

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
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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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Form	ACO1 - Well Completion
Operator	Hayes Oil & Gas LLC
Well Name	HUCK 2-5
Doc ID	1729502

All Electric Logs Run

Sonic
Micro
Neutron
Dual Induction
Mud



# Mid-Continent Conductor, LLC

12485 Memorial Road NW, Calumet, OK 73014

Phone: (580)254-5400

Fax: (877)691-5044

## Invoice

Date	Invoice #
4/6/2023	9037

Bill To
Hayes Oil & Gas LLC 1081 W. Hwy 160 PO Box 108 Attica, KS 67009

Ordered By	Terms	Date of Service	Lease Name/Legal Desc.	Drilling Rig
Shane	Net 30	4/6/2023		Fossil 3

Item	Quantity	Description	Amount
		Huck 2-5	
Conductor Hole	115	Drilled 115' of conductor hole	3,220.00
20 inch pipe	115	Furnished 115' of 20" conductor pipe	8,625.00T
Grout and Trucking TP	14	Furnished grout and trucking to location.	5,250.00T
Mud and Water	1	Furnished mud and water.	500.00T
Transport Truck - Conductor	1	Transport mud and water to location.	1,000.00
Grout Pump	1	Furnished grout pump	1,650.00
20" Cover Plates	1	Furnished 20 inch cover plate.	50.00T
<b>Subtotal</b>			\$20,295.00
<b>Sales Tax (4.875%)</b>			\$703.22

	<b>Total</b>	\$20,998.22
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Phone #
435-789-7223



Customer	Hayes Oil & Gas LLC		Lease & Well #	Huck 2-5		Date	4/10/2023	
Service District	Pratt Kansas		County & State	Comanche, Kansas		Legals S/T/R	5-35s-18w	
Job Type	Surface	<input checked="" type="checkbox"/> PROD	<input type="checkbox"/> INJ	<input type="checkbox"/> SWD	New Well?	<input checked="" type="checkbox"/> YES	<input type="checkbox"/> No	Job #
Equipment #					Ticket #	wp 4142		

Equipment #	Driver	Job Safety Analysis - A Discussion of Hazards & Safety Procedures					
916	M Brungardt	<input type="checkbox"/> Hard hat	<input type="checkbox"/> Gloves	<input type="checkbox"/> Lockout/Tagout	<input type="checkbox"/> Warning Signs & Flagging		
176/522	R Osborn	<input type="checkbox"/> H2S Monitor	<input type="checkbox"/> Eye Protection	<input type="checkbox"/> Required Permits	<input type="checkbox"/> Fall Protection		
182/534	K Julian	<input type="checkbox"/> Safety Footwear	<input type="checkbox"/> Respiratory Protection	<input type="checkbox"/> Slip/Trip/Fall Hazards	<input type="checkbox"/> Specific Job Sequence/Expectations		
		<input type="checkbox"/> FRC/Protective Clothing	<input type="checkbox"/> Additional Chemical/Acid PPE	<input type="checkbox"/> Overhead Hazards	<input type="checkbox"/> Muster Point/Medical Locations		
		<input type="checkbox"/> Hearing Protection	<input type="checkbox"/> Fire Extinguisher	<input type="checkbox"/> Additional concerns or issues noted below			

Comments	

Product/Service Code	Description	Unit of Measure	Quantity	Net Amount
cp050	H-Lite	sack	250.00	\$4,250.00
cp010	Class A Cement	sack	250.00	\$5,000.00
cp100	Calcium Chloride	lb	1,124.00	\$843.00
cp120	Cello-flake	lb	127.00	\$222.25
fd275	8 5/8" AFU Flapper Insert Valve	ea	1.00	\$375.00
fd285	8 5/8" Rubber Plug	ea	1.00	\$175.00
fd255	8 5/8" Cement Basket	ea	1.00	\$500.00
m015	Light Equipment Mileage	mi	55.00	\$110.00
m010	Heavy Equipment Mileage	mi	110.00	\$440.00
m020	Ton Mileage	tm	1,246.00	\$1,869.00
c060	Cement Blending & Mixing Service	sack	500.00	\$700.00
d011	Depth Charge: 501'-1000'	job	1.00	\$1,250.00
c060	Cement Plug Container	job	1.00	\$250.00
c035	Cement Data Acquisition	job	1.00	\$250.00
r061	Service Supervisor	day	1.00	\$275.00

Customer Section: On the following scale how would you rate Hurricane Services Inc.?		Net:	\$16,509.25
Based on this job, how likely is it you would recommend HSI to a colleague?		Total Taxable	\$ -
<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>		Tax Rate:	
Unlikely 1 2 3 4 5 6 7 8 9 10 Extremely Likely		Sale Tax:	\$ -
State tax laws deem certain products and services used on new wells to be sales tax exempt. Hurricane Services relies on the customer provided well information above to make a determination if services and/or products are tax exempt.		Total:	\$ 16,509.25
HSI Representative: <i>Mark Brungardt</i>			

**TERMS:** Cash in advance unless Hurricane Services Inc. (HSI) has approved credit prior to sale. Credit terms of sale for approved accounts are total invoice due on or before the 30th day from the date of invoice. Past due accounts shall pay interest on the balance past due at the rate of 1 1/2% per month or the maximum allowable by applicable state or federal laws. In the event it is necessary to employ an agency and/or attorney to effect the collection, Customer hereby agrees to pay all fees directly or indirectly incurred for such collection. In the event that Customer's account with HSI becomes delinquent, HSI has the right to revoke any discounts previously applied in arriving at net invoice price. Upon revocation, the full invoice price without discount is immediately due and subject to collection. Prices quoted are estimates only and are good for 30 days from the date of issue. Pricing does not include federal, state, or local taxes, or royalties and stated price adjustments. Actual charges may vary depending upon time, equipment, and material ultimately required to perform these services. Any discount is based on 30 days net payment terms or cash. **DISCLAIMER NOTICE:** Technical data is presented in good faith, but no warranty is stated or implied. HSI assumes no liability for advice or recommendations made concerning the results from the use of any product or service. The information presented is a best estimate of the actual results that may be achieved and should be used for comparison purposes and HSI makes no guarantee of future production performance. Customer represents and warrants that well and all associated equipment in acceptable condition to receive services by HSI. Likewise, the customer guarantees proper operational care of all customer owned equipment and property while HSI is on location performing services. The authorization below acknowledges the receipt and acceptance of all terms/conditions stated above, and Hurricane has been provided accurate well information in determining taxable services.

X *Shayne A Hayes* CUSTOMER AUTHORIZATION SIGNATURE





**CEMENT TREATMENT REPORT**

Customer:	Hayes Oil & Gas LLC	Well:	Huck 2-5	Ticket:	wp 4142
City, State:	Coldwater Kansas	County:	Comanche.Kansas	Date:	4/10/2023
Field Rep:	Shayne Hayes	S-T-R:	5-35s-18w	Service:	Surface

Downhole Information	
Hole Size:	12 1/4 in
Hole Depth:	820 ft
Casing Size:	8 5/8 in
Casing Depth:	813 ft
Tubing / Liner:	in
Depth:	ft
Tool / Packer:	
Tool Depth:	ft
Displacement:	49.0 bbls

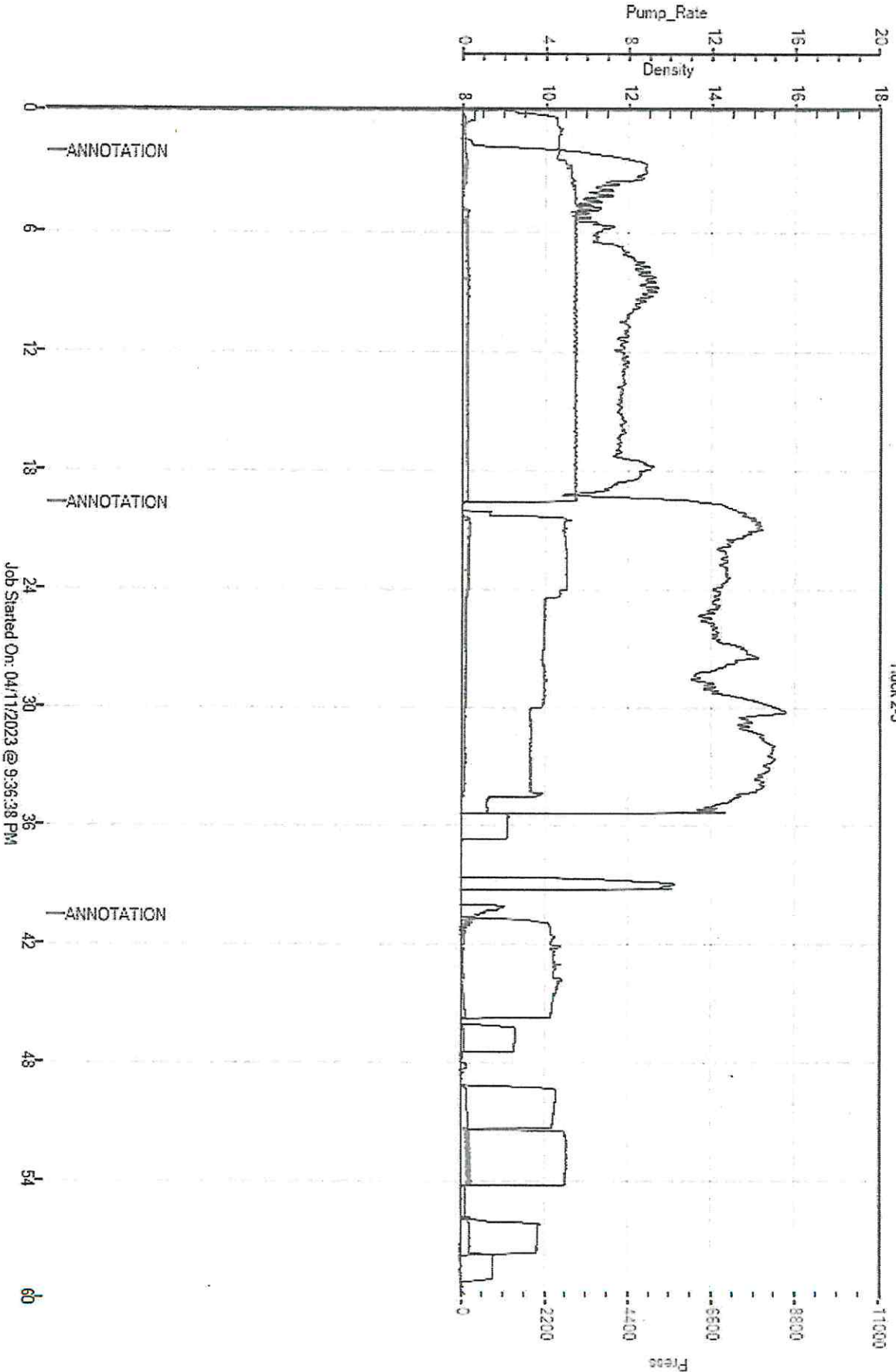
Calculated Slurry - Lead	
Blend:	H- Lite
Weight:	12.3 ppg
Water / Sx:	11.5 gal / sx
Yield:	2.08 ft <sup>3</sup> / sx
Annular Bbls / Ft.:	bbs / ft.
Depth:	ft
Annular Volume:	0.0 bbls
Excess:	
Total Slurry:	92.6 bbls
Total Sacks:	250 sx

Calculated Slurry - Tail	
Blend:	A 2% cc
Weight:	15.6 ppg
Water / Sx:	5.2 gal / sx
Yield:	1.20 ft <sup>3</sup> / sx
Annular Bbls / Ft.:	bbs / ft.
Depth:	ft
Annular Volume:	0 bbls
Excess:	
Total Slurry:	53.4 bbls
Total Sacks:	250 sx

TIME	RATE	PSI	BBLs	STAGE	TOTAL BBLs	REMARKS
7:00 PM			-		-	on location job and safety
7:15 PM					-	spot trucks and rig up
					-	
					-	basket on 3rd joint from top
					-	
7:45 PM					-	start casing in the hole
9:05 PM					-	casing on bottom and circulate
					-	
9:45 PM					-	start cement
	5.0	70.0	5.0		5.0	Water
	5.0	120.0	92.6		97.6	mix 250 sacks lite cement
	5.0	120.0	53.4			mix 250 sacks tail cement
10:17 PM						cement in and shut down
						release the plug
10:20 PM						start displacement
	2.5	50.0	10.0			
	4.5	130.0	20.0			
	4.5	130.0	30.0			
	4.5	200.0	40.0			
10:45 PM	3.5	300.0	49.0			plug down
						took pressure from 300 to 800.....float heid
						circulated 10 bbls to the pit

CREW		UNIT	SUMMARY		
Cementer:	M Brungardt	916	Average Rate	Average Pressure	Total Fluid
Pump Operator:	R Osborn	176/522	4.3 bpm	140 psi	300 bbls
Bulk #1:	K Julian	182/534			
Bulk #2:					

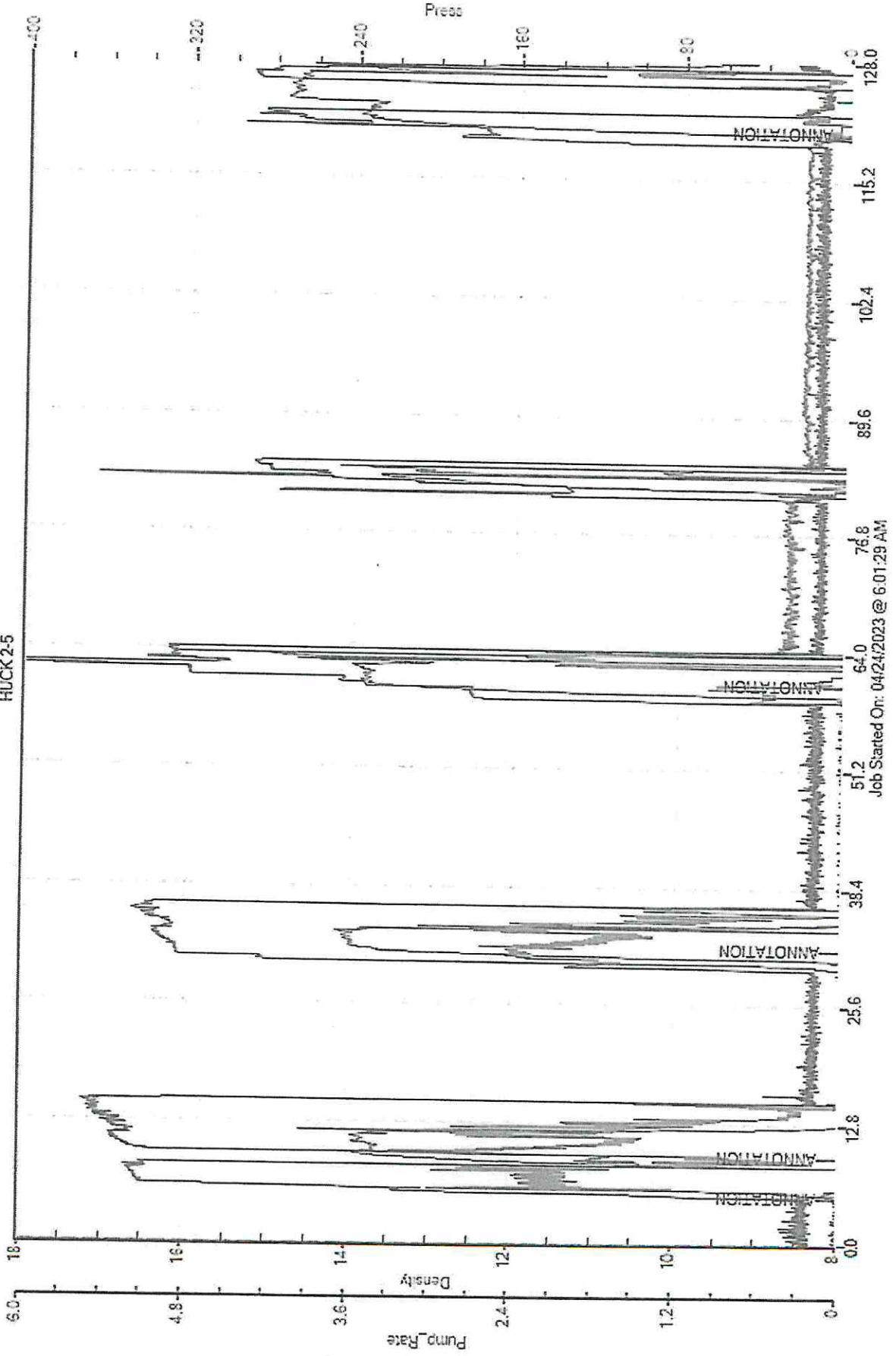
Hayes Oil & Gas  
Huck2-5







HAYES OIL & GAS  
HUCK2-5







**CEMENT TREATMENT REPORT**

Customer: <b>HAYES OIL &amp; GAS</b>	Well: <b>HUCK 2-5</b>	Ticket: <b>WP4201</b>
City, State: <b>COLDWATER KS</b>	County: <b>COMANCHE KS</b>	Date: <b>4/24/2023</b>
Field Rep:	S-T-R: <b>5-35S-18W</b>	Service: <b>PTA</b>

Downhole Information		Calculated Slurry - Lead		Calculated Slurry - Tail	
Hole Size:	<b>7 7/8 in</b>	Blend:	<b>H-PLUG A</b>	Blend:	
Hole Depth:	<b>ft</b>	Weight:	<b>13.8 ppg</b>	Weight:	<b>ppg</b>
Casing Size:	<b>in</b>	Water / Sx:	<b>6.9 gal / sx</b>	Water / Sx:	<b>gal / sx</b>
Casing Depth:	<b>ft</b>	Yield:	<b>1.43 ft<sup>3</sup> / sx</b>	Yield:	<b>ft<sup>3</sup> / sx</b>
Tubing / Liner:	<b>in</b>	Annular Bbls / Ft.:	<b>bbs / ft.</b>	Annular Bbls / Ft.:	<b>bbs / ft.</b>
Depth:	<b>ft</b>	Depth:	<b>ft</b>	Depth:	<b>ft</b>
Tool / Packer:		Annular Volume:	<b>0.0 bbls</b>	Annular Volume:	<b>0 bbls</b>
Tool Depth:	<b>ft</b>	Excess:		Excess:	
Displacement:	<b>bbls</b>	Total Slurry:	<b>53.5 bbls</b>	Total Slurry:	<b>0.0 bbls</b>
		Total Sacks:	<b>210 sx</b>	Total Sacks:	<b>#DIV/0! sx</b>

TIME	RATE	PSI	STAGE BBLs	TOTAL BBLs	REMARKS
6:20 AM			-	-	ON LOCATION
				-	1ST PLUG AT 1200'
7:13 AM	5.0	150.0	15.0	15.0	PUMP 15 BBL WATER
7:16 AM	5.2	160.0	12.7	27.7	MIX 50 SKS H-PLUG A
7:20 AM	5.3	100.0	13.5	41.2	START DISPLACEMENT
				41.2	2ND PLUG AT 870'
7:37 AM	4.2	110.0	10.0	51.2	PUMP 10 BBL WATER
7:39 AM	4.9	170.0	12.7	63.9	MIX 50 SKS H-PLUG A
7:42 AM	5.1	70.0	9.0	72.9	START DISPLACEMENT
				72.9	3RD PLUG AT 330'
8:06 AM	2.7	30.0	5.0	77.9	PUMP 5 BBL WATER
8:10 AM	4.5	70.0	10.0	87.9	MIX 40 SKS H-PLUG
8:13 AM	4.0	50.0	1.3	89.2	START DISPLACEMENT
				89.2	4TH PLUG 60'
8:25 AM	3.0	40.0	5.0	94.2	MIX 20 SKS H-PLUG
				94.2	CEMENT TO SURFACE
9:05 AM	2.0	25.0	7.0	101.2	MIX 30 SKS FOR RATHOLE
9:13 AM	2.0	25.0	5.0	106.2	MIX 20 SKS FOR MOUSE HOLE
					JOB COMPLETE, THANK YOU!
					MIKE MATTAL
					AUSTIN & KENNY

CREW		UNIT	SUMMARY		
Cementer:	<b>MATTAL</b>	<b>912</b>	Average Rate	Average Pressure	Total Fluid
Pump Operator:	<b>CLIFTON</b>	<b>179/521</b>	<b>4.0 bpm</b>	<b>83 psi</b>	<b>106 bbls</b>
Bulk #1:	<b>JULIAN</b>	<b>182/534</b>			
Bulk #2:					



## DRILL STEM TEST REPORT

Prepared For: **Hayes Oil & Gas**

PO Box 108  
Attica, KS 67009

ATTN: Ed Grieves

### **Huck #2-5**

#### **5-32S-18W Comanche,KS**

Start Date: 2023.04.16 @ 23:06:00

End Date: 2023.04.17 @ 07:52:02

Job Ticket #: 70509                      DST #: 1

Trilobite Testing, Inc

PO Box 362 Hays, KS 67601

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

Printed: 2023.04.21 @ 16:55:03

Hayes Oil & Gas

5-32S-18W Comanche,KS

Huck #2-5

DST # 1

Marmaton "B"

2023.04.16



**TRILOBITE  
TESTING, INC**

# DRILL STEM TEST REPORT

Hayes Oil & Gas

**5-32S-18W Comanche,KS**

PO Box 108  
Attica, KS 67009

**Huck #2-5**

Job Ticket: 70509

**DST#: 1**

ATTN: Ed Grieves

Test Start: 2023.04.16 @ 23:06:00

## GENERAL INFORMATION:

Formation: **Marmaton "B"**

Deviated: No Whipstock: ft (KB)

Time Tool Opened: 01:44:47

Time Test Ended: 07:52:02

Test Type: Conventional Bottom Hole (Initial)

Tester: Leal Cason

Unit No: 72

**Interval: 5030.00 ft (KB) To 5070.00 ft (KB) (TVD)**

Reference Elevations: 2180.00 ft (KB)

Total Depth: 5070.00 ft (KB) (TVD)

2168.00 ft (CF)

Hole Diameter: 7.88 inches Hole Condition: Good

KB to GR/CF: 12.00 ft

**Serial #: 8372**

**Inside**

Press@RunDepth: 174.32 psig @ 5036.00 ft (KB)

Capacity: psig

Start Date: 2023.04.16

End Date:

2023.04.17

Last Calib.:

2023.04.17

Start Time: 23:06:01

End Time:

07:52:02

Time On Btm:

2023.04.17 @ 01:43:32

Time Off Btm:

2023.04.17 @ 05:11:32

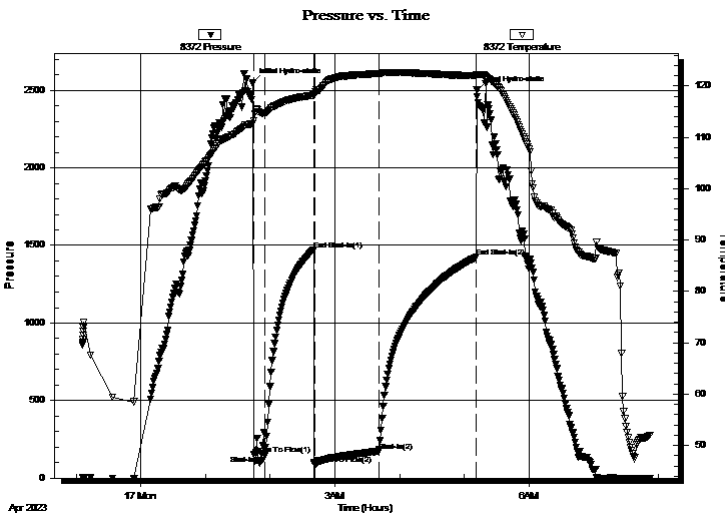
**TEST COMMENT:** IF: Strong Blow , BOB in 30 seconds, Built to 43.27"

IS: No Blow Back

FF: Strong Blow , BOB in 3 minutes, Built to 44.66"

FS: No Blow Back

## PRESSURE SUMMARY



Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	2548.38	112.61	Initial Hydro-static
2	153.60	113.21	Open To Flow (1)
12	144.62	114.74	Shut-In(1)
57	1473.07	118.20	End Shut-In(1)
58	87.08	118.29	Open To Flow (2)
117	174.32	122.41	Shut-In(2)
208	1423.76	121.98	End Shut-In(2)
208	2500.27	122.16	Final Hydro-static

## Recovery

Length (ft)	Description	Volume (bbl)
0.00	697' GIP	0.00
119.00	OMCW 2%O 10%M 88%W	0.59
124.00	GOMCW 10%G 6%O 30%M 54%W	1.74
20.00	GOWCM 6%G 10%O 20%W 64%M	0.28

## Gas Rates

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







**TRILOBITE  
TESTING, INC**

# DRILL STEM TEST REPORT

**TOOL DIAGRAM**

Hayes Oil & Gas

**5-32S-18W Comanche,KS**

PO Box 108  
Attica, KS 67009

**Huck #2-5**

Job Ticket: 70509

**DST#: 1**

ATTN: Ed Grieves

Test Start: 2023.04.16 @ 23:06:00

## Tool Information

Drill Pipe:	Length: 4914.00 ft	Diameter: 3.80 inches	Volume: 68.93 bbl	Tool Weight: 2100.00 lb
Heavy Wt. Pipe:	Length: 0.00 ft	Diameter: 0.00 inches	Volume: 0.00 bbl	Weight set on Packer: 25000.00 lb
Drill Collar:	Length: 119.00 ft	Diameter: 2.25 inches	Volume: 0.59 bbl	Weight to Pull Loose: 75000.00 lb
			<u>Total Volume: 69.52 bbl</u>	Tool Chased ft
Drill Pipe Above KB:	32.00 ft			String Weight: Initial 70000.00 lb
Depth to Top Packer:	5030.00 ft			Final 71000.00 lb
Depth to Bottom Packer:	ft			
Interval between Packers:	40.00 ft			
Tool Length:	69.00 ft			
Number of Packers:	2	Diameter: 6.75 inches		

Tool Comments:

## Tool Description

Tool Description	Length (ft)	Serial No.	Position	Depth (ft)	Accum. Lengths
Shut In Tool	5.00			5006.00	
Hydraulic tool	5.00			5011.00	
Jars	5.00			5016.00	
EM Tool	3.00			5019.00	
Safety Joint	2.00			5021.00	
Packer	5.00			5026.00	29.00 Bottom Of Top Packer
Packer	4.00			5030.00	
Stubb	1.00			5031.00	
Handling Sub	5.00			5036.00	
Recorder	0.00	8372	Inside	5036.00	
Recorder	0.00	8365	Outside	5036.00	
Perforations	31.00			5067.00	
Bullnose	3.00			5070.00	40.00 Bottom Packers & Anchor

**Total Tool Length: 69.00**



**TRILOBITE  
TESTING, INC**

# DRILL STEM TEST REPORT

**FLUID SUMMARY**

Hayes Oil & Gas

**5-32S-18W Comanche,KS**

PO Box 108  
Attica, KS 67009

**Huck #2-5**

Job Ticket: 70509

**DST#: 1**

ATTN: Ed Grieves

Test Start: 2023.04.16 @ 23:06:00

## 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:

84000 ppm

Viscosity: 51.00 sec/qt

Cushion Volume:

bbbl

Water Loss: 9.58 in<sup>3</sup>

Gas Cushion Type:

Resistivity: ohm.m

Gas Cushion Pressure:

psig

Salinity: 7500.00 ppm

Filter Cake: 0.02 inches

## Recovery Information

Recovery Table

Length ft	Description	Volume bbbl
0.00	697' GIP	0.000
119.00	OMCW 2%O 10%M 88%W	0.585
124.00	GOMCW 10%G 6%O 30%M 54%W	1.739
20.00	GOWCM 6%G 10%O 20%W 64%M	0.281

Total Length: 263.00 ft

Total Volume: 2.605 bbl

Num Fluid Samples: 0

Num Gas Bombs: 0

Serial #:

Laboratory Name:

Laboratory Location:

Recovery Comments: RW w as .09 @ 45 degrees

Serial #: 8372

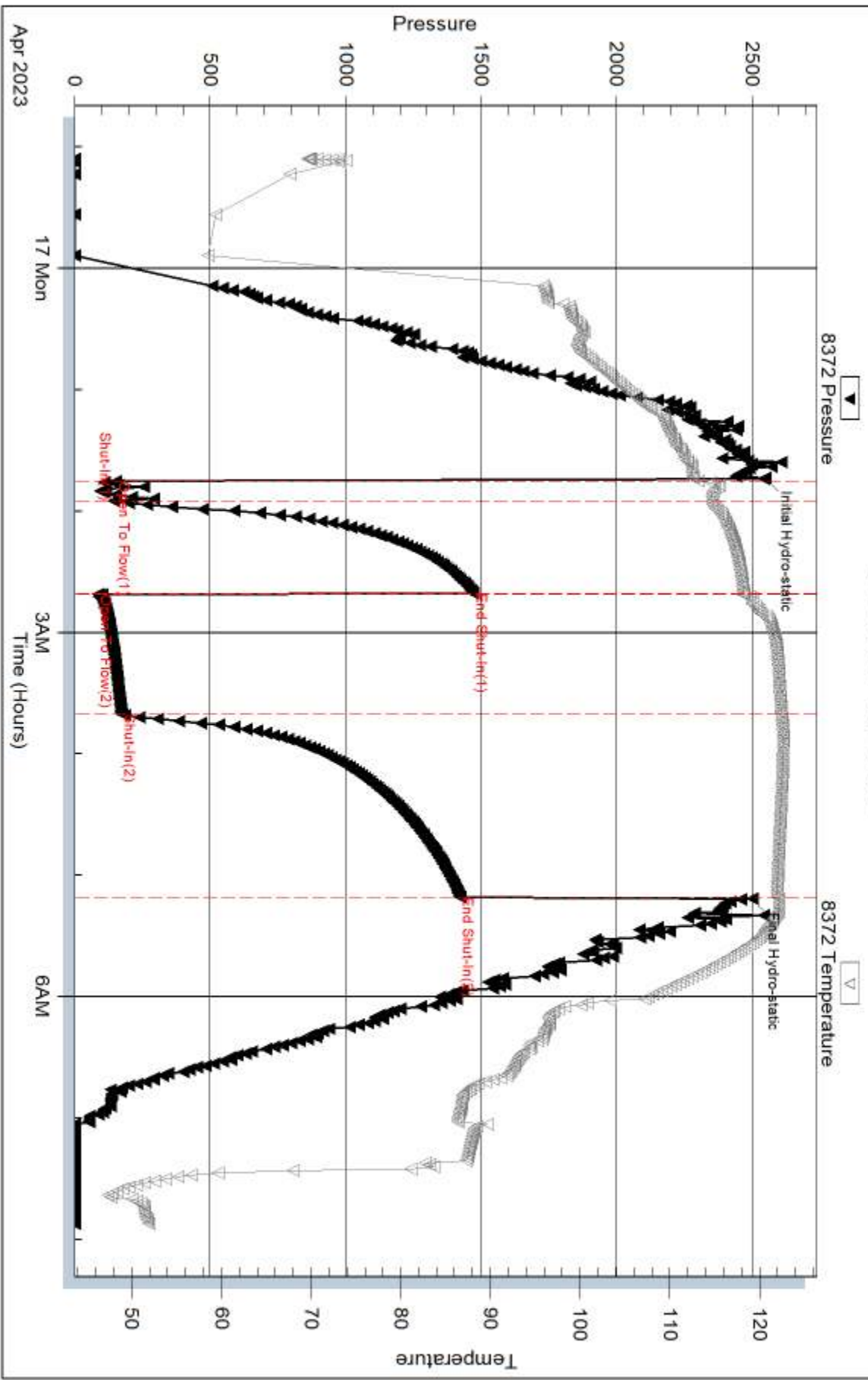
Inside

Hayes Oil & Gas

Huck #2-5

DST Test Number: 1

### Pressure vs. Time



Trilobite Testing, Inc

Ref. No: 70509

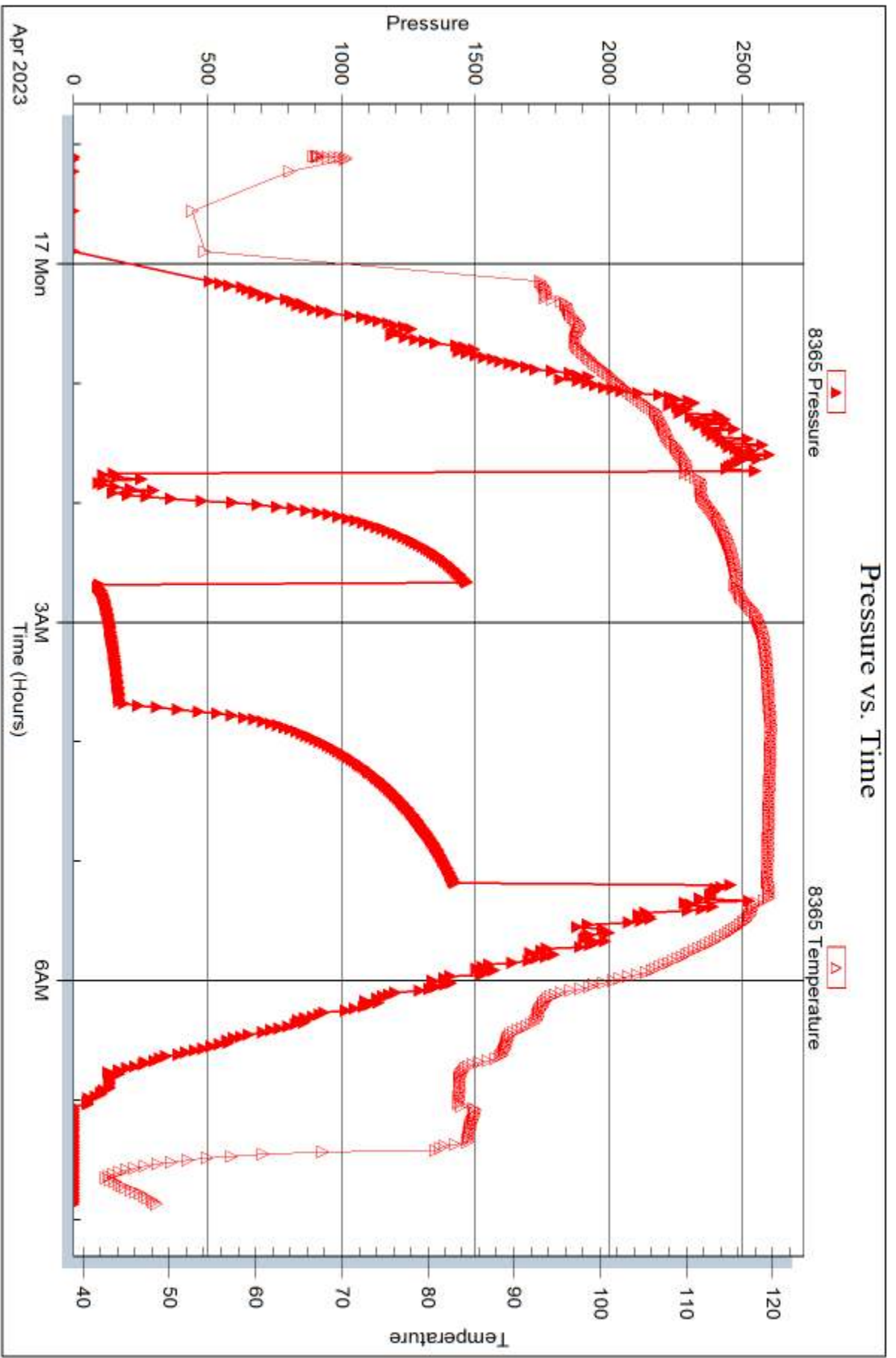
Printed: 2023.04.21 @ 16:55:04

Serial #: 8365

Outside Hayes Oil & Gas

Huck #2-5

DST Test Number: 1







## DRILL STEM TEST REPORT

Prepared For: **Hayes Oil & Gas**

PO Box 108  
Attica, KS 67009

ATTN: Ed Grieves

### **Huck #2-5**

#### **5-32S-18W Comanche,KS**

Start Date: 2023.04.18 @ 09:50:00

End Date: 2023.04.18 @ 18:16:01

Job Ticket #: 70510                      DST #: 2

Trilobite Testing, Inc

PO Box 362 Hays, KS 67601

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

Printed: 2023.04.21 @ 16:54:36



**TRILOBITE  
TESTING, INC**

# DRILL STEM TEST REPORT

Hayes Oil & Gas

**5-32S-18W Comanche,KS**

PO Box 108  
Attica, KS 67009

**Huck #2-5**

Job Ticket: 70510

**DST#: 2**

ATTN: Ed Grieves

Test Start: 2023.04.18 @ 09:50:00

## GENERAL INFORMATION:

Formation: **Mississippi**

Deviated: No Whipstock: ft (KB)

Time Tool Opened: 12:06:02

Time Test Ended: 18:16:01

Test Type: Conventional Bottom Hole (Reset)

Tester: Leal Cason

Unit No: 72

**Interval: 5196.00 ft (KB) To 5135.00 ft (KB) (TVD)**

Reference Elevations: 2180.00 ft (KB)

Total Depth: 5235.00 ft (KB) (TVD)

2168.00 ft (CF)

Hole Diameter: 7.88 inches Hole Condition: Good

KB to GR/CF: 12.00 ft

**Serial #: 8372**

**Inside**

Press@RunDepth: 69.54 psig @ 5202.00 ft (KB)

Capacity: psig

Start Date: 2023.04.18

End Date:

2023.04.18

Last Calib.:

2023.04.18

Start Time: 09:50:01

End Time:

18:16:02

Time On Btm:

2023.04.18 @ 12:03:32

Time Off Btm:

2023.04.18 @ 15:55:47

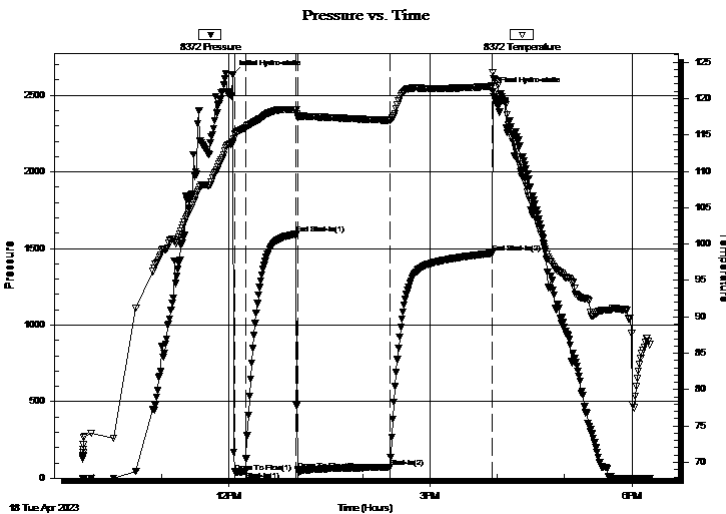
**TEST COMMENT:** IF: Strong Blow , BOB in 30 seconds, Built to 270.3"

IS: No Blow Back

FF: Strong Blow , BOB Immediate, GTS in 1 minute, Gauged & Sampled

FS: No Blow Back

## PRESSURE SUMMARY



Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	2636.31	113.85	Initial Hydro-static
3	40.92	115.16	Open To Flow (1)
12	44.39	115.94	Shut-In(1)
57	1592.60	118.41	End Shut-In(1)
59	49.16	117.42	Open To Flow (2)
141	69.54	117.02	Shut-In(2)
232	1468.60	121.71	End Shut-In(2)
233	2525.55	123.58	Final Hydro-static

## Recovery

Length (ft)	Description	Volume (bbl)
0.00	5072 GIP	0.00
120.00	SGCM 5%G 95%M	0.60

\* Recovery from multiple tests

## Gas Rates

	Choke (inches)	Pressure (psig)	Gas Rate (Mcf/d)
First Gas Rate	0.25	13.32	40.84
Last Gas Rate	0.25	25.85	59.30
Max. Gas Rate	0.25	25.85	59.30





**TRILOBITE  
TESTING, INC**

# DRILL STEM TEST REPORT

**TOOL DIAGRAM**

Hayes Oil & Gas

**5-32S-18W Comanche,KS**

PO Box 108  
Attica, KS 67009

**Huck #2-5**

Job Ticket: 70510

**DST#: 2**

ATTN: Ed Grieves

Test Start: 2023.04.18 @ 09:50:00

## Tool Information

Drill Pipe:	Length: 5073.00 ft	Diameter: 3.80 inches	Volume: 71.16 bbl	Tool Weight:	2100.00 lb
Heavy Wt. Pipe:	Length: 0.00 ft	Diameter: 0.00 inches	Volume: 0.00 bbl	Weight set on Packer:	25000.00 lb
Drill Collar:	Length: 119.00 ft	Diameter: 2.25 inches	Volume: 0.59 bbl	Weight to Pull Loose:	80000.00 lb
			<u>Total Volume: 71.75 bbl</u>	Tool Chased	ft
Drill Pipe Above KB:	25.00 ft			String Weight: Initial	74000.00 lb
Depth to Top Packer:	5196.00 ft			Final	75000.00 lb
Depth to Bottom Packer:	ft				
Interval between Packers:	39.00 ft				
Tool Length:	68.00 ft				
Number of Packers:	2	Diameter: 6.75 inches			
Tool Comments:					

Tool Description	Length (ft)	Serial No.	Position	Depth (ft)	Accum. Lengths
------------------	-------------	------------	----------	------------	----------------

Shut In Tool	5.00			5172.00	
Hydraulic tool	5.00			5177.00	
Jars	5.00			5182.00	
EM Tool	3.00			5185.00	
Safety Joint	2.00			5187.00	
Packer	5.00			5192.00	29.00 Bottom Of Top Packer
Packer	4.00			5196.00	
Stubb	1.00			5197.00	
Handling Sub	5.00			5202.00	
Recorder	0.00	8372	Inside	5202.00	
Recorder	0.00	8365	Outside	5202.00	
Perforations	30.00			5232.00	
Bullnose	3.00			5235.00	39.00 Bottom Packers & Anchor

**Total Tool Length: 68.00**



**TRILOBITE  
TESTING, INC**

# DRILL STEM TEST REPORT

**FLUID SUMMARY**

Hayes Oil & Gas

**5-32S-18W Comanche,KS**

PO Box 108  
Attica, KS 67009

**Huck #2-5**

Job Ticket: 70510

**DST#: 2**

ATTN: Ed Grieves

Test Start: 2023.04.18 @ 09:50:00

## 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: 58.00 sec/qt

Cushion Volume:

bbbl

Water Loss: 10.38 in<sup>3</sup>

Gas Cushion Type:

Resistivity: ohm.m

Gas Cushion Pressure:

psig

Salinity: 8300.00 ppm

Filter Cake: 0.02 inches

## Recovery Information

Recovery Table

Length ft	Description	Volume bbl
0.00	5072 GIP	0.000
120.00	SGCM 5%G 95%M	0.599

Total Length: 120.00 ft

Total Volume: 0.599 bbl

Num Fluid Samples: 0

Num Gas Bombs: 0

Serial #:

Laboratory Name:

Laboratory Location:

Recovery Comments:



Serial #: 8372

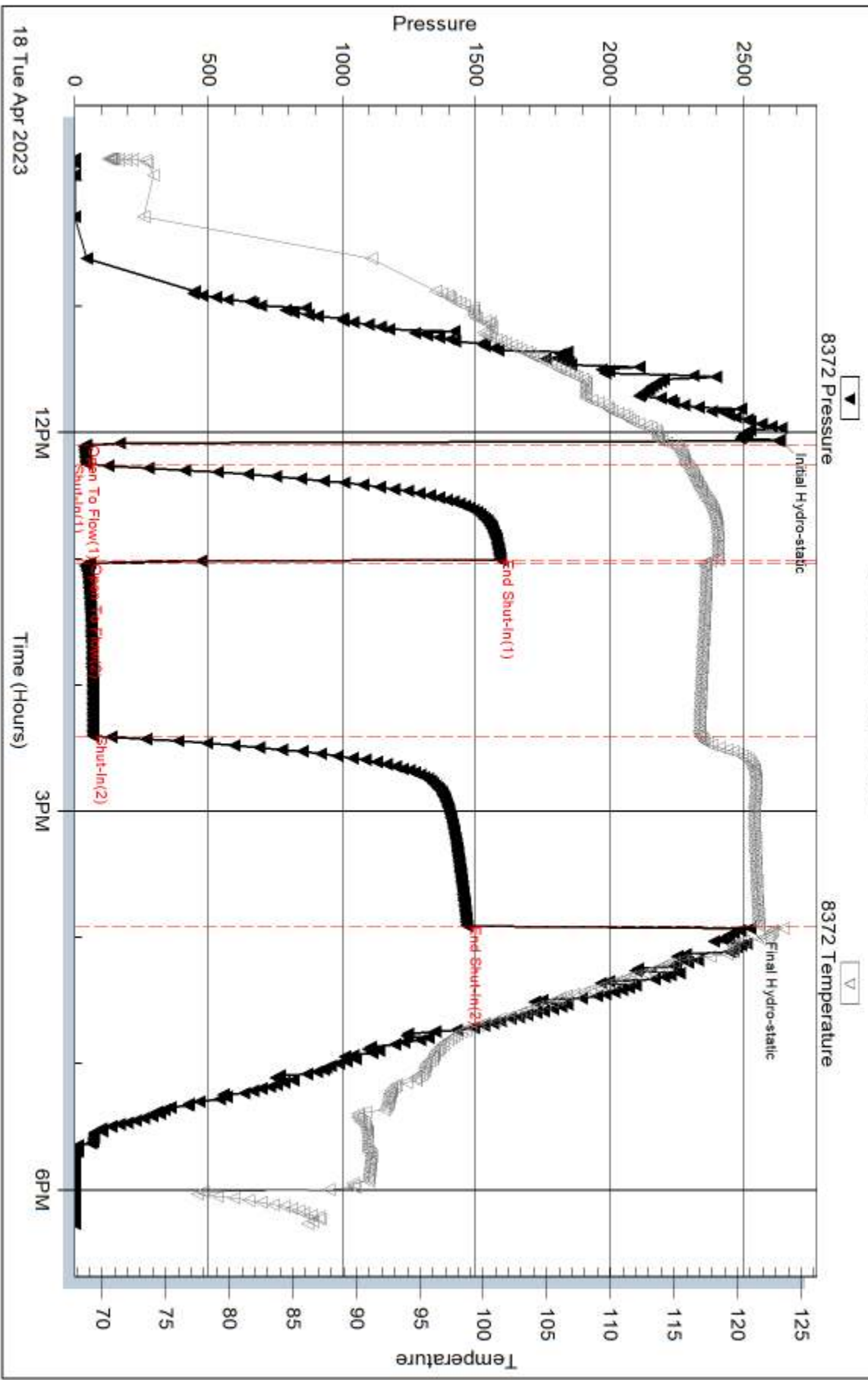
Inside

Hayes Oil & Gas

Huck #2-5

DST Test Number: 2

### Pressure vs. Time

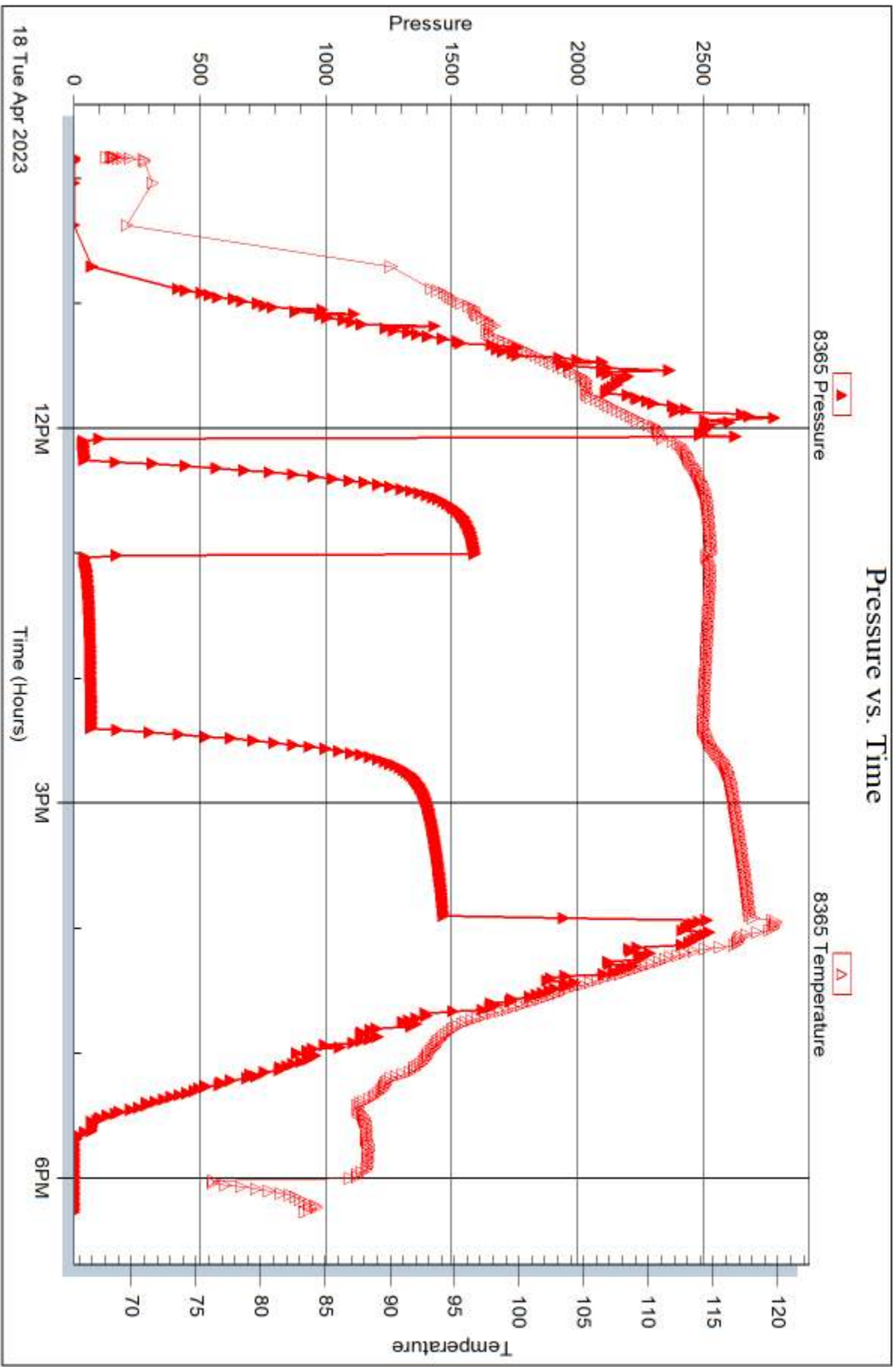


Serial #: 8365

Outside Hayes Oil & Gas

Huck #2-5

DST Test Number: 2





## DRILL STEM TEST REPORT

Prepared For: **Hayes Oil & Gas**

PO Box 108  
Attica, KS 67009

ATTN: Ed Grieves

### **Huck #2-5**

#### **5-32S-18W Comanche,KS**

Start Date: 2023.04.19 @ 06:45:00

End Date: 2023.04.19 @ 13:51:02

Job Ticket #: 70511                      DST #: 3

Trilobite Testing, Inc

PO Box 362 Hays, KS 67601

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

Printed: 2023.04.21 @ 16:53:57



**TRILOBITE  
TESTING, INC**

# DRILL STEM TEST REPORT

Hayes Oil & Gas

**5-32S-18W Comanche,KS**

PO Box 108  
Attica, KS 67009

**Huck #2-5**

Job Ticket: 70511

**DST#: 3**

ATTN: Ed Grieves

Test Start: 2023.04.19 @ 06:45:00

## GENERAL INFORMATION:

Formation: **Mississippi**

Deviated: No Whipstock: ft (KB)

Time Tool Opened: 08:42:47

Time Test Ended: 13:51:02

Test Type: Conventional Bottom Hole (Reset)

Tester: Leal Cason

Unit No: 72

**Interval: 5238.00 ft (KB) To 5275.00 ft (KB) (TVD)**

Reference Elevations: 2180.00 ft (KB)

Total Depth: 5275.00 ft (KB) (TVD)

2168.00 ft (CF)

Hole Diameter: 7.88 inches Hole Condition: Good

KB to GR/CF: 12.00 ft

**Serial #: 8372 Inside**

Press@RunDepth: 72.15 psig @ 5244.00 ft (KB)

Capacity: psig

Start Date: 2023.04.19

End Date:

2023.04.19

Last Calib.:

2023.04.19

Start Time: 06:45:01

End Time:

13:51:02

Time On Btm:

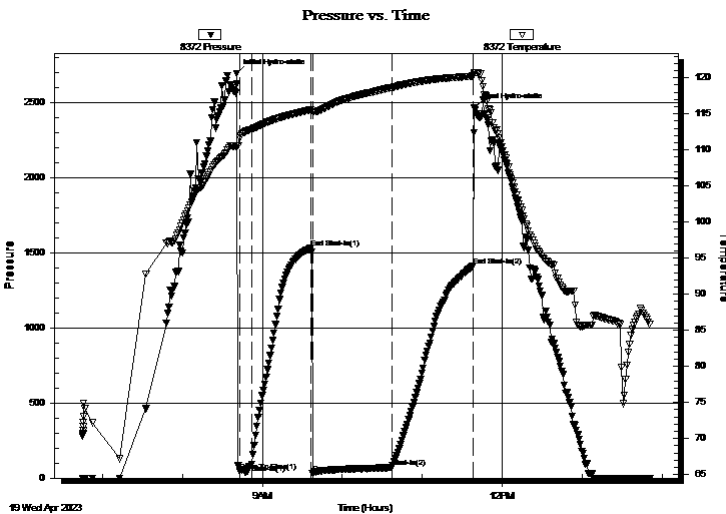
2023.04.19 @ 08:40:32

Time Off Btm:

2023.04.19 @ 11:39:17

**TEST COMMENT:** IF: Strong Blow , BOB in 20 seconds, Built to 70.67"  
IS: No Blow Back  
FF: Strong Blow , BOB in 2 minutes, Built to 53.26"  
FS: No Blow Back

## PRESSURE SUMMARY



Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	2697.05	110.52	Initial Hydro-static
3	47.26	111.61	Open To Flow (1)
12	93.77	112.85	Shut-In(1)
56	1535.77	115.56	End Shut-In(1)
57	32.50	115.31	Open To Flow (2)
117	72.15	118.65	Shut-In(2)
178	1414.03	120.26	End Shut-In(2)
179	2470.92	120.74	Final Hydro-static

## Recovery

Length (ft)	Description	Volume (bbl)
0.00	1531' GIP	0.00
119.00	GOWCM 4%G 4%O 28%W 64%M	0.59
5.00	GOCM 4%G 8%O 88%M	0.07

\* Recovery from multiple tests

## Gas Rates

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



**TRILOBITE  
TESTING, INC**

# DRILL STEM TEST REPORT

Hayes Oil & Gas

**5-32S-18W Comanche, KS**

PO Box 108  
Attica, KS 67009

**Huck #2-5**

Job Ticket: 70511

**DST#: 3**

ATTN: Ed Grieves

Test Start: 2023.04.19 @ 06:45:00

## GENERAL INFORMATION:

Formation: **Mississippi**

Deviated: No Whipstock: ft (KB)

Time Tool Opened: 08:42:47

Time Test Ended: 13:51:02

Test Type: Conventional Bottom Hole (Reset)

Tester: Leal Cason

Unit No: 72

**Interval: 5238.00 ft (KB) To 5275.00 ft (KB) (TVD)**

Reference Elevations: 2180.00 ft (KB)

Total Depth: 5275.00 ft (KB) (TVD)

2168.00 ft (CF)

Hole Diameter: 7.88 inches Hole Condition: Good

KB to GR/CF: 12.00 ft

**Serial #: 8365 Outside**

Press@RunDepth: psig @ 5244.00 ft (KB)

Capacity: psig

Start Date: 2023.04.19

End Date: 2023.04.19

Last Calib.: 2023.04.19

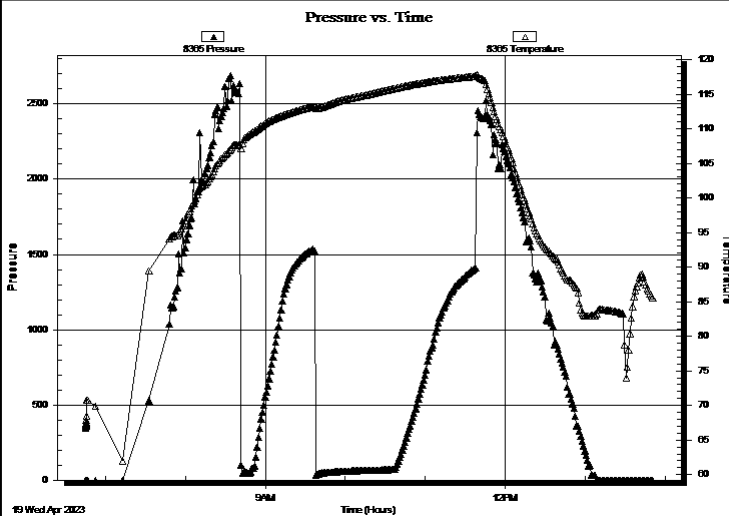
Start Time: 06:45:01

End Time: 13:51:02

Time On Btm:

Time Off Btm:

**TEST COMMENT:** IF: Strong Blow , BOB in 20 seconds, Built to 70.67"  
IS: No Blow Back  
FF: Strong Blow , BOB in 2 minutes, Built to 53.26"  
FS: No Blow Back



## PRESSURE SUMMARY

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

## Recovery

Length (ft)	Description	Volume (bbl)
0.00	1531' GIP	0.00
119.00	GOWCM 4%G 4%O 28%W 64%M	0.59
5.00	GOCM 4%G 8%O 88%M	0.07

## Gas Rates

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

\* Recovery from multiple tests



**TRILOBITE  
TESTING, INC**

# DRILL STEM TEST REPORT

**TOOL DIAGRAM**

Hayes Oil & Gas

**5-32S-18W Comanche,KS**

PO Box 108  
Attica, KS 67009

**Huck #2-5**

Job Ticket: 70511

**DST#: 3**

ATTN: Ed Grieves

Test Start: 2023.04.19 @ 06:45:00

## Tool Information

Drill Pipe:	Length: 5105.00 ft	Diameter: 3.80 inches	Volume: 71.61 bbl	Tool Weight: 2100.00 lb
Heavy Wt. Pipe:	Length: 0.00 ft	Diameter: 0.00 inches	Volume: 0.00 bbl	Weight set on Packer: 25000.00 lb
Drill Collar:	Length: 119.00 ft	Diameter: 2.25 inches	Volume: 0.59 bbl	Weight to Pull Loose: 80000.00 lb
			<u>Total Volume: 72.20 bbl</u>	Tool Chased ft
Drill Pipe Above KB:	15.00 ft			String Weight: Initial 72000.00 lb
Depth to Top Packer:	5238.00 ft			Final 74000.00 lb
Depth to Bottom Packer:	ft			
Interval between Packers:	37.00 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
Shut In Tool	5.00			5214.00	
Hydraulic tool	5.00			5219.00	
Jars	5.00			5224.00	
EM Tool	3.00			5227.00	
Safety Joint	2.00			5229.00	
Packer	5.00			5234.00	29.00 Bottom Of Top Packer
Packer	4.00			5238.00	
Stubb	1.00			5239.00	
Handling Sub	5.00			5244.00	
Recorder	0.00	8372	Inside	5244.00	
Recorder	0.00	8365	Outside	5244.00	
Perforations	28.00			5272.00	
Bullnose	3.00			5275.00	37.00 Bottom Packers & Anchor

**Total Tool Length: 66.00**



**TRILOBITE  
TESTING, INC**

# DRILL STEM TEST REPORT

## FLUID SUMMARY

Hayes Oil & Gas

**5-32S-18W Comanche,KS**

PO Box 108  
Attica, KS 67009

**Huck #2-5**

Job Ticket: 70511

**DST#: 3**

ATTN: Ed Grieves

Test Start: 2023.04.19 @ 06:45:00

### 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: 56.00 sec/qt

Cushion Volume:

bbbl

Water Loss: 9.99 in<sup>3</sup>

Gas Cushion Type:

Resistivity: ohm.m

Gas Cushion Pressure:

psig

Salinity: 6800.00 ppm

Filter Cake: 0.02 inches

### Recovery Information

Recovery Table

Length ft	Description	Volume bbl
0.00	1531' GIP	0.000
119.00	GOWCM 4%G 4%O 28%W 64%M	0.585
5.00	GOCM 4%G 8%O 88%M	0.070

Total Length: 124.00 ft      Total Volume: 0.655 bbl

Num Fluid Samples: 0

Num Gas Bombs: 0

Serial #:

Laboratory Name:

Laboratory Location:

Recovery Comments: RW w as .085 @ 84 degrees

Serial #: 8372

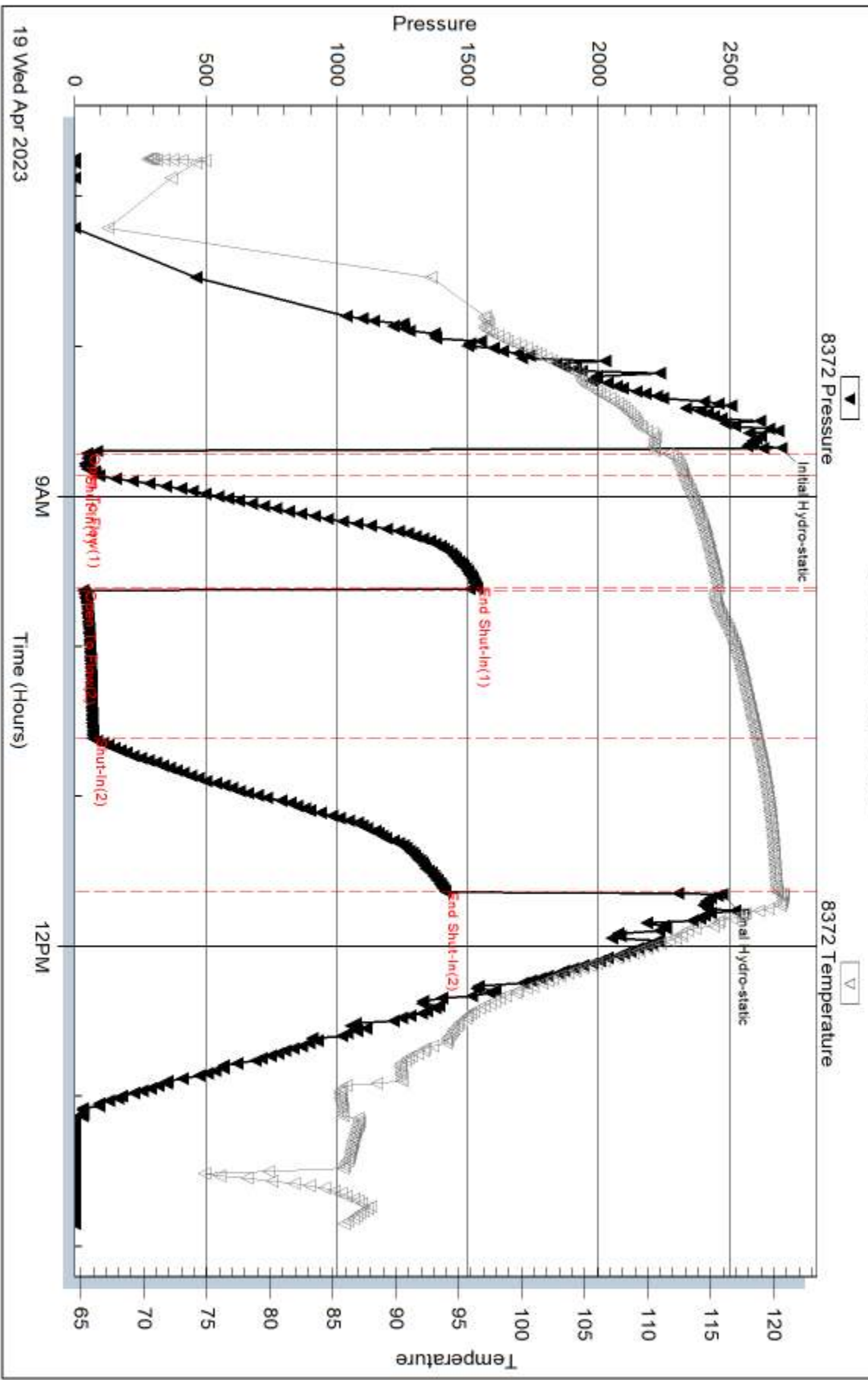
Inside

Hayes Oil & Gas

Huck #2-5

DST Test Number: 3

### Pressure vs. Time



19 Wed Apr 2023

Trilobite Testing, Inc

Ref. No: 70511

Printed: 2023.04.21 @ 16:53:58

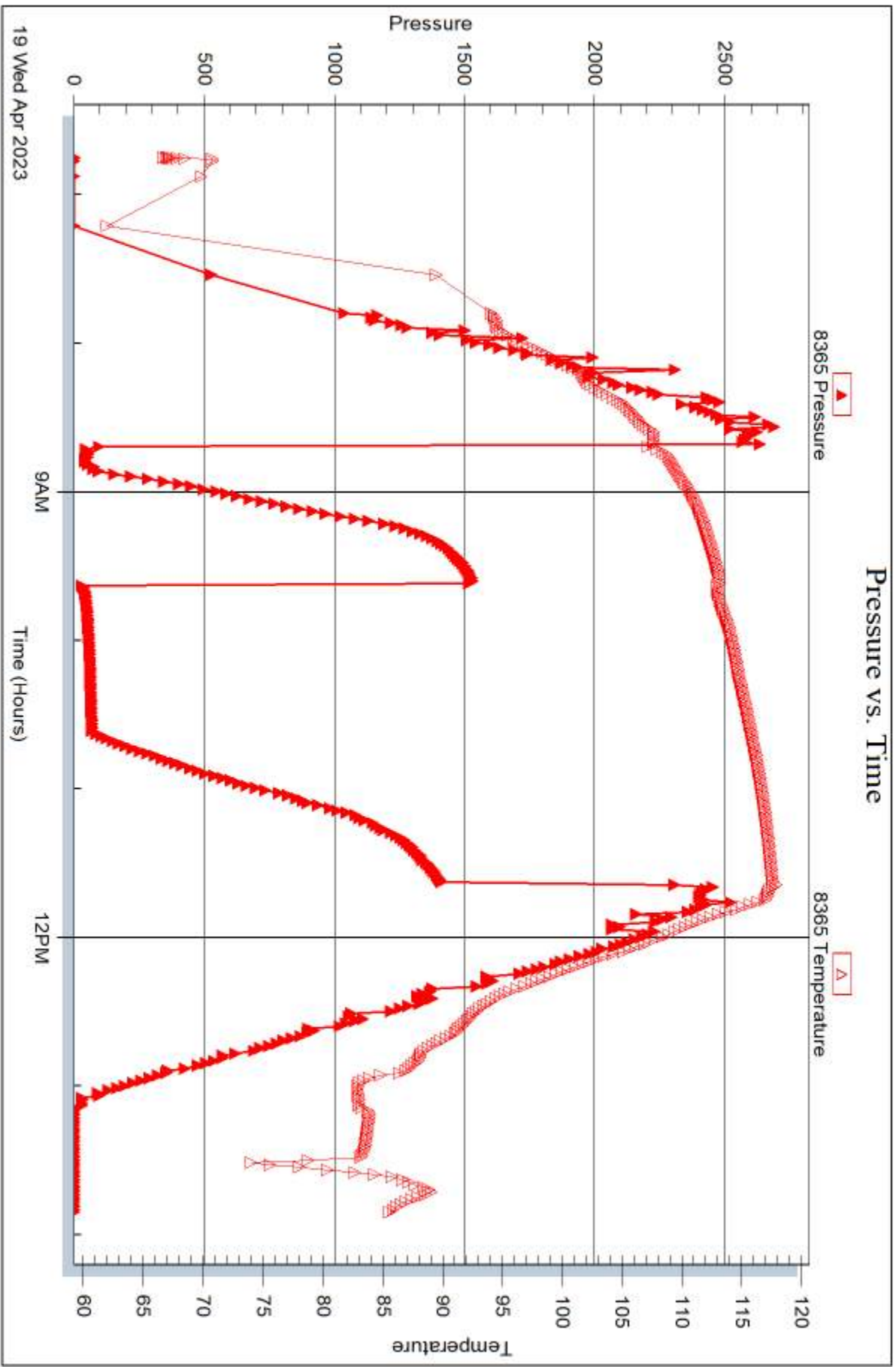


Serial #: 8365

Outside Hayes Oil & Gas

Huck #2-5

DST Test Number: 3



Trilobite Testing, Inc

Ref. No: 70511

Printed: 2023.04.21 @ 16:53:58



## DRILL STEM TEST REPORT

Prepared For: **Hayes Oil & Gas**

PO Box 108  
Attica, KS 67009

ATTN: Ed Grieves

### **Huck #2-5**

#### **5-32S-18W Comanche,KS**

Start Date: 2023.04.21 @ 02:20:00

End Date: 2023.04.21 @ 10:24:02

Job Ticket #: 70512                      DST #: 4

Trilobite Testing, Inc

PO Box 362 Hays, KS 67601

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

Printed: 2023.04.21 @ 16:49:31



**TRILOBITE  
TESTING, INC**

# DRILL STEM TEST REPORT

Hayes Oil & Gas

**5-32S-18W Comanche,KS**

PO Box 108  
Attica, KS 67009

**Huck #2-5**

Job Ticket: 70512

**DST#: 4**

ATTN: Ed Grieves

Test Start: 2023.04.21 @ 02:20:00

## GENERAL INFORMATION:

Formation: **Viola**

Deviated: No Whipstock: ft (KB)

Time Tool Opened: 04:43:47

Time Test Ended: 10:24:02

Test Type: Conventional Bottom Hole (Reset)

Tester: Leal Cason

Unit No: 72

**Interval: 5668.00 ft (KB) To 5728.00 ft (KB) (TVD)**

Reference Elevations: 2180.00 ft (KB)

Total Depth: 5728.00 ft (KB) (TVD)

2168.00 ft (CF)

Hole Diameter: 7.88 inches Hole Condition: Good

KB to GR/CF: 12.00 ft

**Serial #: 8372**

**Inside**

Press@RunDepth: 53.17 psig @ 5711.00 ft (KB)

Capacity: psig

Start Date: 2023.04.21

End Date:

2023.04.21

Last Calib.:

2023.04.21

Start Time: 02:20:01

End Time:

10:24:02

Time On Btm:

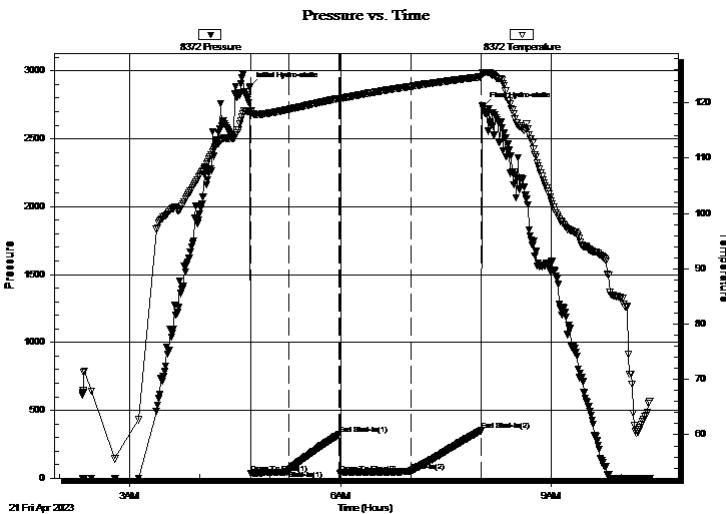
2023.04.21 @ 04:42:32

Time Off Btm:

2023.04.21 @ 08:01:17

**TEST COMMENT:** IF: Strong Blow , BOB in 4 minutes, Built to 20.61"  
IS: No Blow Back  
FF: Fair Blow , BOB in 57 minutes, Built to 12.39"  
FS: No Blow Back

## PRESSURE SUMMARY



Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	2883.00	118.43	Initial Hydro-static
2	35.68	118.53	Open To Flow (1)
34	59.38	118.79	Shut-In(1)
77	322.44	120.76	End Shut-In(1)
77	37.01	120.76	Open To Flow (2)
138	53.17	122.96	Shut-In(2)
198	349.46	124.73	End Shut-In(2)
199	2738.86	125.38	Final Hydro-static

## Recovery

Length (ft)	Description	Volume (bbl)
30.00	SOSM 2% On 98%M	0.15

\* Recovery from multiple tests

## Gas Rates

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



**TRILOBITE TESTING, INC**

# DRILL STEM TEST REPORT

Hayes Oil & Gas

**5-32S-18W Comanche,KS**

PO Box 108  
Attica, KS 67009

**Huck #2-5**

Job Ticket: 70512

**DST#: 4**

ATTN: Ed Grieves

Test Start: 2023.04.21 @ 02:20:00

## GENERAL INFORMATION:

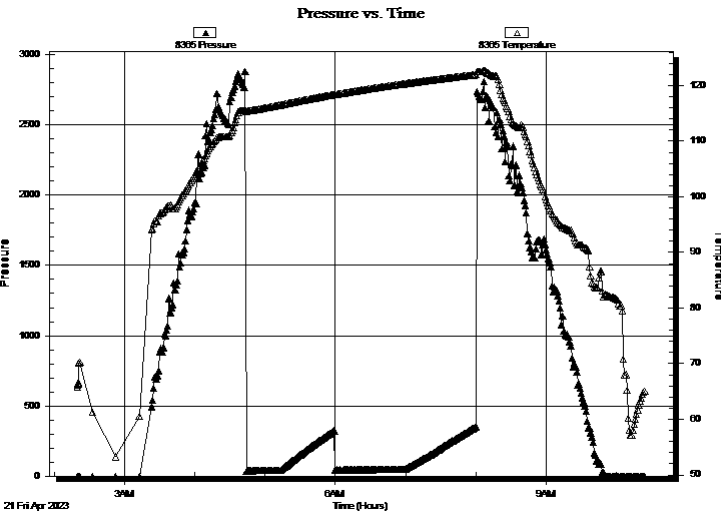
Formation: **Viola**  
 Deviated: No Whipstock: ft (KB)  
 Time Tool Opened: 04:43:47  
 Time Test Ended: 10:24:02  
**Interval: 5668.00 ft (KB) To 5728.00 ft (KB) (TVD)**  
 Total Depth: 5728.00 ft (KB) (TVD)  
 Hole Diameter: 7.88 inches Hole Condition: Good  
 Test Type: Conventional Bottom Hole (Reset)  
 Tester: Leal Cason  
 Unit No: 72  
 Reference Elevations: 2180.00 ft (KB)  
 2168.00 ft (CF)  
 KB to GR/CF: 12.00 ft

**Serial #: 8365**

**Outside**

Press@RunDepth: psig @ 5711.00 ft (KB) Capacity:  
 Start Date: 2023.04.21 End Date: 2023.04.21 Last Calib.: 2023.04.21  
 Start Time: 02:20:01 End Time: 10:24:02 Time On Btm:  
 Time Off Btm:

**TEST COMMENT:** IF: Strong Blow , BOB in 4 minutes, Built to 20.61"  
 IS: No Blow Back  
 FF: Fair Blow , BOB in 57 minutes, Built to 12.39"  
 FS: No Blow Back



## PRESSURE SUMMARY

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

## Recovery

Length (ft)	Description	Volume (bbl)
30.00	SOSM 2% On 98%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**

Hayes Oil & Gas

**5-32S-18W Comanche,KS**

PO Box 108  
Attica, KS 67009

**Huck #2-5**

Job Ticket: 70512

**DST#: 4**

ATTN: Ed Grieves

Test Start: 2023.04.21 @ 02:20:00

## Tool Information

Drill Pipe:	Length: 5548.00 ft	Diameter: 3.80 inches	Volume: 77.82 bbl	Tool Weight:	2100.00 lb
Heavy Wt. Pipe:	Length: 0.00 ft	Diameter: 0.00 inches	Volume: 0.00 bbl	Weight set on Packer:	25000.00 lb
Drill Collar:	Length: 119.00 ft	Diameter: 2.25 inches	Volume: 0.59 bbl	Weight to Pull Loose:	95000.00 lb
			<u>Total Volume: 78.41 bbl</u>	Tool Chased	ft
Drill Pipe Above KB:	28.00 ft			String Weight: Initial	78000.00 lb
Depth to Top Packer:	5668.00 ft			Final	79000.00 lb
Depth to Bottom Packer:	ft				
Interval between Packers:	60.00 ft				
Tool Length:	89.00 ft				
Number of Packers:	2	Diameter: 6.75 inches			
Tool Comments:					

## Tool Description

Tool Description	Length (ft)	Serial No.	Position	Depth (ft)	Accum. Lengths
Shut In Tool	5.00			5644.00	
Hydraulic tool	5.00			5649.00	
Jars	5.00			5654.00	
EM Tool	3.00			5657.00	
Safety Joint	2.00			5659.00	
Packer	5.00			5664.00	29.00 Bottom Of Top Packer
Packer	4.00			5668.00	
Stubb	1.00			5669.00	
Perforations	3.00			5672.00	
Change Over Sub	1.00			5673.00	
Drill Pipe	32.00			5705.00	
Change Over Sub	1.00			5706.00	
Handling Sub	5.00			5711.00	
Recorder	0.00	8372	Inside	5711.00	
Recorder	0.00	8365	Outside	5711.00	
perforations	14.00			5725.00	
Bullnose	3.00			5728.00	60.00 Bottom Packers & Anchor
<b>Total Tool Length:</b>	<b>89.00</b>				



**TRILOBITE  
TESTING, INC**

# DRILL STEM TEST REPORT

## FLUID SUMMARY

Hayes Oil & Gas

**5-32S-18W Comanche,KS**

PO Box 108  
Attica, KS 67009

**Huck #2-5**

Job Ticket: 70512

**DST#: 4**

ATTN: Ed Grieves

Test Start: 2023.04.21 @ 02:20:00

### Mud and Cushion Information

Mud Type: Gel Chem

Cushion Type:

Oil API:

deg API

Mud Weight: 9.00 lb/gal

Cushion Length:

ft

Water Salinity:

ppm

Viscosity: 55.00 sec/qt

Cushion Volume:

bbbl

Water Loss: 9.19 in<sup>3</sup>

Gas Cushion Type:

Resistivity: ohm.m

Gas Cushion Pressure:

psig

Salinity: 5900.00 ppm

Filter Cake: 0.02 inches

### Recovery Information

Recovery Table

Length ft	Description	Volume bbl
30.00	SOSM 2% On 98%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:

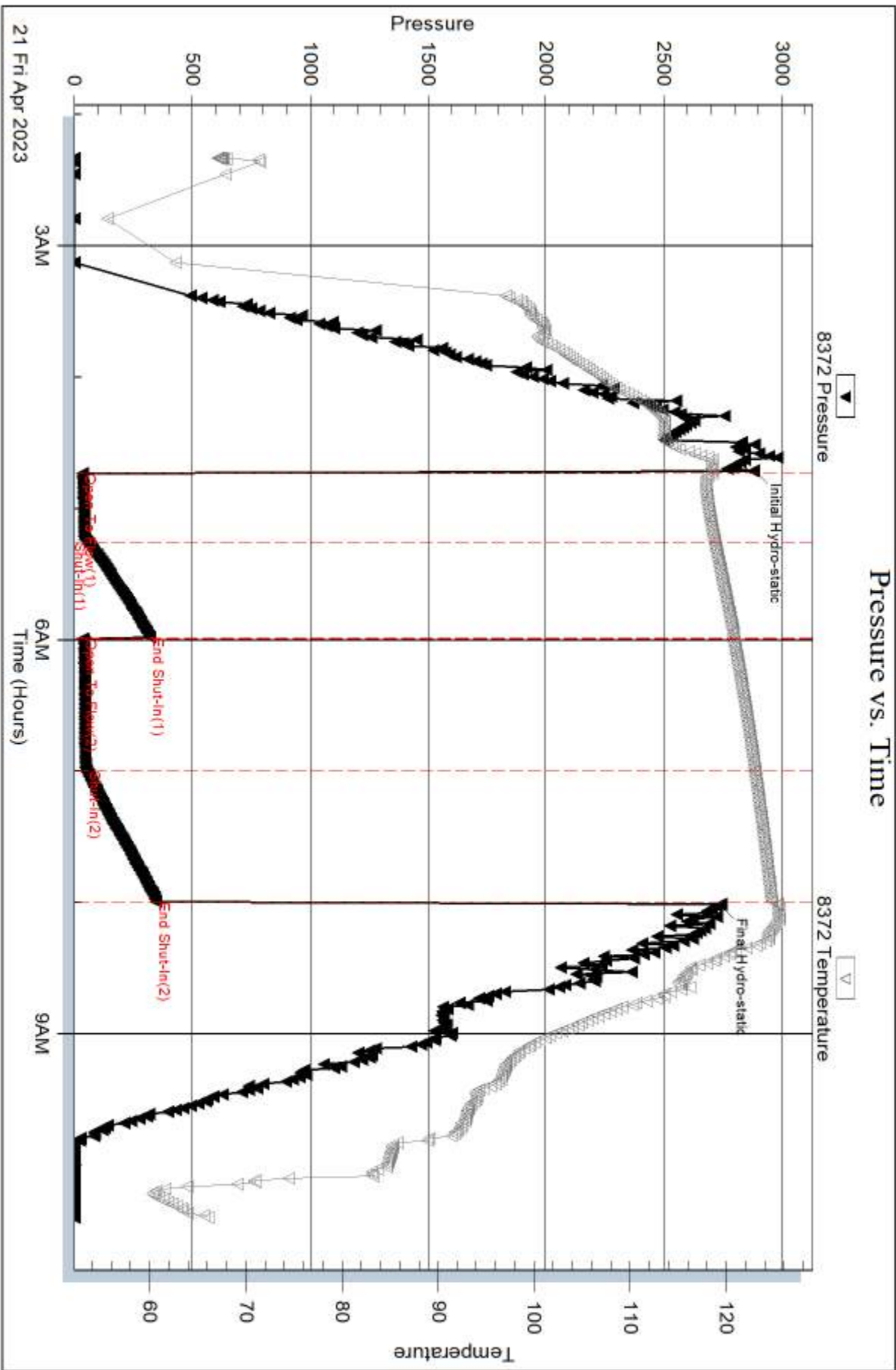
Serial #: 8372

Inside

Hayes Oil & Gas

Huck #2-5

DST Test Number: 4

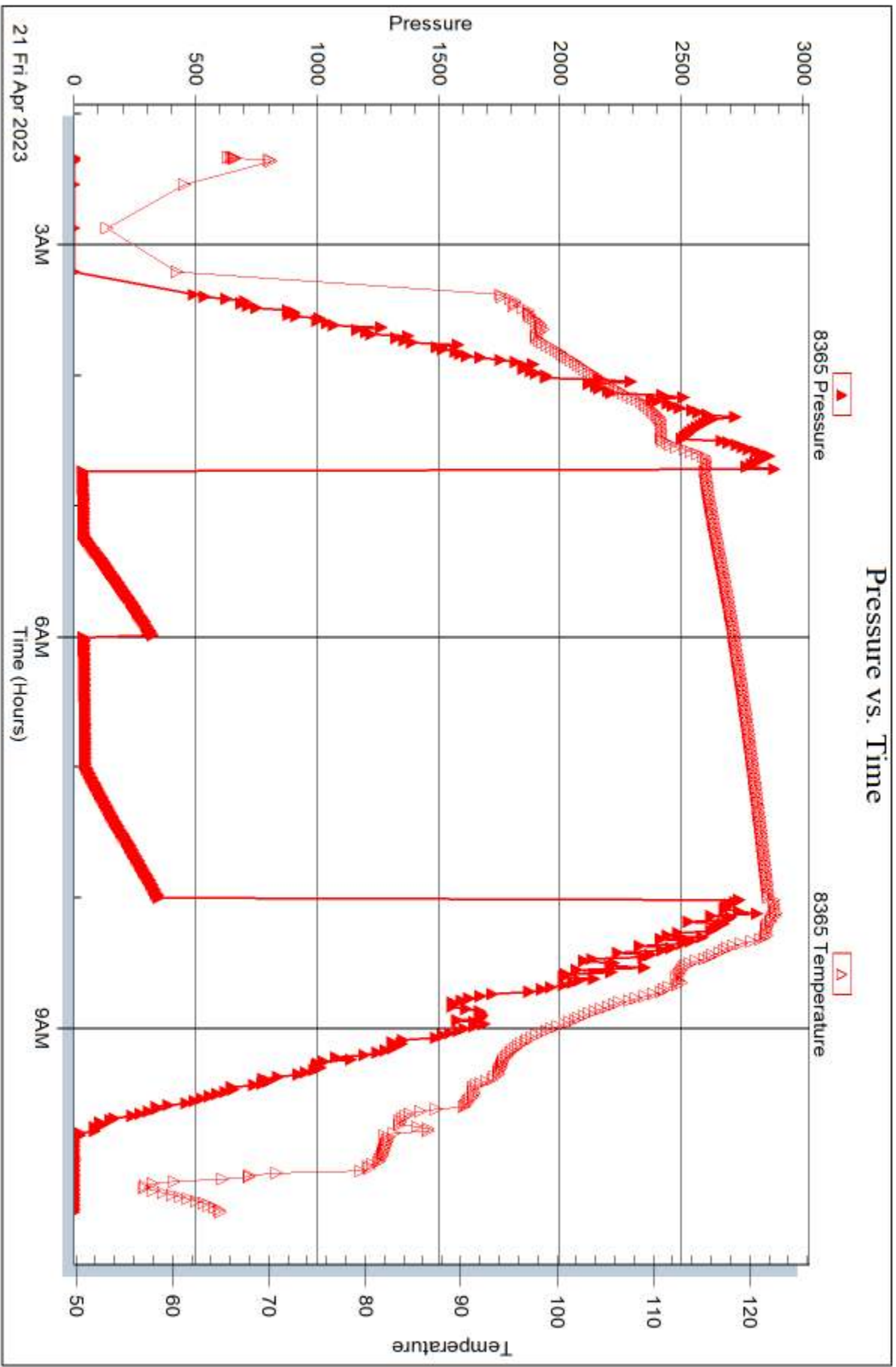


Serial #: 8365

Outside Hayes Oil & Gas

Huck #2-5

DST Test Number: 4







## DRILL STEM TEST REPORT

Prepared For: **Hayes Oil & Gas**

PO Box 108  
Attica, KS 67009

ATTN: Ed Grieves

### **Huck #2-5**

#### **5-32S-18W Comanche,KS**

Start Date: 2023.04.23 @ 08:40:22

End Date: 2023.04.23 @ 18:40:32

Job Ticket #: 70640                      DST #: 5

Trilobite Testing, Inc

PO Box 362 Hays, KS 67601

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

Printed: 2023.04.27 @ 11:31:26



**TRILOBITE  
TESTING, INC**

# DRILL STEM TEST REPORT

Hayes Oil & Gas

**5-32S-18W Comanche,KS**

PO Box 108  
Attica, KS 67009

**Huck #2-5**

Job Ticket: 70640

**DST#: 5**

ATTN: Ed Grieves

Test Start: 2023.04.23 @ 08:40:22

## GENERAL INFORMATION:

Formation: **Viola**

Deviated: No Whipstock: ft (KB)

Time Tool Opened: 11:59:42

Time Test Ended: 18:40:32

Test Type: Conventional Straddle (Reset)

Tester: Eric Burgess

Unit No: 80

**Interval: 5977.00 ft (KB) To 5994.00 ft (KB) (TVD)**

Reference Elevations: 2180.00 ft (KB)

Total Depth: 6050.00 ft (KB) (TVD)

2168.00 ft (CF)

Hole Diameter: 7.88 inches Hole Condition: Fair

KB to GR/CF: 12.00 ft

**Serial #: 8369 Outside**

Press@RunDepth: 72.46 psig @ 5984.00 ft (KB)

Capacity: 8000.00 psig

Start Date: 2023.04.23

End Date: 2023.04.23

Last Calib.: 2023.04.23

Start Time: 08:40:23

End Time: 18:40:32

Time On Btm: 2023.04.23 @ 11:58:52

Time Off Btm: 2023.04.23 @ 15:46:52

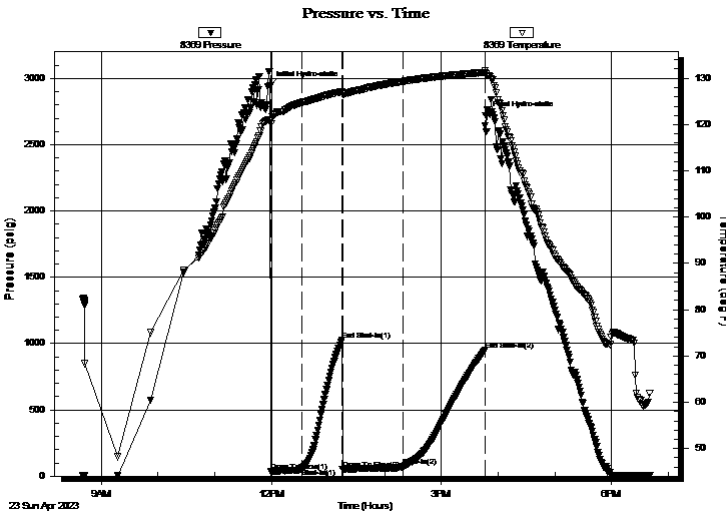
**TEST COMMENT:** IF:Weak Blow built to .93" but died back to .86" (30)

IS:No Blow Back. (45)

FF:Weak Blow built to .25" in bucket. (60)

FS:No Blow Back. (90)

## PRESSURE SUMMARY



Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	2948.57	120.97	Initial Hydro-static
1	35.57	120.26	Open To Flow (1)
34	61.73	124.79	Shut-In(1)
76	1027.45	127.11	End Shut-In(1)
77	53.91	126.63	Open To Flow (2)
141	72.46	129.34	Shut-In(2)
228	949.68	131.31	End Shut-In(2)
228	2722.17	130.93	Final Hydro-static

## Recovery

Length (ft)	Description	Volume (bbl)
0.00	120' GIP	0.00
60.00	OWCM 10%O 15%W 75%M	0.30
50.00	OCM 10%O 90%M	0.25

\* Recovery from multiple tests

## Gas Rates

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



**TRILOBITE TESTING, INC.**

# DRILL STEM TEST REPORT

Hayes Oil & Gas

**5-32S-18W Comanche,KS**

PO Box 108  
Attica, KS 67009

**Huck #2-5**

Job Ticket: 70640

**DST#: 5**

ATTN: Ed Grieves

Test Start: 2023.04.23 @ 08:40:22

## GENERAL INFORMATION:

Formation: **Viola**

Deviated: No Whipstock: ft (KB)

Time Tool Opened: 11:59:42

Time Test Ended: 18:40:32

Test Type: Conventional Straddle (Reset)

Tester: Eric Burgess

Unit No: 80

**Interval: 5977.00 ft (KB) To 5994.00 ft (KB) (TVD)**

Reference Elevations: 2180.00 ft (KB)

Total Depth: 6050.00 ft (KB) (TVD)

2168.00 ft (CF)

Hole Diameter: 7.88 inches Hole Condition: Fair

KB to GR/CF: 12.00 ft

## Serial #: 8679

Press@RunDepth: psig @ ft (KB)

