

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)</i> <i>(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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**TRILOBITE  
TESTING, INC.**

# DRILL STEM TEST REPORT

Red Oak  
7701 E Kellogg Dr Ste 710  
Wichita, Ks 67207  
ATTN: Ryan Davis

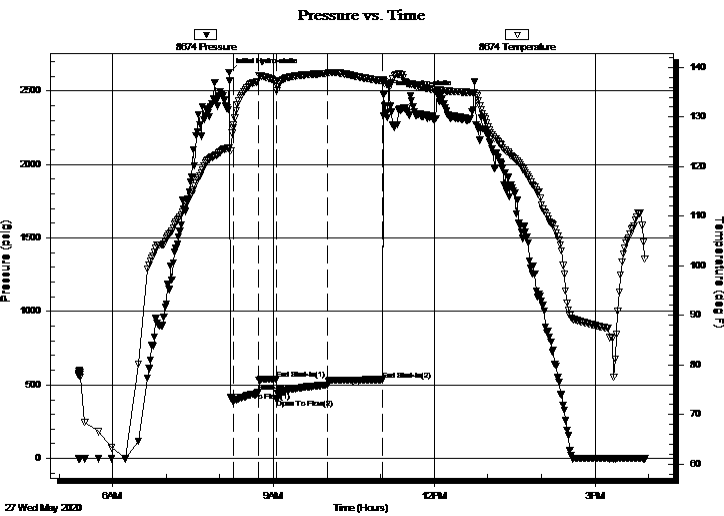
**14-16-42 Greeley Ks**  
**JHT 1-14**  
Job Ticket: 66633 **DST#: 1**  
Test Start: 2020.05.27 @ 05:21:45

## GENERAL INFORMATION:

Formation: **Morrow**  
Deviated: No Whipstock: ft (KB)  
Time Tool Opened: 08:14:45  
Time Test Ended: 15:56:15  
Interval: **4930.00 ft (KB) To 4983.00 ft (KB) (TVD)**  
Total Depth: 5160.00 ft (KB) (TVD)  
Hole Diameter: 7.88 inches Hole Condition: Good  
Test Type: Conventional Bottom Hole (Reset)  
Tester: Brandon Turley  
Unit No: 79  
Reference Elevations: 3805.00 ft (KB)  
3795.00 ft (CF)  
KB to GR/CF: 10.00 ft

**Serial #: 8674 Outside**  
Press@RunDepth: 499.25 psig @ 4931.00 ft (KB) Capacity: 8000.00 psig  
Start Date: 2020.05.27 End Date: 2020.05.27 Last Calib.: 2020.05.27  
Start Time: 05:21:50 End Time: 15:56:15 Time On Btm: 2020.05.27 @ 08:10:15  
Time Off Btm: 2020.05.27 @ 11:03:45

**TEST COMMENT:** IF:BOB in 1 min. Gas to surface in 3 min.  
IS: Never bled off.  
FF: Gauged gas  
FS: Never bled off.



## PRESSURE SUMMARY

Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	2625.51	123.86	Initial Hydro-static
5	386.25	127.83	Open To Flow (1)
33	450.20	137.20	Shut-In(1)
53	540.25	137.18	End Shut-In(1)
54	400.73	135.31	Open To Flow (2)
111	499.25	138.77	Shut-In(2)
172	535.73	137.28	End Shut-In(2)
174	2473.90	137.21	Final Hydro-static

## Recovery

Length (ft)	Description	Volume (bbl)
124.00	mcw 90%w 10%m	0.61
378.00	Top of recovery gocw m 30%g 10%o 10%a 22%50%	

\* Recovery from multiple tests

## Gas Rates

	Choke (inches)	Pressure (psig)	Gas Rate (Mcf/d)
First Gas Rate	0.75	29.00	677.90
Last Gas Rate	0.75	15.34	104.01
Max. Gas Rate	0.75	36.26	177.18



**TRILOBITE TESTING, INC.**

# DRILL STEM TEST REPORT

Red Oak  
 7701 E Kellogg Dr Ste 710  
 Wichita, Ks 67207  
 ATTN: Ryan Davis

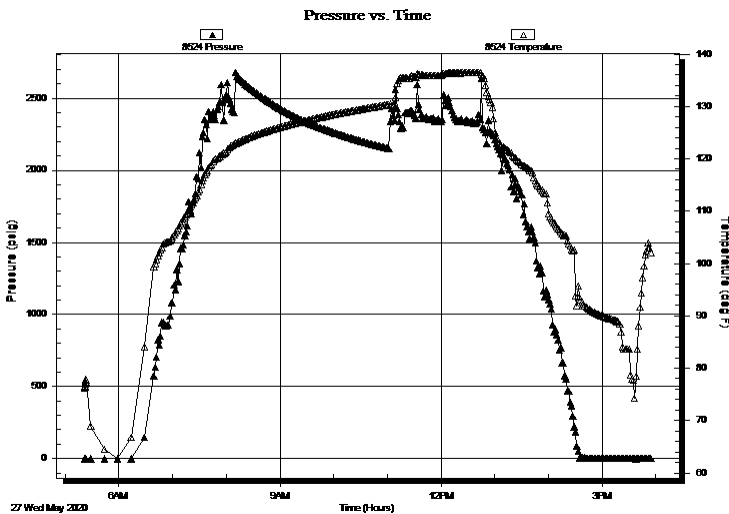
**14-16-42 Greeley Ks**  
**JHT 1-14**  
 Job Ticket: 66633 **DST#: 1**  
 Test Start: 2020.05.27 @ 05:21:45

## GENERAL INFORMATION:

Formation: **Morrow**  
 Deviated: No Whipstock: ft (KB)  
 Time Tool Opened: 08:14:45  
 Time Test Ended: 15:56:15  
 Interval: **4930.00 ft (KB) To 4983.00 ft (KB) (TVD)**  
 Total Depth: 5160.00 ft (KB) (TVD)  
 Hole Diameter: 7.88 inches Hole Condition: Good  
 Test Type: Conventional Bottom Hole (Reset)  
 Tester: Brandon Turley  
 Unit No: 79  
 Reference Elevations: 3805.00 ft (KB)  
 3795.00 ft (CF)  
 KB to GR/CF: 10.00 ft

**Serial #: 8524 Below (Straddle)**  
 Press@RunDepth: psig @ 4984.00 ft (KB) Capacity: 8000.00 psig  
 Start Date: 2020.05.27 End Date: 2020.05.27 Last Calib.: 2020.05.27  
 Start Time: 05:21:49 End Time: 15:54:44 Time On Btm:  
 Time Off Btm:

**TEST COMMENT:** IF:BOB in 1 min. Gas to surface in 3 min.  
 IS: Never bled off.  
 FF: Gauged gas  
 FS: Never bled off.



