

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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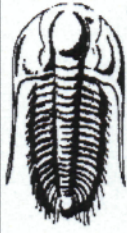
Shots Per Foot	Perforation Top	Perforation Bottom	Bridge Plug Type	Bridge Plug Set At	Acid, Fracture, Shot, Cementing Squeeze Record <i>(Amount and Kind of Material Used)</i>

TUBING RECORD:	Size:	Set At:	Packer At:	
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Form	ACO1 - Well Completion
Operator	Mai Oil Operations, Inc.
Well Name	DOLL 1
Doc ID	1436317

Tops

Name	Top	Datum
Anhydrite	527	+1257
Topeka	2666	-882
Heebner	2936	-1152
Toronto	2951	-1167
Brown Lime	3057	-1273
Lansing	3078	-1294
BKC	3325	-1541
Arbuckle	3346	-1562



**TRILOBITE
TESTING, INC.**

DRILL STEM TEST REPORT

Mai Oil Operations Inc
8411 Preston Rd Suite 800
Dallas TX 75225+5520
ATTN: Jim Musgrove

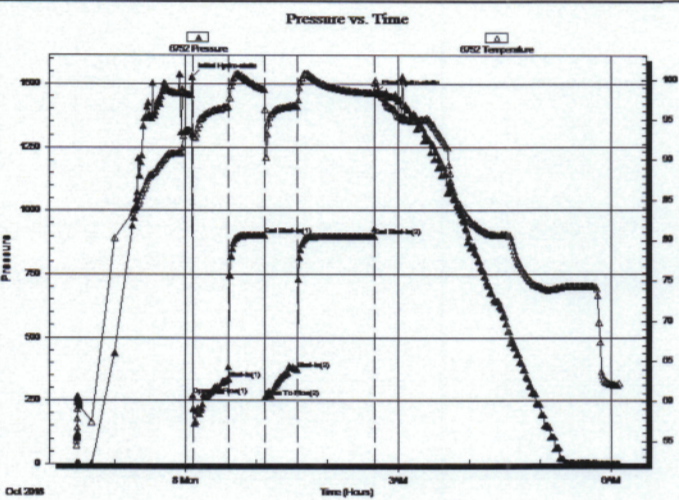
28-20S-11W Barton,KS
Doll #1
Job Ticket: 63467 **DST#: 1**
Test Start: 2018.10.07 @ 22:28:00

GENERAL INFORMATION:

Formation: **LKC D - F**
Deviated: No Whipstock: ft (KB)
Time Tool Opened: 00:06:47
Time Test Ended: 06:06:02
Interval: **3088.00 ft (KB) To 3160.00 ft (KB) (TVD)**
Total Depth: 3160.00 ft (KB) (TVD)
Hole Diameter: 7.88 inches Hole Condition: Fair
Test Type: Conventional Bottom Hole (Initial)
Tester: Ken Sw inney
Unit No: 72
Reference Elevations: 1777.00 ft (KB)
1769.00 ft (CF)
KB to GR/CF: 8.00 ft

Serial #: 6752 **Outside**
Press@RunDepth: 897.41 psig @ 3090.00 ft (KB) Capacity: psig
Start Date: 2018.10.07 End Date: 2018.10.08 Last Calib.: 2018.10.08
Start Time: 22:28:01 End Time: 06:07:02 Time On Btm: 2018.10.08 @ 00:05:47
Time Off Btm: 2018.10.08 @ 02:40:17

TEST COMMENT: IFP 30 Minutes Blow built to BOB in 15 sec. GTS in 1 minute
ISI 30 Mintues Very Strong blow back
FFP 30 Minutes Blow at BOB at open - Muddy oil to surface in 23 minutes
FSI 60 Mintues Very strong blow back



PRESSURE SUMMARY

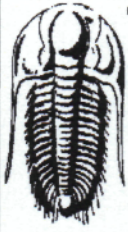
Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	1528.55	93.60	Initial Hydro-static
1	269.19	93.27	Open To Flow (1)
31	335.89	96.62	Shut-In(1)
62	902.28	98.78	End Shut-In(1)
62	261.30	96.28	Open To Flow (2)
89	373.09	96.67	Shut-In(2)
154	897.41	98.37	End Shut-In(2)
155	1462.58	99.63	Final Hydro-static

Recovery

Length (ft)	Description	Volume (bbl)
64.00	MCOV M10% O30% W60%	0.90
124.00	GMCO M10% G30% O60%	1.74
424.00	GO G30% O70%	5.95

Gas Rates

	Choke (inches)	Pressure (psig)	Gas Rate (Mcf/d)
First Gas Rate	0.38	47.00	224.92
Last Gas Rate	0.38	68.00	301.85
Max. Gas Rate	0.38	78.00	338.48



**TRILOBITE
TESTING, INC.**

DRILL STEM TEST REPORT

TOOL DIAGRAM

Mai Oil Operations Inc
8411 Preston Rd Suite 800
Dallas TX 75225+5520
ATTN: Jim Musgrove

28-20S-11W Barton,KS
Doll #1
Job Ticket: 63467 **DST#: 1**
Test Start: 2018.10.07 @ 22:28:00

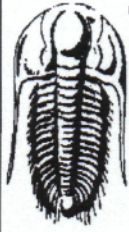
Tool Information

Drill Pipe:	Length: 3099.00 ft	Diameter: 3.80 inches	Volume: 43.47 bbl	Tool Weight:	2000.00 lb
Heavy Wt. Pipe:	Length: 0.00 ft	Diameter: 0.00 inches	Volume: 0.00 bbl	Weight set on Packer:	20000.00 lb
Drill Collar:	Length: 0.00 ft	Diameter: 0.00 inches	Volume: 0.00 bbl	Weight to Pull Loose:	45000.00 lb
			<u>Total Volume: 43.47 bbl</u>	Tool Chased	0.00 ft
Drill Pipe Above KB:	31.00 ft			String Weight: Initial	34000.00 lb
Depth to Top Packer:	3088.00 ft			Final	38000.00 lb
Depth to Bottom Packer:	ft				
Interval between Packers:	72.17 ft				
Tool Length:	92.17 ft				
Number of Packers:	2	Diameter: 6.75 inches			

