

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) (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> |
|----------------|-----------------|--------------------|------------------|--------------------|---|
| | | | | | |
| | | | | | |
| | | | | | |
| | | | | | |

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

| | |
|-----------|------------------------|
| Form | ACO1 - Well Completion |
| Operator | Russell Oil, Inc. |
| Well Name | DOROTHY 21-1 |
| Doc ID | 1381032 |

All Electric Logs Run

| |
|-----------------------|
| |
| Comp. Neutron Density |
| Dual Induction |
| Microlog |
| Bond log |

| | |
|-----------|------------------------|
| Form | ACO1 - Well Completion |
| Operator | Russell Oil, Inc. |
| Well Name | DOROTHY 21-1 |
| Doc ID | 1381032 |

Tops

| Name | Top | Datum |
|----------------|------|-------|
| Anhydrite | 2552 | +493 |
| Base Anhydrite | 2579 | +466 |
| Heebner | 4011 | -966 |
| Toronto | 4034 | -989 |
| Lansing | 4052 | -1007 |
| Stark | 4270 | -1225 |
| BKC | 4329 | -1284 |
| Marmaton | 4366 | -1321 |
| Pawnee | 4464 | -1419 |
| Cherokee | 4550 | -1505 |
| Mississippian | 4638 | -1593 |
| RTD | 4720 | -1675 |
| LTD | 4720 | -1675 |

KITT NOAH

PETROLEUM GEOLOGIST
Kansas License #229



GEOLOGIST'S REPORT

DRILLING TIME AND SAMPLE LOG

ELEVATION: **KB 3045**
GL: **3037**
MEASURED FROM: **KB**

#15-109-21-528

OPERATOR: **Russell Oil, Inc.**
LEASE: **Dorothy** WELL NO.: **#21-1**
LOCATION: **2045FN & 2310FW**
SEC: **21** TWP: **11S** RNG: **32W**
COUNTY: **Logan** STATE: **Kansas**

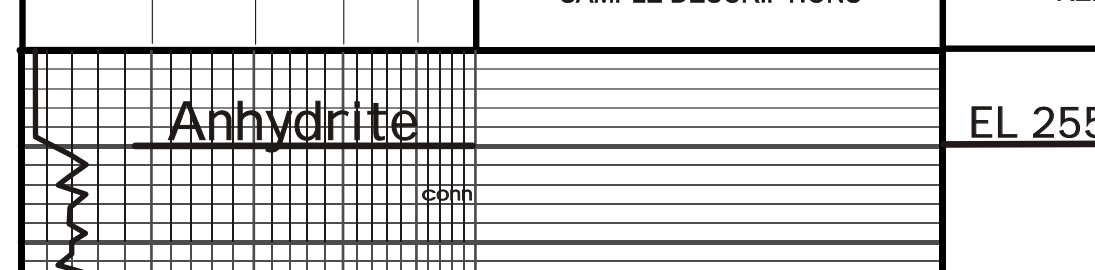
OPENER: **Russell Oil, Inc.**
CABING RECORD: **9 5/8" set at 344' w/170 SX.**
SURFACE: **344' w/170 SX.**
PRODUCTION: **4 1/2" set at 4713' w/200 SX.**
DI/T/OOL: **2522' w/440 SX**

FORMATION LOG

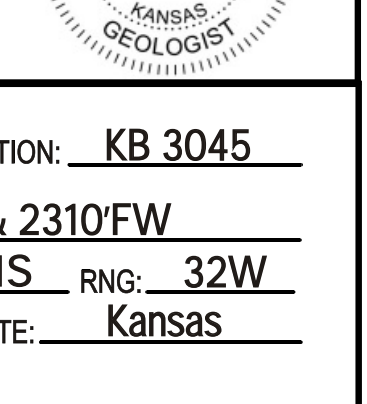
| | | |
|---------------|--------------|-------|
| Anyndrite | TOP | DATUM |
| B/Anyndrite | 2562 (-493) | |
| Heebner | 4011 (-966) | |
| Lansing | 4052 (-1007) | |
| Stark | 4270 (-1225) | |
| B/KC | 4329 (-1284) | |
| Marmaton | 4366 (-1321) | |
| Pawnee | 4464 (-1419) | |
| Cherokee | 4550 (-1505) | |
| Mississippian | 4638 (-1593) | |
| R/D | 4720 (-1675) | |
| L/D | 4720 (-1675) | |

CONTRACTOR: **WV Drilling Rig #12**
COMPL: **10-21-2017** LTD: **11-1-2017**
RTD: **4720** DRILLING TIME SAVED FROM: **3700 TO TD**
SAMPLER: **3700 TO TD**
SAMPLER EXAMINED FROM: **3700 TO TD**
GEOLOGICAL SUPERVISION FROM: **3820 TO TD**
MUD UP: **3411** MUD TYPE: **Chemical**
Mudlog - **Reid Atkins**
DRILL STEW TESTS TAKEN: **5**
Drillbit - **Mike Roberts**
SURVEYS: **Gemini Wireline, LLC**
Compeated Density Neutron
Dual Induction
Microlog

LEGEND



| DEPTH | DRILLING TIME IN MINUTES PER FOOT | SAMPLE DESCRIPTIONS | REMARKS |
|-------|-----------------------------------|---|-----------------|
| | | Anhydrite | EL 2552 (+493) |
| | | B/Anhydrite | EL 2579 (+466) |
| 2600 | | LS.crm fn xln fossil pr Interpart poro NSNO | |
| | | LS.crm-wht fn xln v. dense pr vis poro NSNO | |
| | | LS, AA | |
| | | LS.crm-gry fn xln oolitic pr interpart poro NSNO | |
| | | LS.wht fn xln fossil & ool pr-fr interpart poro barren NSNO sc wht chalk | |
| | | LS.crm fn xln fossil & ool; fr interpart poro barren NSNO | |
| | | LS,AA; sm mushy wht chalk | |
| | | LS.crm fn xln dolomitic NSNO & ool pr-fr interpart poro NSNO; abun pieces wht chalk | |
| | | Topeka | EL 3786 (-741) |
| | | Sh. gry, green, maroon | |
| | | LS.crm-tan fn xln sli fossil pr interpart poro NSNO | |
| | | LS.crm-wht fn xln fossil & ool pr interpart poro NSNO | |
| | | LS.crm-tan fn xln pr vis poro dense NSNO | |
| | | LS.crm fn xln fossil pr interpart poro NSNO; v. chalky | |
| | | LS.crm fn xln fossil & ool chalky pr interpart poro NSNO | |
| | | Sh. flood gry, green, maroon | |
| | | LS.crm fn xln fossil & ool pr-fr interpart poro; abun chalk NSNO | |
| | | LS.crm-tan fn xln fossil & ool pr-fr interpart poro NSNO | |
| | | LS,AA; incr pieces wht chalk | |
| | | LS.crm fn xln sli fossil pr-fr interpart poro NSNO; abun wht mushy chalk | |
| | | LS.crm AA | |
| | | Sh. blk carbonaceous | |
| | | Sh. gry, green, maroon | |
| | | LS.crm fn xln fossil subchalky pr interpart poro NSNO | |
| | | LS.crm AA | |
| | | LS.crm-wht fn xln sli fossil pr interpart poro NSNO | |
| | | LS.crm-tan fn xln sli fossil pr visible poro; dense NSNO | |
| | | Sh. gry, green, maroon | |
| | | LS.crm-gry fn xln v. fossil & ool pr-fr interpart poro; barren NSNO | |
| | | Sh. blk carbonaceous | |
| | | LS.crm fn xln dense w/iso fossil; east poro; barren NSNO sc wht chalk | |
| | | LS.crm AA | |
| | | Sh. gry, green, maroon | |
| | | LS.crm-tan fn xln sli fossil pr interpart poro NSNO | |
| | | LS.crm-tan fn xln sli fossil pr interpart poro NSNO sc wht chalk | |
| | | LS.crm-tan fn xln fossil; pr interpart poro NSNO | |
| | | Heebner | EL 4011 (-966) |
| | | Sh. blk carbonaceous | |
| | | Sh. gry, green, maroon | |
| | | Toronto | EL 4034 (-989) |
| | | Sh. gry, green, maroon | |
| | | LS.crm fn xln fossil & ool; pr-fr interpart poro; subchalky; NSNO; sc wht angular chert | |
| | | Lansing | EL 4052 (-1007) |
| | | Sh. gry, green, maroon | |
| | | LS.crm-wht fn xln v. fossil & ool; pelletoid, pr-fr interpart poro; subchalky; NSNO | |
| | | LS.crm fn xln sli fossil pr vis poro NSNO | |
| | | LS.crm AA | |
| | | Sh. dk gry, red, maroon | |
| | | "C" | |
| | | LS.crm fn xln oolitic pr interpart poro; NSNO; abun translucent chert | |
| | | "D" | |
| | | Sh. gry & green | |
| | | LS.crm-gry fn xln ool; sli ool; pr-fr pinpoint poro; 1-2 pieces sply rare subat-stn; S-SFO; rare pinpoint bds FO on brk; no odor | |
| | | LS.crm-wht AA | |
| | | "E" | |
| | | Sh. blk carbonaceous | |
| | | LS.wht fn xln sli fossil pr vis poro 1-2 pieces dk black iso spots stn; flaky dead oil on brk; no odor | |
| | | "F" | |
| | | LS.wht fn xln oolitic pr interpart poro barren NSNO | |
| | | "G" | |
| | | LS.crm-wht AA | |
| | | LS.crm-gry fn xln iso vug & pinpoint poro; oolitic; 1-2 pieces rare subat-stn; S-SFO; fr-strong odor; dull yellow fluor; slow milky cut | |
| | | LS.crm-gry fn xln pr visible poro; dense blk NSNO; sc gry angular chert | |
| | | LS.crm fn xln pr visible poro; dense; angular NSNO | |
| | | Muncie Crk | EL 4190 (-1145) |
| | | Sh. blk carbonaceous | |
| | | LS.crm-tan-brwn fn xln fossil sc fr vug poro; 1-2 pieces lt brwn sply stn; VSSFO; sli ool; | |
| | | "H" | |
| | | LS.crm fn xln fossil & ool; dolomitic; pr-fr interpart poro; fr-gd vug poro; abun pieces fr brwn sply; subat-stn; S-SFO; fr-strong odor; dull yellow fluor; slow milky cut | |
| | | Sh. blk carbonaceous | |
| | | Sh. dk gry & maroon | |
| | | "I" | |
| | | LS.crm fn xln oolitic; dolomitic; fr-vugular & pinpoint poro; gd amt; golden-brwn subat-stn; S-SFO; slight odor; dull yellow fluor; milky cut | |
| | | "J" | |
| | | Sh. flood gry, maroon, red | |
| | | LS.crm fn xln sli ool; dolomitic; pr-fr vugular poro; sev pieces fr brwn sply; subat-stn; S-SFO; fr-gas bubbles on brk; sli odor; sli yellow fluor; milky cut | |
| | | Stark | EL 4270 (-1225) |
| | | Sh. blk carbonaceous | |
| | | Sh. gry & maroon | |
| | | LS.crm-tan fn xln fossil & ool; sm dolomitic; iso fr vug poro; sev pieces fr brwn sply; subat-stn; S-SFO; fr-gas bubbles on brk; sli odor; sli yellow fluor; milky cut | |
| | | LS.crm fn xln pr visible poro NSNO | |
| | | Sh. blk carbonaceous | |
| | | Sh. dk gry, green, maroon | |
| | | "L" | |
| | | LS.crm-wht fn xln oolitic v. dolomitic; pr-fr pinpoint poro; barren; NSNO | |
| | | LS.crm fn xln fossil pr vis poro; sm pyritic NSNO | |
| | | B/KC | EL 4329 (-1284) |
| | | LS.crm-gry fn xln fossil pr interpart poro; NSNO | |
| | | Sh. gry, green, maroon; silty | |
| | | Marmaton | EL 4366 (-1321) |
| | | Sh. AA | |
| | | LS.crm fn xln sli fossil pr visible poro blocky NSNO | |
| | | Sh. gry & green | |
| | | LS.crm-gry fn xln sli fossil; ool pr interpart poro NSNO | |
| | | LS.crm-yellow fn xln sli fossil pr interpart poro NSNO | |
| | | Sh. gry & green | |
| | | LS.crm-gry fn xln fossil pr interpart poro NSNO | |
| | | LS.crm fn xln sli fossil pr vis poro; dense NSNO | |
| | | Sh. blk carbonaceous; red, gry | |
| | | LS.crm-gry fn xln sli fossil pr visible poro dense NSNO | |
| | | LS.crm-gry AA | |
| | | Pawnee | EL 4464 (-1419) |
| | | Sh. blk carbonaceous | |
| | | LS.tan-gry fn xln ool; mostly pr interpart poro; NSNO abun wht & blue-gray angular chert | |
| | | LS.crm fn xln pr interpart poro; NSNO sc pieces wht chert | |
| | | LS.crm AA | |
| | | Sh. blk carbonaceous | |
| | | Sh. gry, green, maroon | |
| | | Myrick Sta | EL 4497 (-1452) |
| | | LS.tan-brwn fn xln fossil; pr-fr interpart poro; NSNO sc blue gry angular chert | |
| | | Fort Scott | EL 4522 (-1477) |
| | | Sh. blk carbonaceous | |
| | | LS.crm-tan fn xln sli fossil; v. ool pr interpart poro NSNO | |
| | | LS.tan fn xln sli fossil pr visible poro; v. dense NSNO | |
| | | LS.crm fn xln AA | |
| | | Cherokee | EL 4550 (-1505) |
| | | Sh. blk carbonaceous | |
| | | LS.crm-tan fn xln fossil pr interpart poro NSNO | |
| | | LS.crm fn xln pr vis poro; NSNO | |
| | | Sh. blk carbonaceous | |
| | | Sh. lt gry, dk gry, green | |
| | | Sh. blk carbonaceous | |
| | | Johnson Zn | EL 4592(-1547) |
| | | LS.crm-tan-brwn fn xln fossil pr interpart poro; NSNO; sev breeding nvy oil in secondary xln growth; frac poro w/ool bds clinging to rk face; gd amt med-olky brwn mstly sat stn; S-SFO; sli fr-gassy odor; sli fluor; gd milky cut | |
| | | Morrow Sh | EL 4610 (-1565) |
| | | Sh. bright green, mustard yellow maroon w/tan & yellow chert; sm clusters SS; v. fine; dense; barren NSNO | |
| | | SS, clr fr-med gr; subround; pr sor ted; friable clusters; pr-fr intergran poro; barren NSNO | |
| | | Mississippian | EL 4638 (-1593) |
| | | Sh. bright green, mustard yellow, maroon; flood orange chert | |
| | | LS.crm-yellow fn xln sdy pr interpart poro; NSNO; sev clusters in gr SS; very friable | |
| | | LS.crm-wht fn xln fossil sdy matrix pr-fr interpart poro barren NSNO | |
| | | LS.crm-wht fn xln fossil; oolitic pr interpart poro; sandy matrix; NSNO | |
| | | LS.crm-wht fn xln sli fossil & ool mealy; pr interpart poro NSNO | |
| | | LS.wht fn xln fossil & ool pr visible poro; dense NSNO abun pieces wht chalk | |
| | | LS.crm-gry fn xln ool; pr interpart poro; dense NSNO; few pieces wht chalk | |
| | | LS.crm-tan fn xln sli fossil pr visible poro NSNO; flood gry & maroon Sh | |
| | | LS.crm fn xln ool; dolomitic pr-fr interpart poro NSNO; abun pieces wht & salmon chert | |



