

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 |
|--|---|

| 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 |
| | | |

| 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> |
|----------------|-----------------|--------------------|------------------|--------------------|---|
| | | | | | |
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| | | | | |
|----------------|-------|---------|------------|--|
| TUBING RECORD: | Size: | Set At: | Packer At: | |
|----------------|-------|---------|------------|--|

| | |
|-----------|---------------------------|
| Form | ACO1 - Well Completion |
| Operator | Murfin Drilling Co., Inc. |
| Well Name | NELSON 'A' 1-34 |
| Doc ID | 1487975 |

All Electric Logs Run

| |
|------|
| |
| DIL |
| DUCP |
| MEL |
| BHCS |



CEMENT TREATMENT REPORT

| | | | | | |
|--------------|------------------------|---------|---------------|----------|-----------|
| Customer: | Murfyn drilling co Inc | Well: | Nelson A 1-34 | Ticket: | ICT2752 |
| City, State: | | County: | Rawlins KS | Date: | 11/8/2019 |
| Field Rep: | Jay | S-T-R: | 34/4/33W | Service: | Surface |

| Downhole Information | | Calculated Slurry | | Product | | |
|----------------------|------------|-------------------|---------------------------|--------------|--------|---------------|
| Hole Size: | 12.25 In | Weight: | 14.8 # / sx | Class A | 100.00 | 26790 |
| Hole Depth: | 303.38 ft | Water / Sx: | 6.88 gal / sx | Poz | | |
| Casing Size: | 8 5/8 In | Yield: | 1.41 ft ³ / sx | Gel | 2.00 | 536 |
| Casing Depth: | 303 ft | Bbts / Ft.: | 0.0735 | CaCl | 3.00 | 804 |
| Tubing / Liner: | In | Depth: | 303 ft | Gypsum | | |
| Depth: | ft | Annular Volume: | 22.27 bbbls | Metso | | |
| Tool / Packer: | | Excess: | 200% | Kol Seal | | |
| Depth: | ft | Total Slurry: | 71.6 bbbls | Flo Seal | 0.25 | 67 |
| Displacement: | 18.0 bbbls | Total Sacks: | 285 sx | Salt (bww) | | |
| | | | | Total | | 28,196 |

| TIME | RATE | PSI | BBLs | REMARKS |
|---------|------|-------|------|---|
| 3:30 PM | | | | Arrive on location |
| 3:35 PM | | | | Safety meeting |
| 3:40 PM | | | | Rig up pump and lines |
| | | | | Rig in process of running 8 5/8 casing |
| 4:20 PM | | | | Casing on bottom |
| 4:23 PM | | | | Rig up mud line to 8 5/8 surface head |
| 4:28 PM | | | | Rig circulates with mud |
| 4:40 PM | | | | Rig up 8 5/8 surface head to pump and lines |
| 4:45 PM | 1.0 | 290.0 | 2.0 | Pump H2O ahead |
| 4:48 PM | 5.5 | 285.0 | 73.0 | Mix 285 ske @ 14.8 ppg |
| 4:55 PM | 5.5 | 190.0 | 18.0 | Start displacement |
| 5:00 PM | | | | End displacement |
| 5:05 PM | | 180.0 | | Shut in well |
| 5:10 PM | | | | Wash up |
| 5:25 PM | | | | Rig down pump and lines |
| 5:45 PM | | | | Depart |
| | | | | Approx. 5 BBLs to pit |

| CREW | | UNIT | SUMMARY | | |
|----------------|---------|------|--------------|------------------|-------------|
| Cementor: | Dane | 266 | Average Rate | Average Pressure | Total Fluid |
| Pump Operator: | Dane | 266 | 4 bpm | 236 psi | 93 bbbls |
| Bulk #1: | Michael | 181 | | | |
| Bulk #2: | | | | | |



CEMENT TREATMENT REPORT

| | | |
|------------------|---------------------|------------------|
| Customer: Murfin | Well: Nelson A 1-34 | Ticket: ICT2786 |
| City, State: | County: Rawlins KS | Date: 11/16/2019 |
| Field Rep: Jay | S-T-R: 34-4-33 | Service: PTA |

| Downhole Information | |
|----------------------|----------|
| Hole Size: | 7 7/8 In |
| Hole Depth: | ft |
| Casing Size: | In |
| Casing Depth: | ft |
| Drill pipe | 4.5 In |
| Depth: | ft |
| Tool / Packer | |
| Depth: | ft |
| Displacement: | bbbls |

| Calculated Slurry | |
|-------------------|---------------------------|
| Weight: | 13.8 # / sx |
| Water / Sx: | 6.89 gal / sx |
| Yield: | 1.42 ft ³ / sx |
| Bbls / Ft.: | 0.0406 |
| Depth: | ft |
| Annular Volume: | 0 bbls |
| Excess: | |
| Total Slurry: | 64.5 bbls |
| Total Sacks: | 255 sx |

| Product | % / # | # |
|--------------|-------|---|
| Class A | 60.00 | |
| Poz | 40.00 | |
| Gel | 4.00 | 0 |
| CaCl | | |
| Gypsum | | |
| Metso | | |
| Koi Seal | | |
| Flo Seal | 0.25 | 0 |
| Salt (bww) | | |
| Total | | - |

| TIME | RATE | PSI | BBLs | REMARKS |
|----------|------|-------|------|--|
| 11:00 PM | | | | Arrive on location |
| 11:05 PM | | | | Safety meeting |
| 11:10 PM | | | | Rig up pump and lines |
| 12:30 AM | 2.0 | 330.0 | 6.0 | Pump H2O ahead |
| 12:35 AM | 5.0 | 360.0 | 12.5 | Mix 50 sks of H-Plug @ 13.8 ppg @ 2800 feet |
| 12:40 AM | 8.0 | 300.0 | 40.0 | Displace with mud |
| 12:55 AM | | | | Rig pulls pipe |
| 1:30 AM | 6.0 | 290.0 | 25.0 | Mix 100 sks @ 13.8 ppg @ 2060 feet and displace with mud |
| 1:45 AM | | | | Rig pulls pipe |
| 3:00 AM | 5.0 | | 16.5 | Mix 50 sks @ 13.8 ppg @ 350 feet and displace |
| 3:10 AM | | | | Rig comes out of hole |
| 3:45 AM | | | | Push 8 5/8 wiper plug down 40 feet |
| 3:50 AM | 2.0 | 90.0 | 2.5 | Mix 10 sks @ 13.8 ppg |
| 3:55 AM | 3.0 | 90.0 | 7.5 | Mix 30 sks for RH |
| 4:00 AM | 3.0 | 90.0 | 4.0 | Mix 15 sks for MH |
| 4:04 AM | | | | Wash up pump and lines |
| 4:12 AM | | | | Rig down pump and lines |
| 4:30 AM | | | | Depart |
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| CREW | | UNIT | SUMMARY | | |
|----------------|---------|------|--------------|------------------|-------------|
| Cementer: | Dane | 64 | Average Rate | Average Pressure | Total Fluid |
| Pump Operator: | Michael | 266 | 4.125 bpm | 221 psi | 113 bbls |
| Bulk #1: | Josse | 242 | | | |
| Bulk #2: | | | | | |

Nelson 'A' #1-34
 660' FNL 1320'FWL
 Sec. 34-4S-33W
 3118' KB

| Formation | Sample top | Datum | Ref | Log tops | Datum | Ref |
|-------------|------------|-------|-----|----------|-------|-----|
| Anhydrite | 2787 | +331 | -9 | 2787 | +331 | -9 |
| B/Anhydrite | 2825 | +293 | -9 | 2824 | +294 | -8 |
| Topeka | 3814 | -696 | -9 | 3818 | -700 | -13 |
| Heebner | 3981 | -863 | -12 | 3983 | -865 | -14 |
| Lansing | 4024 | -906 | -12 | 4027 | -909 | -15 |
| Stark | 4200 | -1082 | -7 | 4210 | -1092 | -17 |
| Mound City | 4248 | -1130 | -6 | 4260 | -1142 | -18 |
| Ft Scott | 4382 | -1264 | -8 | 4386 | -1268 | -12 |
| Oakley | 4452 | -1334 | -8 | 4466 | -1348 | -22 |
| Mississippi | | | | 4616 | -1498 | -32 |
| RTD | 4700 | | | | | |
| LTD | | | | 4702 | | |

Saman Sharifaie

Petroleum Geologist

GEOLOGIST'S REPORT

DRILLING TIME AND SAMPLE LOG

COMPANY: **Martin Drilling Co., Inc.**
LEASE: **Nelson "A" #1-34**
FIELD: **Simon Saws**
LOCATION: **660' ENL & 130' FWL**
SEC: **34** TWP: **4S** RGE: **33W**
COUNTY: **Randolph** STATE: **Kansas**
CONTRACTOR: **Martin Drilling #3**
SPUD: **11/08/19** COMP: **11/17/19**
RTD: **4700'** TYPE MUD: **Chemical**
MUD UP: **3400'** LITH: **Chemical**

ELEVATIONS
KB 3118'

DE: _____
GL: **3113'**
Measurements Are All From Kelly Bushing
CASING
CONDUCTOR: _____
SURFACE: **8-5/8" at 303'**
PRODUCTION: **N/A**

SAMPLES SAVED FROM **3700'** TO RTD
DRILLING TIME KEPT FROM **3700'** TO RTD
SAMPLES EXAMINED FROM **3700'** TO RTD
GEOLOGICAL SUPERVISION FROM **3400'**
GEOLOGICAL SUPERVISION FROM **3400'**
CND: **DLL: MEL: Somic**
REFERENCE WELL: **MDC1 - Franklin "A" #1-27**
Fluorite Highlight

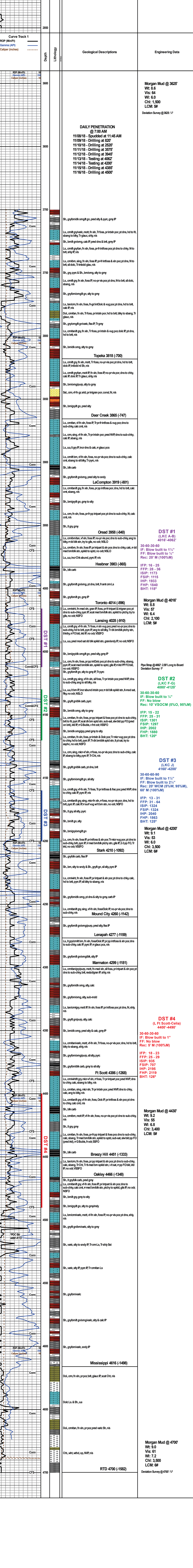
| Formation | Sample Tops | E-log Tops | Strat Pos. |
|----------------|--------------|--------------|------------|
| Anhydrite | 2787 (+331) | 2824 (+294) | -9 |
| Base Anhydrite | 2825 (+293) | 3818 (-700) | -13 |
| Triglycar | 3381 (-863) | 3393 (-863) | -14 |
| Hedberg | 4024 (-906) | 4027 (-909) | -15 |
| Stark | 4201 (-1082) | 4210 (-1092) | -17 |
| Mound City | 4248 (-1130) | 4360 (-1482) | -18 |
| Ft Scott | 4382 (-1264) | 4386 (-1268) | -12 |
| Orkney | 4452 (-1334) | 4466 (-1348) | -22 |



REMARKS Due to poor shows of oil in multiple pay zones and negative DST results, it is recommended and agreed upon by all parties that this well be plugged and abandoned.

