Time Off Btm: 2019.11.20 @ 14:01:09

TEST COMMENT: IF-15- built to 11 1/2 "
ISI-30- no blow back
FF-45- BOB 18 mins total build of 33 1/2"
FSI-60- weak surface blow back

PRESSURE SUMMARY



Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	1928.88	104.83	Initial Hydro-static
2	29.09	104.52	Open To Flow (1)
17	57.02	107.47	Shut-In(1)
47	898.53	109.57	End Shut-In(1)
48	62.83	109.37	Open To Flow (2)
91	97.08	112.32	Shut-In(2)
152	794.96	113.94	End Shut-In(2)
154	1850.63	113.92	Final Hydro-static

Recovery

Length (ft)	Description	Volume (bbl)
120.00	GMCO 5%g 55%O 40%M	1.40
60.00	GMCO 10%G 70%O 20%M	0.84
20.00	GCO 10%G 90%O	0.28
0.00	GIP 40'	0.00

Gas Rates

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



**TRILOBITE
TESTING, INC.**

DRILL STEM TEST REPORT

TOOL DIAGRAM

Mustang Energy Corporation

25-13s-20w Ellis,KS

PO Box 1121
Hays KS 67601+1121

Younger #3

Job Ticket: 65710

DST#: 1

ATTN: Cameron Brin

Test Start: 2019.11.20 @ 09:37:00

Tool Information

Drill Pipe:	Length: 3739.00 ft	Diameter: 3.80 inches	Volume: 52.45 bbl	Tool Weight: 2500.00 lb
Heavy Wt. Pipe:	Length: 0.00 ft	Diameter: 0.00 inches	Volume: 0.00 bbl	Weight set on Packer: 25000.00 lb
Drill Collar:	Length: 31.00 ft	Diameter: 2.25 inches	Volume: 0.15 bbl	Weight to Pull Loose: 60000.00 lb
			<u>Total Volume: 52.60 bbl</u>	Tool Chased 5.00 ft
Drill Pipe Above KB:	16.00 ft			String Weight: Initial 51000.00 lb
Depth to Top Packer:	3774.00 ft			Final 53000.00 lb
Depth to Bottom Packer:	ft			
Interval between Packers:	41.00 ft			
Tool Length:	61.00 ft			
Number of Packers:	2	Diameter: 6.75 inches		

Tool Comments:

Tool Description

Tool Description	Length (ft)	Serial No.	Position	Depth (ft)	Accum. Lengths
Change Over Sub	1.00			3755.00	
Shut In Tool	5.00			3760.00	
Hydraulic tool	5.00			3765.00	
Packer	5.00			3770.00	20.00 Bottom Of Top Packer
Packer	4.00			3774.00	
Stubb	1.00			3775.00	
Recorder	0.00	6772	Inside	3775.00	
Recorder	0.00	6769	Outside	3775.00	
Perforations	4.00			3779.00	
Change Over Sub	1.00			3780.00	
Drill Pipe	31.00			3811.00	
Change Over Sub	1.00			3812.00	
Bullnose	3.00			3815.00	41.00 Bottom Packers & Anchor

Total Tool Length: 61.00



**TRILOBITE
TESTING, INC.**

DRILL STEM TEST REPORT

FLUID SUMMARY

Mustang Energy Corporation

25-13s-20w Ellis,KS

PO Box 1121
Hays KS 67601+1121

Younger #3

Job Ticket: 65710

DST#: 1

ATTN: Cameron Brin

Test Start: 2019.11.20 @ 09:37:00

Mud and Cushion Information

Mud Type: Gel Chem

Cushion Type:

Oil API:

39 deg API

Mud Weight: 9.00 lb/gal

Cushion Length:

ft

Water Salinity:

ppm

Viscosity: 47.00 sec/qt

Cushion Volume:

bbbl

Water Loss: 7.59 in³

Gas Cushion Type:

Resistivity: ohm.m

Gas Cushion Pressure:

psig

Salinity: 4500.00 ppm

Filter Cake: 1.00 inches

Recovery Information

Recovery Table

Length ft	Description	Volume bbbl
120.00	GMCO 5%g 55%O 40%M	1.401
60.00	GMCO 10%G 70%O 20%M	0.842
20.00	GCO 10%G 90%O	0.281
0.00	GIP 40'	0.000

Total Length: 200.00 ft

Total Volume: 2.524 bbl

Num Fluid Samples: 0

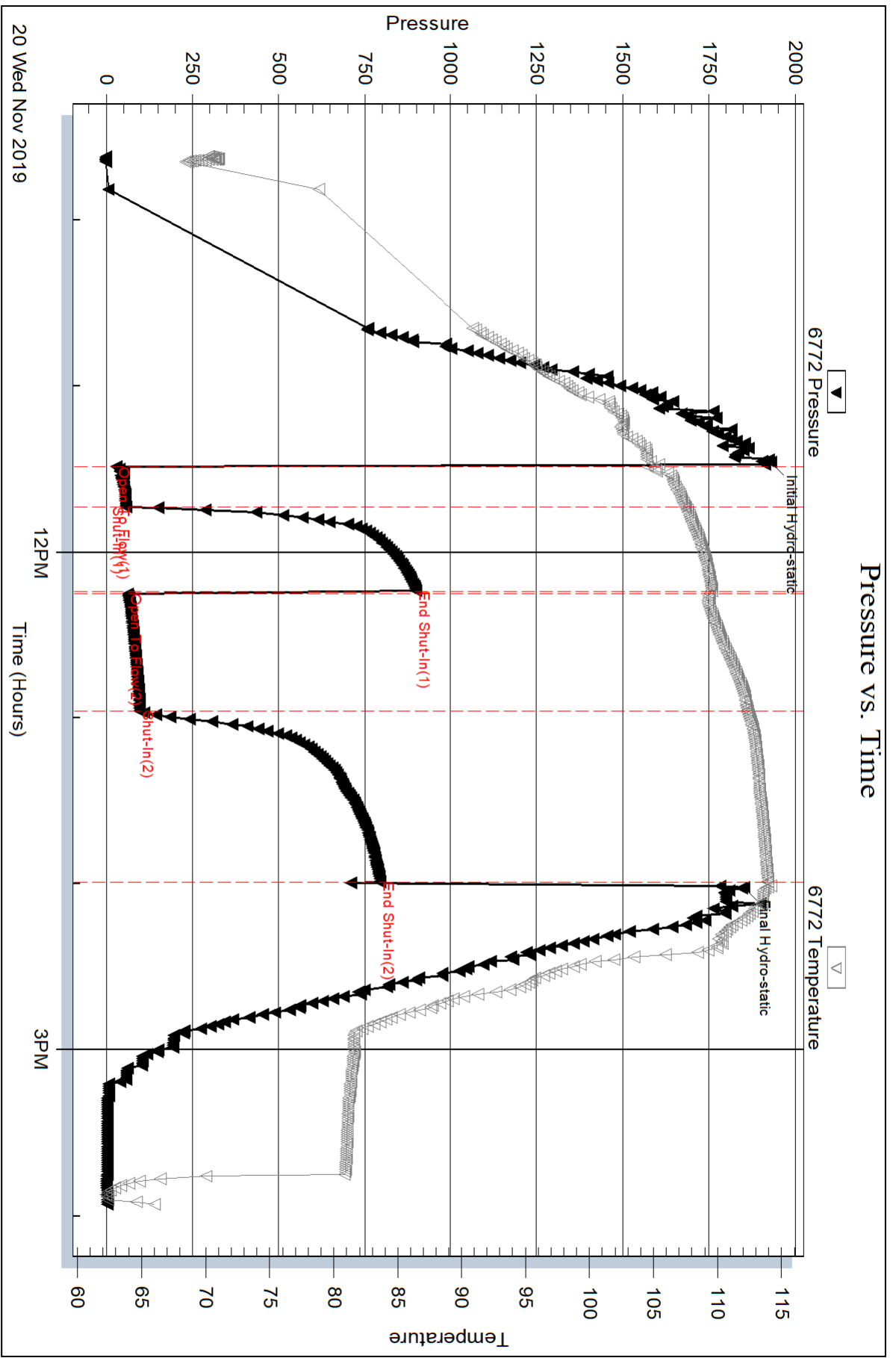
Num Gas Bombs: 0

Serial #:

Laboratory Name:

Laboratory Location:

Recovery Comments:

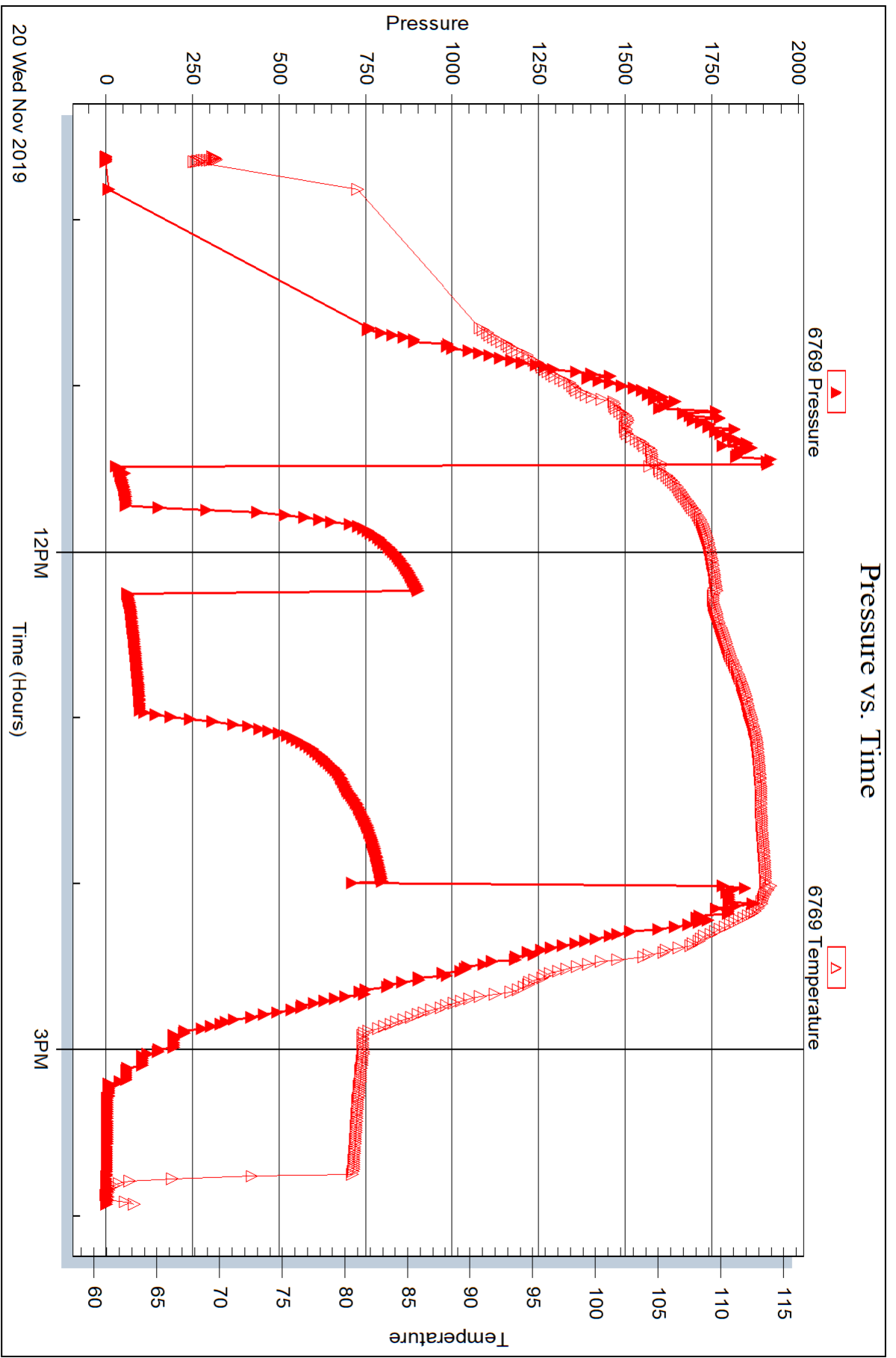


Serial #: 6769

Outside Mustang Energy Corporation

Younger #3

DST Test Number: 1



Trilobite Testing, Inc

Ref. No: 65710

Printed: 2019.11.22 @ 09:59:35



DRILL STEM TEST REPORT

Prepared For: **Mustang Energy Corporation**

PO Box 1121
Hays KS 67601+1121

ATTN: Cameron Brin

Younger #3

25-13s-20w Ellis,KS

Start Date: 2019.11.20 @ 21:27:00

End Date: 2019.11.21 @ 05:49:50

Job Ticket #: 65711 DST #: 2

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

Printed: 2019.11.22 @ 09:53:40



**TRILOBITE
TESTING, INC.**

DRILL STEM TEST REPORT

Mustang Energy Corporation

25-13s-20w Ellis,KS

PO Box 1121
Hays KS 67601+1121

Younger #3

Job Ticket: 65711

DST#: 2

ATTN: Cameron Brin

Test Start: 2019.11.20 @ 21:27:00

GENERAL INFORMATION:

Formation: **Arbuckle**

Deviated: No Whipstock: ft (KB)

Time Tool Opened: 23:48:50

Time Test Ended: 05:49:50

Test Type: Conventional Bottom Hole (Initial)

Tester: Benny Mulligan

Unit No: 67

Interval: 3815.00 ft (KB) To 3823.00 ft (KB) (TVD)

Reference Elevations: 2200.00 ft (KB)

Total Depth: 3823.00 ft (KB) (TVD)

2192.00 ft (CF)

Hole Diameter: 7.88 inches Hole Condition: Fair

KB to GR/CF: 8.00 ft

Serial #: 6772 Inside

Press@RunDepth: 154.68 psig @ 3816.00 ft (KB)

Capacity: 8000.00 psig

Start Date: 2019.11.20

End Date:

2019.11.21

Last Calib.:

2019.11.21

Start Time: 21:27:01

End Time:

05:49:50

Time On Btm:

2019.11.20 @ 23:44:40

Time Off Btm:

2019.11.21 @ 03:43:50

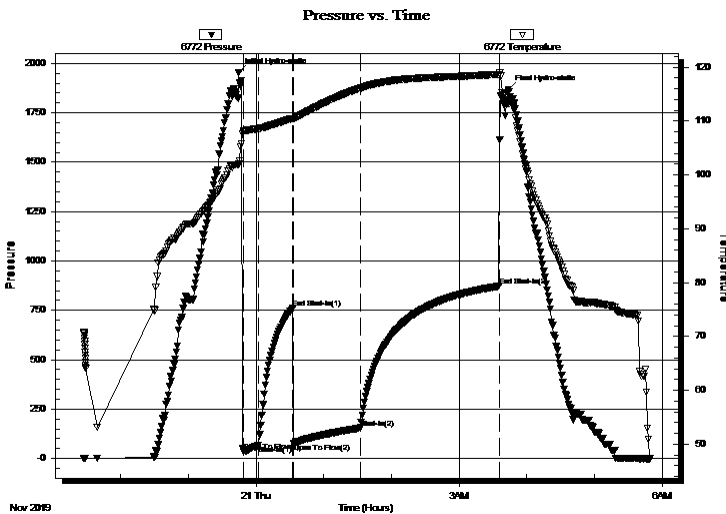
TEST COMMENT: IF-15- BOB 4 mins 30 secs total build of 24 1/2"

ISI-30- 2 1/2" blow back

FF-60- BOB 10 mins total build of 40"

FSI-120- 1" blow back

PRESSURE SUMMARY



Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	1953.95	101.98	Initial Hydro-static
5	34.39	108.03	Open To Flow (1)
18	66.63	108.59	Shut-In(1)
48	761.73	110.53	End Shut-In(1)
49	75.84	110.45	Open To Flow (2)
108	154.68	116.11	Shut-In(2)
231	872.26	118.67	End Shut-In(2)
240	1866.43	113.19	Final Hydro-static

Recovery

Length (ft)	Description	Volume (bbl)
60.00	GOCM 10%G 30%O 60%M	0.56
330.00	GCO 20%G 80%O	4.63
0.00	GIP 180'	0.00

Gas Rates

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



**TRILOBITE
TESTING, INC.**

DRILL STEM TEST REPORT

TOOL DIAGRAM

Mustang Energy Corporation

25-13s-20w Ellis,KS

PO Box 1121
Hays KS 67601+1121

Younger #3

Job Ticket: 65711

DST#: 2

ATTN: Cameron Brin

Test Start: 2019.11.20 @ 21:27:00

Tool Information

Drill Pipe:	Length: 3771.00 ft	Diameter: 3.80 inches	Volume: 52.90 bbl	Tool Weight: 2500.00 lb
Heavy Wt. Pipe:	Length: 0.00 ft	Diameter: 0.00 inches	Volume: 0.00 bbl	Weight set on Packer: 25000.00 lb
Drill Collar:	Length: 31.00 ft	Diameter: 2.25 inches	Volume: 0.15 bbl	Weight to Pull Loose: 60000.00 lb
			<u>Total Volume: 53.05 bbl</u>	Tool Chased 0.00 ft
Drill Pipe Above KB:	7.00 ft			String Weight: Initial 51000.00 lb
Depth to Top Packer:	3815.00 ft			Final 53000.00 lb
Depth to Bottom Packer:	ft			
Interval between Packers:	8.00 ft			
Tool Length:	28.00 ft			
Number of Packers:	2	Diameter: 6.75 inches		

Tool Comments:

Tool Description

Tool Description	Length (ft)	Serial No.	Position	Depth (ft)	Accum. Lengths
Change Over Sub	1.00			3796.00	
Shut In Tool	5.00			3801.00	
Hydraulic tool	5.00			3806.00	
Packer	5.00			3811.00	20.00 Bottom Of Top Packer
Packer	4.00			3815.00	
Stubb	1.00			3816.00	
Recorder	0.00	6772	Inside	3816.00	
Recorder	0.00	6769	Outside	3816.00	
Perforations	4.00			3820.00	
Bullnose	3.00			3823.00	8.00 Bottom Packers & Anchor
Total Tool Length:	28.00				



**TRILOBITE
TESTING, INC.**

DRILL STEM TEST REPORT

FLUID SUMMARY

Mustang Energy Corporation

25-13s-20w Ellis,KS

PO Box 1121
Hays KS 67601+1121

Younger #3

Job Ticket: 65711

DST#: 2

ATTN: Cameron Brin

Test Start: 2019.11.20 @ 21:27:00

Mud and Cushion Information

Mud Type: Gel Chem
Mud Weight: 9.00 lb/gal
Viscosity: 47.00 sec/qt
Water Loss: 7.59 in³
Resistivity: ohm.m
Salinity: 4500.00 ppm
Filter Cake: 1.00 inches

Cushion Type:
Cushion Length: ft
Cushion Volume: bbl
Gas Cushion Type:
Gas Cushion Pressure: psig

Oil API: 39 deg API
Water Salinity: ppm

Recovery Information

Recovery Table

Length ft	Description	Volume bbl
60.00	GOCM 10%G 30%O 60%M	0.559
330.00	GCO 20%G 80%O	4.629
0.00	GIP 180'	0.000