ELEVATION: **KB 3045**

OPERATOR: **Russell Oil, Inc.** LOCATION: **2045FN & 2310FW**
 LEASE: **Dorothy** WELL NO.: **#21-1** SEC: **21** TWP: **11S** RNG: **32W**
 API: **15-109-21-528** FIELD: **Wildcat** COUNTY: **Logan** STATE: **Kansas**



DRILL STEM TEST REPORT

Prepared For: **Russell Oil Inc**

P.O. Box 8050
Edmond OK 73083

ATTN: Kitt Noah

Dorothy #21-1

21-11s-32w Logan,KS

Start Date: 2017.10.26 @ 03:24:15

End Date: 2017.10.26 @ 10:22:00

Job Ticket #: 64235 DST #: 1

Trilobite Testing, Inc

PO Box 362 Hays, KS 67601

ph: 785-625-4778 fax: 785-625-5620

Printed: 2017.10.31 @ 09:46:48



**TRILOBITE
TESTING, INC.**

DRILL STEM TEST REPORT

Russell Oil Inc
P.O. Box 8050
Edmond OK 73083
ATTN: Kitt Noah

21-11s-32w Logan,KS

Dorothy #21-1

Job Ticket: 64235

DST#: 1

Test Start: 2017.10.26 @ 03:24:15

GENERAL INFORMATION:

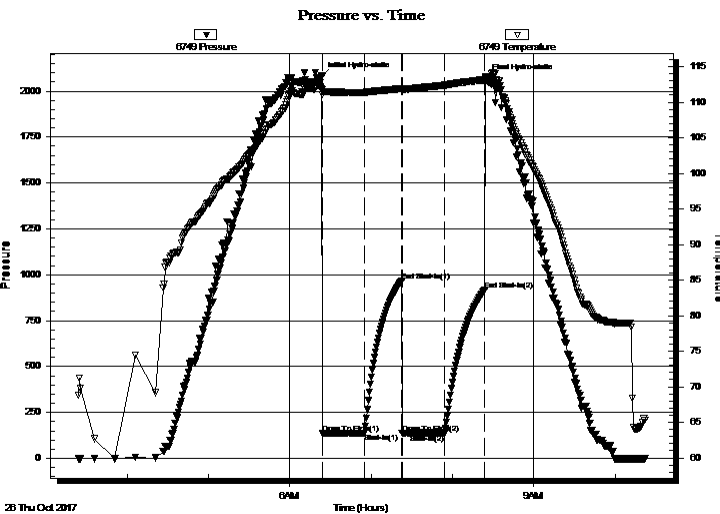
Formation: **LKC H**
 Deviated: No Whipstock: ft (KB)
 Time Tool Opened: 06:24:00
 Time Test Ended: 10:22:00
 Interval: **4193.00 ft (KB) To 4224.00 ft (KB) (TVD)**
 Total Depth: 4224.00 ft (KB) (TVD)
 Hole Diameter: 7.88 inches Hole Condition: Fair
 Test Type: Conventional Bottom Hole (Initial)
 Tester: Mike Roberts
 Unit No: 81
 Reference Elevations: 3045.00 ft (KB)
 3040.00 ft (CF)
 KB to GR/CF: 5.00 ft

Serial #: 6749

Outside

Press@RunDepth: 130.77 psig @ 4194.00 ft (KB)
 Start Date: 2017.10.26 End Date: 2017.10.26
 Start Time: 03:24:15 End Time: 10:22:00
 Capacity: 8000.00 psig
 Last Calib.: 2017.10.26
 Time On Btm: 2017.10.26 @ 06:23:45
 Time Off Btm: 2017.10.26 @ 08:24:30

TEST COMMENT: IF:Week surface blow died in 21 min.
 IS:No return blow
 FF:No blow
 FS:No return blow



PRESSURE SUMMARY

| Time (Min.) | Pressure (psig) | Temp (deg F) | Annotation |
|-------------|-----------------|--------------|----------------------|
| 0 | 2077.79 | 111.78 | Initial Hydro-static |
| 1 | 134.17 | 111.08 | Open To Flow (1) |
| 32 | 135.21 | 111.38 | Shut-In(1) |
| 59 | 967.53 | 111.90 | End Shut-In(1) |
| 60 | 136.39 | 111.45 | Open To Flow (2) |
| 91 | 130.77 | 112.38 | Shut-In(2) |
| 121 | 916.52 | 113.15 | End Shut-In(2) |
| 121 | 2067.32 | 113.41 | Final Hydro-static |

Recovery

| Length (ft) | Description | Volume (bbl) |
|-------------|---------------------|--------------|
| 120.00 | mud w ith oil spots | 0.59 |
| | | |
| | | |
| | | |
| | | |

Gas Rates

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



**TRILOBITE
TESTING, INC.**

DRILL STEM TEST REPORT

TOOL DIAGRAM

Russell Oil Inc

21-11s-32w Logan,KS

P.O. Box 8050
Edmond OK 73083

Dorothy #21-1

Job Ticket: 64235

DST#: 1

ATTN: Kitt Noah

Test Start: 2017.10.26 @ 03:24:15

Tool Information

| | | | | |
|---------------------------|--------------------|-----------------------|--------------------------------|------------------------------------|
| Drill Pipe: | Length: 4075.00 ft | Diameter: 3.80 inches | Volume: 57.16 bbl | Tool Weight: 1500.00 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: 120.00 ft | Diameter: 2.25 inches | Volume: 0.59 bbl | Weight to Pull Loose: 70000.00 lb |
| | | | <u>Total Volume: 57.75 bbl</u> | Tool Chased 10.00 ft |
| Drill Pipe Above KB: | 30.00 ft | | | String Weight: Initial 58000.00 lb |
| Depth to Top Packer: | 4193.00 ft | | | Final 58000.00 lb |
| Depth to Bottom Packer: | ft | | | |
| Interval between Packers: | 31.00 ft | | | |
| Tool Length: | 59.00 ft | | | |
| Number of Packers: | 2 | Diameter: 6.75 inches | | |

Tool Comments:

Tool Description

| Tool Description | Length (ft) | Serial No. | Position | Depth (ft) | Accum. Lengths |
|------------------|-------------|------------|----------|------------|-------------------------------|
| Change Over Sub | 1.00 | | | 4166.00 | |
| Shut In Tool | 5.00 | | | 4171.00 | |
| Hydraulic tool | 5.00 | | | 4176.00 | |
| Jars | 5.00 | | | 4181.00 | |
| Safety Joint | 3.00 | | | 4184.00 | |
| Packer | 5.00 | | | 4189.00 | 28.00 Bottom Of Top Packer |
| Packer | 4.00 | | | 4193.00 | |
| Stubb | 1.00 | | | 4194.00 | |
| Recorder | 0.00 | 8672 | Inside | 4194.00 | |
| Recorder | 0.00 | 6749 | Outside | 4194.00 | |
| Perforations | 25.00 | | | 4219.00 | |
| Bullnose | 5.00 | | | 4224.00 | 31.00 Bottom Packers & Anchor |

Total Tool Length: 59.00



**TRILOBITE
TESTING, INC.**

DRILL STEM TEST REPORT

FLUID SUMMARY

Russell Oil Inc

21-11s-32w Logan,KS

P.O. Box 8050
Edmond OK 73083

Dorothy #21-1

Job Ticket: 64235

DST#: 1

ATTN: Kitt Noah

Test Start: 2017.10.26 @ 03:24:15

Mud and Cushion Information

Mud Type: Gel Chem

Cushion Type:

Oil API:

0 deg API

Mud Weight: 9.00 lb/gal

Cushion Length:

ft

Water Salinity:

0 ppm

Viscosity: 55.00 sec/qt

Cushion Volume:

bbl

Water Loss: 7.14 in³

Gas Cushion Type:

Resistivity: 0.00 ohm.m

Gas Cushion Pressure:

psig

Salinity: 1800.00 ppm

Filter Cake: 1.00 inches

Recovery Information

Recovery Table

| Length ft | Description | Volume bbl |
|--------------|---------------------|---------------|
| 120.00 | mud w ith oil spots | 0.590 |

Total Length: 120.00 ft Total Volume: 0.590 bbl

Num Fluid Samples: 0

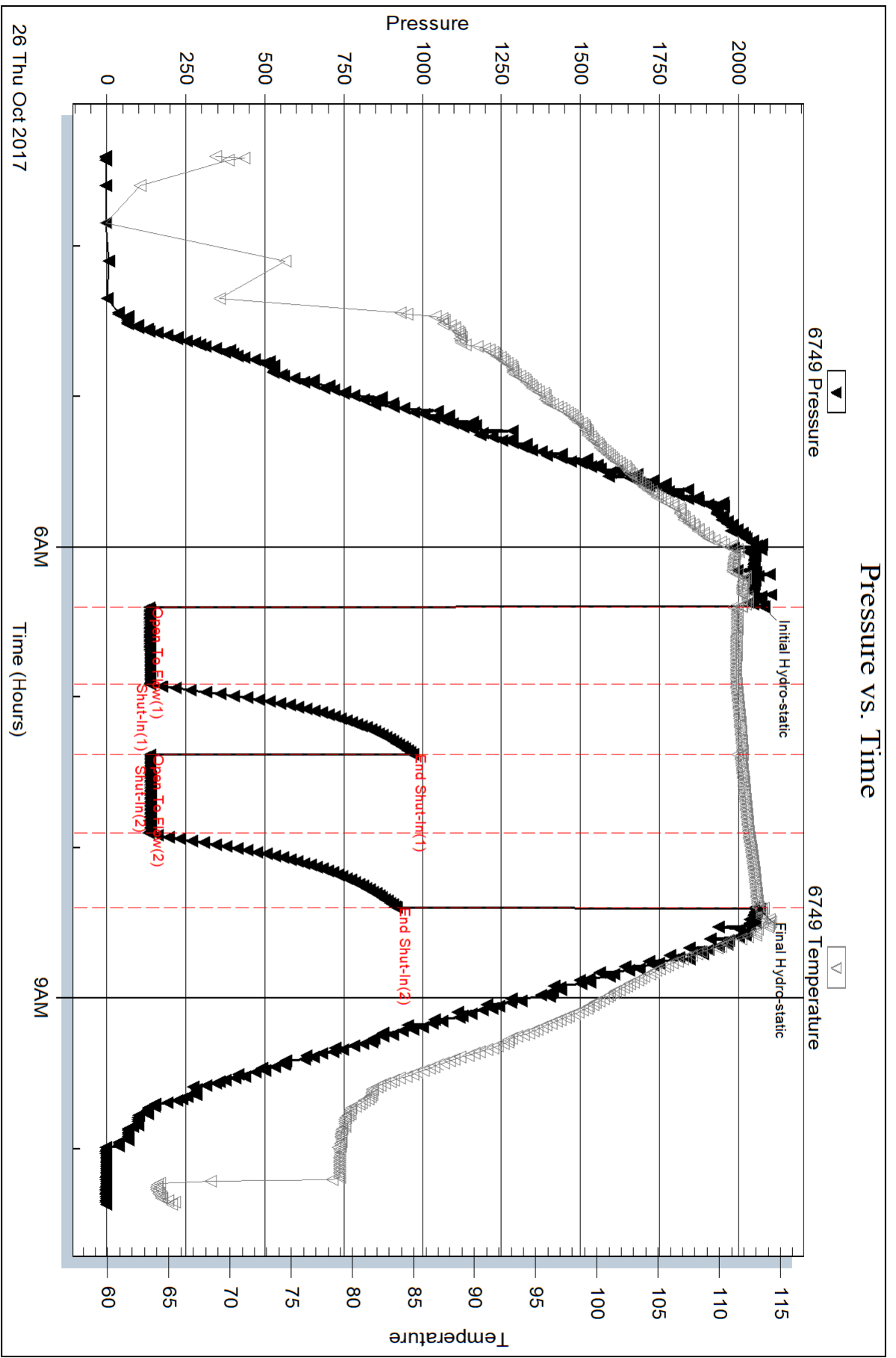
Num Gas Bombs: 0

Serial #:

Laboratory Name:

Laboratory Location:

Recovery Comments:



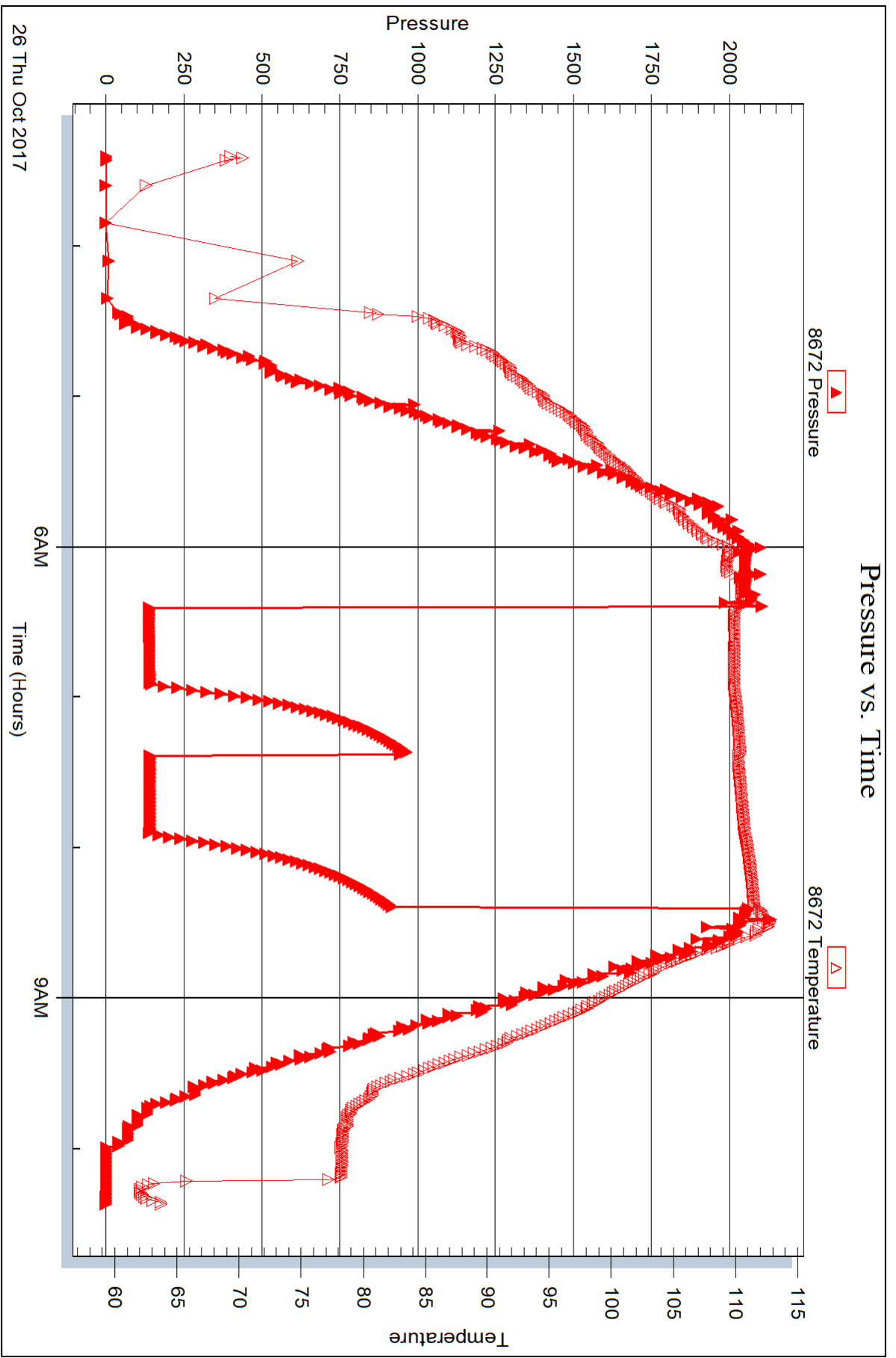
Serial #: 8672

Inside

Russell Oil Inc

Dorothy #21-1

DST Test Number: 1





DRILL STEM TEST REPORT

Prepared For: **Russell Oil Inc**

P.O. Box 8050
Edmond OK 73083

ATTN: Kitt Noah

Dorothy #21-1

21-11s-32w Logan,KS

Start Date: 2017.10.26 @ 21:22:15

End Date: 2017.10.27 @ 04:23:00

Job Ticket #: 64236 DST #: 2

Trilobite Testing, Inc

PO Box 362 Hays, KS 67601

ph: 785-625-4778 fax: 785-625-5620

Printed: 2017.10.31 @ 09:46:12



TRILOBITE TESTING, INC.