Respectfully Submitted,
API #15-153-21242
Saman Sharifaie
Petroleum Geologist

*Tops have been adjusted to electric logs



DST #1
30-60-30-60
IF: Blow built to 1 1/4"
FF: Flow built to 1/4"
Rec: 20' M (100%M)

DST #2
30-60-30-60
IF: Blow built to 1/2"
FF: No blow
Rec: 10' VSOCM (5%O, 95%M)

DST #3
30-60-60-90
IF: Blow built to 1 1/2"
FF: 20' WCM (5%W, 95%M), 60' M (100%M)

DST #4
30-60-30-60
IF: Blow built to 1"
FF: No blow
Rec: 5' M (100%M)

DST #4
30-60-30-60
IF: Blow built to 1"
FF: No blow
Rec: 5' M (100%M)

DST #4
30-60-30-60
IF: Blow built to 1"
FF: No blow
Rec: 5' M (100%M)

Morgan Mud @ 3625'
Wt: 8.6
Vis: 64
Wl: 6.0
Chl: 1.500
LCM: 6#
Deviation Survey @ 3625: 1/2"

Morgan Mud @ 4016'
Wt: 8.7
Vis: 57
Wl: 6.4
Chl: 2.100
LCM: 5#
Pipe Strap @ 4062: 2.89' Long to Board
Deviation Survey: 1"

Morgan Mud @ 4200'
Wt: 9.1
Vis: 53
Wl: 6.0
Chl: 3.500
LCM: 6#

Morgan Mud @ 4430'
Wt: 9.2
Vis: 55
Wl: 6.8
Chl: 3.400
LCM: 6#

Morgan Mud @ 4700'
Wt: 9.0
Vis: 61
Wl: 7.2
Chl: 3.500
LCM: 6#
Deviation Survey @ 4700: 1/2"



DRILL STEM TEST REPORT

Prepared For: **Murfin Drilling Co. Inc.**

250 N. Water STE 300
Wichita KS 67202

ATTN: Samon Sharifaie

Nelson A #1-34

34-4s-33w Rawlins,KS

Start Date: 2019.11.12 @ 21:00:00

End Date: 2019.11.13 @ 04:35:39

Job Ticket #: 66455 DST #: 1

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

Printed: 2019.11.18 @ 13:34:06



**TRILOBITE
TESTING, INC.**

DRILL STEM TEST REPORT

Murfin Drilling Co. Inc.

34-4s-33w Rawlins, KS

250 N. Water STE 300
Wichita KS 67202

Nelson A #1-34

Job Ticket: 66455

DST#: 1

ATTN: Samon Sharifaie

Test Start: 2019.11.12 @ 21:00:00

GENERAL INFORMATION:

Formation: **LKC " A - B "**

Deviated: No Whipstock: ft (KB)

Time Tool Opened: 23:37:20

Time Test Ended: 04:35:39

Test Type: Conventional Bottom Hole (Initial)

Tester: Ryan Nichols

Unit No: 71

Interval: 4016.00 ft (KB) To 4062.00 ft (KB) (TVD)

Reference Elevations: 3118.00 ft (KB)

Total Depth: 4062.00 ft (KB) (TVD)

3113.00 ft (CF)

Hole Diameter: 7.88 inches Hole Condition: Good

KB to GR/CF: 5.00 ft

Serial #: 8366 Outside

Press@RunDepth: 35.76 psig @ 4017.00 ft (KB)

Capacity: 8000.00 psig

Start Date: 2019.11.12

End Date:

2019.11.13

Last Calib.: 2019.11.13

Start Time: 21:00:01

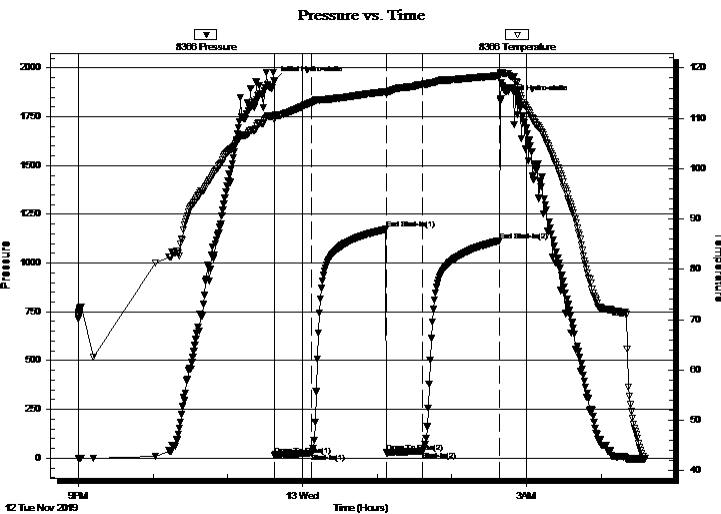
End Time:

04:35:40

Time On Btm: 2019.11.12 @ 23:37:10

Time Off Btm: 2019.11.13 @ 02:39:10

TEST COMMENT: 30 IF - Blow built to 1 1/4"
60 ISI - No return
30 FF - Blow built to 1/4"
60 FSI - No return



PRESSURE SUMMARY

| Time (Min.) | Pressure (psig) | Temp (deg F) | Annotation |
|-------------|-----------------|--------------|----------------------|
| 0 | 1932.96 | 110.49 | Initial Hydro-static |
| 1 | 15.55 | 109.68 | Open To Flow (1) |
| 30 | 25.14 | 113.11 | Shut-In(1) |
| 90 | 1172.93 | 115.31 | End Shut-In(1) |
| 91 | 27.58 | 114.80 | Open To Flow (2) |
| 120 | 35.76 | 116.70 | Shut-In(2) |
| 182 | 1114.72 | 118.47 | End Shut-In(2) |
| 182 | 1839.78 | 118.74 | Final Hydro-static |

Recovery

| Length (ft) | Description | Volume (bbl) |
|-------------|-------------|--------------|
| 20.00 | Mud 100%M | 0.10 |
| | | |
| | | |
| | | |
| | | |

Gas Rates

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



TRILOBITE TESTING, INC.

DRILL STEM TEST REPORT

Murfin Drilling Co. Inc.

34-4s-33w Rawlins, KS

250 N. Water STE 300
Wichita KS 67202

Nelson A #1-34

Job Ticket: 66455

DST#: 1

ATTN: Samon Sharifaie

Test Start: 2019.11.12 @ 21:00:00

GENERAL INFORMATION:

Formation: **LKC " A - B "**

Deviated: No Whipstock: ft (KB)

Time Tool Opened: 23:37:20

Time Test Ended: 04:35:39

Test Type: Conventional Bottom Hole (Initial)

Tester: Ryan Nichols

Unit No: 71

Interval: **4016.00 ft (KB) To 4062.00 ft (KB) (TVD)**

Total Depth: 4062.00 ft (KB) (TVD)

Hole Diameter: 7.88 inches Hole Condition: Good

Reference Elevations: 3118.00 ft (KB)

3113.00 ft (CF)

KB to GR/CF: 5.00 ft

Serial #: 8353 Inside

Press@RunDepth: psig @ 4017.00 ft (KB)

Start Date: 2019.11.12

End Date: 2019.11.13

Start Time: 21:00:01

End Time: 04:35:30

Capacity: 8000.00 psig

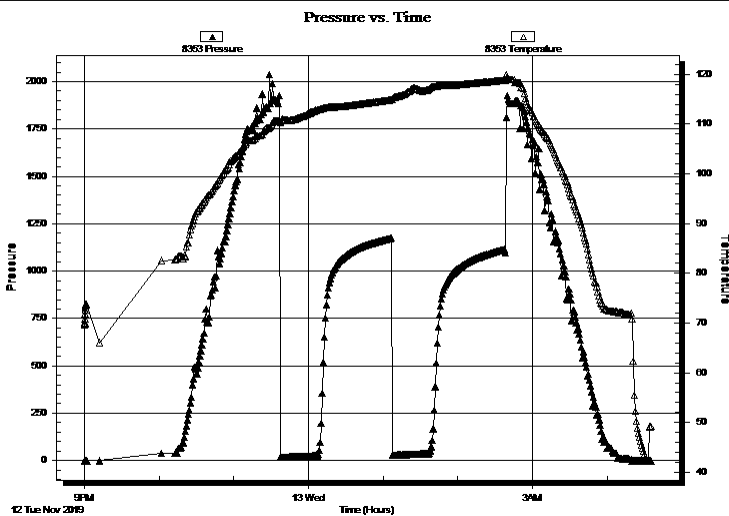
Last Calib.: 2019.11.13

Time On Btm:

Time Off Btm:

TEST COMMENT: 30 IF - Blow built to 1 1/4"
60 ISI - No return
30 FF - Blow built to 1/4"
60 FSI - No return

PRESSURE SUMMARY



| Time (Min.) | Pressure (psig) | Temp (deg F) | Annotation |
|-------------|-----------------|--------------|------------|
| | | | |
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Recovery

| Length (ft) | Description | Volume (bbl) |
|-------------|-------------|--------------|
| 20.00 | Mud 100%M | 0.10 |
| | | |
| | | |
| | | |
| | | |
| | | |
| | | |

Gas Rates

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



**TRILOBITE
TESTING, INC.**

DRILL STEM TEST REPORT

TOOL DIAGRAM

Murfin Drilling Co. Inc.

34-4s-33w Rawlins,KS

250 N. Water STE 300
Wichita KS 67202

Nelson A #1-34

Job Ticket: 66455

DST#: 1

ATTN: Samon Sharifaie

Test Start: 2019.11.12 @ 21:00:00

Tool Information

| | | | | |
|---------------------------|--------------------|-----------------------|--------------------------------|------------------------------------|
| Drill Pipe: | Length: 3830.00 ft | Diameter: 3.80 inches | Volume: 53.72 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: 177.00 ft | Diameter: 2.25 inches | Volume: 0.87 bbl | Weight to Pull Loose: 70000.00 lb |
| | | | <u>Total Volume: 54.59 bbl</u> | Tool Chased 0.00 ft |
| Drill Pipe Above KB: | 19.00 ft | | | String Weight: Initial 60000.00 lb |
| Depth to Top Packer: | 4016.00 ft | | | Final 60000.00 lb |
| Depth to Bottom Packer: | ft | | | |
| Interval between Packers: | 46.00 ft | | | |
| Tool Length: | 74.00 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 | | | 3993.00 | |
| Hydraulic tool | 5.00 | | | 3998.00 | |
| Jars | 5.00 | | | 4003.00 | |
| Safety Joint | 3.00 | | | 4006.00 | |
| Packer | 5.00 | | | 4011.00 | 28.00 Bottom Of Top Packer |
| Packer | 5.00 | | | 4016.00 | |
| Stubb | 1.00 | | | 4017.00 | |
| Recorder | 0.00 | 8353 | Inside | 4017.00 | |
| Recorder | 0.00 | 8366 | Outside | 4017.00 | |
| Perforations | 8.00 | | | 4025.00 | |
| Blank Spacing | 34.00 | | | 4059.00 | |
| Bullnose | 3.00 | | | 4062.00 | 46.00 Bottom Packers & Anchor |

Total Tool Length: 74.00



**TRILOBITE
TESTING, INC.**

DRILL STEM TEST REPORT

FLUID SUMMARY

Murfin Drilling Co. Inc.

34-4s-33w Rawlins,KS

250 N. Water STE 300
Wichita KS 67202

Nelson A #1-34

Job Ticket: 66455

DST#: 1

ATTN: Samon Sharifaie

Test Start: 2019.11.12 @ 21:00:00

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: 57.00 sec/qt

Cushion Volume:

bbbl

Water Loss: 6.39 in³

Gas Cushion Type:

Resistivity: ohm.m

Gas Cushion Pressure:

psig

Salinity: 2100.00 ppm

Filter Cake: 2.00 inches

Recovery Information

Recovery Table

| Length ft | Description | Volume bbl |
|--------------|-------------|---------------|
| 20.00 | Mud 100%M | 0.098 |

