

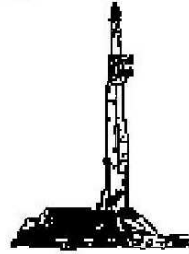
**GOOLSBY BROTHERS**  
and associates, inc.

575 Union Blvd, Suite 208  
Lakewood, CO 80228  
303-945-2860 Office



Geological Wellsite  
Supervision

[www.goolsbybrothers.com](http://www.goolsbybrothers.com)



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

Well Name: NRC 4C-8HZ  
Location: Sec. 8 T1N R67W Weld County, CO.  
License Number: API:051233841100 AFE: 208576  
Spud Date: February 9th, 2014  
Surface Coordinates: 350' FSL, 690' FWL  
Lat. 40.059340, Lon. -104.921482, Sec.8, T1NR67W  
Bottom Hole: 1' FNL, 1105' FWL  
Coordinates: Sec. 8, T1NR67W  
Ground Elevation (ft): 5049' K.B. Elevation (ft): 5066'  
Logged Interval (ft): 7000' To: 12951' Total Depth (ft): 12951'  
Formation: Codell  
Type of Drilling Fluid: LSND (Polymer-Water)

Region: Wattenberg  
Drilling Completed: February 17th, 2014

Printed by HORIZONTAL.LOG from WellSight Systems 1-800-447-1534 [www.WellSight.com](http://www.WellSight.com)

**OPERATOR**

Company: Anadarko Petroleum Corporation  
Address: Granite Tower - 1099 18th St, Ste 1800  
Denver, CO 80202  
CO Geologist, Tom Birmingham.

**GEOLOGIST**

Name: Hank McCroskey, Marek Ciesnik  
Company: Goolsby Brothers & Assoc. (GBA), Inc. ([www.goolsbybrothers.com](http://www.goolsbybrothers.com))  
Address: 575 Union Blvd.  
Suite 208,  
Lakewood CO. 80228

## E-logs

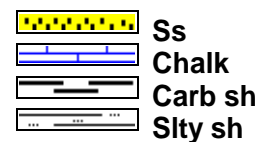
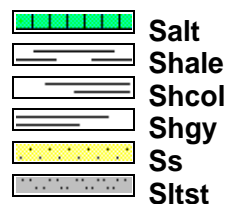
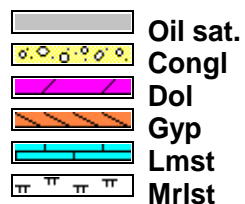
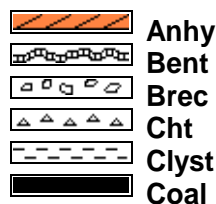
## Casing

Intermediate casing: 7", 26#, HTC 110 LTC, set at 8190'

Liner: 4 1/2", packer and assembly, 11.5#, HCP 110, LTC & D2X, set at 12931'

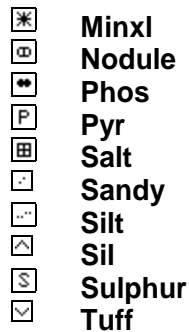
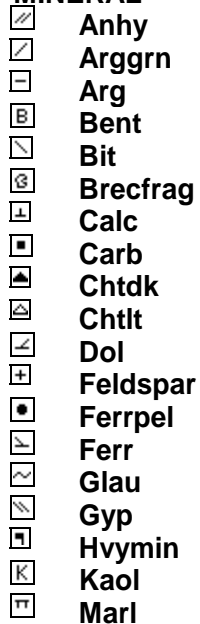
## Comments

