

Confidentiality Requested:

Yes  No

KANSAS CORPORATION COMMISSION  
OIL & GAS CONSERVATION DIVISION

Form ACO-1

January 2018

Form must be Typed

Form must be Signed

All blanks must be Filled

**WELL COMPLETION FORM**  
**WELL HISTORY - DESCRIPTION OF WELL & LEASE**

OPERATOR: License # \_\_\_\_\_

Name: \_\_\_\_\_

Address 1: \_\_\_\_\_

Address 2: \_\_\_\_\_

City: \_\_\_\_\_ State: \_\_\_\_\_ Zip: \_\_\_\_\_ + \_\_\_\_\_

Contact Person: \_\_\_\_\_

Phone: ( \_\_\_\_\_ ) \_\_\_\_\_

CONTRACTOR: License # \_\_\_\_\_

Name: \_\_\_\_\_

Wellsite Geologist: \_\_\_\_\_

Purchaser: \_\_\_\_\_

Designate Type of Completion:

New Well  Re-Entry  Workover

Oil  WSW  SWD

Gas  DH  EOR

OG  GSW

CM (Coal Bed Methane)

Cathodic  Other (Core, Expl., etc.): \_\_\_\_\_

If Workover/Re-entry: Old Well Info as follows:

Operator: \_\_\_\_\_

Well Name: \_\_\_\_\_

Original Comp. Date: \_\_\_\_\_ Original Total Depth: \_\_\_\_\_

Deepening  Re-perf.  Conv. to EOR  Conv. to SWD

Plug Back  Liner  Conv. to GSW  Conv. to Producer

Commingled Permit #: \_\_\_\_\_

Dual Completion Permit #: \_\_\_\_\_

SWD Permit #: \_\_\_\_\_

EOR Permit #: \_\_\_\_\_

GSW Permit #: \_\_\_\_\_

Spud Date or Date Reached TD Completion Date or Recompletion Date

API No.: \_\_\_\_\_

Spot Description: \_\_\_\_\_

\_\_\_\_\_ - \_\_\_\_\_ - \_\_\_\_\_ Sec. \_\_\_\_\_ Twp. \_\_\_\_\_ S. R. \_\_\_\_\_  East  West

\_\_\_\_\_ Feet from  North /  South Line of Section

\_\_\_\_\_ Feet from  East /  West Line of Section

Footages Calculated from Nearest Outside Section Corner:

NE  NW  SE  SW

GPS Location: Lat: \_\_\_\_\_, Long: \_\_\_\_\_  
(e.g. xx.xxxxx) (e.g. -xxx.xxxxx)

Datum:  NAD27  NAD83  WGS84

County: \_\_\_\_\_

Lease Name: \_\_\_\_\_ Well #: \_\_\_\_\_

Field Name: \_\_\_\_\_

Producing Formation: \_\_\_\_\_

Elevation: Ground: \_\_\_\_\_ Kelly Bushing: \_\_\_\_\_

Total Vertical Depth: \_\_\_\_\_ Plug Back Total Depth: \_\_\_\_\_

Amount of Surface Pipe Set and Cemented at: \_\_\_\_\_ Feet

Multiple Stage Cementing Collar Used?  Yes  No

If yes, show depth set: \_\_\_\_\_ Feet

If Alternate II completion, cement circulated from: \_\_\_\_\_

feet depth to: \_\_\_\_\_ w/ \_\_\_\_\_ sx cmt.

**Drilling Fluid Management Plan**

*(Data must be collected from the Reserve Pit)*

Chloride content: \_\_\_\_\_ ppm Fluid volume: \_\_\_\_\_ bbls

Dewatering method used: \_\_\_\_\_

Location of fluid disposal if hauled offsite:

Operator Name: \_\_\_\_\_

Lease Name: \_\_\_\_\_ License #: \_\_\_\_\_

Quarter \_\_\_\_\_ Sec. \_\_\_\_\_ Twp. \_\_\_\_\_ S. R. \_\_\_\_\_  East  West

County: \_\_\_\_\_ Permit #: \_\_\_\_\_

**AFFIDAVIT**

I am the affiant and I hereby certify that all requirements of the statutes, rules and regulations promulgated to regulate the oil and gas industry have been fully complied with and the statements herein are complete and correct to the best of my knowledge.

Submitted Electronically

**KCC Office Use ONLY**

Confidentiality Requested

Date: \_\_\_\_\_

Confidential Release Date: \_\_\_\_\_

Wireline Log Received  Drill Stem Tests Received

Geologist Report / Mud Logs Received

UIC Distribution

ALT  I  II  III Approved by: \_\_\_\_\_ Date: \_\_\_\_\_

Operator Name: \_\_\_\_\_ Lease Name: \_\_\_\_\_ Well #: \_\_\_\_\_

Sec. \_\_\_\_\_ Twp. \_\_\_\_\_ S. R. \_\_\_\_\_  East  West County: \_\_\_\_\_

**INSTRUCTIONS:** Show important tops of formations penetrated. Detail all cores. Report all final copies of drill stems tests giving interval tested, time tool open and closed, flowing and shut-in pressures, whether shut-in pressure reached static level, hydrostatic pressures, bottom hole temperature, fluid recovery, and flow rates if gas to surface test, along with final chart(s). Attach extra sheet if more space is needed.

Final Radioactivity Log, Final Logs run to obtain Geophysical Data and Final Electric Logs must be emailed to [kcc-well-logs@kcc.ks.gov](mailto:kcc-well-logs@kcc.ks.gov). Digital electronic log files must be submitted in LAS version 2.0 or newer AND an image file (TIFF or PDF).

Drill Stem Tests Taken <input type="checkbox"/> Yes <input type="checkbox"/> No <i>(Attach Additional Sheets)</i>  Samples Sent to Geological Survey <input type="checkbox"/> Yes <input type="checkbox"/> No  Cores Taken <input type="checkbox"/> Yes <input type="checkbox"/> No Electric Log Run <input type="checkbox"/> Yes <input type="checkbox"/> No Geologist Report / Mud Logs <input type="checkbox"/> Yes <input type="checkbox"/> No  List All E. Logs Run:	<input type="checkbox"/> Log Formation (Top), Depth and Datum <input type="checkbox"/> Sample  Name Top Datum
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CASING RECORD <input type="checkbox"/> New <input type="checkbox"/> Used							
Report all strings set-conductor, surface, intermediate, production, etc.							
Purpose of String	Size Hole Drilled	Size Casing Set (In O.D.)	Weight Lbs. / Ft.	Setting Depth	Type of Cement	# Sacks Used	Type and Percent Additives

ADDITIONAL CEMENTING / SQUEEZE RECORD				
Purpose:	Depth Top Bottom	Type of Cement	# Sacks Used	Type and Percent Additives
<input type="checkbox"/> Perforate <input type="checkbox"/> Protect Casing <input type="checkbox"/> Plug Back TD <input type="checkbox"/> Plug Off Zone				

1. Did you perform a hydraulic fracturing treatment on this well?  Yes  No *(If No, skip questions 2 and 3)*
2. Does the volume of the total base fluid of the hydraulic fracturing treatment exceed 350,000 gallons?  Yes  No *(If No, skip question 3)*
3. Was the hydraulic fracturing treatment information submitted to the chemical disclosure registry?  Yes  No *(If No, fill out Page Three of the ACO-1)*

Date of first Production/Injection or Resumed Production/Injection:	Producing Method: <input type="checkbox"/> Flowing <input type="checkbox"/> Pumping <input type="checkbox"/> Gas Lift <input type="checkbox"/> Other <i>(Explain)</i> _____				
Estimated Production Per 24 Hours	Oil Bbls.	Gas Mcf	Water Bbls.	Gas-Oil Ratio	Gravity

DISPOSITION OF GAS: <input type="checkbox"/> Vented <input type="checkbox"/> Sold <input type="checkbox"/> Used on Lease <i>(If vented, Submit ACO-18.)</i>	METHOD OF COMPLETION: <input type="checkbox"/> Open Hole <input type="checkbox"/> Perf. <input type="checkbox"/> Dually Comp. <input type="checkbox"/> Commingled <i>(Submit ACO-5) (Submit ACO-4)</i>	PRODUCTION INTERVAL: Top Bottom
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Shots Per Foot	Perforation Top	Perforation Bottom	Bridge Plug Type	Bridge Plug Set At	Acid, Fracture, Shot, Cementing Squeeze Record <i>(Amount and Kind of Material Used)</i>

TUBING RECORD:	Size:	Set At:	Packer At:	
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Form	ACO1 - Well Completion
Operator	Russell Oil, Inc.
Well Name	HR Unit 1
Doc ID	1312475

All Electric Logs Run

COMPUTER PROCESSED INTERPRETATION
DUAL INDUCTION
DUAL COMPENSATED POROSITY
MICRORESISTIVITY
BOND LOG WITH GAMMA RAY

Form	ACO1 - Well Completion
Operator	Russell Oil, Inc.
Well Name	HR Unit 1
Doc ID	1312475

