

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](mailto: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.  
Casey Jones #1-5  
E/2-SW-SE-NW (2970' FSL & 1805' FWL)  
Section 1-9s-23w  
Graham County, Kansas

Page 1

**Dry and Abandoned**

**.Contractor:** Southwind Drilling Co. (rig #3)  
**Commenced:** December 12, 2018  
**Completed:** December 19, 2018  
**Elevation:** 2319' K.B., 2317' D.F., 2311' G.L.  
**Casing program:** Surface; 8 5/8" @ 221'  
Production, 5 1/2" @ none  
**Sample:** Samples saved and examined 3300' to the Rotary Total Depth.  
**Drilling time:** One (1) foot drilling time recorded and kept 3300' 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:** None

<u>Formation</u>	<u>Sample Depth</u>	<u>Sub-Sea Datum</u>
Anhydrite	1931	+388
Base Anhydrite	1968	+351
Topeka	3356	-1037
Heebner	3572	-1253
Toronto	3590	-1271
Lansing	3605	-1286
Muncie Creek	3728	-1409
Base Kansas City	3822	-1503
Rotary Total Depth	3825	-1506

(All tops and zone(s) determinations were made from a correlation of Drilling Time Log and Sample Analysis

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

**TOPEKA SECTION**

3356-3366' Limestone; tan, oolitic/fossiliferous, poor visible porosity; chalky, no shows.

- 3414-3424' Limestone, tan, cream, granular in part; oomoldic, poorly developed porosity, no shows.
- 3521-3526' Limestone, cream, tan, fossiliferous/oolitic, good vuggy type porosity, dead black flaky stain, couple pieces with show of free oil and no odor in fresh samples.

**TORONTO SECTION**

- 3590-3596' Limestone, tan, cream, fossiliferous, fair scattered pinpoint porosity, trace black stain, no show of free oil and no odor in fresh samples.

**LANSING SECTION**

- 3605-3610' Limestone, cream, white, fossiliferous, oolitic, fair scattered vuggy to pinpoint type porosity, trace light golden brown stain, weak show of free oil and faint odor in fresh samples.
- 3632-3639' Limestone, tan, buff, fossiliferous, chalky, scattered pinpoint type porosity, trace brown to golden brown stain, show of free oil and faint odor in fresh samples.
- 3665-3669' Limestone, white, cream, fossiliferous, chalky in part; fair porosity, light brown stain, show of free oil and odor in fresh samples.

**Drill Stem Test #1** **3595-3668**

**Times:** 30-30-30-30

**Blow:** Strong

**Recovery:** 660' muddy water

**Pressures:**

ISIP	387	psi
FSIP	387	psi
IFP	274-387	psi
FFP	276-357	psi
HSH	1745-1695	psi

- 3681-3693' Limestone, white, slightly oolitic, chalky; trace brown stain, trace of free oil and no odor in fresh samples.
- 3698-3702' Limestone, gray, white, oolitic, chalky in part, scattered porosity, brown stain, show of free oil and faint odor in fresh samples.

Mai Oil Operations Inc.  
Casey Jones #1-5  
E/2-SW-SE-NW (2970' FSL & 1805' FWL)  
Section 1-9s-23w  
Graham County, Kansas

Page 3

**Drill Stem Test #2** **3671-3710'**

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

**Blow:** Weak

**Recovery:** 100' watery mud

**Pressures:** ISIP 395 psi  
FSIP 392 psi  
IFP 18-31 psi  
FFP 34-47 psi  
HSH 1781-1736 psi

3741-3746' Limestone, tan, white, fossiliferous, slightly chalky; poor scattered porosity; black stain, trace of free oil and questionable odor in fresh samples.

3761-3765' Limestone, white, cream, highly chalky; trace pyrite inclusions, poor visible porosity; trace dark brown to black stain, show of free oil (flaky, dead appearing) and no odor in fresh samples.

3793-3799' Limestone, white, cream, finely crystalline, dense; trace black stain, no free oil and no odor.

3812-3820' Limestone, tan, granular in part, oomoldic; scattered vuggy to oomoldic type porosity, black stain and saturation, show of free oil and faint odor samples broken.