Tool Comments:

Tool Description	Length (ft)	Serial No.	Position	Depth (ft)	Accum. Lengths
Shut-In Tool	5.00			3073.00	
Hydraulic tool	5.00			3078.00	
Top Packer	5.00			3083.00	
Packer	5.00			3088.00	20.00 Bottom Of Top Packer
Recorder	1.00	8365	Inside	3089.00	
Recorder	1.00	6752	Outside	3090.00	
Anchor	34.00			3124.00	
Change Over Sub	1.00			3125.00	
Drill Pipe	31.17			3156.17	
Change Over Sub	1.00			3157.17	
Bullnose	3.00			3160.17	72.17 Anchor Tool

Total Tool Length: 92.17



**TRILOBITE
TESTING, INC.**

DRILL STEM TEST REPORT

FLUID SUMMARY

Mai Oil Operations Inc

28-20S-11W Barton,KS

8411 Preston Rd Suite 800
Dallas TX 75225+5520

Doll #1

Job Ticket: 63467

DST#: 1

ATTN: Jim Musgrove

Test Start: 2018.10.07 @ 22:28:00

Mud and Cushion Information

Mud Type: Gel Chem

Cushion Type:

Oil API:

37 deg API

Mud Weight: 9.00 lb/gal

Cushion Length:

ft

Water Salinity:

15000 ppm

Viscosity: 52.00 sec/qt

Cushion Volume:

bbl

Water Loss: 8.78 in³

Gas Cushion Type:

Resistivity: ohm.m

Gas Cushion Pressure:

psig

Salinity: 6000.00 ppm

Filter Cake: 1.00 inches

Recovery Information

Recovery Table

Length ft	Description	Volume bbl
64.00	MCOW M10% O30% W60%	0.898
124.00	GMCO M10% G30% O60%	1.739
424.00	GO G30% O70%	5.948

Total Length: 612.00 ft Total Volume: 8.585 bbl

Num Fluid Samples: 0

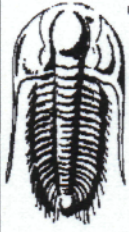
Num Gas Bombs: 0

Serial #:

Laboratory Name:

Laboratory Location:

Recovery Comments: Recovery Resistivity .460 Ohms @ 63 deg.



**TRILOBITE
TESTING, INC.**

DRILL STEM TEST REPORT

GAS RATES

Mai Oil Operations Inc

28-20S-11W Barton,KS

8411 Preston Rd Suite 800
Dallas TX 75225+5520

Doll #1

Job Ticket: 63467

DST#: 1

ATTN: Jim Musgrove

Test Start: 2018.10.07 @ 22:28:00

Gas Rates Information

Temperature: 59 (deg F)
Relative Density: 0.65
Z Factor: 0.8

Gas Rates Table

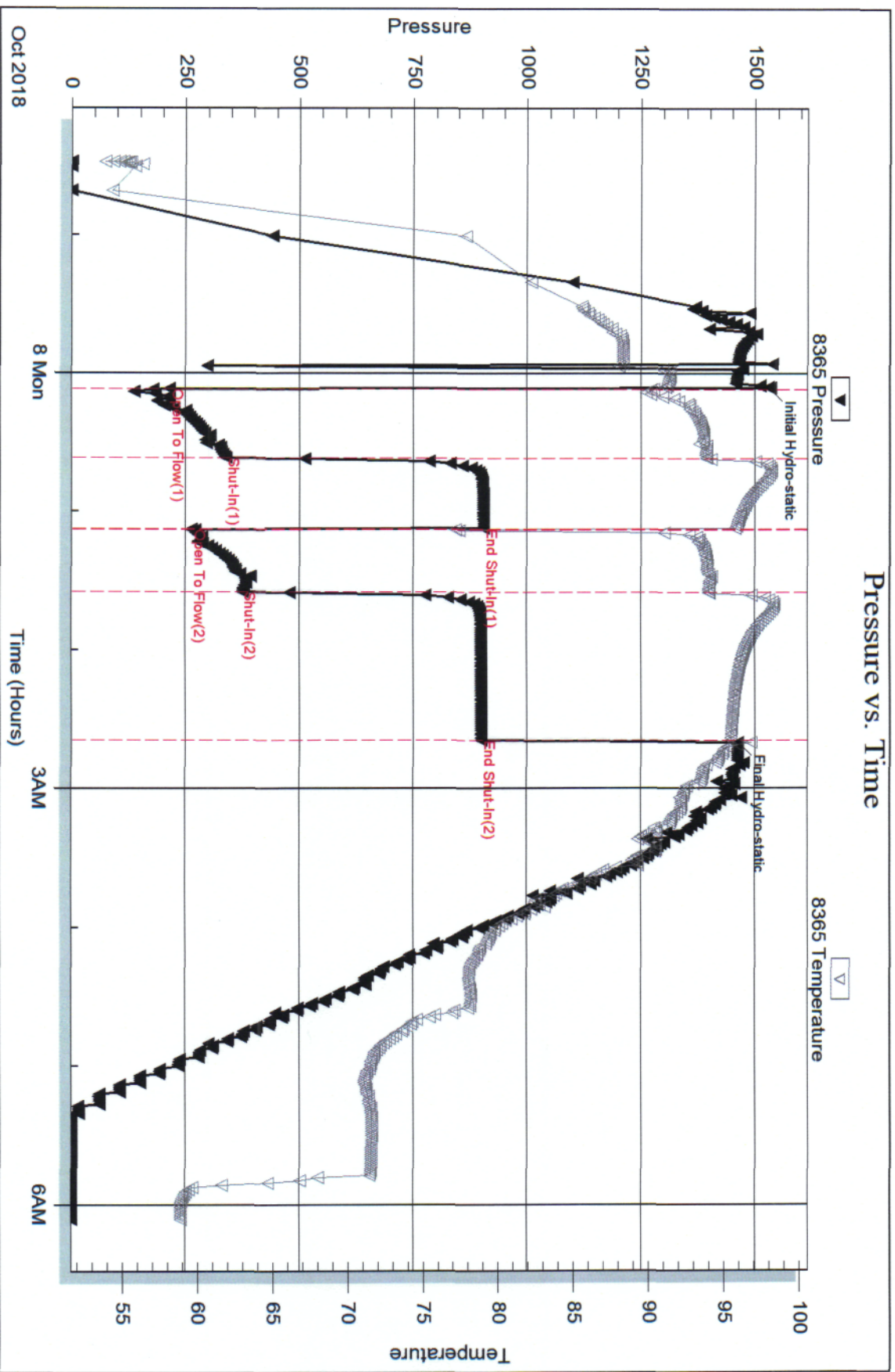
Flow Period	Elapsed Time	Choke (inches)	Pressure (psig)	Gas Rate (Mcf/d)
1	10	0.38	47.00	224.92
1	20	0.38	70.00	309.18
1	30	0.38	78.00	338.48
2	10	0.38	56.00	257.89
2	20	0.38	68.00	301.85