DRILL STEM TEST REPORT

Russell Oil Inc
 P.O. Box 8050
 Edmond OK 73083
 ATTN: Kitt Noah

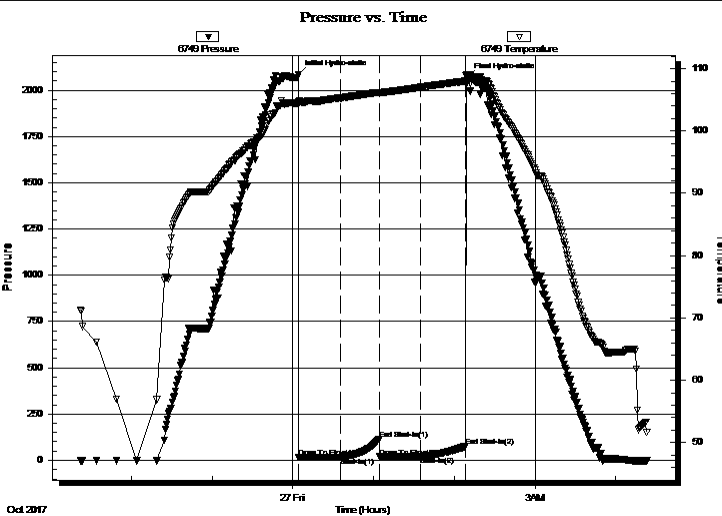
21-11s-32w Logan,KS
Dorothy #21-1
 Job Ticket: 64236 **DST#: 2**
 Test Start: 2017.10.26 @ 21:22:15

GENERAL INFORMATION:

Formation: **LKC I**
 Deviated: No Whipstock: ft (KB)
 Time Tool Opened: 00:04:30
 Time Test Ended: 04:23:00
 Interval: **4222.00 ft (KB) To 4250.00 ft (KB) (TVD)**
 Total Depth: 4250.00 ft (KB) (TVD)
 Hole Diameter: 7.88 inches Hole Condition: Fair
 Test Type: Conventional Bottom Hole (Reset)
 Tester: Mike Roberts
 Unit No: 81
 Reference Elevations: 3045.00 ft (KB)
 3040.00 ft (CF)
 KB to GR/CF: 5.00 ft

Serial #: 6749 Outside
 Press@RunDepth: 20.30 psig @ 4223.00 ft (KB) Capacity: 8000.00 psig
 Start Date: 2017.10.26 End Date: 2017.10.27 Last Calib.: 2017.10.27
 Start Time: 21:22:15 End Time: 04:23:00 Time On Btm: 2017.10.27 @ 00:04:15
 Time Off Btm: 2017.10.27 @ 02:09:30

TEST COMMENT: IF:Weak surface blow died in 3 min.
 IS:No return blow
 FF:No blow
 FS:No return blow



PRESSURE SUMMARY

| Time (Min.) | Pressure (psig) | Temp (deg F) | Annotation |
|-------------|-----------------|--------------|----------------------|
| 0 | 2085.34 | 104.68 | Initial Hydro-static |
| 1 | 14.67 | 104.34 | Open To Flow (1) |
| 31 | 17.59 | 105.27 | Shut-In(1) |
| 60 | 115.31 | 106.20 | End Shut-In(1) |
| 61 | 18.76 | 106.16 | Open To Flow (2) |
| 91 | 20.30 | 107.01 | Shut-In(2) |
| 124 | 75.90 | 107.98 | End Shut-In(2) |
| 126 | 2069.41 | 109.07 | Final Hydro-static |

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

Russell Oil Inc

21-11s-32w Logan,KS

P.O. Box 8050
Edmond OK 73083

Dorothy #21-1

Job Ticket: 64236

DST#: 2

ATTN: Kitt Noah

Test Start: 2017.10.26 @ 21:22:15

Tool Information

| | | | | |
|---------------------------|--------------------|-----------------------|--------------------------------|------------------------------------|
| Drill Pipe: | Length: 4106.00 ft | Diameter: 3.80 inches | Volume: 57.60 bbl | Tool Weight: 1500.00 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: 120.00 ft | Diameter: 2.25 inches | Volume: 0.59 bbl | Weight to Pull Loose: 70000.00 lb |
| | | | <u>Total Volume: 58.19 bbl</u> | Tool Chased 5.00 ft |
| Drill Pipe Above KB: | 32.00 ft | | | String Weight: Initial 57000.00 lb |
| Depth to Top Packer: | 4222.00 ft | | | Final 57000.00 lb |
| Depth to Bottom Packer: | ft | | | |
| Interval between Packers: | 21.00 ft | | | |
| Tool Length: | 49.00 ft | | | |
| Number of Packers: | 2 | Diameter: 6.75 inches | | |

Tool Comments:

Tool Description

| Tool Description | Length (ft) | Serial No. | Position | Depth (ft) | Accum. Lengths |
|------------------|-------------|------------|----------|------------|-------------------------------|
| Change Over Sub | 1.00 | | | 4195.00 | |
| Shut In Tool | 5.00 | | | 4200.00 | |
| Hydraulic tool | 5.00 | | | 4205.00 | |
| Jars | 5.00 | | | 4210.00 | |
| Safety Joint | 3.00 | | | 4213.00 | |
| Packer | 5.00 | | | 4218.00 | 28.00 Bottom Of Top Packer |
| Packer | 4.00 | | | 4222.00 | |
| Stubb | 1.00 | | | 4223.00 | |
| Recorder | 0.00 | 8672 | Inside | 4223.00 | |
| Recorder | 0.00 | 6749 | Outside | 4223.00 | |
| Perforations | 15.00 | | | 4238.00 | |
| Bullnose | 5.00 | | | 4243.00 | 21.00 Bottom Packers & Anchor |

Total Tool Length: 49.00



**TRILOBITE
TESTING, INC.**

DRILL STEM TEST REPORT

FLUID SUMMARY

Russell Oil Inc

21-11s-32w Logan,KS

P.O. Box 8050
Edmond OK 73083

Dorothy #21-1

Job Ticket: 64236

DST#: 2

ATTN: Kitt Noah

Test Start: 2017.10.26 @ 21:22:15

Mud and Cushion Information

Mud Type: Gel Chem

Cushion Type:

Oil API:

0 deg API

Mud Weight: 9.00 lb/gal

Cushion Length:

ft

Water Salinity:

0 ppm

Viscosity: 49.00 sec/qt

Cushion Volume:

bbbl

Water Loss: 8.73 in³

Gas Cushion Type:

Resistivity: 0.00 ohm.m

Gas Cushion Pressure:

psig

Salinity: 2500.00 ppm

Filter Cake: 1.00 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:

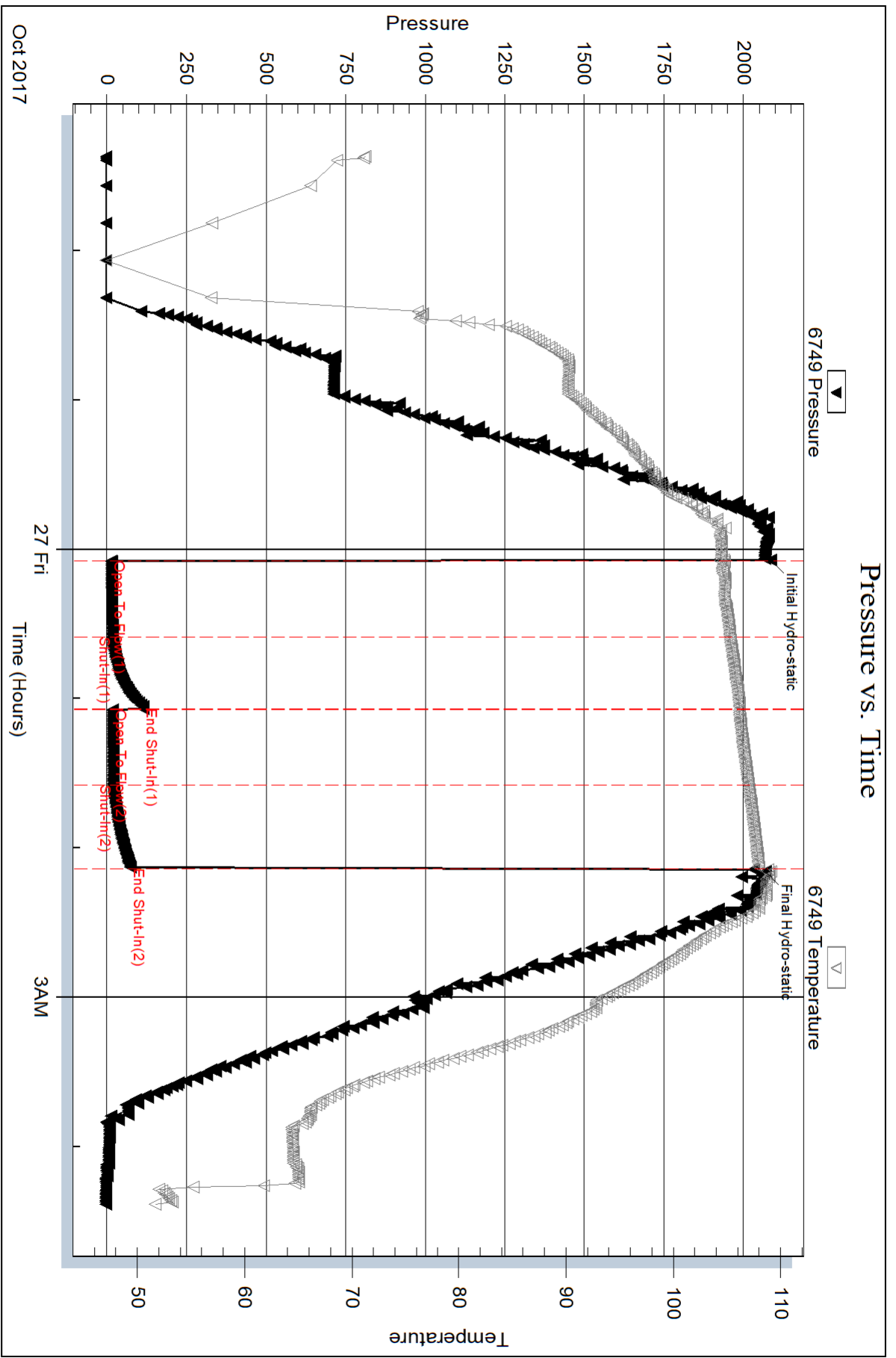
Recovery Comments:

Serial #: 6749

Outside Russell Oil Inc

Dorothy #21-1

DST Test Number: 2



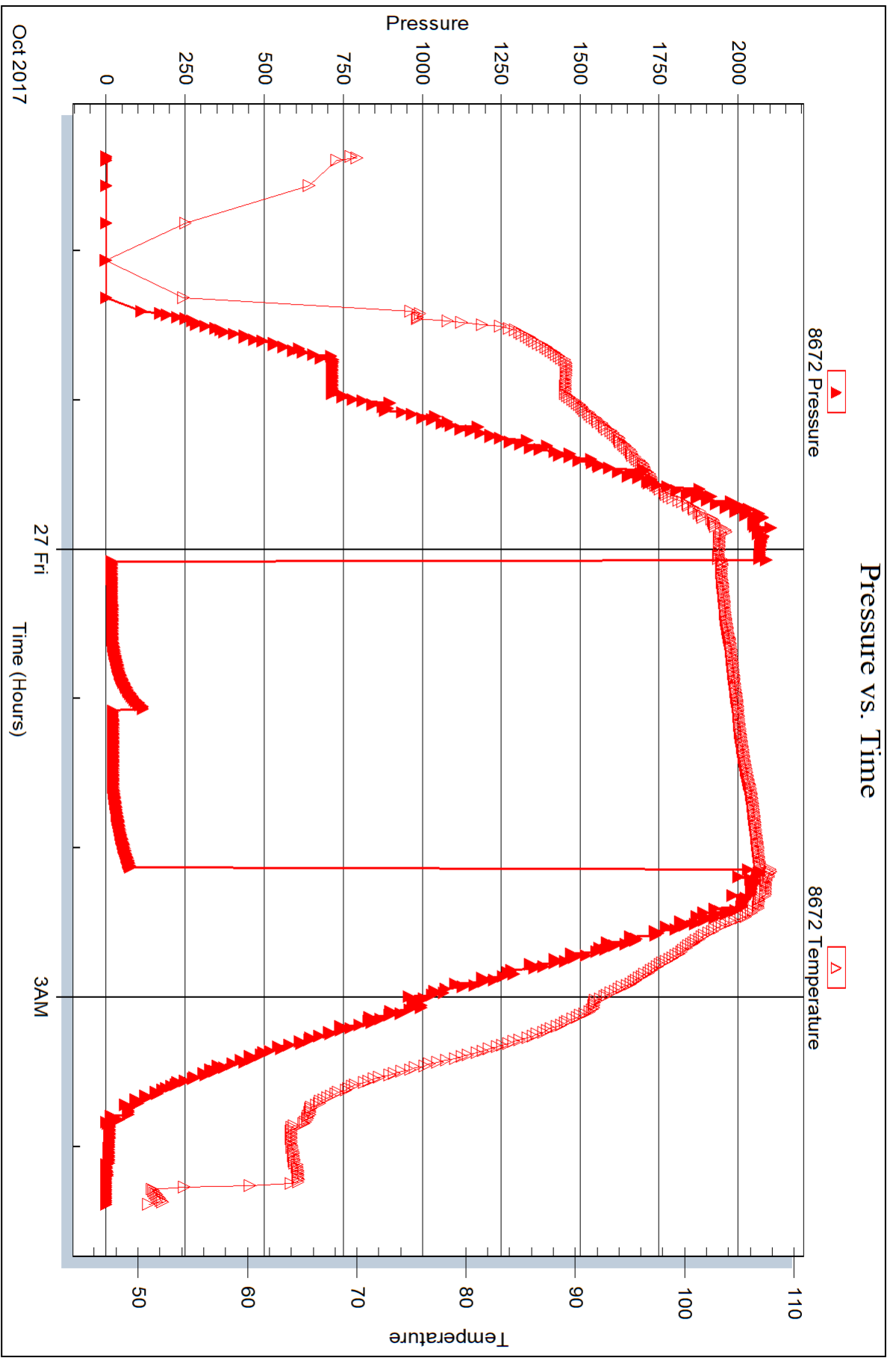
Serial #: 8672

Inside

Russell Oil Inc

Dorothy #21-1

DST Test Number: 2





DRILL STEM TEST REPORT

Prepared For: **Russell Oil Inc**

P.O. Box 8050
Edmond OK 73083

ATTN: Kitt Noah

Dorothy #21-1

21-11s-32w Logan,KS

Start Date: 2017.10.27 @ 11:58:15

End Date: 2017.10.27 @ 18:14:30

Job Ticket #: 64237 DST #: 3

Trilobite Testing, Inc

PO Box 362 Hays, KS 67601

ph: 785-625-4778 fax: 785-625-5620

Printed: 2017.10.31 @ 09:45:42



TRILOBITE TESTING, INC.