**Drill Stem Test #3** **3717-3825**

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

**Blow:** Weak

**Recovery:** 10' oil cut mud  
(20% oil; 80% mud)  
40' speckled mud


**Pressures:** ISIP 918 psi  
FSIP 863 psi  
IFP 22-34 psi  
FFP 38-44 psi  
HSH 1831-1784 psi

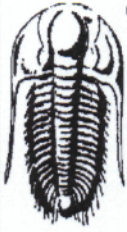
**Rotary Total Depth** 3825

**Recommendations:**

The Mai Oil Operations, Casey Jones #1-5; was plugged and abandoned at the Rotary Depth 3825 (-1506)

Respectfully yours,

  
James C. Musgrove and Wyatt Urban  
Petroleum Geologists



**TRILOBITE  
TESTING, INC.**

**DRILL STEM TEST REPORT**

Mai Oil Operations, Inc.  
8411 Preston Rd STE 800  
Dallas TX 75225-5520  
ATTN: Wyatt Urban

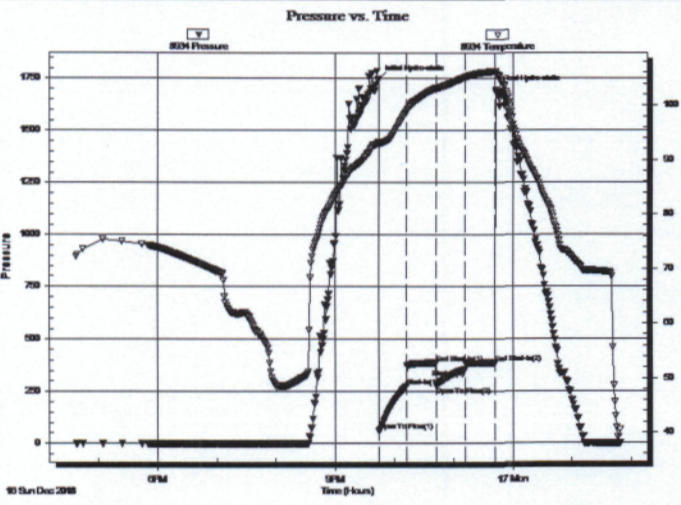
**1-9S-23W Graham,KS**  
**Casey Jones #1-5**  
Job Ticket: 64774      **DST#: 1**  
Test Start: 2018.12.16 @ 16:37:00

**GENERAL INFORMATION:**

Formation: **LKC 'A-C'**  
Deviated: No      Whipstock:      ft (KB)  
Time Tool Opened: 21:44:00  
Time Test Ended: 01:48:45  
Interval: **3597.00 ft (KB) To 3668.00 ft (KB) (TVD)**  
Total Depth: 3668.00 ft (KB) (TVD)  
Hole Diameter: 7.88 inches      Hole Condition: Poor  
Test Type: Conventional Bottom Hole (Initial)  
Tester: Spencer J. Staab  
Unit No: 84  
Reference Elevations: 2319.00 ft (KB)  
2312.00 ft (CF)  
KB to GR/CF: 7.00 ft

**Serial #: 8934      Inside**  
Press@RunDepth: 357.02 psig @ 3601.00 ft (KB)      Capacity: 8000.00 psig  
Start Date: 2018.12.16      End Date: 2018.12.17      Last Calib.: 2018.12.17  
Start Time: 16:37:15      End Time: 01:48:45      Time On Btm: 2018.12.16 @ 21:43:45  
Time Off Btm: 2018.12.16 @ 23:43:00

**TEST COMMENT:** 30-IF-BOB 3 mins; Built to 66 1/2"  
30-IS-No Return  
30-FF-BOB 8 mins; Built to 23"  
30-FSI-No Return



**PRESSURE SUMMARY**

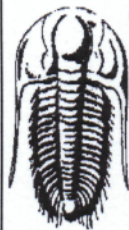
Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	1745.90	93.32	Initial Hydro-static
1	60.44	92.84	Open To Flow (1)
29	274.10	98.82	Shut-In(1)
59	387.95	103.15	End Shut-In(1)
59	276.48	103.13	Open To Flow (2)
89	357.02	105.19	Shut-In(2)
119	387.60	106.23	End Shut-In(2)
120	1695.02	106.01	Final Hydro-static