Tops

Name	Top	Datum
ANHYDRITE	2547	+478
BASE ANHYDRITE	2574	+451
HEEBNER	3998	-973
TORONTO	4024	-999
LANSING	4039	-1014
MUNCIE CREEK	4174	-1149
STARK SHALE	4254	-1229
HUSH SHALE	4288	-1263
BASE KC	4312	-1290
MARMATON	4340	-1315
PAWNEE	4454	-1429
FT SCOTT	4512	-1487
CHEROKEE SHALE	4541	-1516
JOHNSON	4582	-1557
MORROW SHALE	4600	-1575
MISSISSIPPI	4622	-1597
LTD	4700	-1675
RTD	4700	-1675



# 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. 1964

Date	Sec.	Twp.	Range	County	State	On Location	Finish
5-9-16	16	11	32	Logan	KS		10:00 am
Location: Route 1 Hwy 83/16 = 11-3							

Lease	Well No.	Owner
HR Unit	1	To Quality Oilwell Cementing, Inc.
Contractor		You are hereby requested to rent cementing equipment and furnish cementer and helper to assist owner or contractor to do work as listed.
Type Job		Charge To
S. Fair		Russell
Hole Size	T.D.	Street
12 1/4	324	
Csg.	Depth	City
8 5/8	303	
Tbg. Size	Depth	State
Tool	Depth	The above was done to satisfaction and supervision of owner agent or contractor.
Cement Left in Csg.	Shoe Joint	Cement Amount Ordered
15		170 80/20 3/4 2/4 1/4

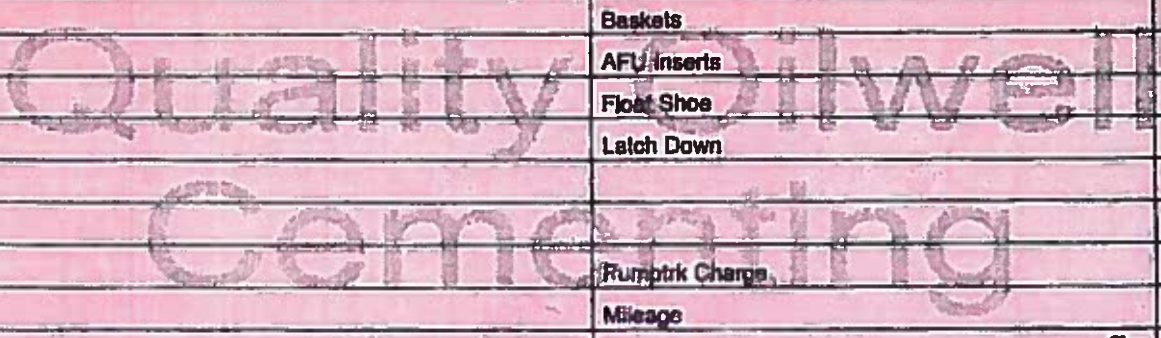
Meas Line Displace 18 1/4 BBL

EQUIPMENT			Common
Pumptrk	No.	Cement Helper	Poz. Mix
	5		
Bulktrk	No.	Driver	Gel.
		5	
Bulktrk	No.	Driver	Calcium
	15		

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 3/8 on bottom hole center	Handling
in 112950 and 50190	Mileage
Cement	

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

X Signature	Tax
	Discount
	Total Charge



# BASIC

energy services, L.P.

Stage #1

## TREATMENT REPORT

Customer Russell Oil, Inc.	Lease No.	Date 5/18/2016
Lease H R Unit	Well # 1	
Field Order # 13635	Station Pratt, KS	Casing 5 1/2
		Depth 4695
		County Logan
		State KS
Type Job ENW / 5 1/2 25+950 Long strings	Formation TD-	Legal Description 16-11-32

PIPE DATA		PERFORATING DATA		FLUID USED		TREATMENT RESUME		
Casing Size	Tubing Size	Shots/Ft		Acid		RATE	PRESS	ISIP
5 1/2								
Depth 4695	Depth	From	To	Pre Pad	Max			5 Min.
Volume 112	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 4668	Packer Depth	From	To	Flush Freshwater	Gas Volume			Total Load

Customer Representative Todd	Station Manager Kevin Goraby	Treater Darin Franklin
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Service Units	92911	58117	19919	19955	21010	84980	19860				
Driver Names	DC111	DC111	DC111	CURTIS	CURTIS	Rocky	Rocky				

Time	Casing Pressure	Tubing Pressure	Bbls. Pumped	Rate	Service Log
12:30 pm					on location / service meeting
					111 jobs 5 1/2 15.5 H casing set @ 4695
					T-2, S, R, 11, 13, 15, 52
					B-10, 50
					DU TOOL - SI 2559'
					175 sk MAZ cement, Russell Oil Blend
					15.3 ppg, 1.36 vol. 12, 5.52 water
					Pipe on bottom & best circulation
4:25 pm	200		24	5	Pump 24 bbls Superflush 1)
	200		5	5	Pump 5 bbls water
	200		42	6	Mix 175 sk cement
					Shut down
					Wash pump 21.00
					Drop plug
	100		0	6	Set 90' displacement
	600		90	6	Life Pressure
	800		100	3	Slow Rate
5:30 pm	2,000		109	3	Bump Plug
					Release
					Drop DV opening Tool & Plug Rate
	800		1/4	1/2	Open DV Tool

# BASIC

energy services, L.P.

Stage #2

## TREATMENT REPORT

Customer Kusson Oil, Inc.	Lease No.	Date 5/18/2016
Lease H R Unit	Well # 1	
Field Order # 13685	Station Pratt, KS	Casing 5 1/2
	Depth 4695	County Logan
Type Job CNW/5 1/2 2stage Longstring	Formation TD-4700	State KS
		Legal Description 16-11-32

PIPE DATA		PERFORATING DATA		FLUID USED		TREATMENT RESUME		
Casing Size	Tubing Size	Shots/Ft		Acid		RATE	PRESS	ISIP
5 1/2								5 Min.
Depth 4695	Depth	From	To	Pre Pad		Max		10 Min.
Volume 112	Volume	From	To	Pad		Min		15 Min.
Max Press	Max Press	From	To	Frac		Avg		
Well Connection	Annulus Vol.	From	To			HHP Used		Annulus Pressure
Plug Depth 4665	Packer Depth	From	To	Flush Freshwater		Gas Volume		Total Load

Customer Representative Todd	Station Manager Kevin Gorav	Treater Darin Frsnick
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Service Units	92911	38117	19919	19955	2106	84980	19860				
Driver Names	Darin	Darin	Darin	Curtis	Curtis	Rocky	Rocky				

Time	Casing Pressure	Tubing Pressure	Bbls. Pumped	Rate	Service Log
					3255K A-Con Blend Cement, 3% HCL, 1/4% PELLETS
					11.6 PPG, 2.77 VISC, 16.75 WSPR
5:45 pm					Circulate 1 hour
6:45 pm	200		160		mix 3255K cement
					Shut down
					Wash Pump & lines
					Release Plug
	300		0	7	Start displacement
	600		450	7	L.P. Pressure
	1,000		50	3	Slow Rate
	2,000		62	3	Burnt Plug - Close DU Tool
					Release - Hold
					Circulate 12 bbls Cement
					Job Complete / Darin & Crew
					Thank you !!!