## PRESSURE SUMMARY

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

## Recovery

Length (ft)	Description	Volume (bbl)
124.00	mcw 90%w 10%m	0.61
378.00	Top of recovery gocw m 30%g 10%o 10%a 22%o	0.61

\* Recovery from multiple tests

## Gas Rates

	Choke (inches)	Pressure (psig)	Gas Rate (Mcf/d)
First Gas Rate	0.75	29.00	677.90
Last Gas Rate	0.75	15.34	104.01
Max. Gas Rate	0.75	36.26	177.18







**TRILOBITE**  
TESTING, INC.

# DRILL STEM TEST REPORT

**FLUID SUMMARY**

Red Oak

**14-16-42 Greeley Ks**

7701 E Kellogg Dr Ste 710  
Wichita, Ks 67207

**JHT 1-14**

Job Ticket: 66633

**DST#: 1**

ATTN: Ryan Davis

Test Start: 2020.05.27 @ 05:21:45

## 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:

34000 ppm

Viscosity: 62.00 sec/qt

Cushion Volume:

bbbl

Water Loss: 7.99 in<sup>3</sup>

Gas Cushion Type:

Resistivity: 0.00 ohm.m

Gas Cushion Pressure:

psig

Salinity: 3400.00 ppm

Filter Cake: 1.00 inches

## Recovery Information

Recovery Table

Length ft	Description	Volume bbl
124.00	mcw 90%w 10%m	0.610
378.00	Top of recovery gocw m 30%g 10%o 10%w	4.218

Total Length: 502.00 ft      Total Volume: 4.828 bbl

Num Fluid Samples: 0

Num Gas Bombs: 0

Serial #:

Laboratory Name:

Laboratory Location:

Recovery Comments: .18@83=34000



**TRILOBITE**  
**TESTING, INC.**

## DRILL STEM TEST REPORT

**GAS RATES**

Red Oak

**14-16-42 Greeley Ks**

7701 E Kellogg Dr Ste 710  
Wichita, Ks 67207

**JHT 1-14**

Job Ticket: 66633

**DST#: 1**

ATTN: Ryan Davis

Test Start: 2020.05.27 @ 05:21:45

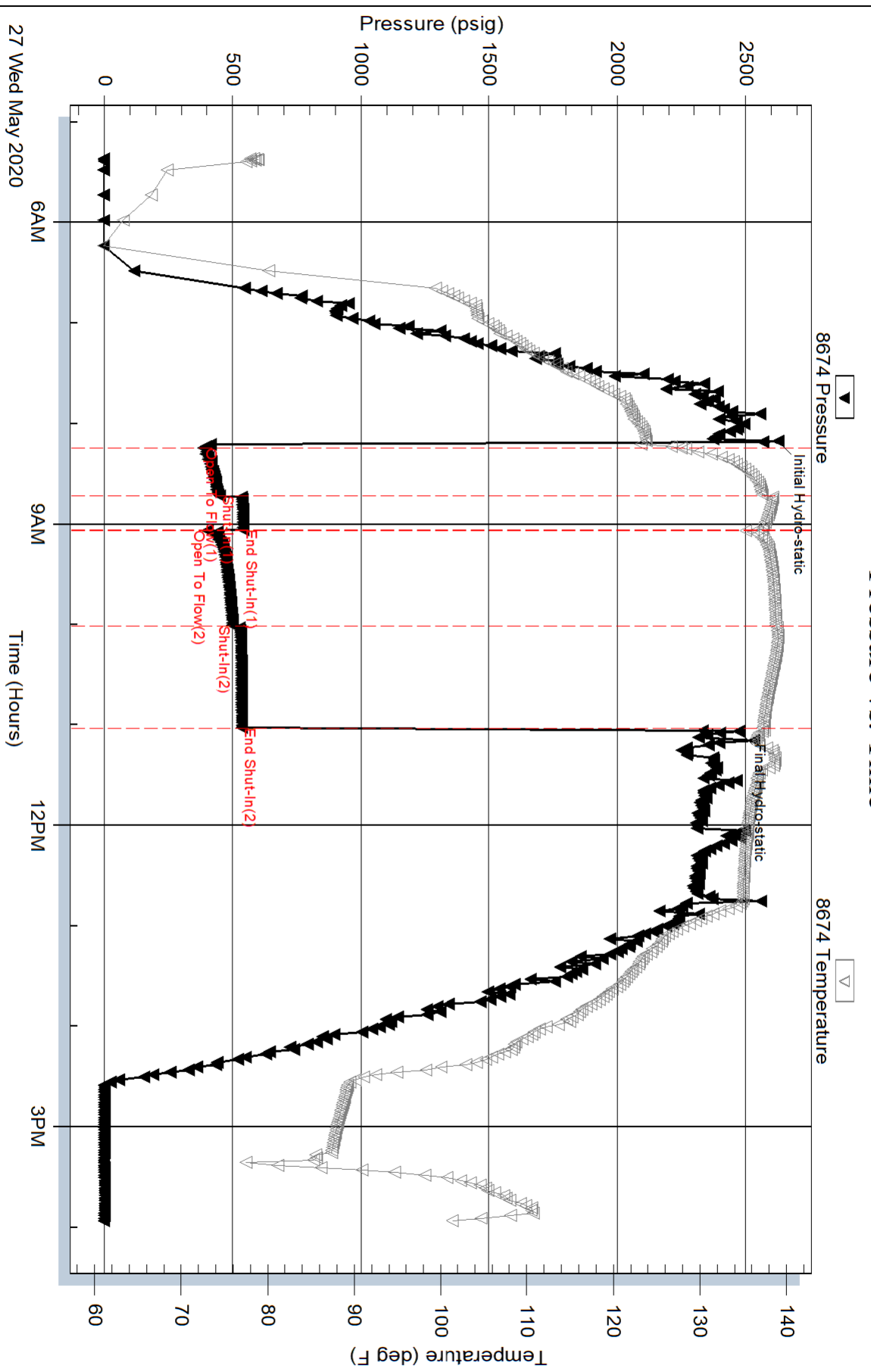
### Gas Rates Information

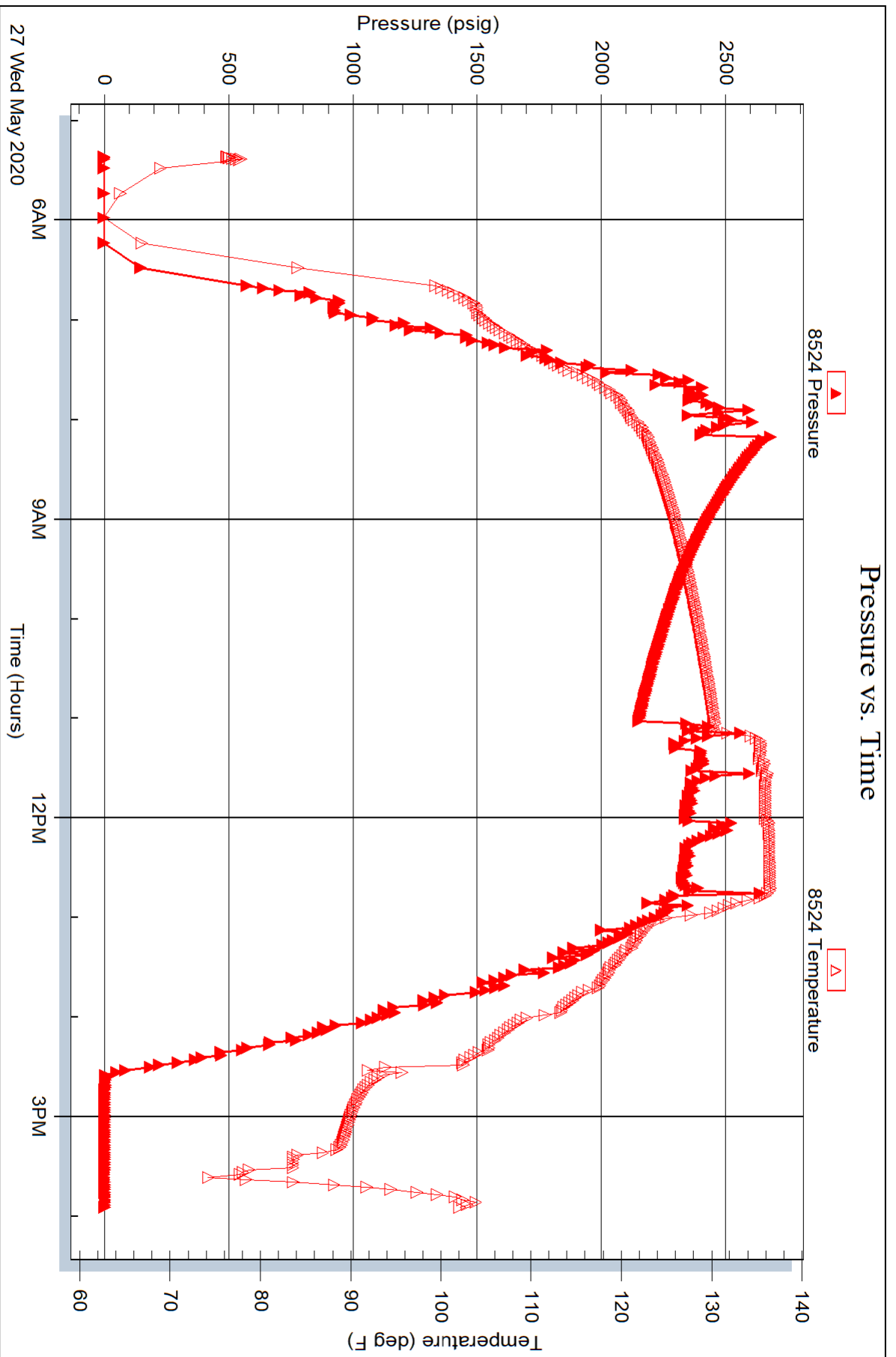
Temperature: 120 (deg F)  
Relative Density: 11.6  
Z Factor: 0.8

Gas Rates Table

Flow Period	Elapsed Time	Choke (inches)	Pressure (psig)	Gas Rate (Mcf/d)
1	10	0.75	29.00	677.90
1	10	0.75	29.00	151.79
1	10	0.75	29.00	151.79
1	20	0.75	36.26	177.18
1	30	0.75	33.99	169.24
2	10	0.75	15.00	102.82
2	20	0.75	24.85	137.27
2	30	0.75	19.86	119.82
2	40	0.75	15.34	104.01

