

# Timothy G. Pierce

## Petroleum Geologist

### GEOLOGIST'S REPORT DRILLING TIME AND SAMPLE LOG

COMPANY R & B Oil & Gas, Inc.

ELEVATIONS

LEASE Culver 'A' #3

KB 1673'

FIELD Spivey-Grabs

LOCATION 2170' FNL & 660' FWL

DF \_\_\_\_\_

SEC 4 TWSP 31S RGE 8W

GL 1663'

COUNTY Harper STATE Kansas

CONTRACTOR Hardt Drilling Rig #1

Measurements Are All  
From Kelly Bushing

SPUD 12-02-2014 COMP 12-10-2014

RTD 4658\* LTD 4646

CASING

MUD UP 2945 TYPE MUD Chemical

CONDUCTOR \_\_\_\_\_  
SURFACE 8-5/8" at 249'  
PRODUCTION 5-1/2" at 4652'

SAMPLES SAVED FROM 3400 TO RTD

DRILLING TIME KEPT FROM 3400 TO RTD

SAMPLES EXAMINED FROM 3400 TO RTD

GEOLOGICAL SUPERVISION FROM 3650' to RTD

GEOLOGIST ON WELL Tim Pierce

Pioneer Energy Svcs.

FORMATION TOPS      ELECTRIC LOG      SAMPLE

Heebner Sh.      3416 (-1743)      3417 (-1744)

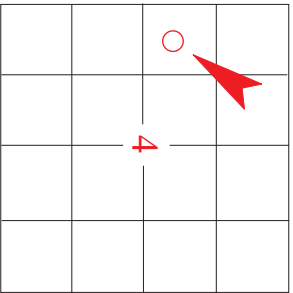
Lansing      3612 (-1939)      3615 (-1942)