DRILL STEM TEST REPORT

Russell Oil Inc
 P.O. Box 8050
 Edmond OK 73083
 ATTN: Kitt Noah

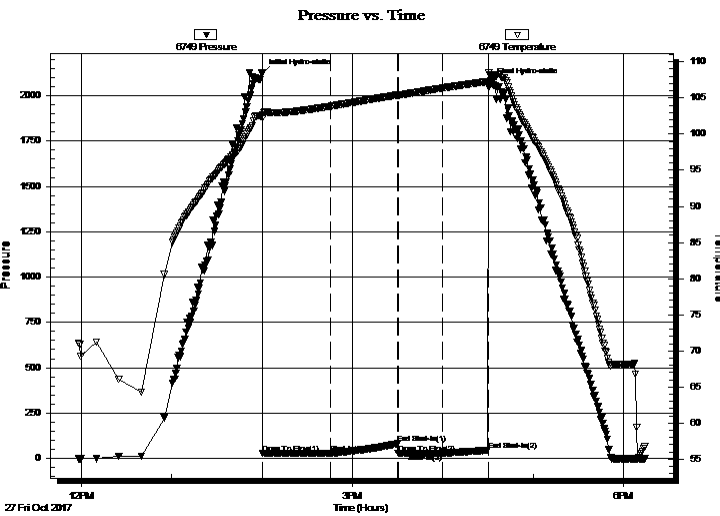
21-11s-32w Logan,KS
Dorothy #21-1
 Job Ticket: 64237 **DST#: 3**
 Test Start: 2017.10.27 @ 11:58:15

GENERAL INFORMATION:

Formation: **LKC J**
 Deviated: No Whipstock: ft (KB)
 Time Tool Opened: 14:00:30
 Time Test Ended: 18:14:30
 Interval: **4246.00 ft (KB) To 4275.00 ft (KB) (TVD)**
 Total Depth: 4275.00 ft (KB) (TVD)
 Hole Diameter: 7.88 inches Hole Condition: Fair
 Test Type: Conventional Bottom Hole (Reset)
 Tester: Mike Roberts
 Unit No: 81
 Reference Elevations: 3045.00 ft (KB)
 3040.00 ft (CF)
 KB to GR/CF: 5.00 ft

Serial #: 6749 Outside
 Press@RunDepth: 28.59 psig @ 4247.00 ft (KB) Capacity: 8000.00 psig
 Start Date: 2017.10.27 End Date: 2017.10.27 Last Calib.: 2017.10.27
 Start Time: 11:58:15 End Time: 18:14:30 Time On Btm: 2017.10.27 @ 14:00:15
 Time Off Btm: 2017.10.27 @ 16:31:15

TEST COMMENT: IF: Built to 1 3/4" blow
 IS: No return blow
 FF: No blow
 FS: No return blow



PRESSURE SUMMARY

| Time (Min.) | Pressure (psig) | Temp (deg F) | Annotation |
|-------------|-----------------|--------------|----------------------|
| 0 | 2124.25 | 102.73 | Initial Hydro-static |
| 1 | 26.72 | 102.26 | Open To Flow (1) |
| 45 | 28.34 | 103.85 | Shut-In(1) |
| 90 | 81.10 | 105.41 | End Shut-In(1) |
| 90 | 28.70 | 105.39 | Open To Flow (2) |
| 120 | 28.59 | 106.37 | Shut-In(2) |
| 150 | 44.14 | 107.28 | End Shut-In(2) |
| 151 | 2074.07 | 108.18 | Final Hydro-static |

Recovery

| Length (ft) | Description | Volume (bbl) |
|-------------|-------------|--------------|
| 30.00 | mud 100% m | 0.15 |
| | | |
| | | |
| | | |
| | | |

* Recovery from multiple tests

Gas Rates

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



**TRILOBITE
TESTING, INC.**

DRILL STEM TEST REPORT

TOOL DIAGRAM

Russell Oil Inc

21-11s-32w Logan,KS

P.O. Box 8050
Edmond OK 73083

Dorothy #21-1

Job Ticket: 64237

DST#: 3

ATTN: Kitt Noah

Test Start: 2017.10.27 @ 11:58:15

Tool Information

| | | | | |
|---------------------------|--------------------|-----------------------|--------------------------------|------------------------------------|
| Drill Pipe: | Length: 4106.00 ft | Diameter: 3.80 inches | Volume: 57.60 bbl | Tool Weight: 1500.00 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: 120.00 ft | Diameter: 2.25 inches | Volume: 0.59 bbl | Weight to Pull Loose: 70000.00 lb |
| | | | <u>Total Volume: 58.19 bbl</u> | Tool Chased 5.00 ft |
| Drill Pipe Above KB: | 8.00 ft | | | String Weight: Initial 57000.00 lb |
| Depth to Top Packer: | 4246.00 ft | | | Final 57000.00 lb |
| Depth to Bottom Packer: | ft | | | |
| Interval between Packers: | 29.00 ft | | | |
| Tool Length: | 57.00 ft | | | |
| Number of Packers: | 2 | Diameter: 6.75 inches | | |

Tool Comments:

Tool Description

| Tool Description | Length (ft) | Serial No. | Position | Depth (ft) | Accum. Lengths |
|------------------|-------------|------------|----------|------------|-------------------------------|
| Change Over Sub | 1.00 | | | 4219.00 | |
| Shut In Tool | 5.00 | | | 4224.00 | |
| Hydraulic tool | 5.00 | | | 4229.00 | |
| Jars | 5.00 | | | 4234.00 | |
| Safety Joint | 3.00 | | | 4237.00 | |
| Packer | 5.00 | | | 4242.00 | 28.00 Bottom Of Top Packer |
| Packer | 4.00 | | | 4246.00 | |
| Stubb | 1.00 | | | 4247.00 | |
| Recorder | 0.00 | 8672 | Inside | 4247.00 | |
| Recorder | 0.00 | 6749 | Outside | 4247.00 | |
| Perforations | 23.00 | | | 4270.00 | |
| Bullnose | 5.00 | | | 4275.00 | 29.00 Bottom Packers & Anchor |

Total Tool Length: 57.00



**TRILOBITE
TESTING, INC.**

DRILL STEM TEST REPORT

FLUID SUMMARY

Russell Oil Inc

21-11s-32w Logan,KS

P.O. Box 8050
Edmond OK 73083

Dorothy #21-1

Job Ticket: 64237

DST#: 3

ATTN: Kitt Noah

Test Start: 2017.10.27 @ 11:58:15

Mud and Cushion Information

Mud Type: Gel Chem

Cushion Type:

Oil API:

0 deg API

Mud Weight: 9.00 lb/gal

Cushion Length:

ft

Water Salinity:

0 ppm

Viscosity: 52.00 sec/qt

Cushion Volume:

bbbl

Water Loss: 8.75 in³

Gas Cushion Type:

Resistivity: 0.00 ohm.m

Gas Cushion Pressure:

psig

Salinity: 2500.00 ppm

Filter Cake: 1.00 inches

Recovery Information

Recovery Table

| Length ft | Description | Volume bbl |
|--------------|-------------|---------------|
| 30.00 | mud 100% m | 0.148 |

Total Length: 30.00 ft Total Volume: 0.148 bbl

Num Fluid Samples: 0

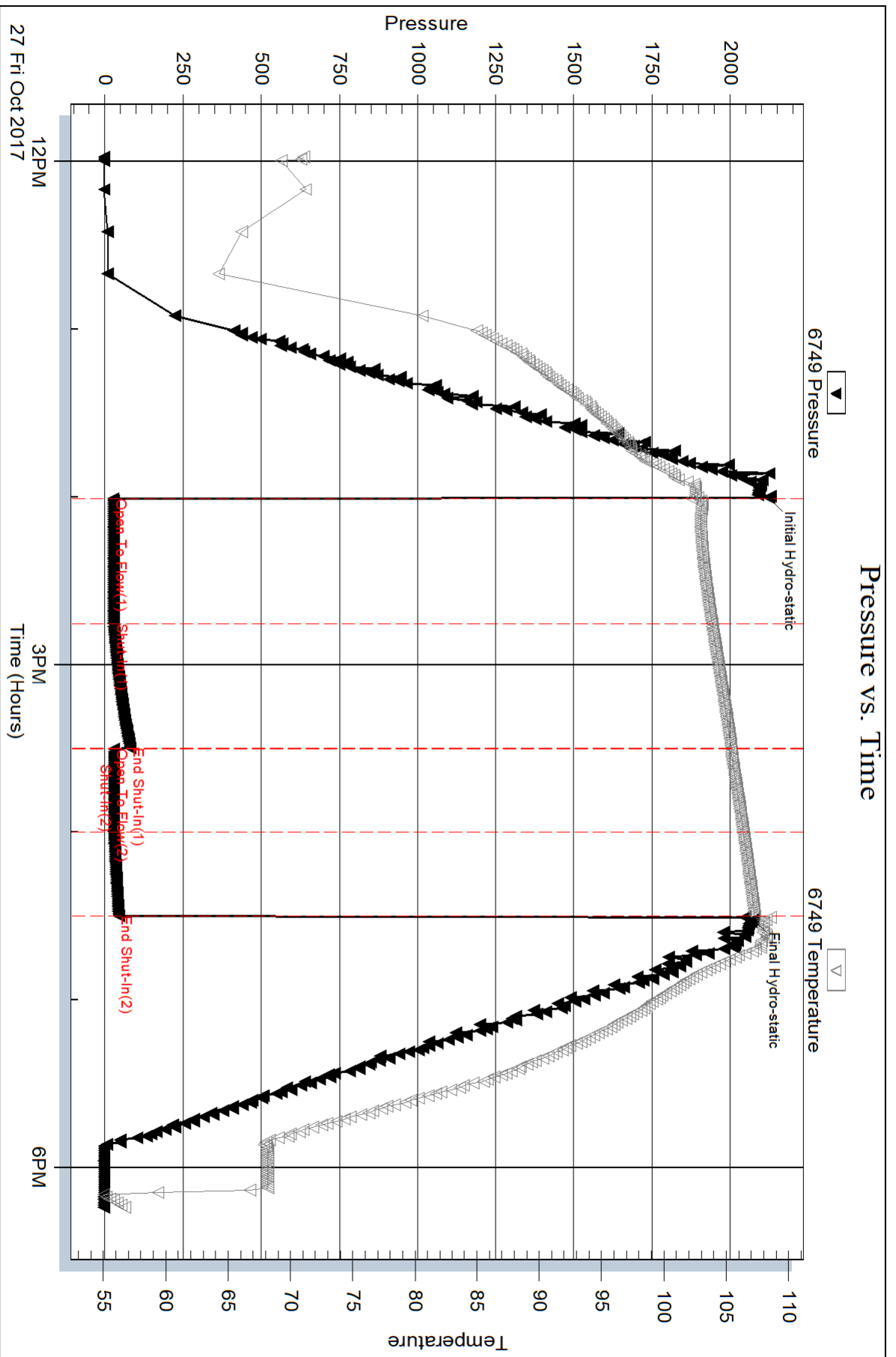
Num Gas Bombs: 0

Serial #:

Laboratory Name:

Laboratory Location:

Recovery Comments:



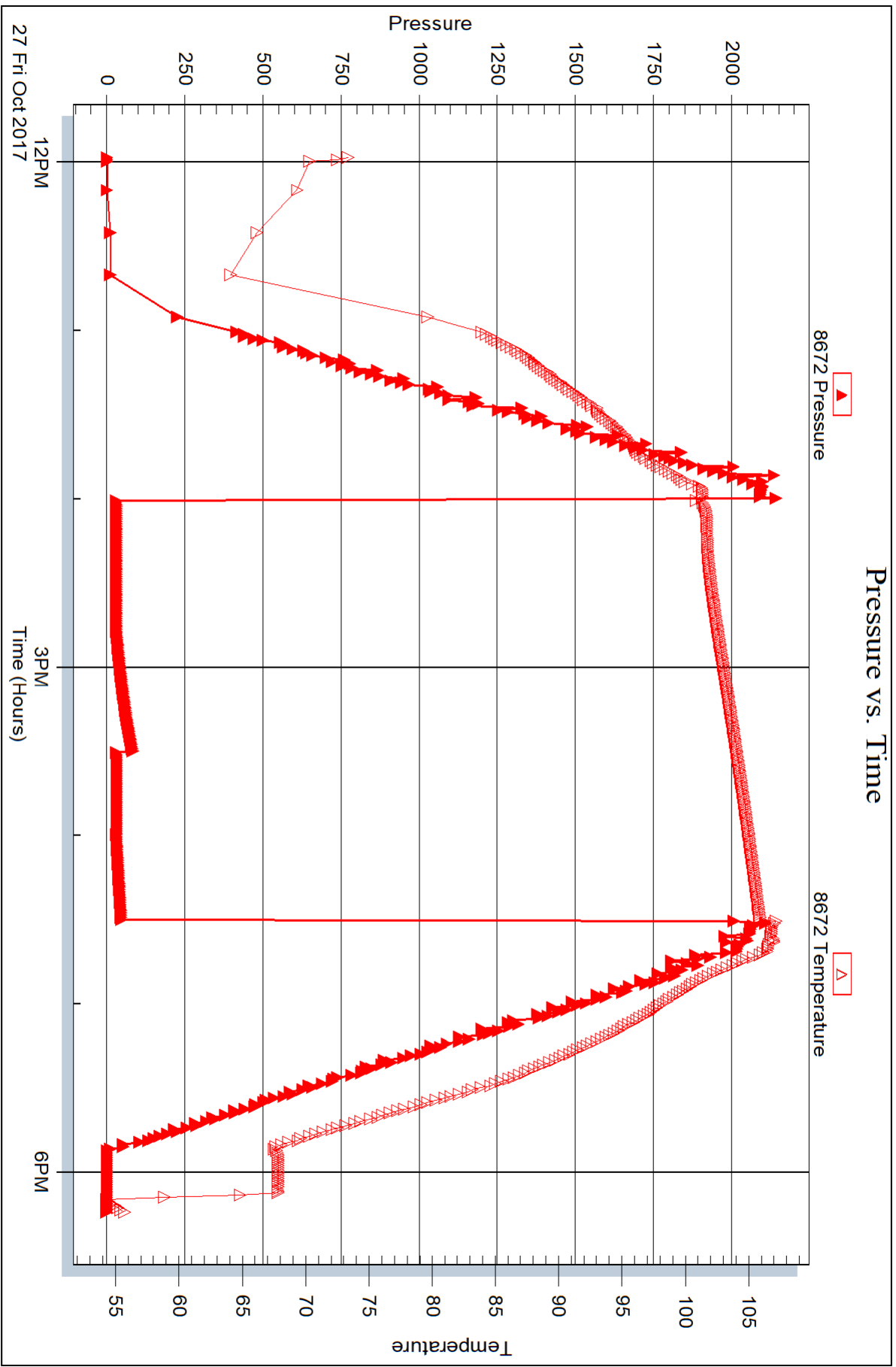
Serial #: 8672

Inside

Russell Oil Inc

Dorothy #21-1

DST Test Number: 3





DRILL STEM TEST REPORT

Prepared For: **Russell Oil Inc**

P.O. Box 8050
Edmond OK 73083

ATTN: Kitt Noah

Dorothy #21-1

21-11s-32w Logan,KS

Start Date: 2017.10.28 @ 02:43:00

End Date: 2017.10.28 @ 08:52:30

Job Ticket #: 64238 DST #: 4

Trilobite Testing, Inc
PO Box 362 Hays, KS 67601
ph: 785-625-4778 fax: 785-625-5620

Printed: 2017.10.31 @ 09:45:20



TRILOBITE TESTING, INC.