Total Length: 390.00 ft Total Volume: 5.188 bbl

Num Fluid Samples: 0

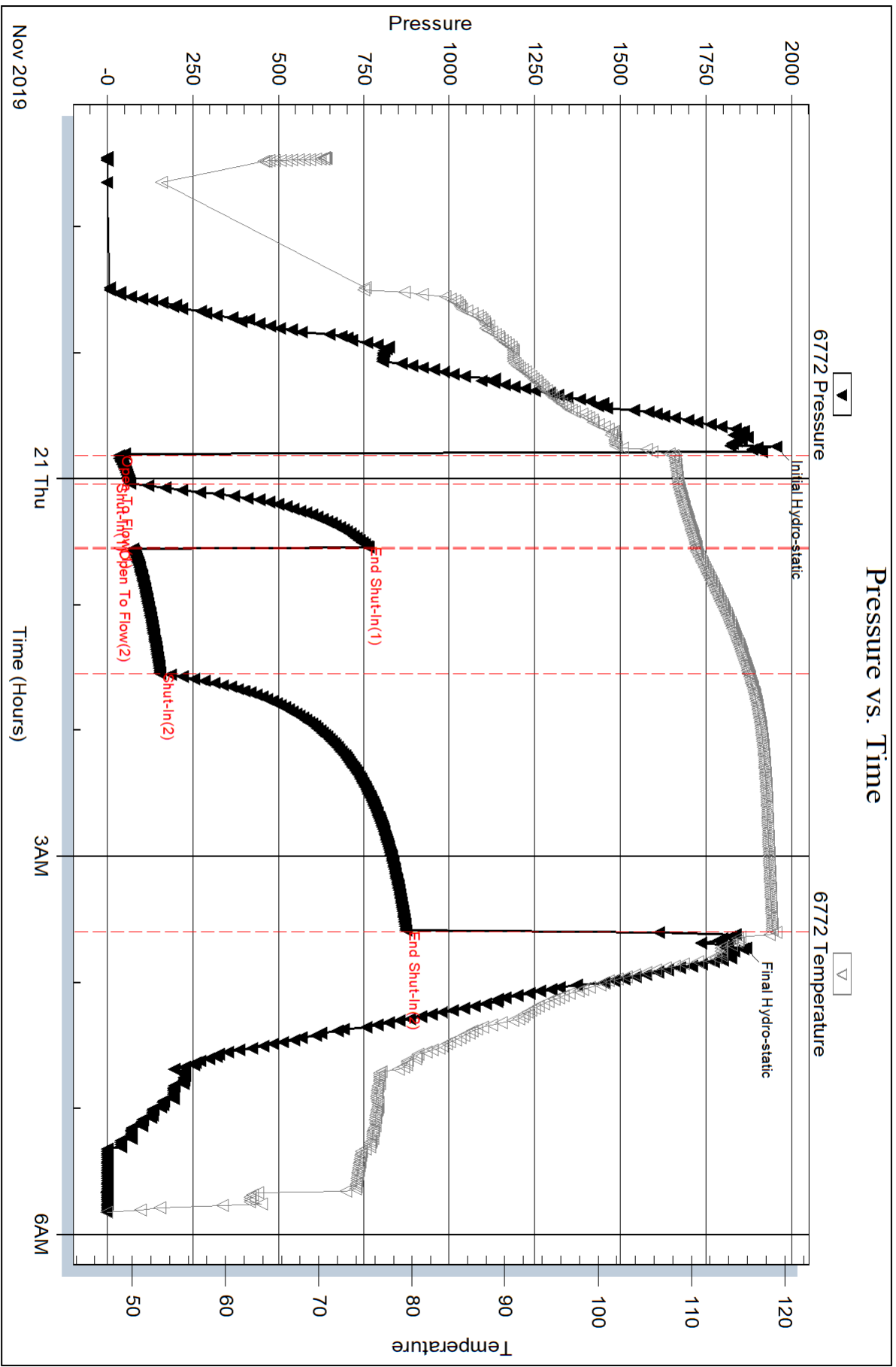
Num Gas Bombs: 0

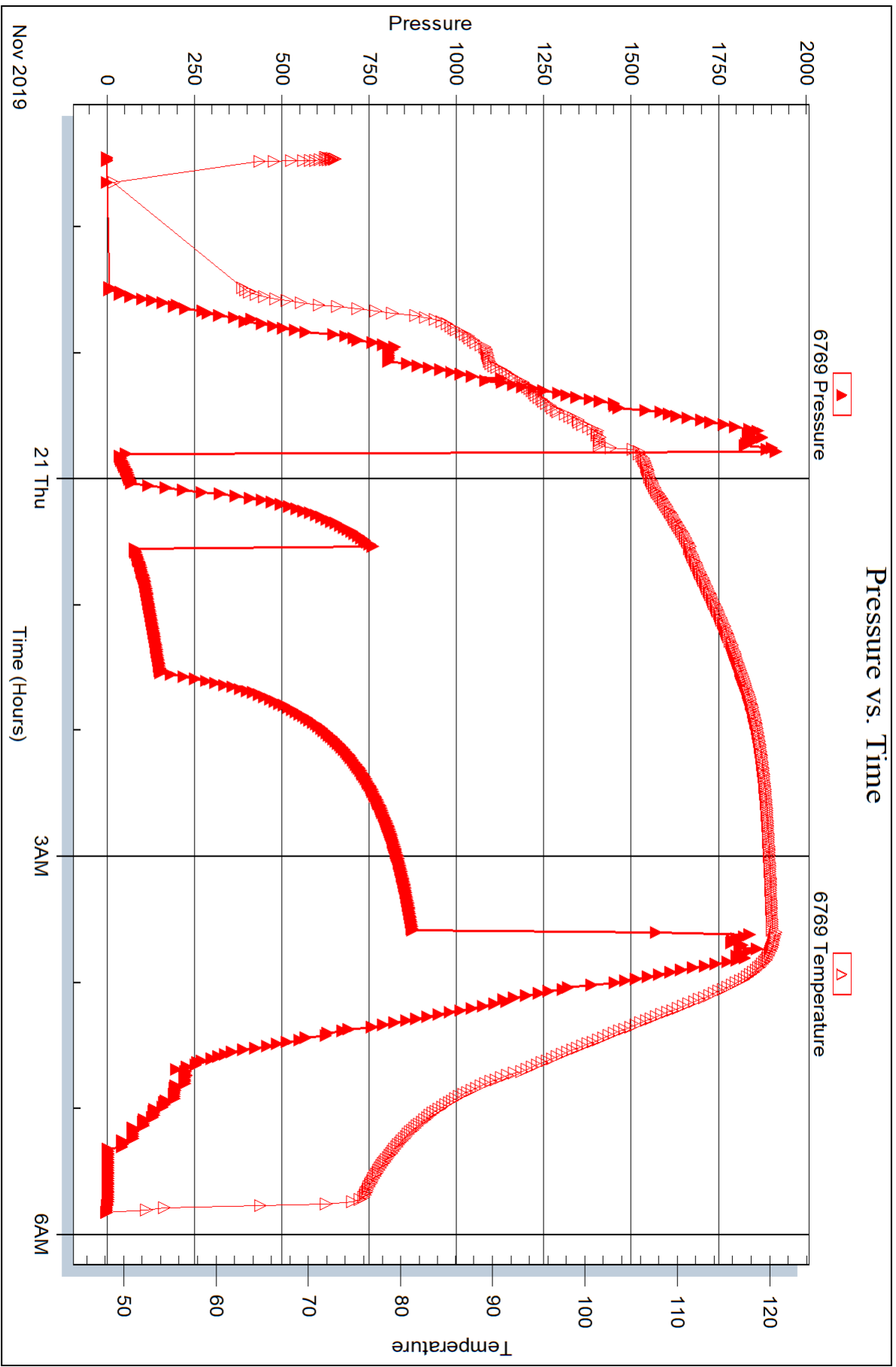
Serial #:

Laboratory Name:

Laboratory Location:

Recovery Comments:







DRILL STEM TEST REPORT

Prepared For: **Mustang Energy Corporation**

PO Box 1121
Hays KS 67601+1121

ATTN: Cameron Brin

Younger #3

25-13s-20w Ellis,KS

Start Date: 2019.11.21 @ 11:40:00

End Date: 2019.11.21 @ 18:38:00

Job Ticket #: 65712 DST #: 3

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

Printed: 2019.11.22 @ 09:52:32



**TRILOBITE
TESTING, INC.**

DRILL STEM TEST REPORT

TOOL DIAGRAM

Mustang Energy Corporation

25-13s-20w Ellis,KS

PO Box 1121
Hays KS 67601+1121

Younger #3

Job Ticket: 65712

DST#: 3

ATTN: Cameron Brin

Test Start: 2019.11.21 @ 11:40:00

Tool Information

Drill Pipe:	Length: 3804.00 ft	Diameter: 3.80 inches	Volume: 53.36 bbl	Tool Weight: 2500.00 lb
Heavy Wt. Pipe:	Length: 0.00 ft	Diameter: 0.00 inches	Volume: 0.00 bbl	Weight set on Packer: 25000.00 lb
Drill Collar:	Length: 31.00 ft	Diameter: 2.25 inches	Volume: 0.15 bbl	Weight to Pull Loose: 60000.00 lb
			<u>Total Volume: 53.51 bbl</u>	Tool Chased 0.00 ft
Drill Pipe Above KB:	30.00 ft			String Weight: Initial 52000.00 lb
Depth to Top Packer:	3825.00 ft			Final 57000.00 lb
Depth to Bottom Packer:	ft			
Interval between Packers:	13.00 ft			
Tool Length:	33.00 ft			
Number of Packers:	2	Diameter: 6.75 inches		
Tool Comments:				

Tool Description

Tool Description	Length (ft)	Serial No.	Position	Depth (ft)	Accum. Lengths
Change Over Sub	1.00			3806.00	
Shut In Tool	5.00			3811.00	
Hydraulic tool	5.00			3816.00	
Packer	5.00			3821.00	20.00 Bottom Of Top Packer
Packer	4.00			3825.00	
Stubb	1.00			3826.00	
Recorder	0.00	6772	Inside	3826.00	
Recorder	0.00	6769	Outside	3826.00	
Perforations	9.00			3835.00	
Bullnose	3.00			3838.00	13.00 Bottom Packers & Anchor
Total Tool Length:	33.00				



**TRILOBITE
TESTING, INC.**

DRILL STEM TEST REPORT

FLUID SUMMARY

Mustang Energy Corporation

25-13s-20w Ellis,KS

PO Box 1121
Hays KS 67601+1121

Younger #3

Job Ticket: 65712

DST#: 3

ATTN: Cameron Brin

Test Start: 2019.11.21 @ 11:40:00

Mud and Cushion Information

Mud Type: Gel Chem

Cushion Type:

Oil API:

39 deg API

Mud Weight: 9.00 lb/gal

Cushion Length:

ft

Water Salinity:

21000 ppm

Viscosity: 50.00 sec/qt

Cushion Volume:

bbbl

Water Loss: 7.99 in³

Gas Cushion Type:

Resistivity: ohm.m

Gas Cushion Pressure:

psig

Salinity: 5500.00 ppm

Filter Cake: 1.00 inches

Recovery Information

Recovery Table

Length ft	Description	Volume bbbl
360.00	W 100%W	4.767
180.00	OSW 2%O 98%W	2.525
120.00	GOCW 20%G 20%O 60%W	1.683
200.00	GCO 20%G 80%O	2.805

Total Length: 860.00 ft

Total Volume: 11.780 bbl

Num Fluid Samples: 0

Num Gas Bombs: 0

Serial #:

Laboratory Name:

Laboratory Location:

Recovery Comments:

Serial #: 6772

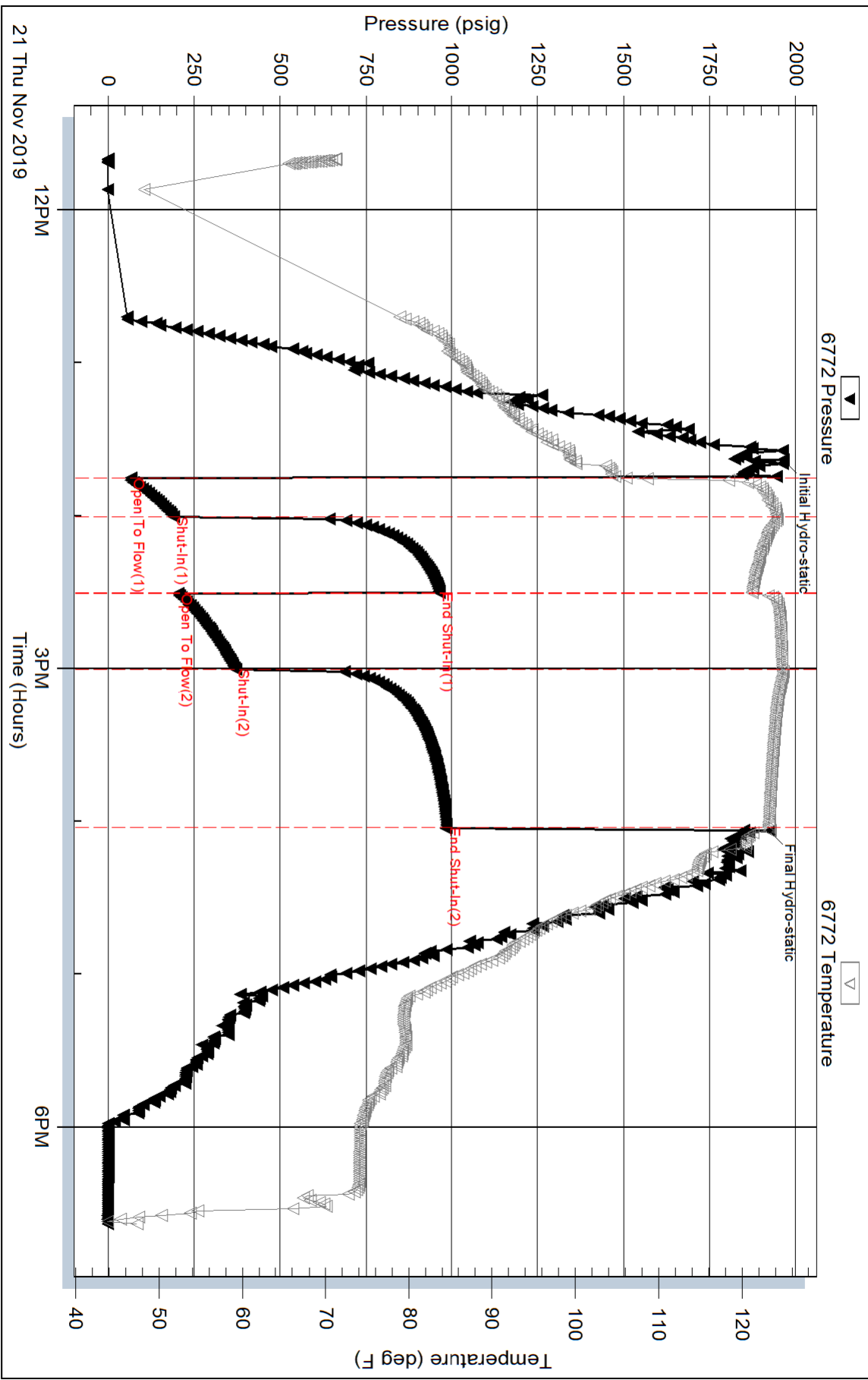
Inside

Mustang Energy Corporation

Younger #3

DST Test Number: 3

Pressure vs. Time



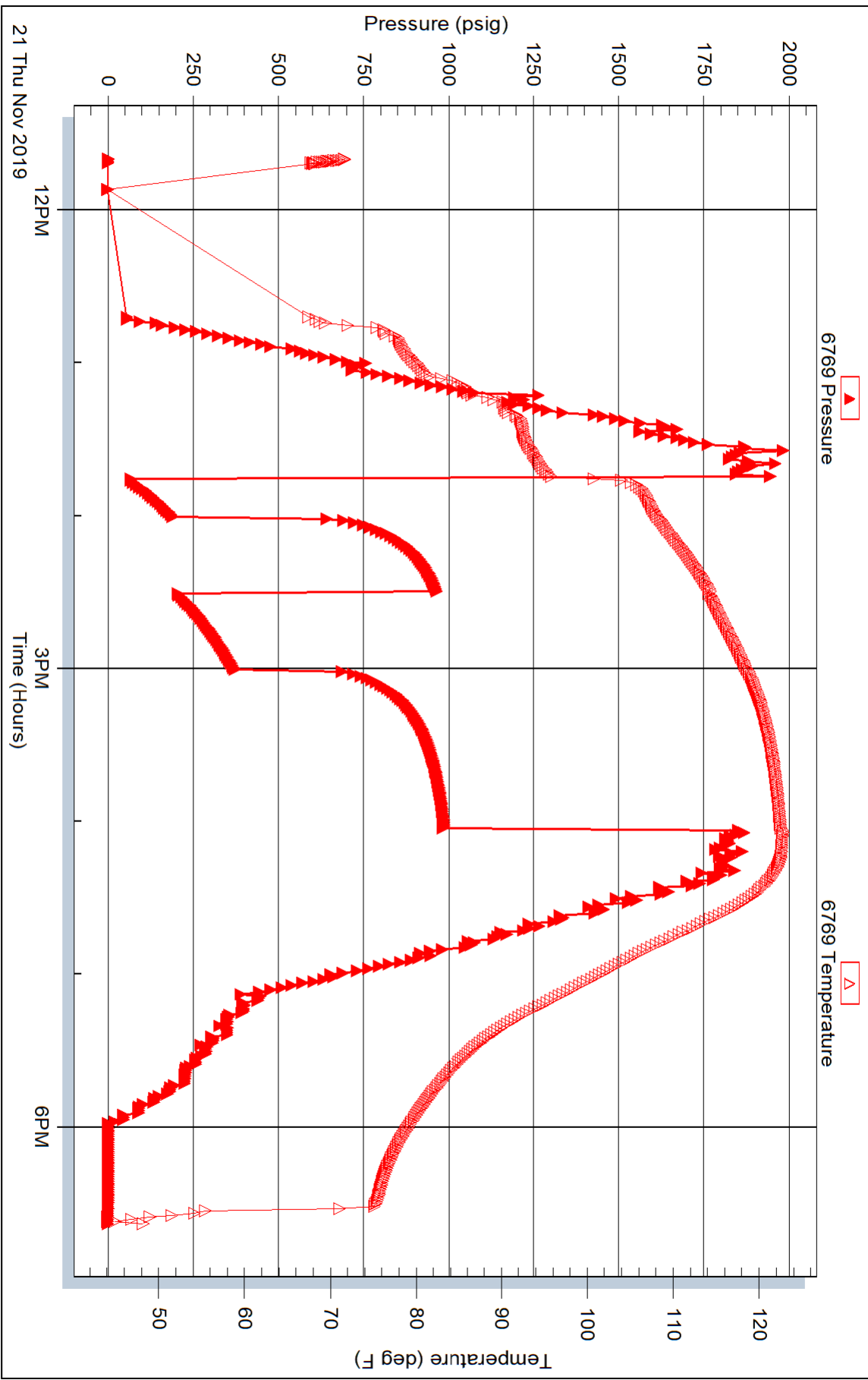
Serial #: 6769

Outside Mustang Energy Corporation

Younger #3

DST Test Number: 3

Pressure vs. Time





TRILOBITE TESTING INC.