**Recovery**

Length (ft)	Description	Volume (bbl)
360.00	MV 50%M 50%W	5.10
300.00	MCW 20%M 80%W	4.25

**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 STE 800  
Dallas TX 75225-5520  
ATTN: Wyatt Urban

**1-9S-23W Graham,KS**  
**Casey Jones #1-5**  
Job Ticket: 64774      DST#: 1  
Test Start: 2018.12.16 @ 16:37:00

**Tool Information**

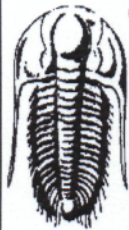
Drill Pipe:	Length: 3571.00 ft	Diameter: 3.82 inches	Volume: 50.62 bbl	Tool Weight: 2500.00 lb
Heavy Wt. Pipe:	Length: 0.00 ft	Diameter: 2.75 inches	Volume: 0.00 bbl	Weight set on Packer: 25000.00 lb
Drill Collar:	Length: 0.00 ft	Diameter: 2.25 inches	Volume: 0.00 bbl	Weight to Pull Loose: 72000.00 lb
			<u>Total Volume: 50.62 bbl</u>	Tool Chased ft
Drill Pipe Above KB:	3.00 ft			String Weight: Initial 49000.00 lb
Depth to Top Packer:	3597.00 ft			Final 53000.00 lb
Depth to Bottom Packer:	ft			
Interval between Packers:	71.00 ft			
Tool Length:	100.00 ft			
Number of Packers:	1	Diameter: inches		

Tool Comments:

Tool Description	Length (ft)	Serial No.	Position	Depth (ft)	Accum. Lengths
Change Over Sub	1.00			3569.00	
Shut In Tool	5.00			3574.00	
Hydraulic tool	5.00			3579.00	
Jars	5.00			3584.00	
Safety Joint	3.00			3587.00	
Packer	5.00			3592.00	29.00      Bottom Of Top Packer
Packer	5.00			3597.00	
Stubb	1.00			3598.00	
Perforations	2.00			3600.00	
Change Over Sub	1.00			3601.00	
Recorder	0.00	8368	Inside	3601.00	
Recorder	0.00	8934	Inside	3601.00	
Drill Pipe	63.00			3664.00	
Change Over Sub	1.00			3665.00	
Bullnose	3.00			3668.00	71.00      Bottom Packers & Anchor

**Total Tool Length: 100.00**





**TRILOBITE  
TESTING, INC.**

**DRILL STEM TEST REPORT**

**FLUID SUMMARY**

Mai Oil Operations, Inc.  
8411 Preston Rd STE 800  
Dallas TX 75225-5520  
ATTN: Wyatt Urban