DRILL STEM TEST REPORT

Russell Oil Inc
 P.O. Box 8050
 Edmond OK 73083
 ATTN: Kitt Noah

21-11s-32w Logan,KS

Dorothy #21-1

Job Ticket: 64238

DST#: 4

Test Start: 2017.10.28 @ 02:43:00

GENERAL INFORMATION:

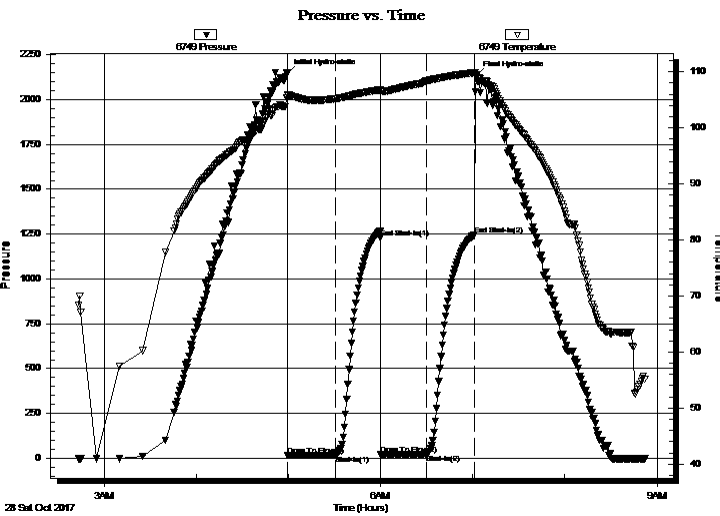
Formation: **LKC K**
 Deviated: No Whipstock: ft (KB)
 Test Type: Conventional Bottom Hole (Reset)
 Time Tool Opened: 04:59:15
 Tester: Mike Roberts
 Time Test Ended: 08:52:30
 Unit No: 81
 Interval: **4274.00 ft (KB) To 4312.00 ft (KB) (TVD)**
 Reference Elevations: 3045.00 ft (KB)
 Total Depth: 4312.00 ft (KB) (TVD)
 3040.00 ft (CF)
 Hole Diameter: 7.88 inches
 Hole Condition: Fair
 KB to GR/CF: 5.00 ft

Serial #: 6749

Outside

Press@RunDepth: 23.21 psig @ 4275.00 ft (KB) Capacity: 8000.00 psig
 Start Date: 2017.10.28 End Date: 2017.10.28 Last Calib.: 2017.10.28
 Start Time: 02:43:00 End Time: 08:52:30 Time On Btm: 2017.10.28 @ 04:59:00
 Time Off Btm: 2017.10.28 @ 07:02:00

TEST COMMENT: IF: Built to 1/8" blow and died in 12 min.
 IS: No return blow
 FF: No blow
 FS: No return blow



PRESSURE SUMMARY

| Time (Min.) | Pressure (psig) | Temp (deg F) | Annotation |
|-------------|-----------------|--------------|----------------------|
| 0 | 2143.62 | 105.90 | Initial Hydro-static |
| 1 | 15.90 | 105.35 | Open To Flow (1) |
| 32 | 18.67 | 105.18 | Shut-In(1) |
| 61 | 1229.59 | 106.76 | End Shut-In(1) |
| 61 | 20.17 | 106.41 | Open To Flow (2) |
| 91 | 23.21 | 108.35 | Shut-In(2) |
| 122 | 1247.76 | 109.81 | End Shut-In(2) |
| 123 | 2134.18 | 109.52 | Final Hydro-static |

Recovery

| Length (ft) | Description | Volume (bbl) |
|-------------|---------------------------|--------------|
| 5.00 | mud w ith oil spots 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

TOOL DIAGRAM

Russell Oil Inc

21-11s-32w Logan,KS

P.O. Box 8050
Edmond OK 73083

Dorothy #21-1

Job Ticket: 64238

DST#: 4

ATTN: Kitt Noah

Test Start: 2017.10.28 @ 02:43:00

Tool Information

| | | | | |
|---------------------------|--------------------|-----------------------|--------------------------------|------------------------------------|
| Drill Pipe: | Length: 4137.00 ft | Diameter: 3.80 inches | Volume: 58.03 bbl | Tool Weight: 1500.00 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: 120.00 ft | Diameter: 2.25 inches | Volume: 0.59 bbl | Weight to Pull Loose: 70000.00 lb |
| | | | <u>Total Volume: 58.62 bbl</u> | Tool Chased 0.00 ft |
| Drill Pipe Above KB: | 11.00 ft | | | String Weight: Initial 58000.00 lb |
| Depth to Top Packer: | 4274.00 ft | | | Final 58000.00 lb |
| Depth to Bottom Packer: | ft | | | |
| Interval between Packers: | 38.00 ft | | | |
| Tool Length: | 66.00 ft | | | |
| Number of Packers: | 2 | Diameter: 6.75 inches | | |

Tool Comments:

Tool Description

| Tool Description | Length (ft) | Serial No. | Position | Depth (ft) | Accum. Lengths |
|------------------|-------------|------------|----------|------------|-------------------------------|
| Change Over Sub | 1.00 | | | 4247.00 | |
| Shut In Tool | 5.00 | | | 4252.00 | |
| Hydraulic tool | 5.00 | | | 4257.00 | |
| Jars | 5.00 | | | 4262.00 | |
| Safety Joint | 3.00 | | | 4265.00 | |
| Packer | 5.00 | | | 4270.00 | 28.00 Bottom Of Top Packer |
| Packer | 4.00 | | | 4274.00 | |
| Stubb | 1.00 | | | 4275.00 | |
| Recorder | 0.00 | 8672 | Inside | 4275.00 | |
| Recorder | 0.00 | 6749 | Outside | 4275.00 | |
| Perforations | 32.00 | | | 4307.00 | |
| Bullnose | 5.00 | | | 4312.00 | 38.00 Bottom Packers & Anchor |

Total Tool Length: 66.00



**TRILOBITE
TESTING, INC.**

DRILL STEM TEST REPORT

FLUID SUMMARY

Russell Oil Inc

21-11s-32w Logan,KS

P.O. Box 8050
Edmond OK 73083

Dorothy #21-1

Job Ticket: 64238

DST#: 4

ATTN: Kitt Noah

Test Start: 2017.10.28 @ 02:43:00

Mud and Cushion Information

Mud Type: Gel Chem

Cushion Type:

Oil API:

0 deg API

Mud Weight: 9.00 lb/gal

Cushion Length:

ft

Water Salinity:

0 ppm

Viscosity: 52.00 sec/qt

Cushion Volume:

bbbl

Water Loss: 8.76 in³

Gas Cushion Type:

Resistivity: 0.00 ohm.m

Gas Cushion Pressure:

psig

Salinity: 2500.00 ppm

Filter Cake: 1.00 inches

Recovery Information

Recovery Table

| Length ft | Description | Volume bbl |
|--------------|--------------------------|---------------|
| 5.00 | mud with oil spots 100%m | 0.025 |

Total Length: 5.00 ft Total Volume: 0.025 bbl

Num Fluid Samples: 0

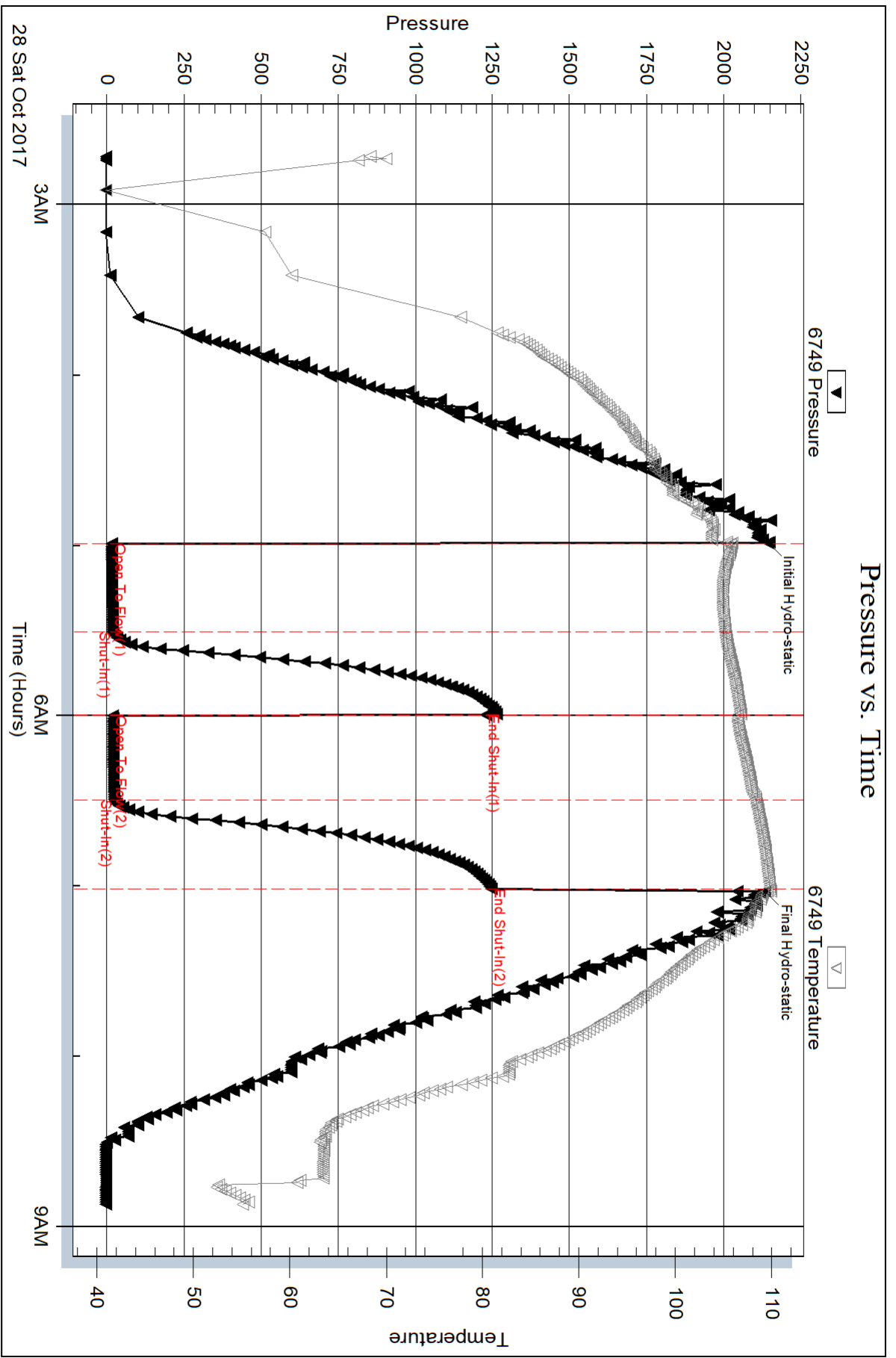
Num Gas Bombs: 0

Serial #:

Laboratory Name:

Laboratory Location:

Recovery Comments:



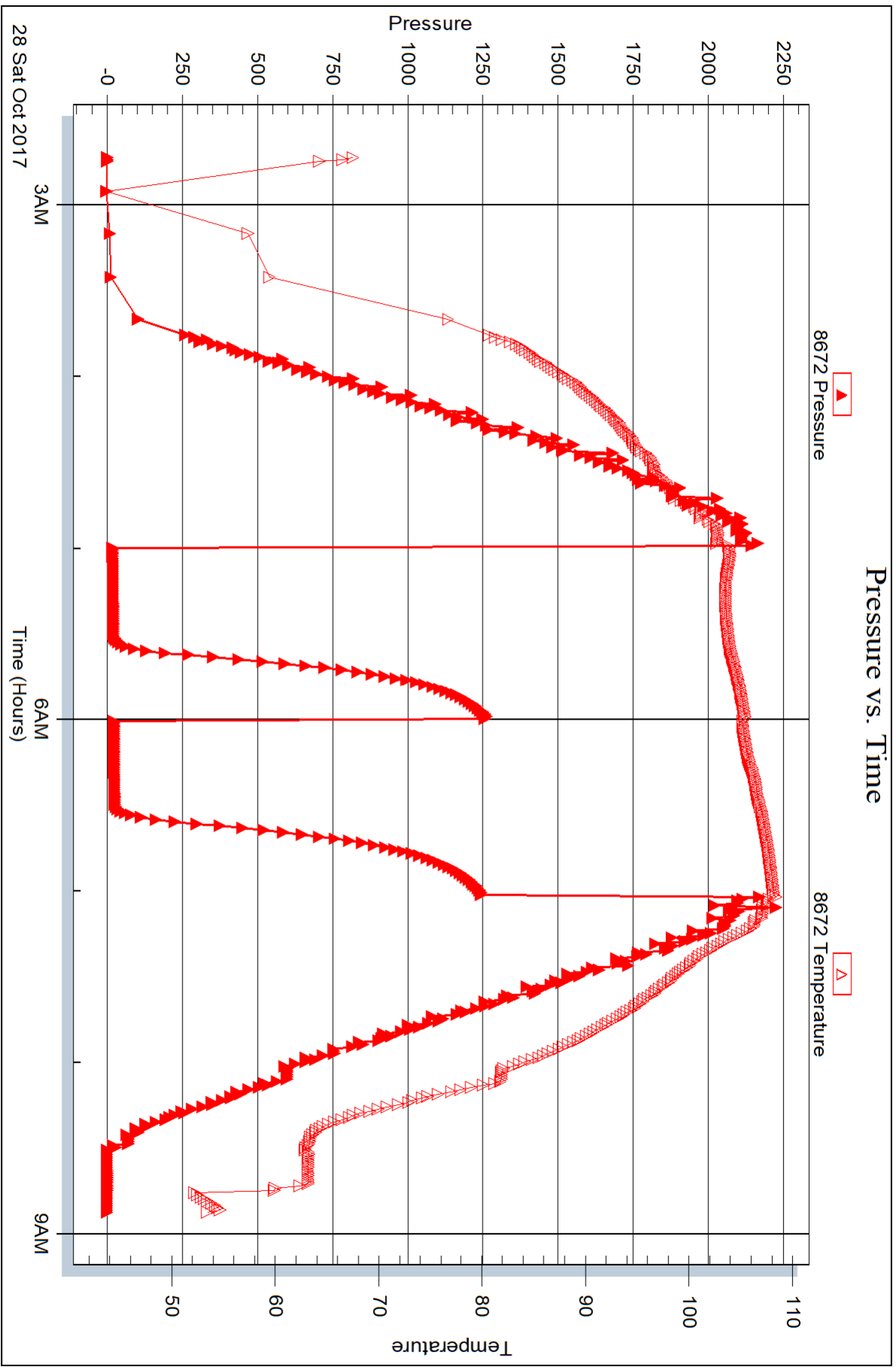
Serial #: 8672

Inside

Russell Oil Inc

Dorothy #21-1

DST Test Number: 4





DRILL STEM TEST REPORT

Prepared For: **Russell Oil Inc**

P.O. Box 8050
Edmond OK 73083

ATTN: Kitt Noah

Dorothy #21-1

21-11s-32w Logan,KS

Start Date: 2017.10.29 @ 14:28:15

End Date: 2017.10.29 @ 22:16:15

Job Ticket #: 64239 DST #: 5

Trilobite Testing, Inc

PO Box 362 Hays, KS 67601

ph: 785-625-4778 fax: 785-625-5620

Printed: 2017.10.31 @ 09:44:51



TRILOBITE TESTING, INC.

