KOLAR Document ID: 1459555

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 # 5123
Name: Pickrell Drilling Company, Inc.
Address 1: 100 S MAIN STE 505
Address 2:
City: WICHITA State: KS Zip: 67202 + 3738
Contact Person: David Pauly
Phone: (316) 262-8420
CONTRACTOR: License # 5123
Name: Pickrell Drilling Company, Inc.
Wellsite Geologist: Aaron Young
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.)*: D&A

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 #:

03/29/2019	04/6/2019	04/6/2019
Spud Date or Recompletion Date	Date Reached TD	Completion Date or Recompletion Date

API No.: 15-135-26061-00-00
Spot Description:
SE - SE - NW - NE Sec. 19 Twp. 17 S. R. 25 ☐ East ☑ West
1025 Feet from ☑ North / ☐ South Line of Section
1525 Feet from ☑ East / ☐ West Line of Section
Footages Calculated from Nearest Outside Section Corner:
☑ NE ☐ NW ☐ SE ☐ SW
GPS Location: Lat: *(e.g. xx.xxxxx)* , Long: *(e.g. -xxx.xxxxx)*
Datum: ☐ NAD27 ☐ NAD83 ☐ WGS84
County: Ness
Lease Name: NORTON J Well #: 5
Field Name: Lazy 17
Producing Formation: D&A
Elevation: Ground: 2487 Kelly Bushing: 2494
Total Vertical Depth: 2494 Plug Back Total Depth:
Amount of Surface Pipe Set and Cemented at: 213 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: 7000 ppm Fluid volume: 20 bbls
Dewatering method used: Hauled to Disposal
Location of fluid disposal if hauled offsite:
Operator Name: Pickrell Drilling Company, Inc
Lease Name: Norton F License #: 5123
Quarter NE Sec. 24 Twp. 17 S. R. 26 ☐ East ☑ West
County: Ness Permit #: D16826

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:** Karen Ritter **Date:** 06/10/2019

Operator Name: Pickrell Drilling Company, Inc. Lease Name: NORTON J Well #: 5

Sec. 19 Twp. 17 S. R. 25 ☐ East ☑ West County: Ness

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 *(Attach Additional Sheets)*	☑ Yes	☐ No
Samples Sent to Geological Survey	☑ Yes	☐ No
Cores Taken	☐ Yes	☑ No
Electric Log Run	☑ Yes	☐ No
Geologist Report / Mud Logs	☑ Yes	☐ No

List All E. Logs Run:

Radiation Guard

☐ Log Formation (Top), Depth and Datum ☐ Sample

Name	Top	Datum
Hush Puckney	4100	-1606
A. Scott	4322	-1828
Cheo. Shale	4347	-1853
Mississippi	4416	-1922

CASING RECORD ☑ New ☐ 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
Surface	12.25	8.625	23	213	Poz Mix	150	80-20, 2% gel, 3% cc

ADDITIONAL CEMENTING / SQUEEZE RECORD

Purpose:	Depth Top Bottom	Type of Cement	# Sacks Used	Type and Percent Additives
☐ Perforate ☐ Protect Casing ☐ Plug Back TD ☐ 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: ☐ Flowing ☐ Pumping ☐ Gas Lift ☐ Other *(Explain)*

Estimated Production Per 24 Hours	Oil Bbls.	Gas Mcf	Water Bbls.	Gas-Oil Ratio	Gravity

DISPOSITION OF GAS:	METHOD OF COMPLETION:	PRODUCTION INTERVAL:
☐ Vented ☐ Sold ☐ Used on Lease *(If vented, Submit ACO-18.)*	☐ Open Hole ☐ Perf. ☐ Dually Comp. *(Submit ACO-5)* ☐ Commingled *(Submit ACO-4)*	Top / Bottom

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

TUBING RECORD: Size: Set At: Packer At:

Mail to: KCC - Conservation Division, 266 N. Main, Suite 220, Wichita, Kansas 67202

Form	ACO1 - Well Completion
Operator	Pickrell Drilling Company, Inc.
Well Name	NORTON J 5
Doc ID	1459555

Casing

Purpose Of String	Size Hole Drilled	Size Casing Set	Weight	Setting Depth	Type Of Cement	Number of Sacks Used	Type and Percent Additives
Surface	12.25	8.625	23	213	Poz Mix	150	80-20, 2% gel, 3% cc

QUALITY OILWELL CEMENTING, INC.

Federal Tax I.D.# 20-2886107

Phone 785-483-2025 Home Office P.O. Box 32 Russell, KS 67665 No. 1245

Cell 785-324-1041

Date	Sec.	Twp.	Range	County	State	On Location	Finish
3-28-19	19	17	25	NESS	KS		8:45A

Location Ransom 10W HRD 6S 200 1W 1/2W Winto

Lease Norton Jr. Well No. 5

Contractor Pickrell #10

Type Job Surface

Hole Size 12 1/4 T.D. 225

Csg. 8 5/8 Depth 210

Tbg. Size Depth

Tool Depth

Cement Left in Csg. 10' Shoe Joint

Meas Line Displace 12 1/2 BBL

EQUIPMENT

Pumptrk 20 No. Cementer Craig

Helper Tony

Bulktrk No. Driver

Driver

Bulktrk 15 No. Driver

Driver Doug

JOB SERVICES & REMARKS

Remarks:

Rat Hole

Mouse Hole

Centralizers

Baskets

D/V or Port Collar

8 5/8 on bottom Est. Circulation Mix 150SK Y Displace Cmnt Circulated

Thanks

X Signature

Owner

To Quality Oilwell Cementing, Inc.
You are hereby requested to rent cementing equipment and furnish cementer and helper to assist owner or contractor to do work as listed.

Charge To Pickrell Drilling

Street

City State

The above was done to satisfaction and supervision of owner agent or contractor.

Cement Amount Ordered 150 80/20 3%cc 2% gel

Common	120	
Poz. Mix	30	
Gel.	3	
Calcium	7	
Hulls		
Salt		
Flowseal		
Kol-Seal		
Mud CLR 48		
CFL-117 or CD110 CAF 38		
Sand		
Handling	160	
Mileage		

FLOAT EQUIPMENT 8 5/8 Swage

Guide Shoe	
Centralizer	
Baskets	
AFU Inserts	
Float Shoe	
Latch Down	
Pumptrk Charge	Surface
Mileage	32
Tax	
Discount	
Total Charge	

QUALITY OILWELL CEMENTING, INC.

Federal Tax I.D.# 20-2886107

Phone 785-483-2025
Cell 785-324-1041

Home Office P.O. Box 32 Russell, KS 67665

No. 1402

Date	Sec.	Twp.	Range	County	State	On Location	Finish
4-6-19	19	17	25	Ness	KS		6:15pm

Location Utica 3E HRD 6S 200RD 1W 1N

Lease Norton	Well No. 5	Owner Wintco	
Contractor Pickrell #10		To Quality Oilwell Cementing, Inc. You are hereby requested to rent cementing equipment and furnish cementer and helper to assist owner or contractor to do work as listed.	
Type Job Rotary Plug			
Hole Size 7 7/8	T.D. 4458	Charge To Pickrell Drilling	
Csg.	Depth	Street	
Tbg. Size	Depth	City State	
Tool	Depth	The above was done to satisfaction and supervision of owner agent or contractor.	
Cement Left in Csg.	Shoe Joint	Cement Amount Ordered 270 60/40 4% 6FL 1/4# Flo	
Meas Line	Displace		

EQUIPMENT

Pumptrk 20	No.	Cementer	Craig
		Helper	
Bulktrk	No.	Driver	Tony
		Driver	
Bulktrk	No.	Driver	
		Driver	Tony

JOB SERVICES & REMARKS

Remarks:		
Rat Hole	30SK	
Mouse Hole		
Centralizers		
Baskets		
D/V or Port Collar		
1st	1875	50SK
2nd	1100	80SK
3rd	650	50SK
4th	270	40SK
5th	60	20SK

Thanks

Common	162
Poz. Mix	108
Gel.	10
Calcium	
Hulls	
Salt	
Flowseal	67#
Kol-Seal	
Mud CLR 48	
CFL-117 or CD110 CAF 38	
Sand	
Handling	280
Mileage	

FLOAT EQUIPMENT

Guide Shoe	
Centralizer	
Baskets	
AFU Inserts	
Float Shoe	
Latch Down	
Pumptrk Charge	Plug
Mileage 32	
Tax	
Discount	
Total Charge	

X Signature

Geologic Report

Aaron L. Young

Drilling Time and Sample Log

Scale 1:240 (5"=100') Imperial
Measured Depth Log

Well Name:	**Norton J #5**		
API:	**15-135-26061**		
Location:	**Section 19 - T17S - R25W**		
License Number:	**5123**	**Region:**	**Ness Co., KS**
Spud Date:	**03/28/19**	**Drilling Completed:**	**04/05/19**
Surface Coordinates:	**1025' FNL and 1525' FEL**		
	Approx. SE - SE - NW - NE		
Bottom Hole Coordinates:			
Ground Elevation (ft):	**2487'**	**K.B. Elevation (ft):**	**2494'**
Logged Interval (ft):	**3750' To: 4458'**	**Total Depth (ft):**	**4458'**
Formation:	**Mississippi**		
Type of Drilling Fluid:	**Chemical - Mud-Co**		

OPERATOR

Company: **Pickrell Drilling Company, Inc.**
Address: **100 S Main Ste 505**
Wichita, KS 67202+3738

GEOLOGIST

Name: **Aaron L. Young, M.S.**
Company: **Pickrell Drilling Company, Inc.**
Address: **100 S Main, Suite 505**
Wichita, Kansas 67202

General Info

CONTRACTOR: Pickrell Drilling, Rig #10

BIT RECORD:

No.	Size	Make	Jets	Out	Feet	Hours
1	12-1/4	Tooth	15-15-15	233	233	4.00
2	7-7/8	HA23	15-15-15	2803	2570	34.50
3	7-7/8	23C	15-15-15	4458	1655	62.25

SURVEYS: 233'-.25, 724'-.75, 1228'-.75, 1730'-.25, 2266'-1, 2772'-.5, 4344'-.75

GENERAL DRILLING AND PUMP INFORMATION:
Drilling with 32,000 - 36,000 lbs. on bit and approx 70-75 RPM.
Running 9 stands of collars; 526.43'
Pumping approx 900 psi at standpipe at 59-60 SPM

Daily Status

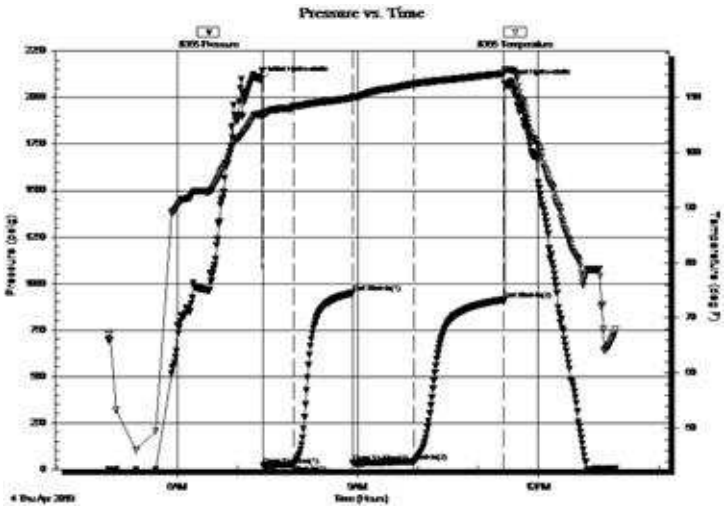
03/28/19 - Spud @ 1:00PM. Drilled 12 ¼" hole to 233', SHT @ 233' = 1/4°. Ran 5jts of new 8 5/8" 23# surface casing, set @ 213' (tally 204'), cement w/150sx 80-20 Pozmix, 2%gel, 3%CC. PD @ 8:45PM. Cement circulated.
03/29/19 - Drilling @ 313'
03/30/19 - Drilling @ 1983'. SHT @ 724' = 3/4°, @ 1228' = 1°, @ 1730' = 1/4°. Drillers Anyhdrite 1815-1846.
03/31/19 - TD 2772'. Stuck on bottom after survey. Waiting on oil truck to spot oil. Made bit trip. SHT @ 2266' = 1°, @ 2772' = 1/2°.
04/01/19 - Drilling @ 3208
04/02/19 - Drilling @ Drilling @ 3791'. Displaced mud from 3450-3500'
04/03/19 - Drilling @ 4179'
04/04/19 - Drilling @ TD 4344'. TIH w/DST #1: 4290-4344 (Ft Scott). Ft Sct 4319(-1825)+8. SHT @ 4344' = 3/4°.
04/05/19 - Testing @ 4446" DST #2: 4418-4446 (Miss), TD'd @ 4458', DST #3
04/06/19 - Ran OH logs. P&A as follows: 50sx @ 1875', 80sx @ 1100', 50sx @ 650', 40sx @ 270', 20sx @ 60', 30sx in RH, all 60-40 Pozmix, 4% gel. Plugging completed @ 6:30 PM.