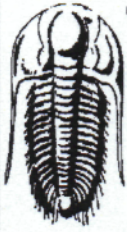
Serial #: 8365

Inside Mai Oil Operations Inc

Well #1

DST Test Number: 1





TRILOBITE TESTING, INC.

DRILL STEM TEST REPORT

Mai Oil Operations Inc
 8411 Preston Rd Suite 800
 Dallas TX 75225+5520
 ATTN: Jim Musgrove

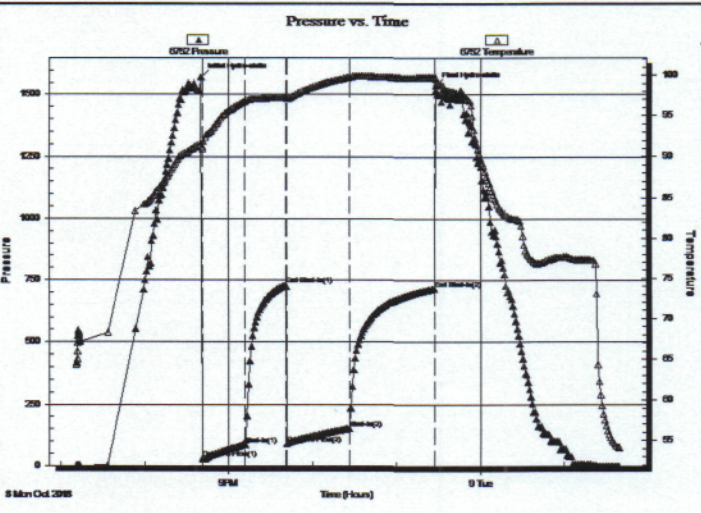
28-20S-11W Barton,KS
Doll #1
 Job Ticket: 63468 **DST#: 2**
 Test Start: 2018.10.08 @ 19:11:00

GENERAL INFORMATION:

Formation: **LKC H-K**
 Deviated: No Whipstock: ft (KB)
 Time Tool Opened: 20:41:17
 Time Test Ended: 01:41:02
 Interval: **3200.00 ft (KB) To 3290.00 ft (KB) (TVD)**
 Total Depth: 3290.00 ft (KB) (TVD)
 Hole Diameter: 7.88 inches Hole Condition: Fair
 Test Type: Conventional Bottom Hole (Initial)
 Tester: Ken Swinney
 Unit No: 72
 Reference Elevations: 1777.00 ft (KB)
 1769.00 ft (CF)
 KB to GR/CF: 8.00 ft

Serial #: 6752 Outside
 Press@RunDepth: 715.89 psig @ 3202.00 ft (KB) Capacity: psig
 Start Date: 2018.10.08 End Date: 2018.10.09 Last Calib.: 2018.10.09
 Start Time: 19:11:01 End Time: 01:40:02 Time On Btm: 2018.10.08 @ 20:40:32
 Time Off Btm: 2018.10.08 @ 23:28:02

TEST COMMENT: IFP 30 Mintues Blow built to BOB in 3 minutes/ Total build 68"
 ISI 30 Mintues Blow back built additional 5 1/2"
 FFP 45 Mintues Blow built to BOB in 10 minutes/ Total build 61"
 FSI 60 Minutes Blow back built additional 8"



PRESSURE SUMMARY			
Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	1572.22	91.39	Initial Hydro-static
1	28.87	91.16	Open To Flow (1)
32	86.68	96.79	Shut-In(1)
61	729.73	97.18	End Shut-In(1)
62	90.00	97.06	Open To Flow (2)
106	152.06	99.75	Shut-In(2)
167	715.89	99.70	End Shut-In(2)
168	1537.27	99.81	Final Hydro-static

Recovery		
Length (ft)	Description	Volume (bbl)
124.00	SOCMW O 5% M 30 W 65	1.74
171.00	GOWCM O10% W10% G40% M40%	2.40
0.00	821' GIP	0.00