# KITT NOAH

PETROLEUM GEOLOGIST  
Kansas License #229



## GEOLOGIST'S REPORT

DRILLING TIME AND SAMPLE LOG

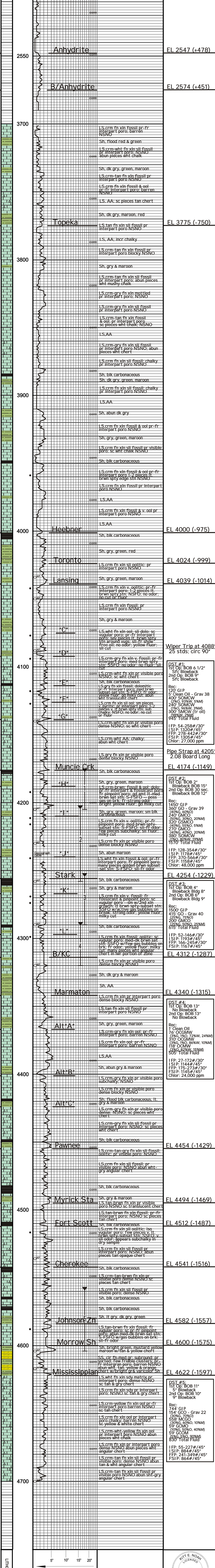
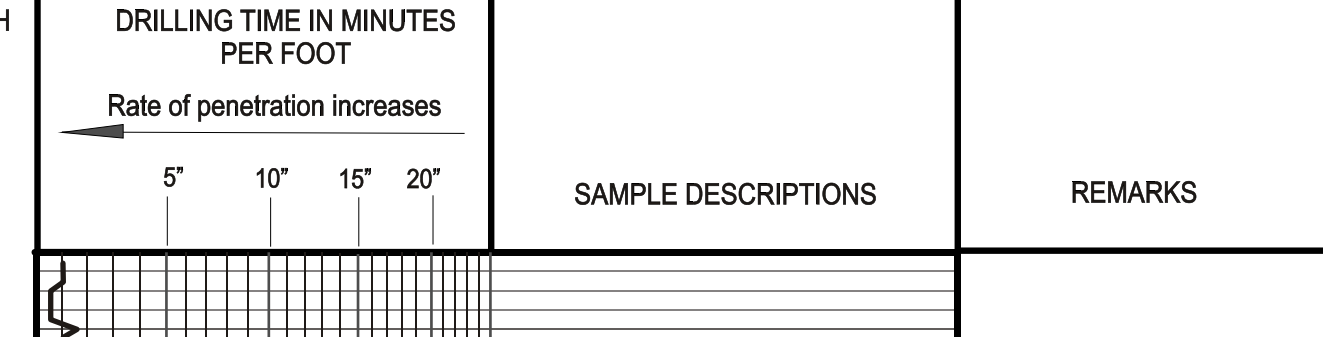
OPERATOR: Russell Oil, Inc.  
LEASE: HR Unit WELL NO.: #1  
LOCATION: 496FS & 196FE  
SEC.: 16 TWP: 11S RNG.: 32W  
COUNTY: Logan STATE: Kansas

FORMATION LOG  
Anydrife 2547 (+478)  
B/Anydrife 2574 (+451)  
Heebner 4000 (-975)  
Toronto 4024 (-999)  
Lansing 4039 (-1014)  
Stark 4284 (-1229)  
B/KC 4312 (-1287)  
Marmaton 4340 (-1315)  
Pawnee 4454 (-1429)  
Cherokee 4541 (-1516)  
Mississippian 4622 (-1597)  
R/D 4700 (-1675)  
LTD 4700 (-1675)

CONTRACTOR: WW Drilling Rig #2  
COMM. 5-2-2016 COMPL. 5-18-2016  
RTD: 4700 LTD: 4700  
SAMPLER SAVED FROM: 3700 TO TD  
DRILLING TIME SAVED FROM: 3700 TO TD  
SAMPLER EXAMINED FROM: 3700 TO TD  
GEOLOGICAL SUPERVISION FROM: 3730 TO TD  
MUD UP: 3400 MUD TYPE: Chemical  
Mudlog - Reid Atkins  
DRILL STEWARTS TAKEN: 5  
Lithobite - Bradley Walters  
SURVEYS: Pioneer Energy Services  
Dial Induction Porosity  
Microlog

ELEVATION:  
KB: 3025  
GL: 3020  
MEASURED FROM:  
KB  
#15-109-21-458

### LEGEND



**DST #1:**  
1st Op: BOB 6 1/2"  
Sfc Blowback  
2nd Op: BOB 9"  
Sfc Blowback

Rec:  
120' GIP  
5' Clean Oil - Grav 38  
400' SOMCW  
(2%G, 93%W, 5%M)  
240' SOMCW  
(1%G, 96%W, 3%M)  
300' SOMCW (tr oil)  
(0.8%W, 2%M)  
945' Total Fluid

IFP: 54-258#/30"  
1SIP: 1320#/45"  
FFP: 278-442#/30"  
FSIP: 1305#/45"  
Chlor: 27,000 ppm

**Pipe Strap at Long**  
2.08 Board Long

**EL 4174 (-1149)**

**DST #2:**  
1st Op: BOB 2"  
Blowback BOB 15"  
2nd Op: BOB 30 sec.  
Blowback BOB 12"

Rec:  
1450' GIP  
360' GO - Grav 39  
(40%G, 60%O)  
240' GCMCO  
(50%G, 30%O, 20%M)  
320' GCMCO  
(40%G, 50%O, 5%M)  
270' GCMCO  
(40%G, 50%O, 20%M)  
380' SOMCW  
(1%G, 82%W, 19%M)  
1570' Total Fluid

IFP: 128-354#/30"  
1SIP: 1178#/45"  
FFP: 370-566#/30"  
FSIP: 1158#/45"  
Chlor: 48,000 ppm

**EL 4254 (-1229)**

**DST #3:**  
1st Op: BOB 4"  
Blowback Bldg 8"  
2nd Op: BOB 6"  
Blowback Bldg 9"

Rec:  
1500' GIP  
415' GO - Grav 40  
(25%G, 75%O)  
200' GCMCO  
(25%G, 50%O, 25%M)  
615' Total Fluid

IFP: 52-146#/30"  
1SIP: 1193#/45"  
FFP: 166-245#/30"  
FSIP: 1167#/45"

**EL 4312 (-1287)**

**DST #4:**  
1st Op: BOB 13"  
No Blowback  
2nd Op: BOB 13"  
No Blowback

Rec:  
1' Clean Oil  
76' OCGMW  
(3%G, 1%O, 72%W, 24%M)  
310' OCGMW  
(3%G, 1%O, 86%W, 10%M)  
118' OCMW  
(3%O, 82%W, 15%M)  
59' GC OIL  
(10%G, 50%O, 40%M)  
1505' Total Fluid

IFP: 27-172#/30"  
1SIP: 1144#/45"  
FFP: 175-273#/30"  
FSIP: 1145#/45"  
Chlor: 24,000 ppm

**EL 4454 (-1429)**

**DST #5:**  
1st Op: BOB 11"  
5' Blowback  
2nd Op: BOB 10"  
9' Blowback

Rec:  
744' GIP  
154' GO - Grav 22  
(30%G, 70%O)  
558' MCGW  
(5%G, 60%O, 10%M)  
59' GC MO  
(10%G, 50%O, 40%M)  
(5%G, 53%O, 90%M)  
830' Total Fluid

IFP: 55-227#/45"  
1SIP: 884#/45"  
FFP: 241-349#/45"  
FSIP: 864#/45"

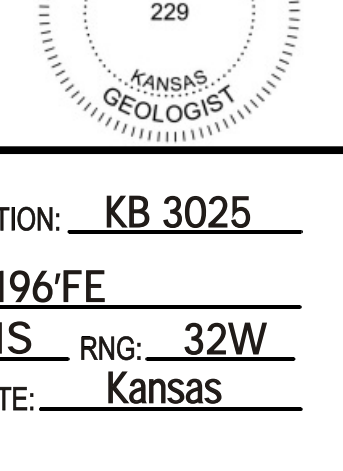
**EL 4622 (-1597)**

ELEVATION: KB 3025

OPERATOR: Russell Oil, Inc. LOCATION: 496FS & 196FE

LEASE: HR Unit WELL NO.: #1 SEC.: 16 TWP.: 11S RNG.: 32W

API: 15-109-21-458 FIELD: Rumback COUNTY: Logan STATE: Kansas





**TRILOBITE  
TESTING, INC**

# DRILL STEM TEST REPORT

Russell Oil, Inc  
Po Box 8050  
Edmond, Ok 73083  
ATTN: Kitt Noah

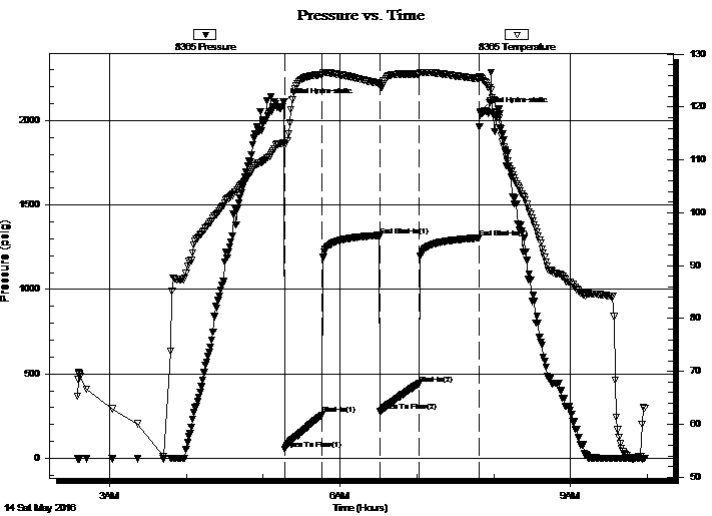
**16 11s 32w Logan, Ks**  
**HR Unit #1**  
Job Ticket: 64644      **DST#: 1**  
Test Start: 2016.05.14 @ 02:35:00