DST #1 FT SCOTT
4290' - 4344'
30-60-60-90

IF - Blow built to 2 1/4"
ISI - No blow back
FF - Blow built to 4"
FSI - No blow back

Rec'd: 55' VLOSPM (100% M), 5' GIP

SIP: 949-913#
FP: 19-27#, 34-43#
HP: 2095-2078#

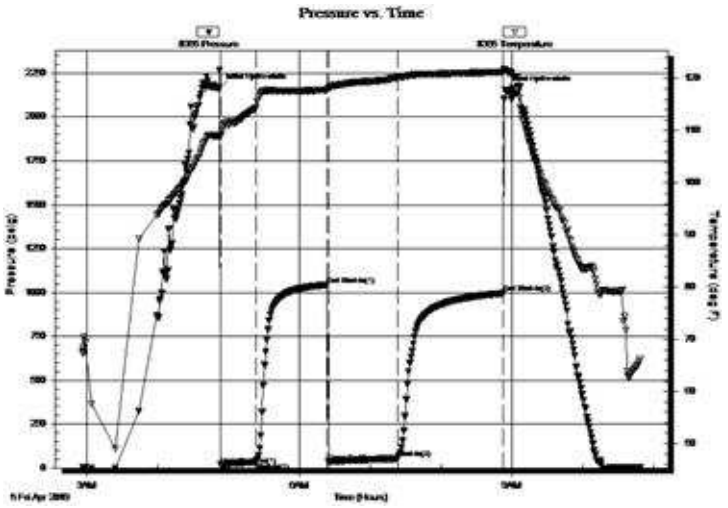


DST #2 MISSISSIPPI
4418' - 4446'
30-60-60-90

IF - Blow built to 4"
ISI - No blow back
FF - Blow built to 2 1/4"
FSI - No blow back

Rec'd: 30' CO (100% O), 60' OCWM (10% W, 30% W, 60% M)

SIP: 1043-996# FP: 19-34#, 35-55# HP: 2164-2154#

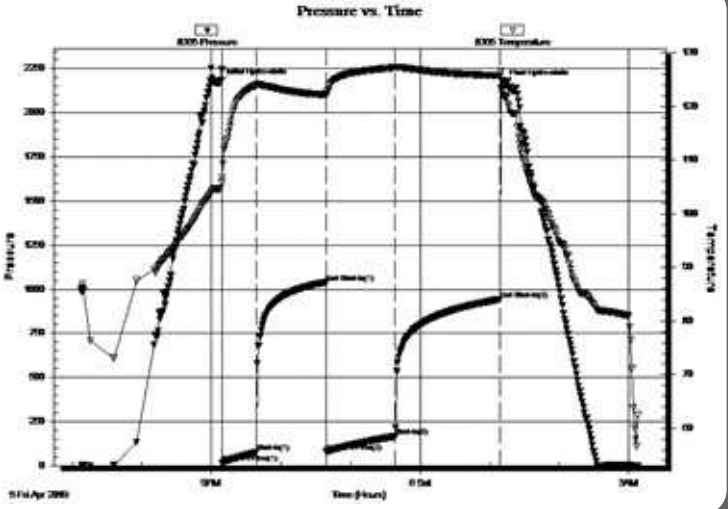


DST #3 MISSISSIPPI
4446' - 4458'
30-60-60-90

IF - Blow built to BOB in 28min, total 12.25"
ISI - No blow back
FF - Blow built to BOB in 42min, total 18"
FSI - No blow back

Rec'd: 1' CO (100% O), 340' VSOCMW (2% O, 10% M, 88% W)

SIP: 1039-943# FP: 15-75#, 79-167# HP: 2168-2161#



ROCK TYPES

- Anhy
- Bent
- Brec
- Cht
- Clyst
- Coal
- Congl
- Dol
- Gyp
- Igne
- Lmst
- Meta
- Mrlst
- Salt
- Shale
- Shcol
- Shgy
- Sltst
- Ss
- Till
- Carb sh
- Dol
- Dtd
- Gry sh
- Sandylms
- Shale
- Sltstn
- Shlyslts
- Sltysh
- Lms

ACCESSORIES

MINERAL

- Anhy
- Arggrn
- Arg
- Bent
- Bit
- Brecfrag
- Calc
- Carb
- Chtdk
- Chtlt
- Dol
- Feldspar
- Ferrpel
- Ferr
- Glau
- Gyp
- Hvymin
- Kaol
- Marl
- Minxl
- Nodule
- Phos
- Pyr
- Salt
- Sandy
- Silt
- Sil
- Sulphur
- Tuff
- Chlorite
- Dol
- Sand
- Slty

FOSSIL

- Algae
- Amph
- Belm
- Bioclst
- Brach
- Bryozoa
- Cephal
- Coral
- Crin
- Echin
- Fish
- Foram
- Fossil
- Gastro
- Oolite
- Ostra
- Pelec
- Pellet
- Pisolite
- Plant
- Strom
- Fuss
- Oomold

STRINGER

- Anhy
- Arg
- Bent
- Coal
- Dol
- Gyp
- Ls
- Mrst
- Sltstrg
- Ssstrg
- Carbsh
- Clystn
- Dol
- Grysh
- Gryslt
- Lms
- Sandylms
- Sh
- Sltstn

TEXTURE

- Boundst
- Chalky
- Cryxln
- Earthy
- Finexln
- Grainst
- Lithogr
- Microxln
- Mudst
- Packst
- Wackest

OTHER SYMBOLS

POROSITY TYPE
- Earthy
- Fenest
- Fracture
- Inter
- Moldic
- Organic
- Pinpoint
- Vuggy

SORTING
- Well
- Moderate
- Poor

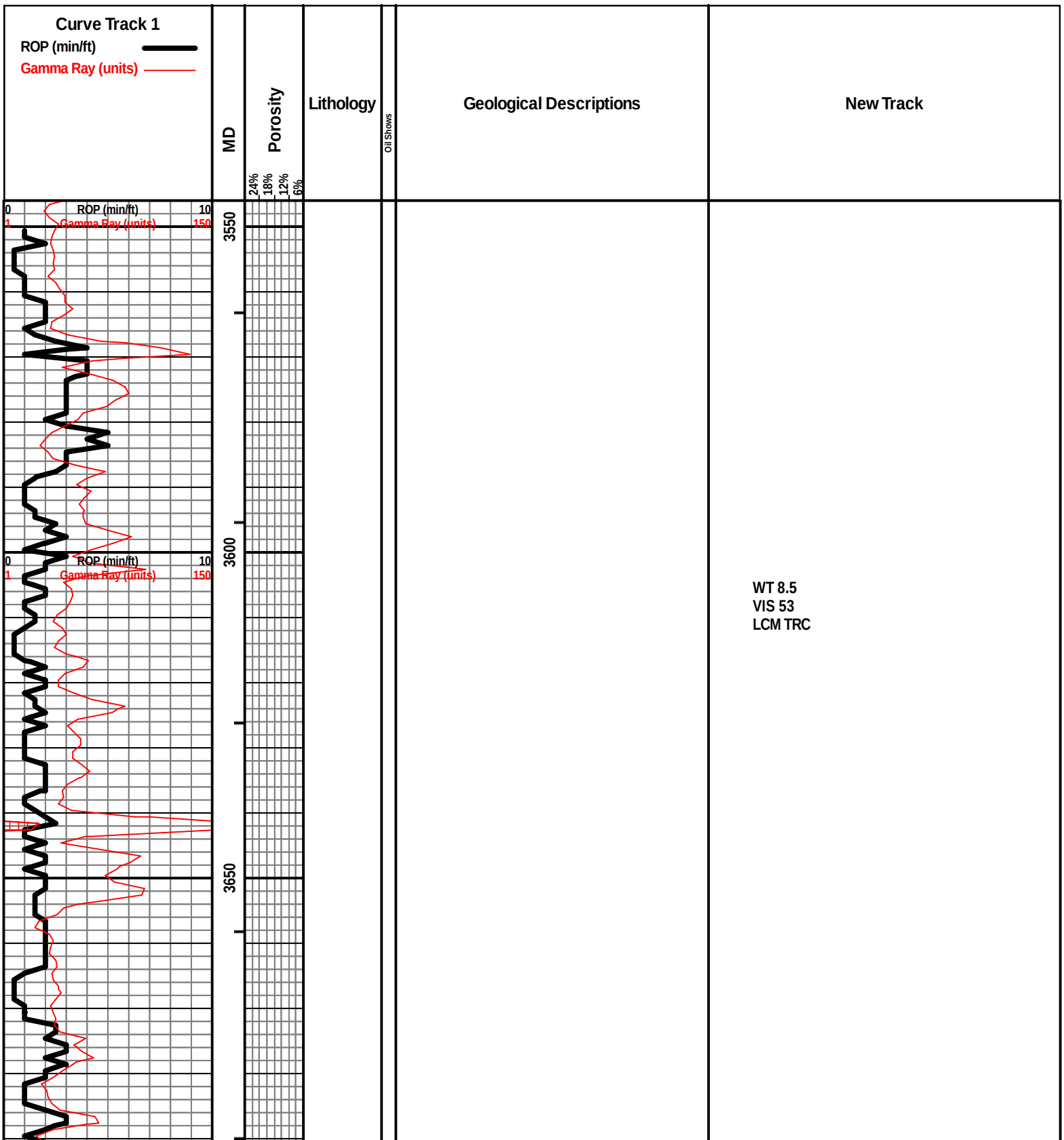
ROUNDING
- Rounded
- Subrnd
- Subang
- Angular