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



**TRILOBITE
TESTING, INC.**

DRILL STEM TEST REPORT

TOOL DIAGRAM

Mai Oil Operations Inc
8411 Preston Rd Suite 800
Dallas TX 75225+5520
ATTN: Jim Musgrove

28-20S-11W Barton,KS
Doll #1
Job Ticket: 63468 **DST#: 2**
Test Start: 2018.10.08 @ 19:11:00

Tool Information

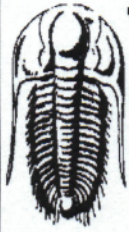
Drill Pipe:	Length: 3195.00 ft	Diameter: 3.80 inches	Volume: 44.82 bbl	Tool Weight: 2000.00 lb
Heavy Wt. Pipe:	Length: 0.00 ft	Diameter: 0.00 inches	Volume: 0.00 bbl	Weight set on Packer: 20000.00 lb
Drill Collar:	Length: 0.00 ft	Diameter: 0.00 inches	Volume: 0.00 bbl	Weight to Pull Loose: 40000.00 lb
			<u>Total Volume: 44.82 bbl</u>	Tool Chased 0.00 ft
Drill Pipe Above KB:	15.00 ft			String Weight: Initial 35000.00 lb
Depth to Top Packer:	3200.00 ft			Final 38000.00 lb
Depth to Bottom Packer:	ft			
Interval between Packers:	89.99 ft			
Tool Length:	109.99 ft			
Number of Packers:	2	Diameter: 6.75 inches		

Tool Comments:

Tool Description	Length (ft)	Serial No.	Position	Depth (ft)	Accum. Lengths
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Shut-In Tool	5.00			3185.00	
Hydraulic tool	5.00			3190.00	
Top Packer	5.00			3195.00	
Packer	5.00			3200.00	20.00 Bottom Of Top Packer
Recorder	1.00	8365	Inside	3201.00	
Recorder	1.00	6752	Outside	3202.00	
Anchor	20.00			3222.00	
Change Over Sub	1.00			3223.00	
Drill Pipe	62.99			3285.99	
Change Over Sub	1.00			3286.99	
Bullnose	3.00			3289.99	89.99 Anchor Tool

Total Tool Length: 109.99



**TRILOBITE
TESTING, INC.**

DRILL STEM TEST REPORT

FLUID SUMMARY

Mai Oil Operations Inc

28-20S-11W Barton,KS

8411 Preston Rd Suite 800
Dallas TX 75225+5520

Doll #1

Job Ticket: 63468

DST#: 2

ATTN: Jim Musgrove

Test Start: 2018.10.08 @ 19:11:00

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:

22000 ppm

Viscosity: 45.00 sec/qt

Cushion Volume:

bbbl

Water Loss: 8.78 in³

Gas Cushion Type:

Resistivity: ohm.m

Gas Cushion Pressure:

psig

Salinity: 6000.00 ppm

Filter Cake: 1.00 inches

Recovery Information

Recovery Table

Length ft	Description	Volume bbl
124.00	SOCMVO 5% M30 W65	1.739
171.00	GOWCM O10% W10% G40% M40%	2.399
0.00	821' GIP	0.000

Total Length: 295.00 ft Total Volume: 4.138 bbl

Num Fluid Samples: 0

Num Gas Bombs: 0

Serial #:

Laboratory Name:

Laboratory Location:

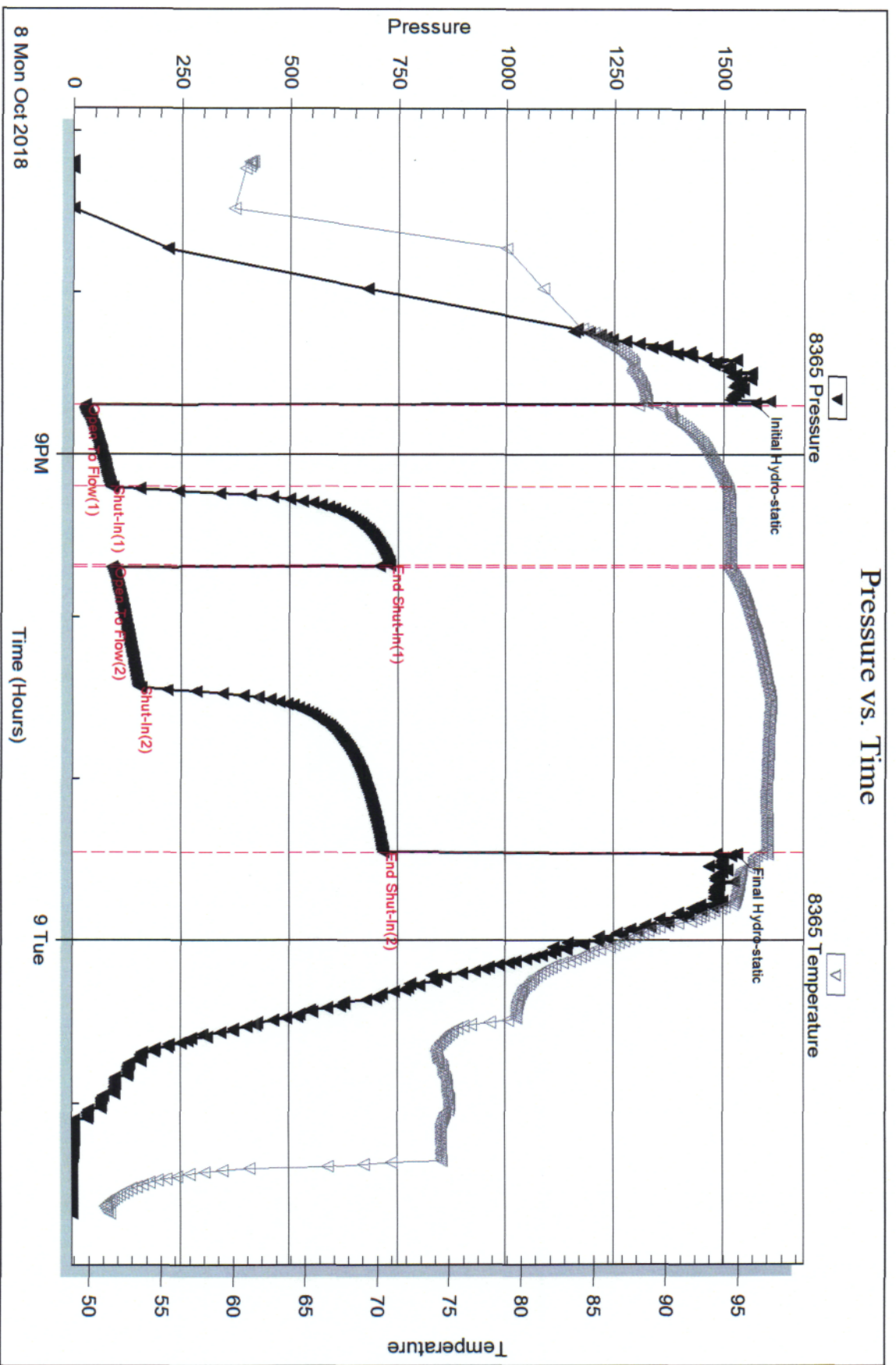
Recovery Comments: Recovery Resistivity .355 ohms @ 58 deg.

