



Home
(785) 798-3400

Andrew Stenzel Geologist

Ness City, Kansas



Cell
(785) 798-5977

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

Well Name: Popp #2
API: 15-135-26031-00-00
Location: NE-SW-SW-NW Sec. 9-17S-26W (Ness County)
License Number: 30742
Spud Date: 11/27/18
Surface Coordinates: 2105' FNL & 360' FWL
Region: KANSAS
Drilling Completed: 12/6/18

Bottom Hole
Coordinates:
Ground Elevation (ft): 2612
Logged Interval (ft): 3600 To: TD
Formation: MISSISSIPPI
Type of Drilling Fluid: Mud-Co Chemical
K.B. Elevation (ft): 2622
Total Depth (ft): 4676

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

OPERATOR

Company: Palomino Petroleum, Inc.
Address: 4924 SE 84th St
Newton, KS 67114

GEOLOGIST

Name: Andrew Stenzel
Company: Petroleum Geologist
Address: 501 S. Franklin
Ness City, KS 67560

Drilling Report

DAILY DRILLING REPORT:

11/27/18 MIRU, ran surface casing
11/28/18 Drilling @ 878'
11/29/18 Drilling @ 2470'
11/30/18 Drilling @ 3465'
12/1/18 Bit trip @ 3941'
12/2/18 Tripping out for DST #1, DST #1
12/3/18 Drilling @ 4383'
12/4/18 DST #2
12/5/18 Ran electric logs, DST #3
12/6/18 Ran production casing

Services

RIG: WW Drilling, Rig #22

MUD: MUDCO

LOGS: Gemini Wireline: CNDL, PE, DIL, ML

TESTER: Trilobite Testing

Casing Record

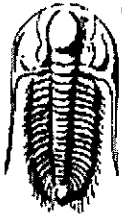
SURFACE Casing: Ran 5 jts new 8 5/8", 23# casing @ 222'

PRODUCTION Casing: Ran 112 jts new 5 1/2", 14# casing set at 4669'.

Formation Tops

Sample Tops		Log Tops	
Anhy.	1995 (+627)	Anhy.	2008 (+614)
Base Anhy.	2029 (+593)	Base Anhy.	2038 (+584)
Heebner	3870 (-1248)	Heebner	3892 (-1270)
Lansing	3915 (-1294)	Lansing	3936 (-1314)
Stark Sh	4171 (-1549)	Stark Sh	4184 (-1562)
BKC	4232 (-1610)	BKC	4249 (-1627)
Marmaton	4265 (-1643)	Marmaton	4280 (-1658)
Pawnee	4370 (-1748)	Pawnee	4381 (-1759)
Ft. Scott	4424 (-1802)	Ft. Scott	4440 (-1818)
Cher. Sh.	4449 (-1827)	Cher. Sh.	4466 (-1844)
Miss.	4533 (-1911)	Miss.	4546 (-1924)
RTD	4657 (-2035)	LTD	4676 (-2054)

Driller and
Logger TD 19'
off.



**TRILOBITE
TESTING, INC.**

DRILL STEM TEST REPORT

Palomino Petroleum, Inc.
4924 SE 84th St
New ton KS 67114+8827
ATTN: Andrew Stenzel

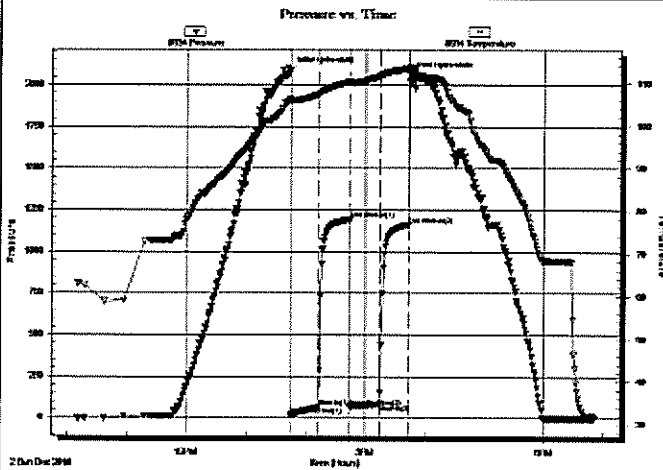
9-17s-26w Ness,KS
Popp #2
Job Ticket: 64768 **DST#: 1**
Test Start: 2018.12.02 @ 10:10:00

GENERAL INFORMATION:

Formation: **LKC 'K-L'**
 Deviated: **No Whipstock** **ft (KB)**
 Time Tool Opened: **13:44:30**
 Time Test Ended: **18:50:45**
 Interval: **4167.00 ft (KB) To 4240.00 ft (KB) (TVD)**
 Total Depth: **4240.00 ft (KB) (TVD)**
 Hole Diameter: **7.88 inches** Hole Condition: **Fair**
 Test Type: **Conventional Bottom Hole (Initial)**
 Tester: **Spencer J. Staab**
 Unit No: **84**
 Reference Elevations: **2622.00 ft (KB)**
 2612.00 ft (CF)
 KB to GR/CF: 10.00 ft