1515 Commerce Parkway • Hays, Kansas 67601

Test Ticket

NO. **65710**

Well Name & No. Younger #3 Test No. 1 Date 11/20/2019
 Company Mustang Energy Corporation Elevation 2200 KB 2192 GL
 Address P.O. Box 1121 Hays KS 67601 + 1121
 Co. Rep / Geo. Cameron Brin Rig Disco Rig 4
 Location: Sec. 25 Twp 13S Rge. 20W Co. Ellis State KS

Interval Tested 3774-3815 Zone Tested Arbuckle
 Anchor Length 41' Drill Pipe Run 3739 Mud Wt. 9.2
 Top Packer Depth 3769 Drill Collars Run 31 Vis 47
 Bottom Packer Depth 3774 Wt. Pipe Run --- WL 7.6
 Total Depth 3815 Chlorides 4500 ppm System LCM 2#

Blow Description IF - built to 11 1/2"
IST - no blow back
FF - BOB 18 mins total build of 33 1/2"
FST - weak surface blow back

Rec	Feet of	%gas	%oil	%water	%mud
<u>20</u>	<u>G.C.O.</u>	<u>10</u>	<u>90</u>		
<u>60</u>	<u>G.M.C.O.</u>	<u>10</u>	<u>70</u>		<u>20</u>
<u>120</u>	<u>G.M.C.O.</u>	<u>5</u>	<u>55</u>		<u>40</u>
	<u>GIP 40'</u>				

Rec Total _____ BHT 113 Gravity 39 API RW _____ @ _____ °F Chlorides _____ ppm

(A) Initial Hydrostatic 1928 Test 1200 T-On Location 9:05 AM
 (B) First Initial Flow 1928 ~~1928~~ 29 Jars _____ T-Started 9:37 AM
 (C) First Final Flow 57 Safety Joint _____ T-Open 11:30
 (D) Initial Shut-In 898 Circ Sub _____ T-Pulled 2:00 P.M.
 (E) Second Initial Flow 62 Hourly Standby _____ T-Out 3:57
 (F) Second Final Flow 97 Mileage 24m. RT Comments _____
 (G) Final Shut-In 794 Sampler _____
 (H) Final Hydrostatic 1850 Straddle _____

Initial Open 15 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 _____ Sub Total 0
 Sub Total 1224 Accessibility _____ Total 1224
 MP/DST Disc't _____

Approved By _____ Our Representative Benny Mulligan

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. 65711

Well Name & No. Younger #3 Test No. 2 Date 11/20/2019
 Company Mustang Energy Corporation Elevation 2200 KB 2192 GL
 Address PO Box 1121 Hays KS 67601+1121
 Co. Rep / Geo. Cameron Brin Rig Disco Rig 4
 Location: Sec. 25 Twp 13s Rge. 20W Co. Ellis State KS

Interval Tested 3815-3823 Zone Tested Arbuckle
 Anchor Length 8' Drill Pipe Run 3771' Mud Wt. 9.2
 Top Packer Depth 3810 Drill Collars Run 31' Vls 47
 Bottom Packer Depth 3815 Wt. Pipe Run WL 7.6
 Total Depth 3823 Chlorides 4500 ppm System LCM 2#
 Blow Description IF - BOB 4mins 30secs total build of 24 1/2"
ISI - 2 1/2" blow back
FF - BOB 10mins total build of 40"
FST - 1" blow back

Rec	Feet of	%gas	%oil	%water	%mud
<u>330</u>	<u>G.C.O.</u>	<u>20</u>	<u>80</u>		
<u>60</u>	<u>G.O.C.M.</u>	<u>10</u>	<u>30</u>		<u>60</u>
	<u>GIP 180'</u>				

Rec Total 390' BHT 113 Gravity _____ API RW _____ @ _____ °F Chlorides _____ ppm

(A) Initial Hydrostatic 1953 Test 1200 T-On Location 9:10 PM
 (B) First Initial Flow 34 Jars _____ T-Started 9:27
 (C) First Final Flow 66 Safety Joint _____ T-Open 11:48
 (D) Initial Shut-In 761 Circ Sub _____ T-Pulled 3:34 AM.
 (E) Second Initial Flow 75 Hourly Standby _____ T-Out ~~5:50~~ 5:50
 (F) Second Final Flow 154 Mileage 2.4 RT 24 Comments _____
 (G) Final Shut-In 872 Sampler _____
 (H) Final Hydrostatic 1866 Straddle _____ EM Tool _____
 Shale Packer _____ Ruined Shale Packer _____
 Extra Packer _____ Ruined Packer _____
 Extra Recorder _____ Extra Copies _____
 Day Standby _____ Sub Total 0
 Accessibility _____ Total 1224
 Sub Total 1224 MP/DST Disc't _____

Approved By _____

Our Representative Benny Mulligan

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TRILOBITE TESTING INC.

1515 Commerce Parkway • Hays, Kansas 67601

Test Ticket

NO. **65712**

Well Name & No. Younger #3 Test No. 3 Date 11/21/2019
 Company Mustang Energy Corporation Elevation 2200 KB 2192 GL
 Address PO Box 1121 Hays KS 67601+1121
 Co. Rep / Geo. Cameron Brin Rig Disco Rig 4
 Location: Sec. 25 Twp 13s Rge. 20w Co. Ellis State KS

Interval Tested 3825'-3838' Zone Tested Arbuckle
 Anchor Length 13' Drill Pipe Run 3804' Mud Wt. 9.3
 Top Packer Depth 3820 Drill Collars Run 31' Vis 50
 Bottom Packer Depth 3825 Wt. Pipe Run _____ WL 8
 Total Depth 3838 Chlorides 5500 ppm System LCM 2#

Blow Description IF - BOB 2mm 40secs total build of 42 1/2"
ISI - 1/4" blow back
FE - BOB 4mins 40secs total build of 47 1/2"
FSTI - 7 1/2" blow back

Rec	Feet of	%gas	%oil	%water	%mud
<u>200</u>	<u>G.C.O.</u>	<u>20</u>	<u>80</u>		
<u>120</u>	<u>G.O.C.W.</u>	<u>20</u>	<u>20</u>	<u>60</u>	
<u>180</u>	<u>O.S.W.</u>		<u>2</u>	<u>98</u>	
<u>360</u>	<u>W</u>			<u>100</u>	
Rec	Feet of	%gas	%oil	%water	%mud

Rec Total 860' BHT 123 Gravity 39 API RW 574 @ 38 °F Chlorides 24000 ppm

(A) Initial Hydrostatic 1963 Test 1200 T-On Location 10:45 AM
 (B) First Initial Flow 66 Jars _____ T-Started 11:40
 (C) First Final Flow 190 Safety Joint _____ T-Open 1:45 PM
 (D) Initial Shut-In 963 Circ Sub _____ T-Pulled 4:00
 (E) Second Initial Flow 203 Hourly Standby _____ T-Out 6:38
 (F) Second Final Flow 370 Mileage 24mi RT 24 Comments _____
 (G) Final Shut-In 985 Sampler _____
 (H) Final Hydrostatic 1922 Straddle _____

Initial Open 15 Shale Packer _____ EM Tool _____
 Initial Shut-In 30 Extra Packer _____ Ruined Shale Packer _____
 Final Flow 30 Extra Recorder _____ Ruined Packer _____
 Final Shut-In 60 Day Standby _____ Extra Copies _____
 Sub Total 0 Accessibility _____ Sub Total 1224
 Sub Total 1224 MP/DST Disc't _____

Approved By _____ Our Representative Benny Mulligan

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MUSTANG

ENERGY CORPORATION

Scale 1:240 Imperial

Well Name: YOUNGER #3
Surface Location: SE NE SE, Sec. 25, T13S, R20W
Bottom Location:
API: 15-051-26974
License Number: 33922
Spud Date: 11/15/2019 Time: 4:00 PM
Region: ELLIS COUNTY
Drilling Completed: 11/22/2019 Time: 1:40 AM
Surface Coordinates: 1650' FSL & 330' FEL
Bottom Hole Coordinates:
Ground Elevation: 2192.00ft
K.B. Elevation: 2200.00ft
Logged Interval: 3150.00ft To: 3925.00ft
Total Depth: 3925.00ft
Formation: ARBUCKLE
Drilling Fluid Type: CHEMICAL

OPERATOR

Company: MUSTANG ENERGY CORPORATION
Address: P.O. BOX 1121

Contact Geologist: ROD BRIN
Contact Phone Nbr: (785)-623-0533
Well Name: YOUNGER #3
Location: SE NE SE, Sec. 25, T13S, R20W
API: 15-051-26974
Pool: Field: IRVIN
State: KS Country:

SURFACE CO-ORDINATES

Well Type: Vertical
Longitude: -99.485226
Latitude: 38.889769
N/S Co-ord: 1650' FSL
E/W Co-ord: 330' FEL

LOGGED BY

Company:
Address: 2717 HICKORY
HAYS, KS 67601
Phone Nbr: (785) 639-0721
Logged By: Geologist Name: CAMERON BRIN

CONTRACTOR

Contractor: DISCOVERY DRILLING INC.
Rig #: 4
Rig Type: MUD ROTARY
Spud Date: 11/15/2019 Time: 4:00 PM
TD Date: 11/22/2019 Time: 1:40 AM

ELEVATIONS

K.B. Elevation: 2200.00ft
K.B. to Ground: 8.00ft

Ground Elevation: 2192.00ft


NOTES

DUE TO POSITIVE RESULTS IN DST #2 & #3 AND GOOD STRUCTURAL POSITION FROM BKC THROUGH THE ARBUCKLE, DECISION WAS MADE TO RUN 5 1/2" PRODUCTION CASING TO FURTHER EVALUATE THE YOUNGER #3 WELL.