Serial #: 8365

Inside Mai Oil Operations Inc

Well #1

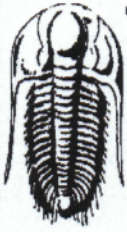
DST Test Number: 2



Triobite Testing, Inc

Ref. No: 63468

Printed: 2018.10.10 @ 17:07:12



TRILOBITE TESTING, INC.

DRILL STEM TEST REPORT

Mai Oil Operations Inc
 8411 Preston Rd Suite 800
 Dallas TX 75225+5520
 ATTN: Jim Musgrove

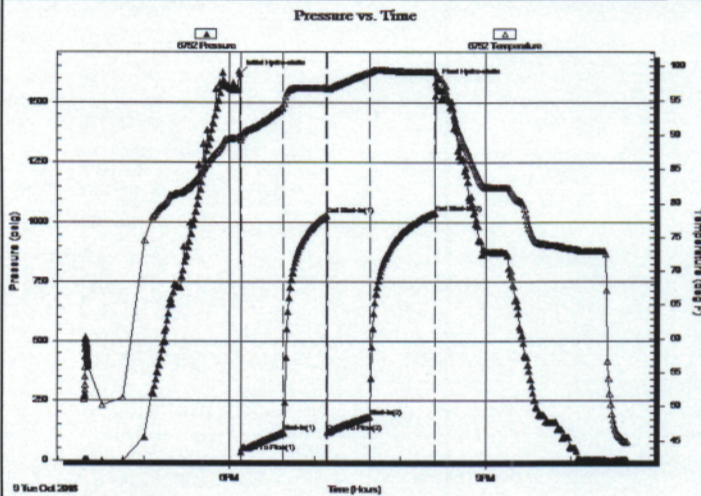
28-20S-11W Barton,KS
Doll #1
 Job Ticket: 63469 **DST#: 3**
 Test Start: 2018.10.09 @ 16:18:00

GENERAL INFORMATION:

Formation: **Arbuckle**
 Deviated: No Whipstock: ft (KB)
 Time Tool Opened: 18:08:32
 Time Test Ended: 22:38:02
 Interval: **3296.00 ft (KB) To 3353.00 ft (KB) (TVD)**
 Total Depth: 3353.00 ft (KB) (TVD)
 Hole Diameter: 7.88 inches Hole Condition: Fair
 Test Type: Conventional Bottom Hole (Initial)
 Tester: Ken Swinney
 Unit No: 72
 Reference Elevations: 1777.00 ft (KB)
 1769.00 ft (CF)
 KB to GR/CF: 8.00 ft

Serial #: 6752 Outside
 Press@RunDepth: 1042.16 psig @ 3298.00 ft (KB) Capacity: psig
 Start Date: 2018.10.09 End Date: 2018.10.09 Last Calib.: 2018.10.09
 Start Time: 16:18:01 End Time: 22:39:02 Time On Btm: 2018.10.09 @ 18:07:47
 Time Off Btm: 2018.10.09 @ 20:25:02

TEST COMMENT: IFP 30 Minutes Blow built to BOB in 3 minutes - Total build 89"
 ISI 30 Minutes Blow back built additional 13"
 FFP 30 Minutes Blow built to BOB in 4 minutes - Total build 60"
 FSI 45 Minutes Blow back built additional 48" - GTS during shut in



PRESSURE SUMMARY

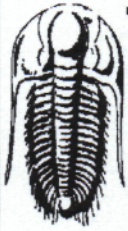
Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	1620.01	89.71	Initial Hydro-static
1	36.41	89.29	Open To Flow (1)
31	115.17	93.96	Shut-In(1)
61	1031.88	96.80	End Shut-In(1)
62	115.29	96.64	Open To Flow (2)
91	181.56	99.11	Shut-In(2)
137	1042.16	99.16	End Shut-In(2)
138	1583.31	99.25	Final Hydro-static

Recovery

Length (ft)	Description	Volume (bbl)
248.00	MW w / oil scum Mud 10% Water 90%	3.48
139.00	VGMCO Mud 10% Oil 20% Gas 70%	1.95