Capacity: 8000.00 psig

Start Date: 2023.04.23 End Date: 2023.04.23

Last Calib.: 1899.12.30

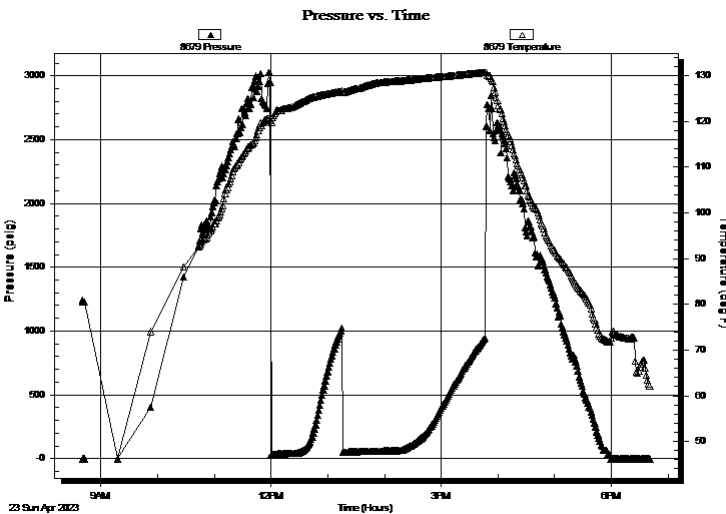
Start Time: 08:40:35 End Time: 18:41:04

Time On Btm:

Time Off Btm:

**TEST COMMENT:** IF:Weak Blow built to .93" but died back to .86" (30)  
IS:No Blow Back. (45)  
FF:Weak Blow built to .25" in bucket. (60)  
FS:No Blow Back. (90)

## PRESSURE SUMMARY



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

## Recovery

Length (ft)	Description	Volume (bbl)
0.00	120' GIP	0.00
60.00	OWCM 10%O 15%W 75%M	0.30
50.00	OCM 10%O 90%M	0.25

## Gas Rates

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

\* Recovery from multiple tests





**TRILOBITE  
TESTING, INC**

# DRILL STEM TEST REPORT

**TOOL DIAGRAM**

Hayes Oil & Gas

**5-32S-18W Comanche,KS**

PO Box 108  
Attica, KS 67009

**Huck #2-5**

Job Ticket: 70640

**DST#: 5**

ATTN: Ed Grieves

Test Start: 2023.04.23 @ 08:40:22

## Tool Information

Drill Pipe:	Length: 5842.00 ft	Diameter: 3.80 inches	Volume: 81.95 bbl	Tool Weight:	2100.00 lb
Heavy Wt. Pipe:	Length: 0.00 ft	Diameter: 0.00 inches	Volume: 0.00 bbl	Weight set on Packer:	24000.00 lb
Drill Collar:	Length: 119.00 ft	Diameter: 2.25 inches	Volume: 0.59 bbl	Weight to Pull Loose:	24000.00 lb
			<u>Total Volume: 82.54 bbl</u>	Tool Chased	0.00 ft
Drill Pipe Above KB:	10.00 ft			String Weight: Initial	84000.00 lb
Depth to Top Packer:	5977.00 ft			Final	86000.00 lb
Depth to Bottom Packer:	5998.00 ft				
Interval between Packers:	21.00 ft				
Tool Length:	105.00 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			5952.00	
Shut In Tool	5.00			5957.00	
Hydraulic tool	5.00			5962.00	
Em Tool	3.00			5965.00	
Jars	5.00			5970.00	
Safety Joint	3.00			5973.00	
Packer	4.00			5977.00	26.00 Bottom Of Top Packer
Packer - Shale	6.00			5983.00	
Stubb	1.00			5984.00	
Recorder	0.00	8369	Outside	5984.00	
Recorder	0.00	8846	Inside	5984.00	
Perforations	13.00			5997.00	
Blank Off Sub	1.00			5998.00	21.00 Tool Interval
Packer	5.00			6003.00	
Recorder	0.00	8846	Below	6003.00	
Perforations	18.00			6021.00	
Change Over Sub	1.00			6022.00	
Blank Spacing	31.00			6053.00	
Change Over Sub	1.00			6054.00	
Bullnose	2.00			6056.00	58.00 Bottom Packers & Anchor

**Total Tool Length: 105.00**



**TRILOBITE  
TESTING, INC**

# DRILL STEM TEST REPORT

## FLUID SUMMARY

Hayes Oil & Gas

**5-32S-18W Comanche,KS**

PO Box 108  
Attica, KS 67009

**Huck #2-5**

Job Ticket: 70640

**DST#: 5**

ATTN: Ed Grieves

Test Start: 2023.04.23 @ 08:40:22

### 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:

9500 ppm

Viscosity: 59.00 sec/qt

Cushion Volume:

bbbl

Water Loss: 11.16 in<sup>3</sup>

Gas Cushion Type:

Resistivity: ohm.m

Gas Cushion Pressure:

psig

Salinity: 10600.00 ppm

Filter Cake: 0.02 inches

### Recovery Information

Recovery Table

Length ft	Description	Volume bbbl
0.00	120' GIP	0.000
60.00	OWCM 10%O 15%W 75%M	0.295
50.00	OCM 10%O 90%M	0.246

Total Length: 110.00 ft      Total Volume: 0.541 bbl

Num Fluid Samples: 0

Num Gas Bombs: 0

Serial #:

Laboratory Name:

Laboratory Location:

Recovery Comments: RW .77@ 64

Straddle packer didn't hold

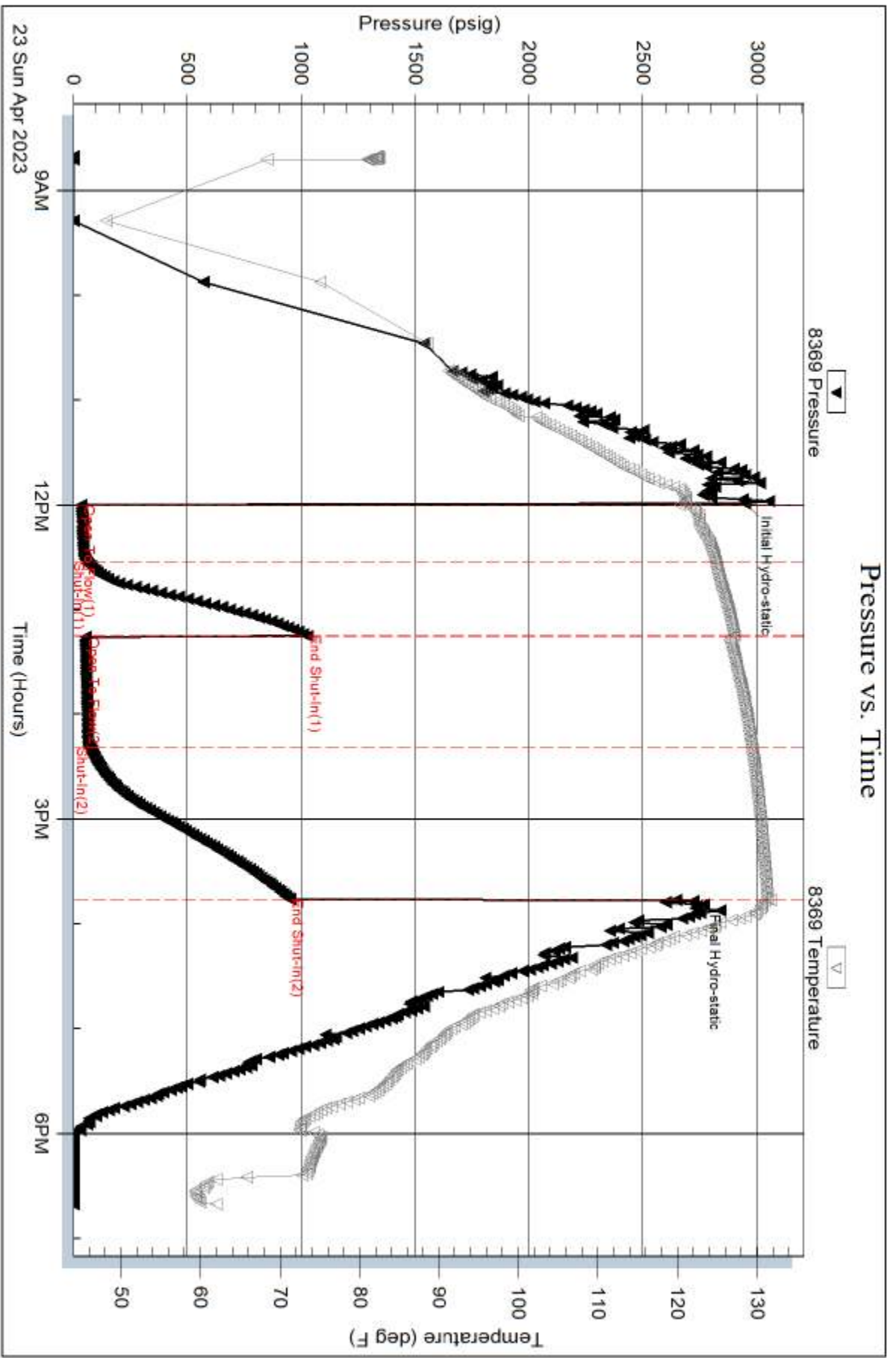


Serial #: 8369

Outside Hayes Oil & Gas

Huck #2-5

DST Test Number: 5

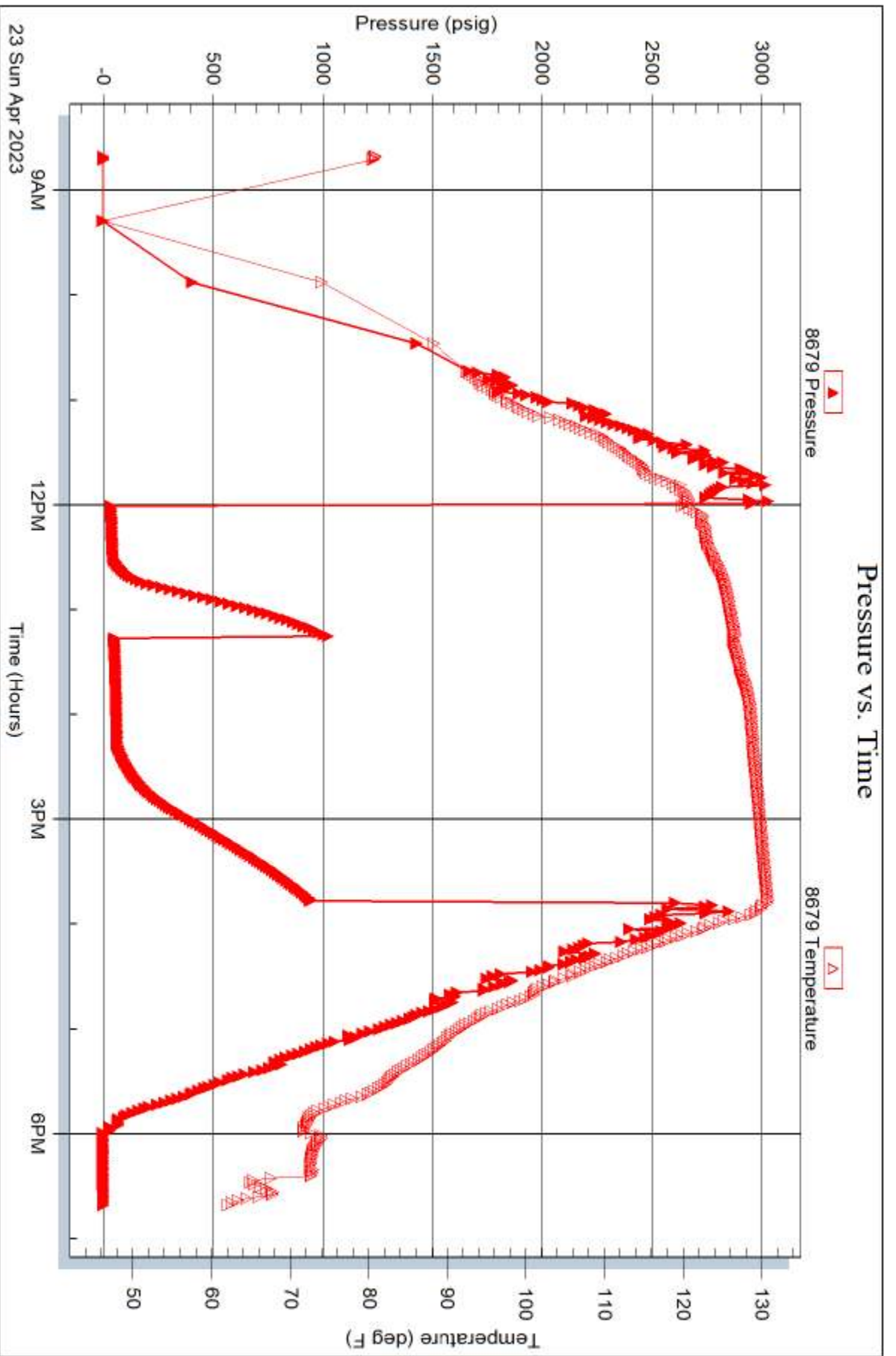


Serial #: 8679

Hayes Oil & Gas

Huck #2-5

DST Test Number: 5

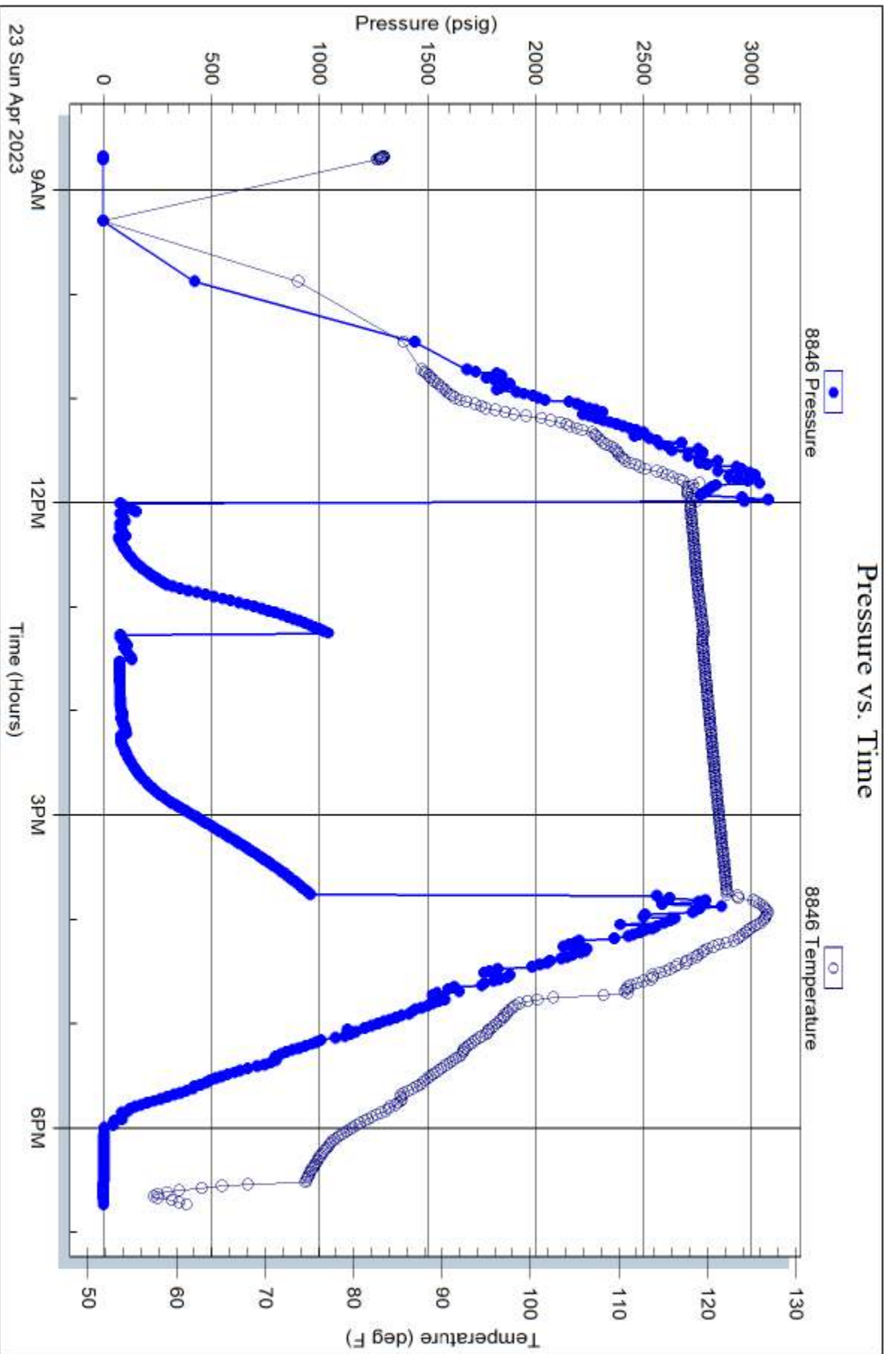


Serial #: 8846

Below (Str Address) Oil & Gas

Huck #2-5

DST Test Number: 5





# TRILOBITE TESTING INC.

1515 Commerce Parkway • Hays, Kansas 67601

## Test Ticket

NO. 70509

Well Name & No. Huck 2-5 Test No. 1 Date 04/16/23  
 Company Hayes Oil & Gas Elevation 2180 KB 2168 GL  
 Address PO Box 108 Attica, KS 67009  
 Co. Rep / Geo Ed Grieves Rig Fossil 3  
 Location: Sec. 5 Twp 32S Rge. 18W Co. Comanche State KS

Interval Tested 5030 - 5070 Zone Tested Marmaton "B"  
 Anchor Length 40 Drill Pipe Run 4914 Mud Wt. 9.35  
 Top Packer Depth 5025 Drill Collars Run 119 Vis 51  
 Bottom Packer Depth 5030 Wt. Pipe Run 0 WL 9.6  
 Total Depth 5070 Chlorides 7500 ppm System LCM 3 1/2

Blow Description IF: Strong Blow, BOB in 30 seconds, Built to 43.27"  
ISI: NO BLOW BACK  
FF: Strong Blow, BOB in 3 minutes, Built to 44.66"  
FSI: ~~NO~~

Rec	Feet of	%gas	%oil	%water	%mud
<u>697</u>	<u>6IP</u>				
<u>20</u>	<u>60 WCM</u>	<u>6</u> %gas	<u>10</u> %oil	<u>20</u> %water	<u>64</u> %mud
<u>124</u>	<u>60 M CW</u>	<u>10</u> %gas	<u>6</u> %oil	<u>54</u> %water	<u>30</u> %mud
<u>119</u>	<u>50 M CW</u>	%gas	<u>2</u> %oil	<u>88</u> %water	<u>10</u> %mud
Rec	Feet of	%gas	%oil	%water	%mud
Rec	Feet of	%gas	%oil	%water	%mud
Rec	Feet of	%gas	%oil	%water	%mud

Rec Total 263 BHT 122 Gravity N/C API RW .09 @ 45 °F Chlorides 84000 ppm  
 Initial Hydrostatic 2548  Test 2150  Ruined Shale Packer  
 Initial Flow 154 to 145  Jars 300  Ruined Packer  
 Initial Shut-In 1473  Circ Sub  Hotel  
 Final Flow 87 to 174  Hourly Standby  EM Tool Successful  
 Final Shut-In 1424  Mileage (1200) 210  Accessibility  
 Final Hydrostatic 2500  Sampler  Gas Sample  
 T-On Location 20:45  Straddle  Oversized Hole  
 Initial Flow 10 T-Started 23:06  Shale Packer 250  Sub Total 0  
 Initial Shut-In 45 T-Open 01:44  Extra Packer  Total 2910  
 Final Flow 60 T-Pulled 05:10  Extra Recorder  Tool Loaded @  
 Final Shut-In 90 T-Out 07:52  Day Standby  MP/DST Disc't

Comments \_\_\_\_\_

Approved By [Signature] Our Representative [Signature]

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# TRILOBITE TESTING INC.

1515 Commerce Parkway • Hays, Kansas 67601

## Test Ticket

NO. 70510

Well Name & No. Huck 2-5 Test No. 2 Date 04/18/23  
 Company Hayes Oil & Gas Elevation 2180 KB 2168 GL  
 Address PO Box 108 Attica, KS 67009  
 Co. Rep / Geo Ed Grieve Rig Fossil 3  
 Location: Sec. 5 Twp 32S Rge. 18W Co. Comanche State KS

Interval Tested 5196 - 5235 Zone Tested Mississippi  
 Anchor Length 39 Drill Pipe Run 5073 Mud Wt. 9.3  
 Top Packer Depth 5191 Drill Collars Run 119 Vis 58  
 Bottom Packer Depth 5196 Wt. Pipe Run 0 WL 10.4  
 Total Depth 5235 Chlorides 8300 ppm System LCM 5

Blow Description IF: Strong Blow, BOB in 30 seconds, Built to 270.3"

ISI: No Blow Back

FF: Strong Blow, BOB immediate, GTS in 1 minute, Gauged & sampled

FSI: NO Blow Back

Rec	Feet of	%gas	%oil	%water	%mud
<u>5072</u>	<u>GIP</u>				
<u>120</u>	<u>SGCM</u>	<u>5</u>			<u>95</u>

Rec Total 120 BHT 124 Gravity NIC API RW NIC @ NIC Chlorides NIC ppm

Initial Hydrostatic 2636  Test 2150  Ruined Shale Packer

Initial Flow 41 to 44  Jars 300  Ruined Packer

Initial Shut-In 1593  Circ Sub  Hotel

Final Flow 49 to 69  Hourly Standby  EM Tool Successful

Final Shut-In 1469  Mileage 1202 210  Accessibility

Final Hydrostatic 2525  Sampler  Gas Sample -350

T- On Location 07:45  Straddle  Oversized Hole

Initial Flow 10 T-Started 09:50  Shale Packer 250  Sub Total -350

Initial Shut-In 45 T-Open 12:06  Extra Packer  Total 2560

Final Flow 70 T-Pulled 15:54  Extra Recorder  Tool Loaded @

Final Shut-In 90 T-Out 18:16  Day Standby  MP/DST Disc't

Comments

Approved By Ed Grieve Our Representative [Signature]

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# TRILOBITE TESTING INC.

1515 Commerce Parkway • Hays, Kansas 67601

## Gas Volume Report

Hayes Oil & Gas  
Operator

Huck 2-5  
Well Name and No.  
GTS 1 Minute

2  
DST No.

Min.	Ins. of Water PSIG	Orifice Size	CF/D	Min.	Ins. of Water PSIG	Orifice Size	MCF/D
				10	13.32	1/4	40.857
				20	18.3	1/4	48.173
				30	20.9	1/4	52.003
				40	22.53	1/4	<del>54.405</del>
				50	24.03	1/4	56.614
				60	25	1/4	58.043
				70	25.41	1/4	58.647
				80	25.85	1/4	59.296

Remarks:





# TRILOBITE TESTING INC.

1515 Commerce Parkway • Hays, Kansas 67601

## Test Ticket

NO. 70511

Well Name & No. Huck 2-5 Test No. 3 Date 04/19/23  
 Company Hayes Oil & Gas Elevation 2170 KB 2168 GL  
 Address PO Box 108 Attica, KS 67009  
 Co. Rep / Geo Ed Grieves Rig Fossil 3  
 Location: Sec. 5 Twp 32S Rge. 18W Co. Comanche State KS

Interval Tested 5238 - 5275 Zone Tested Mississippi  
 Anchor Length 37 Drill Pipe Run 5105 Mud Wt. 9.35  
 Top Packer Depth 5233 Drill Collars Run 119 Vis 56  
 Bottom Packer Depth 5238 Wt. Pipe Run 0 WL 10.0  
 Total Depth 5275 Chlorides 6800 ppm System LCM 10

Blow Description IF: strong blow, BOB in 20 seconds, Built to 70.67"  
ISI: NO Blow Back

FF: Strong Blow, BOB in 2 minutes, Built to 53.26"  
FSI: NO Blow Back

Rec	Feet of	%gas	%oil	%water	%mud
<u>1531</u>	<u>GIP</u>				
<u>5</u>	<u>GOCM</u>	<u>4</u>	<u>8</u>		<u>88</u>
<u>119</u>	<u>GOWCM</u>	<u>4</u>	<u>4</u>	<u>27</u>	<u>64</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 124 BHT 120 Gravity NIC API RW .075 @ 84 °F Chlorides 74000 ppm

Initial Hydrostatic 2697  Test 2150  Ruined Shale Packer  
 Initial Flow 47 to 94  Jars 300  Ruined Packer  
 Initial Shut-In 1536  Circ Sub  Hotel  
 Final Flow 32 to 72  Hourly Standby  EM Tool Successful  
 Final Shut-In 1414  Mileage (120) 210  Accessibility  
 Final Hydrostatic 2471  Sampler  Gas Sample  
 T-On Location 05:10  Straddle  Oversized Hole  
 Initial Flow 10 T-Started 06:45  Shale Packer 250  Sub Total 0  
 Initial Shut-In 45 T-Open 08:42  Extra Packer  Total 2910  
 Final Flow 60 T-Pulled 11:38  Extra Recorder  Tool Loaded @  
 Final Shut-In 60 T-Out 13:51  Day Standby  MP/DST Disc't

Comments \_\_\_\_\_

Approved By [Signature] Our Representative [Signature]

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# TRILOBITE TESTING INC.

1515 Commerce Parkway • Hays, Kansas 67601

## Test Ticket

NO. 70512

Well Name & No. Huck 2-5 Test No. 4 Date 04/21/23  
 Company Hayes Oil & Gas Elevation 2180 KB 2168 GL  
 Address PO BOX 108 Attica, KS 67009  
 Co. Rep / Geo Ed Grieres Rig Fossil 3  
 Location: Sec. 5 Twp 32S Rge. 18W Co. Comanche State KS

Interval Tested 5668 - 5728 Zone Tested Viola  
 Anchor Length 60 Drill Pipe Run 5548 Mud Wt. 9.2  
 Top Packer Depth 5663 Drill Collars Run 119 Vis 55  
 Bottom Packer Depth 5668 Wt. Pipe Run 0 WL 9.2  
 Total Depth 5728 Chlorides 5900 ppm System LCM 8

Blow Description IF: Strong Blow, BOB in 4 minutes, Built to 20.61"  
ISI: NO BLOW BACK  
FF: Fair Blow, BOB in 57 minutes, Built to 1239"  
FST: NO BLOW BACK

Rec	Feet of	%gas	%oil	%water	%mud
<u>30</u>	<u>505M</u>	<u>2</u>		<u>98</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	Feet of	%gas	%oil	%water	%mud
Rec	Feet of	%gas	%oil	%water	%mud

Rec Total 30 BHT 125 Gravity NIC API RW NIC @ NIC °F Chlorides NIC ppm  
 Initial Hydrostatic 2883  Test 2150  Ruined Shale Packer  
 Initial Flow 36 to 59  Jars 300  Ruined Packer  
 Initial Shut-In 322  Circ Sub  Hotel  
 Final Flow 37 to 53  Hourly Standby  EM Tool Successful -350  
 Final Shut-In 349  Mileage (120) 210  Accessibility  
 Final Hydrostatic 2738  Sampler  Gas Sample  
 T-On Location 02:00  Straddle  Oversized Hole  
 Initial Flow 30 T-Started 02:20  Shale Packer 250  Sub Total 408.33 - 350  
 Initial Shut-In 45 T-Open 04:43  Extra Packer  Total 2968.33  
 Final Flow 60 T-Pulled 08:00  Extra Recorder  Tool Loaded @  
 Final Shut-In 60 T-Out 10:24  Day Standby 1d 12.25h  MP/DST Disc't

Comments \_\_\_\_\_

Approved By [Signature] Our Representative [Signature]

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# TRILOBITE TESTING INC.

1515 Commerce Parkway • Hays, Kansas 67601

## Test Ticket

NO. 70640

Well Name & No. Huck 2-5 Test No. 5 Date 4/23/23  
 Company Hays Oil & Gas Elevation 2180 KB 2168 GL  
 Address Po Box 108 Africa, KS 67007  
 Co. Rep / Geo Ed Griener Rig Fossil 23  
 Location: Sec. 5 Twp 32S Rge. 18W Co. Comanche State KS

Interval Tested 5977'-5994' Zone Tested Viola  
 Anchor Length 17' Drill Pipe Run 5842' Mud Wt. 9.1  
 Top Packer Depth 5968 Drill Collars Run 119 Vis 56  
 Bottom Packer Depth 5972 Wt. Pipe Run Ø WL 11.2  
 Total Depth 6060' Chlorides 10,600 ppm System LCM 18

Blow Description IF: Weak Blow built to .93" burdies) back to .86" (.50)  
IST: no Blow Pack. (45)  
FF: Weak Blow built to .25" in bucket. (60)  
FSP: no Blow pack. (90)

Rec	Feet of	%gas	%oil	%water	%mud
<u>50</u>	<u>OCM</u>	<u>10</u>		<u>90</u>	
<u>60</u>	<u>OWCM</u>	<u>10</u>	<u>15</u>	<u>75</u>	
<u>0</u>	<u>120' GIP</u>				

Rec Total 110 BHT 130 Gravity \_\_\_\_\_ API RW .77 @ 64 °F Chlorides 9500 ppm  
 Initial Hydrostatic 2949  Test 2150 straddle packer failed  Ruined Shale Packer \_\_\_\_\_  
 Initial Flow 36 to 62  Jars 300  Ruined Packer \_\_\_\_\_  
 Initial Shut-In 1027  Circ Sub \_\_\_\_\_  Hotel \_\_\_\_\_  
 Final Flow 54 to 72  Hourly Standby \_\_\_\_\_  EM Tool Successful -350  
 Final Shut-In 950  Mileage 120 210  Accessibility \_\_\_\_\_  
 Final Hydrostatic 2722  Sampler \_\_\_\_\_  Gas Sample \_\_\_\_\_  
 T-On Location 0040  Straddle 800  Oversized Hole \_\_\_\_\_  
 Initial Flow 30 T-Started 0840  Shale Packer \_\_\_\_\_  Sub Total -350  
 Initial Shut-In 45 T-Open 1156  Extra Packer \_\_\_\_\_  Total 3110  
 Final Flow 60 T-Pulled 1545  Extra Recorder \_\_\_\_\_  Tool Loaded \_\_\_\_\_ @ \_\_\_\_\_  
 Final Shut-In 90 T-Out 1840  Day Standby \_\_\_\_\_  MP/DST Disc't \_\_\_\_\_

Comments \_\_\_\_\_

Approved By \_\_\_\_\_ Our Representative [Signature]

Trilobite Testing Inc. shall not be liable for damage of any kind of 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.