Total Length: 20.00 ft Total Volume: 0.098 bbl

Num Fluid Samples: 0

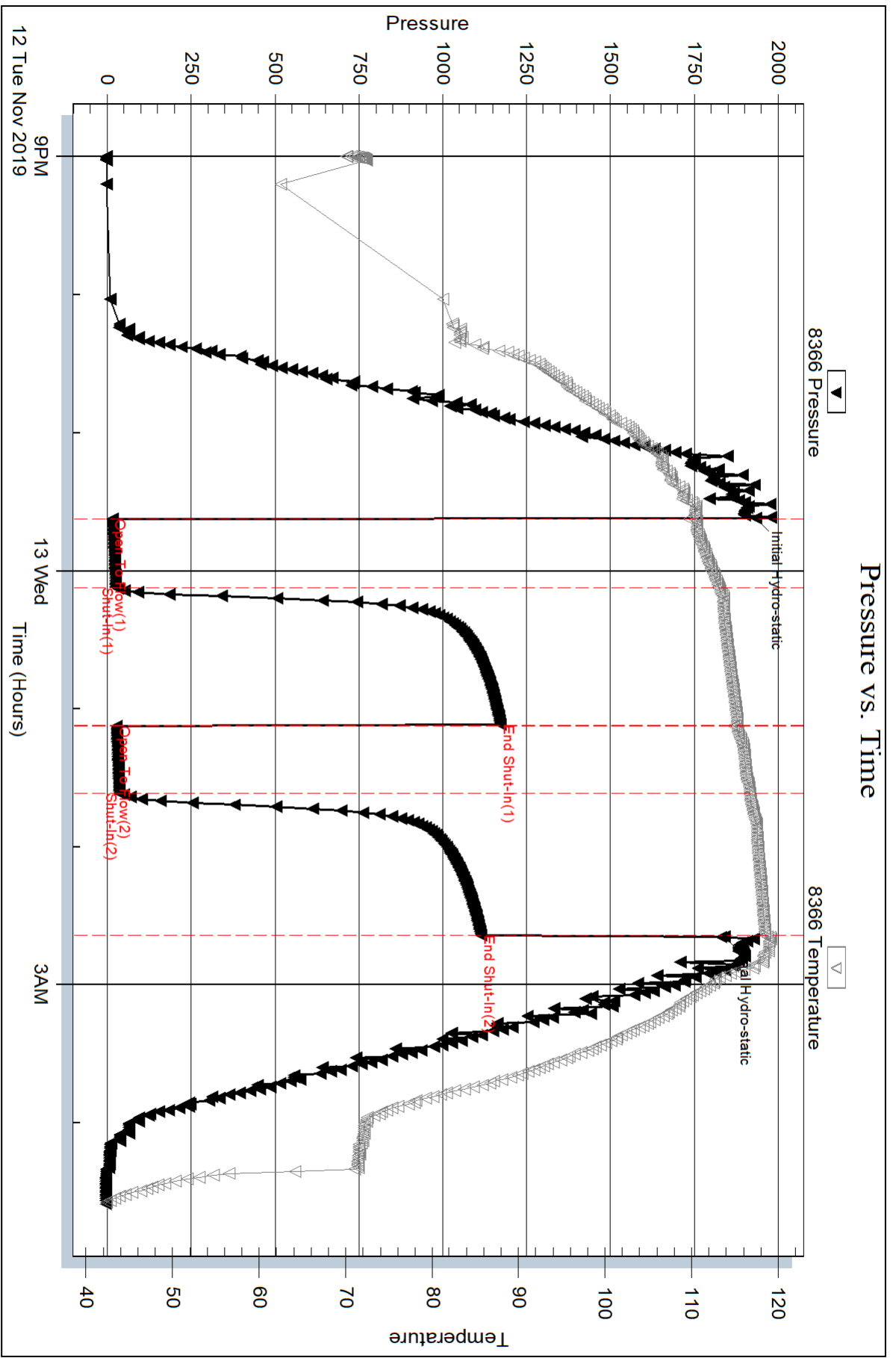
Num Gas Bombs: 0

Serial #:

Laboratory Name:

Laboratory Location:

Recovery Comments:



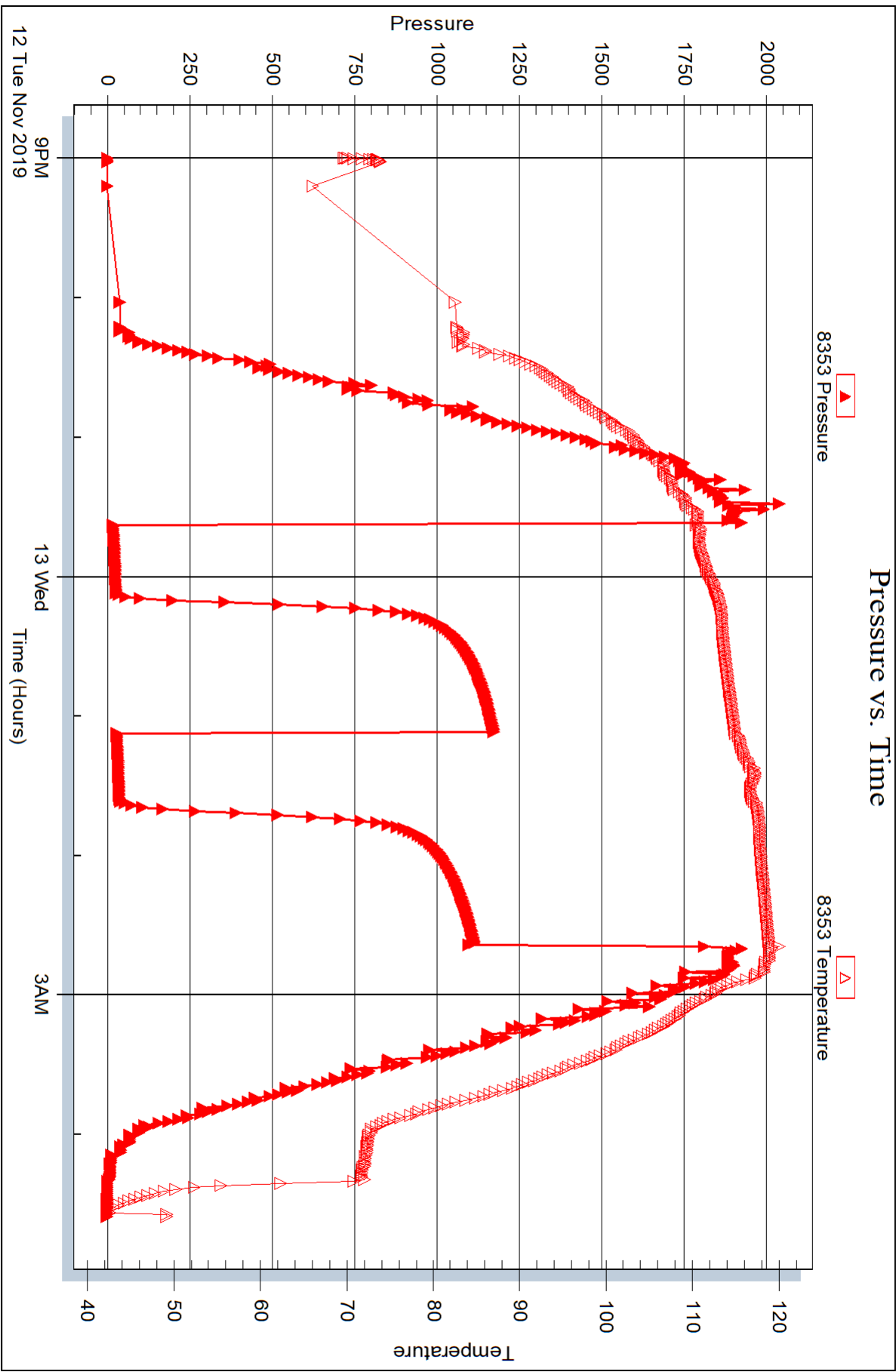
Serial #: 8353

Inside

Murfin Drilling Co. Inc.

Nelson A #1-34

DST Test Number: 1



Trilobite Testing, Inc

Ref. No: 66455

Printed: 2019-11-18 @ 13:34:07



DRILL STEM TEST REPORT

Prepared For: **Murfin Drilling Co. Inc.**

250 N. Water STE 300
Wichita KS 67202

ATTN: Samon Sharifaie

Nelson A #1-34

34-4s-33w Rawlins,KS

Start Date: 2019.11.13 @ 15:00:00

End Date: 2019.11.13 @ 21:53:30

Job Ticket #: 66456 DST #: 2

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

Printed: 2019.11.18 @ 13:31:54



TRILOBITE TESTING, INC.

DRILL STEM TEST REPORT

Murfin Drilling Co. Inc.

34-4s-33w Rawlins, KS

250 N. Water STE 300
Wichita KS 67202

Nelson A #1-34

Job Ticket: 66456

DST#: 2

ATTN: Samon Sharifaie

Test Start: 2019.11.13 @ 15:00:00

GENERAL INFORMATION:

Formation: **LKC " F - G "**

Deviated: No Whipstock: ft (KB)

Time Tool Opened: 16:56:00

Time Test Ended: 21:53:30

Test Type: Conventional Bottom Hole (Reset)

Tester: Ryan Nichols

Unit No: 71

Interval: 4080.00 ft (KB) To 4120.00 ft (KB) (TVD)

Reference Elevations: 3118.00 ft (KB)

Total Depth: 4120.00 ft (KB) (TVD)

3113.00 ft (CF)

Hole Diameter: 7.88 inches Hole Condition: Good

KB to GR/CF: 5.00 ft

Serial #: 8366 Outside

Press@RunDepth: 31.42 psig @ 4081.00 ft (KB)

Capacity: 8000.00 psig

Start Date: 2019.11.13

End Date:

2019.11.13

Last Calib.: 2019.11.13

Start Time: 15:00:01

End Time:

21:53:30

Time On Btm: 2019.11.13 @ 16:55:50

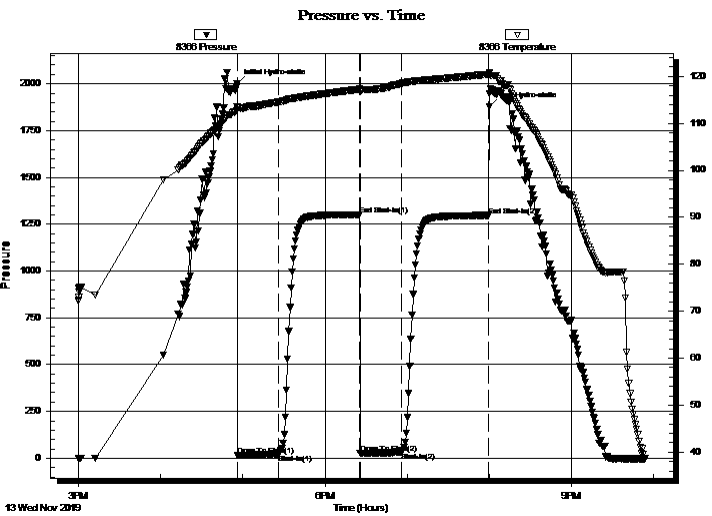
Time Off Btm: 2019.11.13 @ 20:00:00

TEST COMMENT: 30 IF - Blow built to 1/4"

60 ISI - No return

30 FF - No blow

60 FSI - No return



PRESSURE SUMMARY

| Time (Min.) | Pressure (psig) | Temp (deg F) | Annotation |
|-------------|-----------------|--------------|----------------------|
| 0 | 2002.16 | 113.54 | Initial Hydro-static |
| 1 | 14.58 | 112.91 | Open To Flow (1) |
| 31 | 22.20 | 114.53 | Shut-In(1) |
| 90 | 1301.10 | 117.27 | End Shut-In(1) |
| 90 | 25.04 | 116.78 | Open To Flow (2) |
| 120 | 31.42 | 118.53 | Shut-In(2) |
| 184 | 1297.17 | 120.43 | End Shut-In(2) |
| 185 | 1879.58 | 120.84 | Final Hydro-static |

Recovery

| Length (ft) | Description | Volume (bbl) |
|-------------|--------------------|--------------|
| 10.00 | VSOCM - 5%o - 95%M | 0.05 |
| | | |
| | | |
| | | |
| | | |

* Recovery from multiple tests

Gas Rates

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



**TRILOBITE
TESTING, INC.**

DRILL STEM TEST REPORT

Murfin Drilling Co. Inc.

