

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) (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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JAMES C. MUSGROVE

Petroleum Geologist, LLC
212 Main Street
P.O. Box 215
Claflin, KS 67525

Office (620) 588-4250

Res. Claflin (620) 786-0839

Mai Oil Operations Inc.
Kultgen #17
NW-SE-SW-NW (2024' FNL & 672' FWL)
Section 12-19s-12w
Barton County, Kansas

Page 1

5 1/2 Production Casing Set

Contractor: Southwind Drilling Co. (rig #3)
Commenced: May 31, 2018
Completed: June 7, 2018
Elevation: 1817' K.B., 1815' D.F., 1809' G.L.
Casing program: Surface; 8 5/8" @ 366'
Production, 5 1/2" @ 3462'
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 Eli, Dual Induction; Compensated Density/Neutron Log and Micro Log.

<u>Formation</u>	<u>Log Depth</u>	<u>Sub-Sea Datum</u>
Anhydrite (Sample)	628	+1189
Base Anhydrite (Sample)	644	+1173
Heebner	2963	-1146
Toronto	2983	-1166
Douglas	2998	-1181
Brown Lime	3077	-1260
Lansing	3094	-1277
Base Kansas City	3350	-1533
Conglomerate	3362	-1545
Arbuckle	3402	-1585
Rotary Total Depth	3465	-1648
Log Total Depth	3469	-1652

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

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

TOPEKA SECTION

- 2900-2906' Limestone, cream, white, fossiliferous, chalky; fair porosity, light brown stain, show of free oil and faint odor in fresh samples.
- 2911-2920' Limestone, tan, brown, fossiliferous, oomoldic, poor visible porosity no show of oil and faint odor in fresh samples.
- 2940-2946' Limestone, tan, buff, chalky in part; scattered vuggy porosity trace black stain, show of free oil (heavy, black) tarry and no odor in fresh samples.

TORONTO SECTION

- 2989-2998' Limestone, white, tan, finely crystalline, poor visible porosity, chalky increasingly cherty, trace black to light brown stain, no show of free oil and faint odor in fresh samples.

LANSING SECTION

- 3094-3106' Limestone, tan, brown, finely crystalline, few fossiliferous poor to fair scattered pinpoint porosity; light brown stain, show of free oil and faint odor in fresh samples.
- 3115-3124' Limestone, brown, oomoldic, chalky in part, good oomoldic to vuggy porosity, golden brown stain, show of free oil and fair odor in fresh samples.
- 3141-3150' Limestone, tan, brown, oolitic, oomoldic in part, scattered porosity, light brown to dark brown stain show of free oil,
- 3161-3170' Limestone, tan, oomoldic, fossiliferous, poorly developed porosity, cherty increasingly chalky in part; trace brown stain, no free oil and no odor in fresh samples.

Drill Stem Test #1 3080-3177

Times: 30-45-45-60

Blow: Strong

**Recovery: 126' very slightly oil cut mud
(1% oil; 99% mud)
75' slightly oil and gas cut mud**

**Pressures: ISIP 258 psi
FSIP 511 psi
IFP 17-68 psi
FFP 91-110 psi
HSH 1490-146 psi**

- 3180-3190' Limestone, tan, buff, oomoldic, good oomoldic porosity, dark brown stain, show of free oil and strong odor in fresh samples.
- 3190-3201' Limestone, as above, decreasing stain and show of free oil and faint odor.

- 3231-3241' Limestone, tan, buff, oomoldic; good oomoldic and vuggy porosity, dark black stain, show of free oil and faint odor in fresh samples.
- 3250-3255' Limestone, white, cream, fossiliferous, poor visible porosity, no show.
- 3265-3280' Limestone, white, cream, oomoldic and vuggy type porosity, dark brown stain, show of free oil and strong odor in fresh samples.

Drill Stem Test #2 3212-3280

Times: 30-30-30-30

Blow: Weak

Recovery: 15' mud

Pressures:

ISIP	64	psi
FSIP	56	psi
IFP	30-33	psi
FFP	34-37	psi
HSH	1571-1522	psi

- 3297-3304' Limestone, tan, brown, oolitic, oomoldic in part; poor scattered porosity, light brown stain, trace of free oil and faint odor in fresh samples.
- 3332-3340' Limestone, white, cream, finely crystalline, chalky, few fossiliferous, poor visible porosity, no shows; trace pyrite.

CONGLOMERATE SECTION

- 3362-3388' Varied colored cherts; trace very fine grained sand; in matrix of varied colored soft shales.
- 3388-3396' Limestone, tan, finely crystalline sucrosic, fair inter-crystalline type porosity; light brown stain, show of free oil and strong odor in fresh samples.

Drill Stem Test #3 3337-3400

Times: 30-30-30-30

Blow: Weak

**Recovery: 2' very slightly oil cut mud
(1% oil; 99% mud)**

Pressures:

ISIP	59	psi
FSIP	52	psi
IFP	31-37	psi
FFP	31-35	psi
HSH	1655-1607	psi

ARBUCKLE SECTION

- 3405-3420' Dolomite, white, tan, sucrosic scattered vuggy type porosity, light brown

Mai Oil Operations Inc.
Kultgen #17
NW-SE-SW-NW (2024' FNL & 672' FWL)
Section 12-19s-12w
Barton County, Kansas

Page 4

stain, week show of free oil and strong odor; plus iron pyrite.