### ROCK TYPES

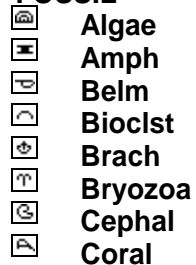


### ACCESSORIES

#### MINERAL



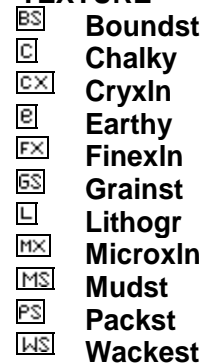
#### FOSSIL



#### STRINGER



#### TEXTURE



## OTHER SYMBOLS

### OIL SHOWS

- Even
- ◐ Spotted
- ◑ Ques
- ◒ Dead
- ◓ Vspotty
- ◔ near even

### POROSITY TYPE

- ◻ E Earthy
- ◻ F Fenest
- ◻ F Fracture
- ◻ X Inter
- ◻ M Moldic
- ◻ O Organic

- ◻ P Pinpoint
- ◻ V Vuggy

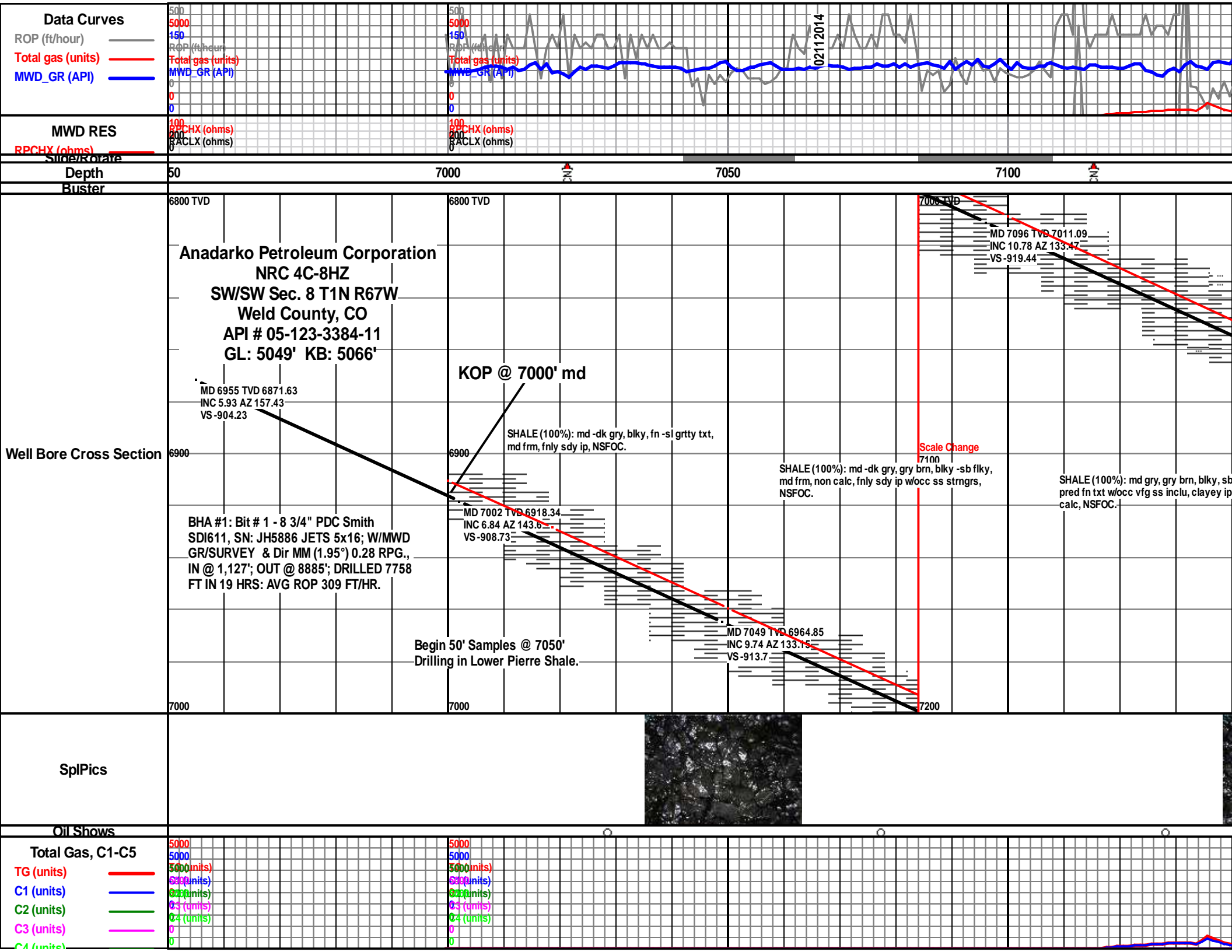
### ROUNDING

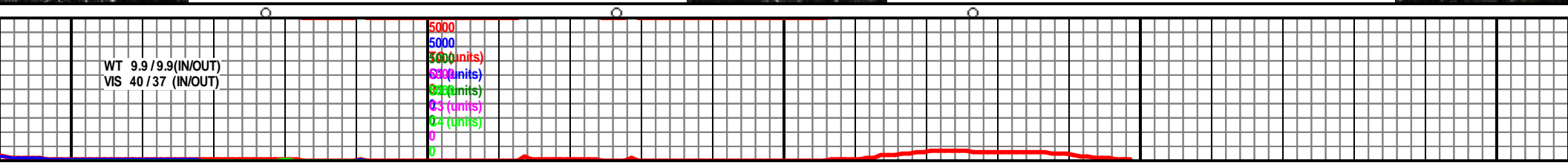
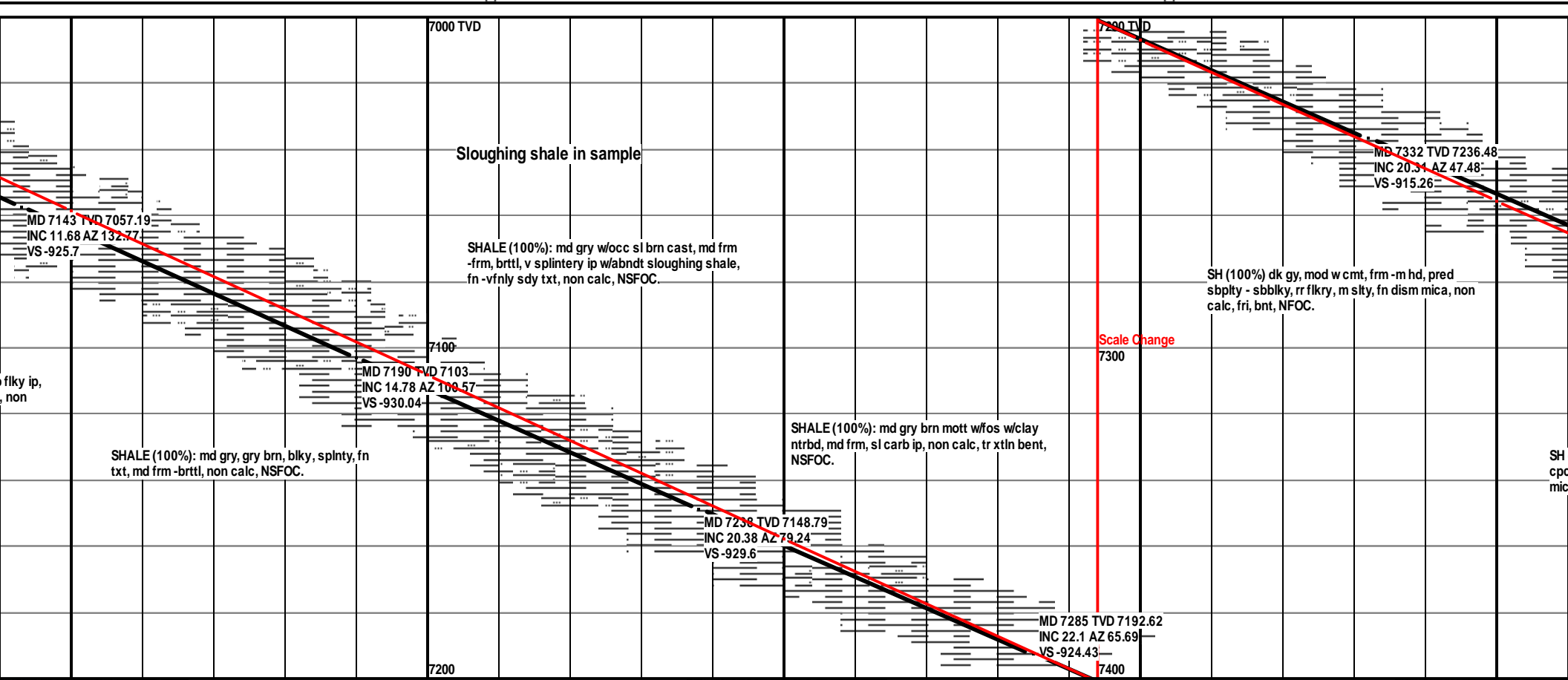
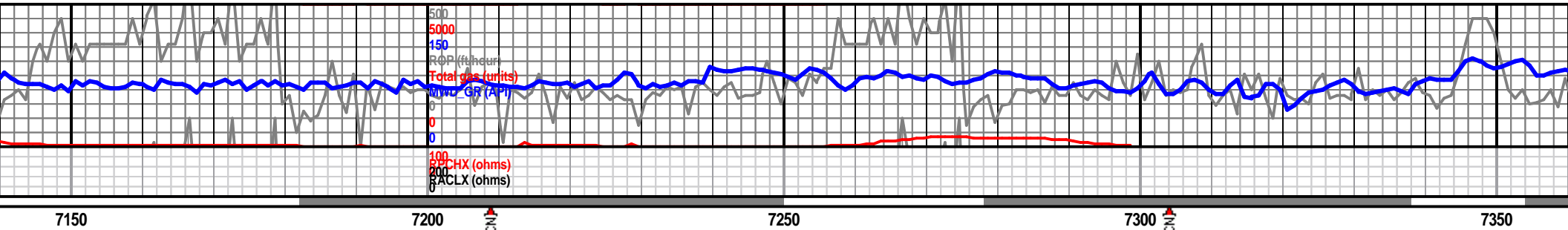
- ◻ R Rounded
- ◻ r Subrnd
- ◻ a Subang