Gas Rates

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



**TRILOBITE
TESTING, INC.**

DRILL STEM TEST REPORT

TOOL DIAGRAM

Mai Oil Operations Inc

28-20S-11W Barton,KS

8411 Preston Rd Suite 800
Dallas TX 75225+5520

Doll #1

Job Ticket: 63469

DST#: 3

ATTN: Jim Musgrove

Test Start: 2018.10.09 @ 16:18:00

Tool Information

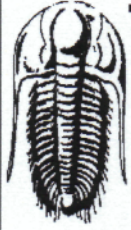
Drill Pipe:	Length: 3291.00 ft	Diameter: 3.80 inches	Volume: 46.16 bbl	Tool Weight: 2000.00 lb
Heavy Wt. Pipe:	Length: 0.00 ft	Diameter: 0.00 inches	Volume: 0.00 bbl	Weight set on Packer: 20000.00 lb
Drill Collar:	Length: 0.00 ft	Diameter: 0.00 inches	Volume: 0.00 bbl	Weight to Pull Loose: 40000.00 lb
			<u>Total Volume: 46.16 bbl</u>	Tool Chased 0.00 ft
Drill Pipe Above KB:	15.00 ft			String Weight: Initial 36000.00 lb
Depth to Top Packer:	3296.00 ft			Final 38000.00 lb
Depth to Bottom Packer:	ft			
Interval between Packers:	56.85 ft			
Tool Length:	76.85 ft			
Number of Packers:	2	Diameter: 6.75 inches		

Tool Comments:

Tool Description	Length (ft)	Serial No.	Position	Depth (ft)	Accum. Lengths
------------------	-------------	------------	----------	------------	----------------

Shut-In Tool	5.00			3281.00	
Hydraulic tool	5.00			3286.00	
Top Packer	5.00			3291.00	
Packer	5.00			3296.00	20.00 Bottom Of Top Packer
Recorder	1.00	8365	Inside	3297.00	
Recorder	1.00	6752	Outside	3298.00	
Anchor	18.00			3316.00	
Change Over Sub	1.00			3317.00	
Drill Pipe	31.85			3348.85	
Change Over Sub	1.00			3349.85	
Bullnose	3.00			3352.85	56.85 Anchor Tool

Total Tool Length: 76.85



**TRILOBITE
TESTING, INC.**

DRILL STEM TEST REPORT

FLUID SUMMARY

Mai Oil Operations Inc
8411 Preston Rd Suite 800
Dallas TX 75225+5520
ATTN: Jim Musgrove

28-20S-11W Barton,KS
Doll #1
Job Ticket: 63469 **DST#: 3**
Test Start: 2018.10.09 @ 16:18:00

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:	16000 ppm
Viscosity: 46.00 sec/qt	Cushion Volume: bbl		
Water Loss: 9.59 in ³	Gas Cushion Type:		
Resistivity: 6000.00 ohm.m	Gas Cushion Pressure: psig		
Salinity: ppm			
Filter Cake: 1.00 inches			

Recovery Information

Recovery Table

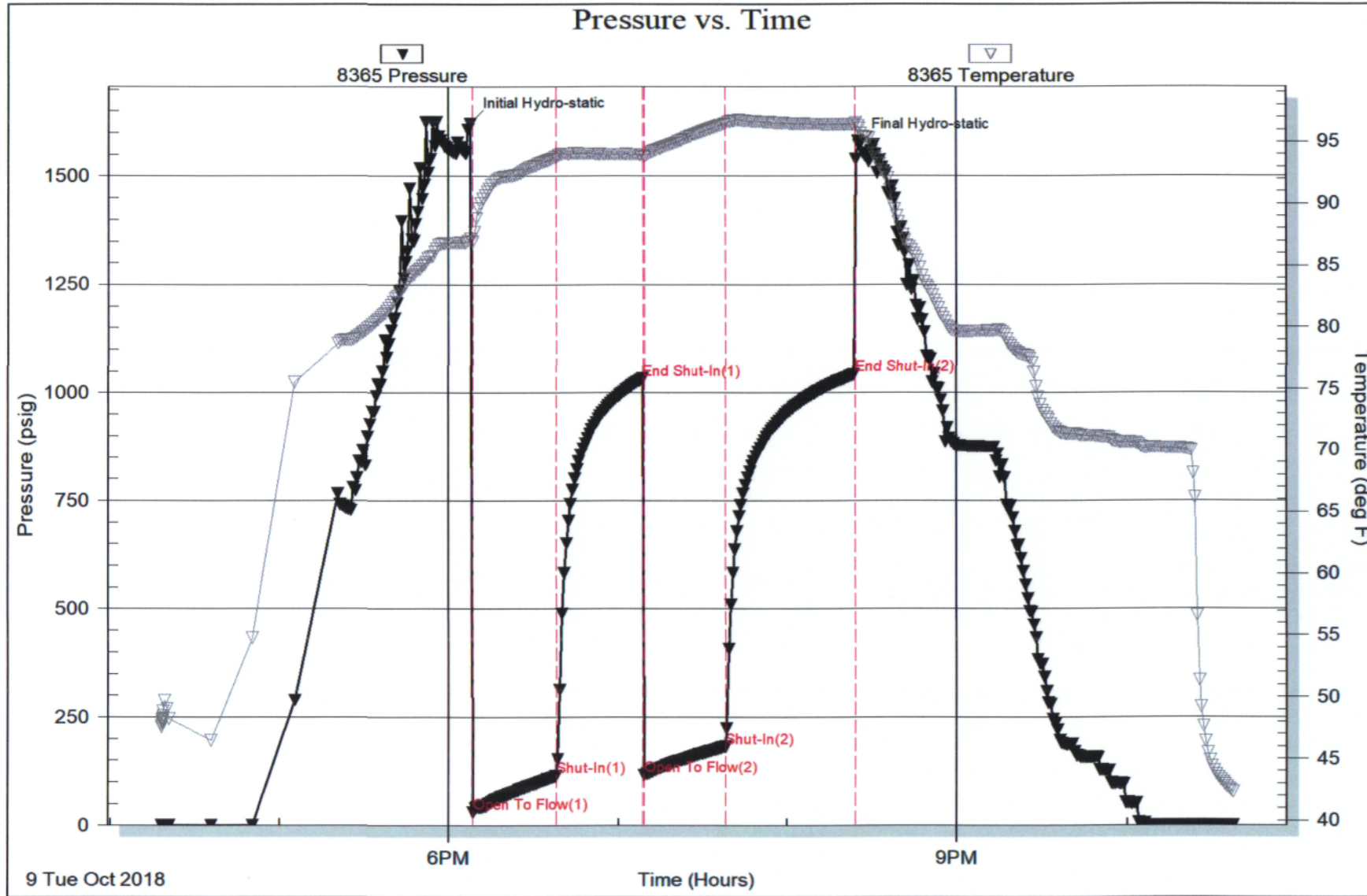
Length ft	Description	Volume bbl
248.00	MW w / oil scum Mud 10% Water 90%	3.479
139.00	VGMCO Mud 10% Oil 20% Gas 70%	1.950