**1-9S-23W Graham,KS**  
**Casey Jones #1-5**  
Job Ticket: 64774      **DST#: 1**  
Test Start: 2018.12.16 @ 16:37:00

**Mud and Cushion Information**

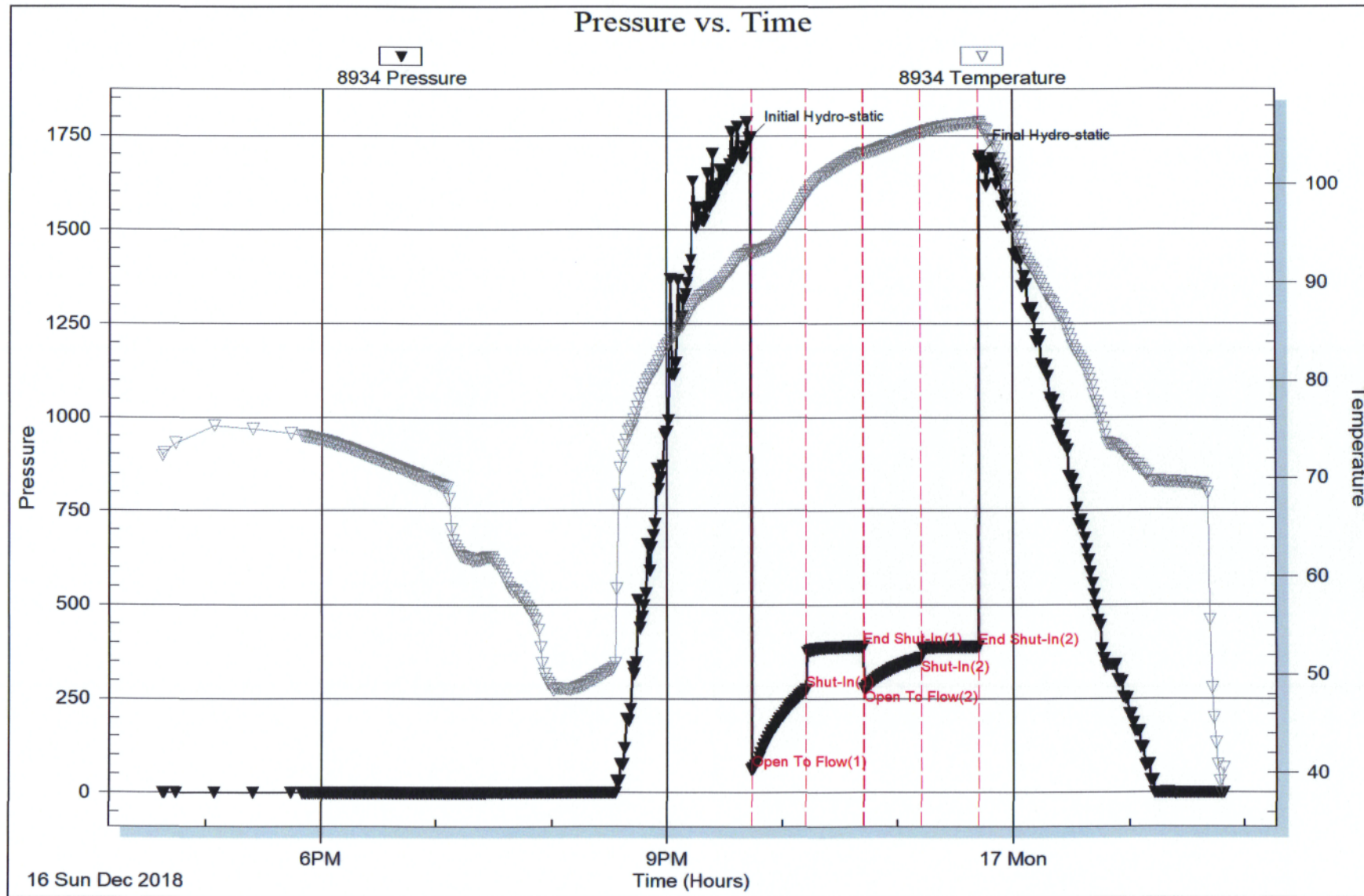
Mud Type: Gel Chem	Cushion Type:	Oil API:	deg API
Mud Weight: 9.00 lb/gal	Cushion Length: ft	Water Salinity:	61000 ppm
Viscosity: 63.00 sec/qt	Cushion Volume: bbl		
Water Loss: 7.59 in <sup>3</sup>	Gas Cushion Type:		
Resistivity: ohm.m	Gas Cushion Pressure: psig		
Salinity: 1500.00 ppm			
Filter Cake: inches			

**Recovery Information**

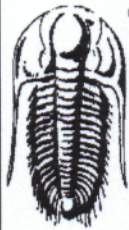
Recovery Table

Length ft	Description	Volume bbl
360.00	MW 50%M 50%W	5.103
300.00	MCW 20%M 80%W	4.253

Total Length: 660.00 ft      Total Volume: 9.356 bbl  
 Num Fluid Samples: 0      Num Gas Bombs: 0      Serial #:  
 Laboratory Name:      Laboratory Location:  
 Recovery Comments: 1&1/2#LCM







**TRILOBITE  
TESTING, INC.**

**DRILL STEM TEST REPORT**

**TOOL DIAGRAM**

Mai Oil Operations, Inc.  
8411 Preston Rd STE 800  
Dallas TX 75225-5520  
ATTN: Wyatt Urban