TOPS COMPARISON

FORMATION	YOUNGER #3								MUSTANG ENERGY CORP. YOUNGER #2				P&A 3/29/2002 JOHN B COLLINS L YOUNGER #10				P&A 12/8/1983 KIMBARK OIL & GAS ORTH #1					
	2200				2192				2214				2192				2219					
	LOG TOPS		SAMPLE TOPS		LOG		SMPL.		LOG		SMPL.		LOG		SMPL.		LOG		SMPL.			
	DEPTH	DATUM	DEPTH	DATUM	DEPTH	DATUM	CORR.	CORR.	DEPTH	DATUM	CORR.	CORR.	DEPTH	DATUM	CORR.	CORR.	DEPTH	DATUM	CORR.	CORR.		
ANHYDRITE TOP	1489	711	1490	710	1490	716	- 5 - 6	1496	718	- 7 - 8	1476	716	- 5 - 6	1504	715	- 4 - 5	1546	673	- 4 - 6	1546	673	- 4 - 6
BASE	1531	669	1533	667	1532	674	- 5 - 7	1538	676	- 7 - 9	1538	676	- 7 - 9	1546	673	- 4 - 6	1546	673	- 4 - 6	1546	673	- 4 - 6
TOPEKA	3201	-1001	3202	-1002	3198	-992	- 9 - 10	3209	-995	- 6 - 7	3186	-994	- 7 - 8	3214	-995	- 6 - 7	3214	-995	- 6 - 7	3214	-995	- 6 - 7
HEEBNER SHALE	3444	-1244	3444	-1244	3441	-1235	- 9 - 9	3454	-1240	- 4 - 4	3430	-1238	- 6 - 6	3456	-1237	- 7 - 7	3456	-1237	- 7 - 7	3456	-1237	- 7 - 7
TORONTO	3465	-1265	3467	-1267	3464	-1258	- 7 - 9	3476	-1262	- 3 - 5	3454	-1262	- 3 - 5	3478	-1259	- 6 - 8	3478	-1259	- 6 - 8	3478	-1259	- 6 - 8
LKC	3486	-1286	3487	-1287	3484	-1278	- 8 - 9	3496	-1282	- 4 - 5	3474	-1282	- 4 - 5	3499	-1280	- 6 - 7	3499	-1280	- 6 - 7	3499	-1280	- 6 - 7
BKC	3735	-1535	3736	-1536	3741	-1535	+ 0 - 1	3747	-1533	- 2 - 3	3722	-1530	- 5 - 6	3756	-1537	+ 2 + 1	3756	-1537	+ 2 + 1	3756	-1537	+ 2 + 1
MARMATON	3771	-1571	3771	-1571	3778	-1572	+ 1 + 1	3784	-1570	- 1 - 1	3765	-1573	+ 2 + 2	3846	-1627	+ 28 + 27	3846	-1627	+ 28 + 27	3846	-1627	+ 28 + 27
ARBUCKLE	3799	-1599	3800	-1600	3818	-1612	+ 13 + 12	3806	-1592	- 7 - 8	3805	-1613	+ 14 + 13	3846	-1627	+ 28 + 27	3846	-1627	+ 28 + 27	3846	-1627	+ 28 + 27
TOTAL DEPTH	3925	-1725	3925	-1725	3905	-1699	- 26 - 26	3923	-1709	- 16 - 16	3810	-1618	- 107 - 107	3857	-1638	- 87 - 87	3857	-1638	- 87 - 87	3857	-1638	- 87 - 87

DST #1 ARBUCKLE (3774-3815)



TRILOBITE TESTING, INC.

DRILL STEM TEST REPORT

Mustang Energy Corporation **25-13s-20w**

PO Box 1121 Hays KS 67601+1121 **Younger #3**

ATTN: Cameron Brin Job Ticket: 65710 **DST#: 1**

Test Start: 2019.11.20 @ 09:37:00

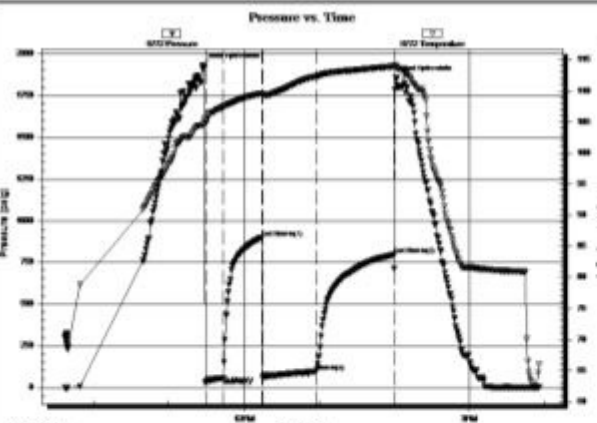
GENERAL INFORMATION:

Formation: **Arbuckle**
 Deviated: No Whipstock ft (KB)
 Time Tool Opened: 11:29:00
 Time Test Ended: 15:56:00
 Interval: **3774.00 ft (KB) To 3815.00 ft (KB) (TVD)**
 Total Depth: 3815.00 ft (KB) (TVD)
 Hole Diameter: 7.88 inches-hole Condition: Fair
 Reference Elevations: 2200.00 ft (KB)
 2192.00 ft (CF)
 KB to GR/CF: 8.00 ft

Serial #: 6772 Inside

Press@RunDepth: 97.08 psig @ 3775.00 ft (KB)	Capacity: 8000.00 psig
Start Date: 2019.11.20 End Date: 2019.11.20	Last Calib.: 2019.11.20
Start Time: 09:37:01 End Time: 15:56:00	Time On Btm: 2019.11.20 @ 11:27:30
	Time Off Btm: 2019.11.20 @ 14:01:09

TEST COMMENT: IF-15- built to 11 1/2 *
 ISI-30- no blow back
 FF-45- BOB 18mins total build of 33 1/2*
 FSI-60- weak surface blow back



Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	1928.88	104.83	Initial Hydro-static
2	29.09	104.52	Open To Flow (1)
17	57.02	107.47	Shut-in(1)
47	898.53	109.57	End Shut-in(1)
48	62.83	109.37	Open To Flow (2)
91	97.08	112.32	Shut-in(2)
152	794.96	113.94	End Shut-in(2)
154	1850.63	113.92	Final Hydro-static

Recovery


Length (ft)	Description	Volume (bbl)

Gas Rates

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

120.00	GMCO 5%G 55%O 40%M	1.40
60.00	GMCO 10%G 70%O 20%M	0.84
20.00	GCO 10%G 90%O	0.28
0.00	GIP 40'	0.00

DST #2 ARBUCKLE (3815-3823)

	DRILL STEM TEST REPORT	
	Mustang Energy Corporation	25-13s-20w
	PO Box 1121 Hays KS 67601+1121	Younger #3
	ATTN: Cameron Brin	Job Ticket: 65711 DST#: 2
		Test Start: 2019.11.20 @ 21:27:00

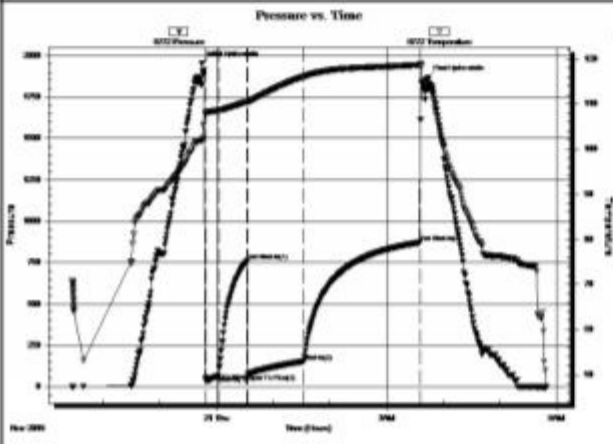
GENERAL INFORMATION:

Formation: **Arbuckle**
Deviated: No Whipstock ft (KB)
Time Tool Opened: 23:48:50 Test Type: Conventional Bottom Hole (Initial)
Time Test Ended: 05:49:50 Tester: Benny Mulligan
Unit No: 67
Interval: **3815.00 ft (KB) To 3823.00 ft (KB) (TVD)**
Reference Elevations: 2200.00 ft (KB)
Total Depth: 3823.00 ft (KB) (TVD) 2192.00 ft (CF)
Hole Diameter: 7.88 inches -hole Condition: Fair KB to GR/CF: 8.00 ft

Serial #: 6772 Inside

Press@RunDepth: 154.68 psig @ 3816.00 ft (KB) Capacity: 8000.00 psig
Start Date: 2019.11.20 End Date: 2019.11.21 Last Calib.: 2019.11.21
Start Time: 21:27:01 End Time: 05:49:50 Time On Btmr: 2019.11.20 @ 23:44:40
Time Off Btmr: 2019.11.21 @ 03:43:50

TEST COMMENT: IF-15- BOB 4mins 30secs total build of 24 1/2"
ISI-30- 2 1/2" blow back
FF-60- BOB 10mins total build of 40"
FSI-120- 1" blow back



PRESSURE SUMMARY			
Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	1953.95	101.98	Initial Hydro-static
5	34.39	108.03	Open To Flow (1)
18	66.63	108.59	Shut-In(1)
48	761.73	110.53	End Shut-In(1)
49	75.84	110.45	Open To Flow (2)
108	154.68	116.11	Shut-In(2)
231	872.26	118.67	End Shut-In(2)
240	1866.43	113.19	Final Hydro-static

Recovery		
Length (ft)	Description	Volume (bbl)
60.00	GOCM 10%G 30%O 60%M	0.56
330.00	GCO 20%G 80%O	4.63
0.00	GIP 180'	0.00

Gas Rates			
	Choke (inches)	Pressure (psig)	Gas Rate (Mcfd)

DST #3 ARUCKLE (3825-3838)

	DRILL STEM TEST REPORT	
	Mustang Energy Corporation	25-13s-20w
	PO Box 1121 Hays KS 67601+1121	Younger #3
		Job Ticket: 65711 DST#: 2
		Test Start: 2019.11.20 @ 21:27:00

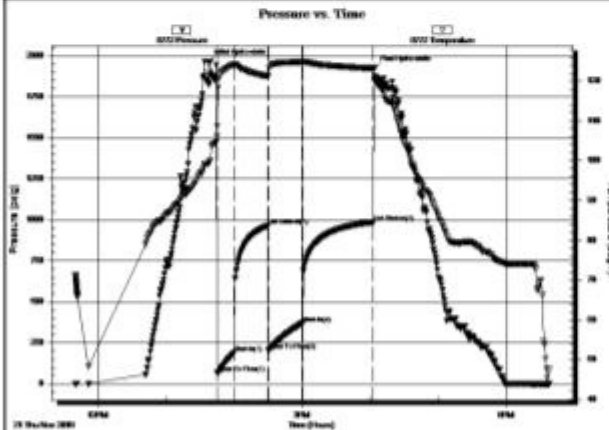


GENERAL INFORMATION:

Formation: **Arbuckle**
 Deviated: No Whipstock: ft (KB)
 Time Tool Opened: 13:45:10
 Time Test Ended: 18:38:00
 Interval: **3825.00 ft (KB) To 3838.00 ft (KB) (TVD)**
 Total Depth: 3838.00 ft (KB) (TVD)
 Hole Diameter: 7.88 inches-hole Condition: Fair
 Test Type: Conventional Bottom Hole (Initial)
 Tester: Benny Mulligan
 Unit No: 67
 Reference Elevations: 2200.00 ft (KB)
 2192.00 ft (CF)
 KB to GR/CF: 8.00 ft