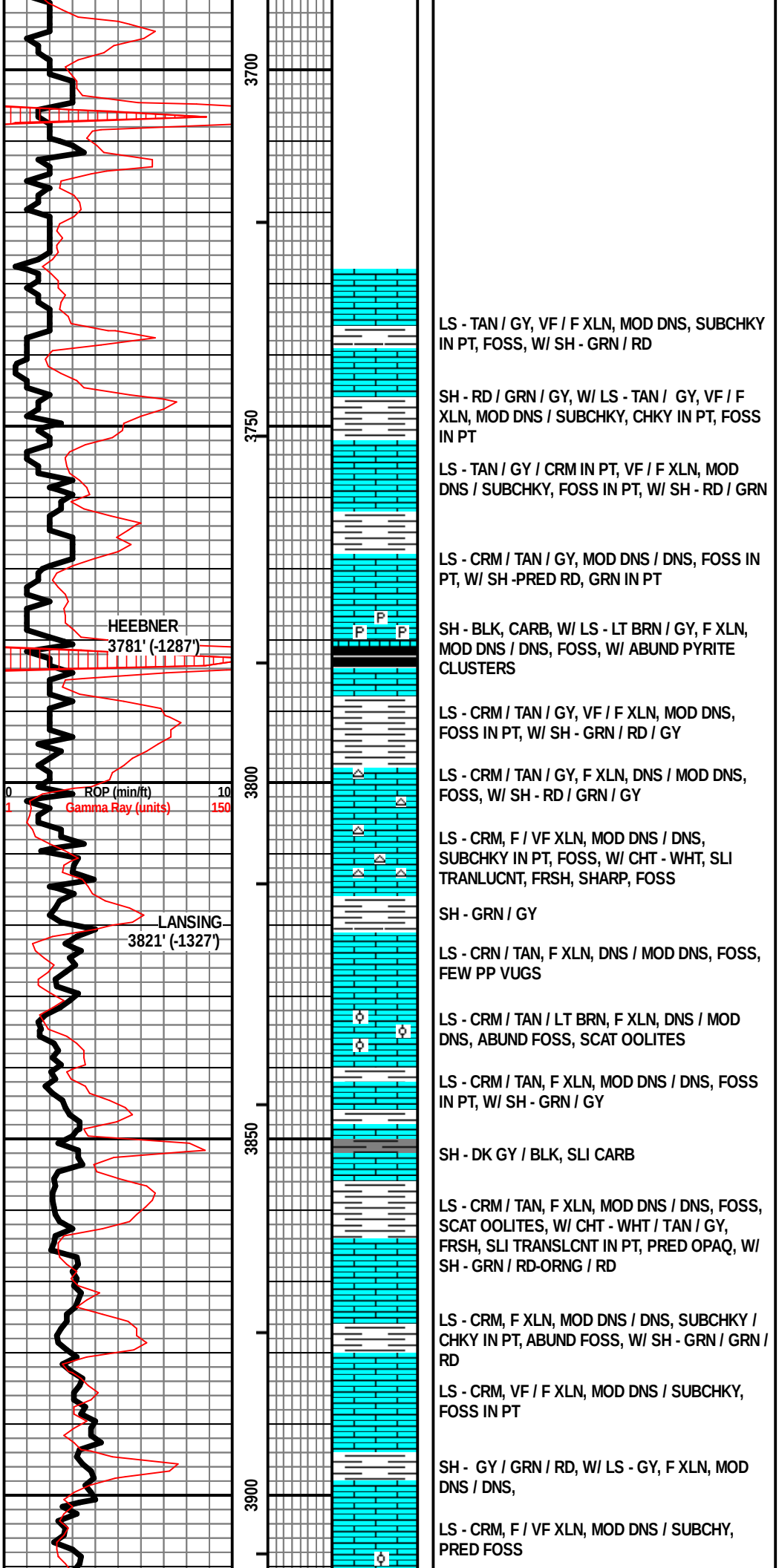
OIL SHOWS
- Even
- Spotted
- Ques
- Dead
- Gas show

INTERVALS
- Core
- Dst

- Dst

EVENTS
- Rft
- Sidewall
- Conn





LS - TAN / GY, VF / F XLN, MOD DNS, SUBCHKY IN PT, FOSS, W/ SH - GRN / RD

SH - RD / GRN / GY, W/ LS - TAN / GY, VF / F XLN, MOD DNS / SUBCHKY, CHKY IN PT, FOSS IN PT

LS - TAN / GY / CRM IN PT, VF / F XLN, MOD DNS / SUBCHKY, FOSS IN PT, W/ SH - RD / GRN

LS - CRM / TAN / GY, MOD DNS / DNS, FOSS IN PT, W/ SH -PRED RD, GRN IN PT

SH - BLK, CARB, W/ LS - LT BRN / GY, F XLN, MOD DNS / DNS, FOSS, W/ ABUND PYRITE CLUSTERS

LS - CRM / TAN / GY, VF / F XLN, MOD DNS, FOSS IN PT, W/ SH - GRN / RD / GY

LS - CRM / TAN / GY, F XLN, DNS / MOD DNS, FOSS, W/ SH - RD / GRN / GY

LS - CRM, F / VF XLN, MOD DNS / DNS, SUBCHKY IN PT, FOSS, W/ CHT - WHT, SLI TRANLUCNT, FRSH, SHARP, FOSS

SH - GRN / GY

LS - CRN / TAN, F XLN, DNS / MOD DNS, FOSS, FEW PP VUGS

WT 8,8
VIS 51
LCM TRC

LS - CRM / TAN / LT BRN, F XLN, DNS / MOD DNS, ABUND FOSS, SCAT OOLITES

LS - CRM / TAN, F XLN, MOD DNS / DNS, FOSS IN PT, W/ SH - GRN / GY

SH - DK GY / BLK, SLI CARB

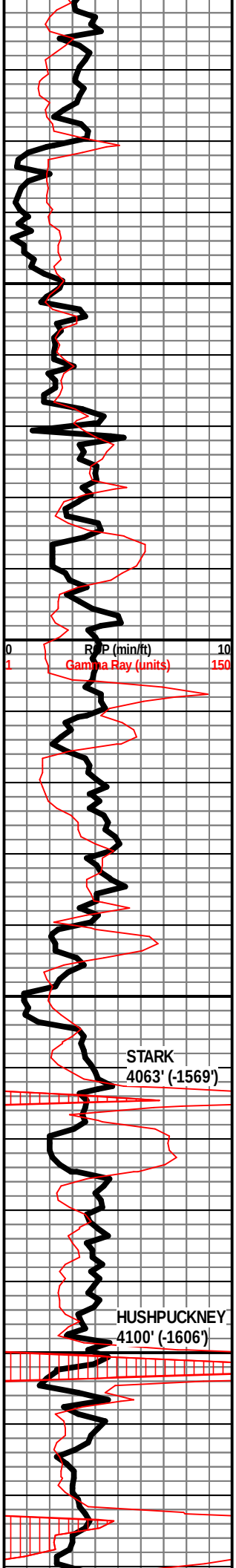
LS - CRM / TAN, F XLN, MOD DNS / DNS, FOSS, SCAT OOLITES, W/ CHT - WHT / TAN / GY, FRSH, SLI TRANSLCNT IN PT, PRED OPAQ, W/ SH - GRN / RD-ORNG / RD

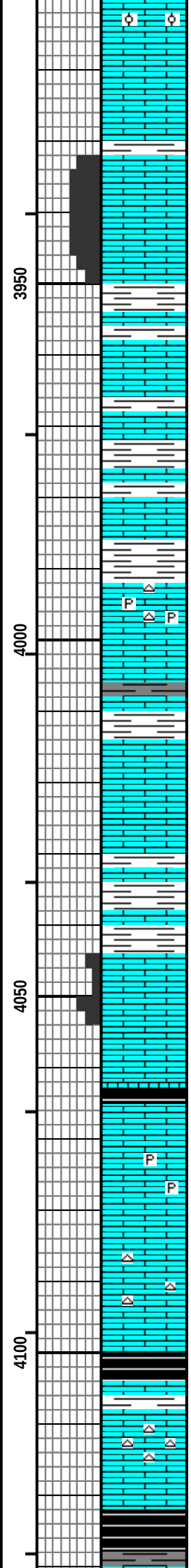
LS - CRM, F XLN, MOD DNS / DNS, SUBCHKY / CHKY IN PT, ABUND FOSS, W/ SH - GRN / GRN / RD

LS - CRM, VF / F XLN, MOD DNS / SUBCHKY, FOSS IN PT

SH - GY / GRN / RD, W/ LS - GY, F XLN, MOD DNS / DNS,

LS - CRM, F / VF XLN, MOD DNS / SUBCHY, PRED FOSS





LS - CRM, F XLN, MOD DNS, OOLITIC, CALCTE CEM MATRIX, NO VIS POR

LS - CRM, VF / F XLN, SUBCHKY / MOD DNS, FOSS IN PT

LS - CRM, VF XLN, SUBCHKY / CHKY, W/ SH - RD-ORNG / DK RD / GRN

LS - CRM, F XLN, F / G OOLMOLDIC POR, NS, NO ODOR

SH - GY / GRN / RD, W/ LS - WHT, CHKY

WT 9.0
VIS 45
LCM 1#

LS - GY / TAN, F XLN, MOD DNS / DNS, FOSS IN PT, SH - GY / DK GRN / MAR

SH - GRN / GY / MAR, W/ LS - CRM, VF / F XLN, SUBCHKY, CHKY IN PT

LS - CRM / TAN, F XLN, MOD DNS / DNS, FOSS IN PT, PYRITIC IN PT, W/ SCAT CHT - GY, SLI TRANSLUCNT, FRSH, W/ SH - GY / GRN / RD

SH - DK GY / GY / GRN / RD, W/ LS - CRM, VF XLN, SUBCHKY / MOD DNS, CHKY IN PT

WT 9.1
VIS 45
LCM 1#

LS - CRM / TAN, F XLN, MOD DNS, W/ SH - GRN / RD-ORNG/ RD / MAR

LS - CRM / TAN, F XLN, DNS / MOD DNS, FOSS IN PT

SH - DK GY / BLK, CARB, W/ SH - GY / GRN / RD / RD-ORNG, W/ LS - CRM, VF / F XLN, MOD DNS / SUBCHKY, FOSS IN PT

LS - CRM / TAN, F XLN, FOSS, P / F OOLMOLDIC POR IN PT, NS

LS - CRM / TAN, F / VF XLN, F OOMOLDIC POR IN PT, NS, SUBCHKY IN PT, FOSS IN PT

SH - BLK, CARB, W/ LS - CRM, VF / F XLN, MOD DNS / SUBCHKY, OOLITIC IN PT

WT 9.1
VIS 52
LCM 1#

LS - BRN / GY, F / M XLN, MOD DNS, FOSS IN PT, PYRITIC IN PT

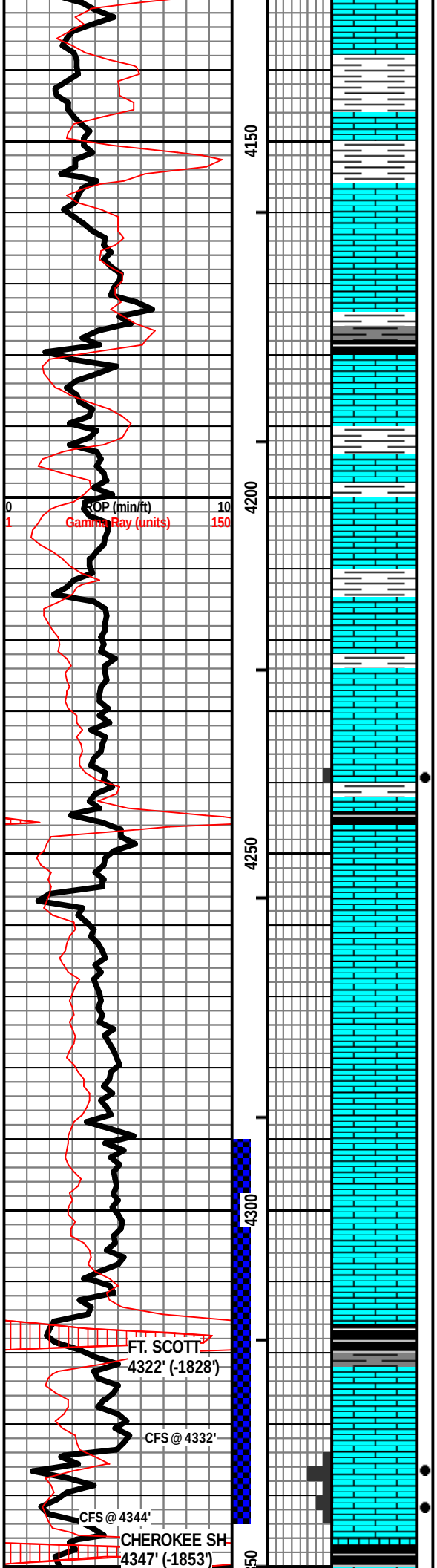
LS - CRM / LT GY / WHT, VF XLN, SUBCHKY / CHKY IN PT

LS - GY / TAN / LT BRN, F XLN, MOD DNS / DNS, FOSS IN PT, W/ CHT - TAN / GY, SLI TRANSLUCNT, FRSH

SH - BLK, CARB, W/ LS - CRM, VF XLN, MOD DNS / SUBCHKY

LS - CRM / TAN / GY IN PT, VF XLN, MOD DNS / SUBCHKY, CHKY IN PT, W/ CHT - TAN / GY, MOD TRANSLUCNT, FRSH, W/ SH - GRN / GY