250 N. Water STE 300
Wichita KS 67202

ATTN: Samon Sharifaie

34-4s-33w Rawlins,KS

Nelson A #1-34

Job Ticket: 66456

DST#: 2

Test Start: 2019.11.13 @ 15:00:00

GENERAL INFORMATION:

Formation: **LKC " F - G "**

Deviated: No Whipstock: ft (KB)

Time Tool Opened: 16:56:00

Time Test Ended: 21:53:30

Test Type: Conventional Bottom Hole (Reset)

Tester: Ryan Nichols

Unit No: 71

Interval: 4080.00 ft (KB) To 4120.00 ft (KB) (TVD)

Reference Elevations: 3118.00 ft (KB)

Total Depth: 4120.00 ft (KB) (TVD)

3113.00 ft (CF)

Hole Diameter: 7.88 inches Hole Condition: Good

KB to GR/CF: 5.00 ft

Serial #: 8353 Inside

Press@RunDepth: psig @ 4081.00 ft (KB)

Capacity: 8000.00 psig

Start Date: 2019.11.13

End Date: 2019.11.13

Last Calib.: 2019.11.13

Start Time: 15:00:01

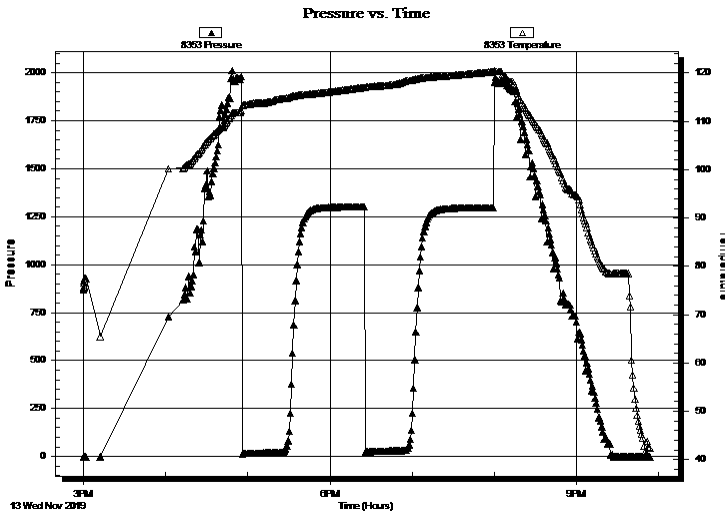
End Time: 21:53:30

Time On Btm:

Time Off Btm:

TEST COMMENT: 30 IF - Blow built to 1/4"
60 ISI - No return
30 FF - No blow
60 FSI - No return

PRESSURE SUMMARY



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

Recovery

| Length (ft) | Description | Volume (bbl) |
|-------------|--------------------|--------------|
| 10.00 | VSOCM - 5%σ - 95%M | 0.05 |
| | | |
| | | |
| | | |
| | | |
| | | |

Gas Rates

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

* Recovery from multiple tests



**TRILOBITE
TESTING, INC.**

DRILL STEM TEST REPORT

TOOL DIAGRAM

Murfin Drilling Co. Inc.

34-4s-33w Rawlins,KS

250 N. Water STE 300
Wichita KS 67202

Nelson A #1-34

Job Ticket: 66456

DST#: 2

ATTN: Samon Sharifaie

Test Start: 2019.11.13 @ 15:00:00

Tool Information

| | | | | | |
|---------------------------|--------------------|-----------------------|--------------------------------|------------------------|-------------|
| Drill Pipe: | Length: 3893.00 ft | Diameter: 3.80 inches | Volume: 54.61 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: 177.00 ft | Diameter: 2.25 inches | Volume: 0.87 bbl | Weight to Pull Loose: | 65000.00 lb |
| | | | <u>Total Volume: 55.48 bbl</u> | Tool Chased | 0.00 ft |
| Drill Pipe Above KB: | 18.00 ft | | | String Weight: Initial | 60000.00 lb |
| Depth to Top Packer: | 4080.00 ft | | | Final | 60000.00 lb |
| Depth to Bottom Packer: | ft | | | | |
| Interval between Packers: | 40.00 ft | | | | |
| Tool Length: | 68.00 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 | | | 4057.00 | |
| Hydraulic tool | 5.00 | | | 4062.00 | |
| Jars | 5.00 | | | 4067.00 | |
| Safety Joint | 3.00 | | | 4070.00 | |
| Packer | 5.00 | | | 4075.00 | 28.00 Bottom Of Top Packer |
| Packer | 5.00 | | | 4080.00 | |
| Stubb | 1.00 | | | 4081.00 | |
| Recorder | 0.00 | 8353 | Inside | 4081.00 | |
| Recorder | 0.00 | 8366 | Outside | 4081.00 | |
| Perforations | 36.00 | | | 4117.00 | |
| Bullnose | 3.00 | | | 4120.00 | 40.00 Bottom Packers & Anchor |

Total Tool Length: 68.00



**TRILOBITE
TESTING, INC.**

DRILL STEM TEST REPORT

FLUID SUMMARY

Murfin Drilling Co. Inc.

34-4s-33w Rawlins,KS

250 N. Water STE 300
Wichita KS 67202

Nelson A #1-34

Job Ticket: 66456

DST#: 2

ATTN: Samon Sharifaie

Test Start: 2019.11.13 @ 15:00:00

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: 61.00 sec/qt

Cushion Volume:

bbbl

Water Loss: 5.59 in³

Gas Cushion Type:

Resistivity: ohm.m

Gas Cushion Pressure:

psig

Salinity: 3400.00 ppm

Filter Cake: 2.00 inches

Recovery Information

Recovery Table

| Length ft | Description | Volume bbl |
|--------------|--------------------|---------------|
| 10.00 | VSOCM - 5%o - 95%M | 0.049 |

Total Length: 10.00 ft Total Volume: 0.049 bbl

Num Fluid Samples: 0

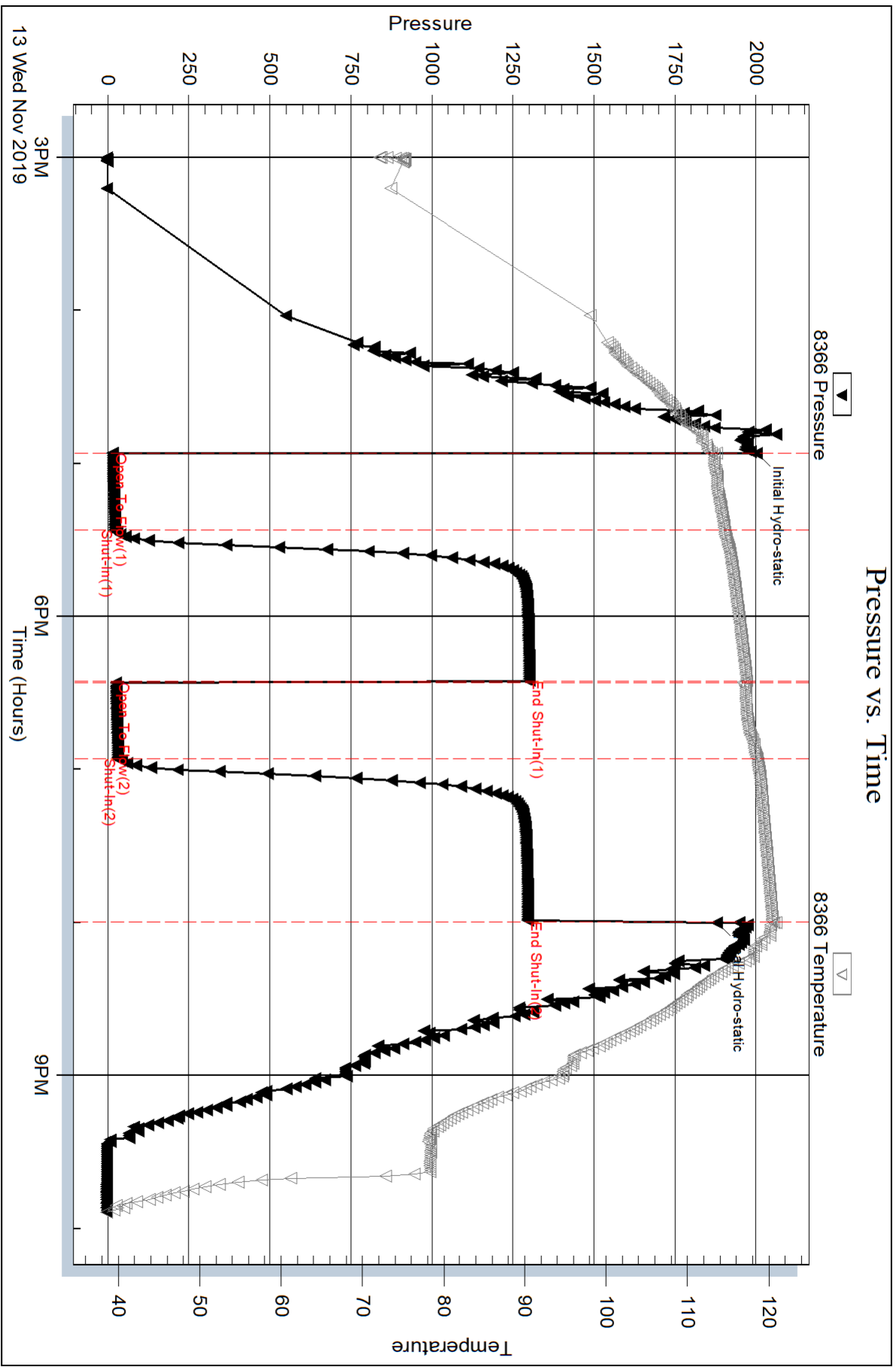
Num Gas Bombs: 0

Serial #:

Laboratory Name:

Laboratory Location:

Recovery Comments:



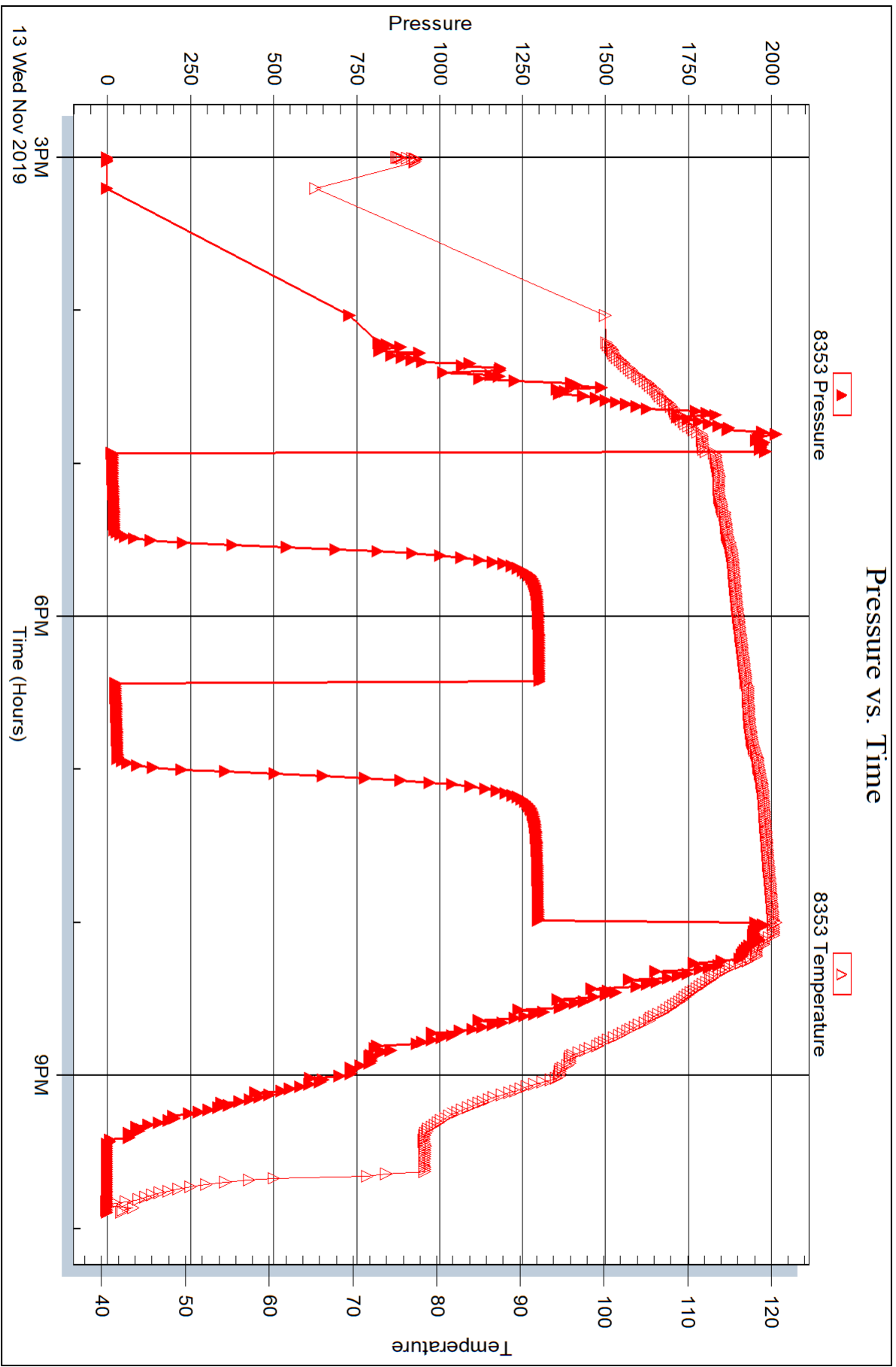
Serial #: 8353

Inside

Murfin Drilling Co. Inc.