Serial #: 8934 **Inside**
 Press@RunDepth: **85.37 psig @ 4173.00 ft (KB)** Capacity: **8000.00 psig**
 Start Date: **2018.12.02** End Date: **2018.12.02** Last Callb.: **2018.12.02**
 Start Time: **10:10:15** End Time: **18:50:45** Time On Btm: **2018.12.02 @ 13:44:15**
 Time Off Btm: 2018.12.02 @ 15:45:00

TEST COMMENT: 30-IF-Weak; Built to 4 1/2"
 30-ISI-No Return
 30-FF-Weak; Built to 3"
 30-FSI-No Return



PRESSURE SUMMARY

Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	2086.29	106.33	Initial Hydro-static
1	18.39	105.57	Open To Flow (1)
29	68.26	107.43	Shut-In(1)
60	1193.15	110.30	End Shut-In(1)
61	70.37	109.95	Open To Flow (2)
90	85.37	111.56	Shut-In(2)
119	1161.78	113.37	End Shut-In(2)
121	2057.81	113.32	Final Hydro-static

Recovery

Length (ft)	Description	Volume (bbl)
150.00	Mud w/oil spots 100%M	1.06

Gas Rates

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



**TRILOBITE
TESTING, INC.**

DRILL STEM TEST REPORT

Palomino Petroleum, Inc.
4924 SE 84th St
Newton KS 67114+8927
ATTN: Andrew Stenzel

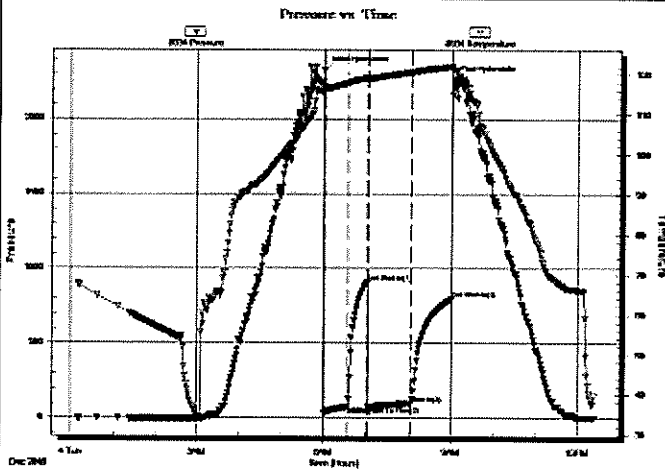
9-17s-26w Ness, KS
Popp #2
Job Ticket: 64769 **DST#: 2**
Test Start: 2018.12.04 @ 00:10:00

GENERAL INFORMATION:

Formation: **Mississippi**
Deviated: **No** Whipstock: ft (KB)
Time Tool Opened: 06:01:00
Time Test Ended: 12:24:45
Interval: **4468.00 ft (KB) To 4563.00 ft (KB) (TVD)**
Total Depth: **4563.00 ft (KB) (TVD)**
Hole Diameter: **7.88 inches** Hole Condition: **Fair**
Test Type: **Conventional Bottom Hole (Reset)**
Tester: **Spencer J. Staab**
Unit No: **84**
Reference Elevations: **2622.00 ft (KB)**
2612.00 ft (CF)
KB to GR/CF: 10.00 ft

Serial #: 8934 **Inside**
Press@RunDepth: **101.08 psig @ 4496.00 ft (KB)** Capacity: **8000.00 psig**
Start Date: **2018.12.04** End Date: **2018.12.04** Last Callb.: **2018.12.04**
Start Time: **00:10:15** End Time: **12:24:45** Time On Btrr: **2018.12.04 @ 06:00:45**
Time Off Btrr: **2018.12.04 @ 09:02:45**

TEST COMMENT: 30-IF-Weak-Fair; Built to 6 1/2"
30-ISI-No Return
60-FF-Weak-Fair; Built to 9"
60-FSI-No Return



PRESSURE SUMMARY

Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	2330.17	117.06	Initial Hydro-static
1	34.01	116.05	Open To Flow (1)
33	76.33	117.90	Shut-In(1)
61	909.54	119.16	End Shut-In(1)
62	80.32	118.94	Open To Flow (2)
123	101.08	120.62	Shut-In(2)
180	799.37	121.97	End Shut-In(2)
182	2272.39	121.19	Final Hydro-static

Recovery

Length (ft)	Description	Volume (bbl)
120.00	MO 50%M 50%O	0.64
90.00	Clean Oil 100%O	1.28

* Recovery from multiple tests

Gas Rates

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



**TRILOBITE
TESTING, INC.**

DRILL STEM TEST REPORT

Palomino Petroleum, Inc.