3420-3440'; Dolomite, white, cream, medium crystalline, scattered vuggy porosity, trace brown stain, show of free oil and strong odor.

3440-3460' Dolomite, white, medium crystalline, good inter-crystalline porosity, dark brown stain, dark brown spotty show of free oil and strong odor in fresh samples.

3460-3469' Dolomite, white, tan, medium to coarse crystalline, good inter-crystalline porosity, no shows; questionable odor.

Rotary Total Depth 3465
Log Total Depth 3469

Recommendations:

5 1/2" production casing was set and cemented on the Mai Oil Operations, Inc., Kultgen #17.

Respectfully yours,



Wyatt Urban
Petroleum Geologist



TRILOBITE TESTING, INC.

DRILL STEM TEST REPORT

Mai Oil Operations
 8411 Preston Rd STE 800
 Dallas TX 75225
 ATTN: Wyatt Urban

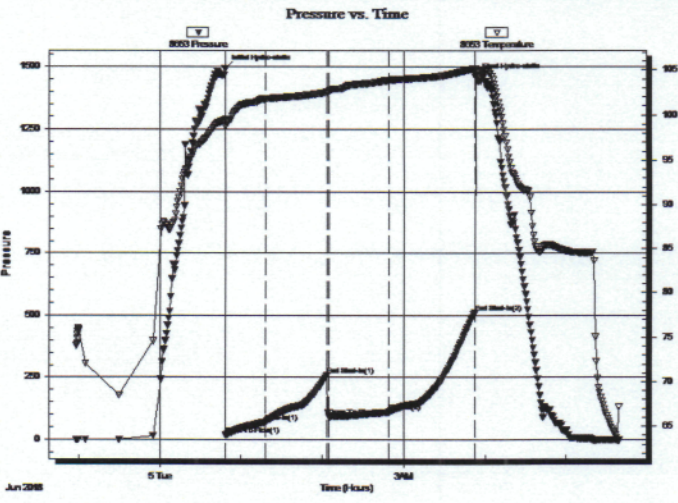
12-19s-12w Barton,KS
Kultgen #17
 Job Ticket: 64021 **DST#: 1**
 Test Start: 2018.06.04 @ 22:58:00

GENERAL INFORMATION:

Formation: **LKC A-G**
 Deviated: No Whipstock: ft (KB)
 Test Type: Conventional Bottom Hole (Initial)
 Time Tool Opened: 00:48:40 Tester: Cade Gerhard
 Time Test Ended: 05:39:20 Unit No: 65
 Interval: **3080.00 ft (KB) To 3177.00 ft (KB) (TVD)** Reference Elevations: 1817.00 ft (KB)
 Total Depth: 3177.00 ft (KB) (TVD) 1810.00 ft (CF)
 Hole Diameter: 7.88 inches Hole Condition: Fair KB to GR/CF: 7.00 ft

Serial #: 8653 Inside
 Press@RunDepth: 110.44 psig @ 3083.00 ft (KB) Capacity: 8000.00 psig
 Start Date: 2018.06.04 End Date: 2018.06.05 Last Calib.: 2018.06.05
 Start Time: 22:58:01 End Time: 05:39:20 Time On Btm: 2018.06.05 @ 00:48:30
 Time Off Btm: 2018.06.05 @ 03:53:00

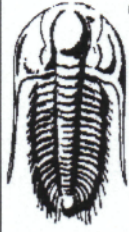
TEST COMMENT: IF-30- Strong blow ; BOB in 12 min; Built to 18"
 IS-45- No blow back
 FF-45- Strong blow ; BOB in 20 min; Built to 11 1/4"
 FSI-60- No blow back



PRESSURE SUMMARY			
Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	1492.22	99.45	Initial Hydro-static
1	17.80	98.78	Open To Flow (1)
30	68.64	101.75	Shut-In(1)
75	258.35	102.50	End Shut-In(1)
77	91.11	102.65	Open To Flow (2)
121	110.44	103.86	Shut-In(2)
184	511.21	105.16	End Shut-In(2)
185	1456.41	105.13	Final Hydro-static

Recovery		
Length (ft)	Description	Volume (bbl)
126.00	VSOCM 1%O 99%M	
74.00	SGOCM 5%G 1%O 94%M	

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



**TRILOBITE
TESTING, INC.**

DRILL STEM TEST REPORT

TOOL DIAGRAM

Mai Oil Operations
8411 Preston Rd STE 800
Dallas TX 75225
ATTN: Wyatt Urban

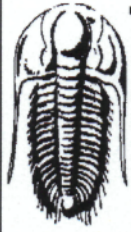
12-19s-12w Barton,KS
Kultgen #17
Job Ticket: 64021 **DST#: 1**
Test Start: 2018.06.04 @ 22:58:00

Tool Information

Drill Pipe:	Length: 3082.00 ft	Diameter: 3.82 inches	Volume: 43.69 bbl	Tool Weight: 2000.00 lb
Heavy Wt. Pipe:	Length: 0.00 ft	Diameter: inches	Volume: 0.00 bbl	Weight set on Packer: 25000.00 lb
Drill Collar:	Length: 0.00 ft	Diameter: inches	Volume: 0.00 bbl	Weight to Pull Loose: 38000.00 lb
			<u>Total Volume: 43.69 bbl</u>	Tool Chased 0.00 ft
Drill Pipe Above KB:	23.00 ft			String Weight: Initial 35000.00 lb
Depth to Top Packer:	3080.00 ft			Final 38000.00 lb
Depth to Bottom Packer:	ft			
Interval between Packers:	97.00 ft			
Tool Length:	118.00 ft			
Number of Packers:	2	Diameter: 6.75 inches		