Nelson A #1-34

DST Test Number: 2





DRILL STEM TEST REPORT

Prepared For: **Murfin Drilling Co. Inc.**

250 N. Water STE 300
Wichita KS 67202

ATTN: Samon Sharifaie

Nelson A #1-34

34-4s-33w Rawlins,KS

Start Date: 2019.11.14 @ 09:00:00

End Date: 2019.11.14 @ 17:10:00

Job Ticket #: 66457 DST #: 3

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

Printed: 2019.11.18 @ 13:17:22



TRILOBITE TESTING, INC.

DRILL STEM TEST REPORT

Murfin Drilling Co. Inc.

34-4s-33w Rawlins, KS

250 N. Water STE 300
Wichita KS 67202

Nelson A #1-34

Job Ticket: 66457

DST#: 3

ATTN: Samon Sharifaie

Test Start: 2019.11.14 @ 09:00:00

GENERAL INFORMATION:

Formation: **LKC " J "**

Deviated: No Whipstock: ft (KB)

Time Tool Opened: 11:03:20

Time Test Ended: 17:10:00

Test Type: Conventional Bottom Hole (Reset)

Tester: Ryan Nichols

Unit No: 71

Interval: 4160.00 ft (KB) To 4200.00 ft (KB) (TVD)

Reference Elevations: 3118.00 ft (KB)

Total Depth: 4200.00 ft (KB) (TVD)

3113.00 ft (CF)

Hole Diameter: 7.88 inches Hole Condition: Good

KB to GR/CF: 5.00 ft

Serial #: 8366 Outside

Press@RunDepth: 64.18 psig @ 4161.00 ft (KB)

Capacity: 8000.00 psig

Start Date: 2019.11.14

End Date:

2019.11.14

Last Calib.: 2019.11.14

Start Time: 09:00:01

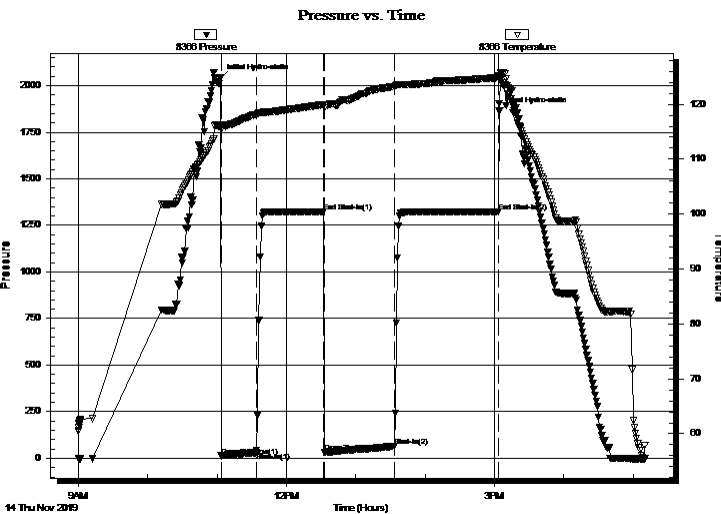
End Time:

17:10:00

Time On Btm: 2019.11.14 @ 11:03:00

Time Off Btm: 2019.11.14 @ 15:03:50

TEST COMMENT: 30 IF - Blow built to 1 1/2"
60 ISI - No return
60 FF - Blow built to 2 1/4"
90 FSI - No return



PRESSURE SUMMARY

| Time (Min.) | Pressure (psig) | Temp (deg F) | Annotation |
|-------------|-----------------|--------------|----------------------|
| 0 | 2040.23 | 116.26 | Initial Hydro-static |
| 1 | 12.92 | 115.33 | Open To Flow (1) |
| 31 | 30.59 | 118.14 | Shut-In(1) |
| 90 | 1324.26 | 119.98 | End Shut-In(1) |
| 90 | 31.45 | 119.33 | Open To Flow (2) |
| 150 | 64.18 | 123.25 | Shut-In(2) |
| 241 | 1323.72 | 124.81 | End Shut-In(2) |
| 241 | 1862.87 | 125.13 | Final Hydro-static |

Recovery

| Length (ft) | Description | Volume (bbl) |
|-------------|------------------|--------------|
| 60.00 | Mud 100%M | 0.30 |
| 20.00 | WCM - 5%W - 95%M | 0.10 |
| | | |
| | | |
| | | |

* Recovery from multiple tests

Gas Rates

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



TRILOBITE TESTING, INC.

DRILL STEM TEST REPORT

Murfin Drilling Co. Inc.

34-4s-33w Rawlins, KS

250 N. Water STE 300
Wichita KS 67202

Nelson A #1-34

Job Ticket: 66457

DST#: 3

ATTN: Samon Sharifaie

Test Start: 2019.11.14 @ 09:00:00

GENERAL INFORMATION:

Formation: **LKC " J "**

Deviated: No Whipstock: ft (KB)

Time Tool Opened: 11:03:20

Time Test Ended: 17:10:00

Test Type: Conventional Bottom Hole (Reset)

Tester: Ryan Nichols

Unit No: 71

Interval: **4160.00 ft (KB) To 4200.00 ft (KB) (TVD)**

Reference Elevations: 3118.00 ft (KB)

Total Depth: 4200.00 ft (KB) (TVD)

3113.00 ft (CF)

Hole Diameter: 7.88 inches Hole Condition: Good

KB to GR/CF: 5.00 ft

Serial #: **8353** Inside

Press@RunDepth: psig @ 4161.00 ft (KB)

Capacity: 8000.00 psig

Start Date: 2019.11.14 End Date: 2019.11.14

Last Calib.: 2019.11.14

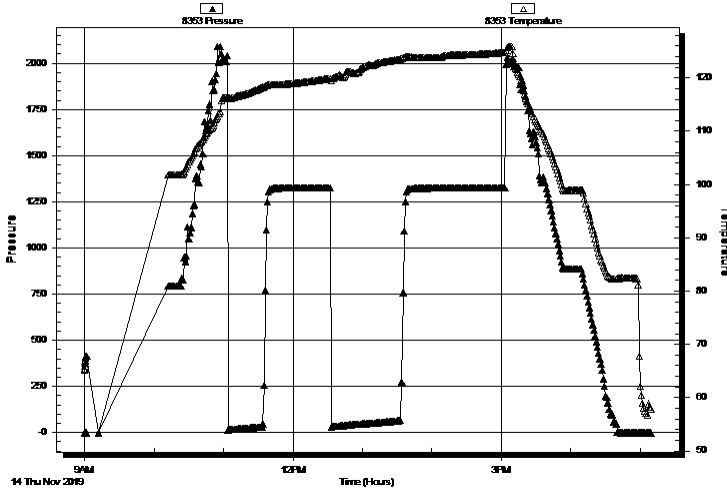
Start Time: 09:00:01 End Time: 17:09:50

Time On Btm:

Time Off Btm:

TEST COMMENT: 30 IF - Blow built to 1 1/2"
60 ISI - No return
60 FF - Blow built to 2 1/4"
90 FSI - No return

Pressure vs. Time



PRESSURE SUMMARY

| Time (Min.) | Pressure (psig) | Temp (deg F) | Annotation |
|-------------|-----------------|--------------|------------|
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Recovery

| Length (ft) | Description | Volume (bbl) |
|-------------|------------------|--------------|
| 60.00 | Mud 100%M | 0.30 |
| 20.00 | WCM - 5%W - 95%M | 0.10 |
| | | |
| | | |
| | | |
| | | |
| | | |

Gas Rates

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

* Recovery from multiple tests



**TRILOBITE
TESTING, INC.**

DRILL STEM TEST REPORT

TOOL DIAGRAM

Murfin Drilling Co. Inc.

34-4s-33w Rawlins,KS

250 N. Water STE 300
Wichita KS 67202

Nelson A #1-34

Job Ticket: 66457

DST#: 3

ATTN: Samon Sharifaie

Test Start: 2019.11.14 @ 09:00:00

Tool Information

| | | | | |
|---------------------------|--------------------|-----------------------|--------------------------------|------------------------------------|
| Drill Pipe: | Length: 3986.00 ft | Diameter: 3.80 inches | Volume: 55.91 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: 177.00 ft | Diameter: 2.25 inches | Volume: 0.87 bbl | Weight to Pull Loose: 70000.00 lb |
| | | | <u>Total Volume: 56.78 bbl</u> | Tool Chased 0.00 ft |
| Drill Pipe Above KB: | 31.00 ft | | | String Weight: Initial 60000.00 lb |
| Depth to Top Packer: | 4160.00 ft | | | Final 60000.00 lb |
| Depth to Bottom Packer: | ft | | | |
| Interval between Packers: | 40.00 ft | | | |
| Tool Length: | 68.00 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 | | | 4137.00 | |
| Hydraulic tool | 5.00 | | | 4142.00 | |
| Jars | 5.00 | | | 4147.00 | |
| Safety Joint | 3.00 | | | 4150.00 | |
| Packer | 5.00 | | | 4155.00 | 28.00 Bottom Of Top Packer |
| Packer | 5.00 | | | 4160.00 | |
| Stubb | 1.00 | | | 4161.00 | |
| Recorder | 0.00 | 8353 | Inside | 4161.00 | |
| Recorder | 0.00 | 8366 | Outside | 4161.00 | |
| Perforations | 36.00 | | | 4197.00 | |
| Bullnose | 3.00 | | | 4200.00 | 40.00 Bottom Packers & Anchor |

Total Tool Length: 68.00



**TRILOBITE
TESTING, INC.**

DRILL STEM TEST REPORT

FLUID SUMMARY

Murfin Drilling Co. Inc.

34-4s-33w Rawlins,KS

250 N. Water STE 300
Wichita KS 67202

Nelson A #1-34

Job Ticket: 66457

DST#: 3

ATTN: Samon Sharifaie

Test Start: 2019.11.14 @ 09:00:00

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: 53.00 sec/qt

Cushion Volume:

bbbl

Water Loss: 5.99 in³

Gas Cushion Type:

Resistivity: ohm.m

Gas Cushion Pressure:

psig

Salinity: 3500.00 ppm

Filter Cake: 2.00 inches

Recovery Information

Recovery Table

| Length ft | Description | Volume bbl |
|--------------|------------------|---------------|
| 60.00 | Mud 100%M | 0.295 |
| 20.00 | WCM - 5%W - 95%M | 0.098 |