Serial #: 6772 Inside
 Press@RunDepth: 370.61 psig @ 3826.00 ft (KB)
 Start Date: 2019.11.21 End Date: 2019.11.21
 Start Time: 11:40:01 End Time: 18:38:00
 Capacity: 8000.00 psig
 Last Calib.: 2019.11.21
 Time On Btm: 2019.11.21 @ 13:38:00
 Time Off Btm: 2019.11.21 @ 16:03:50

TEST COMMENT: IF-15- BOB 2mins 40secs total build of 42 1/2"
 ISI-30- 1/4" blow back
 FF-30- BOB 4mins 40secs total build of 47 1/2"
 FSI-60- 7 1/2" blow back



PRESSURE SUMMARY			
Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	1963.65	99.42	Initial Hydro-static
8	66.05	106.16	Open To Flow (1)
23	190.41	124.18	Shut-in(1)
52	963.77	121.24	End Shut-in(1)
53	203.63	121.20	Open To Flow (2)
83	370.61	124.83	Shut-in(2)
145	985.50	123.23	End Shut-in(2)
146	1922.97	123.30	Final Hydro-static

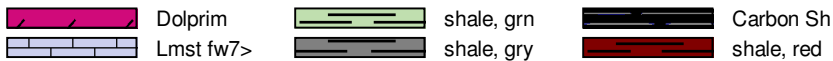
Recovery		
Length (ft)	Description	Volume (bbl)
360.00	W 100%W	4.77
180.00	OSW 2%O 98%W	2.52
120.00	GOCW 20%G 20%O 60%W	1.68
200.00	GCO 20%G 80%O	2.81

Gas Rates			
	Choke (inches)	Pressure (psig)	Gas Rate (Mcfd)