Stark Sh.      4054 (-2381)      4058 (-2385)

Cherokee Sh.      4296 (-2623)      4300 (-2627)

Mississippi      4394 (-2721)      4401 (-2728)

Kinderhook Sh.      4610 (-2937)      4612 (-2939)



REMARKS The log top of the Mississippi was 7' shallower than picked on drill time. Therefore DST #2 did not cover the better portion of the upper chert section and a better recovery might have resulted. Samples and electric logs indicate probable production from both the upper and lower chert sections of the Mississippi.

Slight sample shows were noted in the KC Hertha zone at 4102-4108, and the KC 'A' zone at 3950-3954, both these zones appear to be non-commercial after electric log examination.

There were no other zones of interest indicated by samples or electric logs.

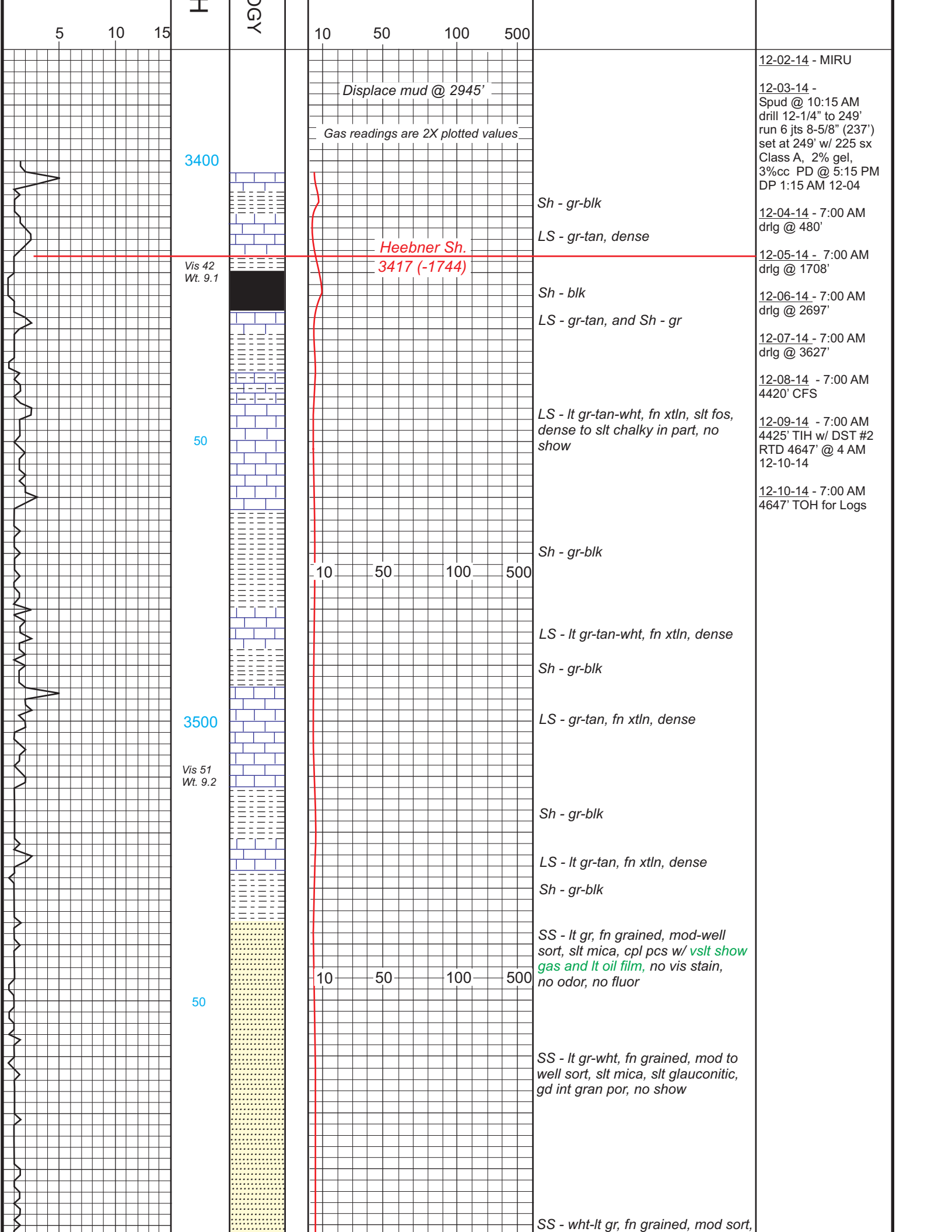
An additional 10' was drilled after logs were run to allow for locating production casing collar at ground level - New RTD 4658'.