Tool Comments:

Tool Description	Length (ft)	Serial No.	Position	Depth (ft)	Accum. Lengths
Change Over Sub	2.00			3061.00	
Shut In Tool	5.00			3066.00	
Hydraulic tool	5.00			3071.00	
Packer	5.00			3076.00	21.00 Bottom Of Top Packer
Packer	4.00			3080.00	
Stubb	1.00			3081.00	
Change Over Sub	2.00			3083.00	
Recorder	0.00	8653	Inside	3083.00	
Recorder	0.00	8737	Outside	3083.00	
Change Over Sub	2.00			3085.00	
Drill Pipe	63.00			3148.00	
Perforations	26.00			3174.00	
Bullnose	3.00			3177.00	97.00 Bottom Packers & Anchor
Total Tool Length:	118.00				



**TRILOBITE
TESTING, INC.**

DRILL STEM TEST REPORT

FLUID SUMMARY

Mai Oil Operations

12-19s-12w Barton,KS

8411 Preston Rd STE 800
Dallas TX 75225

Kultgen #17

Job Ticket: 64021

DST#: 1

ATTN: Wyatt Urban

Test Start: 2018.06.04 @ 22:58:00

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: 62.00 sec/qt

Cushion Volume:

bbbl

Water Loss: 7.17 in³

Gas Cushion Type:

Resistivity: ohm.m

Gas Cushion Pressure:

psig

Salinity: 3000.00 ppm

Filter Cake: inches

Recovery Information

Recovery Table

Length ft	Description	Volume bbbl
126.00	VSOCM 1%O 99%M	
74.00	SGOCM 5%G 1%O 94%M	