Total Length: 80.00 ft Total Volume: 0.393 bbl

Num Fluid Samples: 0

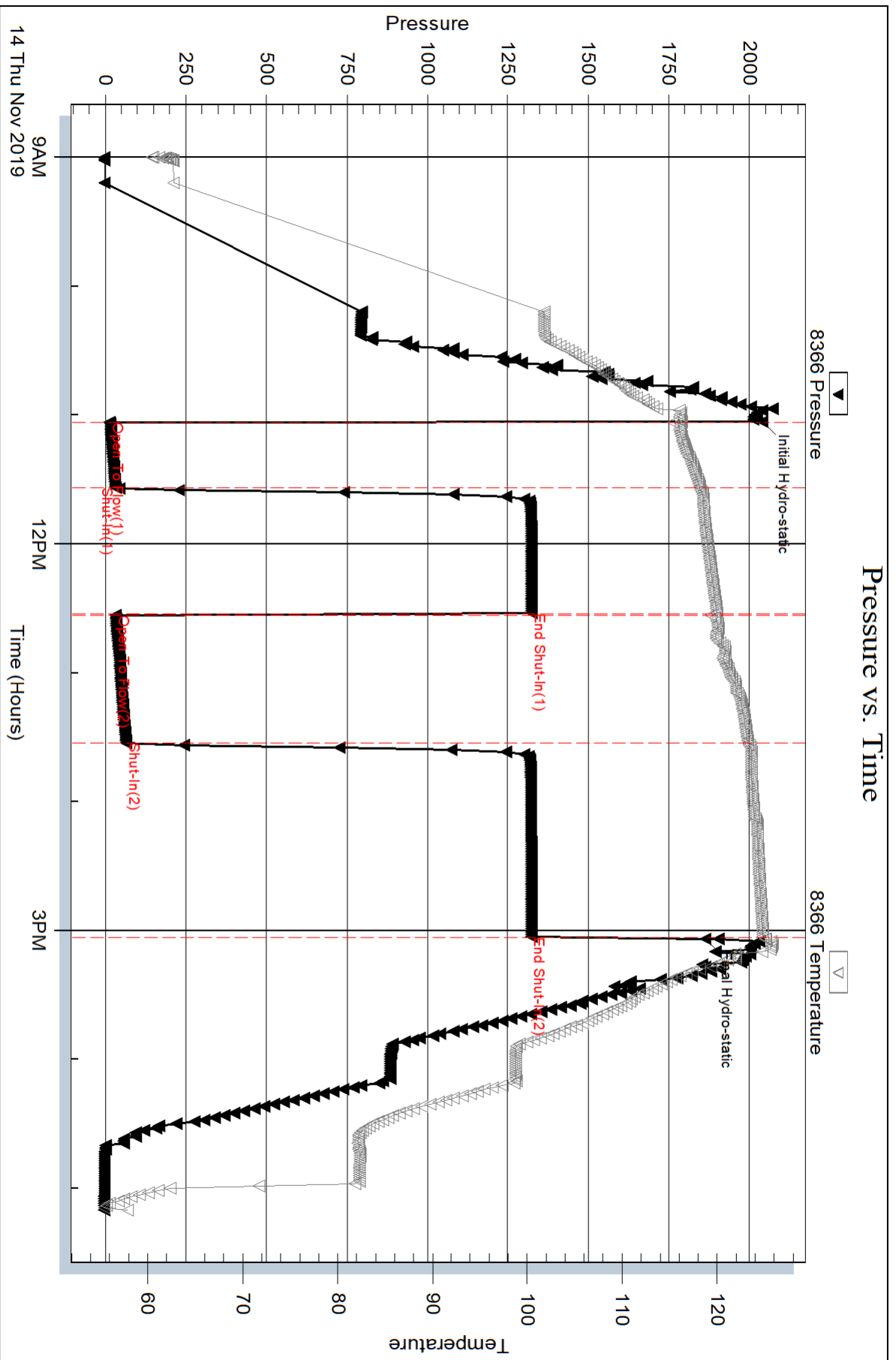
Num Gas Bombs: 0

Serial #:

Laboratory Name:

Laboratory Location:

Recovery Comments:



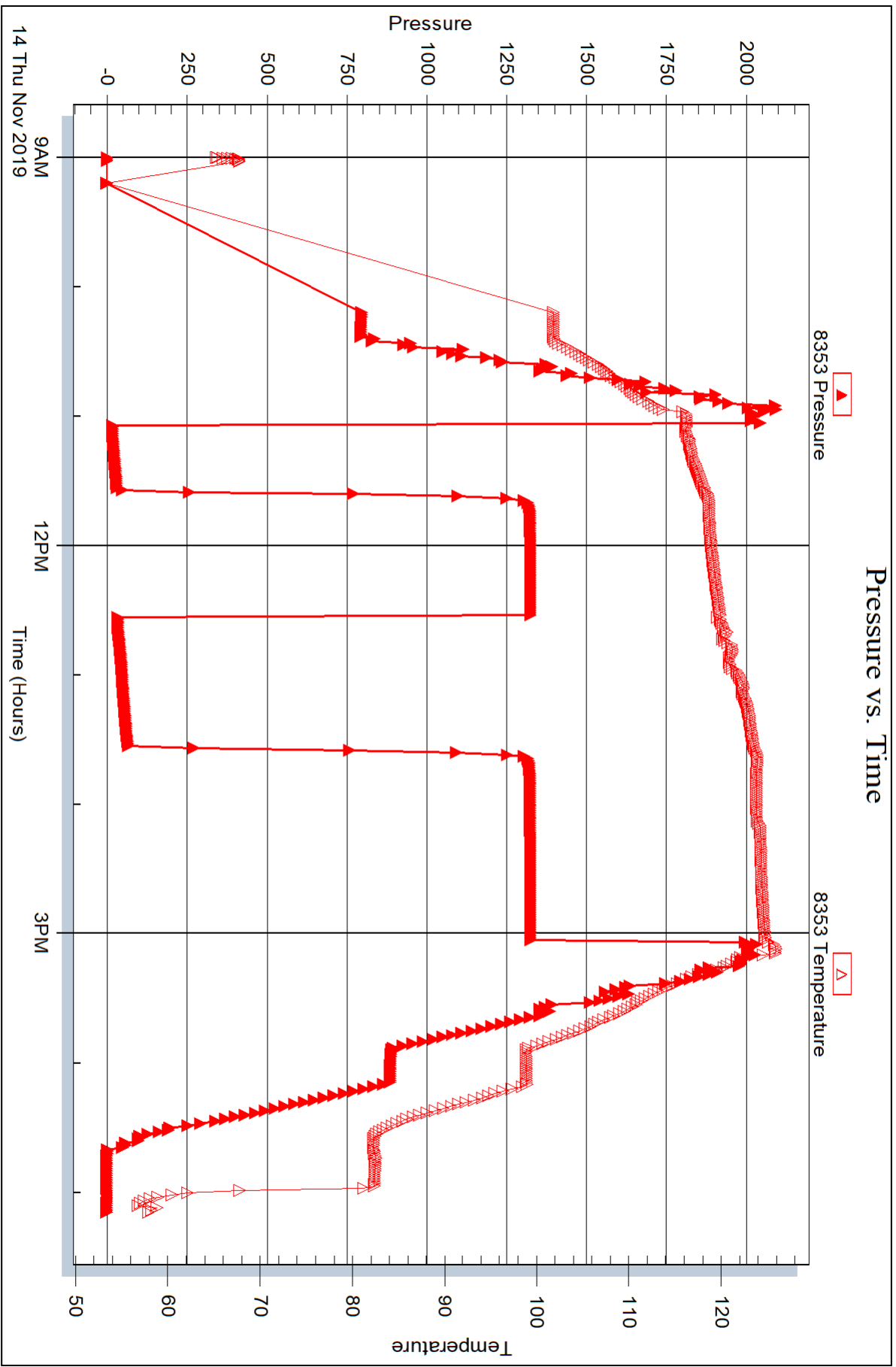
Serial #: 8353

Inside

Murfin Drilling Co. Inc.

Nelson A #1-34

DST Test Number: 3



Trilobite Testing, Inc

Ref. No: 66457

Printed: 2019-11-18 @ 13:17:24



DRILL STEM TEST REPORT

Prepared For: **Murfin Drilling Co. Inc.**

250 N. Water STE 300
Wichita KS 67202

ATTN: Samon Sharifaie

Nelson A #1-34

34-4s-33w Rawlins,KS

Start Date: 2019.11.15 @ 19:51:00

End Date: 2019.11.16 @ 03:12:39

Job Ticket #: 66458 DST #: 4

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

Printed: 2019.11.18 @ 13:14:51



TRILOBITE TESTING, INC.

DRILL STEM TEST REPORT

Murfin Drilling Co. Inc.

34-4s-33w Rawlins, KS

250 N. Water STE 300
Wichita KS 67202

Nelson A #1-34

Job Ticket: 66458

DST#: 4

ATTN: Samon Sharifaie

Test Start: 2019.11.15 @ 19:51:00

GENERAL INFORMATION:

Formation: **Lower Ft. Scott - Ce**

Deviated: No Whipstock: ft (KB)

Time Tool Opened: 21:59:30

Time Test Ended: 03:12:39

Test Type: Conventional Bottom Hole (Reset)

Tester: Ryan Nichols

Unit No: 71

Interval: **4400.00 ft (KB) To 4490.00 ft (KB) (TVD)**

Reference Elevations: 3118.00 ft (KB)

Total Depth: 4490.00 ft (KB) (TVD)

3113.00 ft (CF)

Hole Diameter: 7.88 inches Hole Condition: Good

KB to GR/CF: 5.00 ft

Serial #: 8366 Outside

Press@RunDepth: 28.62 psig @ 4401.00 ft (KB)

Capacity: 8000.00 psig

Start Date: 2019.11.15

End Date:

2019.11.16

Last Calib.: 2019.11.16

Start Time: 19:51:01

End Time:

03:12:40

Time On Btm: 2019.11.15 @ 21:59:10

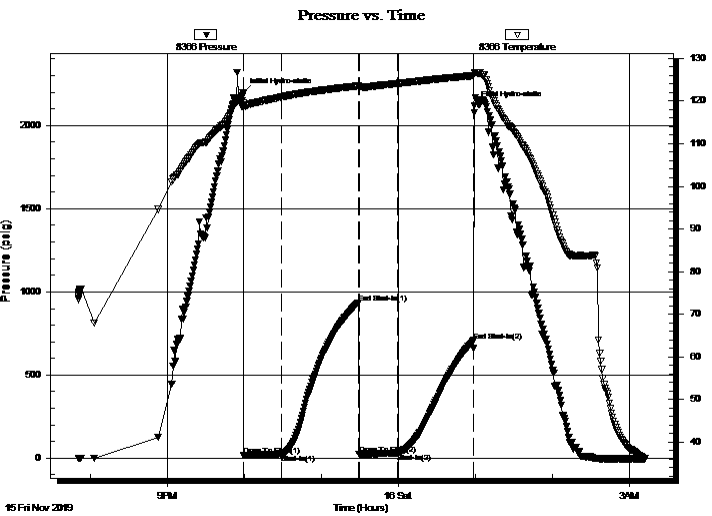
Time Off Btm: 2019.11.16 @ 00:59:10

TEST COMMENT: 30 IF - Blow built to 1" died back to 1/2"

60 ISI - No return

30 FF - No blow

60 FSI - No return



PRESSURE SUMMARY

| Time (Min.) | Pressure (psig) | Temp (deg F) | Annotation |
|-------------|-----------------|--------------|----------------------|
| 0 | 2194.97 | 119.50 | Initial Hydro-static |
| 1 | 18.43 | 118.47 | Open To Flow (1) |
| 31 | 22.58 | 120.97 | Shut-In(1) |
| 90 | 934.89 | 123.56 | End Shut-In(1) |
| 91 | 25.44 | 123.16 | Open To Flow (2) |
| 120 | 28.62 | 124.10 | Shut-In(2) |
| 180 | 706.76 | 125.94 | End Shut-In(2) |
| 180 | 2119.11 | 126.53 | Final Hydro-static |

Recovery

| Length (ft) | Description | Volume (bbl) |
|-------------|-------------|--------------|
| 5.00 | Mud 100%M | 0.02 |
| | | |
| | | |
| | | |
| | | |

* Recovery from multiple tests

Gas Rates

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



**TRILOBITE
TESTING, INC.**

DRILL STEM TEST REPORT

Murfin Drilling Co. Inc.

34-4s-33w Rawlins, KS

250 N. Water STE 300
Wichita KS 67202

Nelson A #1-34

Job Ticket: 66458

DST#: 4

ATTN: Samon Sharifaie

Test Start: 2019.11.15 @ 19:51:00

GENERAL INFORMATION:

Formation: **Lower Ft. Scott - Ce**

Deviated: No Whipstock: ft (KB)

Time Tool Opened: 21:59:30

Time Test Ended: 03:12:39

Test Type: Conventional Bottom Hole (Reset)

Tester: Ryan Nichols

Unit No: 71

Interval: 4400.00 ft (KB) To 4490.00 ft (KB) (TVD)

Reference Elevations: 3118.00 ft (KB)

Total Depth: 4490.00 ft (KB) (TVD)

3113.00 ft (CF)

Hole Diameter: 7.88 inches Hole Condition: Good

KB to GR/CF: 5.00 ft

Serial #: 8353 Inside

Press@RunDepth: psig @ 4401.00 ft (KB)

Capacity: 8000.00 psig

Start Date: 2019.11.15 End Date: 2019.11.16

Last Calib.: 2019.11.16

Start Time: 19:51:01 End Time: 03:12:30

Time On Btm:

Time Off Btm:

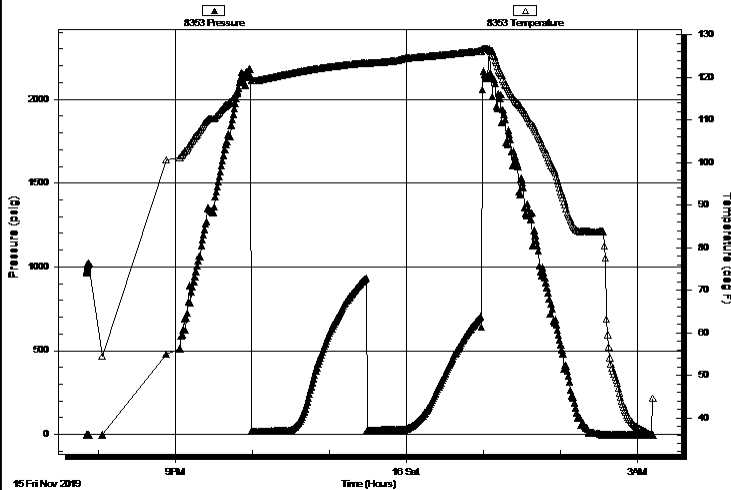
TEST COMMENT: 30 IF - Blow built to 1" died back to 1/2"

60 ISI - No return

30 FF - No blow

60 FSI - No return

Pressure vs. Time



PRESSURE SUMMARY

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

Recovery

| Length (ft) | Description | Volume (bbl) |
|-------------|-------------|--------------|
| 5.00 | Mud 100%M | 0.02 |
| | | |
| | | |
| | | |
| | | |

Gas Rates

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

* Recovery from multiple tests



**TRILOBITE
TESTING, INC.**

DRILL STEM TEST REPORT

TOOL DIAGRAM

Murfin Drilling Co. Inc.