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

Well Name: Hayes Oil & Gas -Huck 2-5  
Well Id:  
Location: Sec 5 T32S, R18W, Commanche County, Kansas  
License Number: 15-033-21797-00  
Spud Date: April 10th,2023  
Surface Coordinates: 1980' FNL & 1512' FEL  
Region: Wildcat  
Drilling Completed: April 22nd, 2023

Bottom Hole  
Coordinates:  
Ground Elevation (ft): 2168' K.B. Elevation (ft): 2180'  
Logged Interval (ft): 3400' To: 6020' Total Depth (ft): 6020'  
Formation: Lansing, Marmaton, Miss.  
Type of Drilling Fluid: Natural Chemical

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

**OPERATOR**

Company: HAYES OIL & GAS LLC  
Address: 1081 W. Hiway 160  
Attica , Kansas 67009

**GEOLOGIST**

Name: Edwin H, Grieves/ Tim Hedrick  
Company: Earth Tech  
Address: PO Box 683  
Hooker, Okla. 73945  
580-754-0062

**Daily Drilling Reports**

4-11- on location rigged up at 1300'  
4-12- at 2140' @ 7am  
4-13- at 3165' @ 7am  
4-14- at 3947' @ 7am  
4-15- at 4491' @ 7am  
4-16- at 4964' @ 7am  
4-17- at 5070' @ 7am  
4-18- at 4235' @ 7am  
4-19- at 5275' @ 7am  
4-20- at 5438' @ 7am  
4-21- at 5728' @ 7am  
4-22- at 6050' @ 7am

DST #1 5030' - 5070'

DST #1 10-45-60-90 MARMATON "B"  
IF- BOB 30 SEC. BLT TO 43.27" 10 MIN  
FF-BOB 3 MIN BLT TO 44.66 IN 45 MIN  
IHP- 2548#/ FHP 2500# IFP- 154 #TO 145#, ISIP-1473#, FFP-87# TO 174# , FSIP- 1424#  
RECOV. 697' GIP,  
20' GOWCM =6%G., 10% O. ,20%W., 64%M.  
124' GOMCW = 10% G, 6% O., 54%W., 30%M.  
119' SOCMW = 2% O., 88%W., 10%M.  
RW .07 @45 DEG, CHLORIDES 84,000/ PIT CHL. 7500PPM

DST #2 5196' - 5235'

DST#2 10-45-80-90 MISSISSIPPI  
IF-BOB 30 SEC. BLT TO 270.0"  
FF-BOB GTS IN 1 MINUTE  
IHP-2636# / FHP- 2525# / IFP-41# TO 44# / FFP-49#-69#  
ISIP- 1593# / FSIP- 1469#  
RECOV. 5092' GIP/ 120' GCM = 5%G., 95%M.

BHT 124 DEG

FLOW PRESSURES

MIN.	CHOKE	PRESS	GAS RATE MCF/D
10	.25	13.32	40.84
40	.25	22.53	54.41
60	.25	25.00	58.04
70	.25	25.41	58.65
80	.25	25.85	59.30

DST #3 5238' - 5275'

DST #3 10-45-60-60 MISSISSIPPI  
IF- BOB 20 SEC, BLT TO 70.67  
FF-BOB 2 MIN., BLT TO 53.26  
IHP- 2697#, FHP-2471# / IFP- 47# TO 94#/FFP-32#TO72#  
ISIP-1536" ,FSIP-1414#  
RECOV.- 1531' GIP/ 124' TF = 5'GOCM, 45G.,8%O., 88%M  
119- GOWCM= 4%G., 45O., 28%W.,64% M./ 74000 PPM CHL.  
RW .08 @84 DEG., PIT CHL.- 6800/ BHT 120 DEG.

DST #4 5668' - 5728'

DST #4 30-45-60-60 VIOLA  
IF-BOB 4 MIN, BLT TO 20.61  
FF- FAIR BLOW BOB 57 MIN, BLT TO 12.72  
IHP- 2883# /FH- 2738# , IFP-36# TO 59#, FFP- 37# TO 53#  
ISIP - 322#, FSIP- 349#  
RECOV.- 30' TF =SOCM 2% O., 98%M. BHT 125 DEG

### Formation Tops

	SAMPLE TOPS	E-LOG TOPS
WABAUNSEE	3436' -1256'	
STOTLER	3568'- 1388'	
B. HEEBNER	4353'- 2173'	
BR. LIME	4517'- 2337'	
LANSING	4543'-2363'	
KANSAS CITY	4836'-2656'	
BKC	4992'-2812'	
MARMATON	5002'-2822'	
PAWNEE	5086'-2906'	
FT.SCOTT	5123'-2943'	
CHEROKEE	5138'-2958'	
MISSISSIPPI	5193'-3013'	
COWLEY 2	5628'-3448'	
VIOLA	5665'-3485'	
SIMPSON SH	5954' -3774'	
R.T.D.	6050'	

### Daily Mud Reports

DATE	4-12	4-13	4-14	4-15	4-16	4-17	4-18	4-19
TIME	915A	915A	10 A	835A	1145A	925A	925a	830a
MW	9.6	9.7	9.0	9.3	9.3	9.3	9.3	9.3
VIS	28	28	52	48	51	50	56	52
PV	1	1	16	16	16	22	17	18
YP	2	2	15	15	16	20	17	18
G/S	1/2	1/2	14/40	16/54	16/54	21/63	16/54	17/53
WL	-	-	7.6	10.4	9.6	10.4	10.	10.4
CAKE	-	-	1	1	1	1	2	1
CHL	61K	74K	6K	8.2K	7.5K	8.3K	6.8k	9.36
HRD	HVY	HVY	2	4	4	2	4	12
LCM	0	0	4	4	3.5	5	10	9
PH	7.0	7	11	9.5	11.0	10.0	9.0	9.0

### Deviation / CFS Points

8 5/8" CASING SET TO 813'

DEV SRVY	CFS POINTS	
1. 509'±1	1.4200'	10.5728'
2. 800'±1	2.5040'	11.5776'
3. 1324'±.25	3.5070'	12.6050'
4. 1833'±.75	4.5120'	
5. 2310'±.75	5.5146'	
6. 2850'±.50	6.5235'	
7. 3324'±.75	7.5275'	
8. 3828'±.50	8.5300'	
9. 4842'±.75	9.5690'	

### ROCK TYPES

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

### ACCESSORIES

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

- MINERAL**
- [Icon] Anhy
  - [Icon] Arggrn
  - [Icon] Arg
  - [Icon] Bent
  - [Icon] Bit
  - [Icon] Breclfrag
  - [Icon] Calc
  - [Icon] Carb
  - [Icon] Chtdk
  - [Icon] Chtlt
  - [Icon] Dol
  - [Icon] Feldspar
  - [Icon] Ferrpel
  - [Icon] Ferr
  - [Icon] Glau
  - [Icon] Gyp
  - [Icon] Hvymin
  - [Icon] Kaol
  - [Icon] Marl
  - [Icon] Minxl
  - [Icon] Nodule
  - [Icon] Phos
  - [Icon] Pyr

- [Icon] Salt
- [Icon] Sandy
- [Icon] Silt
- [Icon] Sil
- [Icon] Sulphur
- [Icon] Tuff
- [Icon] Chlorite
- [Icon] Dol
- [Icon] Sand
- [Icon] Sltly

- [Icon] Dol
- [Icon] Grysh
- [Icon] Gryslt
- [Icon] Lms
- [Icon] Sandylms
- [Icon] Sh
- [Icon] Sltstn

**STRINGER**

- [Icon] Anhy
- [Icon] Arg
- [Icon] Bent
- [Icon] Coal
- [Icon] Dol
- [Icon] Gyp
- [Icon] Ls
- [Icon] Mrst
- [Icon] Sltstrg
- [Icon] Ssstrg
- [Icon] Carbsh
- [Icon] Clystn

**TEXTURE**

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

### OTHER SYMBOLS

**INTERVALS**

- [Icon] Core
- [Icon] Dst
- [Icon] Dst

**EVENTS**

- [Icon] Rft
- [Icon] Sidewall

**POROSITY TYPE**

- [Icon] Earthy
- [Icon] Fenest
- [Icon] Fracture
- [Icon] Inter
- [Icon] Moldic
- [Icon] Organic
- [Icon] Pinpoint
- [Icon] Vuggy

**SORTING**

- [Icon] Well
- [Icon] Moderate
- [Icon] Poor

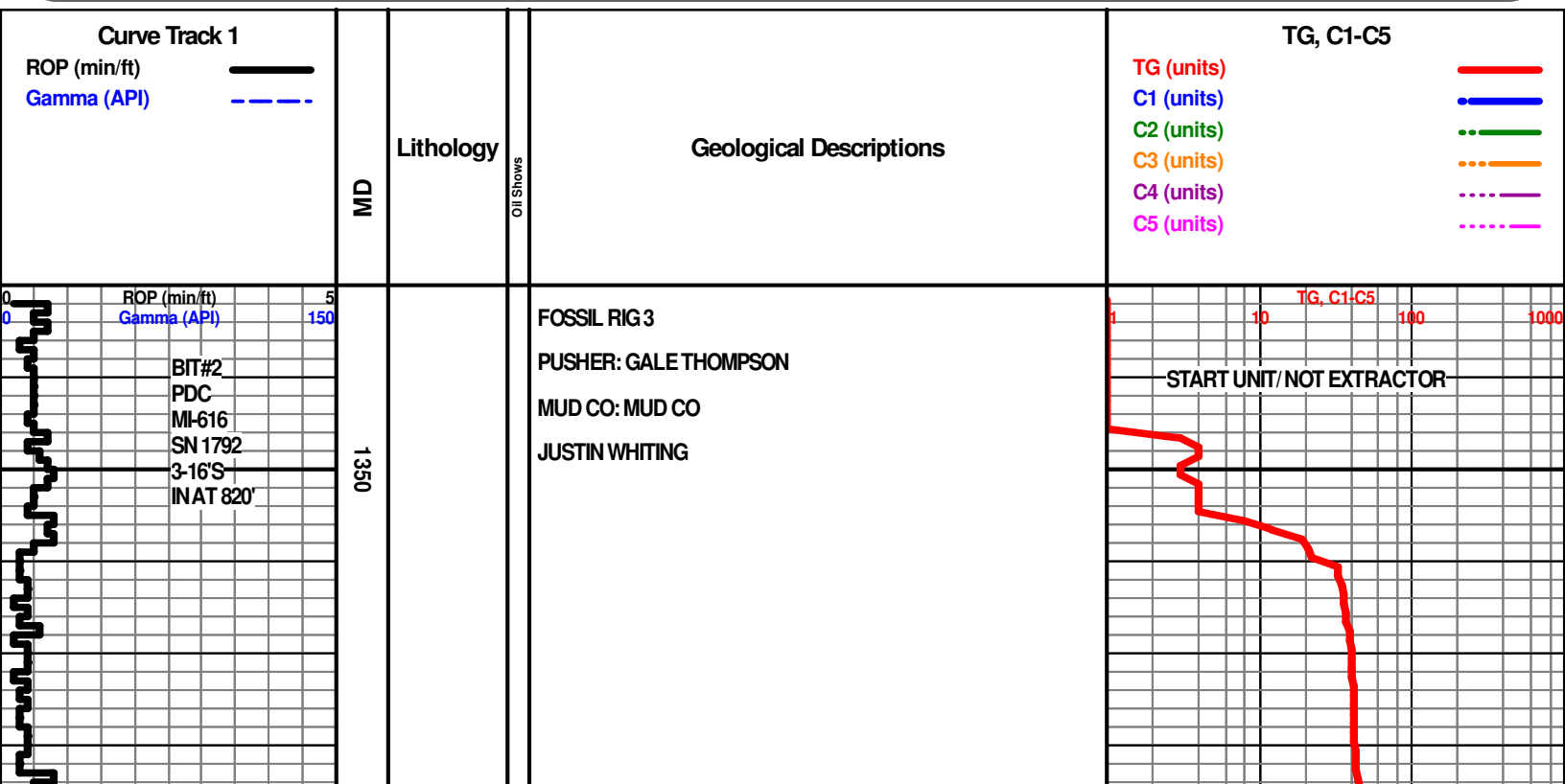
**ROUNDING**

- [Icon] Rounded
- [Icon] Subrnd
- [Icon] Subang

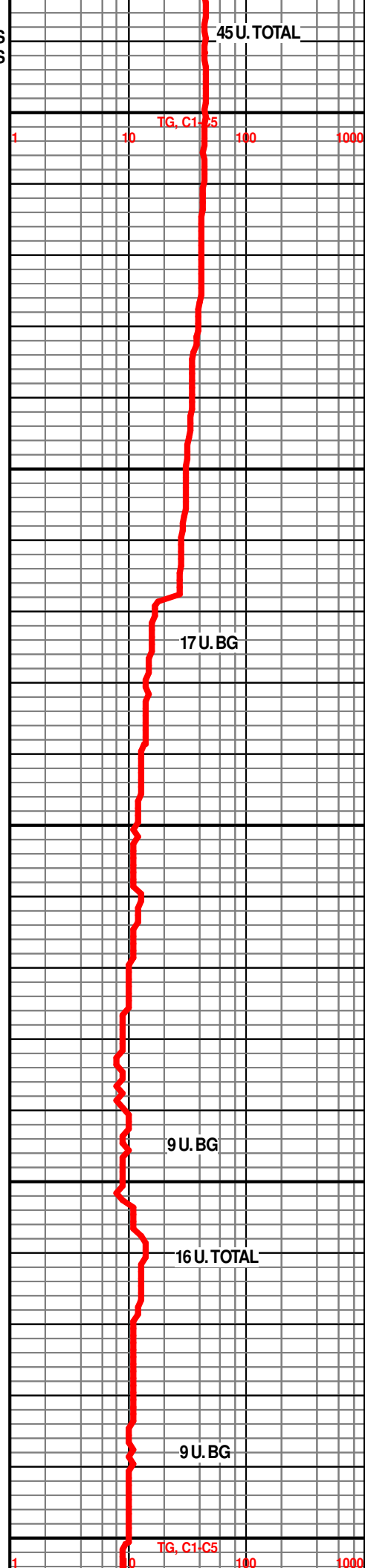
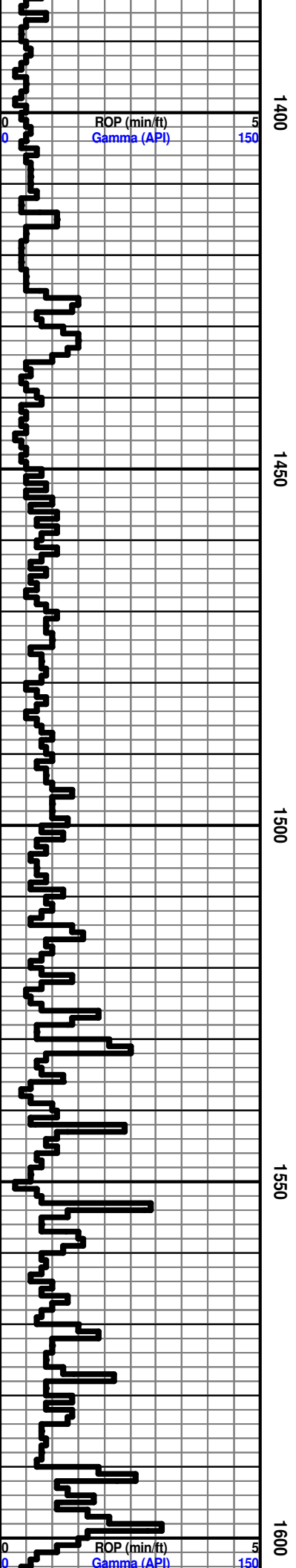
- [Icon] Angular

**OIL SHOWS**

- [Icon] Even
- [Icon] Spotted
- [Icon] Ques
- [Icon] Dead
- [Icon] Gas show



PLEASE NOTE: GAS EXTRACTOR WAS NO RUNNING AND WAS 8' ABOVE THE MUD COMING OUT OF THE FLOWLINE, THIS GAS FREE FLOWED UP TO THE EXTRACTOR AND THE WAS PULLED INSIDE TO THE DETECTOR



45 U. TOTAL

TG, C1-C5

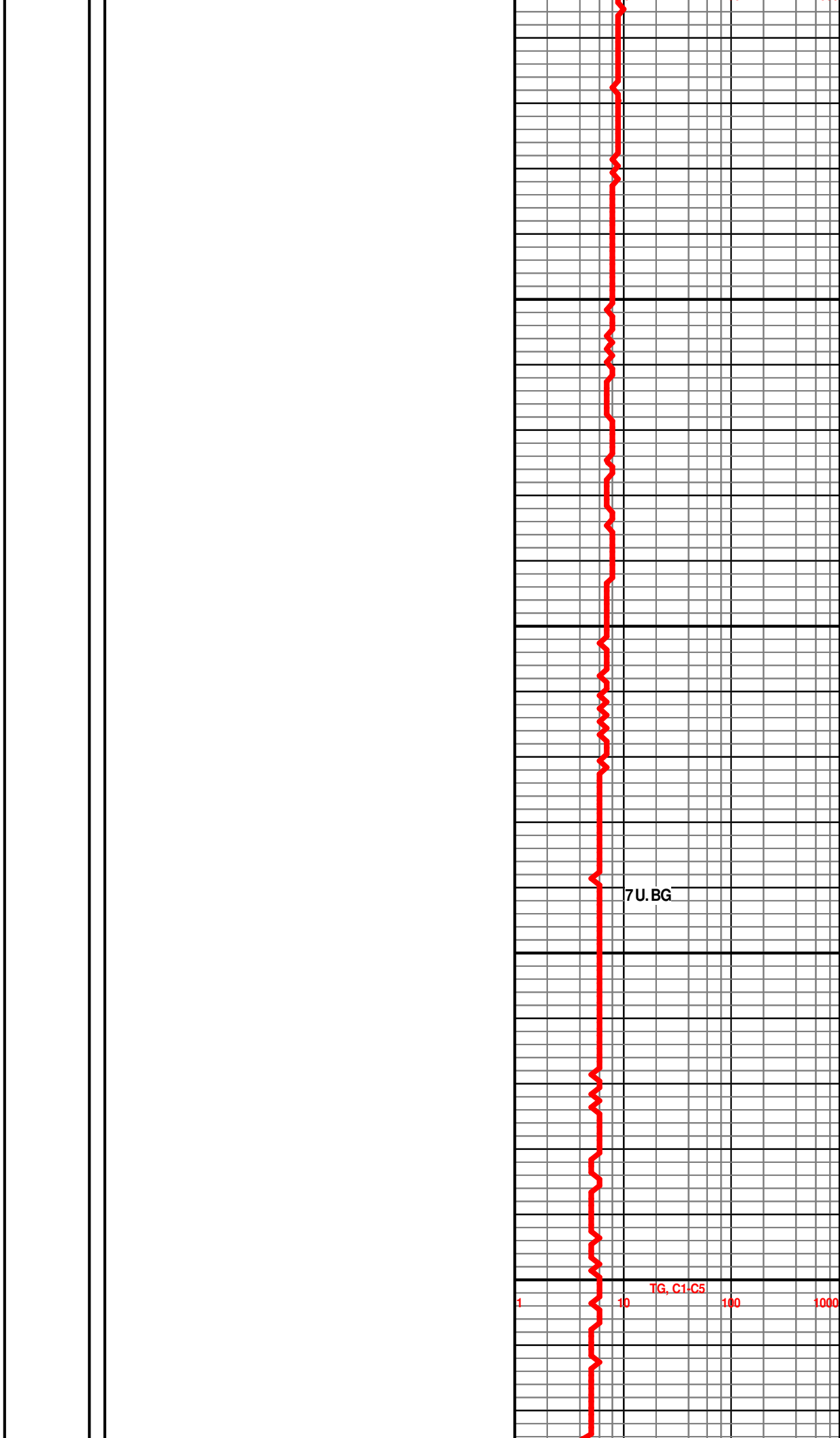
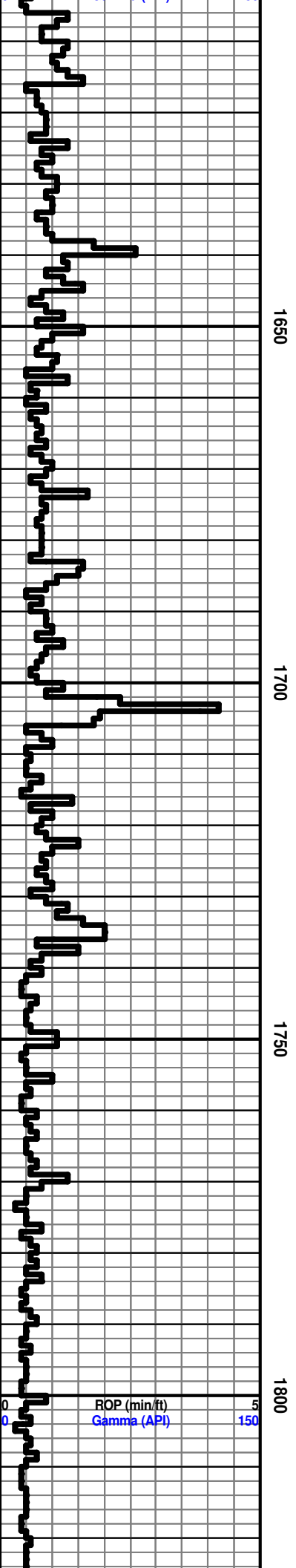
17 U. BG

9 U. BG

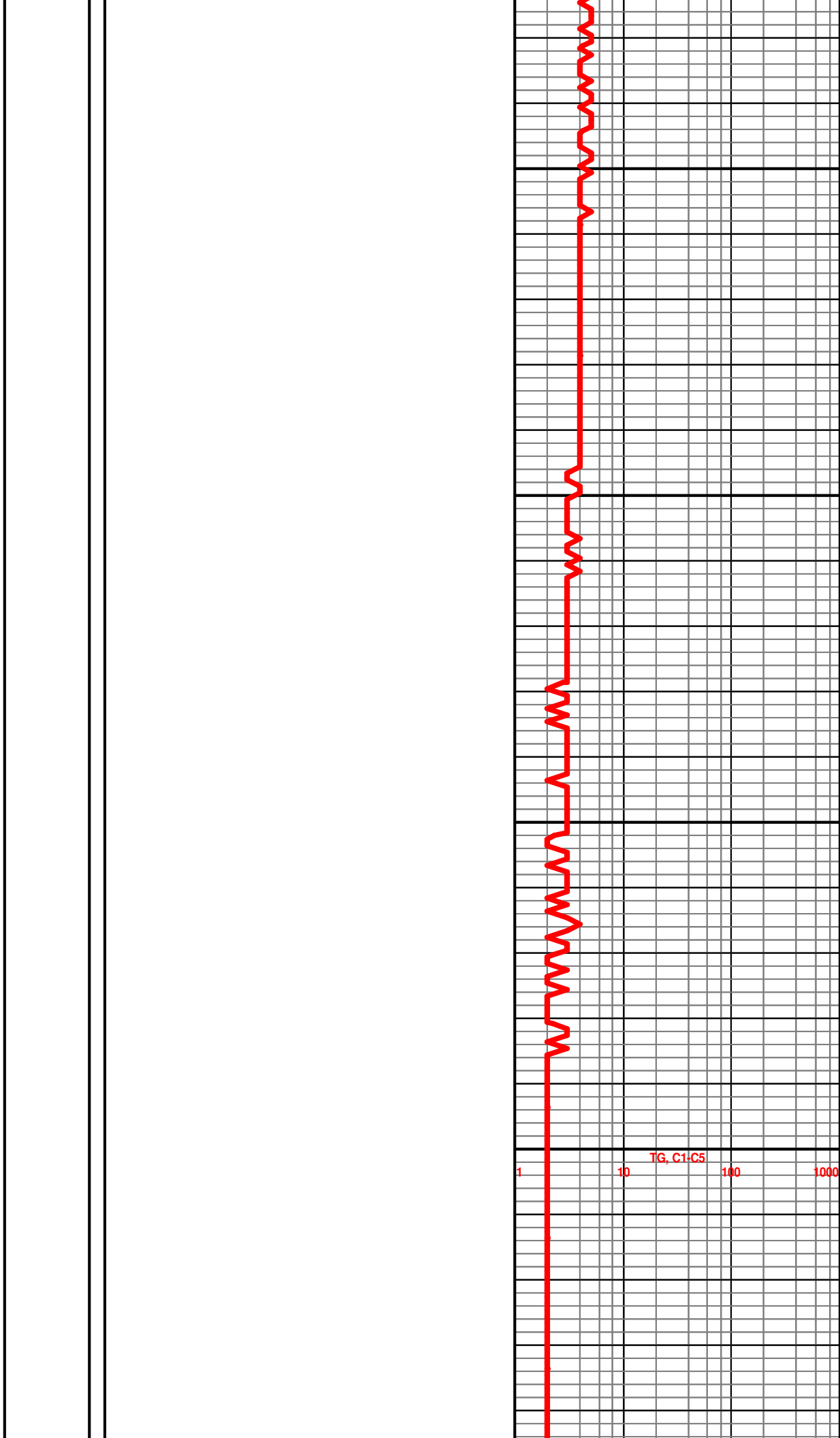
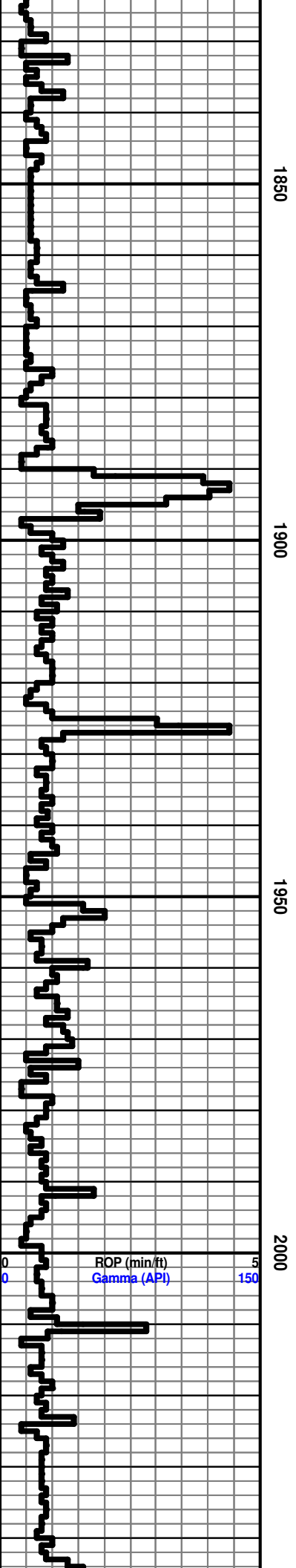
16 U. TOTAL