*Timothy G. Pierce*

#### LEGEND



DRILLING TIME IN MINUTES PER FOOT Rate of Penetration Decreases 	DEPTH	LITHOLOGY	GAS SCALE	SAMPLE DESCRIPTION	REMARKS
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5 10 15

H  
OGY

10 50 100 500

Displace mud @ 2945'

Gas readings are 2X plotted values

3400

Vis 42  
Wt. 9.1

Heebner Sh.  
3417 (-1744)

Sh - gr-blk

LS - gr-tan, dense

Sh - blk

LS - gr-tan, and Sh - gr

50

LS - lt gr-tan-wht, fn xtln, slt fos,  
dense to slt chalky in part, no  
show

10 50 100 500

Sh - gr-blk

LS - lt gr-tan-wht, fn xtln, dense

Sh - gr-blk

3500

Vis 51  
Wt. 9.2

LS - gr-tan, fn xtln, dense

Sh - gr-blk

LS - lt gr-tan, fn xtln, dense

Sh - gr-blk

50

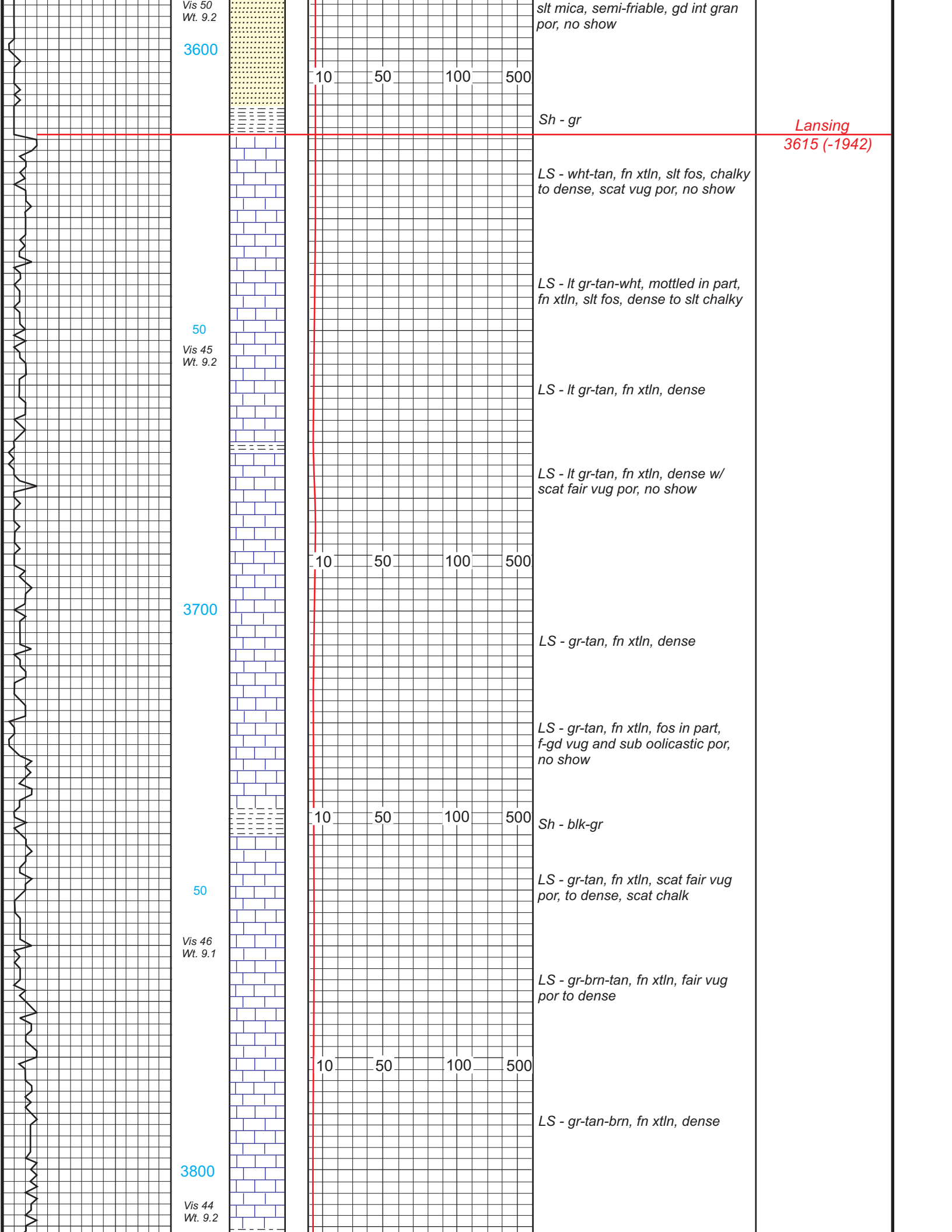
10 50 100 500

SS - lt gr, fn grained, mod-well  
sort, slt mica, cpl pcs w/ vslt show  
gas and lt oil film, no vis stain,  
no odor, no fluor

SS - lt gr-wht, fn grained, mod to  
well sort, slt mica, slt glauconitic,  
gd int gran por, no show

SS - wht-lt gr, fn grained, mod sort,

12-02-14 - MIRU  
12-03-14 -  
Spud @ 10:15 AM  
drill 12-1/4" to 249'  
run 6 jts 8-5/8" (237')  
set at 249' w/ 225 sx  
Class A, 2% gel,  
3%cc PD @ 5:15 PM  
DP 1:15 AM 12-04  
12-04-14 - 7:00 AM  
drlg @ 480'  
12-05-14 - 7:00 AM  
drlg @ 1708'  
12-06-14 - 7:00 AM  
drlg @ 2697'  
12-07-14 - 7:00 AM  
drlg @ 3627'  
12-08-14 - 7:00 AM  
4420' CFS  
12-09-14 - 7:00 AM  
4425' TIH w/ DST #2  
RTD 4647' @ 4 AM  
12-10-14  
12-10-14 - 7:00 AM  
4647' TOH for Logs



3600

Vis 50  
Wt. 9.2

slt mica, semi-friable, gd int gran por, no show

10 50 100 500

Sh - gr

Lansing  
3615 (-1942)