## GENERAL INFORMATION:

Formation: **LKC - H**  
Deviated: No Whipstock: ft (KB)  
Time Tool Opened: 05:16:45  
Time Test Ended: 09:58:30  
Interval: **4174.00 ft (KB) To 4205.00 ft (KB) (TVD)**  
Total Depth: 4205.00 ft (KB) (TVD)  
Hole Diameter: 7.88 inches Hole Condition: Good  
Test Type: Conventional Bottom Hole (Initial)  
Tester: Bradley Walter  
Unit No: 69  
Reference Elevations: 3025.00 ft (KB)  
3020.00 ft (CF)  
KB to GR/CF: 5.00 ft

**Serial #: 8365**      **Inside**  
Press@RunDepth: 441.76 psig @ 4175.00 ft (KB)      Capacity: 8000.00 psig  
Start Date: 2016.05.14      End Date: 2016.05.14      Last Calib.: 2016.05.14  
Start Time: 02:35:05      End Time: 09:58:29      Time On Btm: 2016.05.14 @ 05:16:15  
Time Off Btm: 2016.05.14 @ 07:49:15

**TEST COMMENT:** IF: BOB @ 6 1/2 min.  
IS: Surface return.  
FF: BOB @ 9 min.  
FS: Surface return.



## PRESSURE SUMMARY

Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	2108.82	113.18	Initial Hydro-static
1	54.25	112.65	Open To Flow (1)
30	258.27	126.11	Shut-In(1)
75	1320.39	124.51	End Shut-In(1)
75	277.67	124.04	Open To Flow (2)
106	441.76	126.20	Shut-In(2)
152	1304.85	125.34	End Shut-In(2)
153	2052.83	125.62	Final Hydro-static

## Recovery

Length (ft)	Description	Volume (bbl)
300.00	smcw 2m 98w (trace oil)	3.12
240.00	somcw 1o 3m 96w	3.37
400.00	somcw 2o 5m 93w	5.61
5.00	oil 100o	0.07
0.00	120' GIP	0.00

## Gas Rates

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





**TRILOBITE  
TESTING, INC**

# DRILL STEM TEST REPORT

## FLUID SUMMARY

Russell Oil, Inc  
Po Box 8050  
Edmond, Ok 73083  
ATTN: Kitt Noah

**16 11s 32w Logan, Ks**  
**HR Unit #1**  
Job Ticket: 64644      **DST#: 1**  
Test Start: 2016.05.14 @ 02:35:00

### Mud and Cushion Information

Mud Type: Gel Chem	Cushion Type:	Oil API: 38 deg API
Mud Weight: 9.00 lb/gal	Cushion Length: ft	Water Salinity: 27000 ppm
Viscosity: 50.00 sec/qt	Cushion Volume: bbl	
Water Loss: 6.40 in <sup>3</sup>	Gas Cushion Type:	
Resistivity: ohm.m	Gas Cushion Pressure: psig	
Salinity: 1800.00 ppm		
Filter Cake: 1.00 inches		

### Recovery Information

Recovery Table

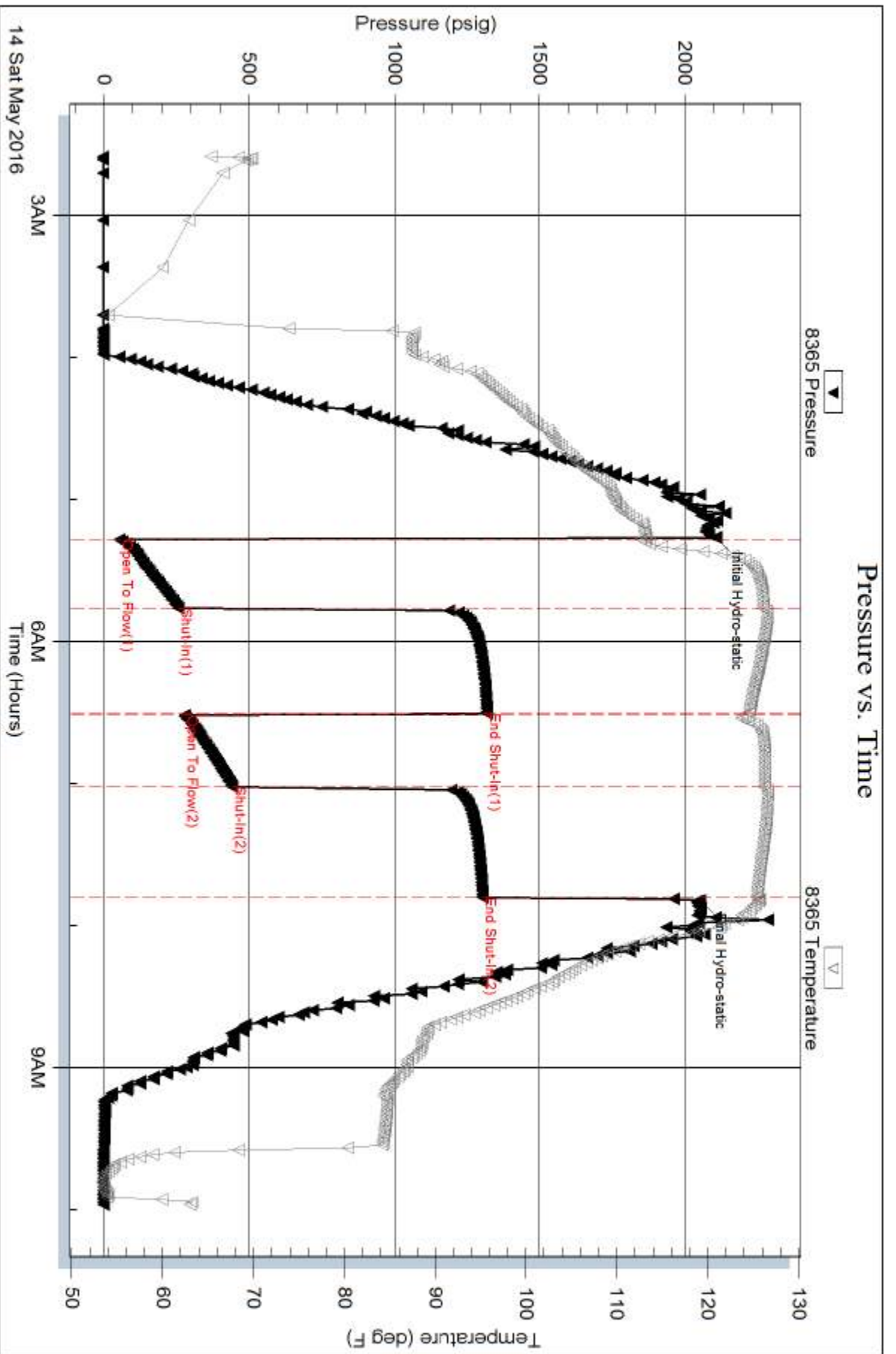
Length ft	Description	Volume bbl
300.00	smcw 2m 98w (trace oil)	3.124
240.00	somcw 1o 3m 96w	3.367
400.00	somcw 2o 5m 93w	5.611
5.00	oil 100o	0.070
0.00	120' GIP	0.000

Total Length: 945.00 ft      Total Volume: 12.172 bbl

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

Laboratory Name:      Laboratory Location:

Recovery Comments: rw is .290@ 60f = 27000ppm

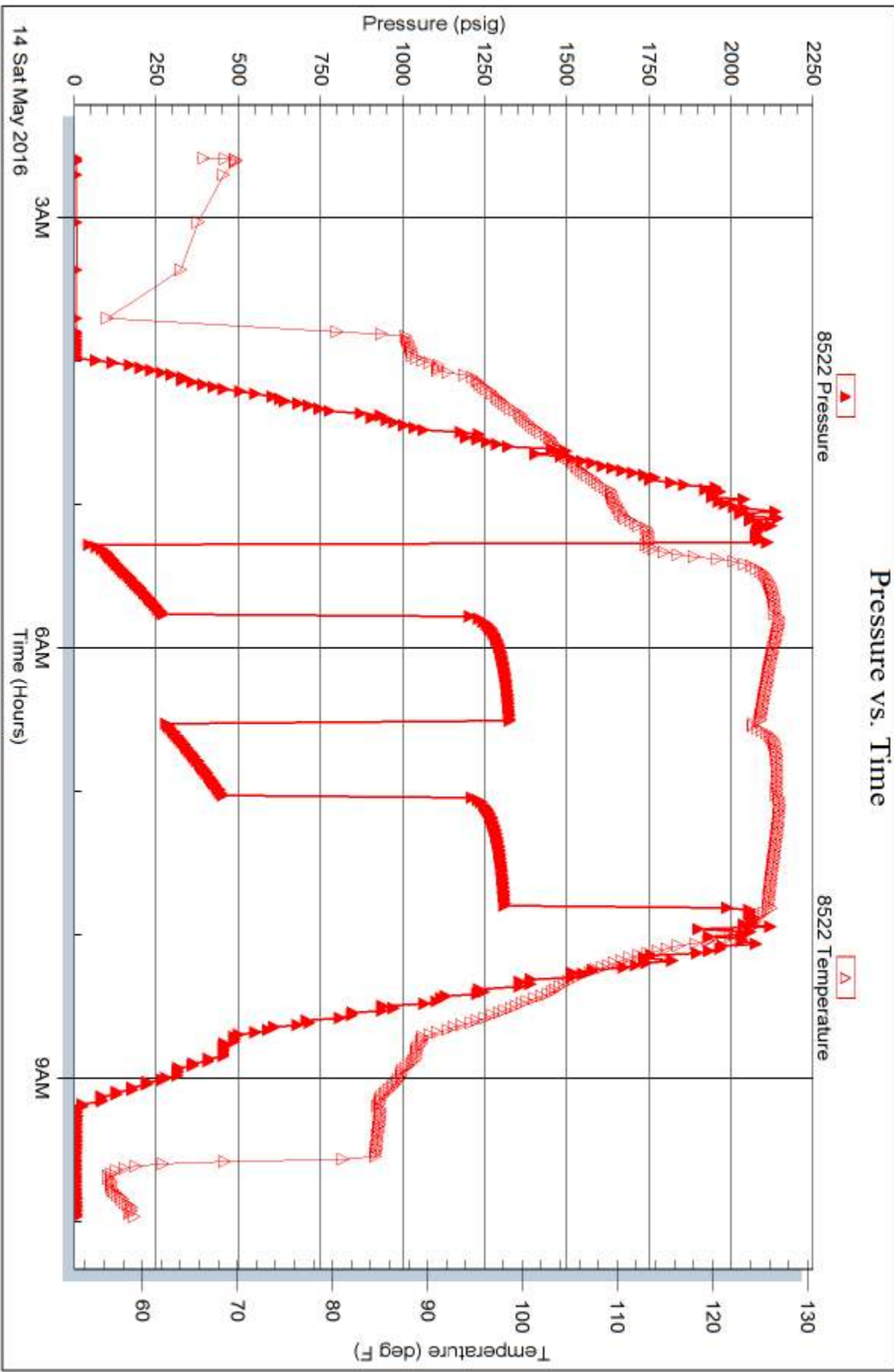


Serial #: 8522

Outside Russell Oil, Inc

HR Unit #1

DST Test Number: 1



Trilobite Testing, Inc

Ref. No: 64644

Printed: 2016.05.14 @ 11:44:05



**TRILOBITE  
TESTING, INC**

# DRILL STEM TEST REPORT

Russell Oil, Inc  
Po Box 8050  
Edmond, Ok 73083  
ATTN: Kitt Noah

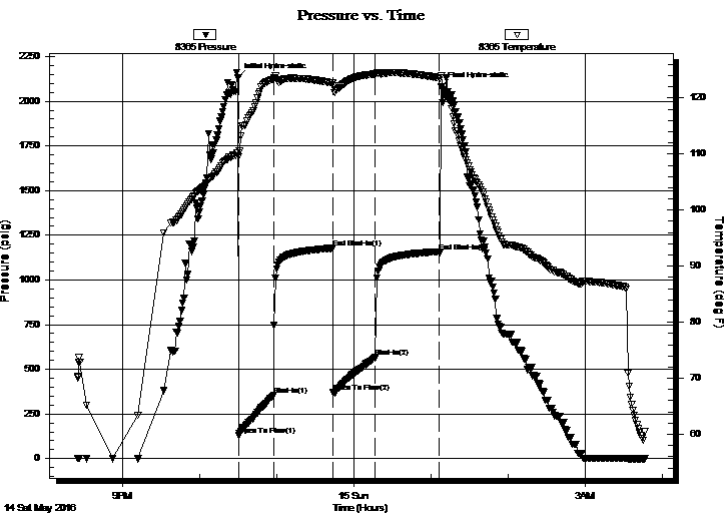
**16 11s 32w Logan, Ks**  
**HR Unit #1**  
Job Ticket: 64645      **DST#: 2**  
Test Start: 2016.05.14 @ 20:25:00

## GENERAL INFORMATION:

Formation: **LKC - I & J**  
Deviated: No Whipstock:                      ft (KB)  
Time Tool Opened: 22:30:15  
Time Test Ended: 03:45:45  
Interval: **4202.00 ft (KB) To 4258.00 ft (KB) (TVD)**  
Total Depth: 4258.00 ft (KB) (TVD)  
Hole Diameter: 7.88 inches Hole Condition: Good  
Test Type: Conventional Bottom Hole (Reset)  
Tester: Bradley Walter  
Unit No: 69  
Reference Elevations: 3025.00 ft (KB)  
3020.00 ft (CF)  
KB to GR/CF: 5.00 ft

**Serial #: 8365      Inside**  
Press@RunDepth: 565.94 psig @ 4203.00 ft (KB)      Capacity: 8000.00 psig  
Start Date: 2016.05.14      End Date: 2016.05.15      Last Calib.: 2016.05.15  
Start Time: 20:25:05      End Time: 03:45:44      Time On Btm: 2016.05.14 @ 22:29:45  
Time Off Btm: 2016.05.15 @ 01:07:45

TEST COMMENT: IF: BOB @ 2 min.  
IS: BOB @ 15, receded to 5".  
FF: BOB @ 30 sec.  
FS: BOB @ 12 min. receded to 6".



## PRESSURE SUMMARY

Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	2131.67	110.26	Initial Hydro-static
1	128.22	109.48	Open To Flow (1)
28	353.74	123.40	Shut-In(1)
74	1177.95	122.67	End Shut-In(1)
74	369.66	122.18	Open To Flow (2)
107	565.94	124.28	Shut-In(2)
157	1157.90	123.61	End Shut-In(2)
158	2079.40	124.05	Final Hydro-static

## Recovery

Length (ft)	Description	Volume (bbl)
380.00	somcw 1o 19m 80w	4.25
270.00	gmco 40g 20m 40o	3.79
320.00	gsmco 40g 5m 55o	4.49
240.00	gmco 50g 20m 30o	3.37
360.00	go 40g 60o	5.05
0.00	1450 GIP	0.00

\* Recovery from multiple tests

## Gas Rates

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







**TRILOBITE  
TESTING, INC**

# DRILL STEM TEST REPORT

## FLUID SUMMARY

Russell Oil, Inc  
Po Box 8050  
Edmond, Ok 73083  
ATTN: Kitt Noah

**16 11s 32w Logan, Ks**  
**HR Unit #1**  
Job Ticket: 64645      **DST#: 2**  
Test Start: 2016.05.14 @ 20:25:00

### Mud and Cushion Information

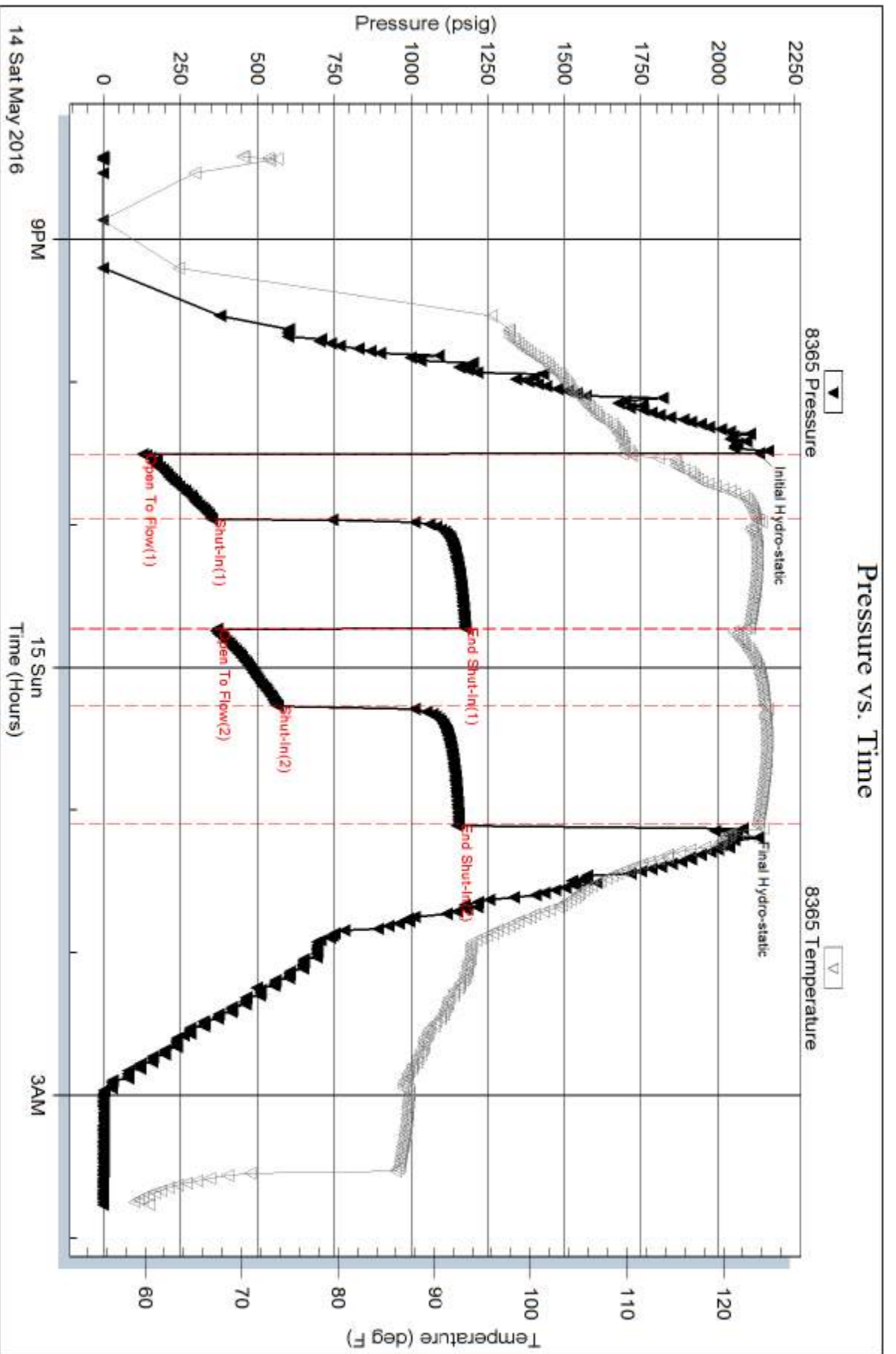
Mud Type: Gel Chem	Cushion Type:	Oil API: 39 deg API
Mud Weight: 9.00 lb/gal	Cushion Length: ft	Water Salinity: 48000 ppm
Viscosity: 54.00 sec/qt	Cushion Volume: bbl	
Water Loss: 6.40 in <sup>3</sup>	Gas Cushion Type:	
Resistivity: ohm.m	Gas Cushion Pressure: psig	
Salinity: 1800.00 ppm		
Filter Cake: 1.00 inches		