9 U. BG

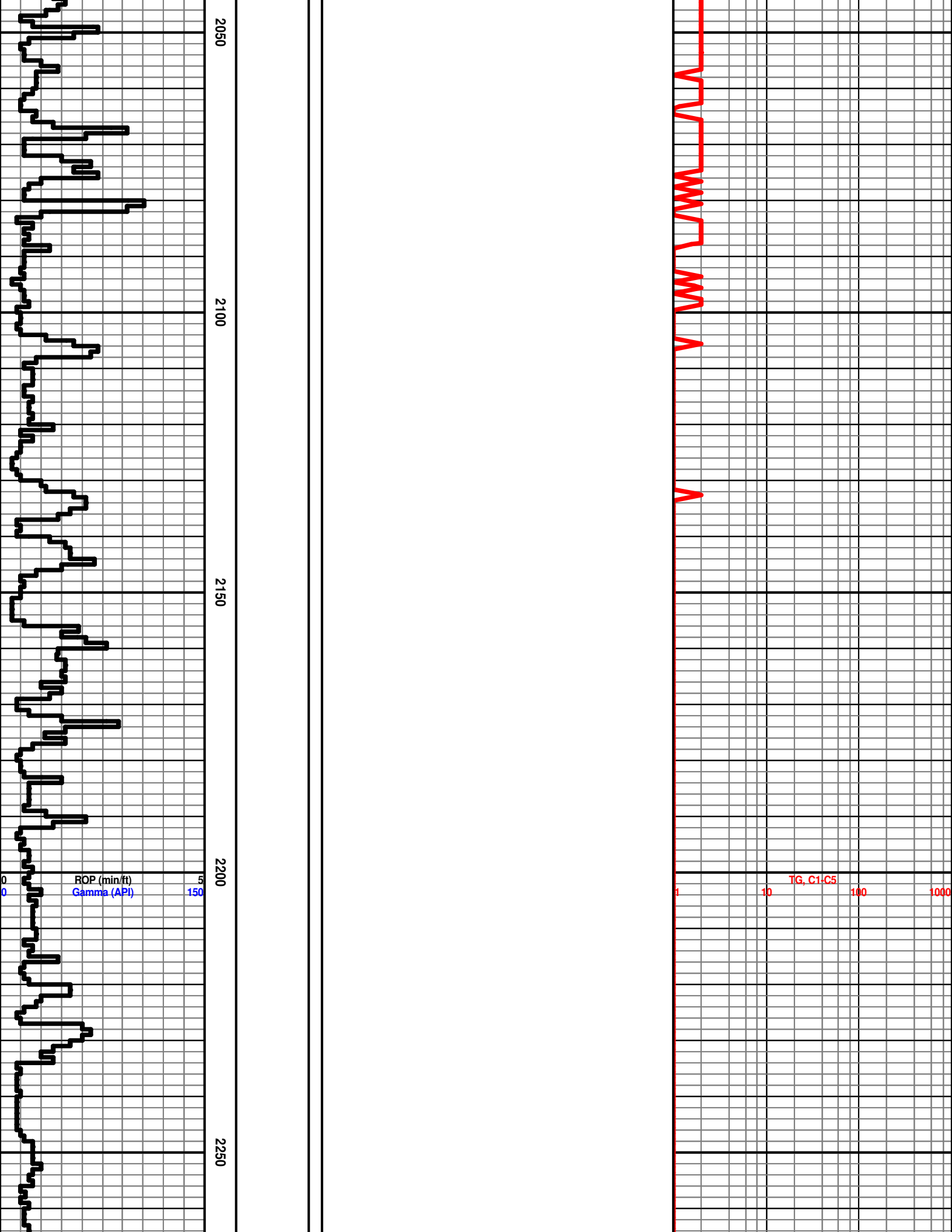
TG, C1-C5

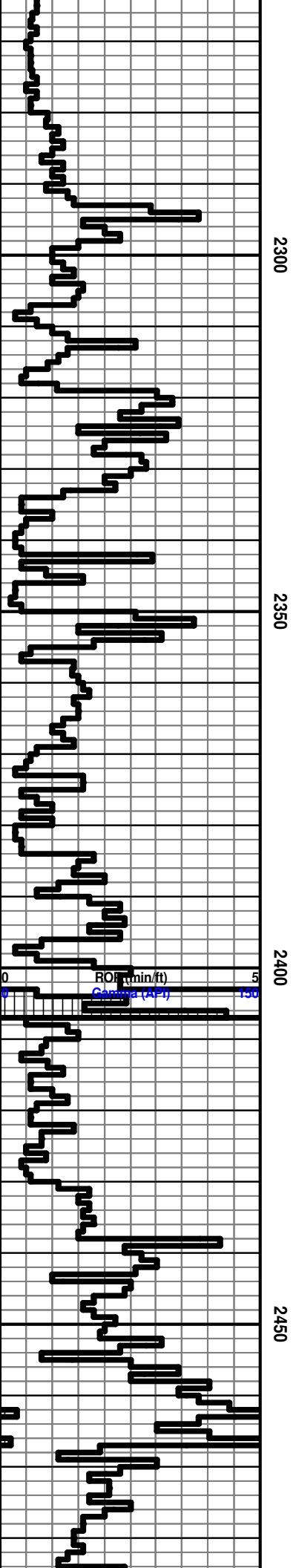










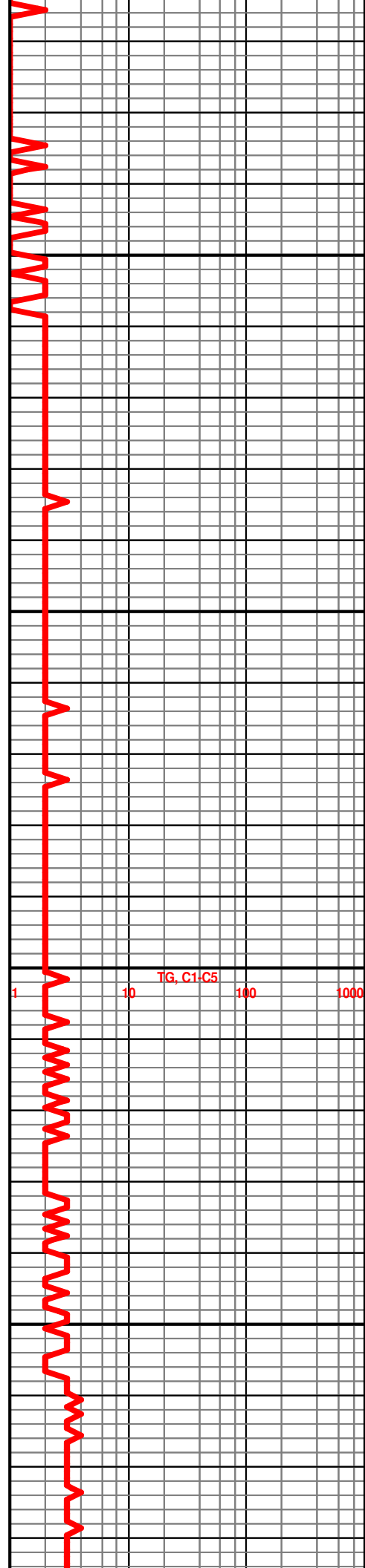


2300

2350

2400

2450



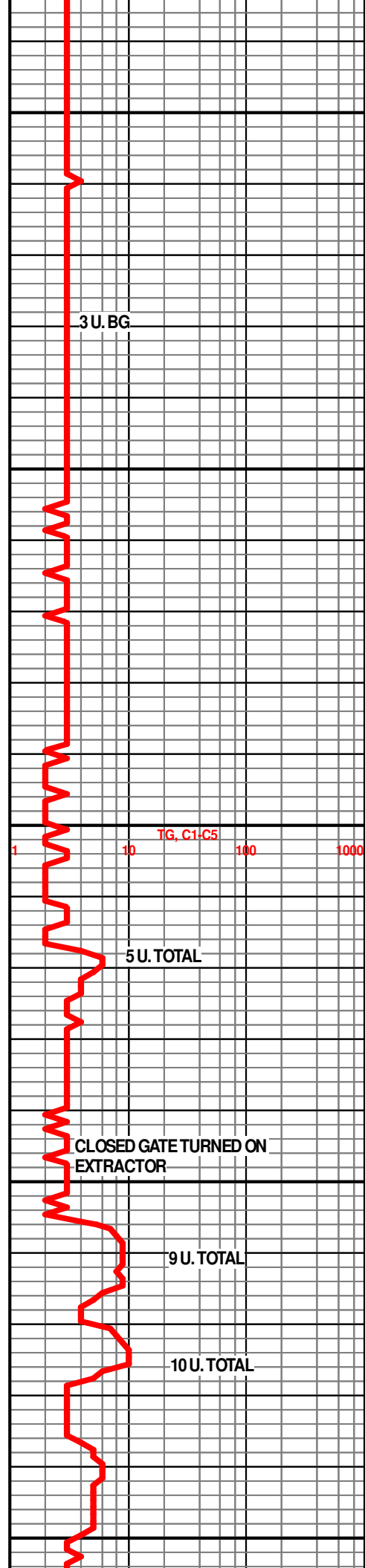
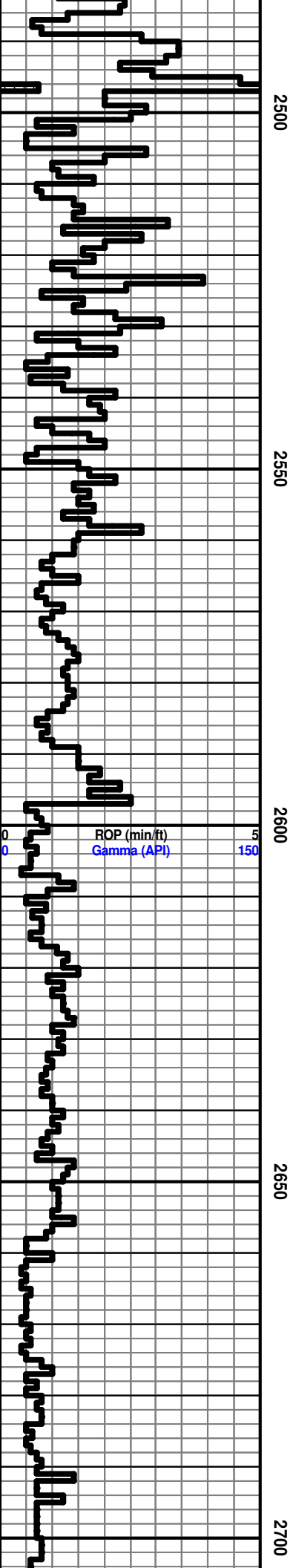
TG, C1-C5

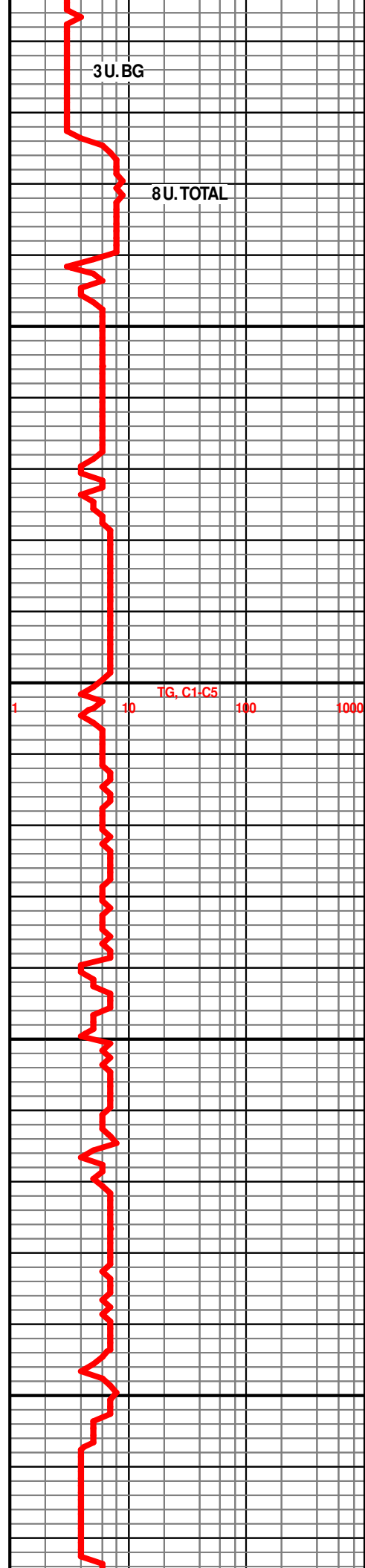
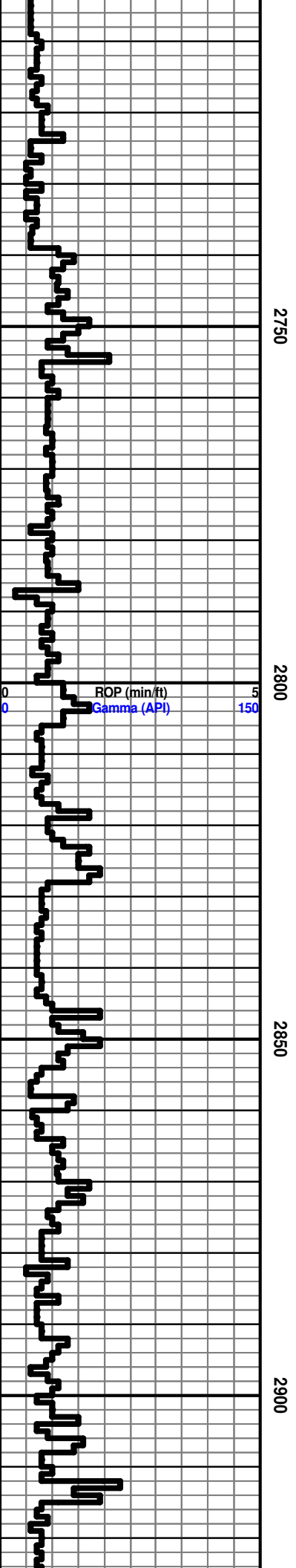
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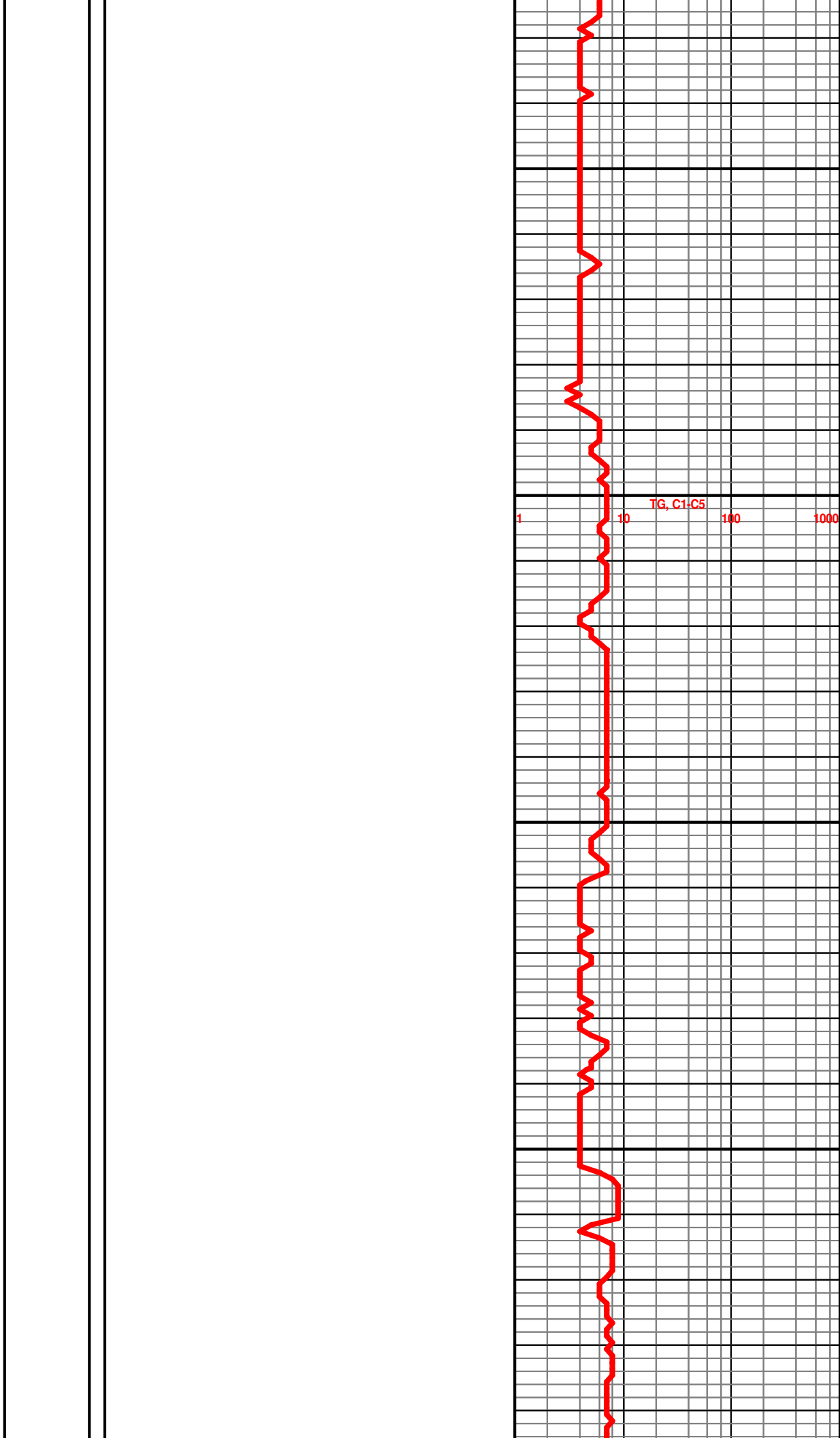
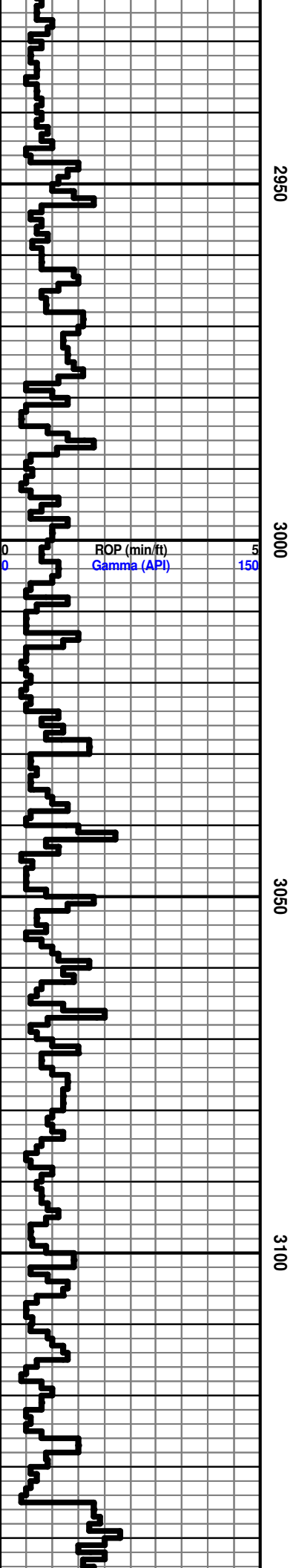
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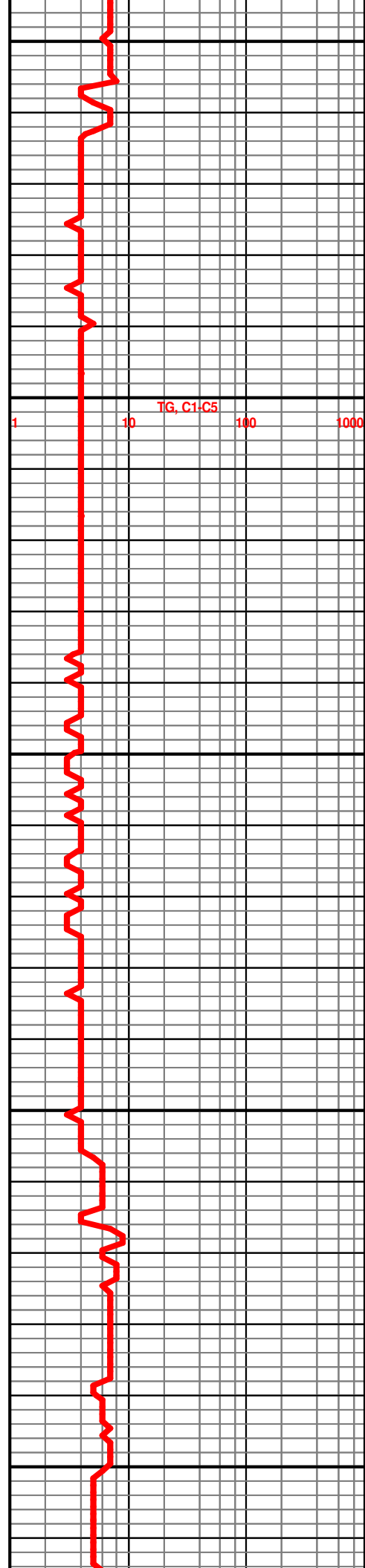
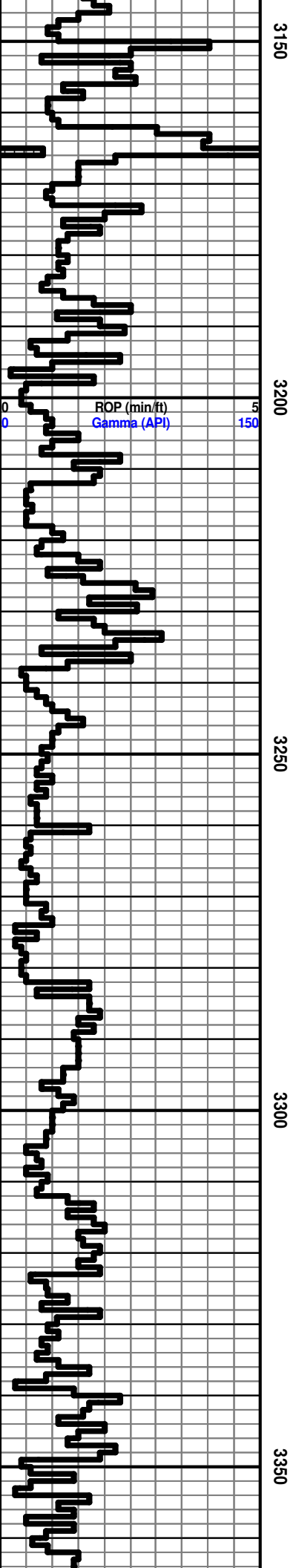
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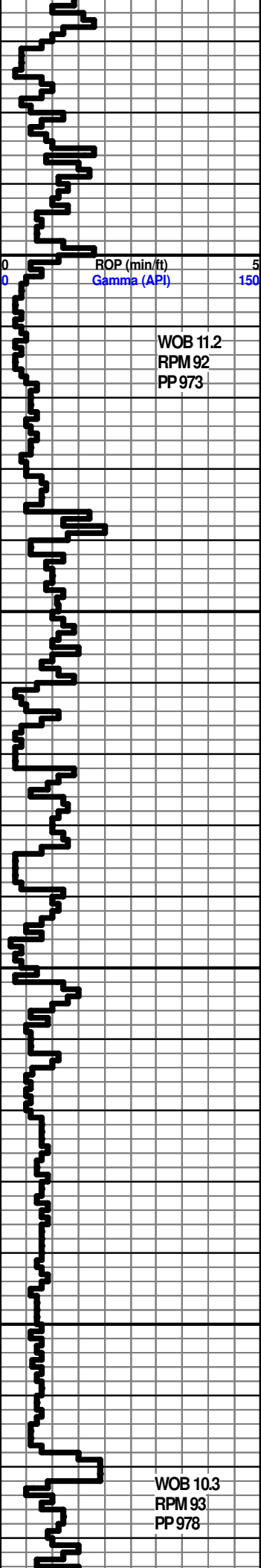
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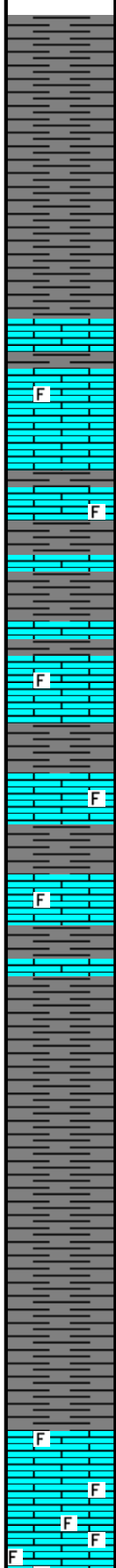








3400  
3450  
3500  
3550



START SAMPLES @ 3400'

3401'-3436' SHALE- RED WITH GREEN AND TRACES MEDIUM TO DARK GRAY

**WABAUNSEE 3436' -1256'**

3436'-3514' LIMESTONE- WITH INTERBEDDED SHALES

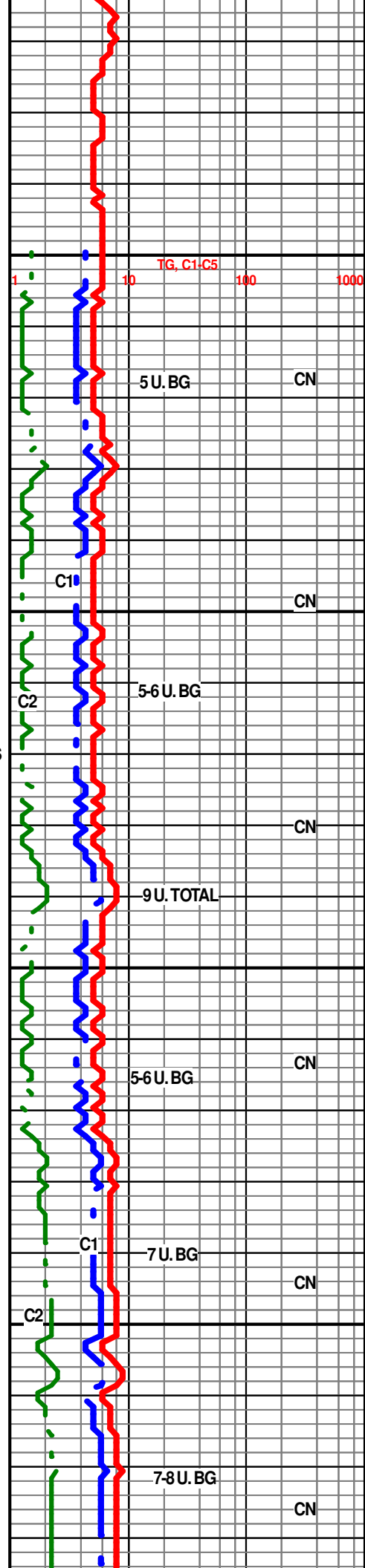
1. HARD DRILLING - LIMESTONE- OFF WHITE CREAM LIGHT TAN W/ TRACES BROWN CRYPTO-VV/FN-XLN, SUB CHALKY, SUB SUCROSIC TO TRACES OF PACKSTONE, TRACE FOSSILS IP, LIGHT YELLOW FLUORESCENCE, NO CUT , NO VIS POR

2. FAST DRILLING- SHALES- LIGHT TO MEDIUM GRAY, SLIGHT TO FAIRLY CALCAREOUS IP

3514'- 3568' - SHALE LIGHT GRAY TO LIGHT GREEN, SLIGHTLY SILTY IP TO TRACES VERY FINE LIGHT GRAY SILTS

**STOTLER 3568' - 1388'**

3568'- 3598' LIMESTONE- CREAM LIGHT TAN CRYPTO-VV/FN-XLN SUB SUCROSIC, VERY FOSSIL IP, LT YELLOW FLUORESCENCE IP, NO CUT , NO VIS POROSITY



TG, C1-C5  
1 10 100 1000

5 U. BG CN

C1 CN

C2 5-6 U. BG CN

9 U. TOTAL CN

5-6 U. BG CN

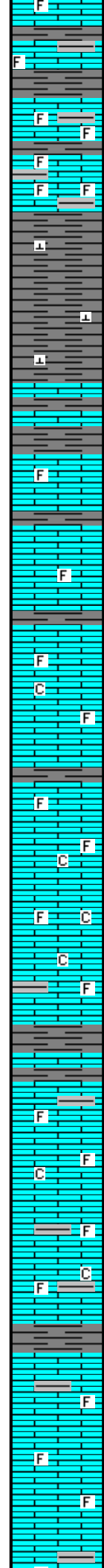
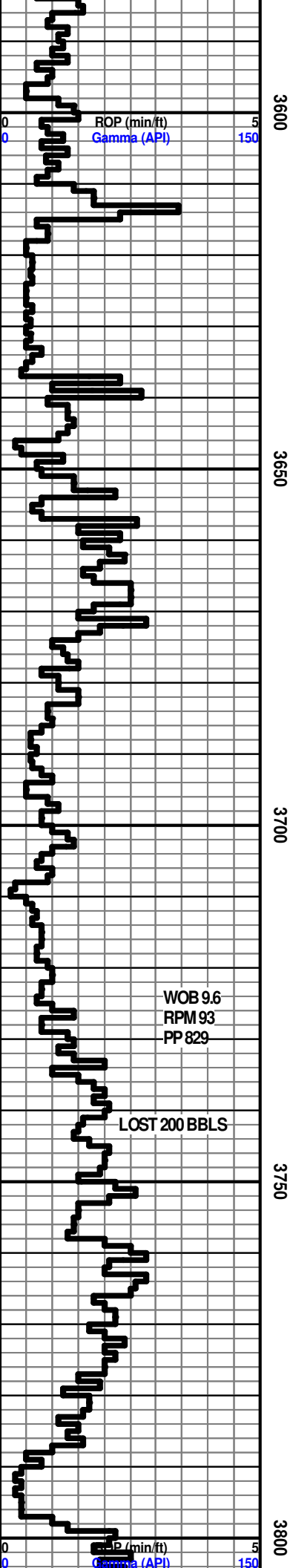
C1 7 U. BG CN

C2 7-8 U. BG CN

7-8 U. BG CN

WOB 11.2  
RPM 92  
PP 973

WOB 10.3  
RPM 93  
PP 978



3598-3615' LIMESTONE-LIGHT TO MEDIUM GRAYS LIGHT TO VERY SHALY IP, SILTY IP, CRYPTO-XLN SUB CHALKY SUB SUCROSIC, TRACES LIGHT YELLOW FLUORESCENCE, NO CUT, NO VIS POR

3615-3637' SHALES- LIGHT GRAY GREEN IP TO MEDIUM GRAY, SLT TO FAIRLY CALC IP

3637-3672' 'INTEBEDDED LIMESTONE SIMILAR TO 3568' - 3616' WITH SCATTERED THIN BEDS SHALE MEDIUM TO DARK GRAY SLIGHT TO FAIRLY CALC, NO FLUOR, NO VIS POR, NO VIS SHOW OR CUT

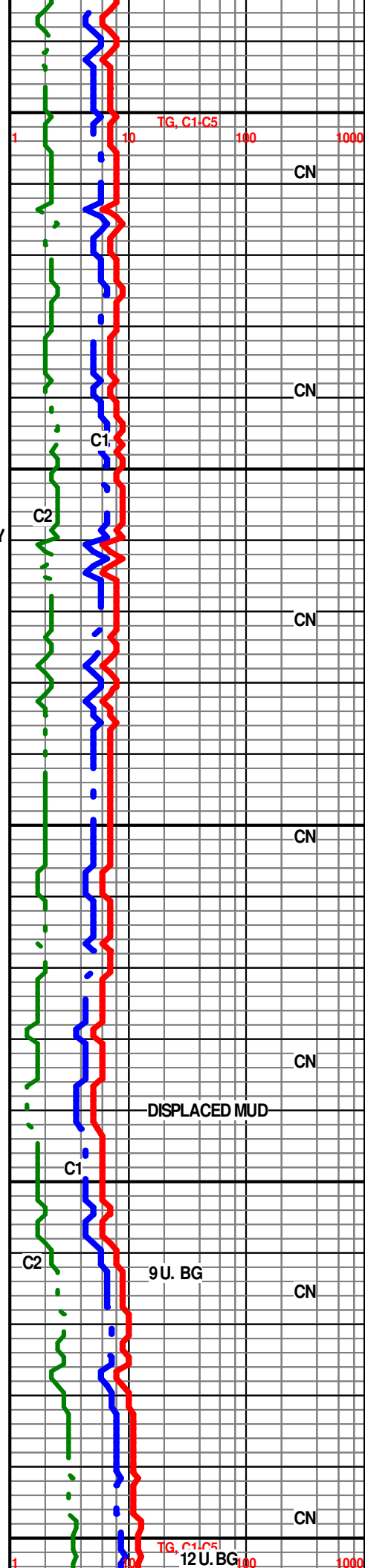
LIMESTONE- CREAM LIGHT TAN CRYPTO-V/V/FN-XLN SUB SUCROSIC, SUB CHALKY, TRACES PACKSTONE, SLIGHT TO VERY FOSSIL IP, LT YELLOW FLUORESCENCE IP, NO CUT, NO VIS POROSITY

LIMESTONE-LIGHT TO MEDIUM GRAY SLIGHT TO VERY SHALY IP, SILTY IP, CRYPTO-XLN SUB CHALKY SUB SUCROSIC, TRACES LIGHT YELLOW FLUORESCENCE, NO CUT, NO VIS POR

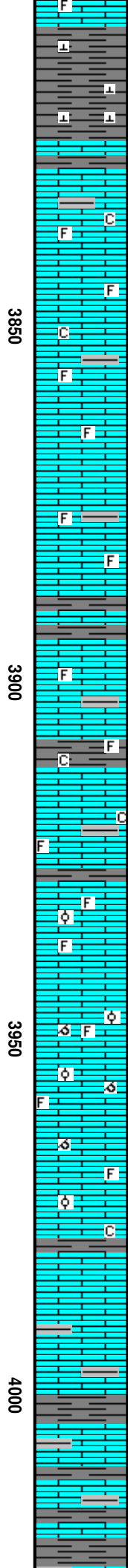
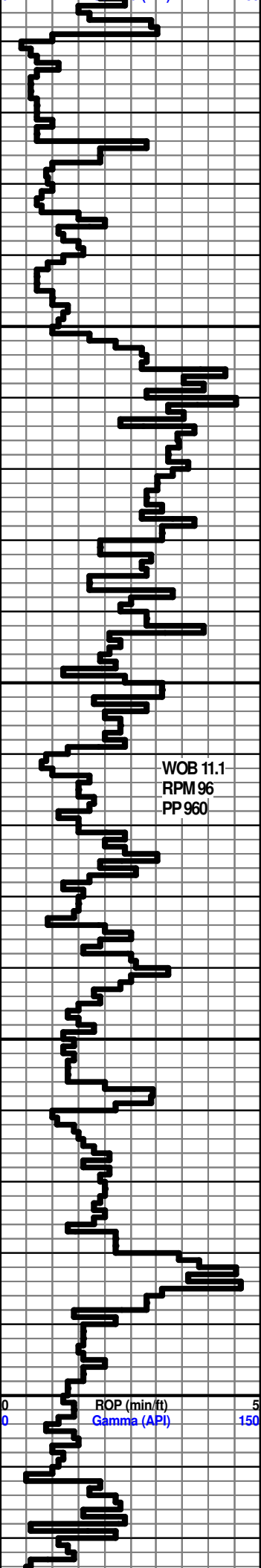
LIMESTONE- CREAM LIGHT TAN CRYPTO-V/V/FN-XLN SUB SUCROSIC, SUB CHALKY, VERY FOSSIL IP, LT YELLOW FLUORESCENCE IP, NO CUT, NO VIS POROSITY