### Pressure vs. Time





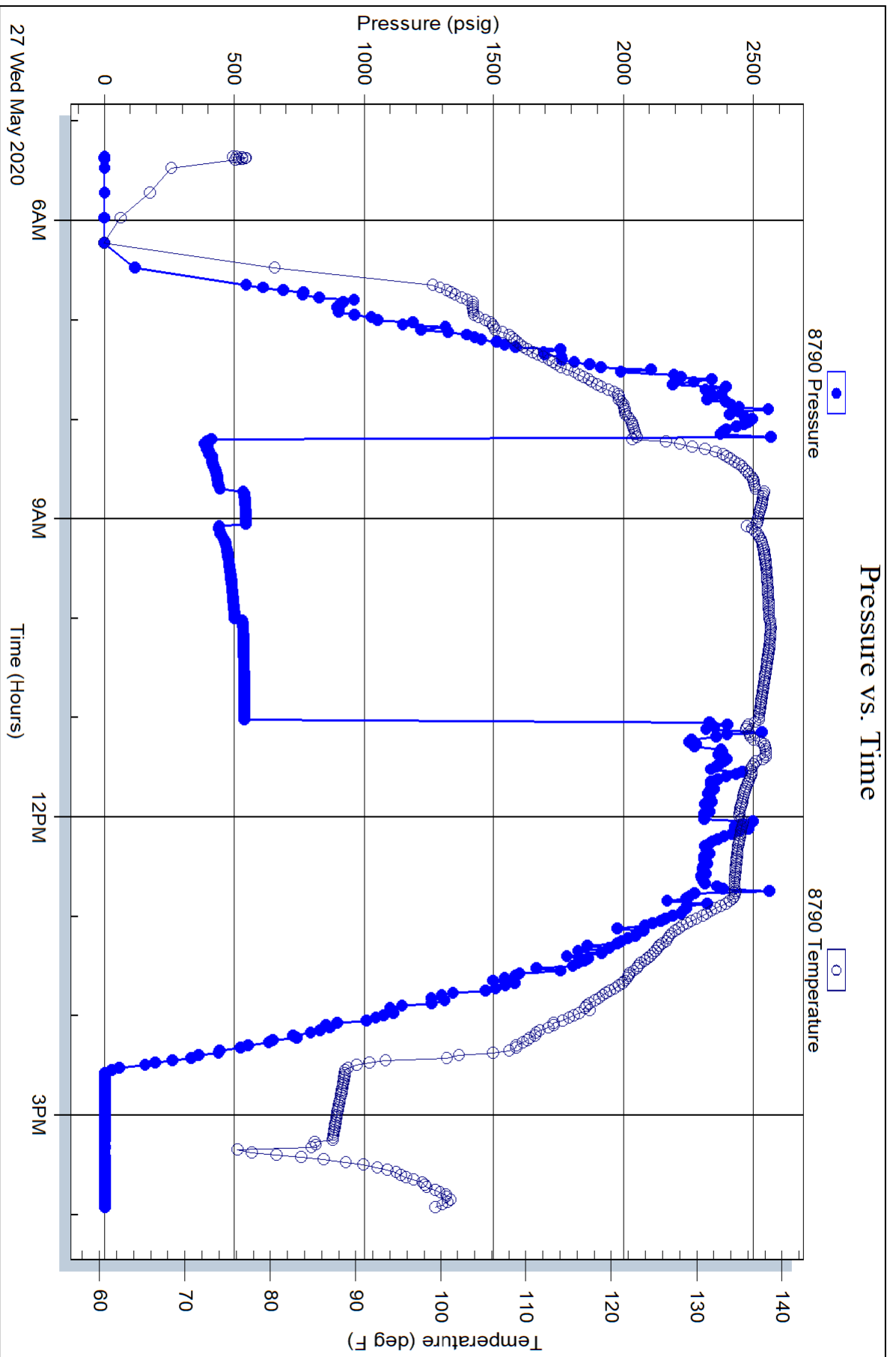
Serial #: 8790

Inside

Red Oak

JHT 1-14

DST Test Number: 1





CHARGE TO: *Red Oak Energy*

ADDRESS

CITY, STATE, ZIP CODE

TICKET 033154

PAGE 1 OF

1. SERVICE LOCATIONS <i>Hays Ks</i>	WELL/PROJECT NO. <i>1-14</i>	LEASE <i>JHT</i>	COUNTY/PARISH <i>Greeley</i>	STATE <i>Ks</i>	CITY	DATE <i>5-28-2020</i>	OWNER
2. <i>Ness City Ks</i>	TICKET TYPE <input type="checkbox"/> SERVICE <input type="checkbox"/> SALES	CONTRACTOR <i>Murfin</i>	RIG NAME/NO. <i>Rig 21</i>	SHIPPED <i>CT</i>	DELIVERED TO <i>location</i>	ORDER NO.	
3.	WELL TYPE <i>oil</i>	WELL CATEGORY <i>development</i>	JOB PURPOSE <i>long string</i>	WELL PERMIT NO.	WELL LOCATION		
4.	REFERRAL LOCATION	INVOICE INSTRUCTIONS					

PRICE REFERENCE	SECONDARY REFERENCE/ PART NUMBER	ACCOUNTING			DESCRIPTION	QTY.		UNIT PRICE	AMOUNT
		LOC	ACCT	DF		U/M	U/M		
575		1			MILEAGE <i>Trk # 111</i>	100	Mi	5.00	500.00
578		1			<i>Pump charge - long string</i>	1	EA	1400	1400.00
290		1			<i>D-Air</i>	2	Gal	42.00	84.00
281		1			<i>Mudflush</i>	500	Gal	1.50	750.00
221		1			<i>Liquin kcal</i>	4	Gal	25.00	100.00
403		1			<i>Cement Basket</i>	3	EA	275.00	825.00
404		1			<i>port collar</i>	1	EA	2500.00	2500.00
406		1			<i>Launch down Plug &amp; Baffle</i>	1	EA	250.00	250.00
407		1			<i>Insert 1 joint shoe</i>	1	EA	325.00	325.00
409		1			<i>Turbolizer</i>	8	EA	90.00	720.00

**LEGAL TERMS:** Customer hereby acknowledges and agrees to the terms and conditions on the reverse side hereof which include, but are not limited to, PAYMENT, RELEASE, INDEMNITY, and LIMITED WARRANTY provisions.

MUST BE SIGNED BY CUSTOMER OR CUSTOMER'S AGENT PRIOR TO START OF WORK OR DELIVERY OF GOODS.

**X**

DATE SIGNED \_\_\_\_\_ TIME SIGNED \_\_\_\_\_  A.M.  P.M.

REMIT PAYMENT TO:

SWIFT SERVICES, INC.  
P.O. BOX 466  
NESS CITY, KS 67560  
785-798-2300

SURVEY	AGREE	UNDECIDED	DISAGREE		
OUR EQUIPMENT PERFORMED WITHOUT BREAKDOWN?				P.1	7454.00
WE UNDERSTOOD AND MET YOUR NEEDS?				P.2	5542.25
OUR SERVICE WAS PERFORMED WITHOUT DELAY?				TOTAL	12996.25
WE OPERATED THE EQUIPMENT AND PERFORMED JOB CALCULATIONS SATISFACTORILY?				<i>186.13</i>	11047.24
ARE YOU SATISFIED WITH OUR SERVICE? <input type="checkbox"/> YES <input type="checkbox"/> NO				TAX <i>Greeley</i>	624.69
<input type="checkbox"/> CUSTOMER DID NOT WISH TO RESPOND				TOTAL	11671.93

CUSTOMER ACCEPTANCE OF MATERIALS AND SERVICES The customer hereby acknowledges receipt of the materials and services listed on this ticket.

SWIFT OPERATOR *Davis Edgerton* APPROVAL \_\_\_\_\_

Thank You!



PO Box 466  
Ness City, KS 67560  
Off: 785-798-2300

TICKET CONTINUATION

TICKET No. **33154**

CUSTOMER **Red Oak Energy** WELL **JHT 1-14** DATE **5-28-20** PAGE **1** OF **1**

PRICE REFERENCE	SECONDARY REFERENCE/ PART NUMBER	ACCOUNTING			TIME	DESCRIPTION	QTY		U/M		UNIT PRICE		AMOUNT	
		LOC	ACCT	DF			QTY	U/M	QTY	U/M				
325		2				Standard Cement	175	sk			13	50	2362	80
284		2				CALSEAL	8	sk			40	00	320	00
283		2				SALT	950	lbs			25		237	50
292		2				Halad 322	150	lbs			8	50	1275	00
276		2				Florete	50	lbs			3	00	150	00
581		2				SERVICE CHARGE Cement					1	95	323	75
583		2				MILEAGE CHARGE					95		874	00

CUBIC FEET **175 sk**  
TON MILES **920**  
TOTAL WEIGHT **18400**  
LOADED MILES **100**

CONTINUATION TOTAL **5542.25**

JOB LOG

SWIFT Services, Inc.

CHART NO.	TIME	RATE (BPM)	WELL NO.	LEASE	JOB TYPE	TICKET NO.	DESCRIPTION OF OPERATION AND MATERIALS	PUMPS		PRESSURE (PSI)	
								T	C	TUBING	CASING
230	2:30		1-14	JHT	Long Street	33154	On location				
							CSG - 5 1/2 x 15 #				
							RTD - 5160'				
							Baskets - 2, 7, 60				
							Centralizers - 1-7 x 59				
							Part Collar - 60'				
							Start Running Csg				
							Circ on J7 60				
							Break Circ on Bottom				
		2.5	8	0			plug rat hole - 30 sks				
		2.5	4	0			plug mouse hole - 20 sks				
		5	12	300			pump mudflush - 500 gm				
		5	20	300			pump Kcl spacer				
		5	30	500			pump cement				
							Drop plug - Wash P&L				
		6.5	0	300			Start Disp.				
			50	300			Start Recipe				
			95	800			End Recipe				
			120	1200/1700			land plug lift psi - 1200*				
							land psi - 1700*				
							Release psi - Dry				
							Job Complete				
							Thanks				
							Davis, Zach & Isaac				