34-4s-33w Rawlins,KS

250 N. Water STE 300
Wichita KS 67202

Nelson A #1-34

Job Ticket: 66458

DST#: 4

ATTN: Samon Sharifaie

Test Start: 2019.11.15 @ 19:51:00

Tool Information

| | | | | |
|---------------------------|--------------------|-----------------------|--------------------------------|------------------------------------|
| Drill Pipe: | Length: 4204.00 ft | Diameter: 3.80 inches | Volume: 58.97 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: 177.00 ft | Diameter: 2.25 inches | Volume: 0.87 bbl | Weight to Pull Loose: 70000.00 lb |
| | | | <u>Total Volume: 59.84 bbl</u> | Tool Chased 0.00 ft |
| Drill Pipe Above KB: | 9.00 ft | | | String Weight: Initial 62000.00 lb |
| Depth to Top Packer: | 4400.00 ft | | | Final 62000.00 lb |
| Depth to Bottom Packer: | ft | | | |
| Interval between Packers: | 90.00 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 |
|------------------|-------------|------------|----------|------------|----------------|
|------------------|-------------|------------|----------|------------|----------------|

| | | | | | |
|----------------|-------|------|---------|---------|-------------------------------|
| Shut In Tool | 5.00 | | | 4377.00 | |
| Hydraulic tool | 5.00 | | | 4382.00 | |
| Jars | 5.00 | | | 4387.00 | |
| Safety Joint | 3.00 | | | 4390.00 | |
| Packer | 5.00 | | | 4395.00 | 28.00 Bottom Of Top Packer |
| Packer | 5.00 | | | 4400.00 | |
| Stubb | 1.00 | | | 4401.00 | |
| Recorder | 0.00 | 8353 | Inside | 4401.00 | |
| Recorder | 0.00 | 8366 | Outside | 4401.00 | |
| Perforations | 21.00 | | | 4422.00 | |
| Blank Spacing | 65.00 | | | 4487.00 | |
| Bullnose | 3.00 | | | 4490.00 | 90.00 Bottom Packers & Anchor |

Total Tool Length: 118.00



**TRILOBITE
TESTING, INC.**

DRILL STEM TEST REPORT

FLUID SUMMARY

Murfin Drilling Co. Inc.

34-4s-33w Rawlins,KS

250 N. Water STE 300
Wichita KS 67202

Nelson A #1-34

Job Ticket: 66458

DST#: 4

ATTN: Samon Sharifaie

Test Start: 2019.11.15 @ 19:51:00

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:

bbbl

Water Loss: 6.79 in³

Gas Cushion Type:

Resistivity: ohm.m

Gas Cushion Pressure:

psig

Salinity: 3400.00 ppm

Filter Cake: 2.00 inches

Recovery Information

Recovery Table

| Length ft | Description | Volume bbl |
|--------------|-------------|---------------|
| 5.00 | Mud 100%M | 0.025 |

Total Length: 5.00 ft Total Volume: 0.025 bbl

Num Fluid Samples: 0

Num Gas Bombs: 0

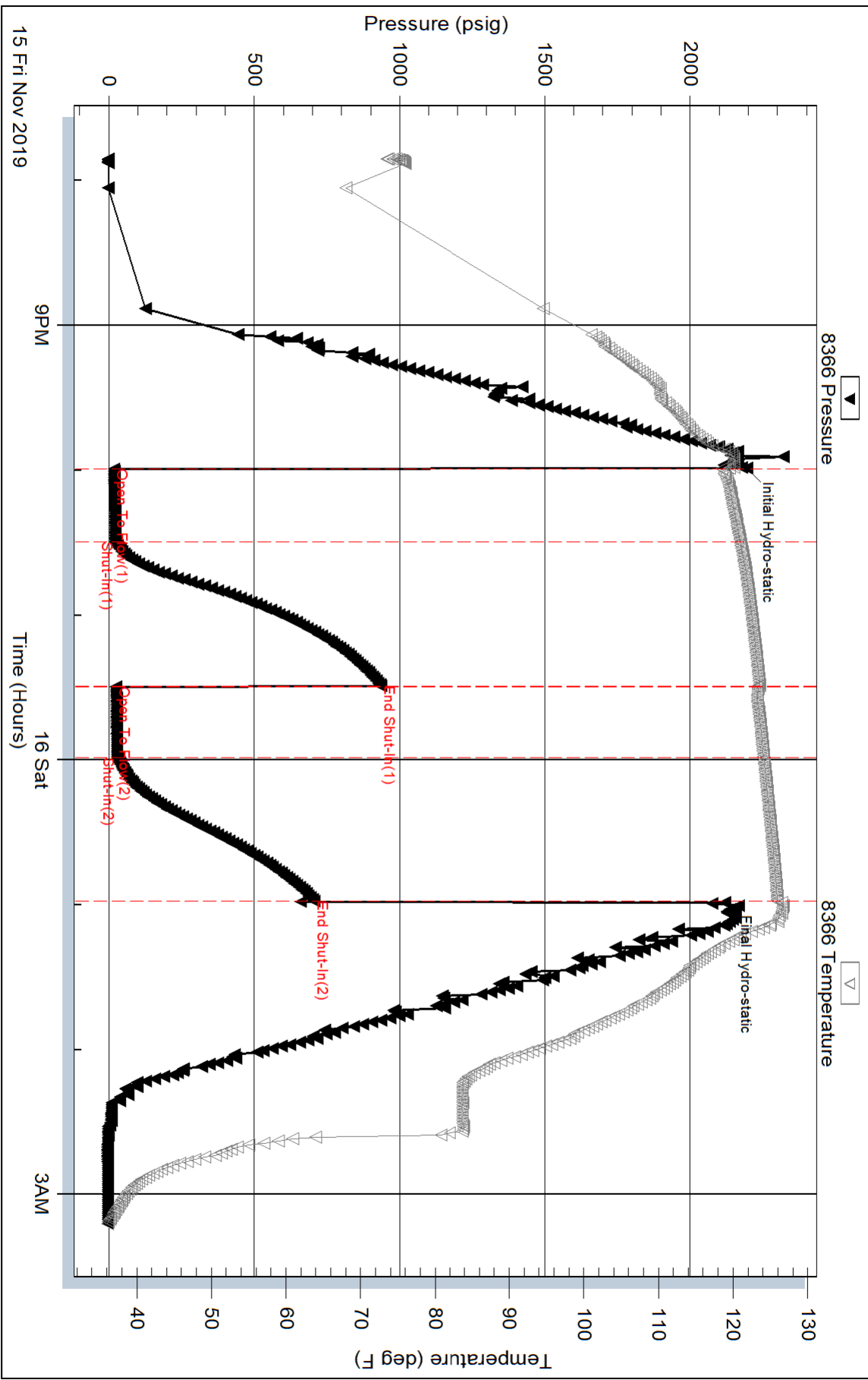
Serial #:

Laboratory Name:

Laboratory Location:

Recovery Comments:

Pressure vs. Time



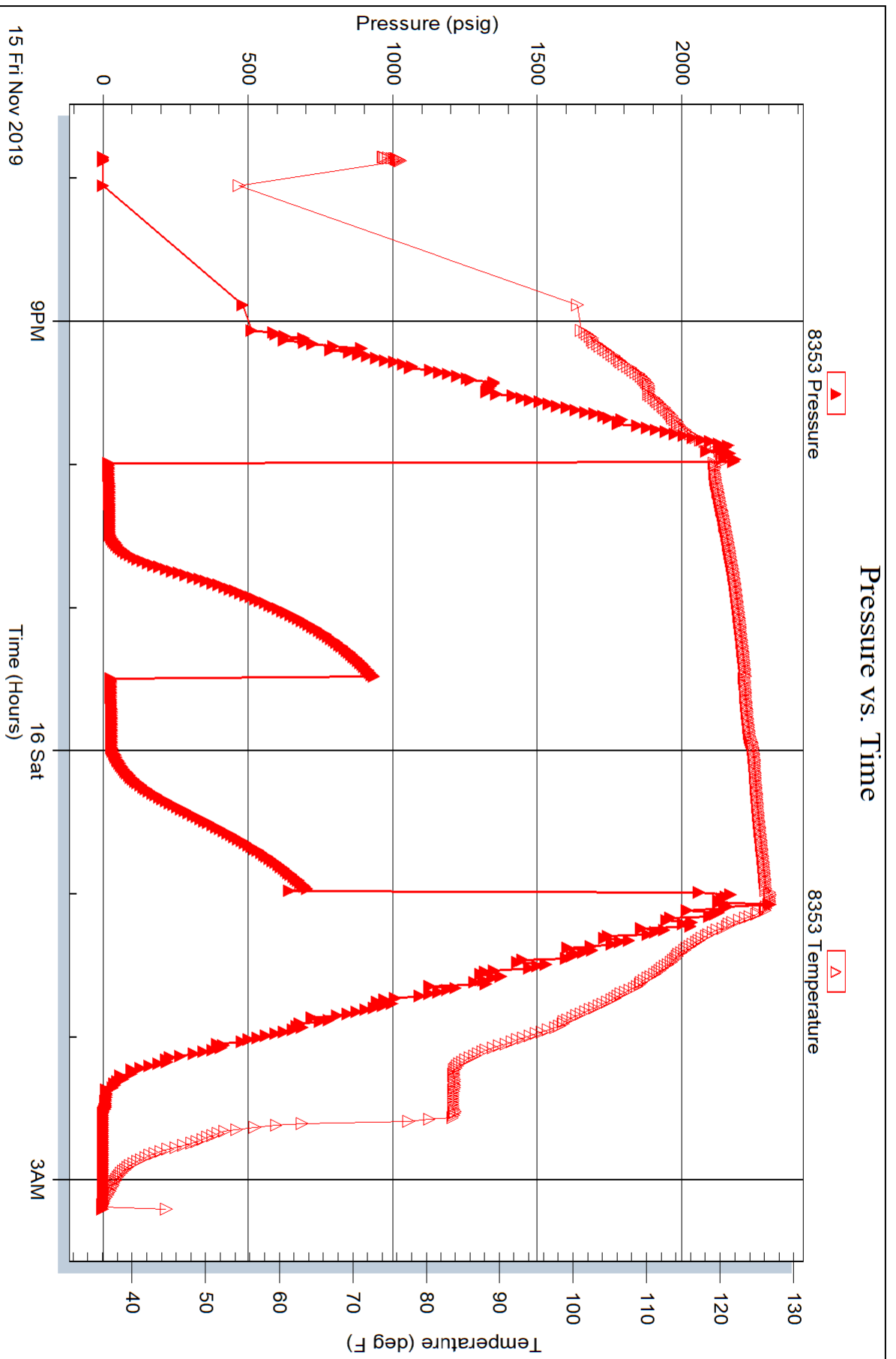
Serial #: 8353

Inside

Murfin Drilling Co. Inc.

Nelson A #1-34

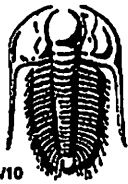
DST Test Number: 4



Trilobite Testing, Inc

Ref. No: 66458

Printed: 2019-11-18 @ 13:14:52



TRILOBITE TESTING INC.

1515 Commerce Parkway • Hays, Kansas 67601

Test Ticket 66455

NO.