### Recovery Information

Recovery Table

Length ft	Description	Volume bbl
380.00	somcw 1o 19m 80w	4.246
270.00	gmco 40g 20m 40o	3.787
320.00	gsmco 40g 5m 55o	4.489
240.00	gmco 50g 20m 30o	3.367
360.00	go 40g 60o	5.050
0.00	1450 GIP	0.000

Total Length: 1570.00 ft      Total Volume: 20.939 bbl  
 Num Fluid Samples: 0      Num Gas Bombs: 0      Serial #:  
 Laboratory Name:      Laboratory Location:  
 Recovery Comments: rw is .250 @ 44F = 48000PPM

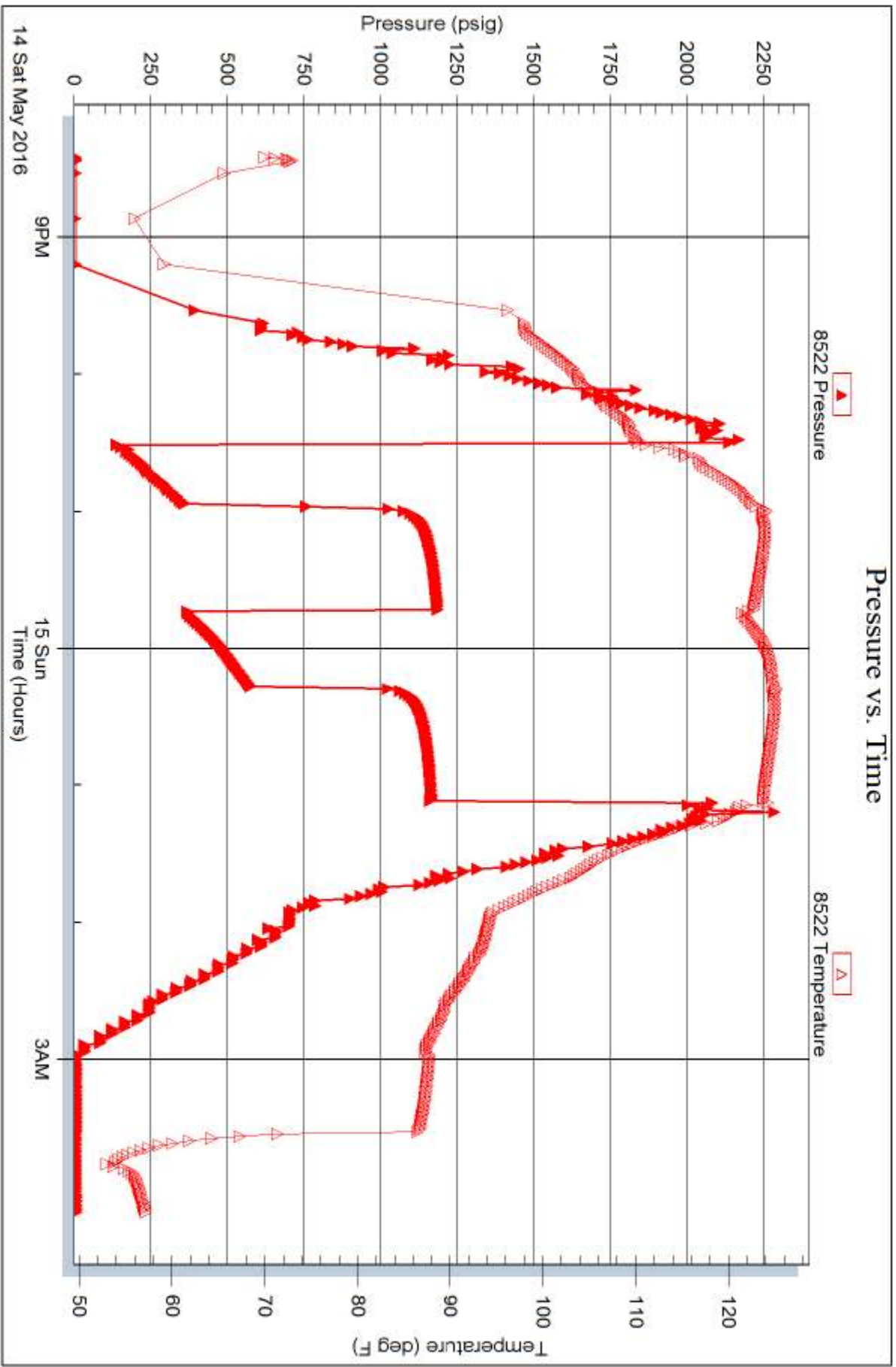


Serial #: 8522

Outside Russell Oil, Inc

HR Unit #1

DST Test Number: 2



Trilobite Testing, Inc

Ref. No: 64645

Printed: 2016.05.15 @ 08:08:16







**TRILOBITE  
TESTING, INC**

# DRILL STEM TEST REPORT

## FLUID SUMMARY

Russell Oil, Inc

**16 11s 32w Logan, Ks**

Po Box 8050  
Edmond, Ok 73083

**HR Unit #1**

Job Ticket: 64646

**DST#: 3**

ATTN: Kitt Noah

Test Start: 2016.05.15 @ 10:25:00

### Mud and Cushion Information

Mud Type: Gel Chem

Cushion Type:

Oil API:

40 deg API

Mud Weight: 9.00 lb/gal

Cushion Length:

ft

Water Salinity:

0 ppm

Viscosity: 50.00 sec/qt

Cushion Volume:

bbbl

Water Loss: 6.40 in<sup>3</sup>

Gas Cushion Type:

Resistivity: ohm.m

Gas Cushion Pressure:

psig

Salinity: 1800.00 ppm

Filter Cake: 1.00 inches

### Recovery Information

Recovery Table

Length ft	Description	Volume bbl
200.00	gmco 25g 25m 50o	1.721
415.00	go 25g 75o	5.821
0.00	1500' GIP	0.000