Total Length: 200.00 ft Total Volume: bbl

Num Fluid Samples: 0

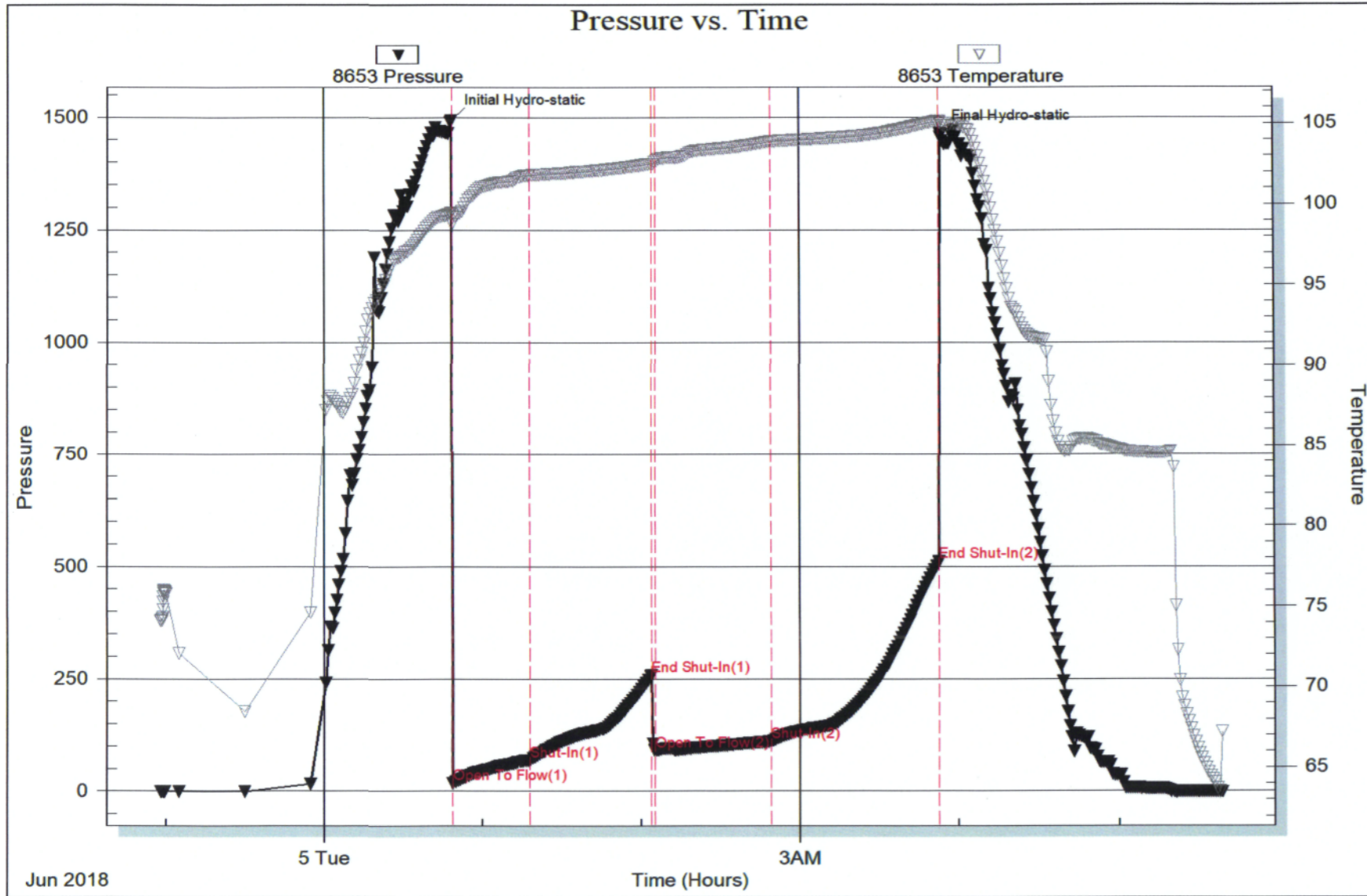
Num Gas Bombs: 0

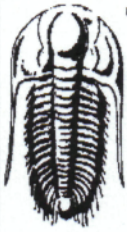
Serial #:

Laboratory Name:

Laboratory Location:

Recovery Comments: LCM- 1.5#





**TRILOBITE
TESTING, INC.**

DRILL STEM TEST REPORT

Mai Oil Operations
8411 Preston Rd STE 800
Dallas TX 75225
ATTN: Wyatt Urban

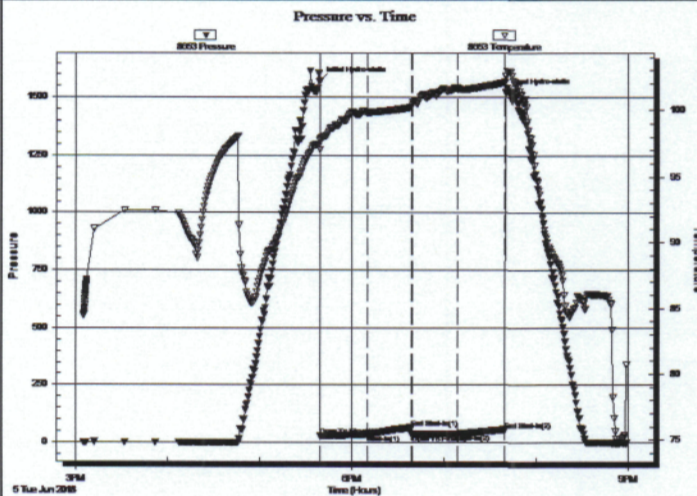
12-19s-12w Barton,KS
Kultgen #17
Job Ticket: 64022 **DST#: 2**
Test Start: 2018.06.05 @ 15:05:00

GENERAL INFORMATION:

Formation: **LKC H - J**
Deviated: No Whipstock: ft (KB)
Time Tool Opened: 17:39:30
Time Test Ended: 20:59:20
Interval: **3212.00 ft (KB) To 3280.00 ft (KB) (TVD)**
Total Depth: 3280.00 ft (KB) (TVD)
Hole Diameter: 7.88 inches Hole Condition: Fair
Test Type: Conventional Bottom Hole (Initial)
Tester: Cade Gerhard
Unit No: 65
Reference Elevations: 1817.00 ft (KB)
1810.00 ft (CF)
KB to GR/CF: 7.00 ft

Serial #: 8653 **Inside**
Press@RunDepth: 37.52 psig @ 3249.00 ft (KB) Capacity: 8000.00 psig
Start Date: 2018.06.05 End Date: 2018.06.05 Last Calib.: 2018.06.05
Start Time: 15:05:01 End Time: 20:59:20 Time On Btm: 2018.06.05 @ 17:39:20
Time Off Btm: 2018.06.05 @ 19:40:09

TEST COMMENT: IF-30- Weak surface blow
IS-30- No blow back
FF-30- No blow
FSI-30- No blow back



PRESSURE SUMMARY

Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	1571.84	97.87	Initial Hydro-static
1	30.59	97.02	Open To Flow (1)
31	33.54	99.83	Shut-In(1)
60	64.37	100.22	End Shut-In(1)
61	34.96	100.41	Open To Flow (2)
90	37.52	101.63	Shut-In(2)
121	56.05	102.09	End Shut-In(2)
121	1522.59	102.55	Final Hydro-static

Recovery

Length (ft)	Description	Volume (bbl)
15.00	M 100%M	0.21

Gas Rates

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



**TRILOBITE
TESTING, INC.**

DRILL STEM TEST REPORT

TOOL DIAGRAM

Mai Oil Operations
8411 Preston Rd STE 800
Dallas TX 75225
ATTN: Wyatt Urban

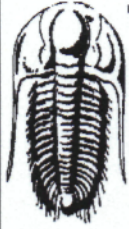
12-19s-12w Barton,KS
Kultgen #17
Job Ticket: 64022 **DST#: 2**
Test Start: 2018.06.05 @ 15:05:00

Tool Information

Drill Pipe:	Length: 3211.00 ft	Diameter: 3.82 inches	Volume: 45.52 bbl	Tool Weight: 2000.00 lb
Heavy Wt. Pipe:	Length: 0.00 ft	Diameter: inches	Volume: 0.00 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: 38000.00 lb
			<u>Total Volume: 45.52 bbl</u>	Tool Chased 0.00 ft
Drill Pipe Above KB:	20.00 ft			String Weight: Initial 37000.00 lb
Depth to Top Packer:	3212.00 ft			Final 38000.00 lb
Depth to Bottom Packer:	ft			
Interval between Packers:	68.00 ft			
Tool Length:	89.00 ft			
Number of Packers:	2	Diameter: 6.75 inches		