# MUD LOG

## WellSight Systems

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

Measured Depth Log

Well Name: JHT #1-14  
API: 15-071-20893  
Location: NE SE SW SE Sec 14-16S-42W  
License Number:  
Spud Date: 5/20/2020  
Surface Coordinates: NAD27 Long: -101.9245778  
NAD27 Lat: 38.6562018  
Bottom Hole Coordinates:  
Ground Elevation (ft): 3794  
Logged Interval (ft): 3900 To: 5160  
Formation: Mississippian  
Type of Drilling Fluid: Chemical Mud

Region:  
Drilling Completed: 5/27/2020

Printed by MudLog from WellSight Systems 1-800-447-1534 www.WellSight.com

### OPERATOR

Company: Red Oak Energy, Inc.  
Address: 7701 E. Kellogg  
STE 710  
Wichita, KS 67207

### GEOLOGIST

Name: Ryan Davis  
Company:  
Address:

### Cores

No Cores

### DSTs

DST #1 Upper Morrow Sand 4930' – 4983'. 30-20-60-60 mins. IF: BOB in 1 min, GTS in 3 min (MCF/D 10 min: 151 / 20 min: 173 / 30 min: 16). IFPs: 386-450# ISI: Never bled off. FF: GTS (10 mi: 102 / 20 min: 134 / 30 min: 117 / 40 min: 102 / 50 min: 94) FFPs: 400-499#. FSI: Never bled off. SIPs: 537-531#. Rec: 378' GOCWM (30% G, 10% O, 10% W, 50 %M), 124' MCW (90% W, 10% M).

### Comments

After discussions with partners the decision was made to further test Morrow Ss through casing. A port collar was ran so the majority of the csg could be recovered if further testing did not yield positive results.

5/28/20 – RIH w 118 jts 5 1/2" 15.5# used csg from Sunrise. Swift cement w 125 sx EA2. PBTD @ 5112', PC @ 2683'. Released Murfin Rig 21.

### ROCK TYPES

	Anhy		Clyst		Gyp		Mrlst		Shgy
	Bent		Coal		Igne		Salt		Sltst
	Brec		Congl		Lmst		Shale		Ss

### ACCESSORIES

#### MINERAL

- Anhy
- Arggrn
- Arg
- Bent
- Bit
- Brefrag
- Calc
- Carb
- Chtdk
- Chtlt
- Dol
- Feldspar
- Ferrpel
- Ferr
- Glau

- Gyp
- Hvymin
- Kaol
- Marl
- Minxl
- Nodule
- Phos
- Pyr
- Salt
- Sandy
- Silt
- Sil
- Sulphur
- Tuff

#### FOSSIL

- Algae
- Amph
- Belm
- Bioclst
- Brach
- Bryozoa
- Cephal
- Coral
- Crin
- Echin
- Fish
- Foram
- Fossil
- Gastro
- Oolite