Total Length: 387.00 ft Total Volume: 5.429 bbl

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

Laboratory Name: Laboratory Location:

Recovery Comments: Recovery Resistivity .540 ohms @ 53 deg.



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.
Doll #1
SE-NW-NE-NE (553' FNL & 985' FEL)
Section 28-20s-11w
Barton County, Kansas

Page 1

5 1/2" Production Casing Set

Contractor: Southwind Drilling Co. (rig #3)

Commenced: October 4, 2018

Completed: October 10, 2018

Elevation: 1784' K.B., 1782' D.F., 1776' G.L.

Casing program: Surface; 8 5/8" @ 520'
Production, 5 1/2" @ 3414'

Sample: Samples saved and examined 2700' to the Rotary Total Depth.

Drilling time: One (1) foot drilling time recorded and kept 2700' 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	527	+1259
Base Anhydrite	537	+1247
Topeka	2666	-882
Heebner	2936	-1152
Toronto	2951	-1167
Douglas	2967	-1183
Brown Lime	3057	-1273
Lansing	3078	-1294
Base Kansas City	3325	-1541
Erosional Arbuckle	3341	-1557
Solid Arbuckle	3346	-1562
Rotary Total Depth	3425	-1641
Log Total Depth	3425	-1641

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

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

TOPEKA SECTION

2700-2935' There were several zones of well-developed porosity encountered in the drilling of the Topeka Section but no shows of oil and/or gas was noted (see attached Sample Log/Geologist Report)

TORONTO SECTION

2951-2960' Limestone, white, chalky; poor visible porosity, dark brown and black stain, no show of free oil and no odor in fresh samples.

LANSING SECTION

3078-3083' Limestone, tan, finely crystalline, fossiliferous; scattered pinpoint type porosity; trace gray and brown stain, no show of free oil and no odor in fresh samples.

3089-3096' Limestone, gray, cream, finely crystalline, fossiliferous, poor to fair inter-crystalline type porosity, brown stain, trace of free oil and no odor in fresh samples.

3104-3110' Limestone, as above, fossiliferous, few oolitic, chalky; trace stain, trace of free oil and no odor in fresh samples.

3118-3124' Limestone, cream, gray, fossiliferous, fair fossil cast porosity; fair stain and saturation, show of free oil and no odor.

3142-3146' Limestone, tan, oolitic, fair porosity; good stain and saturation; show of free oil and questionable odor in fresh samples.

3150-3160' Limestone, gray, oolitic, poorly developed porosity, trace brown stain, trace of free oil and no odor in fresh samples.

Drill Stem Test #1 **3088-3160**

Times: 30-30-30-60

Blow: Strong; gas to surface in 1 min; gas gauge as follows;

10 mins	224,900	cfgpd
20 mins	309,100	cfgpd
30 mins	338,400	cfgpd

Final Flow:	10 mins	257,800	cfgpd
	20 mins	301,800	cfgpd

**** oil and mud to surface in 23 mins****

**Recovery: 424' gassy oil
124' mud cut gassy oil
(30% gas; 60% water; 10% mud)
62' mud cut oily water
(30% oil; 60% water; 10% mud)**

Pressures:	ISIP	904	psi
	FSIP	899	psi
	IFP	214-338	psi
	FFP	26-374	psi
	HSH	1529-1462	psi

- 3167-3187' Limestone, white, gray, finely oomoldic, few fossiliferous; poor porosity; no shows.
- 3214-3224' Limestone, tan, oolitic, sub-oomoldic, poor porosity; trace stain, no free oil and no odor.
- 3224-3230' Limestone, tan; oolitic, fair porosity; fair stain and saturation, show of free oil and faint odor in fresh samples.
- 3250-3255' Limestone, tan, oolitic, chalky, poor porosity; no shows.
- 3257-3266' Limestone, tan, oomoldic, fair oomoldic porosity; brown stain, trace of free oil and faint odor in fresh samples.
- 3277-3282' Limestone; tan, finely crystalline, fossiliferous, poor stain, poor show of free oil and no odor in fresh samples.