**1-9S-23W Graham,KS**  
**Casey Jones #1-5**  
Job Ticket: 57076      **DST#: 2**  
Test Start: 2018.12.18 @ 12:36:00

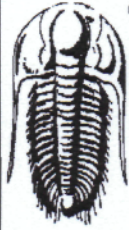
**Tool Information**

Drill Pipe:	Length: 3666.00 ft	Diameter: 3.82 inches	Volume: 51.97 bbl	Tool Weight: 2500.00 lb
Heavy Wt. Pipe:	Length: 0.00 ft	Diameter: 2.75 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: 72000.00 lb
			<u>Total Volume: 51.97 bbl</u>	Tool Chased ft
Drill Pipe Above KB:	24.00 ft			String Weight: Initial 50000.00 lb
Depth to Top Packer:	3671.00 ft			Final 50000.00 lb
Depth to Bottom Packer:	ft			
Interval between Packers:	39.00 ft			
Tool Length:	68.00 ft			
Number of Packers:	1	Diameter: inches		

Tool Comments:

Tool Description	Length (ft)	Serial No.	Position	Depth (ft)	Accum. Lengths
Change Over Sub	1.00			3643.00	
Shut In Tool	5.00			3648.00	
Hydraulic tool	5.00			3653.00	
Jars	5.00			3658.00	
Safety Joint	3.00			3661.00	
Packer	5.00			3666.00	29.00      Bottom Of Top Packer
Packer	5.00			3671.00	
Stubb	1.00			3672.00	
Perforations	2.00			3674.00	
Change Over Sub	1.00			3675.00	
Recorder	0.00	8677	Inside	3675.00	
Recorder	0.00	8018	Inside	3675.00	
Drill Pipe	31.00			3706.00	
Change Over Sub	1.00			3707.00	
Bullnose	3.00			3710.00	39.00      Bottom Packers & Anchor

**Total Tool Length: 68.00**



**TRILOBITE  
TESTING, INC.**

# DRILL STEM TEST REPORT

**FLUID SUMMARY**

Mai Oil Operations, Inc.  
8411 Preston Rd STE 800  
Dallas TX 75225-5520  
ATTN: Wyatt Urban

**1-9S-23W Graham,KS**  
**Casey Jones #1-5**  
Job Ticket: 57076      **DST#: 2**  
Test Start: 2018.12.18 @ 12:36:00

## 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:	43000 ppm
Viscosity: 63.00 sec/qt	Cushion Volume: bbl		
Water Loss: 7.59 in <sup>3</sup>	Gas Cushion Type:		
Resistivity: ohm.m	Gas Cushion Pressure: psig		
Salinity: 1500.00 ppm			
Filter Cake: inches			