9-17s-26w Ness, KS

4924 SE 84th St
Newton KS 67114+8827

Popp #2

Job Ticket: 64770

DST#: 3

ATTN: Andrew Stenzel

Test Start: 2018.12.05 @ 15:20:00

GENERAL INFORMATION:

Formation: **Mississippi**

Deviated: No Whipstock: ft (KB)

Time Tool Opened: 18:24:15

Time Test Ended: 02:31:30

Test Type: Conventional Straddle (Reset)

Tester: Spencer J. Staab

Unit No: 84

Interval: 4554.00 ft (KB) To 4582.00 ft (KB) (TVD)

Reference Elevations: 2622.00 ft (KB)

Total Depth: 4554.00 ft (KB) (TVD)

2612.00 ft (CF)

Hole Diameter: 7.88 inches Hole Condition: Fair

KB to GR/CF: 10.00 ft

Serial #: 8934

Inside

Press@RunDepth: 76.99 psig @ 4583.00 ft (KB)

Capacity: 8000.00 psig

Start Date: 2018.12.05

End Date:

2018.12.06

Last Callb.:

2018.12.06

Start Time: 15:20:15

End Time:

02:31:30

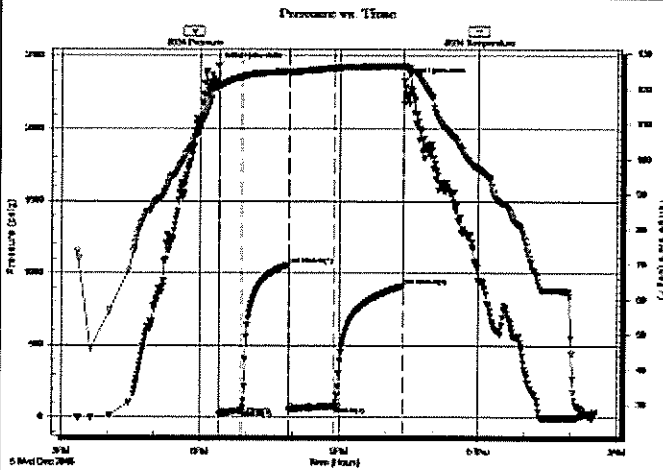
Time On Btm:

2018.12.05 @ 18:23:30

Time Off Btm:

2018.12.05 @ 22:23:15

TEST COMMENT: 30-IF-Weak; Built to 4 1/2"
60-ISI-No Return
60-FF-Weak; Built to 6 1/4"
90-FSI-No Return



PRESSURE SUMMARY

Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	2431.24	121.57	Initial Hydro-static
1	20.21	121.01	Open To Flow (1)
30	49.69	123.33	Shut-In(1)
90	1055.37	124.86	End Shut-In(1)
91	54.72	124.59	Open To Flow (2)
149	76.99	125.80	Shut-In(2)
239	913.37	126.43	End Shut-In(2)
240	2331.58	126.36	Final Hydro-static

Recovery

Length (ft)	Description	Volume (bbl)
70.00	OCM 10%O 90%M	0.34
80.00	CO 100%O	0.72

* Recovery from multiple tests

Gas Rates

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



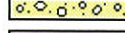

Trilobite Testing, Inc

Ref. No: 64770

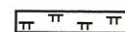

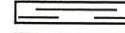
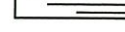
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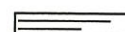