ANHYDRITE



ROCK TYPES



ACCESSORIES

MINERAL

- ▲ Chert, dark
- ∟ Dolomitic
- Sandy
- △ Chert White
- ∕ Euhed rhombs of dol or

FOSSIL

- F Fossils < 20%
- Oolite
- ⊕ Oomoldic

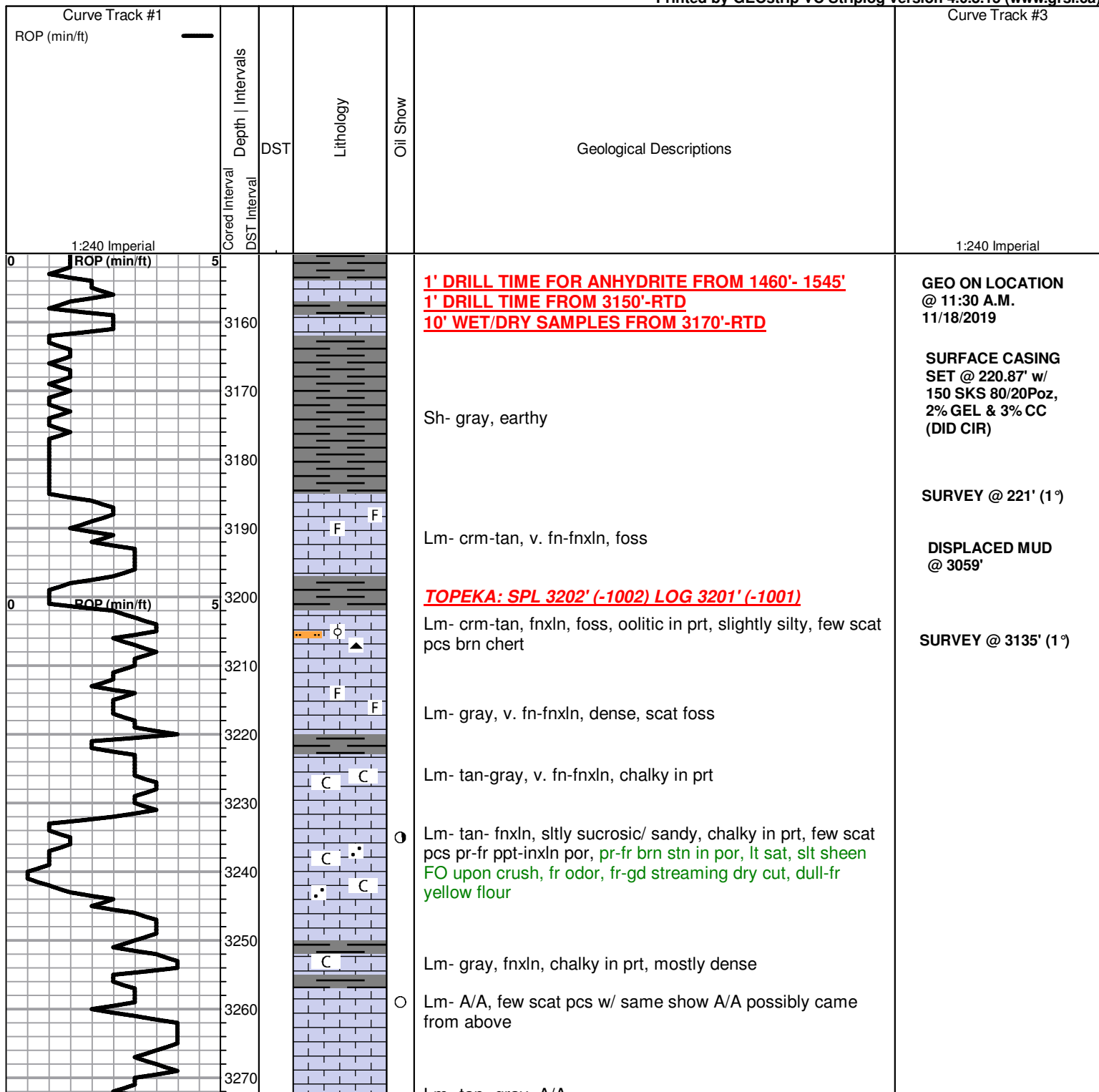
STRINGER

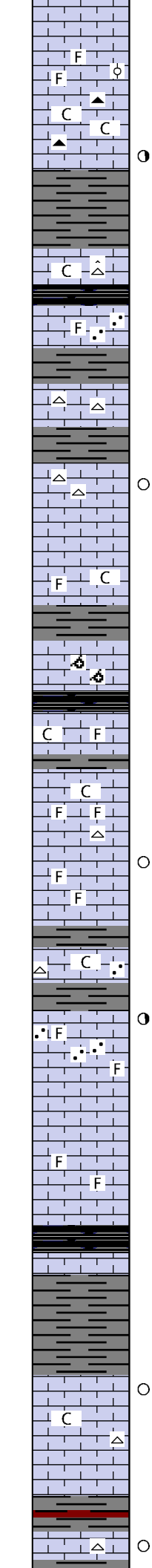
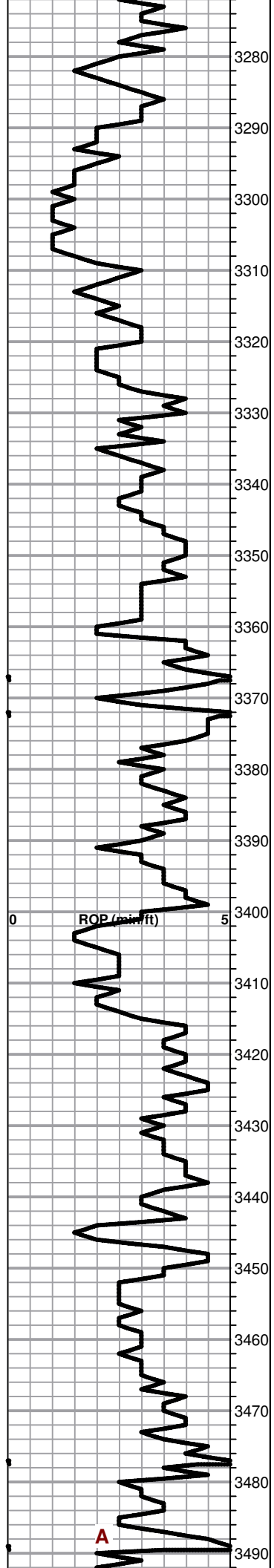
- ~~~~ Chert
- Siltstone
- red shale

TEXTURE

- C Chalky

Printed by GEOstrip VC Striplog version 4.0.8.15 (www.grsi.ca)





Lm- tan- gray, A/A

Lm- tan- v. fn-fnxln, foss, oolitic

Lm- tan-gray, fnxln, foss, chalky, scat blk chert

Lm- crm-gray, v. fn-fnxln, foss, sli chalky, few scat pcs pr infoss por, 1-3 pcs pr brn stn in foss por, FO droplets upon crush, lt odor

Lm- crm- fnxln, foss, chalky in prt, scat chert

Lm- tan, fnxln, sucrosic, foss, chalky in prt, mostly soft and sandy

Lm- crm- micro-fnxln, cherty throughtout, barren

Lm- crm- micro-fnxln, mostly barren, cherty, mostly dense, v. few scat pcs w/ pr inxln por w/ a few scat vuggs, few scat lt brn stn in por, NSFO, fr odor

Lm- crm, v. fn-fnxln, foss, chalky

Lm- crm- fnxln, foss, oolitic in prt, few sact pcs pr inxln por, pr v. lt brn stn, NSFO, lt odor

Lm- tan, fnxln, foss, few scat inxln-oomoldic por, NSO

Lm- crm- gray, v. fn-fnxln, foss, mostly dnse, chalky in prt

Lm- A/A

Lm- crm-gray, v.fn-fnxln, foss in prt, chalky in prt, cherty in prt

Lm- tan-gray, v. fn-fnxln, foss, few scat pcs w/ pr ppt por, 1-3 pcs pr brn stn, NSFO, v. lt odor

Sh- gray

Lm- crm, v. fn-fnxln, cherty, mostly dnse, sandy in prt, sli chalky in prt, few scat pcs pr inxln por

Lm- crm, fnxln, foss, scat sandy scat pr w/ few fr infoss por, few pcs w/ pr brn stn, slt SFO upon crush, pr-fr odor

Lm- tan, v fn- fnxln, dnse, scat foss

HEEBNER: SPL 3444' (-1244) LOG 3444' (-1244)

Sh- blk, carb

TORONTO: SPL 3467' (-1267) LOG 3465' (-1265)

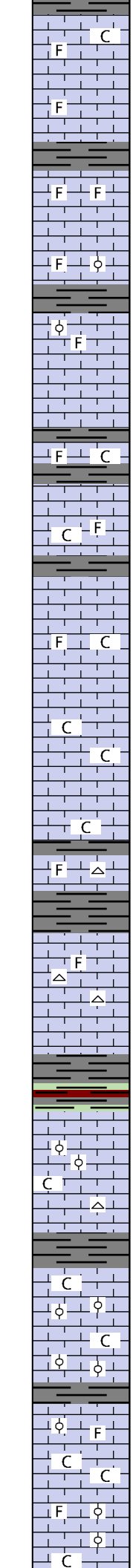
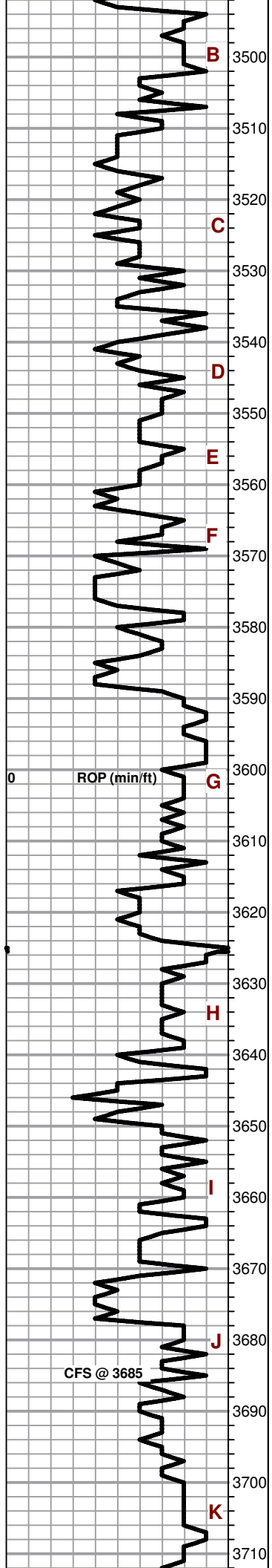
Lm- crm-off wt, vfn-fnxln, chalky in prt, cherty, few scat pcs w/ pr inxln por, few scat pcs w/ blk sticky oil possibly dead

Sh- red-gray

LKC: SPL 3487' (-1287) LOG 3486' (-1286)

Lm- crm- wt, foss, sli cherty, few scat pcs w/ pr infoss-inxln

VIS 58
WT 8.7



por, 1 pc pr. v. lt brn stn in por, NSFO, no odor

Lm- crm-tan, v. fn-fxnln, foss in prt, chalky in prt

Lm- tan- gray, dnse, sli foss

Sh- gray- red

Lm- crm- fnxln, foss, scat pr inxln- infoss por, scat pr lt brn stn, NSFO, lt odor

Lm- crm- fnxln, foss, oolitic in prt dnse

Lm- crm, fnxln, foss, oolitic in prt, few scat pcs pr inxln por, pr v. lt brn stn, NSFO, lt odor

Lm- crm- fnxln, scat foss, chalky in prt, few scat pcs pr inxln-infoss por, 1-3 pcs pr lt brn stn in por, NSFO, no odor

Lm- crm- fnxln, foss, chalky, barren

Lm- crm- fnxln, chalky, foss in prt, barren

Lm- A/A

Lm- A/A, scat foss, scat chert

Lm- crm- v. fnxln-fnxln, scat chert, scat foss, few scat pcs pr inxln por, 1-3 pcs pr lt brn stn, NSFO, no odor

Sh- gray-red-green

Lm- tan- crm- fnxln, oolitic, chalky in prt, sli cherty, scat pr w/ 1-2 pcs fr inxln-infoss por, pr brn- blk sticky stn in por, NSFO, pr odor

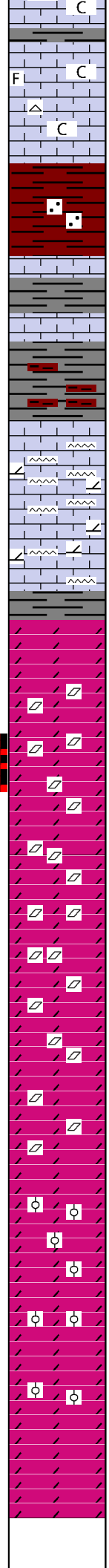
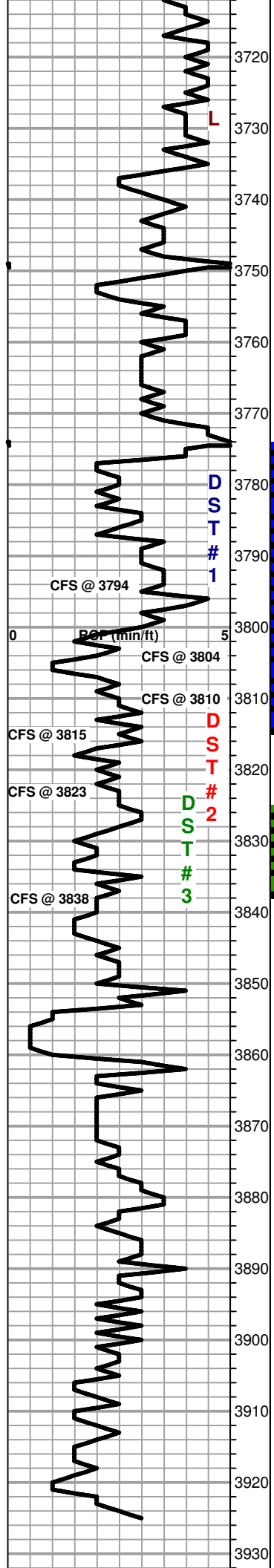
Sh- gray- blk

Lm- crm- fnxln, oolitic, chalky, scat, tight pr infoss por, pr brn stn in por, gassy FO bubbles upon crush, lt odor

Lm- crm- fnxln, chalky, foss, oolitic, scat pr infoss w/ a few pcs fr inxln por, mostly pr w/ a few pcs fr blk-brn stn, v. few FO drops in cup, lt odor

Lm- crm- fnxln, foss, oolitic, chalky, scat dnse, barren

VIS 50
WT 8.8
LCM 2 1/2#



Lm- crm- tan, fnxln, scat foss, chalky, scat dnse, barren, some scat chert

BKC: SPL 3736' (-1536) LOG 3735' (-1535)

Sh- red, muddy red wash, sandy

Lm- fnxln, crm-brn, foss, scat dnse, scat soft and chalky

MARMATON: SPL 3771' (-1571) LOG 3771' (-1571)

Lm- fnxln, crm- dnse

Lm- crm, fnxln, sli dolomitic, sandy, sucrosic, scat pr inxln por, scat pr brn stn, fr FO droplets in cup and upon crush, fr odor, orange chert through

Lm- A/A, 1 pc of dolomite

ARBUCKLE: SPL 3800' (-1600) 3799' (-1599)

Dolo-tan, fnxln, sucrosic, mostly tight, mostly pr w/ a few pcs fr inxln por, pr-fr v. lt brn stn, fr FO sheen in cup and spl, fr-gd sulfuric odor, brt yellow flour, fr-gd streaming dry cut

Dolo- tan- fnxln, sucrosic, fn rhombic in prt, fr inxln por w/ scat vuggs, fr lt brn stn, fr-gd FO sheen in spl and in cup, fr-gd sulfuric odor, gd dry cut

Dolo- sucrosic- scat fn-md rhombic xln, fr inxln por w/ scat vuggs, fr brn stn, fr sat, fr-gd FO sheen in cup & spl, pr-fr odor

Dolo- tan-crm, sucrosic-fn w/ a few md pcs rhom xln, v. few scat vuggs, pr w/ few scat fr inxln-few scat oom por, pr-fr brn stn, lt sat, fr SFO, pr-fr odor

Dolo- crm- sucrosic, fn-scat sli coarse rhombic xln, scat vuggs, fr brn stn, fr w/ scat gd sat, fr-gd FO sheen in cup and spl, fr odor

Dolo- tan-crm- sucrosic- fn w/ few md rhom xln, v. few scat vuggs, pr w/ few inxln- few oom por, pr-fr brn stn, lt sat, fr SFO, pr-fr odor

Dolo- crm-wt, sucrosic-fn-md w/ few scat coarse rhombic xln, scat vuggs, fr brn-blk stn, pr-fr sat, fr-gd FO sheen in spl & cup, pr-fr odor

Dolo- crm- wt, sucrosic- fn-md rhom xln, scat vuggs, fr brn- blk stn, most pr w/ few fr sat, pr-fr SFO upon crush, pr odor

Dolo- crm-wt, sucrosic- fn-md rhom xln, few scat vuggs, pr-fr blk stn, most pr sat, pr-fr SFO upon crush, pr odor

Dolo- wt, fnxln, oolitic, mostly barren, few scat pcs pr-fr inxln por, pr blk stn, pr sat, sli SFO, pr odor

Dolo- wt, v. fn-fnxln, oolitic in prt, barren, scat md coarse rhombic xln por, NSO

Dolo- A/A

Dolo- A/A

RTD: SPL 3925' (-1725) LOG 3925' (-1725)

VIS 58
WT 9.0

PIPE STRAP -0.02
TO BOARD

SURVEY @ 3815' (1 3/4°)

VIS 53
WT 9.4

VIS 50
WT 9.3

VIS 60
WT 9.0

GEO OFF LOCATION
@ 6:15 A.M
11/22/2019