- Ostra
- Pelec
- Pellet
- Pisolite
- Plant
- Strom

#### STRINGER

- Anhy
- Arg
- Bent
- Coal
- Dol
- Gyp
- Ls
- Mrst

- Sltstrg
- Ssstrg

#### TEXTURE

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

### OTHER SYMBOLS

#### POROSITY

- Earthy
- Fenest
- Fracture
- Inter
- Moldic
- Organic
- Pinpoint

- Vuggy

#### SORTING

- Well
- Moderate
- Poor

#### ROUNDING

- Rounded
- Subrnd
- Subang
- Angular

- Spotted
- Ques
- Dead

#### EVENT

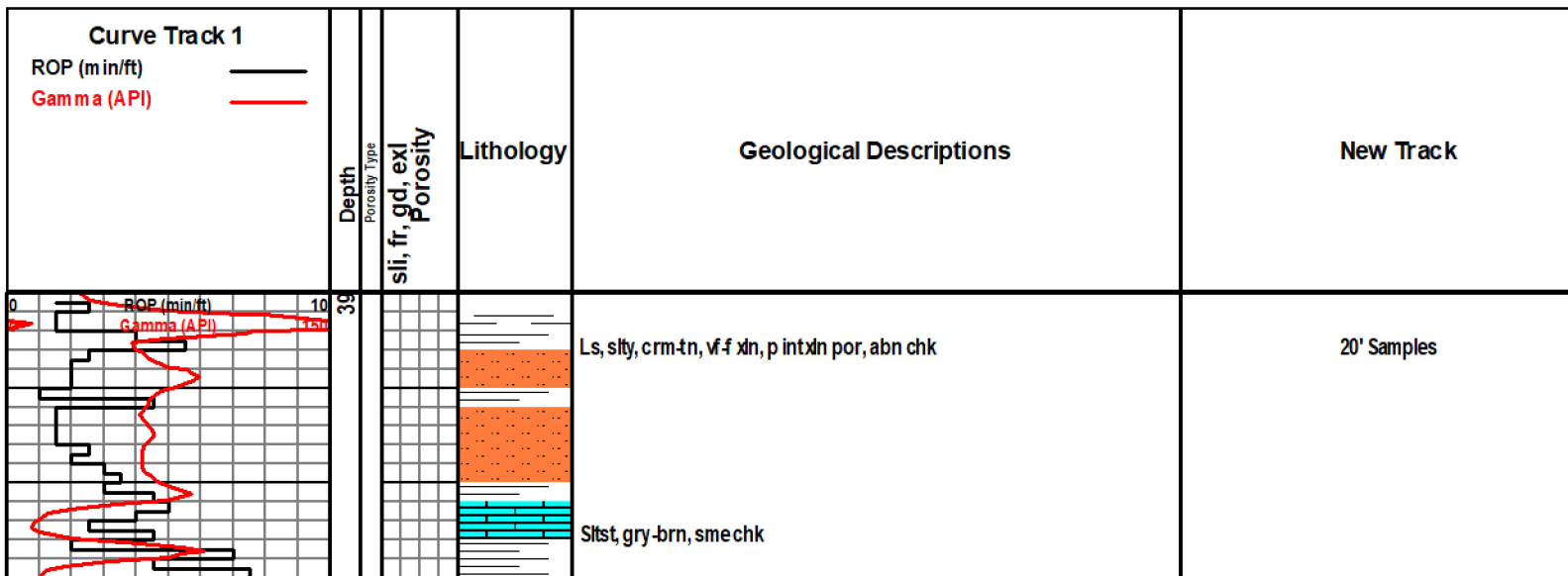
- Rft
- Sidewall

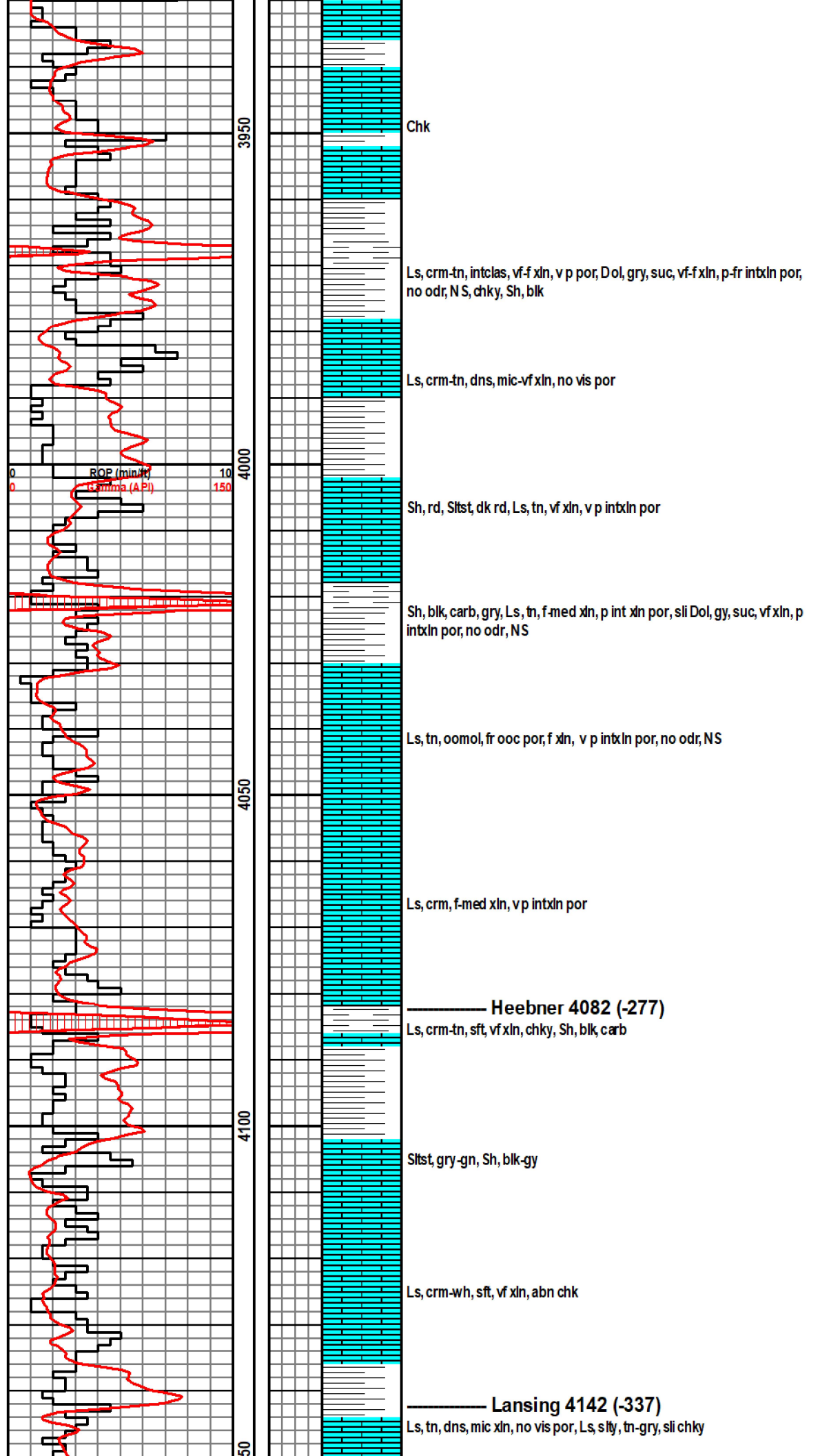
#### INTERVAL

- Core
- Dst

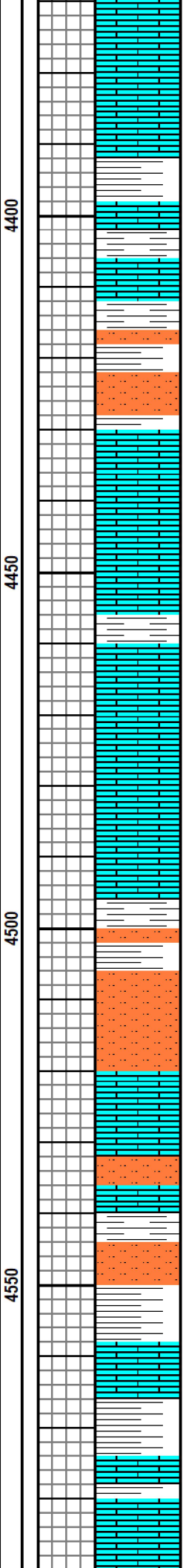
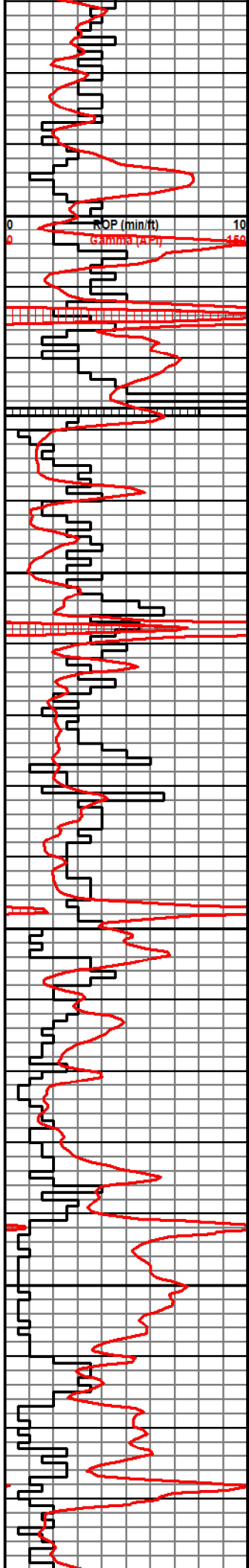
#### OIL SHOW