ROCK TYPES

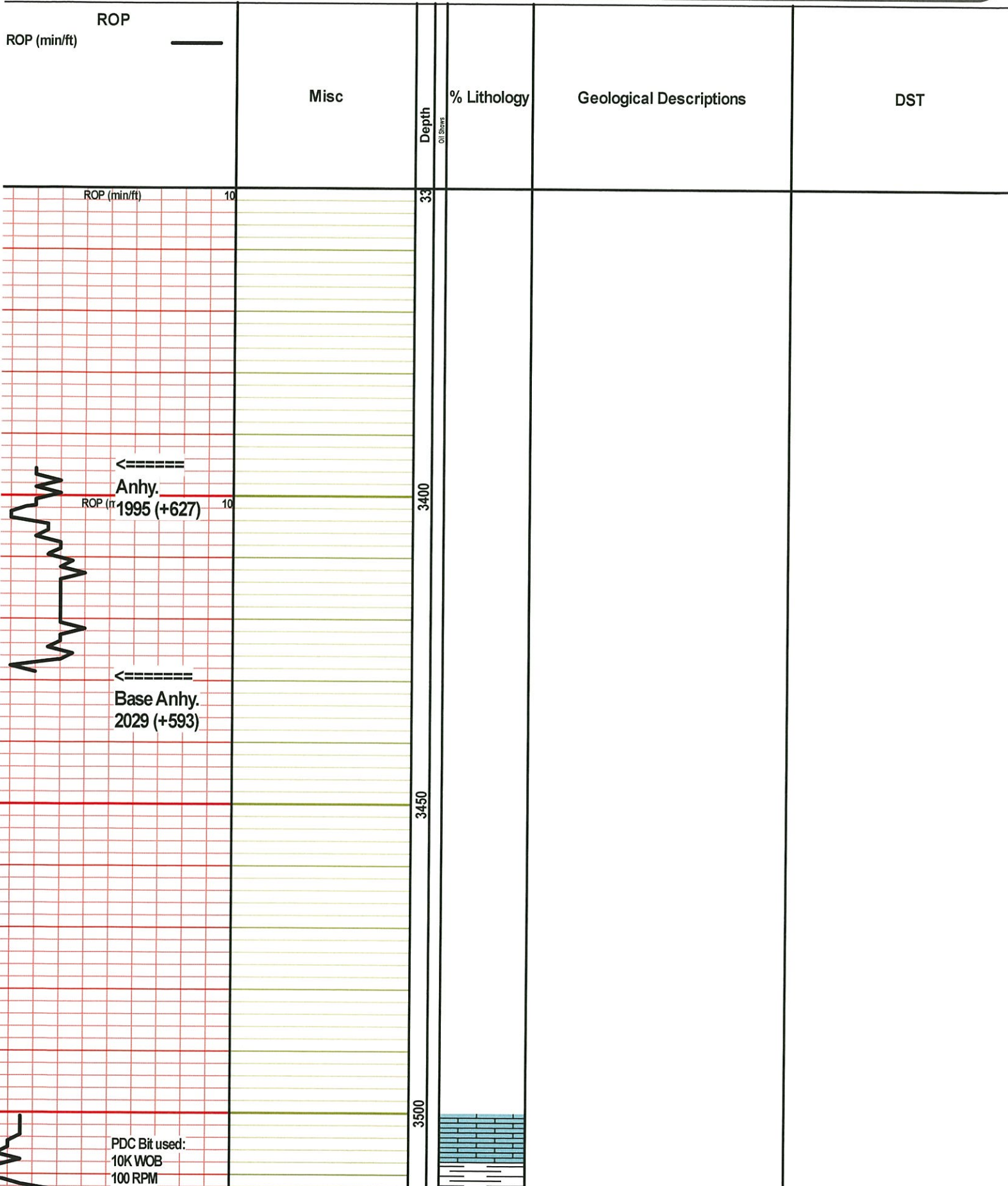
-  Anhy
-  Bent
-  Brec
-  Cht

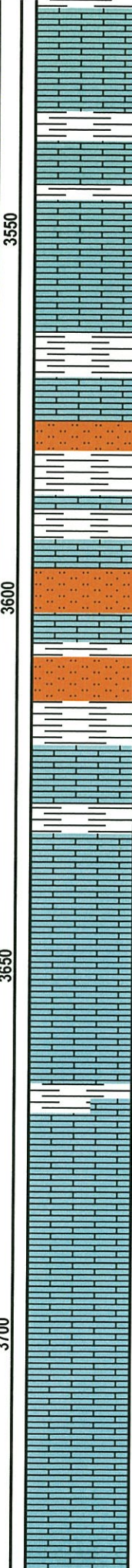
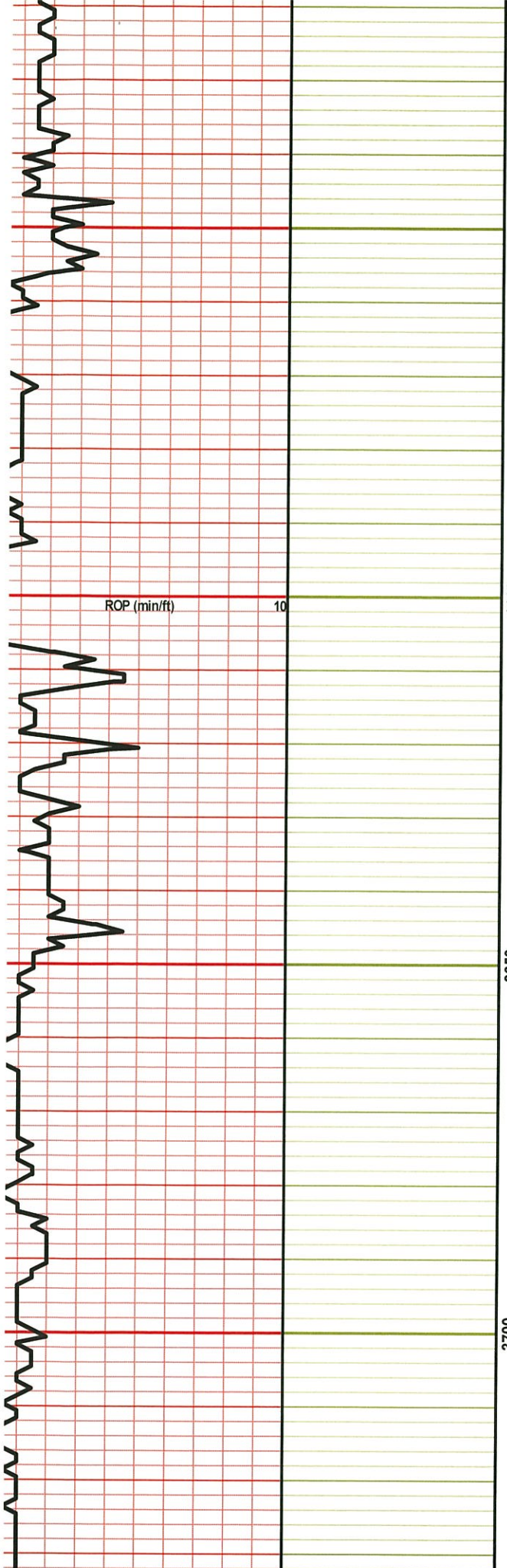
-  Clyst
-  Carb shale
-  Congl
-  Dol