SH - BLK, CARB, W/ LS - GY / LT BRN / TAN, F / M XLN, DNS, FOSS IN PT



M XLN, DNS, FOSS IN PT

LS - CRM / GY / WHT, VF XLN, SUBCHKY / CHKY, W/ SH - GY

SH - LT GRN / LT GY / LT RD, V SOFT / SOFT, W/ LS - CRM / TAN, VF / F XLN, MOD DNS / SUBCHKY

LS - TAN / LT GY IN PT, F XLN, MOD DNS / DNS, FOSS IN PT, W/ SH - GRN / RD / RD-ORNG

LS - BRN / GY, F / M XLN, V DNS / DNS, FOSS

SH - GRN / GY / DK GY / BLK, CARB IN PT

LS - CRM / TAN / GY IN PT, F XLN, MOD DNS / DNS, FOSS IN PT, W/ SH - GRN / RD / GY

LS - CRM / TAN, F / VF XLN, MOD DNS / DNS, FOSS IN PT, W/ SH - RD / GRN

LS - PRED CRM, TAN IN PT, F XLN, MOD DNS / DNS, FOSS IN PT

LS - CRM / TAN, VF / F XLN, MOD DNS / SUBCHKY, FOSS IN PT, W/ SH - RD / GRN / GY

LS - CRM / TAN / GY, F XLN, MOD DNS / DNS, FOSS IN PT, W/ SH - GY

LS - GY / TAN, F XLN, DNS / MOD DNS, FOSS IN PT

LS - CRM, F XLN, DNS, FOSS, ONE LOOSE FUSULINID W/ P MOLDIC POR, ONE PIECE W/ P INTERXLN POR, SSFO, BLEEDING OIL, LT BRN OIL DROPLETS, NO ODOR, DULL FLUOR

SH - DK GY / GY / GRN / RD, W/ LS - CRM / TAN, F XLN, DNS, FOSS, OOLITIC IN PT

LS - CLM / TAN, F XLN, DNS, ABUND FOSS, OOLITIC IN PT

LS - GY, TAN IN PT, F XLN, DNS, FOSS IN PT

SH - DK GY, F XLN, DNS / MOD DNS

LS - DK GY, VF / F XLN, DNS / MOD DNS / SUBCHKY IN PT

SH - BLK, CARB

LS - TAN / LT BRN / CRM, F / M XLN, DNS, FOSS, NO VIS POR, NS, NO ODOR, MINERAL FLUOR IN PT, PYRITIC IN PT

LS - CRM, F XLN, ABUND MICRO FOSS, P / F INTERXLN & INTERPART POR, VUG POR IN PT, FSFO, SLI SHO GAS BUB, STRONG CUP ODOR, BRI YEL-GRN FLUOR

SH - BLK, CARB, PYRITIC IN PT

WT 9.1
VIS 53
LCM 1#

WT 9.3
VIS 61
LCM 1#

WT 9.2
VIS 56
LCM 1#

WT 9.1
VIS 57
LCM 1#

WT 9.1
VIS 51
LCM 1#

WT 9.3
VIS 52
LCM 1#

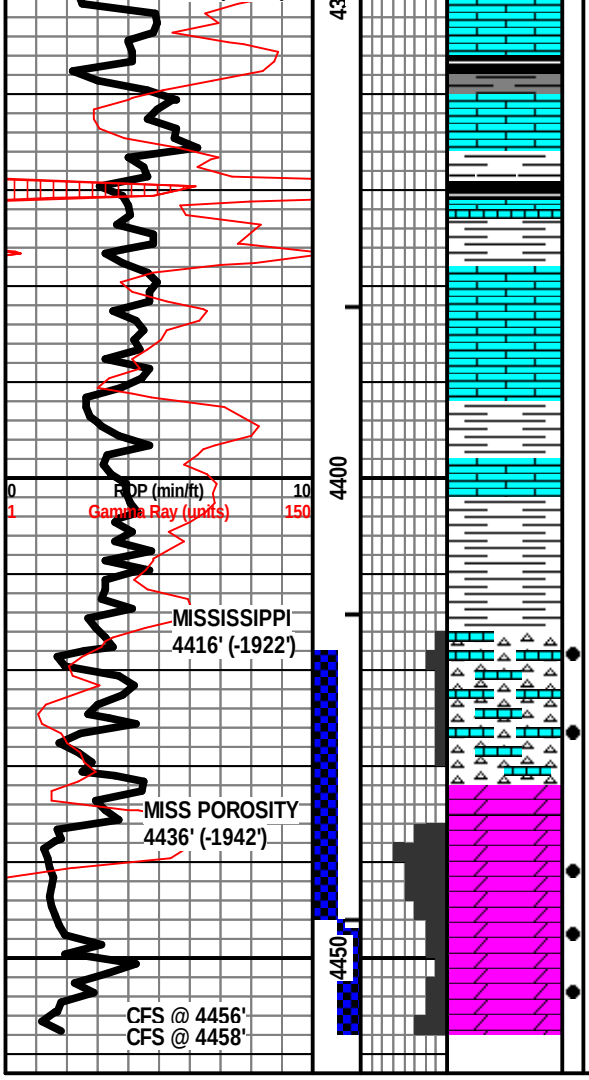
DST #1
FT SCOTT
4290' - 4344'
30-60-60-90

IF - Blow built to 2 1/4"
ISI - No blow back
FF - Blow built to 4"
FSI - No blow back

Rec'd: 55' VLOSPM (100% M), 5' GIP

JET #1
ADD PREMIX

WT 9.3
VIS 51
LCM 1#



LS - CRM / TAN / GY, F XLN, MOD DNS / DNS, W/ SH- DK GY / BLK, CARB

SH - RD / GRN / GY, W/ LS - CRM / WHT IN PT, MOD DNS / SUBCHKY / CHKY IN PT

SH - RD / GRN / GY, W/ LS - TAN / CRM, F XLN, MOD DNS, FOS IN PT

LS - CRM / TAN, F XLN, MOD DNS / DNS, ABUND OF MICRO FOSS

SH - RD-ORNG / RD / MAR / GRN / GY, W/ LS - CRM / TAN, MOD DNS / DNS, FOSS

SH - GRN / GY / RD-ORNG / RD / MAR, W/ LS - CRM / TAN, VF / F XLN, MOD DNS / SUBCHKY

CHT - GY / YEL, GY PIECES HAVE P WEATH POR, FSFO, BLEEDING OIL, LT BRN OIL DROPLETS, F ODOR, BRI YEL-GRN FLUOR, LMY IN PT

CHT - BRN, V LMY / LMY, F XLN, VP / P INTERXLN POR, SSFO, F ODOR, BRI YEL-GRN FLUOR
DOLO - WHT, V CHKY

DOLO - LT GY / TAN, F XLN, FOSS IN PT, F / G INTERXLN POR, FSFO, G ODOR, BRI YEL-GRN FLUOR

DOLO - TAN / LT BRN, F / M XLN, ABUND FOSS, P INTERXLN POR, F MOLDIC & VUG POR, FSFO, F ODOR, MOD YEL-GRN FLUOR

RTD 4458'

SIP: 949-913#
FP: 19-27#, 34-43#
HP: 2095-2078#

DST #2
MISSISSIPPI
4418' - 4446'
30-60-60-90

WT 9.3
VIS 50
LCM 1#

IF - Blow built to 4"
ISI - No blow back
FF - Blow built to 2 1/4"
FSI - No blow back

Rec'd: 30' CO (100% O), 60' OCWM (10% W, 30% W, 60% M)

SIP: 1043-996#
FP: 19-34#, 35-55#
HP: 2164-2154#

DST #3
MISSISSIPPI
4446' - 4458'
30-60-60-90

IF - Blow built to BOB in 28min, total 12.25"
ISI - No blow back
FF - Blow built to BOB in 42min, total 18"
FSI - No blow back

Rec'd: 1' CO (100% O), 340' VSOCMW (2% O, 10% M, 88% W)

SIP: 1039-943#
FP: 15-75#, 79-167#
HP: 2168-2161#

DRILL STEM TEST REPORT

Pickrell Drilling Co. Inc

100 S Main
Suite 505
Wichita, Kansas 67202+3738
ATTN: Aaron Young

19/17S/25W/Ness

Norton J #5

Job Ticket: 65656 **DST#: 1**

Test Start: 2019.04.04 @ 04:51:00

GENERAL INFORMATION:

Formation: **Ft. Scott**
Deviated: No Whipstock: ft (KB)
Time Tool Opened: 07:25:17
Time Test Ended: 13:17:01

Test Type: Conventional Bottom Hole (Initial)
Tester: Ken Swinney
Unit No: 72 Hays/ 138

Interval: 4290.00 ft (KB) To 4344.00 ft (KB) (TVD)
Total Depth: 4344.00 ft (KB) (TVD)
Hole Diameter: 7.80 inches Hole Condition: Fair

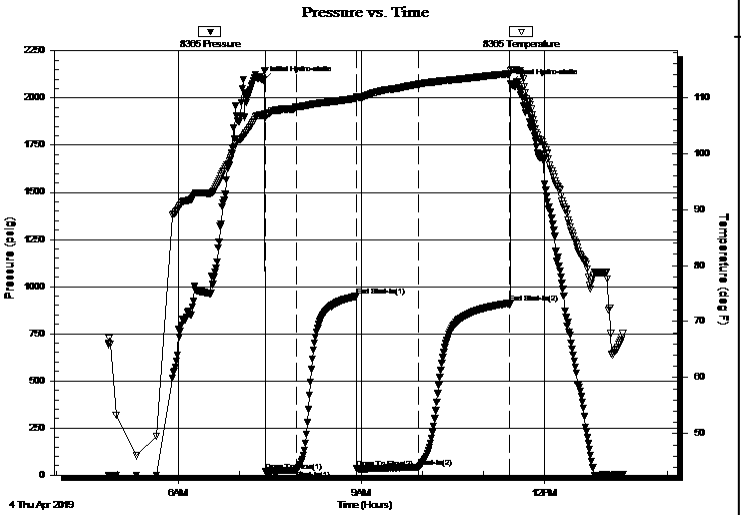
Reference Elevations: 2494.00 ft (KB)
2487.00 ft (CF)
KB to GR/CF: 7.00 ft

Serial #: 8365 **Inside**

Press@RunDepth: 42.81 psig @ 4291.00 ft (KB)
Start Date: 2019.04.04 End Date: 2019.04.04
Start Time: 04:51:01 End Time: 13:17:02