DRILL STEM TEST REPORT

Russell Oil Inc
 P.O. Box 8050
 Edmond OK 73083
 ATTN: Kitt Noah

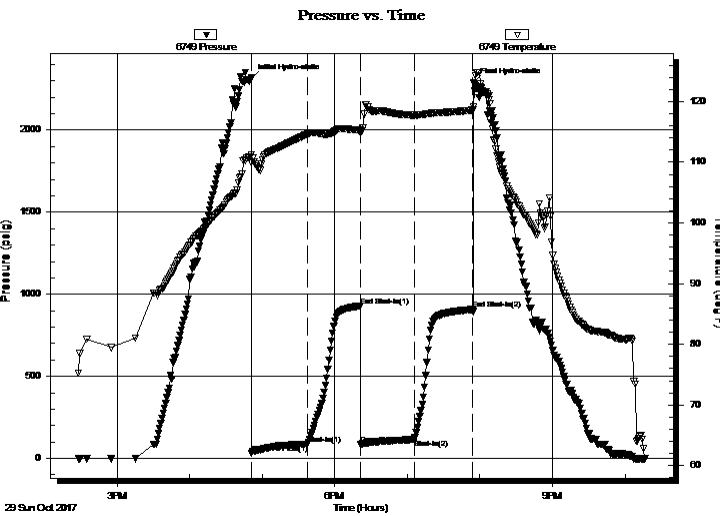
21-11s-32w Logan,KS
Dorothy #21-1
 Job Ticket: 64239 **DST#: 5**
 Test Start: 2017.10.29 @ 14:28:15

GENERAL INFORMATION:

Formation: **Johnson**
 Deviated: No Whipstock: ft (KB)
 Time Tool Opened: 16:51:15
 Time Test Ended: 22:16:15
 Interval: **4574.00 ft (KB) To 4622.00 ft (KB) (TVD)**
 Total Depth: 4622.00 ft (KB) (TVD)
 Hole Diameter: 7.88 inches Hole Condition: Fair
 Test Type: Conventional Bottom Hole (Reset)
 Tester: Mike Roberts
 Unit No: 81
 Reference Elevations: 3045.00 ft (KB)
 3040.00 ft (CF)
 KB to GR/CF: 5.00 ft

Serial #: 6749 Outside
 Press@RunDepth: 116.22 psig @ 4617.00 ft (KB) Capacity: 8000.00 psig
 Start Date: 2017.10.29 End Date: 2017.10.29 Last Calib.: 2017.10.29
 Start Time: 14:28:15 End Time: 22:16:15 Time On Btm: 2017.10.29 @ 16:51:00
 Time Off Btm: 2017.10.29 @ 19:54:45

TEST COMMENT: IF:BOB in 10 min.
 IS:Built to weak surface blow and died in 3 min.
 FF:BOB in 4 min.
 FS:Built to 1/2" blow died in 27 min.



PRESSURE SUMMARY

| Time (Min.) | Pressure (psig) | Temp (deg F) | Annotation |
|-------------|-----------------|--------------|----------------------|
| 0 | 2316.50 | 111.26 | Initial Hydro-static |
| 1 | 31.76 | 109.90 | Open To Flow (1) |
| 47 | 87.19 | 114.66 | Shut-In(1) |
| 91 | 928.87 | 115.28 | End Shut-In(1) |
| 91 | 86.08 | 114.92 | Open To Flow (2) |
| 135 | 116.22 | 117.75 | Shut-In(2) |
| 183 | 907.51 | 118.57 | End Shut-In(2) |
| 184 | 2291.27 | 119.09 | Final Hydro-static |

Recovery

| Length (ft) | Description | Volume (bbl) |
|-------------|------------------------------------|--------------|
| 60.00 | w cgom 3%w 5%g 22%o 70%m (collars) | 0.30 |
| 60.00 | gcom 2%g 10%o 88%m (collars) | 0.30 |
| 92.00 | ocm 3%o 97%m | 1.29 |
| 0.00 | GIP= 650 | 0.00 |
| | | |
| | | |

* Recovery from multiple tests

Gas Rates

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



**TRILOBITE
TESTING, INC.**

DRILL STEM TEST REPORT

TOOL DIAGRAM

Russell Oil Inc

21-11s-32w Logan,KS

P.O. Box 8050
Edmond OK 73083

Dorothy #21-1

Job Ticket: 64239

DST#: 5

ATTN: Kitt Noah

Test Start: 2017.10.29 @ 14:28:15

Tool Information

| | | | | |
|---------------------------|--------------------|-----------------------|--------------------------------|------------------------------------|
| Drill Pipe: | Length: 4451.00 ft | Diameter: 3.80 inches | Volume: 62.44 bbl | Tool Weight: 1500.00 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: 120.00 ft | Diameter: 2.25 inches | Volume: 0.59 bbl | Weight to Pull Loose: 70000.00 lb |
| | | | <u>Total Volume: 63.03 bbl</u> | Tool Chased 0.00 ft |
| Drill Pipe Above KB: | 25.00 ft | | | String Weight: Initial 58000.00 lb |
| Depth to Top Packer: | 4574.00 ft | | | Final 60000.00 lb |
| Depth to Bottom Packer: | ft | | | |
| Interval between Packers: | 48.00 ft | | | |
| Tool Length: | 76.00 ft | | | |
| Number of Packers: | 2 | Diameter: 6.75 inches | | |

Tool Comments:

Tool Description

| Tool Description | Length (ft) | Serial No. | Position | Depth (ft) | Accum. Lengths |
|---------------------------|--------------|------------|----------|------------|-------------------------------|
| Change Over Sub | 1.00 | | | 4547.00 | |
| Shut In Tool | 5.00 | | | 4552.00 | |
| Hydraulic tool | 5.00 | | | 4557.00 | |
| Jars | 5.00 | | | 4562.00 | |
| Safety Joint | 3.00 | | | 4565.00 | |
| Packer | 5.00 | | | 4570.00 | 28.00 Bottom Of Top Packer |
| Packer | 4.00 | | | 4574.00 | |
| Stubb | 1.00 | | | 4575.00 | |
| Perforations | 4.00 | | | 4579.00 | |
| Change Over Sub | 1.00 | | | 4580.00 | |
| Drill Pipe | 31.00 | | | 4611.00 | |
| Change Over Sub | 1.00 | | | 4612.00 | |
| Perforations | 5.00 | | | 4617.00 | |
| Recorder | 0.00 | 8672 | Inside | 4617.00 | |
| Recorder | 0.00 | 6749 | Outside | 4617.00 | |
| Bullnose | 5.00 | | | 4622.00 | 48.00 Bottom Packers & Anchor |
| Total Tool Length: | 76.00 | | | | |



**TRILOBITE
TESTING, INC.**

DRILL STEM TEST REPORT

FLUID SUMMARY

Russell Oil Inc

21-11s-32w Logan,KS

P.O. Box 8050
Edmond OK 73083

Dorothy #21-1

Job Ticket: 64239

DST#: 5

ATTN: Kitt Noah

Test Start: 2017.10.29 @ 14:28:15

Mud and Cushion Information

Mud Type: Gel Chem

Cushion Type:

Oil API:

0 deg API

Mud Weight: 9.00 lb/gal

Cushion Length:

ft

Water Salinity:

19000 ppm

Viscosity: 58.00 sec/qt

Cushion Volume:

bbbl

Water Loss: 7.58 in³

Gas Cushion Type:

Resistivity: 0.00 ohm.m

Gas Cushion Pressure:

psig

Salinity: 2200.00 ppm

Filter Cake: 1.00 inches

Recovery Information

Recovery Table

| Length ft | Description | Volume bbl |
|--------------|------------------------------------|---------------|
| 60.00 | w cgom 3%w 5%g 22%o 70%m (collars) | 0.295 |
| 60.00 | gcom 2%g 10%o 88%m (collars) | 0.295 |
| 92.00 | ocm 3%o 97%m | 1.291 |
| 0.00 | GIP= 650 | 0.000 |

Total Length: 212.00 ft Total Volume: 1.881 bbl

Num Fluid Samples: 0

Num Gas Bombs: 0

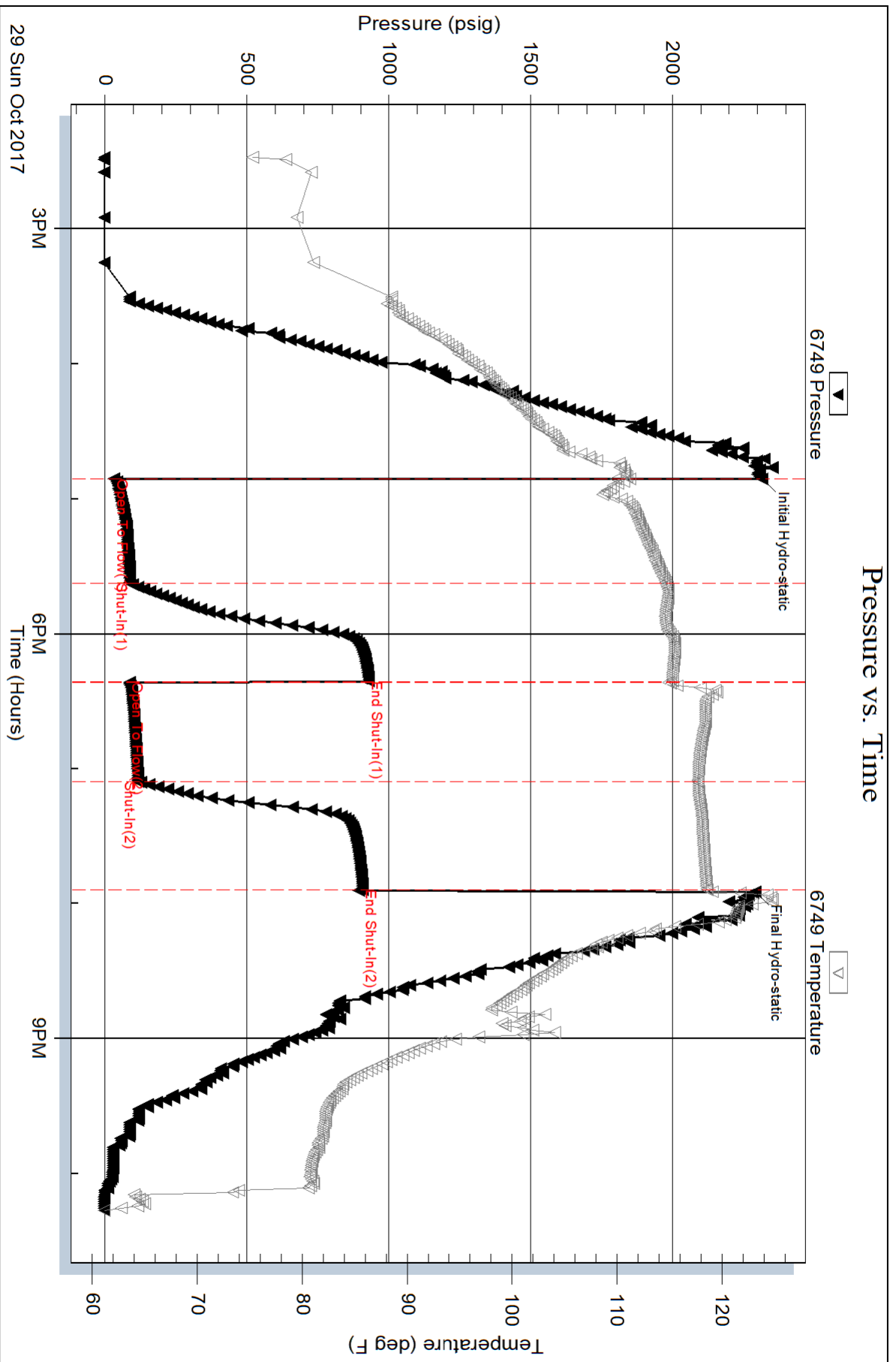
Serial #:

Laboratory Name:

Laboratory Location:

Recovery Comments: RW= .426@ 74.3= 19,000 ppm

Pressure vs. Time



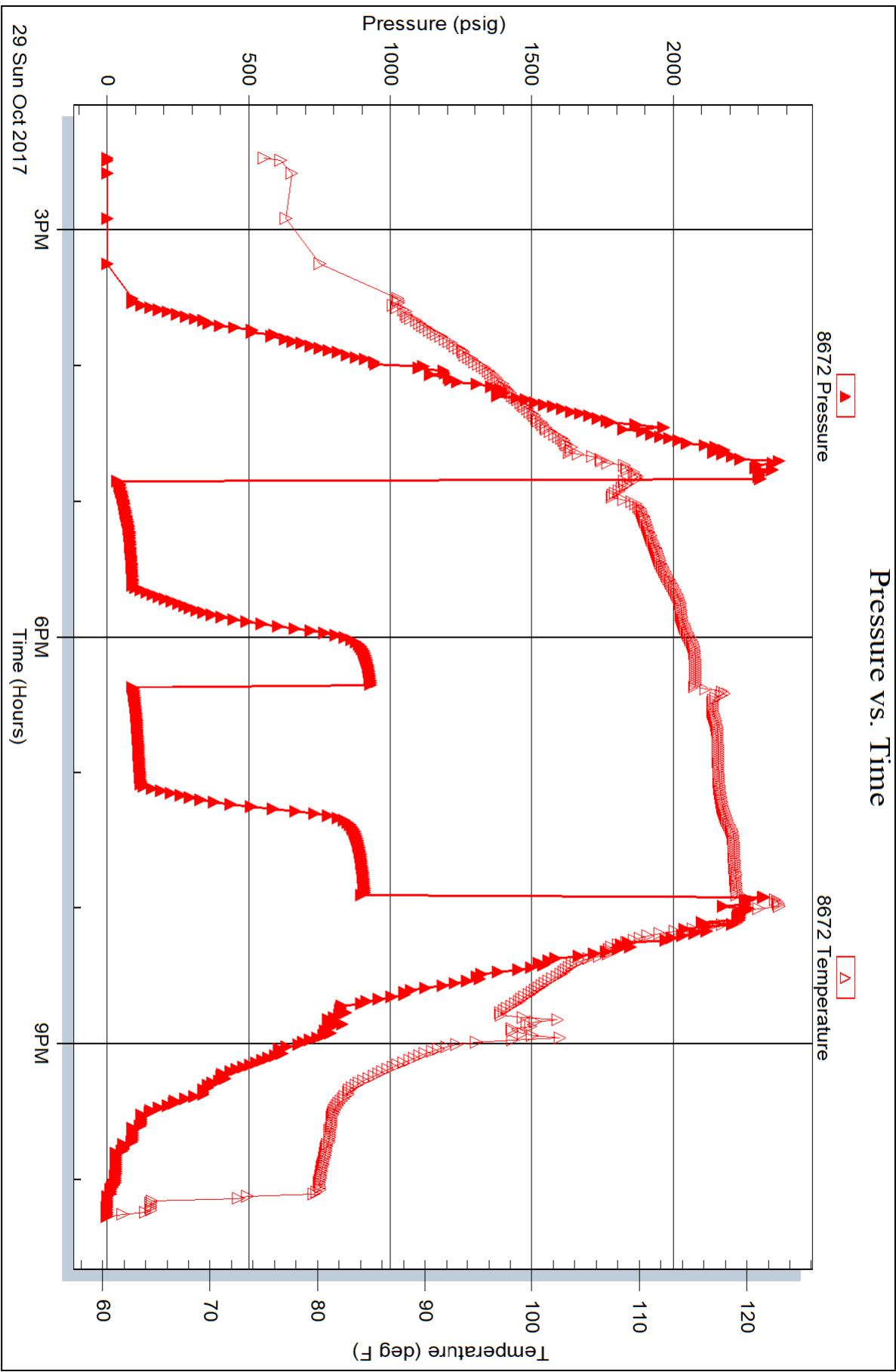
Serial #: 8672

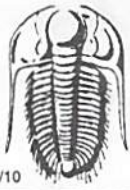
Inside

Russell Oil Inc

Dorothy #21-1

DST Test Number: 5





TRILOBITE TESTING INC.