Tool Comments:

Tool Description	Length (ft)	Serial No.	Position	Depth (ft)	Accum. Lengths
Change Over Sub	2.00			3193.00	
Shut In Tool	5.00			3198.00	
Hydraulic tool	5.00			3203.00	
Packer	5.00			3208.00	21.00 Bottom Of Top Packer
Packer	4.00			3212.00	
Stubb	1.00			3213.00	
Change Over Sub	2.00			3215.00	
Drill Pipe	32.00			3247.00	
Change Over Sub	2.00			3249.00	
Recorder	0.00	8653	Inside	3249.00	
Recorder	0.00	8737	Outside	3249.00	
Perforations	28.00			3277.00	
Bullnose	3.00			3280.00	68.00 Bottom Packers & Anchor
Total Tool Length:	89.00				



**TRILOBITE
TESTING, INC.**

DRILL STEM TEST REPORT

FLUID SUMMARY

Mai Oil Operations

12-19s-12w Barton,KS

8411 Preston Rd STE 800
Dallas TX 75225

Kultgen #17

Job Ticket: 64022

DST#: 2

ATTN: Wyatt Urban

Test Start: 2018.06.05 @ 15:05:00

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: 50.00 sec/qt

Cushion Volume:

bbl

Water Loss: 9.57 in³

Gas Cushion Type:

Resistivity: ohm.m

Gas Cushion Pressure:

psig

Salinity: 8000.00 ppm

Filter Cake: inches

Recovery Information

Recovery Table

Length ft	Description	Volume bbl
15.00	M 100%M	0.213

Total Length: 15.00 ft Total Volume: 0.213 bbl

Num Fluid Samples: 0

Num Gas Bombs: 0

Serial #:

Laboratory Name:

Laboratory Location:

Recovery Comments: LCM- 1#

Serial #: 8653

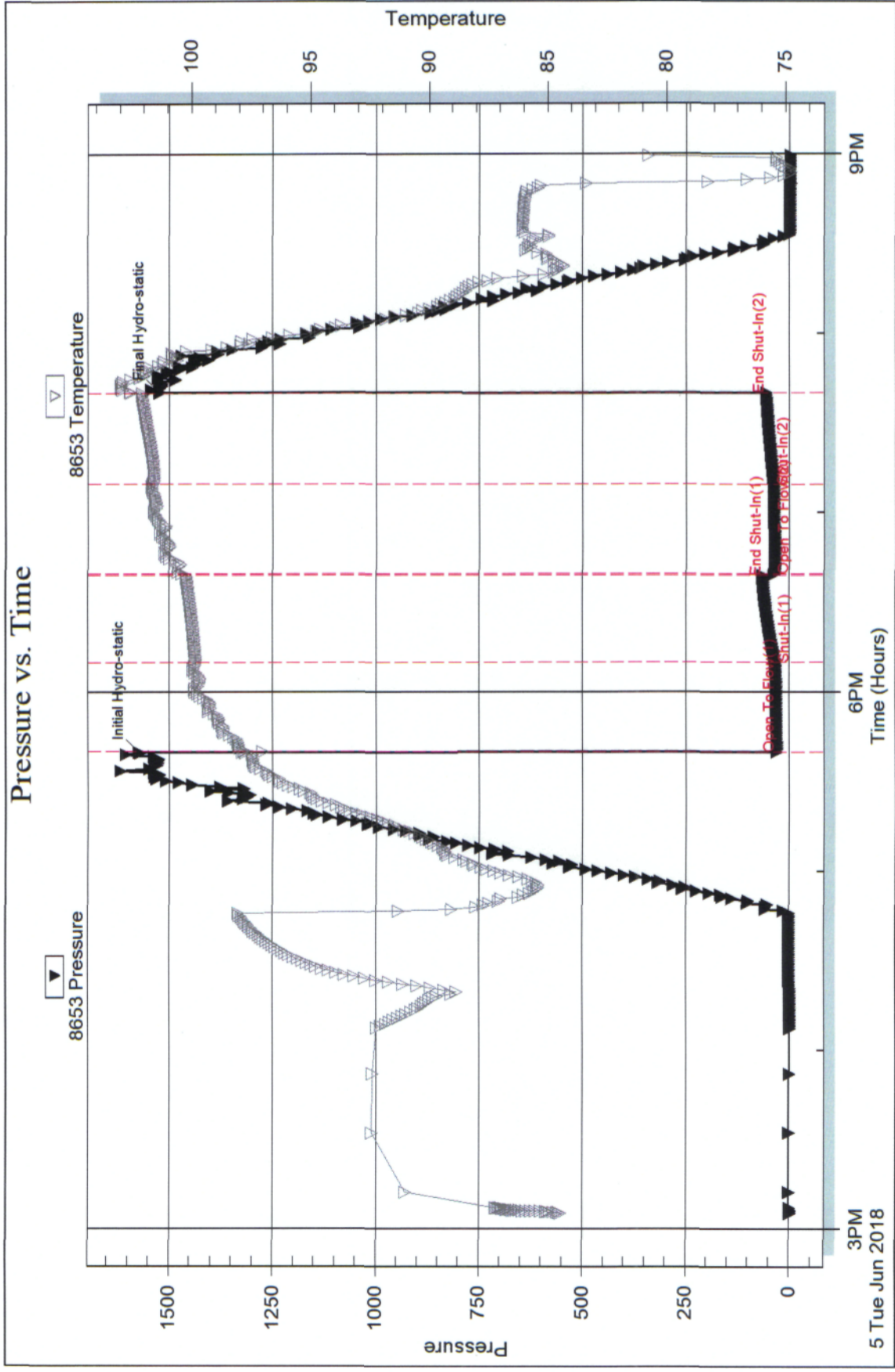
Inside

Mai Oil Operations

Kultigen #17

DST Test Number: 2

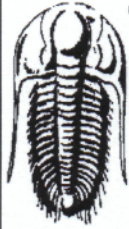
Pressure vs. Time



Trilobite Testing, Inc

Ref. No: 64022

Printed: 2018.06.07 @ 14:15:42



TRILOBITE TESTING, INC.

DRILL STEM TEST REPORT

Mai Oil Operations
 8411 Preston Rd STE 800
 Dallas TX 75225
 ATTN: Wyatt Urban

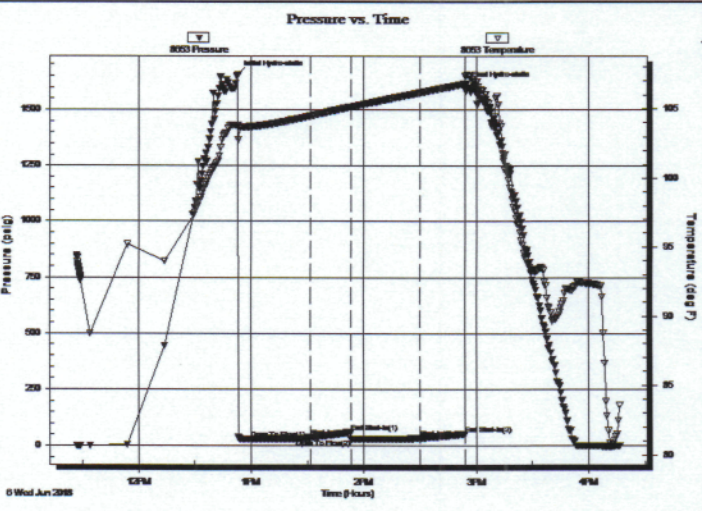
12-19s-12w Barton,KS
Kultgen #17
 Job Ticket: 64023 **DST#: 3**
 Test Start: 2018.06.06 @ 11:27:00

GENERAL INFORMATION:

Formation: **Arbuckle**
 Deviated: No Whipstock: ft (KB)
 Time Tool Opened: 13:00:00
 Time Test Ended: 16:17:00
 Interval: **3337.00 ft (KB) To 3400.00 ft (KB) (TVD)**
 Total Depth: 3400.00 ft (KB) (TVD)
 Hole Diameter: 7.88 inches Hole Condition: Fair
 Test Type: Conventional Bottom Hole (Initial)
 Tester: Cade Gerhard
 Unit No: 65
 Reference Elevations: 1817.00 ft (KB)
 1810.00 ft (CF)
 KB to GR/CF: 7.00 ft

Serial #: 8653 **Inside**
 Press@RunDepth: 35.02 psig @ 3374.00 ft (KB) Capacity: 8000.00 psig
 Start Date: 2018.06.06 End Date: 2018.06.06 Last Calib.: 2018.06.06
 Start Time: 11:27:01 End Time: 16:17:00 Time On Btm: 2018.06.06 @ 12:53:00
 Time Off Btm: 2018.06.06 @ 14:54:10

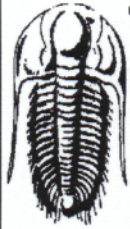
TEST COMMENT: IF-30- Very weak surface blow
 IS-30- No blow back
 FF-30- Very weak surface blow
 FSI-30- No blow back



PRESSURE SUMMARY			
Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	1655.33	103.79	Initial Hydro-static
7	31.71	103.72	Open To Flow (1)
39	37.76	104.48	Shut-In(1)
60	59.10	105.14	End Shut-In(1)
61	31.45	105.12	Open To Flow (2)
97	35.02	106.16	Shut-In(2)
121	52.97	106.78	End Shut-In(2)
122	1607.71	107.37	Final Hydro-static

Recovery		
Length (ft)	Description	Volume (bbl)
1.00	VSOCM 1%O 99%M	0.01
1.00	M 100%M	0.01

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



**TRILOBITE
TESTING, INC.**

DRILL STEM TEST REPORT

TOOL DIAGRAM

Mai Oil Operations
8411 Preston Rd STE 800
Dallas TX 75225
ATTN: Wyatt Urban

12-19s-12w Barton,KS
Kultgen #17
Job Ticket: 64023 **DST#: 3**
Test Start: 2018.06.06 @ 11:27:00