Capacity: psig
Last Calib.: 2019.04.04
Time On Btm: 2019.04.04 @ 07:23:32
Time Off Btm: 2019.04.04 @ 11:26:32

TEST COMMENT:
IF 30 Minutes/ Blow built to 2 1/4 inch
ISI 60 Minutes/ No blow back
FF 60 Minutes/ Blow built to 4 inch
FSI 90 Minutes/ No blow back



PRESSURE SUMMARY

Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	2095.09	106.81	Initial Hydro-static
2	19.03	106.38	Open To Flow (1)
32	27.04	108.23	Shut-In(1)
92	948.99	109.86	End Shut-In(1)
92	34.13	110.04	Open To Flow (2)
153	42.81	112.36	Shut-In(2)
242	912.72	114.27	End Shut-In(2)
243	2077.83	114.84	Final Hydro-static

Recovery

Length (ft)	Description	Volume (bbl)
55.00	VLOSP/ M 100%	0.77
0.00	5 feet GIP	0.00

Gas Rates

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

DRILL STEM TEST REPORT

Pickrell Drilling Co. Inc

100 S Main
Suite 505
Wichita, Kansas 67202+3738
ATTN: Aaron Young

19/17S/25W/Ness

Norton J #5

Job Ticket: 65656 **DST#: 1**

Test Start: 2019.04.04 @ 04:51:00

GENERAL INFORMATION:

Formation: **Ft. Scott**
Deviated: No Whipstock: ft (KB)
Time Tool Opened: 07:25:17
Time Test Ended: 13:17:01

Test Type: Conventional Bottom Hole (Initial)
Tester: Ken Swinney
Unit No: 72 Hays/ 138

Interval: 4290.00 ft (KB) To 4344.00 ft (KB) (TVD)
Total Depth: 4344.00 ft (KB) (TVD)
Hole Diameter: 7.80 inches Hole Condition: Fair

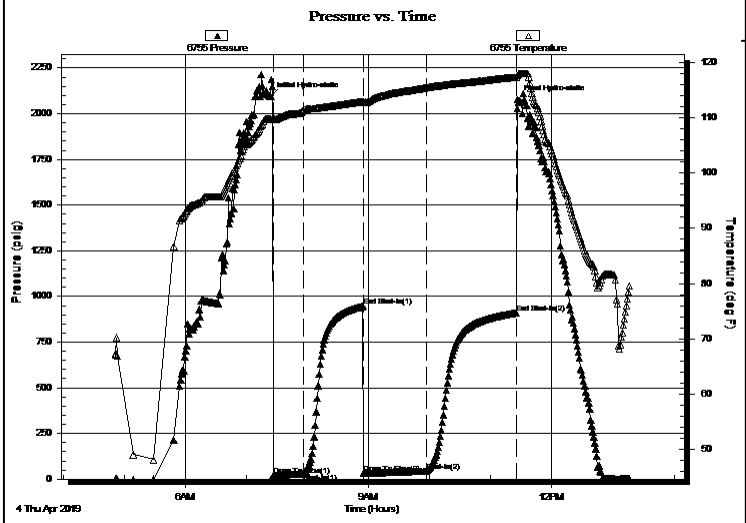
Reference Elevations: 2494.00 ft (KB)
2487.00 ft (CF)
KB to GR/CF: 7.00 ft

Serial #: 6755 **Outside**

Press@RunDepth: 910.54 psig @ 4292.00 ft (KB)
Start Date: 2019.04.04 End Date: 2019.04.04
Start Time: 04:51:01 End Time: 13:17:02

Capacity: psig
Last Calib.: 2019.04.04
Time On Btm: 2019.04.04 @ 07:23:47
Time Off Btm: 2019.04.04 @ 11:26:32

TEST COMMENT:
IF 30 Minutes/ Blow built to 2 1/4 inch
ISI 60 Minutes/ No blow back
FF 60 Minutes/ Blow built to 4 inch
FSI 90 Minutes/ No blow back



PRESSURE SUMMARY

Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	2094.18	109.78	Initial Hydro-static
3	19.37	109.73	Open To Flow (1)
33	30.73	111.29	Shut-In(1)
91	946.75	112.93	End Shut-In(1)
92	34.31	112.79	Open To Flow (2)
153	43.95	115.42	Shut-In(2)
242	910.54	117.37	End Shut-In(2)
243	2078.15	117.68	Final Hydro-static

Recovery

Length (ft)	Description	Volume (bbl)
55.00	VLOSP/ M 100%	0.77
0.00	5 feet GIP	0.00

Gas Rates

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

DRILL STEM TEST REPORT

FLUID SUMMARY

Pickrell Drilling Co. Inc

100 S Main
Suite 505
Wichita, Kansas 67202+3738
ATTN: Aaron Young

19/17S/25W/Ness

Norton J #5

Job Ticket: 65656 **DST#: 1**

Test Start: 2019.04.04 @ 04:51:00

Mud and Cushion Information

Mud Type:	Gel Chem	Cushion Type:		Oil API:	deg API
Mud Weight:	9.00 lb/gal	Cushion Length:	ft	Water Salinity:	ppm
Viscosity:	57.00 sec/qt	Cushion Volume:	bbl		
Water Loss:	9.59 in³	Gas Cushion Type:			
Resistivity:	ohm.m	Gas Cushion Pressure:	psig		
Salinity:	2900.00 ppm				
Filter Cake:	1.00 inches				

Recovery Information

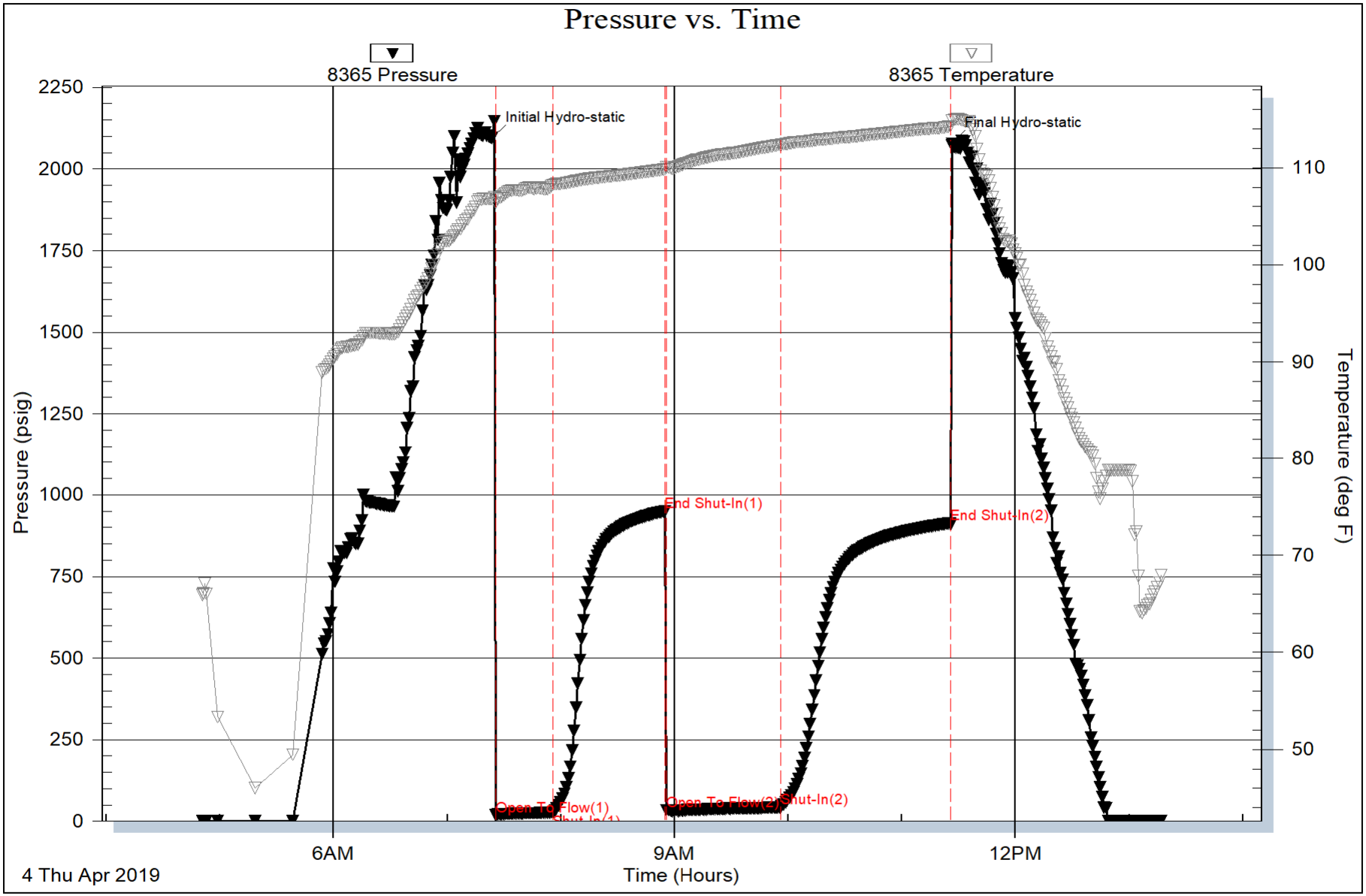
Recovery Table

Length ft	Description	Volume bbl
55.00	VLOSP/ M 100%	0.772
0.00	5 feet GIP	0.000

Total Length: 55.00 ft Total Volume: 0.772 bbl

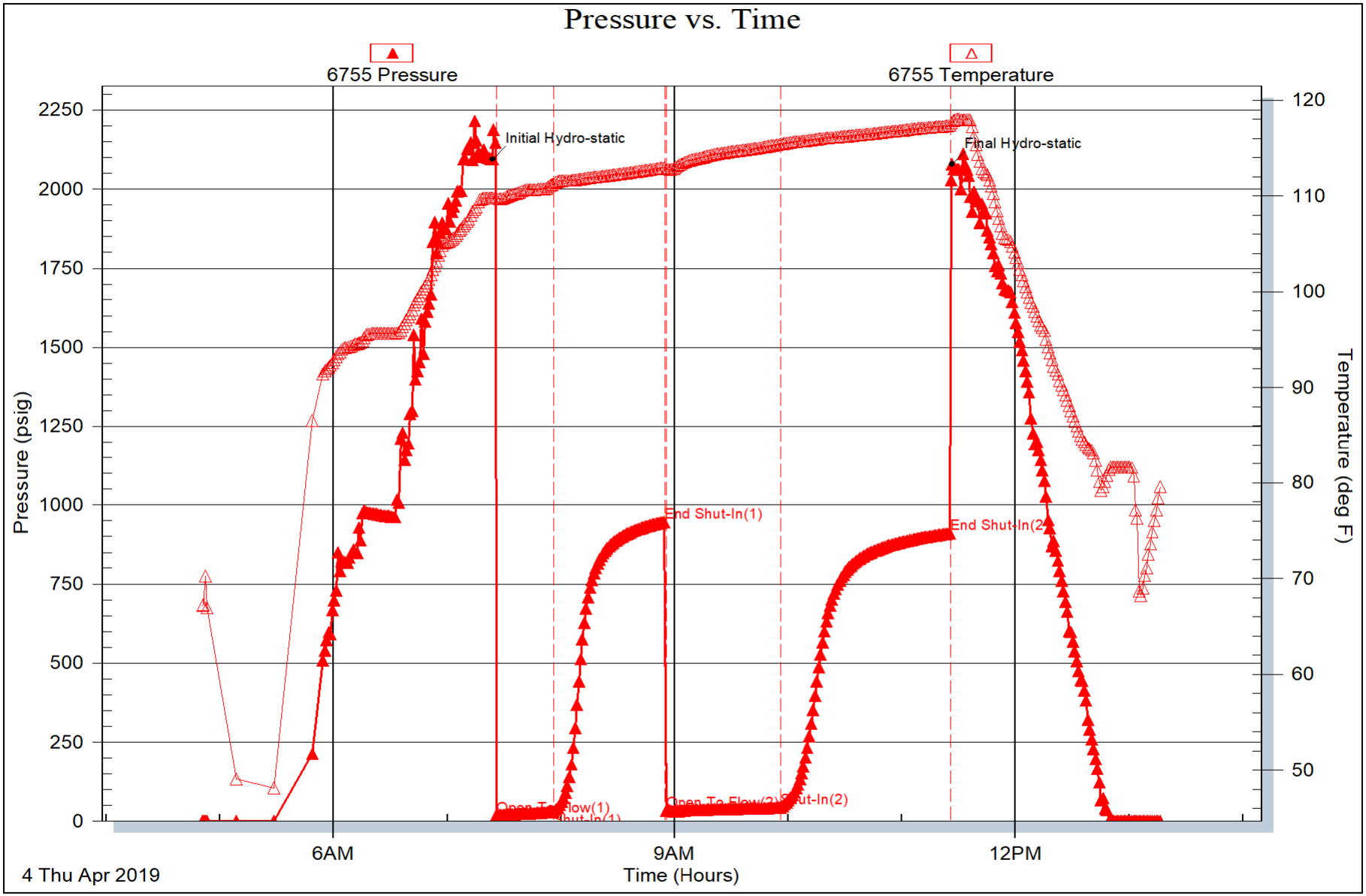
Num Fluid Samples: 0 Num Gas Bombs: 0 Serial #:
Laboratory Name: Laboratory Location:
Recovery Comments:

Serial #: 8365 **Inside** Pickrell Drilling Co. Inc Norton J #5 DST Test Number: 1



Trilobite Testing, Inc Ref. No: 65656 Printed: 2019.04.04 @ 13:48:25

Serial #: 6755 **Outside** Pickrell Drilling Co. Inc Norton J #5 DST Test Number: 1



Trilobite Testing, Inc Ref. No: 65656 Printed: 2019.04.04 @ 13:48:25

DRILL STEM TEST REPORT

Pickrell Drilling Co. Inc

100 S Main
Suite 505
Wichita, Kansas 67202+3738
ATTN: Aaron Young

19/17S/25W/Ness

Norton J #5

Job Ticket: 65657 **DST#: 2**

Test Start: 2019.04.05 @ 02:57:00

GENERAL INFORMATION:

Formation: **Mississippi**
Deviated: No Whipstock: ft (KB)
Time Tool Opened: 04:53:47
Time Test Ended: 10:49:02

Test Type: Conventional Bottom Hole (Initial)
Tester: Ken Swinney
Unit No: 72 Hays/ 138

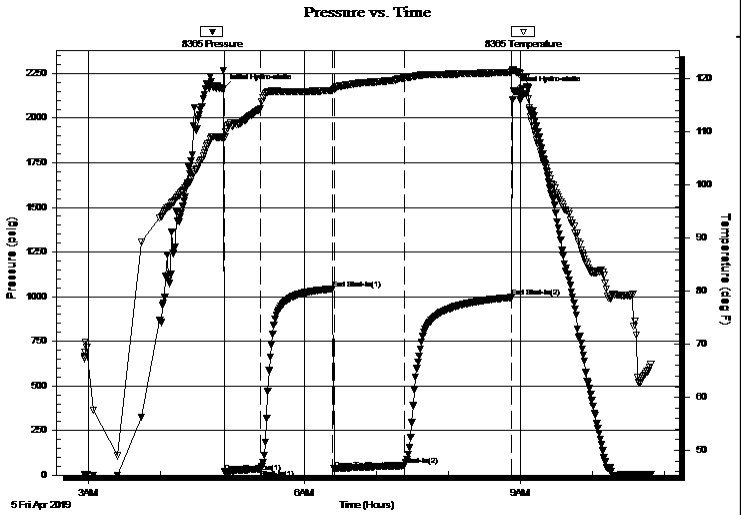
Interval: 4418.00 ft (KB) To 4446.00 ft (KB) (TVD)
Total Depth: 4446.00 ft (KB) (TVD)
Hole Diameter: 7.80 inches Hole Condition: Fair

Reference Elevations: 2494.00 ft (KB)
2487.00 ft (CF)
KB to GR/CF: 7.00 ft

Serial #: 8365 **Inside**
Press@RunDepth: 55.02 psig @ 4419.00 ft (KB)
Start Date: 2019.04.05 End Date: 2019.04.05
Start Time: 02:57:01 End Time: 10:49:02

Capacity: psig
Last Calib.: 2019.04.05
Time On Btm: 2019.04.05 @ 04:52:17
Time Off Btm: 2019.04.05 @ 08:54:32

TEST COMMENT:
IF 30 Minutes/ Blow built to 4 inches
ISI 60 Minutes/ No blow back
FF 60 Minutes/Blow built to 2 1/4 inches
FSI 90 Minutes/ No blow back



PRESSURE SUMMARY

Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	2164.17	108.96	Initial Hydro-static
2	18.63	109.02	Open To Flow (1)
32	33.92	114.44	Shut-In(1)
92	1043.19	117.84	End Shut-In(1)
93	35.06	117.95	Open To Flow (2)
152	55.02	120.22	Shut-In(2)
241	995.62	121.30	End Shut-In(2)
243	2153.83	121.66	Final Hydro-static

Recovery

Length (ft)	Description	Volume (bbl)
30.00	Clean Oil	0.42
60.00	OCWM/ O 10% W 30% M 60%	0.84

Gas Rates

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

DRILL STEM TEST REPORT

Pickrell Drilling Co. Inc

100 S Main
Suite 505
Wichita, Kansas 67202+3738
ATTN: Aaron Young

19/17S/25W/Ness

Norton J #5

Job Ticket: 65657 **DST#: 2**

Test Start: 2019.04.05 @ 02:57:00

GENERAL INFORMATION:

Formation: **Mississippi**
Deviated: No Whipstock: ft (KB)
Time Tool Opened: 04:53:47
Time Test Ended: 10:49:02

Test Type: Conventional Bottom Hole (Initial)
Tester: Ken Swinney
Unit No: 72 Hays/ 138

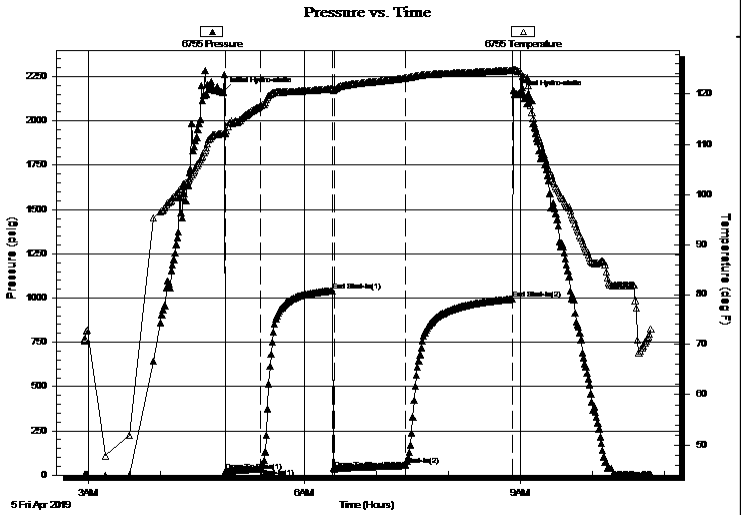
Interval: 4418.00 ft (KB) To 4446.00 ft (KB) (TVD)
Total Depth: 4446.00 ft (KB) (TVD)
Hole Diameter: 7.80 inches Hole Condition: Fair

Reference Elevations: 2494.00 ft (KB)
2487.00 ft (CF)
KB to GR/CF: 7.00 ft

Serial #: 6755 **Outside**
Press@RunDepth: 994.10 psig @ 4420.00 ft (KB)
Start Date: 2019.04.05 End Date: 2019.04.05
Start Time: 02:57:01 End Time: 10:49:02

Capacity: psig
Last Calib.: 2019.04.05
Time On Btm: 2019.04.05 @ 04:52:32
Time Off Btm: 2019.04.05 @ 08:54:47

TEST COMMENT:
IF 30 Minutes/ Blow built to 4 inches
ISI 60 Minutes/ No blow back
FF 60 Minutes/Blow built to 2 1/4 inches
FSI 90 Minutes/ No blow back



PRESSURE SUMMARY

Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	2163.39	112.09	Initial Hydro-static
2	20.20	112.12	Open To Flow (1)
32	36.82	117.70	Shut-In(1)
91	1041.18	121.03	End Shut-In(1)
93	34.72	120.98	Open To Flow (2)
152	56.45	123.20	Shut-In(2)
241	994.10	124.74	End Shut-In(2)
243	2150.10	124.91	Final Hydro-static

Recovery

Length (ft)	Description	Volume (bbl)
30.00	Clean Oil	0.42
60.00	OCWM/ O 10% W 30% M 60%	0.84

Gas Rates

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

DRILL STEM TEST REPORT

FLUID SUMMARY

Pickrell Drilling Co. Inc

100 S Main
Suite 505
Wichita, Kansas 67202+3738
ATTN: Aaron Young

19/17S/25W/Ness

Norton J #5

Job Ticket: 65657 **DST#: 2**

Test Start: 2019.04.05 @ 02:57:00

Mud and Cushion Information

Mud Type:	Gel Chem	Cushion Type:		Oil API:	37 deg API
Mud Weight:	9.00 lb/gal	Cushion Length:	ft	Water Salinity:	7000 ppm
Viscosity:	51.00 sec/qt	Cushion Volume:	bbl		
Water Loss:	9.19 in³	Gas Cushion Type:			
Resistivity:	ohm.m	Gas Cushion Pressure:	psig		
Salinity:	3300.00 ppm				
Filter Cake:	1.00 inches				

Recovery Information

Recovery Table

Length ft	Description	Volume bbl
30.00	Clean Oil	0.421
60.00	OCWM/ O 10% W 30% M 60%	0.842