- Even









Ls, tn-gry, dns, vf xln vp intxln por, foss, no odr, NS

Stst, gry, sft, Sh, blk, carb, gry, sme chk  
**Stark 4412 (-607)**

Stst, AA, Sh, AA, chky

Chk, wh-tn, plty, sft

Ls, dolc, tn-gry, mic-vf xln, vp intxln por, abn chKAA

Ls, crm-tn, dns, f-med xln, p intxln por, chky, no odr, NS

**Base Kansas City 4496 (-691)**

Sh, blk, carb, gry, Ls, tn dns, fxln, no vis por

Stst, gry, sft, Sh, gry

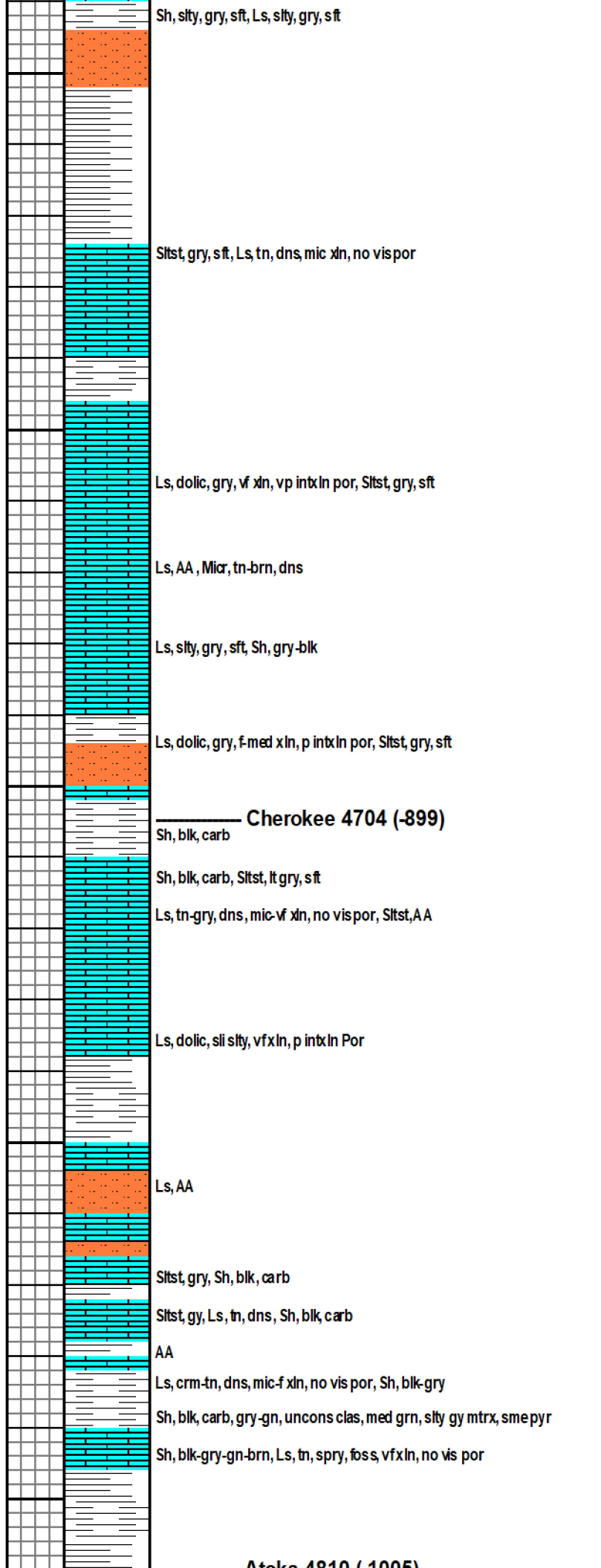
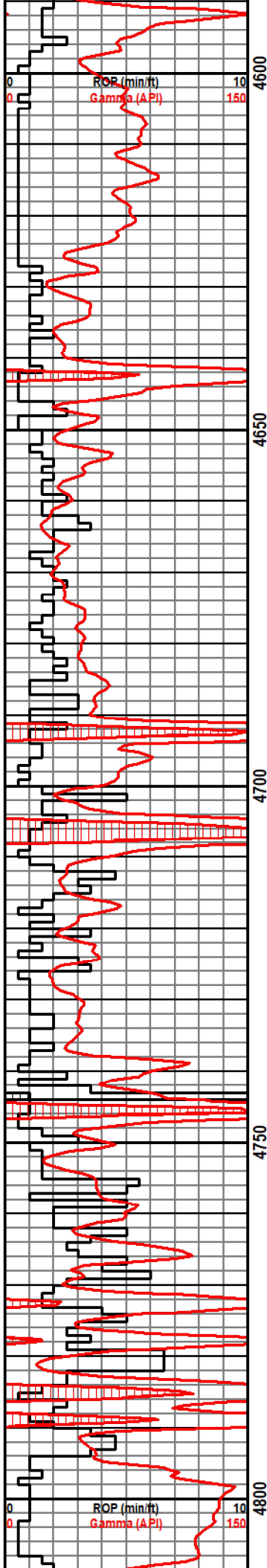
Ls, tn, clas, f-med xln, p intxln por, no odr, NS

Ls, tn, ooc, vgggy por, vf xln, p intxln por, chky, no odr, NS

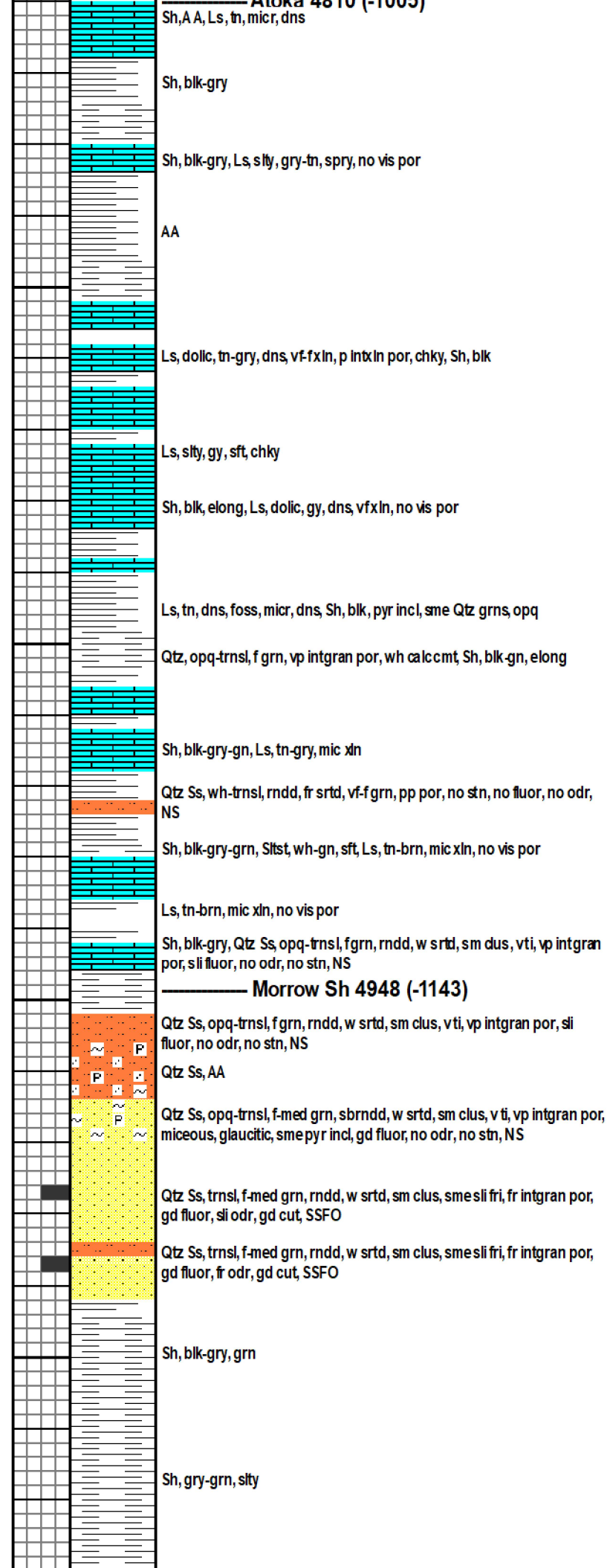
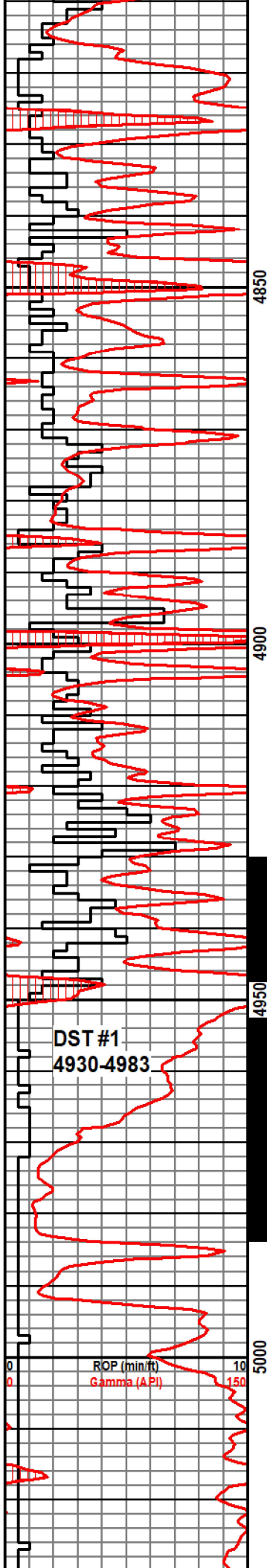
Sh, slty, gry, sft, Ls, slty, gry, sft