Drill Stem Test #2

3200-3290

Times: 30-30-45-60

Blow: Strong

**Recovery: 815' gas in pipe
171' oil and gas cut water
(40% gas; 10% oil; 10% water, 40% mud)
124' oil cut muddy water
(5% oil; 65% water; 30 mud)**

**Pressures: ISIP 731 psi
FSIP 717 psi
IFP 29-87 psi
FFP 90-151 psi
HSH 1573-1533 psi**

EROSIONAL SECTION

- 3342-3346' Dolomite, tan; sucrosic, poor visible porosity, trace stain, show of free oil and no odor; plus tan, finely crystalline "ratty" (dirty) dolomite, no shows.

ARBUCKLE SECTION

- 3346-3353' Dolomite, white; sandy; fair porosity, brown stain, show of free oil and fair odor in fresh samples.

Mai Oil Operations Inc.
Doll #1
SE-NW-NE-NE (553' FNL & 985' FEL)
Section 28-20s-11w
Barton County, Kansas

Page 4

Drill Stem Test #3

3296-3353

Times: 30-30-30-45

Blow: Strong; G.T.S. during final shut in T.S.T.M.

**Recovery: 139' oil and gas cut mud
(70% gas; 20% oil; 10% mud)
248' speckled muddy water**

**Pressures: ISIP 1033 psi
FSIP 1042 psi
IFP 31-113 psi
FFP 115-181 psi
HSH 1621-1571 psi**

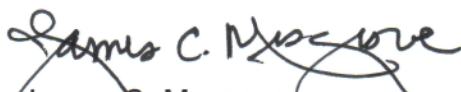
- 3353-3370' Dolomite, as above, plus tan; sucrosic, dolomite, fair pinpoint type porosity, fair stain, show of free oil and fair odor; plus abundant blue green soft shale.
- 3371-3390' Dolomite, as above, sandy in part, trace stain, show of free oil and fair odor in fresh samples.
- 3390-3400' Dolomite, white, cream, fine and medium crystalline, fair inter-crystalline porosity, trace brown stain, no show of free oil and fair odor in fresh samples.
- 3425-3450' Dolomite, tan, medium crystalline, dense; trace chert, white and gray, oolitic, and abundant blue green soft shale.

**Rotary Total Depth 3425 (-1641)
Log Total Depth 3425 (-1641)**

Recommendations:

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

Respectfully yours,


James C. Musgrove
Petroleum Geologist



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. 1117

Date	10-5-18	Sec.	28	Twp.	20	Range	11	County	Barton	State	Ks	On Location		Finish	3:00AM
Lease								Location		Great Bend -55 to 50 Rd, 11E to 130th Ave					
Doll								Well No.		#1					
Contractor								Owner		J Southwind #3 W/S W/S					
Type Job								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.							
Hole Size								Charge To		5 1/4" Main oil					
Csg.								Depth		8 5/8" 520'					
Tbg. Size								Depth		520'					
Tool								Depth		The above was done to satisfaction and supervision of owner agent or contractor.					
Cement Left in Csg.								Shoe Joint		20' 20'					
Cement Amount Ordered								450 60/100 40/60 2% Gel							
Meas Line								Displace		31 3/4 BCS 1/2 # Flo-seal					
EQUIPMENT								Common							
Pumptrk 16 No.								Cementer		David					
Bulktrk 19 No.								Helper		David					
Bulktrk p.u. No.								Driver		Tony					
								Driver		Rick					
JOB SERVICES & REMARKS								Hulls							
Remarks:								Cement did Circulate							
Rat Hole								Salt							
Mouse Hole								Flowseal							
Centralizers								Kol-Seal							
Baskets								Mud CLR 48							
D/V or Port Collar								CFL-117 or CD110 CAF 38							
								Sand							
								Handling							
								Mileage							
FLOAT EQUIPMENT															
								Guide Shoe		Rubber plug					
								Centralizer							
								Baskets							
								AFU Inserts							
								Float Shoe							
								Latch Down							
								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. 1120

Date	10-10-18	Sec.	28	Twp.	20	Range	11	County	Barton	State	Ks	On Location		Finish	7:30 PM		
Lease								Location		Doll Great Bend, 55, 11E, 44S							
Well No. #1								Owner W/Int									
Contractor 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 Longstring								Charge To Main oil operations									
Hole Size 7 7/8"								T.D.		3425'		Street				State	
Csg. 5 1/2' 1 1/4" News								Depth		3414'		City				State	
Tbg. Size								Depth		City				State			
Tool								Depth		The above was done to satisfaction and supervision of owner agent or contractor.							
Cement Left in Csg. 23'								Shoe Joint		23'		Cement Amount Ordered 160 6 1/4" 10% salt 2% bent					
Meas Line								Displace		82 3/4 BLS 1/4" H ₂ O seal 1000 gal mud Clear 48							
EQUIPMENT												Common					
Pumptrk 16		No.		Cementer		Helper		David		Poz. Mix							
Bulktrk 9		No.		Driver		Driver		Tony		Gel.							
Bulktrk pu.		No.		Driver		Driver		Rick		Calcium							
JOB SERVICES & REMARKS												Hulls					
Remarks:								Salt									
Rat Hole								Flowseal									
Mouse Hole								Kol-Seal									
Centralizers 1-12								Mud CLR 48									
Baskets pipe on bottom, break circulation								CFL-117 or CD110 CAF 38									
D/V or Port Collar pump 1000 gal mud Clear 48								Sand									
plug bathub out 30' or hook to 5 1/2"								Handling									
Closing + mix 130' cement shut								Mileage									
down wash pump + lines. Displace								FLOAT EQUIPMENT									
plug w/ 82 3/4 BLS at 1120.								Guide Shoe									
Release + hold								Centralizer 12									
Lift pressure 600 #								Baskets									
Land plug to 1600 #								AFU Inserts									
								Float Shoe /									
								Latch Down /									
								Pumptrk Charge									
								Mileage									
								Tax									
								Discount									
X Signature <i>Greg Hines</i>								Total Charge									