Well Name & No. Nelson "A" #1-34 Test No. 1 Date 11/12/19
 Company Martin Drilling Co. Inc. Elevation 3118 KB 3113 GL
 Address 250 N. Water STE 300 Wichita KS 67202
 Co. Rep / Geo. Saman Sharifaie Rig Martin #3
 Location: Sec. 34 Twp 4S Rge. 33W Co. Rawlins State KS

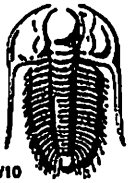
Interval Tested 4016 - 4062 Zone Tested LKC "A-B"
 Anchor Length 46' Drill Pipe Run 3830' Mud Wt. 8.8
 Top Packer Depth 4011 Drill Collars Run 177' Vis 57
 Bottom Packer Depth 4016 Wt. Pipe Run 0' WL 6.4
 Total Depth 4062 Chlorides 2100 ppm System LCM 5
 Blow Description 30 IF - Blow built to 1 1/4"
60 ISI - No return
30 FF - Blow built to 1/4"
60 FSI - No return

| Rec | Feet of | %gas | %oil | %water | %mud |
|------------|------------|------|------|------------|------|
| <u>20'</u> | <u>Mud</u> | | | <u>100</u> | |
| Rec | Feet of | %gas | %oil | %water | %mud |
| Rec | Feet of | %gas | %oil | %water | %mud |
| Rec | Feet of | %gas | %oil | %water | %mud |
| Rec | Feet of | %gas | %oil | %water | %mud |

Rec Total 20' BHT 118° Gravity — API RW — @ — F Chlorides — ppm

| | | |
|-------------------------------------|---|--|
| (A) Initial Hydrostatic <u>1933</u> | <input checked="" type="checkbox"/> Test <u>1300</u> | T-On Location <u>19:15</u> |
| (B) First Initial Flow <u>16</u> | <input checked="" type="checkbox"/> Jars <u>250</u> | T-Started <u>21:00</u> |
| (C) First Final Flow <u>25</u> | <input checked="" type="checkbox"/> Safety Joint <u>75</u> | T-Open <u>23:37</u> |
| (D) Initial Shut-In <u>1173</u> | <input type="checkbox"/> Circ Sub | T-Pulled <u>02:38</u> |
| (E) Second Initial Flow <u>28</u> | <input type="checkbox"/> Hourly Standby | T-Out <u>04:45</u> |
| (F) Second Final Flow <u>36</u> | <input checked="" type="checkbox"/> Mileage <u>82 AT 82</u> | Comments |
| (G) Final Shut-In <u>1115</u> | <input type="checkbox"/> Sampler | |
| (H) Final Hydrostatic <u>1840</u> | <input type="checkbox"/> Straddle | |
| Initial Open <u>30</u> | <input type="checkbox"/> Shale Packer | <input type="checkbox"/> EM Tool |
| Initial Shut-In <u>60</u> | <input type="checkbox"/> Extra Packer | <input type="checkbox"/> Ruined Shale Packer |
| Final Flow <u>30</u> | <input type="checkbox"/> Extra Recorder | <input type="checkbox"/> Ruined Packer |
| Final Shut-In <u>60</u> | <input type="checkbox"/> Day Standby | <input type="checkbox"/> Extra Copies |
| | <input type="checkbox"/> Accessibility | Sub Total <u>0</u> |
| | Sub Total <u>1707</u> | Total <u>1707</u> |

Approved By _____ Our Representative [Signature]
 Trilobite Testing Inc. shall not be liable for damaged of any kind of the property or personnel of the one for whom a test is made, or for any loss suffered or sustained, directly or indirectly, through the use of its equipment, or its statements or opinion concerning the results of any test, tools lost or damaged in the hole shall be paid for at cost by the party for whom the test is made.



TRILOBITE TESTING INC.

1515 Commerce Parkway • Hays, Kansas 67601

Test Ticket 66456

NO.

Well Name & No. Nelson "A" #1-34 Test No. 2 Date 11/13/19
 Company Martin Drilling Co. Inc. Elevation 3118 KB 3113 GL
 Address 250 N. Water STE 300 Wichita KS 67202
 Co. Rep / Geo. Samen Sharifaie Rig Martin # 3
 Location: Sec. 34 Twp 4S Rge. 33W Co. Rawlins State KS

Interval Tested 4090 - 4120 Zone Tested LKC "F - G"
 Anchor Length 40' Drill Pipe Run 3893' Mud Wt. 8.9
 Top Packer Depth 4075 Drill Collars Run 177' Vis 61
 Bottom Packer Depth 4080 Wt. Pipe Run 0' WL 5.6
 Total Depth 4120 Chlorides 3400 ppm System LCM 6

Blow Description 30 IF - Blow built to 1/4"
60 ISI - No return
30 FF - No blow
60 FSI - No return

| Rec | Feet of | %gas | %oil | %water | %mud |
|------------|--------------|----------|------|-----------|------|
| <u>10'</u> | <u>VSOCM</u> | <u>5</u> | | <u>95</u> | |
| Rec | Feet of | %gas | %oil | %water | %mud |
| Rec | Feet of | %gas | %oil | %water | %mud |
| Rec | Feet of | %gas | %oil | %water | %mud |
| Rec | Feet of | %gas | %oil | %water | %mud |

Rec Total 10' BHT 120° Gravity ✓ API RW ✓ @ ✓ ° F Chlorides --- ppm

- (A) Initial Hydrostatic 2002
- (B) First Initial Flow 15
- (C) First Final Flow 22
- (D) Initial Shut-In 1301
- (E) Second Initial Flow 25
- (F) Second Final Flow 31
- (G) Final Shut-In 1297
- (H) Final Hydrostatic 1880

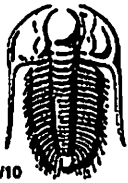
- Test 1300
- Jars 250
- Safety Joint 75
- Circ Sub
- Hourly Standby
- Mileage 82 RT 82
- Sampler
- Straddle
- Shale Packer
- Extra Packer
- Extra Recorder
- Day Standby
- Accessibility
- Sub Total 1707

- T-On Location 14:30
- T-Started 15:00
- T-Open 16:56
- T-Pulled 19:59
- T-Out 21:45

- Comments _____
- EM Tool
 - Ruined Shale Packer
 - Ruined Packer
 - Extra Copies
 - Sub Total 0
 - Total 1707
 - MP/DST Disc't _____

Initial Open 30
 Initial Shut-In 60
 Final Flow 30
 Final Shut-In 60

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TRILOBITE TESTING INC.

1515 Commerce Parkway • Hays, Kansas 67601

Test Ticket 66457

NO.

Well Name & No. Nelson "A" #1-34 Test No. 3 Date 11/14/19
 Company Murfin Drilling Co. Inc. Elevation 3118 KB 3113 GL
 Address 250 N. Water STE 300 Wichita KS 67202
 Co. Rep / Geo. Samen Sharifaie Rig Murfin # 3
 Location: Sec. 34 Twp 4S Rge. 33W Co. Rawlins State KS

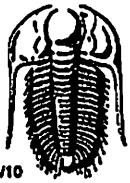
Interval Tested 4160 - 4200 Zone Tested LKC "J"
 Anchor Length 40' Drill Pipe Run 2986' Mud Wt. 9.1
 Top Packer Depth 4155 Drill Collars Run 177' Vis 53
 Bottom Packer Depth 4160 Wt. Pipe Run 0' WL 2.0
 Total Depth 4200 Chlorides 3500 ppm System LCM 6
 Blow Description 30 IF - Blow built to 1 1/2"
60 ISI - No return
60 FF - Blow built to 1 1/4"
90 FSI - No return

| Rec | Feet of | %gas | %oil | %water | %mud |
|------------|------------|------|----------|------------|------|
| <u>20'</u> | <u>WCM</u> | | <u>5</u> | <u>95</u> | |
| <u>60'</u> | <u>Mud</u> | | | <u>100</u> | |
| | | | | | |
| | | | | | |

Rec Total 80' BHT _____ Gravity _____ API RW _____ @ _____ °F Chlorides _____ ppm

(A) Initial Hydrostatic 2040 Test 1300 T-On Location 08:30
 (B) First Initial Flow 13 Jars 250 T-Started 09:00
 (C) First Final Flow 31 Safety Joint 75 T-Open 11:03
 (D) Initial Shut-In 1324 Circ Sub _____ T-Pulled 15:03
 (E) Second Initial Flow 31 Hourly Standby _____ T-Out 17:00
 (F) Second Final Flow 64 Mileage 82 RT 82 Comments _____
 (G) Final Shut-In 1324 Sampler _____
 (H) Final Hydrostatic 1863 Straddle _____
 EM Tool _____
 Ruined Shale Packer _____
 Ruined Packer _____
 Extra Copies _____
 Initial Open 30 Shale Packer _____
 Initial Shut-In 60 Extra Packer _____
 Final Flow 60 Extra Recorder _____
 Final Shut-In 90 Day Standby _____
 Accessibility _____
 Sub Total 1707 Sub Total 1707 MP/DST Disc't _____

Approved By _____ Our Representative [Signature]
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TRILOBITE TESTING INC.

1515 Commerce Parkway • Hays, Kansas 67601

Test Ticket 66458

NO.

Well Name & No. Nelson "A" # 1-34 Test No. 4 Date 11/15/19
 Company Murkin Drilling Co. Inc. Elevation 3118 KB 3113 GL
 Address 250 N Water STE 300 Wichita KS 67202
 Co. Rep / Geo. Saman Sharif Rig Murkin # 3
 Location: Sec. 34 Twp 4S Rge. 33W Co. Randolph State KS

Interval Tested 4400 - 4490 Zone Tested L. Ft. Scott - Celia
 Anchor Length 90' Drill Pipe Run 4204' Mud Wt. 9.2
 Top Packer Depth 4395 Drill Collars Run 177' Vis 55
 Bottom Packer Depth 4400 Wt. Pipe Run 0' WL 6.8
 Total Depth 4490 Chlorides 3400 ppm System LCM 5
 Blow Description 30 IF - Blow built to 1" died back to 1/2"
60 IFI - No return
30 FF - No blow
60 FFI - No return

| Rec | Feet of | %gas | %oil | %water | %mud |
|-----------|--------------|----------|------|-----------|------|
| <u>5'</u> | <u>USOCM</u> | <u>3</u> | | <u>97</u> | |
| Rec | Feet of | %gas | %oil | %water | %mud |
| Rec | Feet of | %gas | %oil | %water | %mud |
| Rec | Feet of | %gas | %oil | %water | %mud |

Rec Total 5' BHT 126° Gravity — API RW — @ — °F Chlorides — ppm

| | | |
|-------------------------------------|---|--|
| (A) Initial Hydrostatic <u>2195</u> | <input checked="" type="checkbox"/> Test <u>1300</u> | T-On Location <u>19:00</u> |
| (B) First Initial Flow <u>19</u> | <input checked="" type="checkbox"/> Jars <u>250</u> | T-Started <u>19:51</u> |
| (C) First Final Flow <u>23</u> | <input checked="" type="checkbox"/> Safety Joint <u>75</u> | T-Open <u>21:59</u> |
| (D) Initial Shut-In <u>935</u> | <input type="checkbox"/> Circ Sub | T-Pulled <u>00:59</u> |
| (E) Second Initial Flow <u>25</u> | <input type="checkbox"/> Hourly Standby | T-Out <u>03:10</u> |
| (F) Second Final Flow <u>29</u> | <input checked="" type="checkbox"/> Mileage <u>82 RT</u> 82 | Comments |
| (G) Final Shut-In <u>707</u> | <input type="checkbox"/> Sampler | |
| (H) Final Hydrostatic <u>2119</u> | <input type="checkbox"/> Straddle | <input type="checkbox"/> EM Tool |
| Initial Open <u>30</u> | <input type="checkbox"/> Shale Packer | <input type="checkbox"/> Ruined Shale Packer |
| Initial Shut-In <u>60</u> | <input type="checkbox"/> Extra Packer | <input type="checkbox"/> Ruined Packer |
| Final Flow <u>30</u> | <input type="checkbox"/> Extra Recorder | <input type="checkbox"/> Extra Copies |
| Final Shut-In <u>60</u> | <input type="checkbox"/> Day Standby | Sub Total <u>0</u> |
| | <input type="checkbox"/> Accessibility | Total <u>1707</u> |
| | Sub Total <u>1707</u> | MP/DST Disc't |

Approved By _____ Our Representative [Signature]

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