LS - wht-tan, fn xtln, slt fos, chalky to dense, scat vug por, no show

LS - lt gr-tan-wht, mottled in part, fn xtln, slt fos, dense to slt chalky

50

Vis 45  
Wt. 9.2

LS - lt gr-tan, fn xtln, dense

LS - lt gr-tan, fn xtln, dense w/ scat fair vug por, no show

10 50 100 500

3700

LS - gr-tan, fn xtln, dense

LS - gr-tan, fn xtln, fos in part, f-gd vug and sub oolitic por, no show

10 50 100 500

Sh - blk-gr

LS - gr-tan, fn xtln, scat fair vug por, to dense, scat chalk

50

Vis 46  
Wt. 9.1

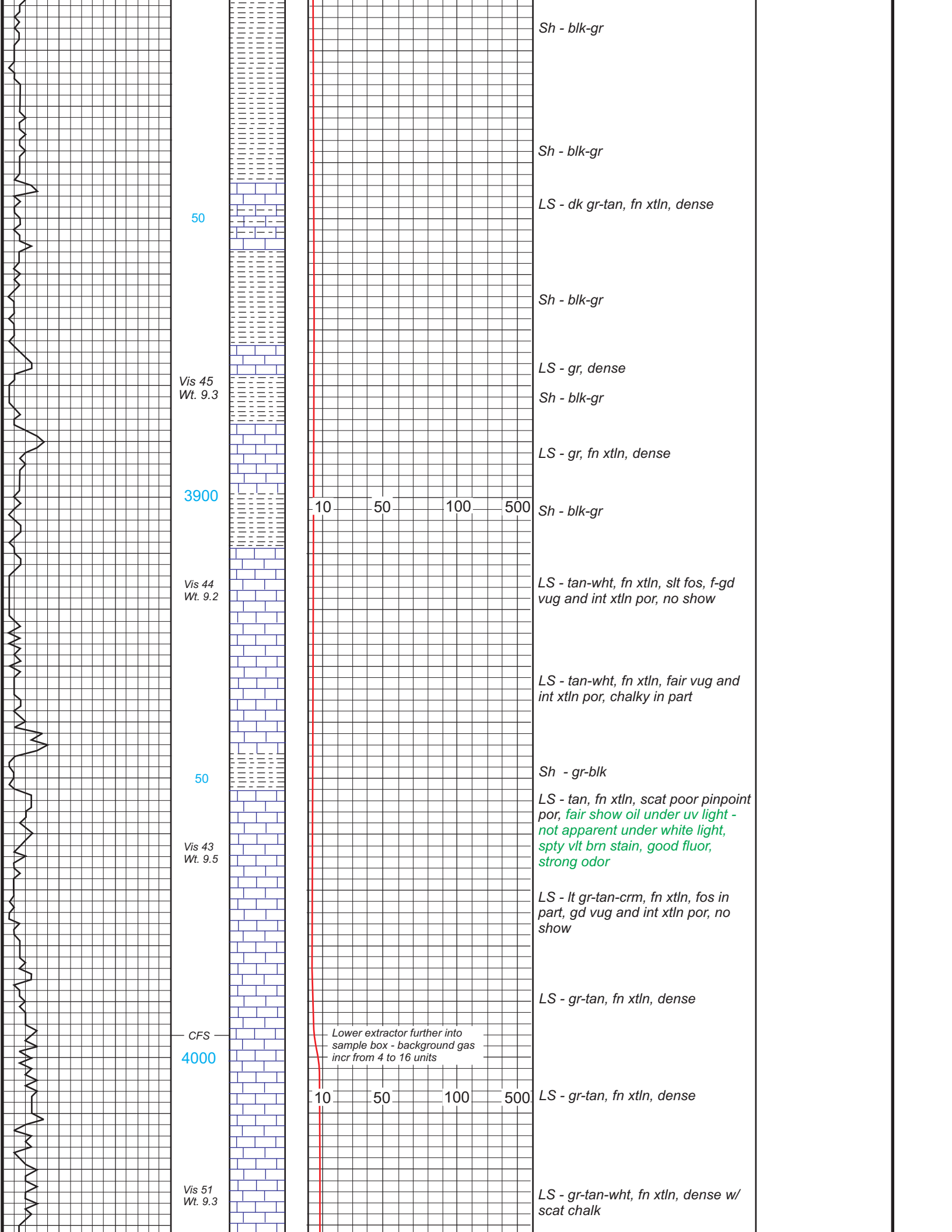
LS - gr-brn-tan, fn xtln, fair vug por to dense