-  Gyp
-  Igne
-  Lmst
-  Meta

-  Mrlst
-  Salt
-  Shale
-  Shcol

-  Shgy
-  Sltst
-  Ss
-  Till





3550
 Ls., cm-tn, fnxln, sli fri-mod hd ip, chlky ip, foss, nvp, ns, abund Sh., gy

3600
 Sh., gy-bm, sandy ip

3650
 Sh., gy, silty/sandy, scatt Ls., gy, fnxln, mod hd, silty, nvp, ns

3700
 Ls., tn-lt gy, fnxln, mod hd, foss, ool ip, pr intrxn & foss por, ns, no odr, abund Sh., gy-bm

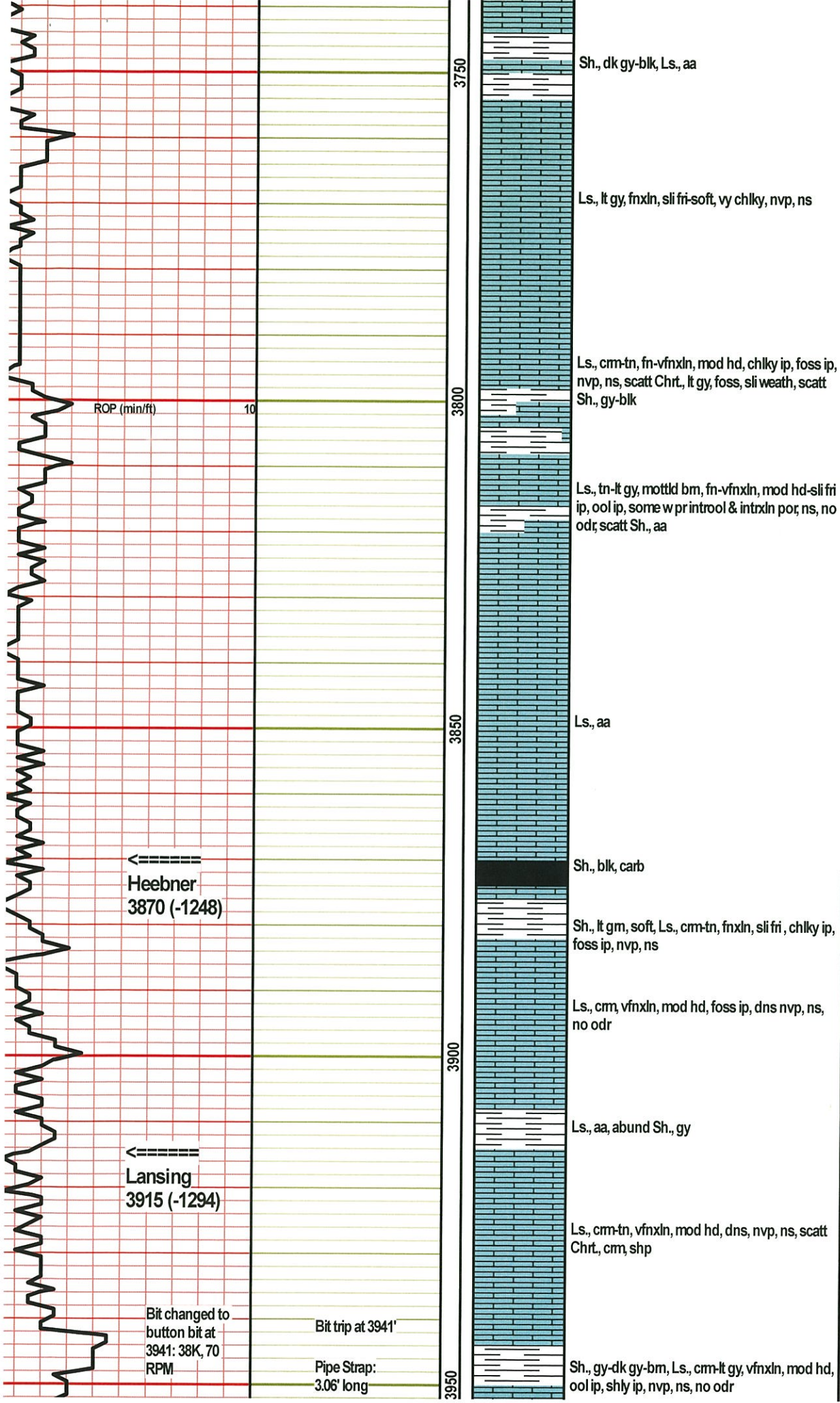
Ls., cm-tn, fnxln, mod hd-sli fri, vy chlky ip, some ool w pr introol por, ns, no odr

Ls., tn-lt gy, vfn-fnxln, sli fri-fri, chlky-vy chlky, foss, ool ip, pr introol por, ns, no odr, scatt Sh., dk gy