1515 Commerce Parkway • Hays, Kansas 67601

Test Ticket

NO. **64235**

Well Name & No. Dorothy # 21-1 Test No. 1 Date 10-26-17
 Company Russell Oil, Inc Elevation 3045 KB 3040 GL
 Address P.O. Box 8050 EDMOND OK 73083
 Co. Rep / Geo. KITT Noah Rig WW12
 Location: Sec. 21 Twp. 11s Rge. 32w Co. Logan State KS

Interval Tested 4193-4224 Zone Tested LKC 'H'
 Anchor Length 31 Drill Pipe Run 4075 Mud Wt. 8.7
 Top Packer Depth 4188 Drill Collars Run 120 Vis 0.55
 Bottom Packer Depth 4193 Wt. Pipe Run 0 WL 7.2
 Total Depth 4224 Chlorides 1800 ppm System LCM 1
 Blow Description IF: Weak Surface Blow Died in 21 Min.
IS: No Return Blow
FF: No Blow
FS: No Return Blow

| Rec | Feet of | %gas | %oil | %water | %mud |
|------------|---------------------------|------|------|------------|------|
| <u>120</u> | <u>mud with oil spots</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 120 BHT 113 Gravity — API RW — @ — °F Chlorides — ppm

| | | |
|-------------------------------------|--|--|
| (A) Initial Hydrostatic <u>2077</u> | <input checked="" type="checkbox"/> Test <u>\$1150.00/-</u> | T-On Location <u>02:10</u> |
| (B) First Initial Flow <u>134</u> | <input checked="" type="checkbox"/> Jars <u>\$250.00/-</u> | T-Started <u>03:24</u> |
| (C) First Final Flow <u>135</u> | <input checked="" type="checkbox"/> Safety Joint <u>\$75.00/-</u> | T-Open <u>06:23</u> |
| (D) Initial Shut-In <u>967</u> | <input checked="" type="checkbox"/> Circ Sub <u>WC</u> | T-Pulled <u>08:23</u> |
| (E) Second Initial Flow <u>136</u> | <input type="checkbox"/> Hourly Standby | T-Out <u>10:22</u> |
| (F) Second Final Flow <u>130</u> | <input checked="" type="checkbox"/> Mileage <u>100RT = \$75.00/-</u> | Comments |
| (G) Final Shut-In <u>916</u> | <input type="checkbox"/> Sampler | |
| (H) Final Hydrostatic <u>2067</u> | <input type="checkbox"/> Straddle | <input type="checkbox"/> Ruined Shale Packer |
| Initial Open <u>30</u> | <input type="checkbox"/> Shale Packer | <input type="checkbox"/> Ruined Packer |
| Initial Shut-In <u>30</u> | <input type="checkbox"/> Extra Packer | <input type="checkbox"/> Extra Copies |
| Final Flow <u>30</u> | <input type="checkbox"/> Extra Recorder | Sub Total <u>0</u> |
| Final Shut-In <u>30</u> | <input type="checkbox"/> Day Standby | Total <u>1550</u> |
| | <input type="checkbox"/> Accessibility | MP/DST Disc't |
| | Sub Total <u>\$1550.00/-</u> | |

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



TRILOBITE TESTING INC.

1515 Commerce Parkway • Hays, Kansas 67601

Test Ticket

NO. **64236**

Well Name & No. Dorothy #21-1 Test No. 2 Date 10-26-17
 Company Russell Oil, Inc. Elevation 3045 KB 3040 GL
 Address P.O. Box 8050 Edmond OK 73083
 Co. Rep / Geo. KITT NOAH Rig WW 12
 Location: Sec. 21 Twp. 11S Rge. 32w Co. Logan State KS

Interval Tested 4222-4250 Zone Tested LKC "I"
 Anchor Length 28 Drill Pipe Run 4106 Mud Wt. 9.0
 Top Packer Depth 4217 Drill Collars Run 120 Vis 49
 Bottom Packer Depth 4222 Wt. Pipe Run 0 WL 8.8
 Total Depth 4250 Chlorides 2500 ppm System LCM 1
 Blow Description IF: Weak Blow Dried in 3 Min
IS: No Return Blow
FF: No Blow
FS: No Return Blow

| Rec | Feet of | %gas | %oil | %water | %mud |
|----------|--------------------|------|------|------------|------|
| <u>5</u> | <u>Feet of 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 5 BHT 108 Gravity — API RW — @ — °F Chlorides — ppm

| | | |
|-------------------------------------|---|--|
| (A) Initial Hydrostatic <u>2085</u> | <input checked="" type="checkbox"/> Test <u>\$1150.00/-</u> | T-On Location <u>19:45</u> |
| (B) First Initial Flow <u>14</u> | <input checked="" type="checkbox"/> Jars <u>\$250.00/-</u> | T-Started <u>21:22</u> |
| (C) First Final Flow <u>17</u> | <input checked="" type="checkbox"/> Safety Joint <u>\$75.00/-</u> | T-Open <u>12:05</u> |
| (D) Initial Shut-In <u>115</u> | <input checked="" type="checkbox"/> Circ Sub <u>NC</u> | T-Pulled <u>02:05</u> |
| (E) Second Initial Flow <u>18</u> | <input type="checkbox"/> Hourly Standby | T-Out <u>04:23</u> |
| (F) Second Final Flow <u>20</u> | <input checked="" type="checkbox"/> Mileage <u>RT=100 = \$75.00/-</u> | Comments |
| (G) Final Shut-In <u>75</u> | <input type="checkbox"/> Sampler | |
| (H) Final Hydrostatic <u>2069</u> | <input type="checkbox"/> Straddle | <input type="checkbox"/> Ruined Shale Packer |
| Initial Open <u>30</u> | <input type="checkbox"/> Shale Packer | <input type="checkbox"/> Ruined Packer |
| Initial Shut-In <u>30</u> | <input type="checkbox"/> Extra Packer | <input type="checkbox"/> Extra Copies |
| Final Flow <u>30</u> | <input type="checkbox"/> Extra Recorder | Sub Total <u>0</u> |
| Final Shut-In <u>30</u> | <input type="checkbox"/> Day Standby | Total <u>1550</u> |
| | <input type="checkbox"/> Accessibility | MP/DST Disc't |
| | Sub Total <u>\$1550.00/-</u> | |

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



TRILOBITE TESTING INC.

1515 Commerce Parkway • Hays, Kansas 67601

Test Ticket

NO. **64237**

Well Name & No. Dorothy #21-1 Test No. 3 Date 10-27-17
 Company Russell Oil Inc Elevation 3045 KB 3040 GL
 Address P.O. Box 8050 Edmond OK 73083
 Co. Rep / Geo. KITT NOAH Rig WW 12
 Location: Sec. 21 Twp. 11S Rge. 32W Co. Logan State KS

Interval Tested 4246-4275 Zone Tested LKC 'J'
 Anchor Length 29 Drill Pipe Run 4106 Mud Wt. 9.1
 Top Packer Depth 4241 Drill Collars Run 120 Vis 52
 Bottom Packer Depth 4246 Wt. Pipe Run 0 WL 8.8
 Total Depth 4275 Chlorides 2500 ppm System LCM 1

Blow Description IF: Built to 134' Blow
IS: No Return Blow
FF: No Blow
FS: No Return Blow

| Rec | Feet of | %gas | %oil | %water | %mud |
|-----------|------------|------|------|------------|------|
| <u>30</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 Total 30 BHT 107 Gravity — API RW — @ — °F Chlorides — ppm

| | | |
|-------------------------------------|--|--|
| (A) Initial Hydrostatic <u>2124</u> | <input checked="" type="checkbox"/> Test <u>\$ 1150.00/-</u> | T-On Location <u>11:30</u> |
| (B) First Initial Flow <u>26</u> | <input checked="" type="checkbox"/> Jars <u>\$ 250.00/-</u> | T-Started <u>11:58</u> |
| (C) First Final Flow <u>28</u> | <input checked="" type="checkbox"/> Safety Joint <u>\$ 75.00/-</u> | T-Open <u>14:00</u> |
| (D) Initial Shut-In <u>81</u> | <input checked="" type="checkbox"/> Circ Sub <u>NC</u> | T-Pulled <u>16:30</u> |
| (E) Second Initial Flow <u>28</u> | <input type="checkbox"/> Hourly Standby | T-Out <u>18:14</u> |
| (F) Second Final Flow <u>28</u> | <input checked="" type="checkbox"/> Mileage <u>100RT = \$75.00/-</u> | Comments |
| (G) Final Shut-In <u>84</u> | <input type="checkbox"/> Sampler | |
| (H) Final Hydrostatic <u>2074</u> | <input type="checkbox"/> Straddle | <input type="checkbox"/> Ruined Shale Packer |

Initial Open 45
 Initial Shut-In 45
 Final Flow 30
 Final Shut-In 30

Shale Packer
 Extra Packer
 Extra Recorder
 Day Standby
 Accessibility

Sub Total \$1550.00/-

Sub Total 0
 Total 1550
 MP/DST Disc't

Approved By Kitt Noah Our Representative Mike Roberts

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



TRILOBITE TESTING INC.

1515 Commerce Parkway • Hays, Kansas 67601

Test Ticket

NO. **64238**

Well Name & No. Dorothy # 21-1 Test No. 4 Date 10-28-17
 Company Russell Oil Inc Elevation 3045 KB 3040 GL
 Address P.O. Box 8050 Edmond OK 73083
 Co. Rep / Geo. KITT NOAH Rig WW12
 Location: Sec. 21 Twp. 11S Rge. 32W Co. Logan State KS

Interval Tested 4274-4312 Zone Tested LICC 'K'
 Anchor Length 38 Drill Pipe Run 4137 Mud Wt. 9.1
 Top Packer Depth 4269 Drill Collars Run 120 Vis 52
 Bottom Packer Depth 4274 Wt. Pipe Run Ø WL 8.8
 Total Depth 4312 Chlorides 2500 ppm System LCM 1
 Blow Description IF: Built to 1/8' Blow & Died in 12 Min.
IS: No Return Blow
FF: No Blow
FS: No Return Blow

| Rec | Feet of | %gas | %oil | %water | %mud |
|----------|---------------------------|------|------|------------|------|
| <u>5</u> | <u>MUD with oil spots</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 5 BHT 110
 (A) Initial Hydrostatic 2143
 (B) First Initial Flow 15
 (C) First Final Flow 18
 (D) Initial Shut-In 1229
 (E) Second Initial Flow 20
 (F) Second Final Flow 23
 (G) Final Shut-In 1247
 (H) Final Hydrostatic 2134

Gravity — API RW — @ — F Chlorides — ppm
 Test \$ 1150.00/- T-On Location 01:45
 Jars \$ 250.00/- T-Started 0
 Safety Joint \$ 75.00/- T-Open 05:00
 Circ Sub NC T-Pulled 07:00
 Hourly Standby _____ T-Out _____
 Mileage 100RT = \$75.00/- Comments _____
 Sampler _____
 Straddle _____
 Shale Packer _____
 Extra Packer _____
 Extra Recorder _____
 Day Standby _____
 Accessibility _____
 Sub Total \$1550.00/-

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

Approved By [Signature] Our Representative [Signature]
 Sub Total \$1550.00/-

TriLOBITE TESTING Inc. shall not be liable for damaged of any kind of the property or personnel of the one for whom a test is made, or for any loss suffered or sustained, directly or indirectly, through the use of its equipment, or its statements or opinion concerning the results of any test, tools lost or damaged in the hole shall be paid for at cost by the party for whom the test is made.



TRILOBITE TESTING INC.

1515 Commerce Parkway • Hays, Kansas 67601

Test Ticket

NO. **64239**

Well Name & No. Dorothy #21-1 Test No. 5 Date 10-29-17
 Company Russell Oil Inc Elevation 3045 KB 3040 GL
 Address P.O. Box 8050 Edmond OK 73083
 Co. Rep / Geo. KITT NOAH Rig WW12
 Location: Sec. 21 Twp. 11s Rge. 32w Co. Logan State KS

Interval Tested 4574-4622 Zone Tested Johnson
 Anchor Length 48 Drill Pipe Run 4451 Mud Wt. 9.1
 Top Packer Depth 4569 Drill Collars Run 120 Vis 58
 Bottom Packer Depth 4574 Wt. Pipe Run Ø WL 7.4
 Total Depth 4622 Chlorides 2200 ppm System LCM 2

Blow Description IF: BOB in 10 Min
IS: ~~BOB~~ Weak Surface Blow died in 3 Min
FF: BOB in 4 Min
FS: Built to 1/2" Blow died in 27 Min.

| Rec | Feet of | %gas | %oil | %water | %mud |
|-----------|------------------|------------|-----------|----------|-----------|
| <u>Ø</u> | <u>GIP = 650</u> | <u>100</u> | | | |
| <u>92</u> | <u>OCM</u> | | <u>3</u> | | <u>97</u> |
| <u>60</u> | <u>gcom</u> | <u>2</u> | <u>10</u> | | <u>88</u> |
| <u>60</u> | <u>wcgom</u> | <u>5</u> | <u>22</u> | <u>3</u> | <u>70</u> |
| | | | | | |

Rec Total 212 BHT 120 Gravity — API RW 426 @ 74.3° F Chlorides 19000 ppm

- (A) Initial Hydrostatic 2316
- (B) First Initial Flow 31
- (C) First Final Flow 87
- (D) Initial Shut-In 928
- (E) Second Initial Flow 86
- (F) Second Final Flow 116
- (G) Final Shut-In 907
- (H) Final Hydrostatic 2291

Initial Open 45
 Initial Shut-In 45
 Final Flow 45
 Final Shut-In 45

- Test \$1150.00/- T-On Location 13:10
- Jars \$250.00/- T-Started 14:28
- Safety Joint \$75.00/- T-Open 16:52
- Circ Sub NC T-Pulled 19:52
- Hourly Standby _____ T-Out 22:16
- Mileage 100RT = \$75.00/- Comments Loaded at 18:00 10-30-17
- Sampler x2 75
- Straddle _____
- Shale Packer _____
- Extra Packer _____
- Extra Recorder _____
- Day Standby _____
- Accessibility 1625
- Sub Total \$1550.00/-

Approved By Kitt Noah

Our Representative Mike Roberts

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.