LIMESTONE-LIGHT TO MEDIUM GRAY SLIGHT SHALY IP, SILTY IP, CRYPTO-XLN SUB SUCROSIC, TRACES LIGHT YELLOW FLUORESCENCE, NO CUT, NO VIS POR

LIMESTONE- CREAM LIGHT TAN CRYPTO-V/V/FN-XLN SUB SUCROSIC, SUB CHALKY, SLIGHT TO VERY FOSSIL IP, LT YELLOW FLUORESCENCE IP, NO CUT, NO VIS POROSITY







3809-3824' SHALES LIGHT GRAY TO LIGHT GREEN, FIRM BLOCKY SMOOTH, CALC IP

3824'- 3853' LIMESTONE- LIGHT TAN TO LIGHT GRAY, MOTTLED IP, SUCROSIC SUB CHALKY, TRACES TO VERY FOSSIL IP, DULL YELLOW FLUOR, NO CUT, TRACES MICRO PP POR IP, NO VIS SHOW

3853'- 3909' -LIMESTONE- LIGHT TAN TAN CRYPTO-VV/FN-XLN SUB SUCROSIC, TRACES TO FAIRLY FOSSIL, VERY DULL YELLOW FLUOR, NO CUTS, NO VIS POR

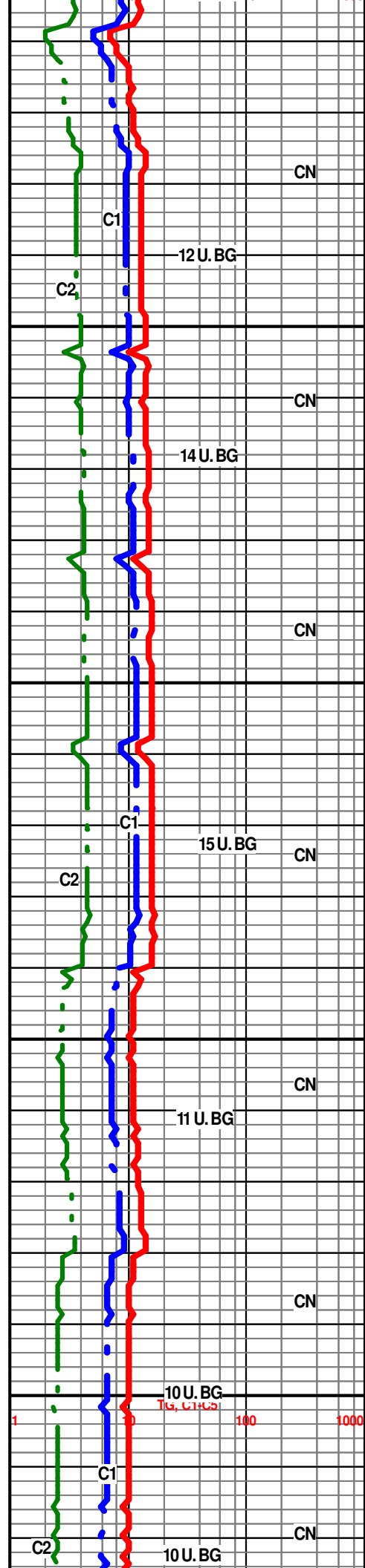
3909-3913' SHALE MEDIUM TO DARK GARY SLIGHT TO FAIRLY CALCAREOUS

3913-3943' LIMESTONE- TAN, CRYPTO-VV/FN-XLN, SUCROSIC TO SUB SUCROSIC IP, TRACES OOLITIC, DULL YELLOW FLUOR, NO CUT, HVY TRACES POOR TO FAIR PP & MICRO PP POR

3943'-3980' LIMESTONE- LIGHT TAN TAN, CRYPTO-VV/FN-XLN W/ TRACES CLEAR TO WHITE MEDIUM TO COARSE CALCITE XLS, SUB SUCROSIC TO SUCROSIC, TRACES OOLITIC TO SLI TRACES OOLICASTIC, DULL YEL TO TR YELLOW FLUOR, NO CUT, ABN POOR FAIR GOOD TO EXCEL PP, MICRO PP & INTER-XLN POR, PROB VUG POR IP

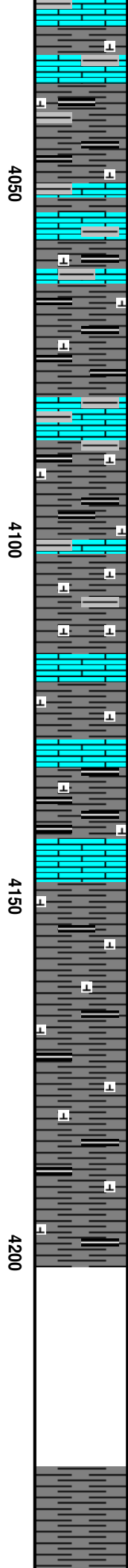
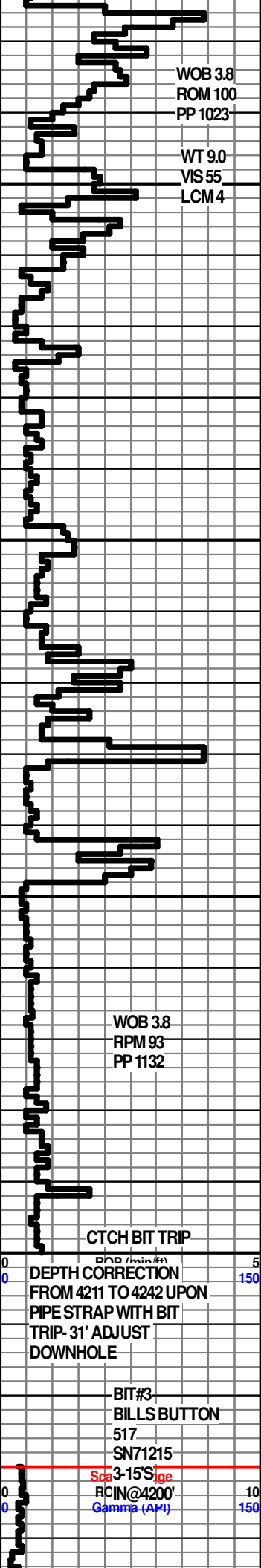
3980-3988' LIMESTONE- TAN, CRYPTO-VV/FN-XLN, SUCROSIC TO SUB SUCROSIC IP DULL YELLOW FLUOR, NO CUT, HVY TRACES POOR TO FAIR PP & MICRO PP POR

3988-4036' LIMESTONE- LIGHT TO MEDIUM GRAY, FAIRLY TO V/ SHALY, TRACES TAN CRYPTO-XLN TO PACKSTONE, NO FLUOR, NO CUT OR VIS POR



WOB 11.1  
RPM 96  
PP 960

10 U. BG  
100 1000



4036'-4109' SHALY LIMES TO LIMY SHALES- MEDIUM TO VERY DARK GRY, CRYPTO- XLN, SHALY & PACKSTONE, NO FLUOR, NO CUT, NO VIS POR

4109'-4112' SHALE VERY DARK GRAY TO BLACK CARB LOOKING

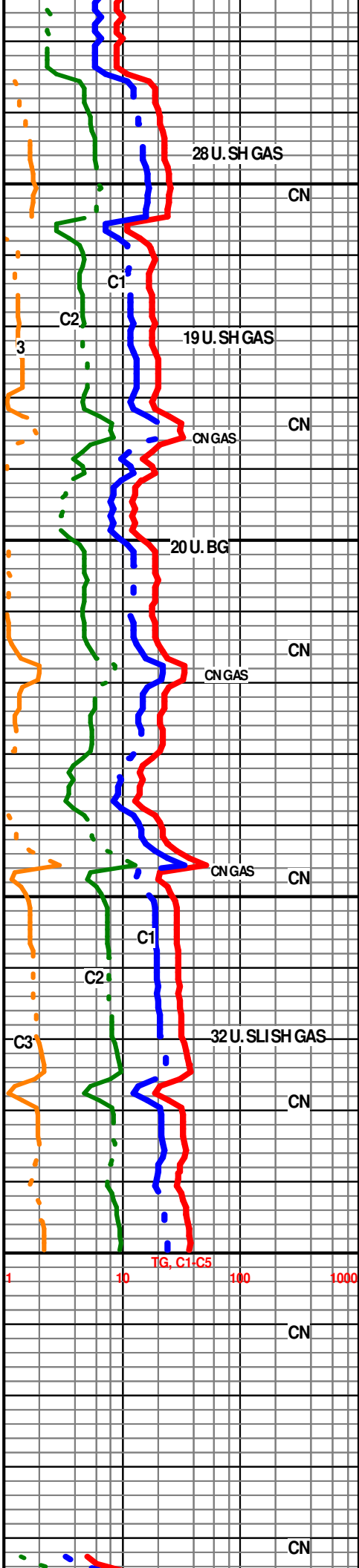
4112'-4128' SHALEY LIMES TO LIMEY SHALES TRACES TAN CRYPTO-XLN PACKSTONE, NO FLUOR, NO VIS POR, NO CUTS

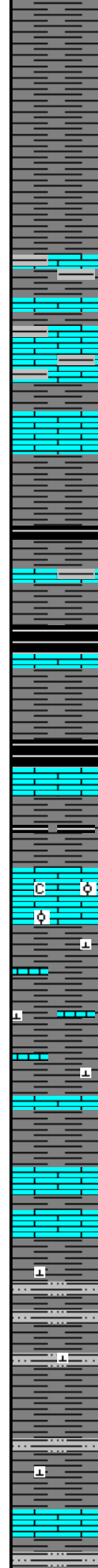
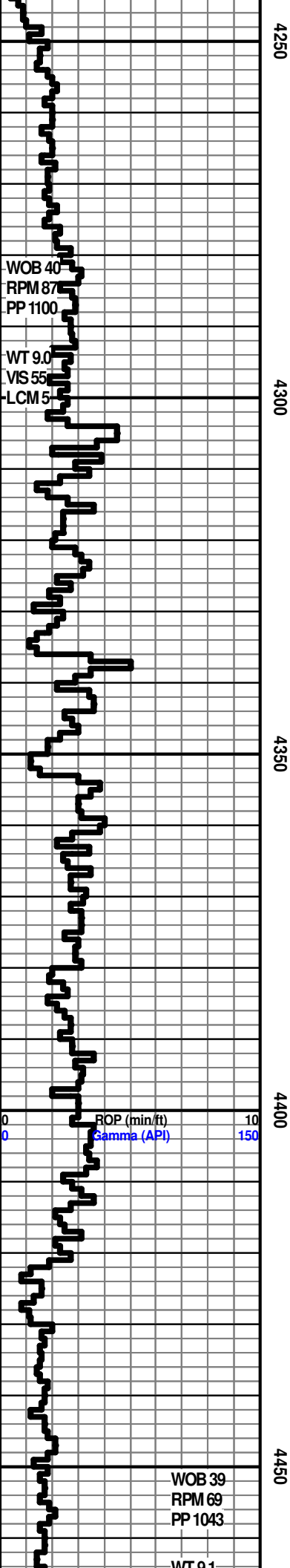
4128'-4131' LIMESTONE- TAN GRAYISH TAN, CRYPTO-XLN PACKSTONE. DUL YEL FLUOR, NO VIS POR, NO CUT

4131'-4142' SHALE-VERY DARK GRAY TO A BN BLACK CARB LOOKING

4142'-4148' LIMESTONE- TAN GRAYISH TAN, CRYPTO-XLN PACKSTONE. DUL YEL FLUOR, NO VIS POR, NO CUT

4148'-4200' SHALE-VERY DARK TO BLACK CARB LOOKING SLIGHT TO FAIRLY CALCAREOUS IP





4231-4279 SHALE - DARK TO V/DARK GRAY TO BLACK CARB  
LOOKING SLI TO VERY CALC, W/ HEAVY TRACES LIGHT GRAY  
SILTST. MICACIOUS NO FLUOR

4279'- 4316' INTERBEDDED LS & SILTS, MEDIUM TO DARK GRAY,  
CRYPTO-XLN SUB CHALKY & OR SHALY, NO FLUOR, NO VIS  
POR, NO SHOW

SILTST- LT GRAY MICACIOUS, TRACES BLACK MINERAL, NO  
FLUOR, NO VIS POR, NO CUT

SHALE- VERY DARK GRAY TO BLACK SOFT CARB

4321-4333' LS- LT GRAY TO TAN CRYPTO-XLN, TRACES DLL  
YELLOW FLUOR, NO CUT, NO VIS POR, W/ ABN LS & SILTS

4333'-4336' SHALE- BLACK SOFT CARB

**B. HEEBNER 4353' - 2173'**

4336- 4339' LMS- TAN LT GRAY, CRYPTO-XLN PCKSTN, TO TRS  
SUB LITHO GRAPHIC, TRACES DLL YEL FLUOR, NOT CUT, NO  
VIS POR

4339'4348' SH- LT GRAY TO LT GREEN, SOFT MUSHY WHEN WET,  
SILTY IP'S

4348'-4354' LMS- TRACES WHT TO CREAM CHLK, & LT TAN  
TO TAN, CRYPTO VV/FN-XLN, SUB CHALK SUB SUCRO,  
TRACES PHANTOM OOLITES, NO CUT, NO VIS POR

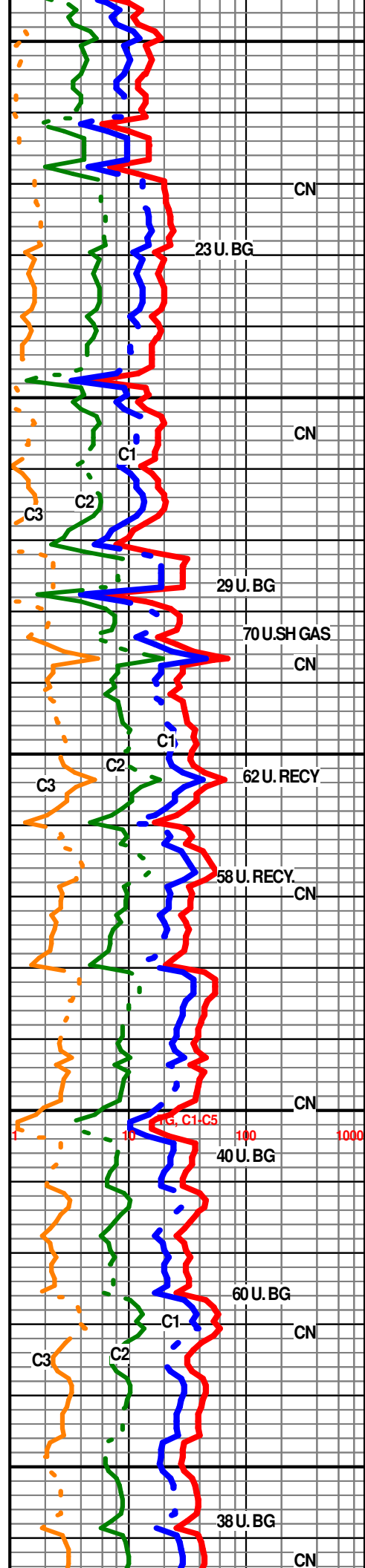
4366-4375' LMS- WHT TO CRM CHLK & LT TAN TAN  
CRYPTO-VV/FN-XLN SUB CHALKY SUB SUCRO, TRS  
PHANTOM OOLITES NO FLO, NO VIS POR, NO SHOW

4375' - 4421 INTERBEDDED LMS & SHALES

1. LMS- LT TAN TAN CRYPTO-VV/FN-XLN SUB CHALK SUB  
SUCRO, TRACES PHANTOM OOLITES, NO CUT, NO VIS POR

SHALES MED TO DARK GRAY- CALC IP'S TO TRS V/ DRK GRAY

4421'- 4517' INTERBEDDED SILTST & SHALES LT GRAY, SLI TO  
FAIRLY MICACIOUS IP, TRS SH, V/DRK GRAY TO BLK  
INCLUSIONS, NO FLO, NO VIS POR, NO VIS SHOW OR CUT



WT 9.1  
VIS 57  
LCM 4

4500

SHALES-LT TO MED GRAY, FAIRLY CALC IP, & SLI TO FAIRLY SILTY W/HVY TRS DRK TO V/ DRK GRY TO SLI TRS BLK SFT CARB

LMS- LT TN GYISH TAN- CRYPTO-XLN SUB SUCRO SUB CHLKY, NO FLO, NO VIS POR, NO VIS SHOW

**BROWN LIME 4517' -2337'**

4517-4525' LMS- TAN DRK TANCRYPTO-XLN SUB CHLKY TO PCKSTN, TRS DLL YEL FLO, NO CUT, NO VIS POR

4525- 4543' SH- MED TO GRY V/ TO EXTRML CALC IP; GRDNG TO SHLY LMSY

**LANSING 4543' - 2363'**

4543' - 4560' LMS- TAN W/ WHT TO CRM CHLK, CRYPTO-VV/FN-XLN ABNDT OOLITES & FOSS, PCKST N MATRIX, DLL YEL FLO, NO CUT, NO VIS POR

4560-4567- SH- MED GRY, V/ CALC

4567-4589' LMS- TAN GRAYISH TAN CRYPTO-VV/FN-XLN IP, SLI TR FOSS IP; TRS WHT CRM CHLK, DLL YEL FLO, SLI TRS PR PP TO SMLL VUG POR, NO CUT OR SHOW

4589- 4598' SH - MED GRY TO V/ EXTRMLY CALC GRADING TO SHLY LIMES

4598-4624' LMS-OFF WHT CRM TO TAN, GRAY IP, CRYPTO-V/FN-XLN SUB SUCRO, PHANTOM OOLITES TO PHANTOM OOLICASTIC, RE-XLZED, DLL YEL TO TRS YEL FLO, HVY TRS TO ABDNT PR FR GD TO EXCEL PP & MICRO PP POR, NOSHOW

LMS- 4614' - 4667' LMS- TAN GRAYISH IP, TRS LT GRY, CRYPTO-VV/FN-XLN, SUB CHLKY SUB SUCRO, DUL YEL TO YEL FLO, SLI TRS LT GRY TAN OPQUE TRANSLCNT CHERT, W/ SCATTERD THIN BEDS MED TO DRK GRAY SH SLI TO EXTRMLY CALC, NO CUTS OR SHOWS

4667- 4675' LMS- TAN CRYPTO-XLN TO V/FN-XLN SUB SUCRO TO V/ SUCRO, PHANTOM OOLITES IP, TRS V/ DLL YEL FLO, ABNDT PR FR GD TO EXCEL MICRO PPTO INTER-XLN POR, TRS CHERT LT GRY OPQUE

4675-4686' LMS- TAN CRM W/FN TO V/FN-XLN SUB SUCRO TO V/ SUCRO, TRS LT GRY OPQUE CHERT, TRS DLL YEL FLO, NO VIS POR, NO VIS SHOW OR CUT

4550

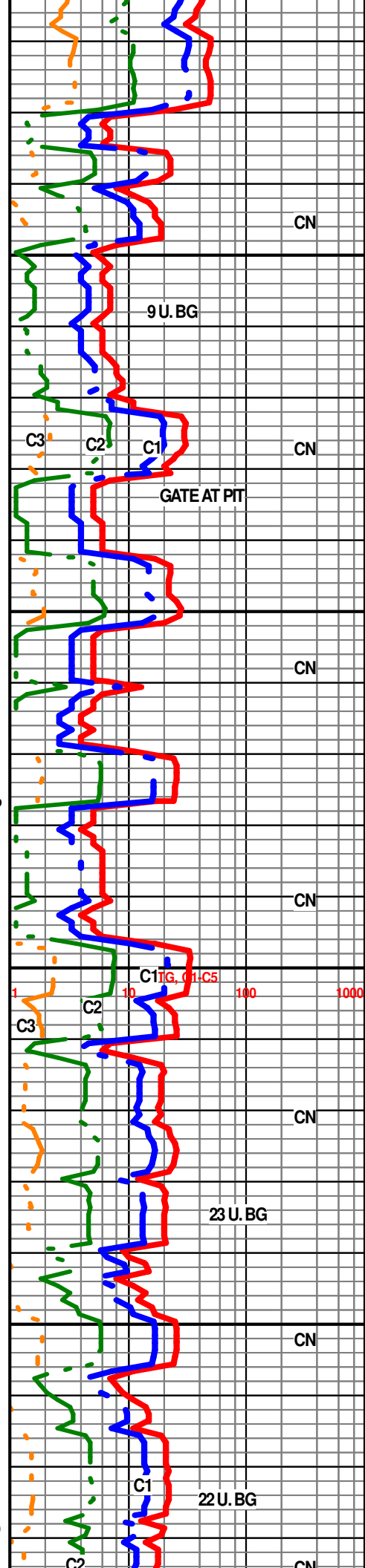
4600

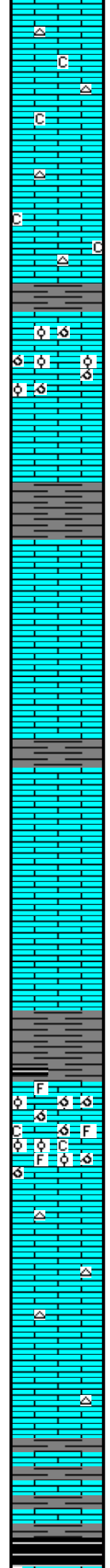
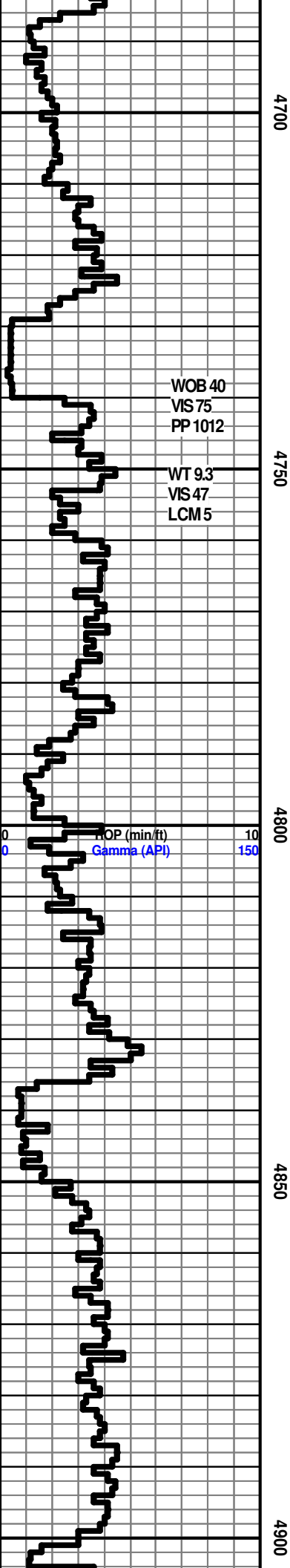
4650

ROP (min/ft)  
Gamma (API)

WOB 40  
RPM 81  
PP 1090

WT 9.2  
VIS 51  
LCM 4





4686' -4712' LMS TRS CHLK WHT TO CRM, & TAN V/FN TOP V/V/FN-XLN SUB SUCRO TO SUCRO IP, TRS CHERT LT GRY OPQUE, DLL LT YEL FLO, ABDNT PR FR & TRS EXCEL MICRO PP POR, TRS PR FR PP & INTER-XLN POR, NO CUT

4712-4725' LMS- LT GRY GRAYISH TAN , CRYPTO V/FN-XLN TRS SUN SUCRO & PCKSTN & SUB LITHO GRPHIC, DLL YEL FLO, NO VIS POR, NO CUT

**LANSING "H" 4729' - 2549'**

SH- MED TO DRK GRY

4729' -4740' LMS- TAN GRAYISH IP, CRYPTO TO V/V/FN-XN W/ TRS MED TO COARSE CALC WHT CALCITE XLS & FOSS FRGS, V/ RE-XLZED OOLICASTIC W/ TRS OOLITIC & FOSS MATRIX, TRS PCKSTN TO SUB LITHOGRAPHIC, TRS TAN OPQUE CHERT, DLL LT YEL TO TRS YEL FLO, ABNT PR FR TO GD TRS EXCEL OOLICASTIC POR, TRS INTER-XLN POR, POSS VUG POR. NO CUT

4753' -4760' SH- MED TO DARK GRAY TO V/ DARK GRAY

4760- 4788' LMS- TAN GRAYISH TAN IP, CRYPTO-V/V/FN-XLN SUB SUCRO, TRS WHT TO CRM CHLK, TRACES SUB LITHO, DLL YEL FLO IP, NO IS POR, NO VIS SHOW

SH- MED TO V/DARK GRAY

4792' -4799' LMS- TAN GRAYISH IP V/V/FN-XLN TO SUCRO SUB SUCRO, TRS WHT TO CRM CHLK, DLL LT YEL FLO IP, HVY TRS PR FR MICRO PP & PROB INTER-XLN POR, NO CUTS

4799-4827' LMS TAN TO LT GRY CRYPTO- V/V/FN XLN SUB SUCRO IP PCKSTN TRS SUB LITHO GRAPHIC, TRS LT YEL FLO, TRS PR MICRO PP POR IN TOP, NO CUT

SH- V/ DRK GRAY TO BLK SFT CARB

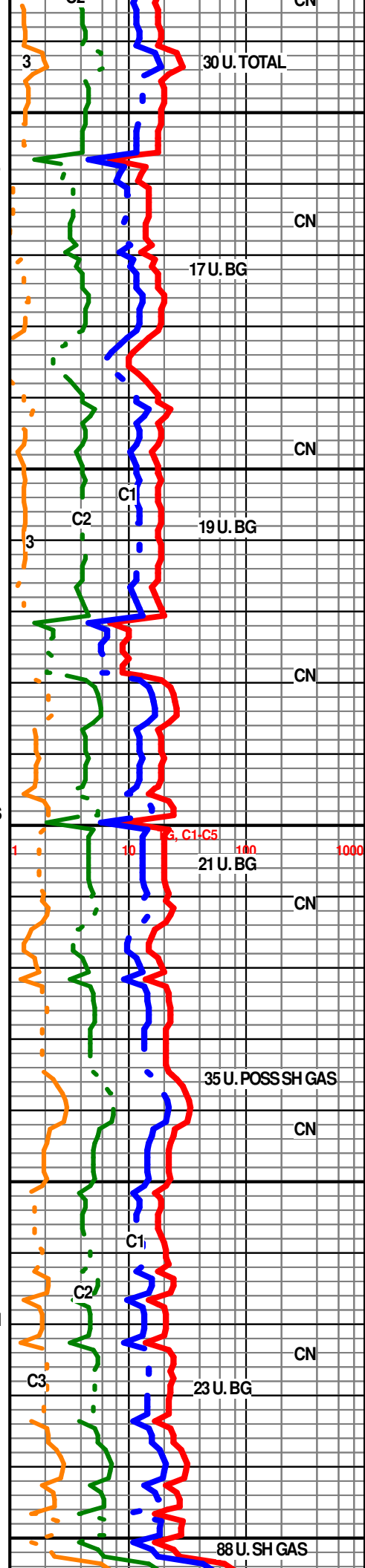
4836' - 4850' LMS CRM LT TN - CRYPTO-V/V/FN-XLN. EXTRMLY OOLICASTIC TO FAIRLY OOLITIC, SUB SUCRO, TRS MED TO COARSE CLEAR CALCITE XLS & FOSS FRGS, TRS WHT TO CRM CHLK, V/V/DLL YEL FLO, ABDT GOOD TO EXCEL OOLICASTIC POR, NO CUTS

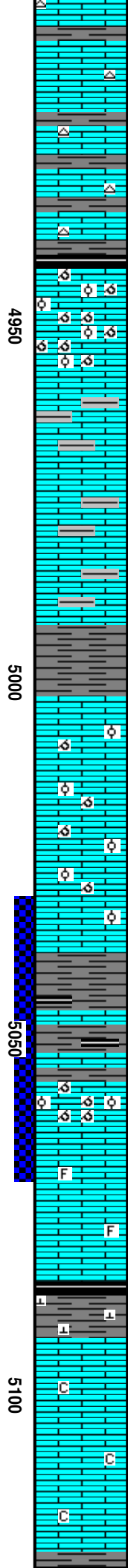
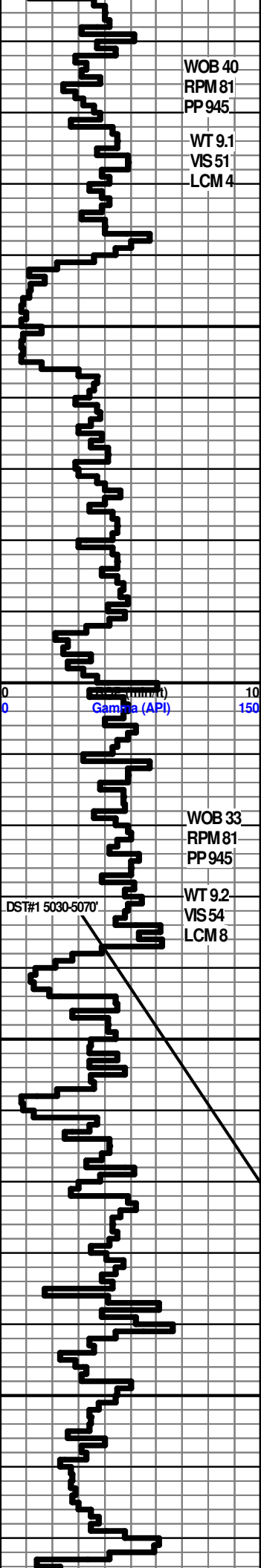
4550'-4587' LMS- LT GRY TOTAN, CRYPTO-V/V/FN-XLN. SUB SUCRO TO PCKSTN, TRS SUB LITH GRAPHIC, TRS CRM LT TN CHERT, TRS DLL YEL FLO, NO VIS POR, NO CUTS

4887' - 4899' SH- MED TO V/DRK GRY, SLI TO FAIRLY CALC

**KANSAS CITY "B" 4881' -2715'**

SH- BLK SFT CARB





**4904- 4937' - INTERBEDDED LMS W/ TRS CHERT**

LMS- LT GRY TOTAN- CRYPTO- V/V/FN-XLN, SUB SUCRO, PCKSTN, SUB LITHO GRAPHIC. TRS MED GRYTAN CHERT,LT YEL FLO IP, NO VIS POR, NOCUT