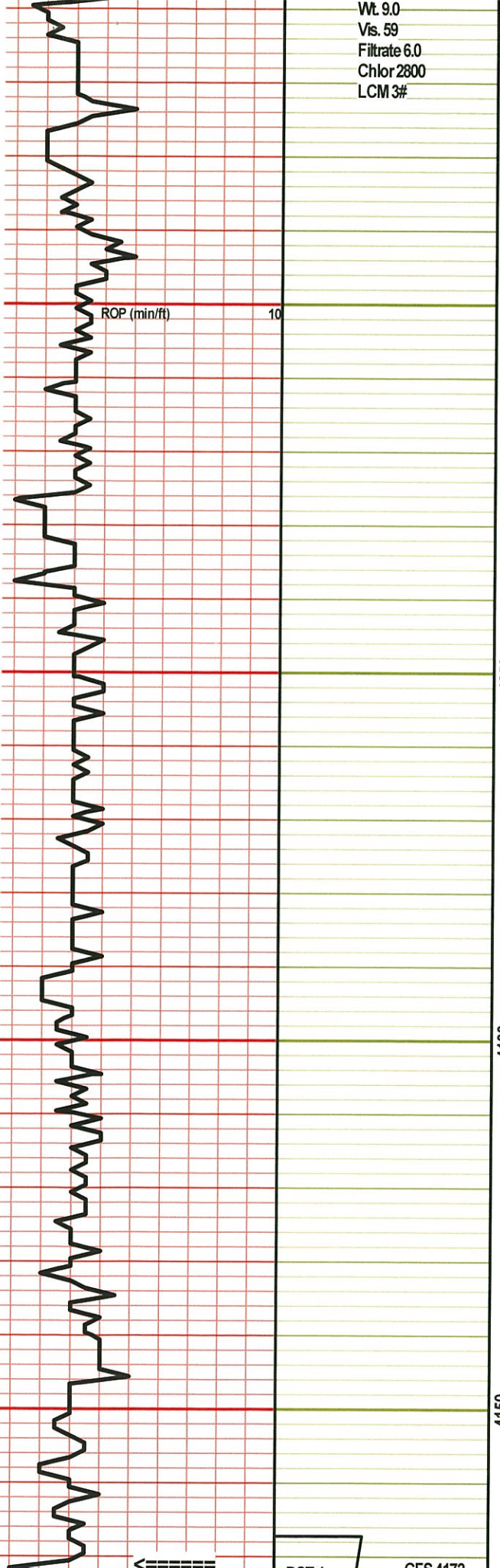
Ls., cm-tn, fnxln, sli fri-fri, vy chlky, ool ip, pr introol por, ns, no odr

Ls., cm, vfnxn, soft, vy chlky, nvp, ns

Ls., cm, vfnxn, mod hd-hd, foss ip, nvp, ns



Wt. 9.0
Vis. 59
Filtrate 6.0
Chlor 2800
LCM 3#

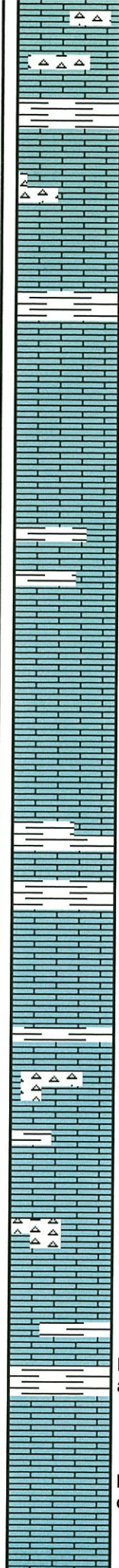


4000

4050

4100

4150



Ls., cm-tn, fnxn, mod hd-sli fri ip, chlky ip, ool ip, pr introol por, ns, no odr, no fluoro, abund Chrt, tn, sli weath, scatt Sh., gy-bm

Ls., cm-lt gy, fn-vfnxn, mod hd, sli chlky, couple pcs w pr intxn por, ns, no odr, scatt Chrt, gy, spic, abund Sh., gy-dk gy

Ls., cm, fn-vfnxn, mod hd, dns, nvp, ns

Ls., cm, fn-vfnxn, mod hd, ool ip, some w pr introol & ooc por, ns, no odr, some shly infill, scatt Sh., gy

Ls., cm, vfnxn, mod hd, ool ip, dns, nvp, ns, no odr

Ls., aa

Sh., gy-dk gy, Ls., cm-tn, fnxn, mod hd, ool ip, nvp, ns

Ls.,aa

Ls., cm-tn, vfnxn, mod hd-hd, ool ip, couple pcs w vy pr introol por, one w vy sli bm stn, NSFO, no det odr, scatt Sh., bm, scatt Chrt, cm, shp

Ls., cm-tn, vfnxn, mod hd-hd, dns, foss ip, nvp, ns, scatt Chrt, tn, opq, sli weath