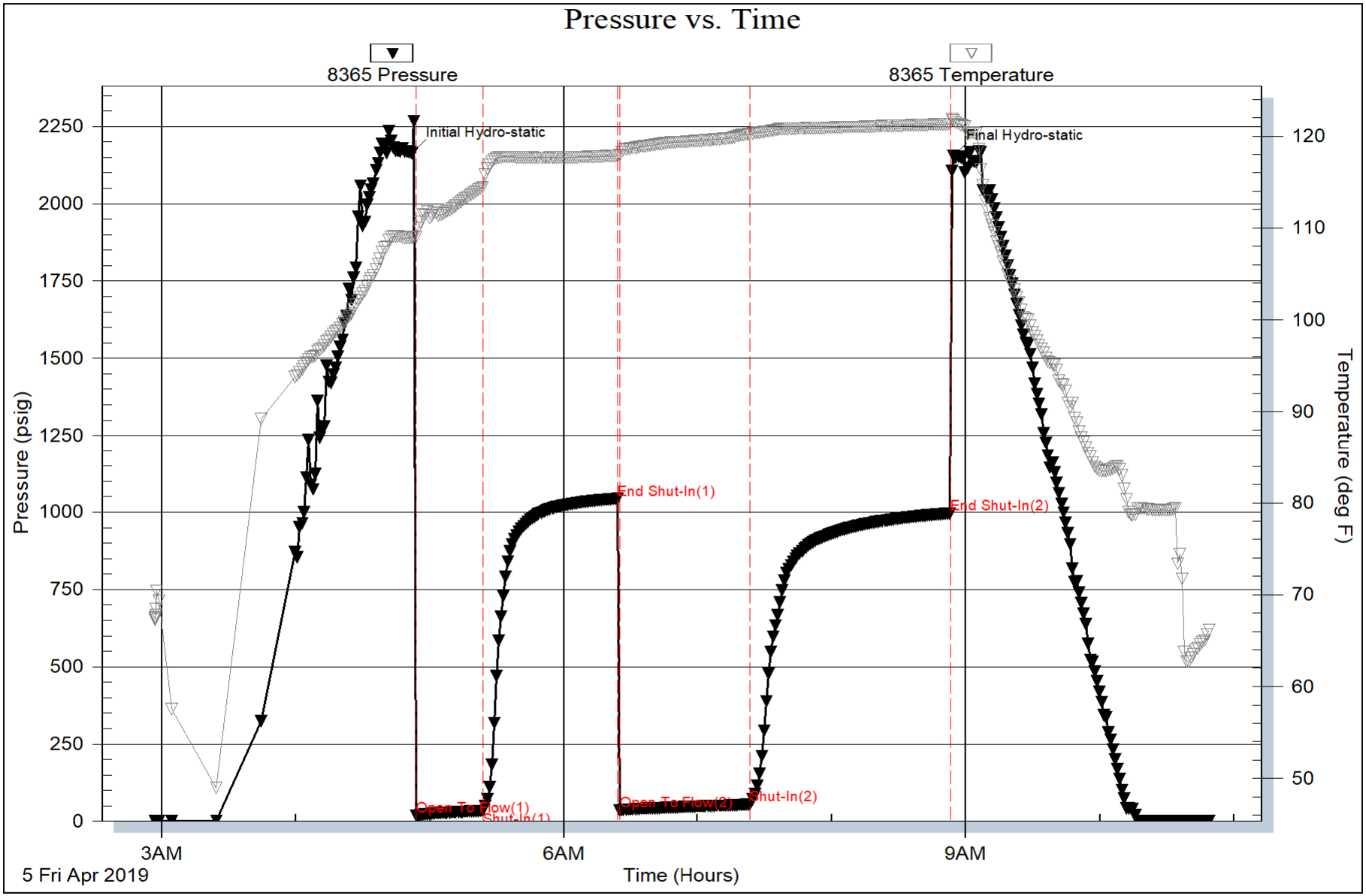
Total Length: 90.00 ft Total Volume: 1.263 bbl

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

Laboratory Name: Laboratory Location:

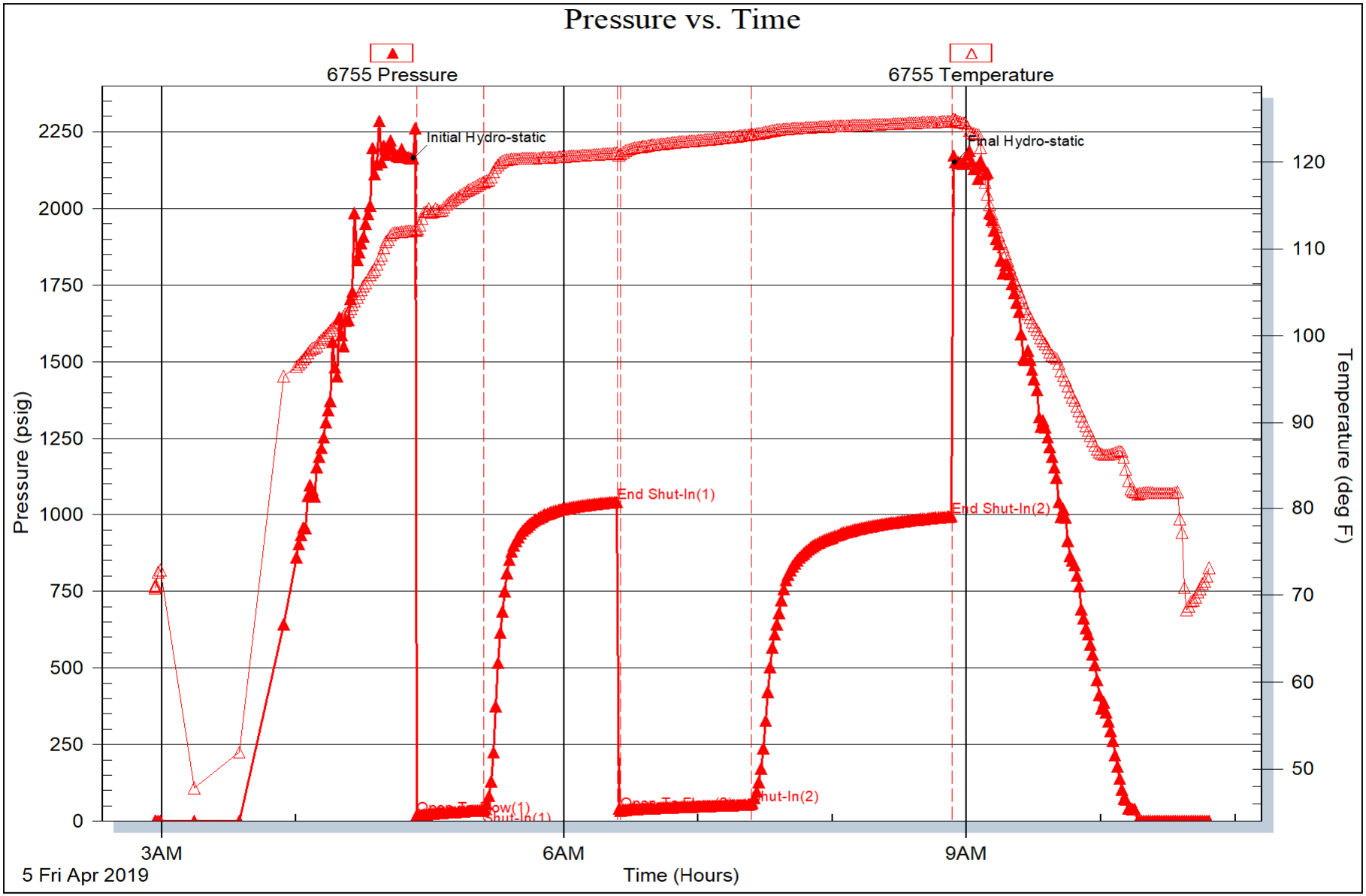
Recovery Comments: Recovery Resistivity .795 ohms @ 74 deg

Serial #: 8365 **Inside** Pickrell Drilling Co. Inc Norton J #5 DST Test Number: 2



Trilobite Testing, Inc Ref. No: 65657 Printed: 2019.04.05 @ 11:22:57

Serial #: 6755 **Outside** Pickrell Drilling Co. Inc Norton J #5 DST Test Number: 2



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DRILL STEM TEST REPORT

Pickrell Drilling Co. Inc

100 S Main
Suite 505
Wichita, Kansas 67202+3738
ATTN: Aaron Young

19/17S/25W/Ness

Norton J #5

Job Ticket: 65658 **DST#: 3**

Test Start: 2019.04.05 @ 19:08:00

GENERAL INFORMATION:

Formation: **Mississippi**
Deviated: No Whipstock: ft (KB)
Time Tool Opened: 21:09:17
Time Test Ended: 03:08:02

Test Type: Conventional Bottom Hole (Initial)
Tester: Ken Swinney
Unit No: 72 Hays/ 138

Interval: 4446.00 ft (KB) To 4458.00 ft (KB) (TVD)
Total Depth: 4458.00 ft (KB) (TVD)
Hole Diameter: 7.80 inches Hole Condition: Fair

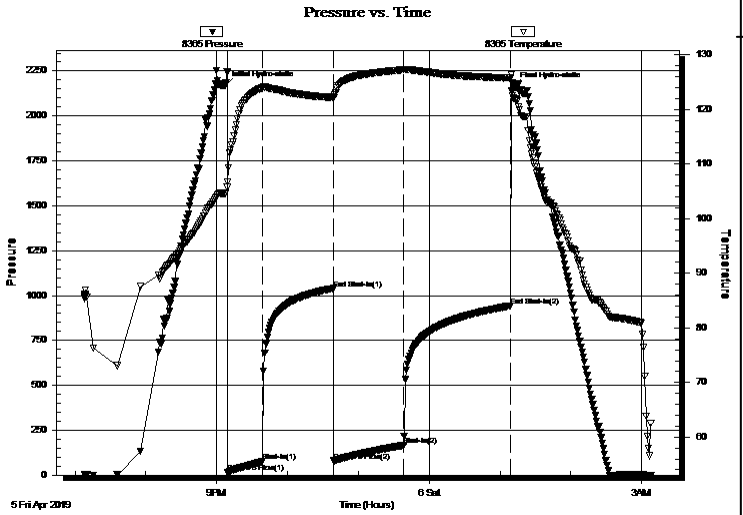
Reference Elevations: 2494.00 ft (KB)
2487.00 ft (CF)
KB to GR/CF: 7.00 ft

Serial #: 8365 **Inside**

Press@RunDepth: 166.52 psig @ 4447.00 ft (KB)
Start Date: 2019.04.05 End Date: 2019.04.06
Start Time: 19:08:01 End Time: 03:08:02

Capacity: psig
Last Calib.: 2019.04.06
Time On Btm: 2019.04.05 @ 21:07:32
Time Off Btm: 2019.04.06 @ 01:11:32

TEST COMMENT:
IF 30 Minutes/ Blow to BOB in 28 minutes/ Total build 12 1/2 inches
ISI 60 Minutes/ No blow back
FF 60 Minutes/ Blow to BOB in 42 minutes/ Total build 18 inches
FSI 90 Minutes/ No blow back



PRESSURE SUMMARY

Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	2168.44	104.65	Initial Hydro-static
2	14.99	106.65	Open To Flow (1)
32	75.35	124.07	Shut-In(1)
92	1039.31	122.26	End Shut-In(1)
92	79.21	122.20	Open To Flow (2)
151	166.52	127.31	Shut-In(2)
242	943.07	125.74	End Shut-In(2)
244	2160.96	122.14	Final Hydro-static

Recovery

Length (ft)	Description	Volume (bbl)
1.00	Clean Oil	0.01
340.00	VSOCMW/ O 2% M 10% W 88%	4.77

Gas Rates

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

DRILL STEM TEST REPORT

Pickrell Drilling Co. Inc

100 S Main
Suite 505
Wichita, Kansas 67202+3738
ATTN: Aaron Young

19/17S/25W/Ness

Norton J #5

Job Ticket: 65658 **DST#: 3**

Test Start: 2019.04.05 @ 19:08:00

GENERAL INFORMATION:

Formation: **Mississippi**
Deviated: No Whipstock: ft (KB)
Time Tool Opened: 21:09:17
Time Test Ended: 03:08:02

Test Type: Conventional Bottom Hole (Initial)
Tester: Ken Swinney
Unit No: 72 Hays/ 138

Interval: 4446.00 ft (KB) To 4458.00 ft (KB) (TVD)
Total Depth: 4458.00 ft (KB) (TVD)
Hole Diameter: 7.80 inches Hole Condition: Fair