Tool Information

Drill Pipe:	Length: 3337.00 ft	Diameter: 3.82 inches	Volume: 47.30 bbl	Tool Weight: 2000.00 lb
Heavy Wt. Pipe:	Length: 0.00 ft	Diameter: inches	Volume: 0.00 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: 39000.00 lb
			<u>Total Volume: 47.30 bbl</u>	Tool Chased 0.00 ft
Drill Pipe Above KB:	21.00 ft			String Weight: Initial 38000.00 lb
Depth to Top Packer:	3337.00 ft			Final 39000.00 lb
Depth to Bottom Packer:	ft			
Interval between Packers:	63.00 ft			
Tool Length:	84.00 ft			
Number of Packers:	2	Diameter: 6.75 inches		

Tool Comments:

Tool Description	Length (ft)	Serial No.	Position	Depth (ft)	Accum. Lengths
Change Over Sub	2.00			3318.00	
Shut In Tool	5.00			3323.00	
Hydraulic tool	5.00			3328.00	
Packer	5.00			3333.00	21.00 Bottom Of Top Packer
Packer	4.00			3337.00	
Stubb	1.00			3338.00	
Change Over Sub	2.00			3340.00	
Drill Pipe	32.00			3372.00	
Change Over Sub	2.00			3374.00	
Recorder	0.00	8653	Inside	3374.00	
Recorder	0.00	8737	Outside	3374.00	
Perforations	23.00			3397.00	
Bullnose	3.00			3400.00	63.00 Bottom Packers & Anchor

Total Tool Length: 84.00



**TRILOBITE
TESTING, INC.**

DRILL STEM TEST REPORT

FLUID SUMMARY

Mai Oil Operations

12-19s-12w Barton,KS

8411 Preston Rd STE 800
Dallas TX 75225

Kultgen #17

Job Ticket: 64023

DST#: 3

ATTN: Wyatt Urban

Test Start: 2018.06.06 @ 11:27:00

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:

bbbl

Water Loss: 7.97 in³

Gas Cushion Type:

Resistivity: ohm.m

Gas Cushion Pressure:

psig

Salinity: 8000.00 ppm

Filter Cake: inches

Recovery Information

Recovery Table

Length ft	Description	Volume bbl
1.00	VSOCM 1%O 99%M	0.014
1.00	M 100%M	0.014

Total Length: 2.00 ft Total Volume: 0.028 bbl

Num Fluid Samples: 0

Num Gas Bombs: 0

Serial #:

Laboratory Name:

Laboratory Location:

Recovery Comments: LCM 1#

Serial #: 8653

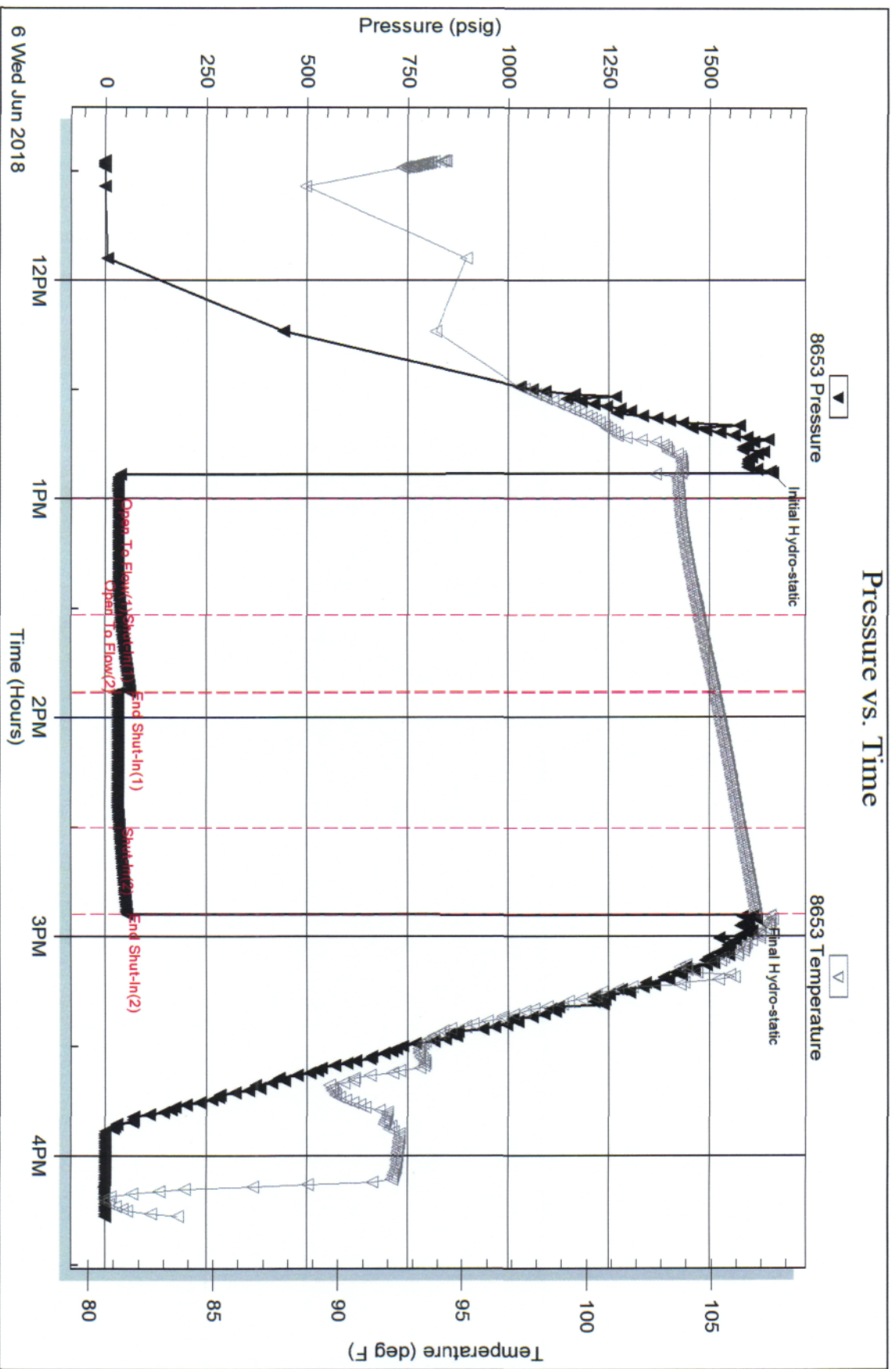
Inside

Mai Oil Operations

Kullgen #17

DST Test Number: 3

Pressure vs. Time



QUALITY OILWELL CEMENTING, INC.

Federal Tax I.D.# 20-2886107

Phone 785-483-2025
Cell 785-324-1041

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

No. 787

Date	6-7-18	Sec.	12	Twp.	19	Range	12	County	Barber	State	Ks	On Location		Finish	1:00 PM
Lease								Well No.		Owner					
Kultgen								17		1/2 N, E 1/4					
Contractor								#3		To Quality Oilwell Cementing, Inc. You are hereby requested to rent cementing equipment and furnish cement and helper to assist owner or contractor to do work as listed.					
Southwind															
Type Job										Charge To					
Longstring										Main oil operations					
Hole Size								T.D.		Street					
7 7/8"								3465'							
Csg. 14# used								Depth		City					
5 1/2"								3462'		State					
Tbg. Size								Depth		The above was done to satisfaction and supervision of owner agent or contractor.					
Tool								Depth		Cement Amount Ordered					
										160 60/40 10% Salt 2% Gel 1/4# Flo					
Cement Left in Csg.								Shoe Joint		Cement Amount Ordered					
32.91'								32.91'		160 60/40 10% Salt 2% Gel 1/4# Flo					
Meas Line								Displace		Common					
								83 1/2 BLS		1000 gal mud clear 48					
EQUIPMENT															
Pumptrk 17 No. Cementer										Common					
Helper David										Poz. Mix					
Bulktrk 15 No. Driver										Gel.					
Driver Doug										Calcium					
Bulktrk p.u. No. Driver										Hulls					
Driver Rick										Salt					
JOB SERVICES & REMARKS															
Remarks:										Flowseal					
Rat Hole										Kol-Seal					
Mouse Hole										Mud CLR 48					
Centralizers 1-4 67, 9, 12										CFL-117 or CD110 CAF 38					
Baskets pipe on bottom, break circulation										Sand					
D/V or Port Collar pump 1000 gal mud clear 48										Handling					
plug Rathole with 32.5% back to 5 1/2"										Mileage					
Casing + mix 13.5% cement shut down										FLOAT EQUIPMENT					
wash pump + lines - Released plug +										Guide Shoe					
Displaced w/ 83 1/2 BLS of H ₂ O.										Centralizer 8					
Released + Held										Baskets					
Lift pressure 600 #										AFU Inserts					
Land plug to 1500 #										Float Shoe					
										Latch Down 1					
										Pumptrk Charge					
										Mileage					
										Tax					
										Discount					
X Signature										Total Charge					

QUALITY OILWELL CEMENTING, INC.

Federal Tax I.D.# 20-2886107

Phone 785-483-2025
Cell 785-324-1041

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

No. 782

Date	6-1-18	Sec.	12	Twp.	19	Range	12	County	Barton	State	Ks	On Location	Finish	10:30 PM
Lease								Location		281 + Juro Rd - NE to 90th Ave				
Kultgen								Well No.		17				
Contractor								Owner		1/2 N E Lata				
Southwind								#3		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								Charge To		Main oil operations				
Surface								Hole Size		12 1/4"				
Csg.								T.D.		366'				
8 5/8"								Depth		366'				
Tbg. Size								Street						
								City		State				
Tool								Depth		The above was done to satisfaction and supervision of owner agent or contractor.				
Cement Left in Csg.								Shoe Joint		Cement Amount Ordered				
15'								15'		180 60/100 4% CC 2% GL				
Meas Line								Displace		22 1/4 BLS				
EQUIPMENT														
Pumptrk								No.		Common				
17								Cementer		Glenn				
								Helper		Poz. Mix				
Bulktrk								No.		Gel.				
								Driver		Jack				
Bulktrk								No.		Calcium				
p.m.								Driver		Rick				
JOB SERVICES & REMARKS														
Remarks:								Hulls		Cement did Circulate				
								Salt						
Rat Hole								Flowseal						
Mouse Hole								Kol-Seal						
Centralizers								Mud CLR 48						
Baskets								CFL-117 or CD110 CAF 38						
D/V or Port Collar								Sand						
								Handling						
								Mileage						
FLOAT EQUIPMENT														
								Guide Shoe		Wood Plug				
								Centralizer						
								Baskets						
								AFU Inserts						
								Float Shoe						
								Latch Down						
								Pumptrk Charge						
								Mileage						
										Tax				
										Discount				
										Total Charge				
X Signature								Jay Hauer						