## Recovery Information

Recovery Table

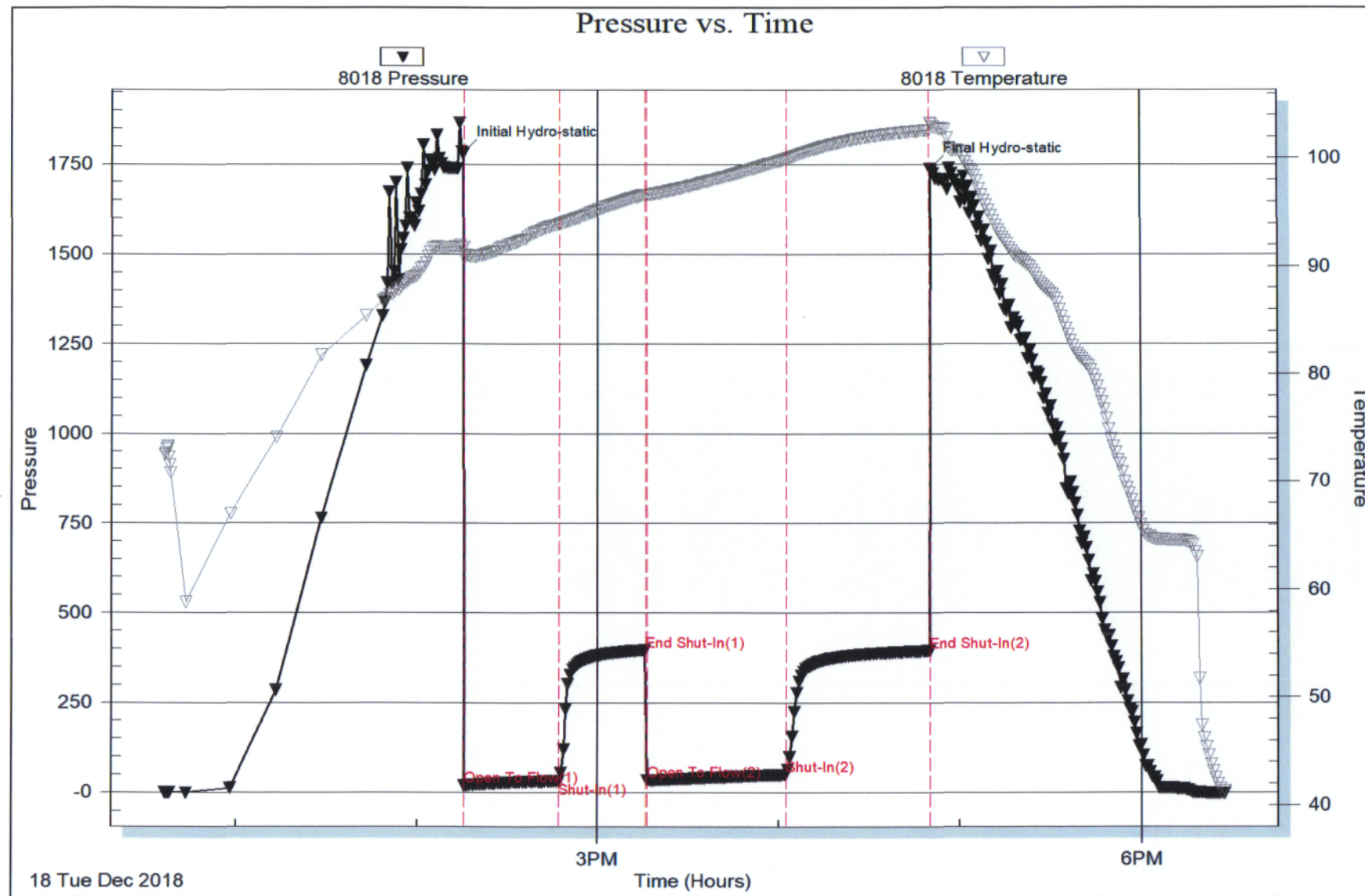
Length ft	Description	Volume bbl
100.00	WM 20%W 80%M	1.418

Total Length: 100.00 ft      Total Volume: 1.418 bbl

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

Laboratory Name:      Laboratory Location:

Recovery Comments: 1&1/2#LCM  
RW=.343 @ 35F





**TRILOBITE  
TESTING, INC.**

**DRILL STEM TEST REPORT**

Mai Oil Operations, Inc.  
8411 Preston Rd STE 800  
Dallas TX 75225-5520  
ATTN: Wyatt Urban