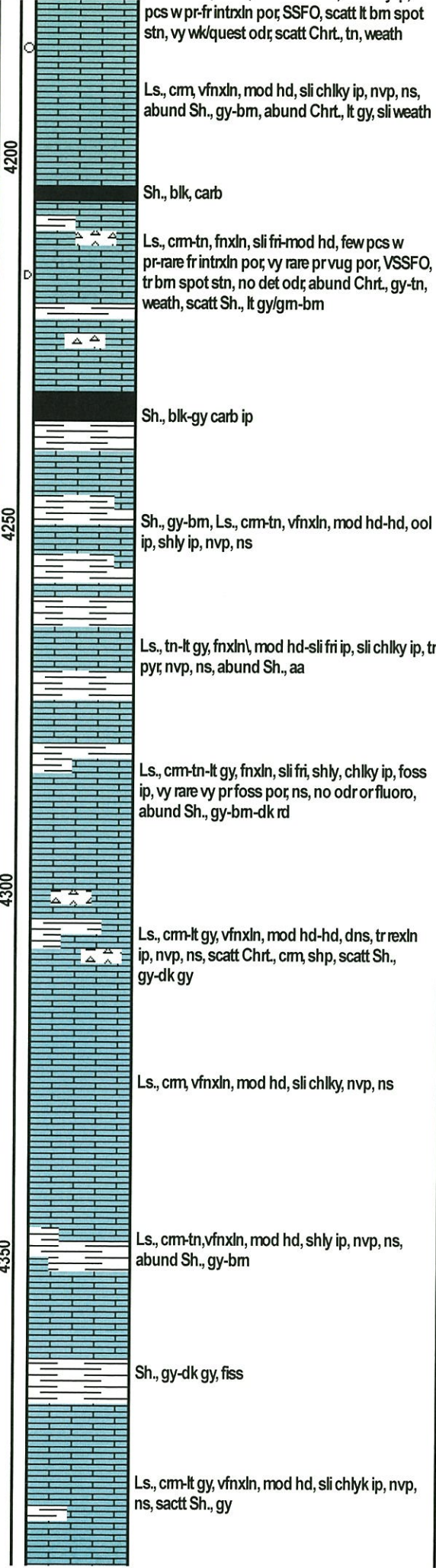
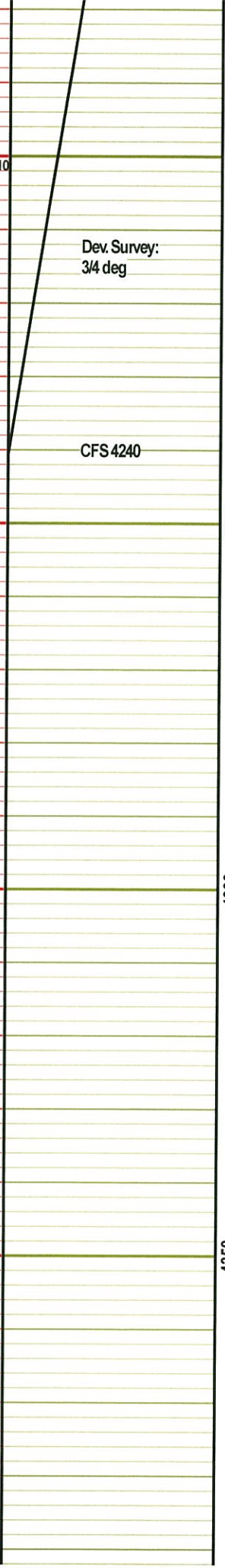
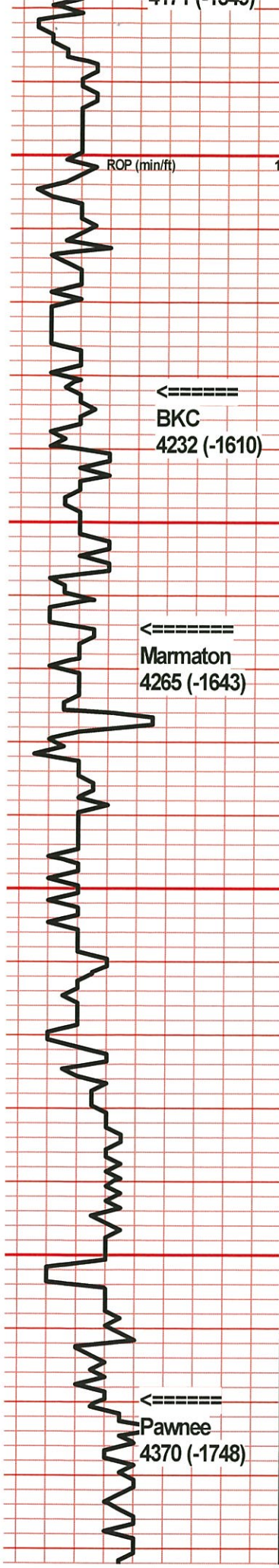
Ls., cm, fn-vfnxn, mod hd, dns, nvp, ns, abund Sh., bm-gy