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. 326

| | | | | | | | | | | | | | | | |
|------|----------|------|----|------|----|-------|----|------------------------|-------|-------|----|-------------|--|--------|--------|
| Date | 10-21-17 | Sec. | 21 | Twp. | 11 | Range | 32 | County | Logan | State | KS | On Location | | Finish | 8:15pm |
| | | | | | | | | Location | | | | | | | |
| | | | | | | | | Oakland 43200 3s Winto | | | | | | | |

| | | | | | |
|---------------------|---------|--|-------------|--|------------------------------------|
| Lease | Dorothy | Well No. | 21-1 | Owner | To Quality Oilwell Cementing, Inc. |
| Contractor | WW #12 | You are hereby requested to rent cementing equipment and furnish cementer and helper to assist owner or contractor to do work as listed. | | | |
| Type Job | Surface | Charge To | Russell Oil | | |
| Hole Size | 12 1/4 | T.D. | 344 | | |
| Csg. | 8 5/8 | Depth | 343 | | |
| Tbg. Size | | Depth | | | |
| Tool | | Depth | | The above was done to satisfaction and supervision of owner agent or contractor. | |
| Cement Left in Csg. | 10' | Shoe Joint | | Cement Amount Ordered | 170 @ 20 3/4 2-1/2 |
| Meas Line | | Displace | 21BC | | |

| | | | | | |
|------------------|----|--------------|------|----------|--------|
| EQUIPMENT | | | | Common | 13 1/2 |
| Pumptrk | 20 | No. Cementer | | Poz. Mix | 34 |
| | | Helper | | Gel. | 3 |
| Bulktrk | | Driver | Bret | Calcium | 6 |
| Bulktrk | 15 | Driver | John | | |

| | | | | | |
|-----------------------------------|--|--|--|-------------------------|-----|
| 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 | |
| 8 5/8 on bottom. Est. Circulation | | | | Handling | 179 |
| Mix 170 SK & Displace. | | | | Mileage | |

| | | | | | |
|--------------------|--|--|--|------------------------|--|
| Cement Circulated. | | | | FLOAT EQUIPMENT | |
| | | | | Guide Shoe | |
| | | | | Centralizer | |
| | | | | Baskets | |
| | | | | AFU Inserts | |
| | | | | Float Shoe | |
| | | | | Latch Down | |

| | | | | | |
|-------------|-------------|--|--|----------------|-----------|
| | | | | Pumptrk Charge | ✓ Surface |
| | | | | Mileage | 15 (min) |
| | | | | Tax | |
| | | | | Discount | |
| | | | | Total Charge | |
| X Signature | [Signature] | | | | |

(JTMH: 62)



10244 NE Hwy. 61
P.O. Box 8613
Pratt, Kansas 67124
Phone 620-672-1201

FIELD SERVICE TICKET
1718 15491 A

21-115-32W

DATE _____ TICKET NO. _____

| | | | | | | | |
|-----------------------------|---|--|-----------------------------------|-------------------------------|------------------------------|------------------------------|---------------------|
| DATE OF JOB: 10/31/2019 | DISTRICT: Prgh, KS | NEW WELL <input checked="" type="checkbox"/> | OLD WELL <input type="checkbox"/> | PROD <input type="checkbox"/> | INJ <input type="checkbox"/> | WDW <input type="checkbox"/> | CUSTOMER ORDER NO.: |
| CUSTOMER: Russell Oil, Inc. | LEASE: Dorothy | WELL NO. 21- | | | | | |
| ADDRESS: | COUNTY: Logan | STATE: KS | | | | | |
| CITY: | STATE: | SERVICE CREW: Doria, Ed, Cobb | | | | | |
| AUTHORIZED BY: | JOB TYPE: 242/4 1/2 2 Stage Long Straws | | | | | | |

| EQUIPMENT# | HRS | EQUIPMENT# | HRS | EQUIPMENT# | HRS | TRUCK CALLED | DATE | AM | TIME |
|------------|-------|------------|-----|------------|-----|----------------------------|-------|----|-------|
| 198438 | 3 1/4 | | | | | | 10/30 | AM | 5:00 |
| 19918 | 1/2 | | | | | | 10/30 | AM | 10:00 |
| 37547 | 1/2 | | | | | | 10/31 | AM | 2:45 |
| | | | | | | | 10/31 | AM | 6:30 |
| | | | | | | | 10/31 | AM | 7:15 |
| | | | | | | MILES FROM STATION TO WELL | 206 | | |

CONTRACT CONDITIONS: (This contract must be signed before the job is commenced or merchandise is delivered).

The undersigned is authorized to execute this contract as an agent of the customer. As such, the undersigned agrees and acknowledges that this contract for services, materials, products, and/or supplies includes all of and only those terms and conditions appearing on the front and back of this document. No additional or substitute terms and/or conditions shall become a part of this contract without the written consent of an officer of Basic Energy Services LP.

SIGNED: Todd Brown
(WELL OWNER, OPERATOR, CONTRACTOR OR AGENT)

| ITEM/PRICE REF. NO. | MATERIAL, EQUIPMENT AND SERVICES USED | UNIT | QUANTITY | UNIT PRICE | \$ AMOUNT |
|---------------------|--|------|----------|------------|-----------|
| CP105 | A#2 Cement | SK | 200 | | 3,400 00 |
| CP101 | A-con Blend Common | SK | 44.5 | | 8,010 00 |
| CP101 | A-con Blend Common | SK | 30 | | 540 00 |
| CC109 | Calcium Chloride | Lb | 1344 | | 1,411 20 |
| CC102 | Cellofibre | Lb | 169 | | 625 30 |
| CC201 | Gilsonite | Lb | 997 | | 667 99 |
| CC111 | SSIT | Lb | 920 | | 400 00 |
| CC105 | C-41P | Lb | 47 | | 188 00 |
| CC129 | FLA-322 | Lb | 151 | | 1,132 50 |
| CC130 | C-51 | Lb | 45 | | 1,125 00 |
| CF1250 | Auto Fill Float Shoe, 4 1/2" (Blue) | EQ | 1 | | 330 00 |
| CF450 | Two Stage Cement Collar, 4 1/2" (Blue) | EQ | 1 | | 3,500 00 |
| CF1650 | Turbolizer, 4 1/2" (Blue) | EQ | 7 | | 595 00 |
| CF1900 | 4 1/2" Bore (Blue) | EQ | 2 | | 540 00 |
| CC155 | Super Flush II | Gal | 1,000 | | 1,530 00 |
| E100 | Unit Mileage Charge - pickups, small usage cases | m. | 100 | | 4.50 00 |
| E101 | Heavy Equipment Mileage | m. | 300 | | 2,250 00 |
| E113 | Proppant One Bulk Delivery Charge, perforator | fm | 3180 | | 7,950 00 |

SUB TOTAL

| CHEMICAL / ACID DATA: | | | |
|-----------------------|--|--|--|
| | | | |
| | | | |
| | | | |

| | |
|---------------------|------------|
| SERVICE & EQUIPMENT | %TAX ON \$ |
| MATERIALS | %TAX ON \$ |

TOTAL
11,110 00

SERVICE REPRESENTATIVE: Wes Egan

THE ABOVE MATERIAL AND SERVICE ORDERED BY CUSTOMER AND RECEIVED BY: Todd Brown
(WELL OWNER OPERATOR CONTRACTOR OR AGENT)

FIELD SERVICE ORDER NO.



Energy services, L.P.

St 950 #1

TREATMENT REPORT

| | |
|-------------|-------------------|
| Lease No. | Date |
| Well # 21-1 | 10/31/2017 |
| Station | County |
| Pratt, OK | Logan |
| State | OK |
| Formation | Legal Description |
| TP-4720 | 21-115-330 |

| PIPE DATA | | PERFORATING DATA | | FLUID USED | TREATMENT RESUME | | |
|-------------------|--------------|------------------|----|------------------|------------------|-------|------------------|
| Casing Size 4 1/2 | Tubing Size | Shots/Ft | | Acid | RATE | PRESS | ISIP |
| Depth 4713 | Depth | From | To | Pre Pad | Max | | 5 Min. |
| Volume 73 | Volume | From | To | Pad | Min | | 10 Min. |
| Max Press 1500 | Max Press | From | To | Frac | Avg | | 15 Min. |
| Well Connection | Annulus Vol. | From | To | | HHP Used | | Annulus Pressure |
| Plug Depth 4673 | Packer Depth | From | To | Flush mix, water | Gas Volume | | Total Load |

Customer Representative: Todd Brown Station Manager: Justin Workmen Treater: Darin Franklin

| | | | | | | | | | | | |
|---------------|-------|-------|-------|-------|-------|-------|-------|--|--|--|--|
| Service Units | 92511 | 84581 | 19843 | 19559 | 19918 | 30463 | 37547 | | | | |
| Driver Names | Darin | Ed | Ed | Cobb | Cobb | | | | | | |

| Time | Casing Pressure | Tubing Pressure | Bbls. Pumped | Rate | Service Log |
|--------|-----------------|-----------------|--------------|-------|------------------------------|
| 10:00 | | | | | on location / safety meeting |
| | | | | | T-2, 4, 8, 13, 16, 18, 20 |
| | | | | | B-10, 4x |
| | | | | | DV Tool - 49 25521 |
| 10/31 | | | | | |
| 2:45pm | 300 | | 3 | 4 1/2 | Pump 3 bbls water |
| | 300 | | 24 | 4 1/2 | Pump 24 bbls Flush |
| | 300 | | 3 | 4 1/2 | Pump 3 bbls water |
| | 300 | | 51 | 4 1/2 | Mix 200sc AA2 cement |
| | | | | | Shut down |
| | | | | | Wash pump lines & drop plug |
| | 200 | | 0 | 5 1/2 | Start displacement |
| | 600 | | 50 | 5 1/2 | Lib pressure |
| | 800 | | 62 | 5 3/4 | Slow Rise |
| | 1500 | | 71 | 3 | Bump Plug |
| | | | | | Flow - Hold |
| | | | | | Drop DV open Tool |
| | | | | | Wait 20 min. |
| | 1100 | | 1/4 | 1/4 | Open DV Tool |
| | | | | | Circulate 30 min with P.S. |

Sit 952 #2

TREATMENT REPORT

| | | | | | |
|---|--------------------------|--------------------|-----------|-------------------------------------|-----------------|
| Order # 13497 | Station Pratt, KS | Casing | Depth | County Lossn | State KS |
| Lease No. Russell O.I., Inc | | Well # 21-1 | | Date 10/31/2017 | |
| Type Job 242/4 1/2 25x952 Lens 5/1ms | | | Formation | Legal Description 21-115-332 | |

| PIPE DATA | | PERFORATING DATA | | FLUID USED | | TREATMENT RESUME | | |
|-----------------|--------------|------------------|----|------------|------------|------------------|------------------|--|
| Casing Size | Tubing Size | Shots/Ft | | Acid | RATE | PRESS | ISIP | |
| Depth | Depth | From | To | Pre Pad | Max | | 5 Min. | |
| Volume | Volume | From | To | Pad | Min | | 10 Min. | |
| Max Press | Max Press | From | To | Frac | Avg | | 15 Min. | |
| Well Connection | Annulus Vol. | From | To | | HHP Used | | Annulus Pressure | |
| Plug Depth | Packer Depth | From | To | Flush | Gas Volume | | Total Load | |

| | | |
|-------------------------|-----------------|---------|
| Customer Representative | Station Manager | Treater |
| Service Units | | |
| Driver Names | | |

| Time | Casing Pressure | Tubing Pressure | Bbbs. Pumped | Rate | Service Log |
|--------|-----------------|-----------------|--------------|------|----------------------------------|
| 4:45pm | 500 | | 220 | 5 | Mix 4455K @ - Cen Blend CEMENT |
| | | | | | Shut down |
| | | | | | Lossn Pump @ 1105 & Release Plus |
| | 500 | | 0 | 5 | SIST displacement |
| | 600 | | 30 | 3 | Slow Rate |
| 6:30pm | 1500 | | 40 | 3 | Bump Plus |
| | | | | | Flow - Hold |
| | | | | | Job complete / Degrin & Cree |
| | | | | | Thank you!! |

Cement Callsheet



| | | | | | | | |
|-----------|-------------------|------------|--------------|---------------|-----------|-------|-----|
| Company | Russell Oil, Inc. | | | Service Point | Pratt, KS | | |
| Well Type | New | CONTRACTOR | WW Drig. #12 | COUNTY | Logan | STATE | KS |
| LEASE | Dorothy | | WELL # 21-1 | SEC | 21 | TWP | 11S |
| RANGE | | 32W | | | | | |

DIRECTIONS:
 Oakley, Kansas - West end of town on Hwy. 40 by golf course to Road 430
 3 South to tank battery (Porter Lease sign) go thru red gate on South side of tank battery - BE SURE TO CLOSE GATE

| | | | | | | | | | |
|-----------|----------------------|--|--|------------------------|-------|---------------|------|------------------|------|
| Job Type | 4 1/2" 2 Stage | | | Casing Size | 4 1/2 | Thread | 8 RD | Weight | 11.6 |
| Equipment | | | | Tubing/Drill Pipe Size | | Thread | | Weight | |
| | | | | Hole Size | 7 7/8 | Pecker | | Bridge Plug | |
| Remarks: | DV Tool set at 2600' | | | Plug Container | Yes | Casing Swivel | Yes | Squeeze Manifold | |

2 Stage Production Casing

CEMENT DATA

| LEAD 1 | Weight PPG | Type | Additives | |
|-----------|------------|--------------------|--|--|
| Sacks | Excess | Yield FT/ck | Water Gal/ck | |
| TAIL 1 | Weight PPG | Type | Additives | |
| CP105 | 15.30 | AA2 Cement | Russell Oil Blend | |
| Sacks | Excess | Yield FT/ck | Water Gal/ck | |
| 200 | 35% | 1.43 | 5.79 | |
| LEAD 2 | Weight PPG | Type | Additives | |
| Sacks | Excess | Yield FT/ck | Water Gal/ck | |
| TAIL 2 | Weight PPG | Type | Additives | |
| CP101 | 11.6 | A-Con Blend Common | 3% calcium chloride 0.25 pps celloflake 0.1% wcn | |
| Sacks | Excess | Yield FT/ck | Water Gal/ck | |
| 445 | 108% | 2.77 | 16.75 | |
| Mouse/Rat | Weight PPG | Type | Additives | |
| CP101 | 11.6 | A-Con Blend Common | 3% Calcium chloride 0.25 pps celloflake 0.1% wcn | |
| Sacks | Excess | Yield FT/ck | Water Gal/ck | |
| 30 | | 2.77 | 16.70 | |

Float Equipment

| Part # | Quantity | Description | # Used | # Returned |
|--------|----------|--|--------|------------|
| CF1250 | 1 | Auto Fill Float Shoe 4 1/2" (Blue) | | |
| CF450 | 1 | Two Stage Cement Collar, 4 1/2" (Blue) | | |
| CF1650 | 7 | Turbolizer, 4 1/2" (Blue) | | |
| CF1900 | 2 | 4 1/2" Basket (Blue) | | |

Misc. Chemicals

| | | | |
|-------|------|----------------|----------|
| CC155 | 1000 | Super Flush II | 10 sacks |
|-------|------|----------------|----------|

| | | | | | |
|---------------------------|-----------------|--------------------|-------|---------------|----------|
| Ordered By | Todd Brown | Phone 785-445-6270 | Fax | Date of Job | 10/30/17 |
| Call Taken By | Kevin Brungardt | Phone 620-213-1586 | Email | Time Ready | W/C |
| Operator or Driver Called | | | | Call Out Time | |