**1-9S-23W Graham,KS**  
**Casey Jones #1-5**  
Job Ticket: 57077      **DST#: 3**  
Test Start: 2018.12.18 @ 22:58:00

**GENERAL INFORMATION:**

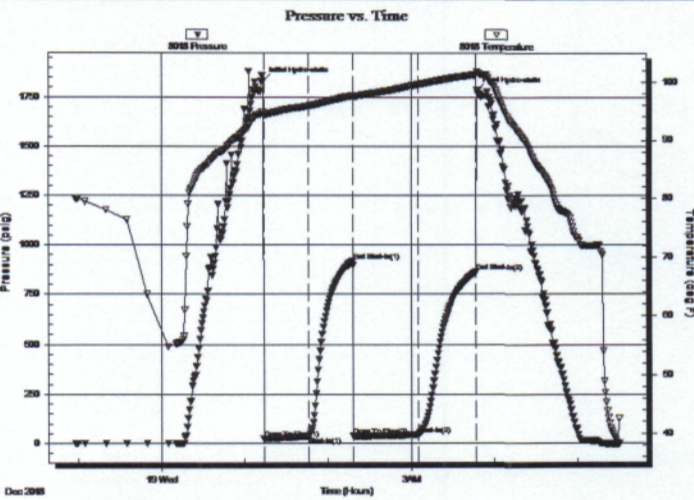
Formation: **Lower Lansing**  
Deviated: No      Whipstock:      ft (KB)  
Time Tool Opened: 01:14:00  
Time Test Ended: 05:30:30  
Interval: **3717.00 ft (KB) To 3825.00 ft (KB) (TVD)**  
Total Depth: 3825.00 ft (KB) (TVD)  
Hole Diameter: 7.88 inches      Hole Condition: Poor  
Test Type: Conventional Bottom Hole (Reset)  
Tester: Spencer J. Staab  
Unit No: 84  
Reference Elevations: 2319.00 ft (KB)  
2312.00 ft (CF)  
KB to GR/CF: 7.00 ft

**Serial #: 8018**

**Inside**

Press@RunDepth: 44.20 psig @ 3726.00 ft (KB)      Capacity: 8000.00 psig  
Start Date: 2018.12.18      End Date: 2018.12.19      Last Calib.: 2018.12.19  
Start Time: 22:58:05      End Time: 05:30:29      Time On Btm: 2018.12.19 @ 01:13:45  
Time Off Btm: 2018.12.19 @ 03:47:15

**TEST COMMENT:** 30-IF-Weak; Built to 3"  
30-ISI-No Return  
45-FF-Weak; Built to 3"  
45-FSI-No Return



**PRESSURE SUMMARY**

Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	1831.30	94.90	Initial Hydro-static
1	22.25	94.15	Open To Flow (1)
33	34.22	95.88	Shut-In(1)
64	918.97	97.66	End Shut-In(1)
65	38.04	97.45	Open To Flow (2)
112	44.20	99.60	Shut-In(2)
153	863.38	101.26	End Shut-In(2)
154	1784.32	101.82	Final Hydro-static

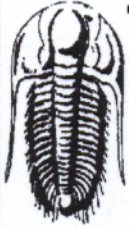
**Recovery**

Length (ft)	Description	Volume (bbl)
40.00	Oil spotted Mud 100%M	0.57
10.00	OCM 20%O 80%M	0.14

\* Recovery from multiple tests

**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 STE 800  
Dallas TX 75225-5520  
ATTN: Wyatt Urban

**1-9S-23W Graham,KS**  
**Casey Jones #1-5**  
Job Ticket: 57077      DST#: 3  
Test Start: 2018.12.18 @ 22:58:00

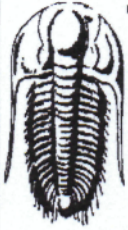
**Tool Information**

Drill Pipe:	Length: 3698.00 ft	Diameter: 3.82 inches	Volume: 52.42 bbl	Tool Weight: 2500.00 lb
Heavy Wt. Pipe:	Length: 0.00 ft	Diameter: 2.75 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: 68000.00 lb
			<u>Total Volume: 52.42 bbl</u>	Tool Chased ft
Drill Pipe Above KB:	10.00 ft			String Weight: Initial 50000.00 lb
Depth to Top Packer:	3717.00 ft			Final 50000.00 lb
Depth to Bottom Packer:	ft			
Interval between Packers:	108.00 ft			
Tool Length:	137.00 ft			
Number of Packers:	1	Diameter: inches		

Tool Comments:

Tool Description	Length (ft)	Serial No.	Position	Depth (ft)	Accum. Lengths
Change Over Sub	1.00			3689.00	
Shut In Tool	5.00			3694.00	
Hydraulic tool	5.00			3699.00	
Jars	5.00			3704.00	
Safety Joint	3.00			3707.00	
Packer	5.00			3712.00	29.00      Bottom Of Top Packer
Packer	5.00			3717.00	
Stubb	1.00			3718.00	
Perforations	7.00			3725.00	
Change Over Sub	1.00			3726.00	
Recorder	0.00	8018	Inside	3726.00	
Recorder	0.00	8677	Inside	3726.00	
Drill Pipe	95.00			3821.00	
Change Over Sub	1.00			3822.00	
Bullnose	3.00			3825.00	108.00      Bottom Packers & Anchor
<b>Total Tool Length:</b>	<b>137.00</b>				