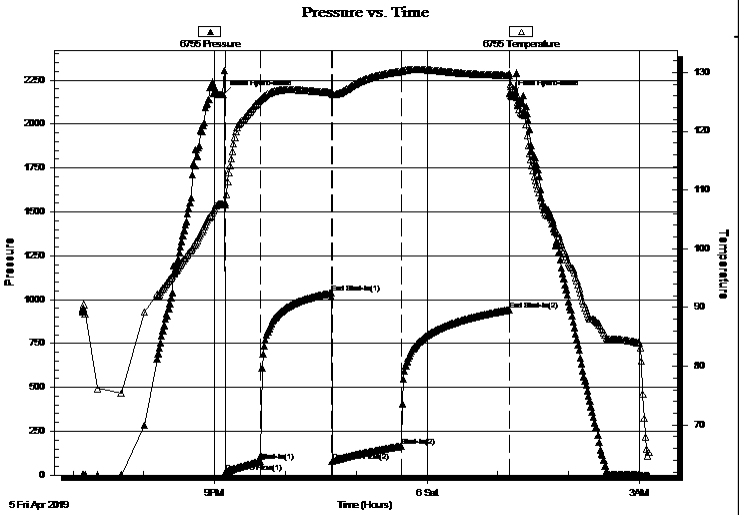
Reference Elevations: 2494.00 ft (KB)
2487.00 ft (CF)
KB to GR/CF: 7.00 ft

Serial #: 6755 **Outside**

Press@RunDepth: 941.82 psig @ 4448.00 ft (KB)
Start Date: 2019.04.05 End Date: 2019.04.06
Start Time: 19:08:01 End Time: 03:08:02

Capacity: psig
Last Calib.: 2019.04.06
Time On Btm: 2019.04.05 @ 21:07:17
Time Off Btm: 2019.04.06 @ 01:11:17

TEST COMMENT:
IF 30 Minutes/ Blow to BOB in 28 minutes/ Total build 12 1/2 inches
ISI 60 Minutes/ No blow back
FF 60 Minutes/ Blow to BOB in 42 minutes/ Total build 18 inches
FSI 90 Minutes/ No blow back



PRESSURE SUMMARY

Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	2168.24	107.61	Initial Hydro-static
2	16.68	107.83	Open To Flow (1)
32	78.30	125.32	Shut-In(1)
92	1037.25	126.55	End Shut-In(1)
93	79.98	126.37	Open To Flow (2)
152	166.31	130.20	Shut-In(2)
243	941.82	129.48	End Shut-In(2)
244	2165.50	127.64	Final Hydro-static

Recovery

Length (ft)	Description	Volume (bbl)
1.00	Clean Oil	0.01
340.00	VSOCMW/ O 2% M 10% W 88%	4.77

Gas Rates

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

DRILL STEM TEST REPORT

FLUID SUMMARY

Pickrell Drilling Co. Inc

100 S Main
Suite 505
Wichita, Kansas 67202+3738
ATTN: Aaron Young

19/17S/25W/Ness

Norton J #5

Job Ticket: 65658 **DST#: 3**

Test Start: 2019.04.05 @ 19:08:00

Mud and Cushion Information

Mud Type:	Gel Chem	Cushion Type:		Oil API:	deg API
Mud Weight:	9.00 lb/gal	Cushion Length:	ft	Water Salinity:	20000 ppm
Viscosity:	46.00 sec/qt	Cushion Volume:	bbl		
Water Loss:	9.99 in³	Gas Cushion Type:			
Resistivity:	ohm.m	Gas Cushion Pressure:	psig		
Salinity:	3700.00 ppm				
Filter Cake:	1.00 inches				

Recovery Information

Recovery Table

Length ft	Description	Volume bbl
1.00	Clean Oil	0.014
340.00	VSOCMW/ O 2% M 10% W 88%	4.769

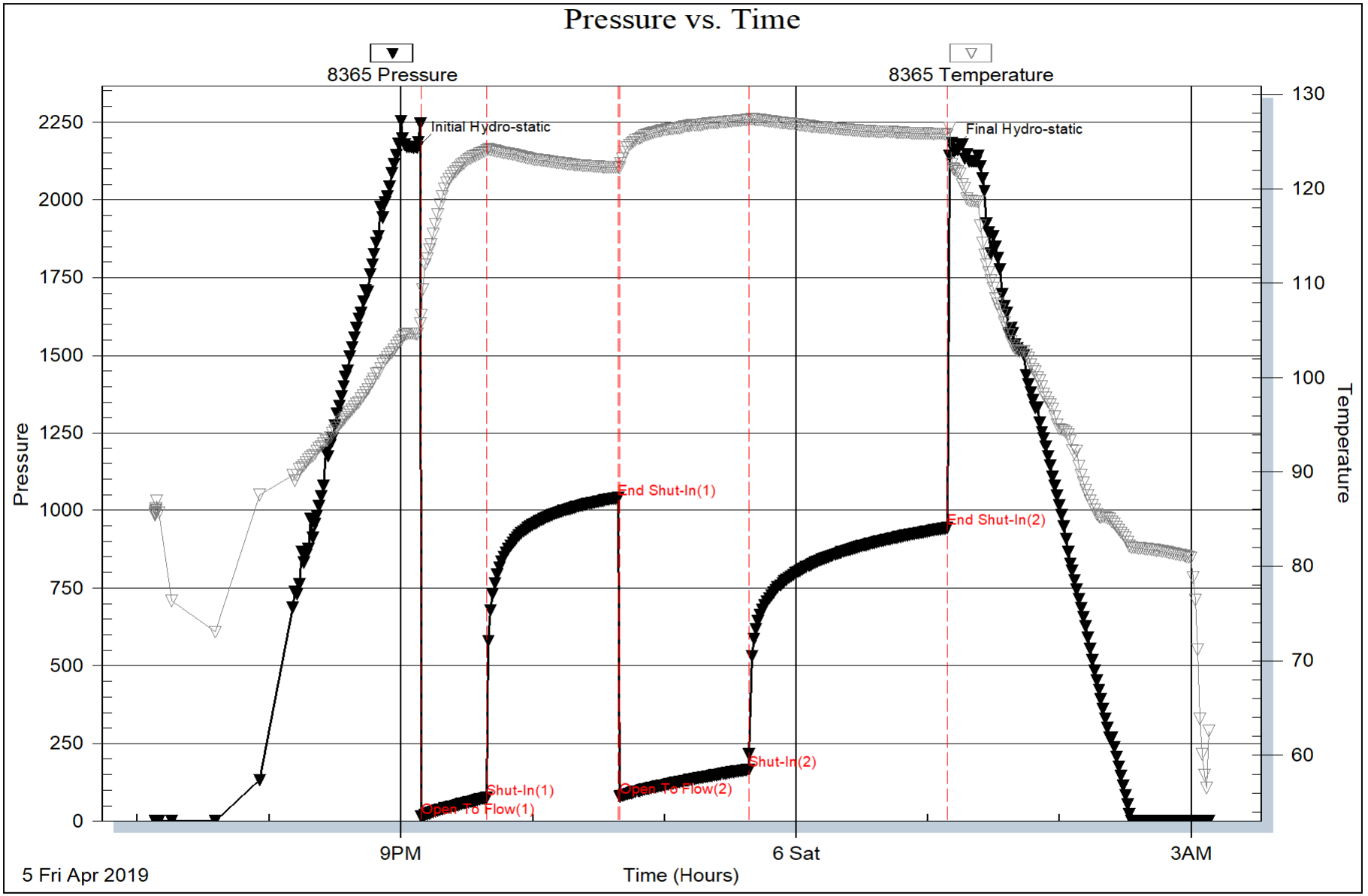
Total Length: 341.00 ft Total Volume: 4.783 bbl

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

Laboratory Name: Laboratory Location:

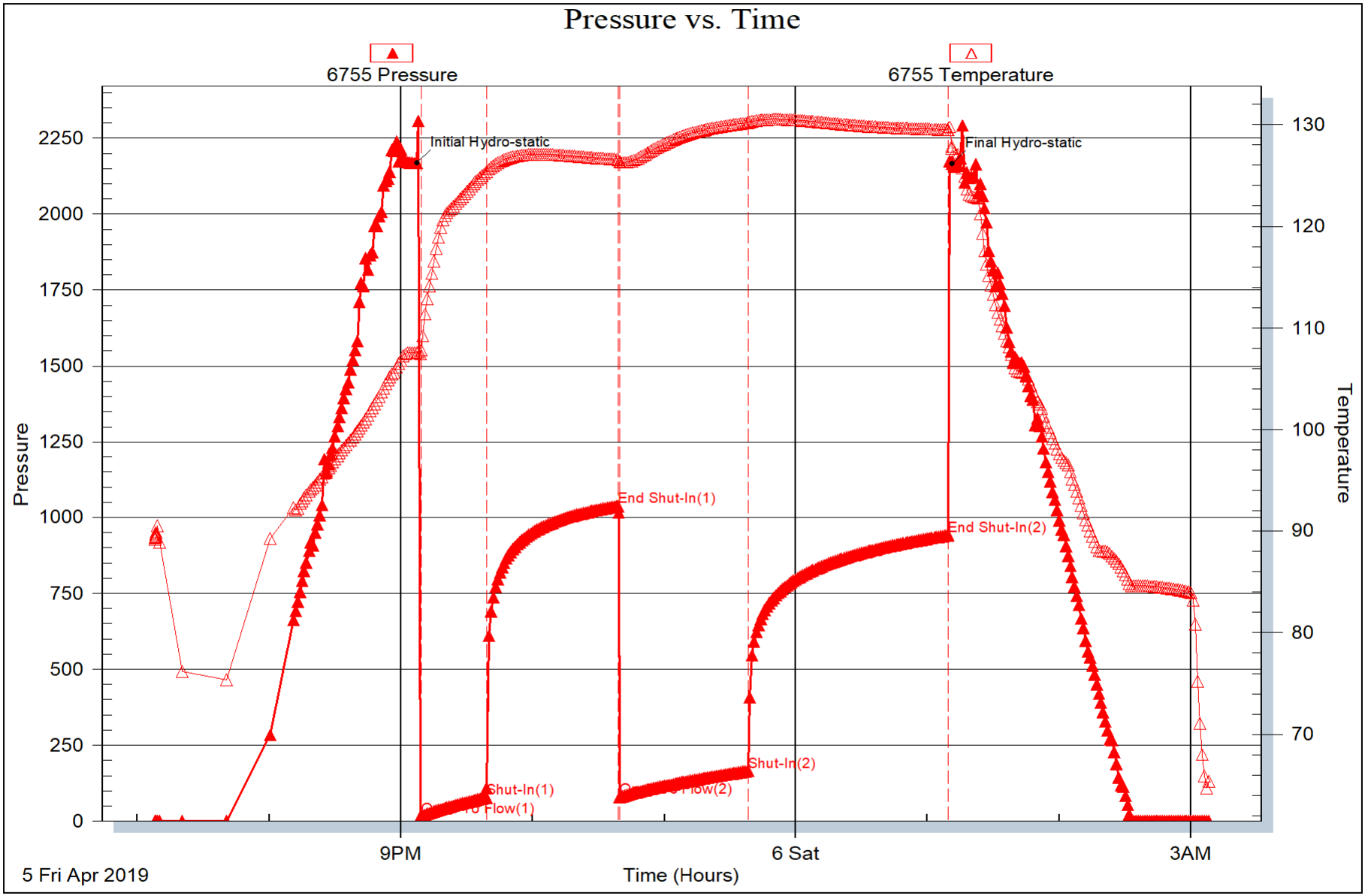
Recovery Comments: Recovery Resistivity .369 ohms @ 62 deg

Serial #: 8365 **Inside** Pickrell Drilling Co. Inc Norton J #5 DST Test Number: 3



Trilobite Testing, Inc Ref. No: 65658 Printed: 2019.04.06 @ 07:41:14

Serial #: 6755 **Outside** Pickrell Drilling Co. Inc Norton J #5 DST Test Number: 3



Trilobite Testing, Inc Ref. No: 65658 Printed: 2019.04.06 @ 07:41:14