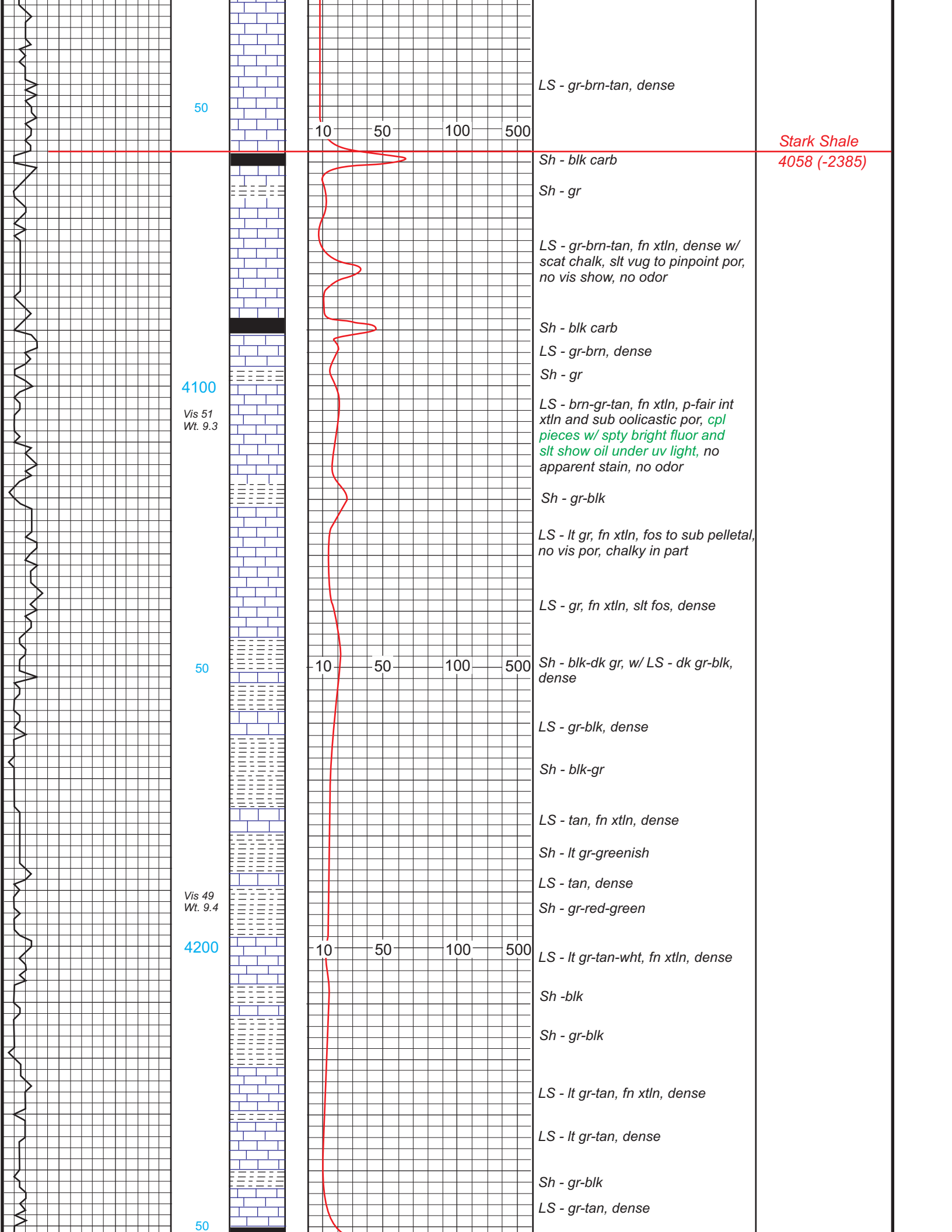
10 50 100 500

LS - gr-tan-brn, fn xtln, dense

3800

Vis 44  
Wt. 9.2





50

LS - gr-brn-tan, dense

Stark Shale  
4058 (-2385)

Sh - blk carb

Sh - gr

LS - gr-brn-tan, fn xtln, dense w/  
scat chalk, slt vug to pinpoint por,  
no vis show, no odor

Sh - blk carb

LS - gr-brn, dense

Sh - gr

4100

Vis 51  
Wt. 9.3

LS - brn-gr-tan, fn xtln, p-fair int  
xtln and sub oolitic por, cpl  
pieces w/ spty bright fluor and  
slt show oil under uv light, no  
apparent stain, no odor

Sh - gr-blk

LS - lt gr, fn xtln, fos to sub pelletal,  
no vis por, chalky in part

LS - gr, fn xtln, slt fos, dense

50

Sh - blk-dk gr, w/ LS - dk gr-blk,  
dense

LS - gr-blk, dense

Sh - blk-gr

LS - tan, fn xtln, dense

Sh - lt gr-greenish

LS - tan, dense

Sh - gr-red-green

Vis 49  
Wt. 9.4

4200

LS - lt gr-tan-wht, fn xtln, dense

Sh -blk

Sh - gr-blk

LS - lt gr-tan, fn xtln, dense

LS - lt gr-tan, dense

Sh - gr-blk

LS - gr-tan, dense

50