Total Length: 615.00 ft

Total Volume: 7.542 bbl

Num Fluid Samples: 0

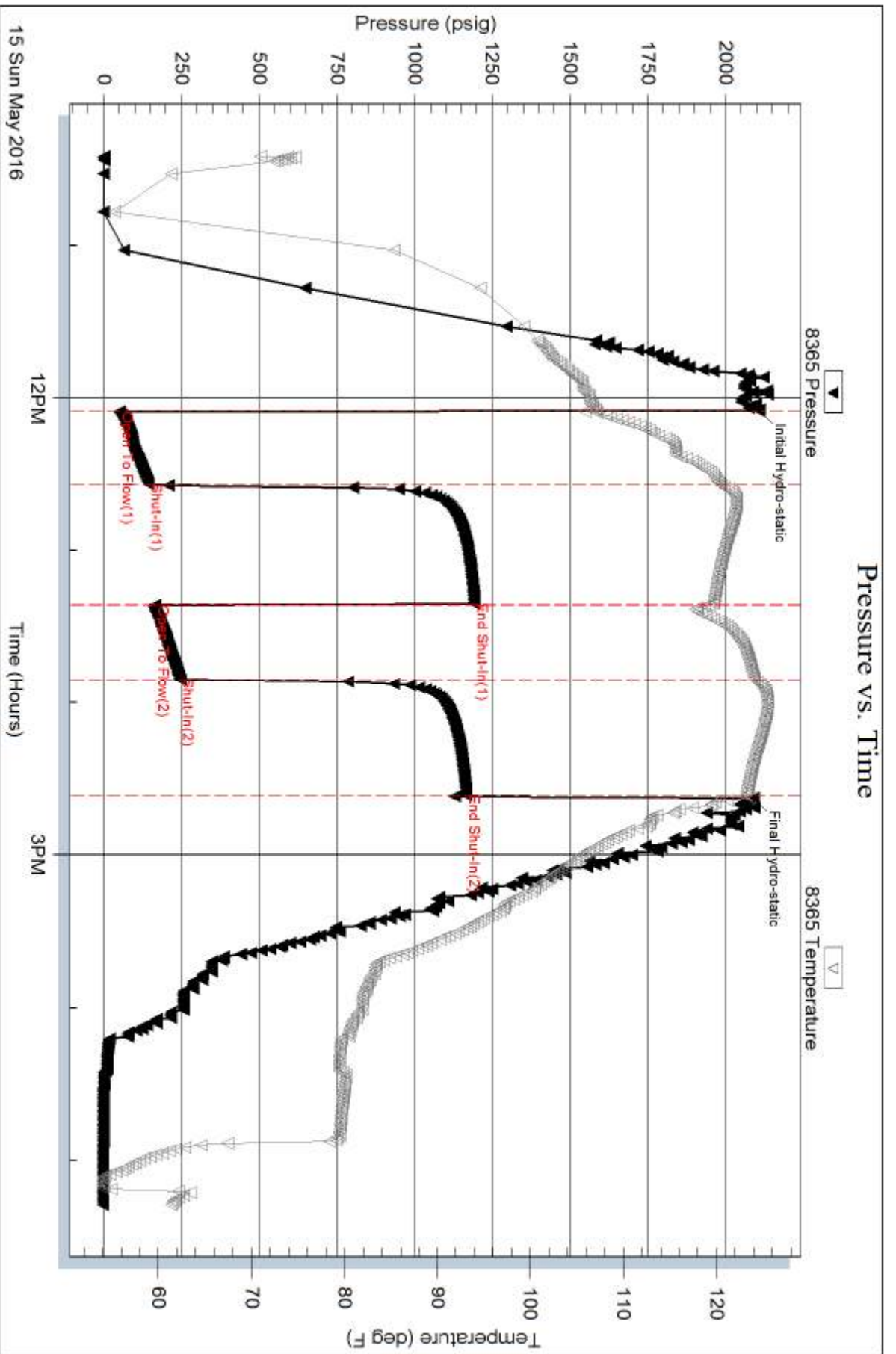
Num Gas Bombs: 0

Serial #:

Laboratory Name:

Laboratory Location:

Recovery Comments:

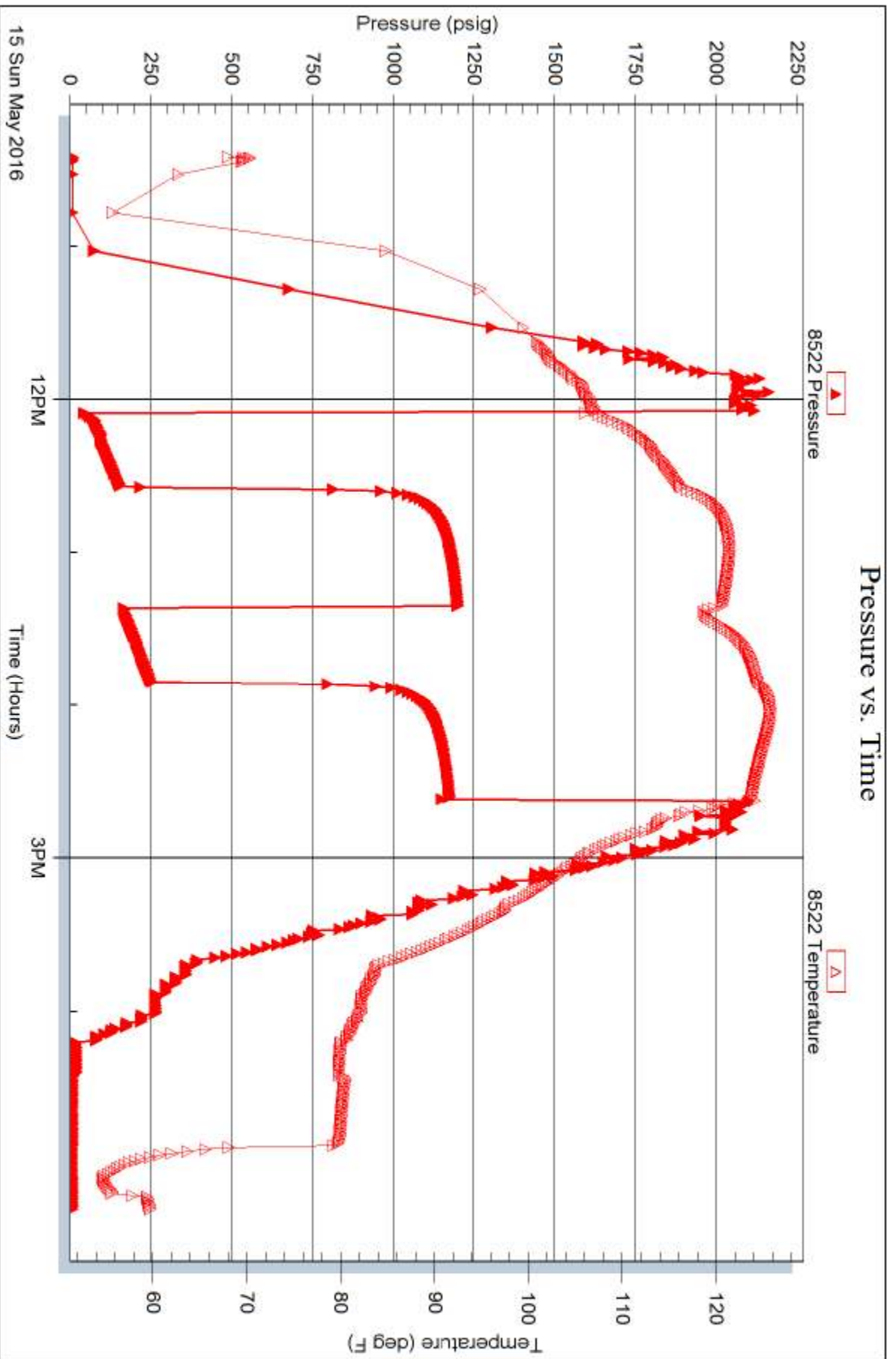


Serial #: 8522

Outside Russell Oil, Inc

HR Unit #1

DST Test Number: 3



Triobite Testing, Inc

Ref. No: 64646

Printed: 2016.05.15 @ 22:34:37





**TRILOBITE TESTING, INC.**

# DRILL STEM TEST REPORT

Russell Oil, Inc  
 Po Box 8050  
 Edmond, Ok 73083  
 ATTN: Kitt Noah

**16 11s 32w Logan, Ks**  
**HR Unit #1**  
 Job Ticket: 64572      **DST#: 4**  
 Test Start: 2016.05.16 @ 00:37:15

## GENERAL INFORMATION:

Formation: **L**  
 Deviated: No Whipstock: ft (KB)  
 Time Tool Opened: 02:30:30  
 Time Test Ended: 06:50:00  
**Interval: 4288.00 ft (KB) To 4320.00 ft (KB) (TVD)**  
 Total Depth: 4320.00 ft (KB) (TVD)  
 Hole Diameter: 7.88 inches Hole Condition: Fair  
 Test Type: Conventional Bottom Hole (Initial)  
 Tester: Mike Roberts  
 Unit No: 75  
 Reference Elevations: 3025.00 ft (KB)  
 3020.00 ft (CF)  
 KB to GR/CF: 5.00 ft