**TRILOBITE  
TESTING, INC.**

**DRILL STEM TEST REPORT**

**FLUID SUMMARY**

Mai Oil Operations, Inc.  
8411 Preston Rd STE 800  
Dallas TX 75225-5520  
ATTN: Wyatt Urban

**1-9S-23W Graham,KS**  
**Casey Jones #1-5**  
Job Ticket: 57077      DST#: 3  
Test Start: 2018.12.18 @ 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: 55.00 sec/qt	Cushion Volume: bbl		
Water Loss: 7.59 in <sup>3</sup>	Gas Cushion Type:		
Resistivity: ohm.m	Gas Cushion Pressure: psig		
Salinity: 2500.00 ppm			
Filter Cake: inches			

**Recovery Information**

Recovery Table

Length ft	Description	Volume bbl
40.00	Oil spotted Mud 100%M	0.567
10.00	OCM 20%O 80%M	0.142

Total Length: 50.00 ft      Total Volume: 0.709 bbl  
 Num Fluid Samples: 0      Num Gas Bombs: 0      Serial #:  
 Laboratory Name:      Laboratory Location:  
 Recovery Comments: 1#LCM



# 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. 982

Date 12-12-18	Sec. 1	Twp. 9	Range 23	County Graham	State KS	On Location	Finish 11:15P
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Location Hill City 35 Rd M E. etc

Lease Casey Jones	Well No. 1-5	Owner 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.
Contractor Southwind #3		
Type Job Surface		
Hole Size 12 1/4	T.D. 220	Charge To Misc Oil
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	Cement Amount Ordered 150 60/40 40 cc 20 bel

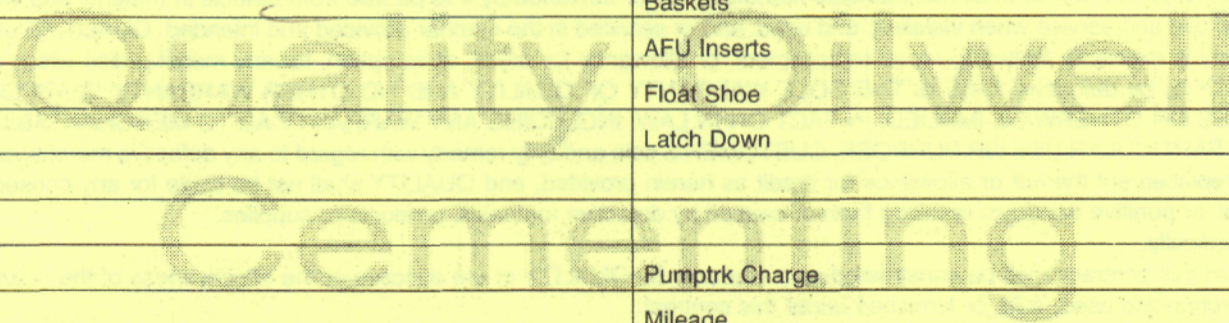
Meas Line Displace 13 bbl

EQUIPMENT			Common
Pumptrk 17	No. Cementer Helper Brett		Poz. Mix
Bulktrk 9	No. Driver Driver Craig		Gel.
Bulktrk	No. Driver Driver Doug		Calcium

JOB SERVICES & REMARKS		Hulls
Remarks:		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

Ran 220' 8 5/8 + Est c/c  
Mix 150 ss  
Displaced 13 bbl  
Cement Circulated

FLOAT EQUIPMENT	
	Mileage
	Guide Shoe
	Centralizer
	Baskets
	AFU Inserts
	Float Shoe
	Latch Down



	Pumptrk Charge
	Mileage
	Tax
	Discount
	Total Charge

X Signature *[Handwritten Signature]*