LMS- LT TO MED GRYSLI TO EXTRMLY SHLY, CRYPTO-XLN, V/ SHLY PCKSTN, TRS MED GRY OPQUE CHERT, NO FLO, NO VIS POR, NO CUT

**SH- BLK SFT CARB**

4940' - 4957' TAN CRYPTO TO V/FN-XLN, V/TO EXTRMLY OOLICASTIC, TRS TOABNDT OOLITES MATRIX SUB SUCRO PCKSTN, TRS WHT TO CRM CHLK, DLL YEL FLO IP, A BNDT PR FR TO GOOD EXCEL OOLICASTIC POR, NO CUTS

4957- 4992' INTERBEDDED LMS SIMILAR TO 4904- 4937' W/ NO CHERT

LMS- LT TO MED GRYSLI TO EXTRMLY SHLY, CRYPTO-XLN, V/ SHLY PCKSTN, NO FLO, NO VIS POR, NO CUT

**BKC 4992' -2812'**

4992'5002' SH- MED GRY V/DRK GRY & BLK

**MARMATON 5002' - 2822'**

5002'-5038' LMS- TRS WHT TO CR CHLK & TAN, CRYPTO TO V/V/FN-XLN, V/TO EXTRMLY OOLICASTIC, TRSABDNT OOLITES ,SUB SUCRO , DLL YEL F LO IP, ABDT DLL YEL FLO, PR FR GOOD OOLICASTIC POR, NO CUTS

5038' - 5057 SH- DRK GRY TO V/ DRK GRAY TO BLK SFT CARB

5057-5065' LMS- LT TAN TO TAN LT GY ( SLI DRK TN SPTTD OIL STN IP) CRYPTO-V/FN/XLN V/OOLICASTIC TO TRS OOLITIC MATRIX. SUB SUCRO TO SUCRO, HVY TRS DLL GLDN YE L.FLO, ABDT PR FR TO GOOD & EXCEL OOLICASTIC POR, &TR GOOD MICRO PP TO INTER-XLN POR, FAINT OIL ODOR, FLUSH TO GOOD STRM CUTS

5065- 5085' LMS- TAN GRYSH IP, CRYPTO-XLN TO V/V/FN-XLN, SUB CHLKY TO SUB SUCRO & PCKSTN, TRS FOSS, TRS DLL YEL FLO, NO VIS POR, NO VIS CUT

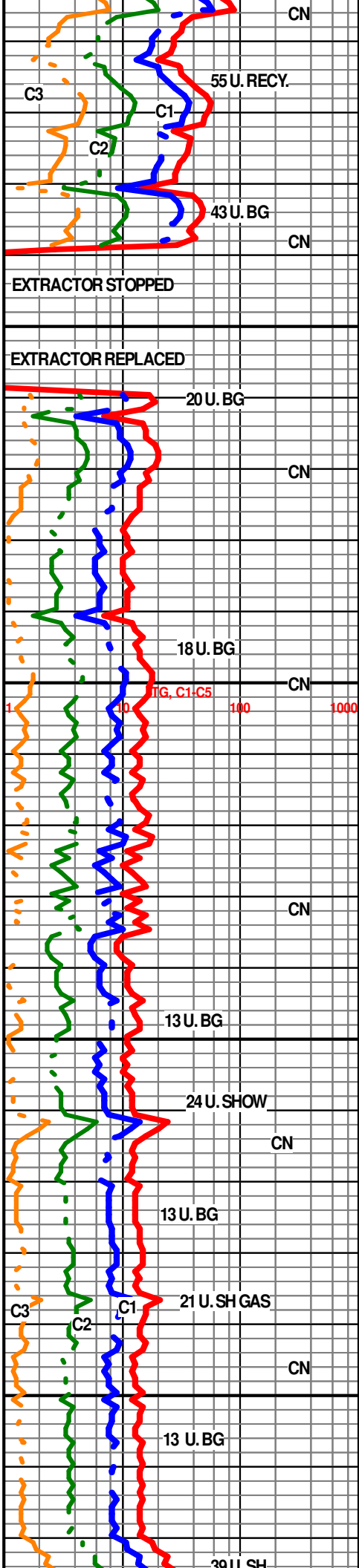
5085-5092' SH- BLK SFT CARB TO MED TO DRK GRY CALC IP

5092-5098' - LMS- TAN TO LT GRY, CRYPTO-V/V/FN-XLN, TRS SUB SUCRO PCKSTN IP, NO FLO, NO VIS POR, NO VIS SHOW

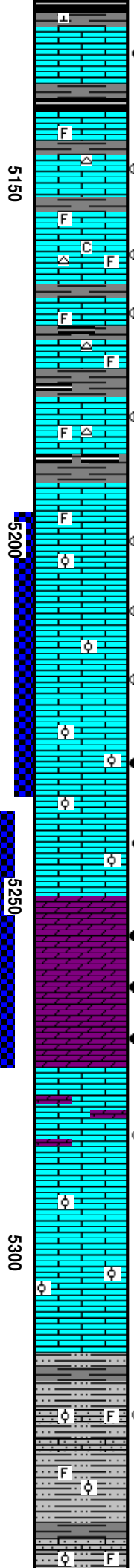
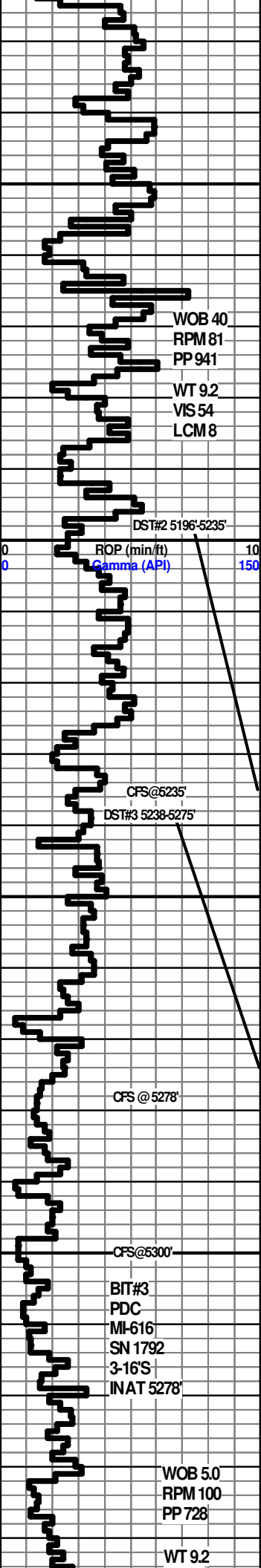
5102- 5119' LMS- LT TAN TAN ( V/ SLI TRS SPTTD DRK TN OIL STN), CRYPTO-V/V/FN-XLN SUB SUCRO SUB CHLKY PCKSTN, TRS WHT CRM CHLK, DLL YEL GLDN FLO, V/SU TR PR MICRO P PPOR, QUEST PERM, GD STRM CUTS

5119-5123' SIMILAR TO 5092-5098'

**FT. SCOTT 5123' - 2943'**







5129'-5138' LMS TAN, (W/ SPTTD DRK TN OIL STN) CRYPTO-XLN SUB SUCRO SLI SUCRO, SLI TR DLL GLDN YEL FLO, SLI TR PR TO FR MICRO PP, PP & TR VUG & TR INTER-XLN, QUEST PERM, GD STRM CUT, NO ODOR

**CHEROKEE 5138' -2958'**

5140-5193' LMS TAN GRY LT GY ( TR SPTTD TO EVEN DRK TO BRN OIL STN IPS) CRYPTO-V/FN-XLN PCKSTN, SUCRO & SUB SUCRO IP, TR WHT TO CLR SMLL TO LRG CALCITE XLS & FRGS (OIL STN IP), TR GRY TAN CHERT, DLL GLDN TO GLDN YEL FLO, TR PR FR GOOD EXCEL MICRO PP, VUG & INTER-XLN POR, QUEST PERM, FLUSH TO GD STM CUTS, TR WHT CRM CHLK IP

SH- DRK GRY TO BLK SFT CARB

SH MED TO V/DRK GRY TO BLK SFT CARB

**MISSISSIPPI 5193' - 3013'**

5193' 5250' LMS-TAN TO LT GY, SPTTD TO TR EVEN DRK TAN STN, LT BRN TO TRS BLK OIL STN, CRYPTO TO V/V/FN-XN SUCROSIC, PCKSTN, TRACE TO ABDNT FOSS IP, PHANTM OOLITES-RE-XLD, TR FN TO COARSE WHT CLR CALCITE XLS, BRIT YEL FLO, TR PR FR GOOD & SLI TR MICRO PP POR, PROB VUG & INTER-XLN POR, POSS FRACTURE, TR WHT CRM CHLK, FNT TO GOOD OIL ODOR, FLSH TO GD STRM CUTS,

5250-5275' DOLO- LT GRY ( V/ABDT SPTTD TO EVEN TAN OIL STN) VV/FN TO V/FN-XLN, SUB SUCRO TO EXTRMLY SUCRO, VBRIT YEL GLDN FLO THRU, V/ABDT PR FR TO GD & ABDT EXCEL PP, MICRO PP, & INTER-XLN POR, FRACTURED, FLUSH TO GD STRNG CUTS, SLI TO VERY GOOD OIL ODOR

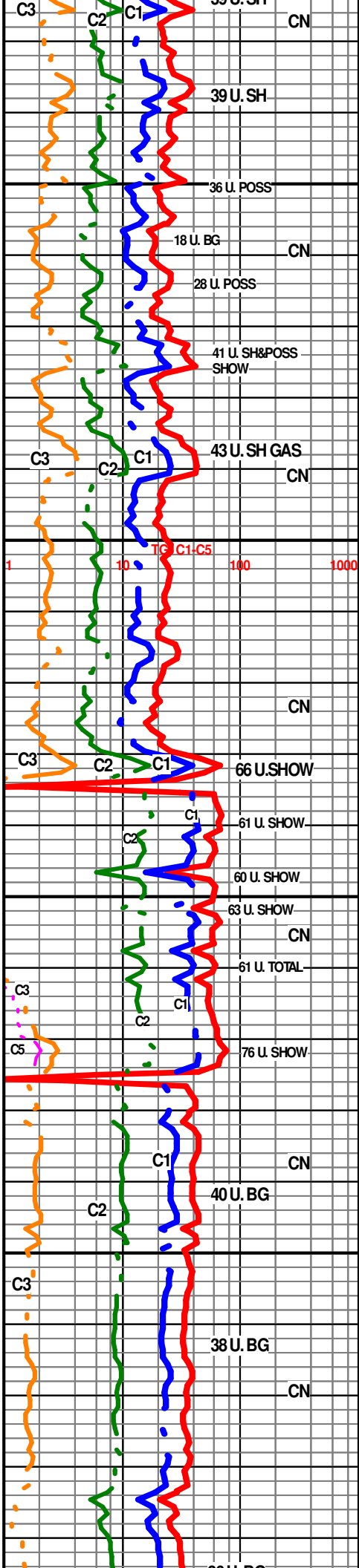
TRS DOLO- V/LT GRY VV/FN-XLN TO SLI TO VERY SUCROSIC W/ DLL YEL GLDN FLO, NO POR IP TO SLI TR PR FR TO GOOD MICRO PP TO INTER-XLN POR, V/FAINT TO FR RING CUT

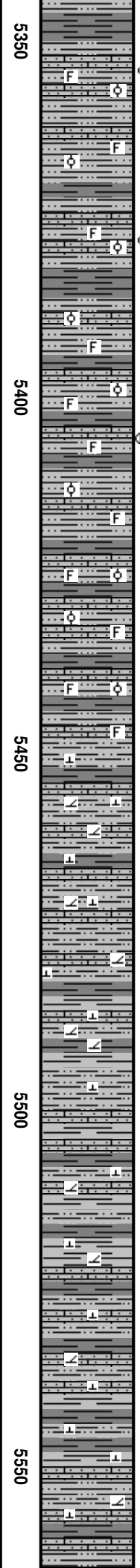
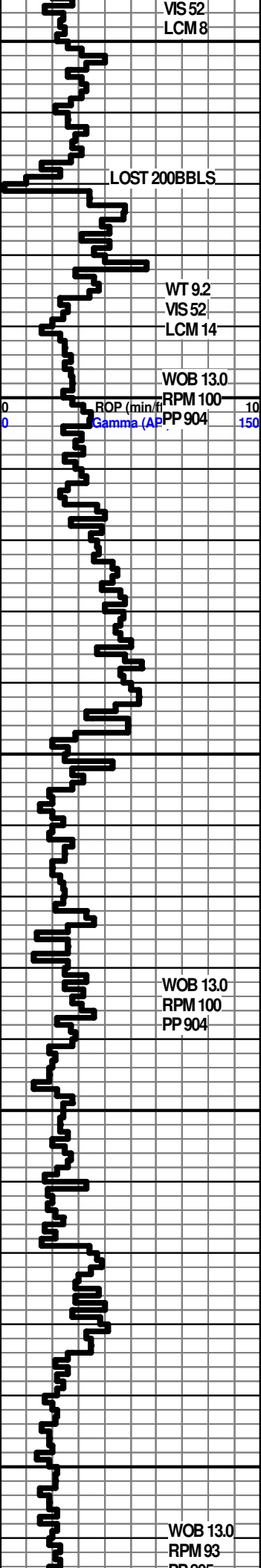
5275- LMS- TAN- CRYPTO-VV/FN-XLN SUB SUCRO & PCKSTN, ABDT PHANTM OOLITES, DLL YEL FLO, V/SLI TRS V/PR MICRO PP POR, NO CUTS

5314' SILTY SH INTERBEDDED LMS

SH- MED GRY V/TO EXTRMLY SILTY V/ CALC

5314-5447' LMS- LT GRY TOTAN (DRK TN EVEN OIL STN)





CRYPTO-VV/FN-XLN SUB SUCRO TRS WHT FINE TO MED  
CALC XLS & FOSS FRGS TR PHANTOM OOLITIC TO OOLITIC  
SLI TRS BRIT YEL FLO, W/ SLI TR PR TO FAIR MICRO PP TO  
INTER-XLN POR W/ TR FAINT STREAM TO MILKY CUTS

5369' LOST 200 BBLS MUD

SH- MED GRYV/TO EXTRMLY SILTY V/ CALC

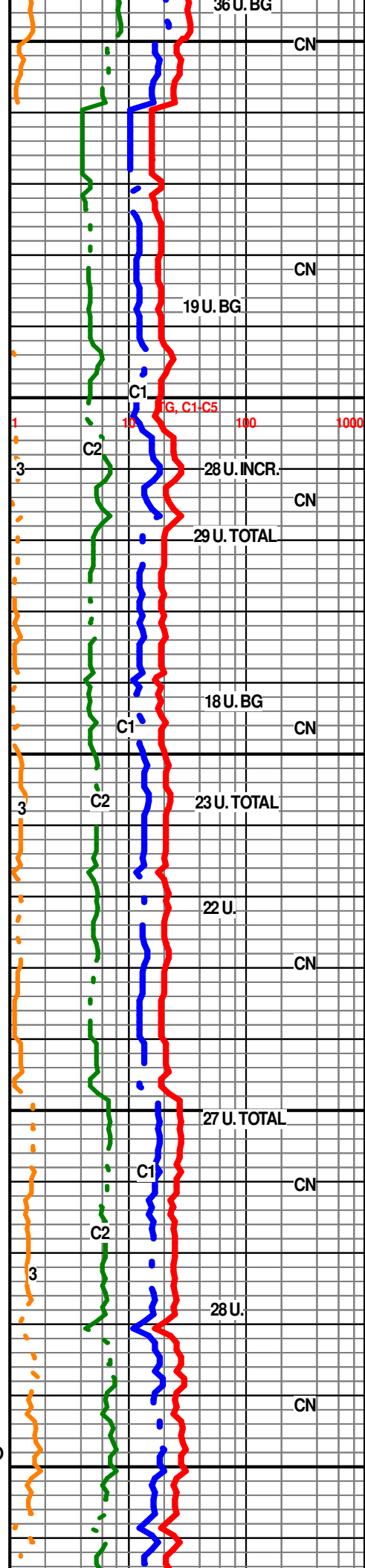
5314-5447' LMS- LT GRY TOTAN (DRK TN EVEN OIL STN)  
CRYPTO-VV/FN-XLN SUB SUCRO TRS WHT FINE TO MED  
CALC XLS & FOSS FRGS TR PHANTOM OOLITIC TO OOLITIC  
SLI TRS BRIT YEL FLO, W/ SLI TR PR TO FAIR MICRO PP TO  
INTER-XLN POR W/ TR FAINT STREAM TO MILKY CUTS

5314-5447' SILTY SHALE GRADING TO INTERBEDDED LMS-  
SILTY SH- MED GRYV/TO EXTRMLY, V/ CALC

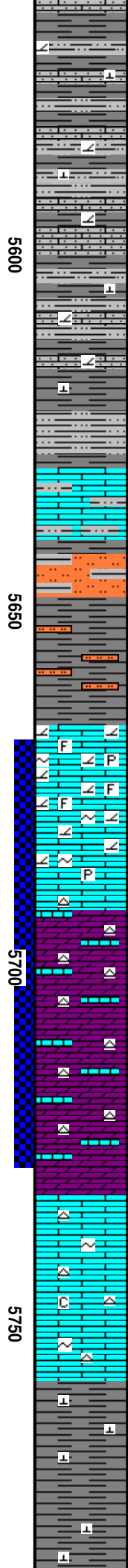
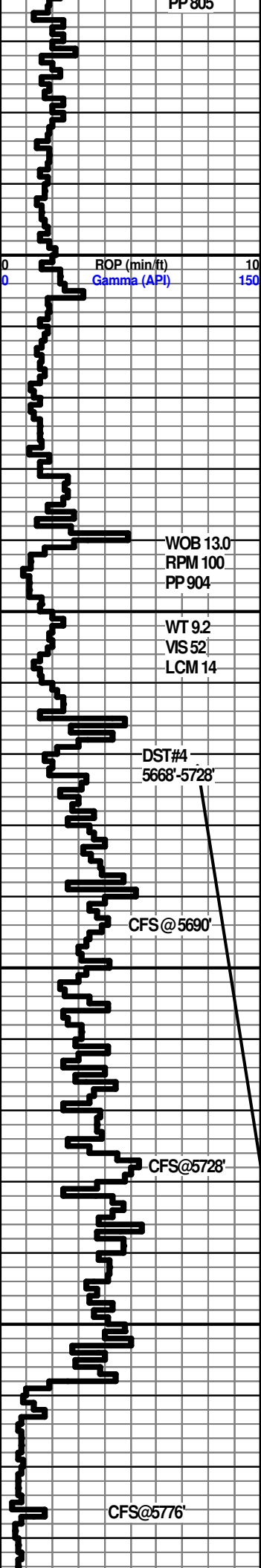
SILTY SH- MED GRYV/TO EXTRMLY, V/ CALC

5447- 5550' SH- MED TO GRY V/ TO EXTRMLY SILTY GRADING  
TO SILST, MED GRY BOTH SLI TO EXTRMLY CALC TO  
DOLOMITIC, TR WHT FINE TO COARSE XLS & POSS DOLO XLS  
FRAGS NO FLO, PROB VUG POR, NO VIS CUT

5550-5628' SH- MED TO GRY V/ TO EXTRMLY SILTY GRADING TO  
SILST, MED GRY BOTH SLI TO EXTRMLY CALC TO DOLOMITIC,  
TR WHT FINE TO COARSE XLS & POSS DOLO XLS FRAGS NO  
FLO, PROB VUG POR, NO VIS CUT







SH- MED TO GRY V/ TO EXTRMLY SILTY GRADING TO SILST, MED GRYBOTH SLI TO EXTRMLY CALC TO DOLOMITIC, TR WHT FINE TO COARSE XLS & POSS DOLO XLS FRAGS NO FLO, PROB VUG POR, NO VIS CUT

**COWLEY" 2" 5628' - 3448'**

5628-5641' LMS MED GRYCRYPTO-XLN, SLI TO V/ SILTY, NO FLO, NO VIS POR, NO VIS SHOW

5641-5665' SH- MED GRY, V/ TO EXTRMLY SILTY, W/ABDT SILTST LT TO MED GRY V/ CALC TO DOLOIP, TRS SILTST BBLNG GAS, NO FLO, PROB INTER-GRAIN POR, NO VIS CUT

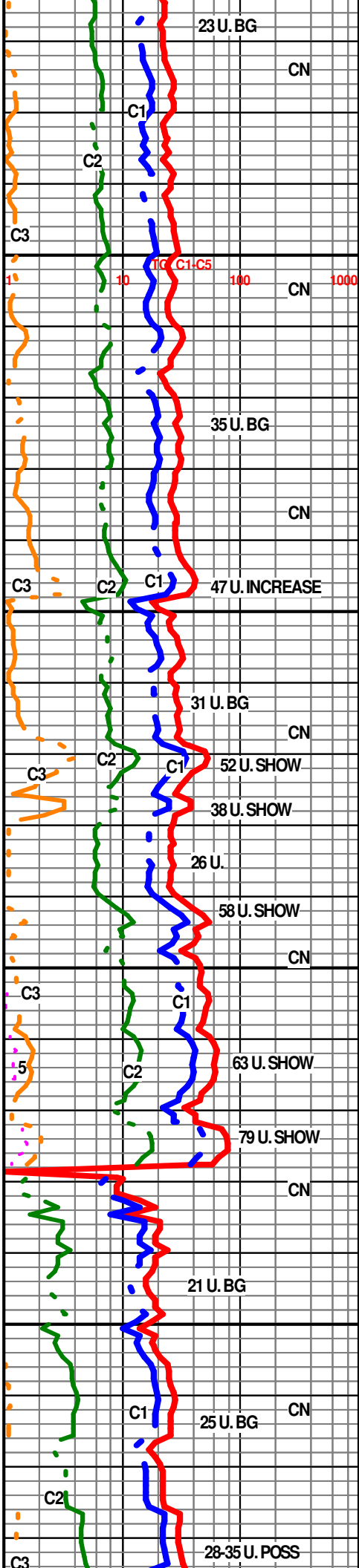
**VIOLA 5665' - 3485'**

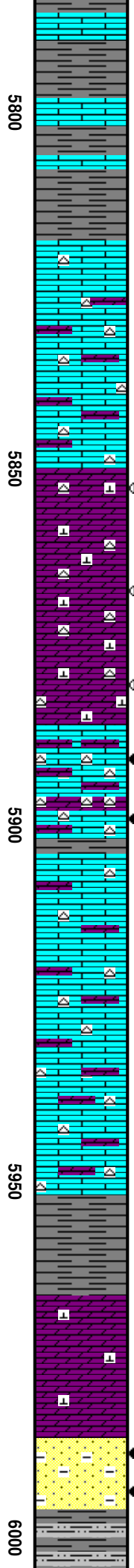
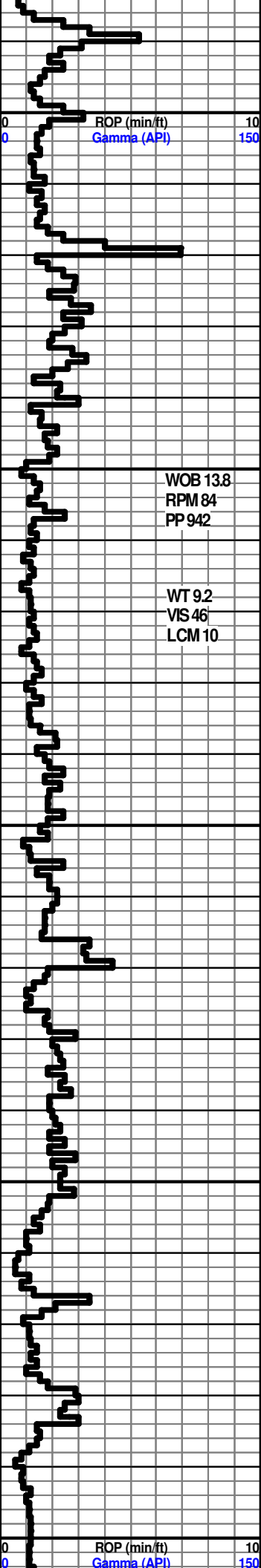
5665'-5690' LMS, DOLO, LMY DOLO, CRM LT GRY(TN TO EVEN BRN OIL STN) V/V/FN-XLN TO SUCRO SUB SUCRO, TRS GLAUC IP, SLI TR PYR, TR WHT FN TO COARSE DOLO & CALCITE XLS, FOSS FRGS & CLSTRS(W/TN TO BLK OIL STN) LT YEL FLO, TR PR MICRO PP TO INTER-XLN POR, VUG & OPEN FRACTURES, W/ MILKY CUTS, FAINT OIL ODOR

5690-5728' DOLO V/LMY TO LMY DOLO, CRM LT GY( TAN EVEN OIL STN) SUCRO SUB SUCRO V/FN-XLNABDT, TRS WHT FINE TO COARSE & CLSTRS XLS & FOSS FRGS( W/ TAN BLK OIL STN) W/ CHERT, TRS MICRO PP TO PROB INTER-XLN PORTO VUG & OPEN FRACTURES, LT YEL TO YEL FLO, W/ MILKY CUTS, RAINBOW OIL IN CUP, FAIR TO GOOD OIL ODOR

5728-5758' LMS- TAN GRYISH TAN- CRYPTO-V/V/FN-XLN V/ SLI TR GLAUC, TRS SUB CHLKY, SUB SUCRO, SLI TR T LT GY OPQUE TRANLSCNT CHERT, NO FLO, NO VIS POR, N VIS CUT

5758' -5787' SH- LT TO MED GRYW/ TRSGREEN SLI CALC IP





5787- 5818' SH- MED GRYSLI TR GREEN W/ HVY TR LMS- GRAY IP CRYPTO-VV/FN-XLN, TR DLL YEL FLO, NO VIS POR, NO VIS SHOW OR CUT

5818-5849' LMS- GRAY TAN CRYPTO-VV/FN-XLN W/ HEAVYTR CHERT WHT GRY OPQUE W/ SLI TRS DOLO LT GRY V/FN-XLN SUB SUCRO TO SUCRO BRIT YEL FLO TR PR MIROPP & PR INTER-XLN POR NO SHOW

5849- 5887' DOLO- CALC IP, TAN GRAYISH IP(DRK TN TO EVEN BRN OIL STN), CRYPTO-V/FN-XLN SUB SUCRO TO SUCROSIC, TR SUB LITHO, TR TOABDNT CHERT WHT TOLT GY OPQUE TRNSLCNT, TR BRIT YEL FLO, PR VIS MIROPP TO PR INTER-XLN POR, FAIR TO GOOD STRM CUTS, GOOD OIL ODOR

5887-5902' LMS & DOLO INTERBEDS- LT TAN GRAY IP,(HVY TRS OIL STN) VV/FN-XLN, SUB SUCRO TO SUCRO,ABDT WHT CHERT WHT TO GRY OPQUE, TR BRIT YEL FLO, TR PR TO FR MICRO PP TO INTER-XLN POR, FAIR TO GOOD STRM CUTS, GOOD OIL ODOR

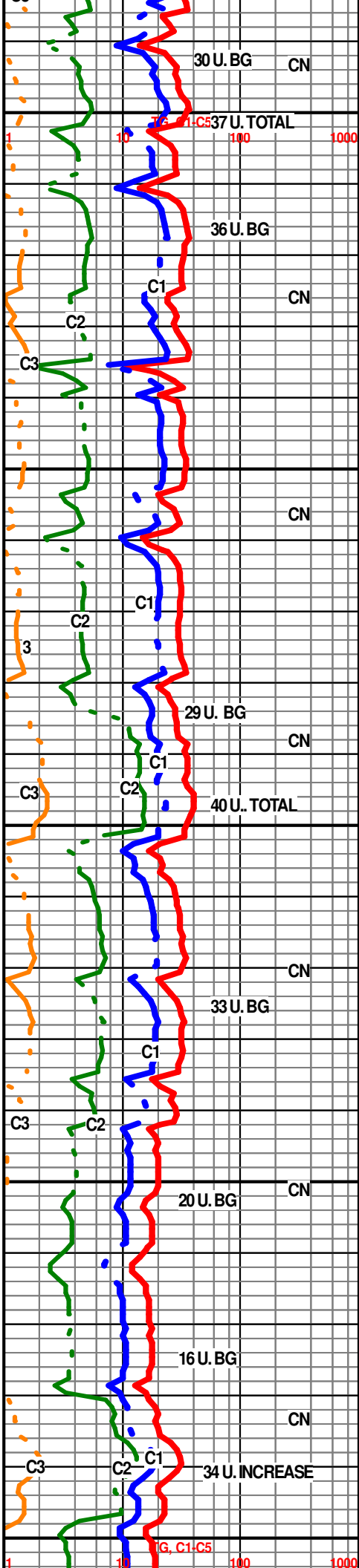
5902' - 5952' LMS TO DOLO LT TAN GRAY IP,CRYPTO-VV/FN-XLN ,HVY TR DRK TAN DOLO, SUB SUCRO TO SUCRO, ABDT WHT CHERT WHT CRM TO GRY OPQUE, TR BRIT YEL FLO, TR PR TO FR TO TR GOOD MICRO PP TO INTER-XLN POR, NO CUTS

**SIMPSON SH 5954' - 3774'**

5952'-5966' SH- LT GRY OLIVE GREEN TURQUOISE, SMOOTH WAXY TEXTURE

5966-5986' DOLO- LT GRY TO TAN TR WHT, VV/FN-XLN SUB SUCRO TO V/ SUCROSLI CALC IP, DLL YEL FLO, TR V/PR MICRO PP INTER-XLN IN VV/FN-XN, GOOD TO EXCEL PPMICRO PP & INTER-XLN POR, NO CUTS

5986'- 5993' QURTZ SS- FN TO MED GRN RNDED MED GRY SH IP, (BRN OILSTN) ANGULAR TO SUB ANGL LR, PR TO GD SORT, DLL GLD TO GLDN YEL FLO ABDT PR FR GD TO EXCEL INTERGRN POR, FLUSH TO GOOD STRM CUTS GOOD OIL ODOR



WOB 13.8  
RPM 84  
PP 942

WT 9.2  
VIS 41  
LCM 10

LOST CIRC @ TD 90  
MIN INTO CFS

RTD 6050'

6050



5993'-6050' INTERBEDDED QTZ SS, SILTS & SHALES

1. QURTZ SS OFF WHT CRM LT GRY V/V/FN TOFN & TR MED GRYPR SRT, ANGULAR, NO FLO, NO VIS POR, NO VIS SHOW

2. SILTS LT TO MED GRY & GREENISH GRY, V/V/FN-FN GRN. NO FLO NO VIS POR, NO SHOW

3. SH- LT TO MED GRY, ABDT DRK GREEN WXY

RTD @ 2:45 AM APRIL 22ND, 2023

CTCH 1.5 HRS

TRIP OUT FOR LOGS