Ls., cm-tn, fnxn, mod hd-sli fri ip, sli chlky ip, ool ip, nvp, ns, no odr

DST #1 4167-4240
(LKC K, L)
30-30-30-30
IF: Built to 4.5"
IS: No blow



DST 4 CFS 4172



Recovery:
150' Mud w oil spots

FP: 18-68; 70-85
SIP: 1193-1161
HP: 2086-2057

BHT: 113
Gravity: -
Chlor: —



Mud @ 4416'
 Wt. 9.7
 Vis. 49
 Filtrate 6.8
 Chlor 2700
 LCM 1#

DST 2

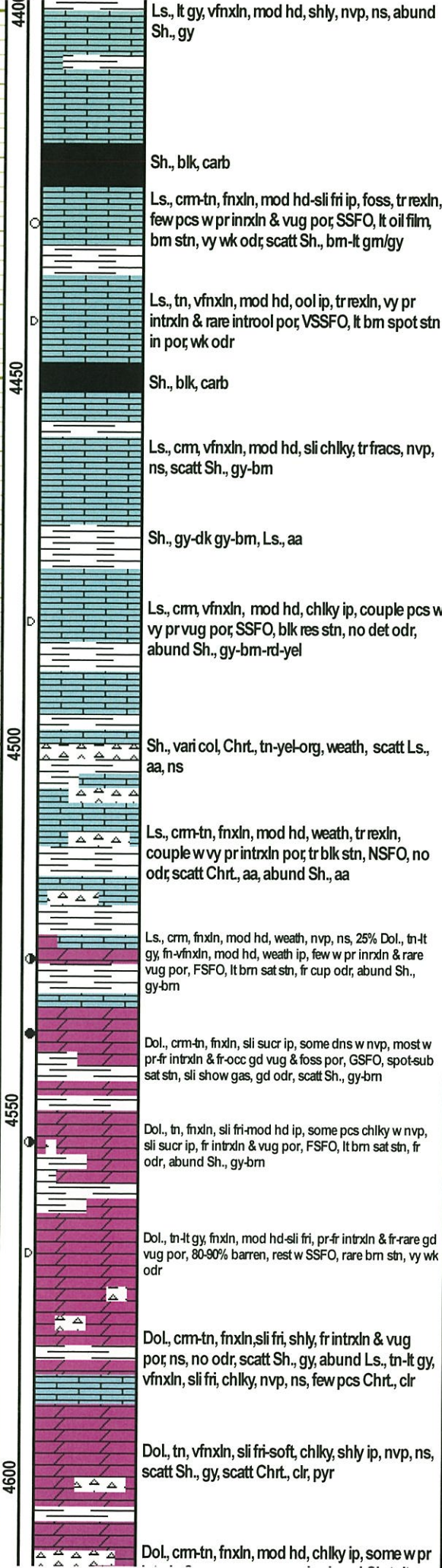
Mud @ 4563'
 Wt. 9.2
 Vis. 57
 Filtrate 6.4
 Chlor 2400
 LCM 1#

DST 3

CFS 4563

CFS 4579

4563'
 PDC Bit:
 8K WOB
 100 RPM



DST #2 4468-4563 (Mississippi)

30-30-60-60
 IF: Built to 6.5"
 IS: No blow
 FF: Built to 9"
 FS: No blow

Recovery:
 90' CO (100%O)
 120' MCO (50%M, 50%O)

210' TF

FP: 34-76; 80-101
 SIP: 909-799
 HP: 2330-2272

BHT: 122
 Gravity: 36
 Chlor: —

DST #3 4554-4582* (Straddle Mississippian)

30-60-60-90
 IF: Built to 4 1/2"
 IS: No blow
 FF: Built to 6 1/4"
 FS: No blow

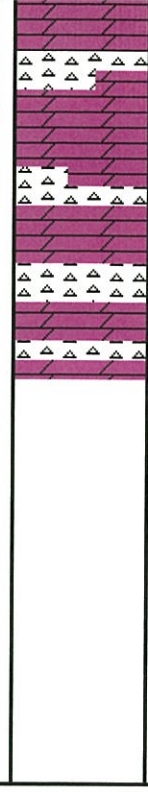
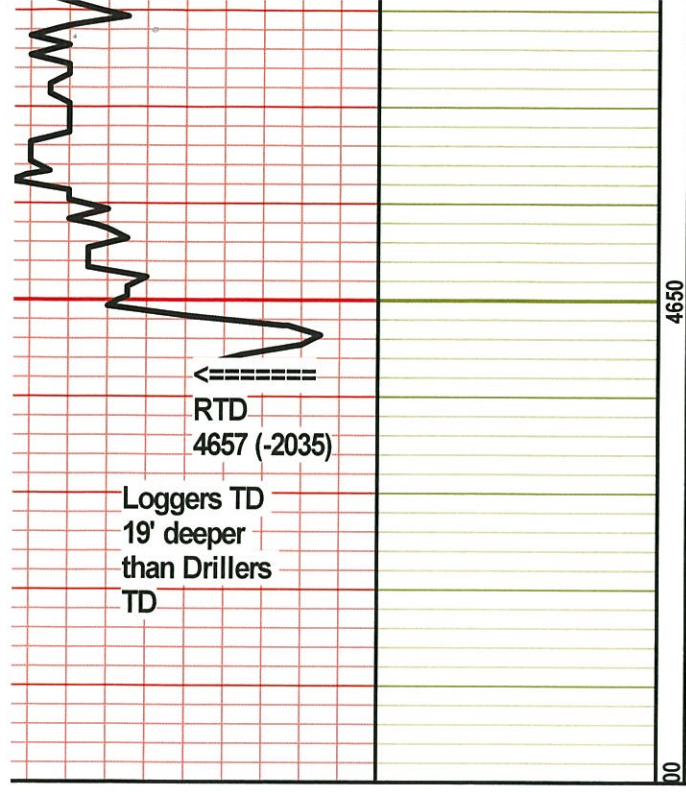
Recovery:
 80' CO (100%O)
 70' OCM (10%O, 90%M)

150' TF

FP: 20-49; 54-76
 SIP: 1055-913
 HP: 2431-2331

BHT: 126
 Gravity: 36
 Chlor: —

*Loggers TD used for straddle test, correlated to 4535-4563 drill time



Dol., tn-lt gy, fnxn, mod hd, pr intrxn & vug por,
ns, abund Chrt., crm-lt gy, spic