Stst, gry, sft, Qtz, trns l, sbang, vf grn, p intgrn por, calc cmt, no odr, NS

Wrk on Dwks



Switch to 10 ft samples



Atoka 4810 (-1005)

Sh, blk-gry

Sh, blk-gry, Ls, stly, gry-tn, spry, no vis por

AA

Ls, dolc, tn-gry, dns, vfxln, p intxn por, chky, Sh, blk

Ls, stly, gy, sft, chky

Sh, blk, elong, Ls, dolc, gy, dns, vfxln, no vis por

Ls, tn, dns, foss, micr, dns, Sh, blk, pyr incl, sme Qtz grns, opq

Qtz, opq-trnsl, f grn, vp intgran por, wh calcmnt, Sh, blk-gn, elong

Sh, blk-gry-gn, Ls, tn-gry, mic xln

Qtz Ss, wh-trnsl, rndd, fr srtdd, vf-f grn, pp por, no stn, no fluor, no odr, NS

Sh, blk-gry-grn, Sltst, wh-gn, sft, Ls, tn-brn, mic xln, no vis por

Ls, tn-brn, mic xln, no vis por

Sh, blk-gry, Qtz Ss, opq-trnsl, fgrn, rndd, w srtdd, sm dus, vti, vp intgran por, sli fluor, no odr, no stn, NS

**Morrow Sh 4948 (-1143)**

Qtz Ss, opq-trnsl, fgrn, rndd, w srtdd, sm clus, vti, vp intgran por, sli fluor, no odr, no stn, NS

Qtz Ss, AA

Qtz Ss, opq-trnsl, f-med grn, sbrmdd, w srtdd, sm clus, v ti, vp intgran por, miceous, glaucitic, sme pyr incl, gd fluor, no odr, no stn, NS

Qtz Ss, trnsl, f-med grn, rndd, w srtdd, sm clus, sme sli fri, fr intgran por, gd fluor, sli odr, gd cut, SSFO

Qtz Ss, trnsl, f-med grn, rndd, w srtdd, sm clus, sme sli fri, fr intgran por, gd fluor, fr odr, gd cut, SSFO

Sh, blk-gry, grn

Sh, gry-grn, stly

TOOH to Collars

**DST #1**

Upper Morrow Sand 4930' - 4983' 30-20-60-60 mins.

IF: BOB in 1 min, GTS in 3 min  
(MCF/D 10 min: 151 / 20 min: 173 / 30 min: 16)

IFPs: 386-450# ISI: Never bled off. FF: GTS  
(10 mi: 102 / 20 min: 134 / 30 min: 117 / 40 min: 102 / 50 min: 94)

FFPs: 400-499#. FSI: Never bled off.  
SIPs: 537-531#

Rec: 378' GOCWM (30% G, 10% O, 10% W, 50% M), 124' MCW (90% W, 10% M).

CFS 20/40/60/75

**Upper Morrow Ss 4968 (-1163)**

CFS 20/40/60

CFS 20/40/60

**DST #1**  
4930-4983

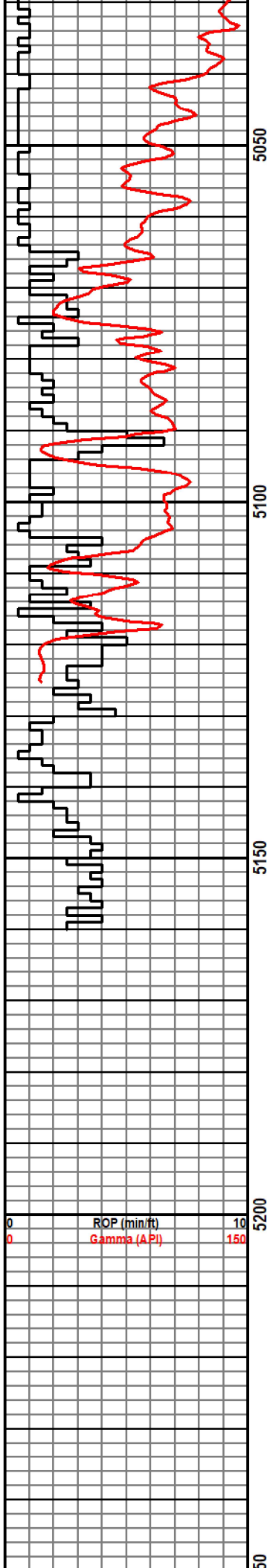
ROP (min/ft)  
Gamma (API)

4850

4900

4950

5000



5050

5100

5150

5200

50

0 ROP (min/ft) 10  
 0 Gamma (API) 150

Sh, blk-gry-gn, stly, pyr incl

Sh,AA

**Morrow Ls 5066 (-1261)**

Ls, tn-brn, mic-vf xln, no vis por, chky, foss

Sh, blk-gy

Ls, AA

Ls, tn-brn, mic-vf xln, no vis por, chky, foss

Sh, gy-buff, stly

**Mississippian 5138 (-1333)**

Ls, tn-gry, mic xln, no vis por, foss, ool, ti, suc, ti, calc cmt mtrx, no str, NS

RTD 5160  
 LTD 5162