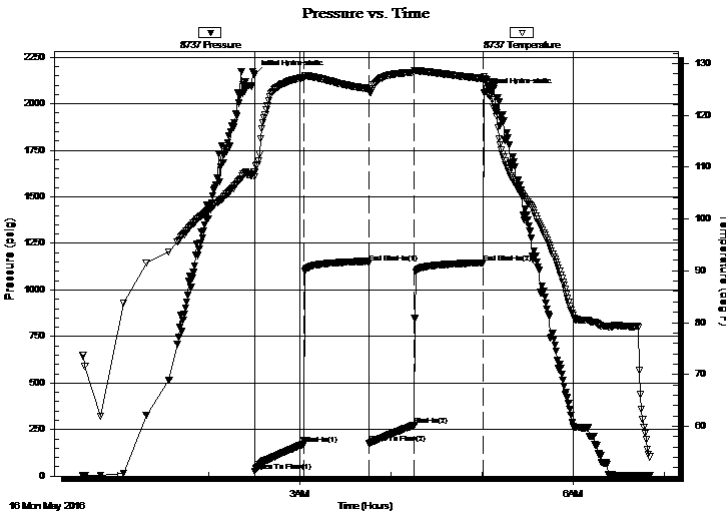
## Serial #: 8737

**Outside**

Press@RunDepth: 273.61 psig @ 4315.00 ft (KB)      Capacity: 8000.00 psig  
 Start Date: 2016.05.16      End Date: 2016.05.16      Last Calib.: 2016.05.16  
 Start Time: 00:37:15      End Time: 06:50:00      Time On Btm: 2016.05.16 @ 02:30:15  
 Time Off Btm: 2016.05.16 @ 05:01:15

TEST COMMENT: IF:BOB in 13 min.  
 IS: No return blow  
 FF:BOB in 13 min.  
 FS:No return blow

## PRESSURE SUMMARY



Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	2158.95	109.03	Initial Hydro-static
1	27.22	108.15	Open To Flow (1)
33	172.24	127.30	Shut-In(1)
75	1144.58	125.05	End Shut-In(1)
76	175.35	124.64	Open To Flow (2)
105	273.61	128.29	Shut-In(2)
151	1145.44	127.05	End Shut-In(2)
151	2057.43	127.46	Final Hydro-static

## Recovery

Length (ft)	Description	Volume (bbl)
118.00	ocmw 3%o 15%m 82%w	0.58
310.00	ocgmw 1%o 3%g 10%m 86%w	4.35
76.00	ocgmw 1%o 3%g 24%m 72%w	1.07
1.00	free oil 100% o	0.01

## Gas Rates

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



**TRILOBITE  
TESTING, INC**

# DRILL STEM TEST REPORT

**FLUID SUMMARY**

Russell Oil, Inc  
Po Box 8050  
Edmond, Ok 73083  
ATTN: Kitt Noah

**16 11s 32w Logan, Ks**  
**HR Unit #1**  
Job Ticket: 64572      **DST#: 4**  
Test Start: 2016.05.16 @ 00:37:15

## Mud and Cushion Information

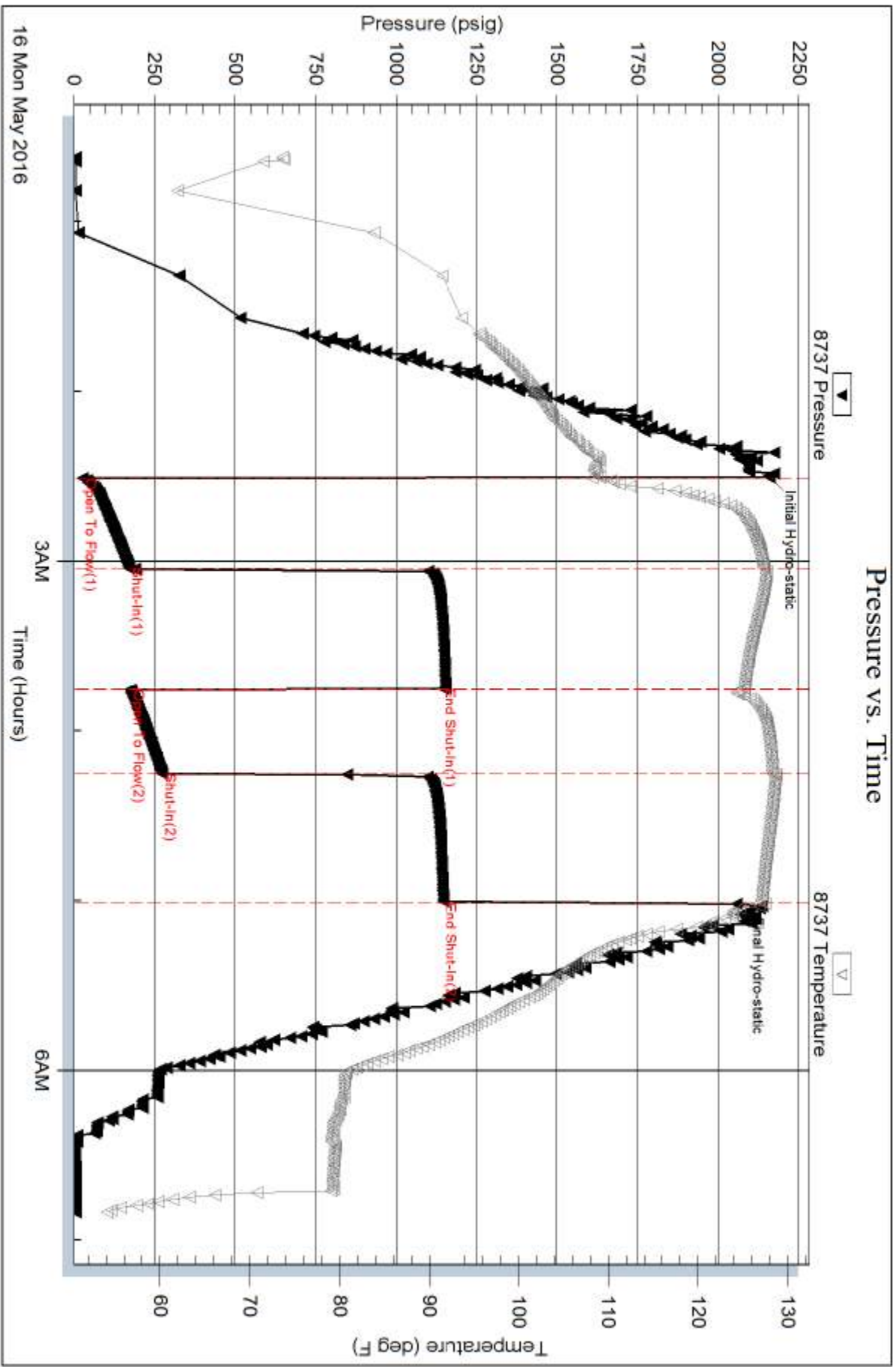
Mud Type: Gel Chem	Cushion Type:	Oil API: 0 deg API
Mud Weight: 9.00 lb/gal	Cushion Length: ft	Water Salinity: 24000 ppm
Viscosity: 53.00 sec/qt	Cushion Volume: bbl	
Water Loss: 8.77 in <sup>3</sup>	Gas Cushion Type:	
Resistivity: 0.00 ohm.m	Gas Cushion Pressure: psig	
Salinity: 2500.00 ppm		
Filter Cake: 1.00 inches		

## Recovery Information

Recovery Table

Length ft	Description	Volume bbl
118.00	ocmw 3%o 15%m 82%w	0.580
310.00	ocgmw 1%o 3%g 10%m 86%w	4.348
76.00	ocgmw 1%o 3%g 24%m 72%w	1.066
1.00	free oil 100% o	0.014

Total Length: 505.00 ft      Total Volume: 6.008 bbl  
Num Fluid Samples: 0      Num Gas Bombs: 0      Serial #:  
Laboratory Name:      Laboratory Location:  
Recovery Comments: RW= .62@ 47.5 24,000 ppm







**TRILOBITE  
TESTING, INC**

# DRILL STEM TEST REPORT

## FLUID SUMMARY

Russell Oil, Inc  
Po Box 8050  
Edmond, Ok 73083  
ATTN: Kitt Noah

**16 11s 32w Logan, Ks**  
**HR Unit #1**  
Job Ticket: 64573      **DST#: 5**  
Test Start: 2016.05.17 @ 08:08:15

### Mud and Cushion Information

Mud Type: Gel Chem	Cushion Type:	Oil API: 22 deg API
Mud Weight: 9.00 lb/gal	Cushion Length: ft	Water Salinity: 0 ppm
Viscosity: 52.00 sec/qt	Cushion Volume: bbl	
Water Loss: 8.78 in <sup>3</sup>	Gas Cushion Type:	
Resistivity: 0.00 ohm.m	Gas Cushion Pressure: psig	
Salinity: 3300.00 ppm		
Filter Cake: 1.00 inches		

### Recovery Information

Recovery Table

Length ft	Description	Volume bbl
59.00	gcom 5%g 5%o 90%m	0.290
59.00	gcmo 10%g 40%m 50%o	0.290
558.00	mcgo 10%m 30%g 60%o	7.827
154.00	gco 30%g 70%o	2.160
0.00	GIP= 744 ft	0.000

Total Length: 830.00 ft      Total Volume: 10.567 bbl  
Num Fluid Samples: 0      Num Gas Bombs: 0      Serial #:  
Laboratory Name:      Laboratory Location:  
Recovery Comments: API= 21@ 70 corrected to 22@ 60