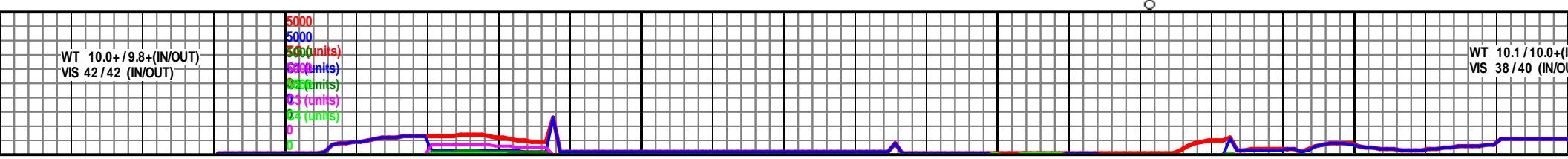
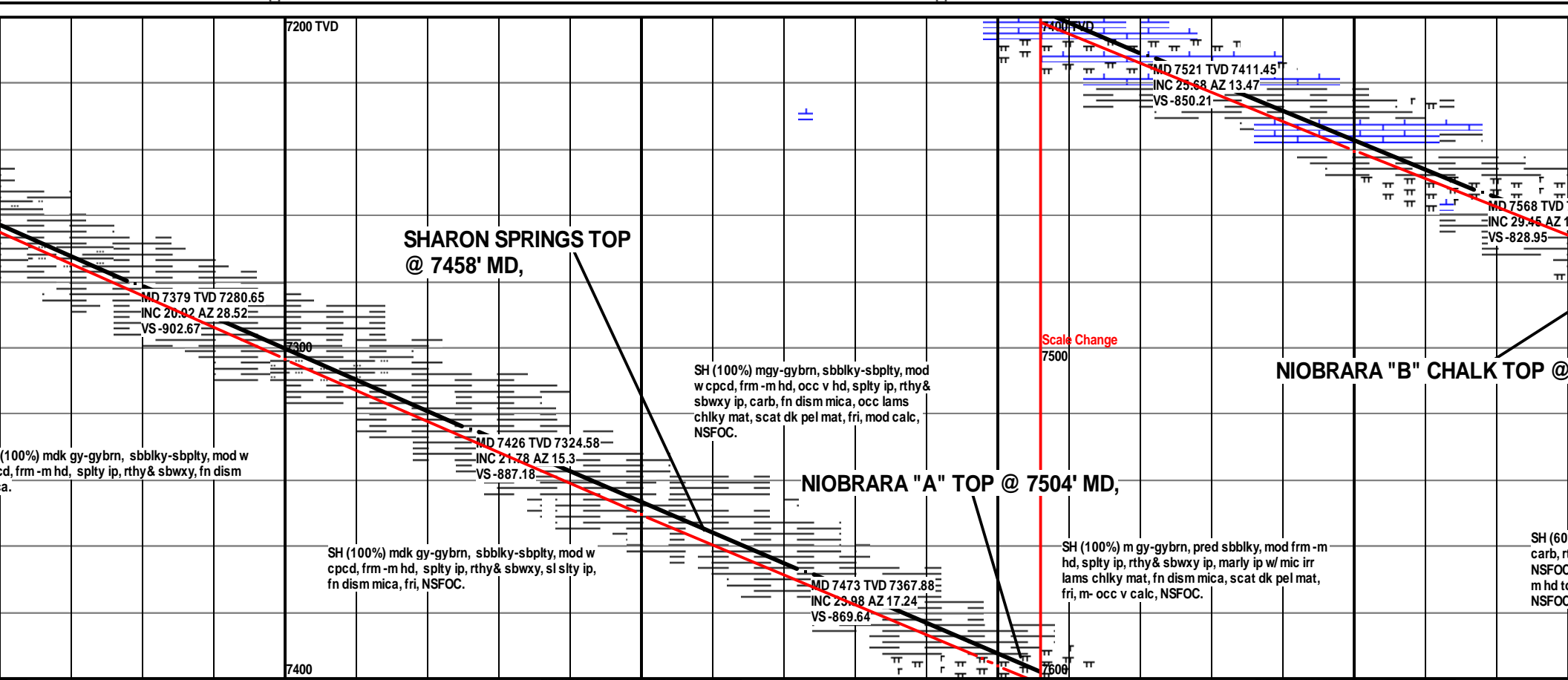
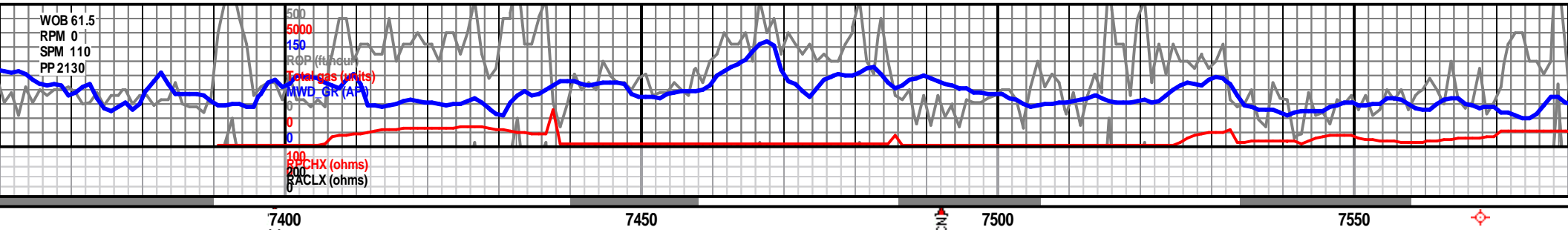
- ◻ A Angular

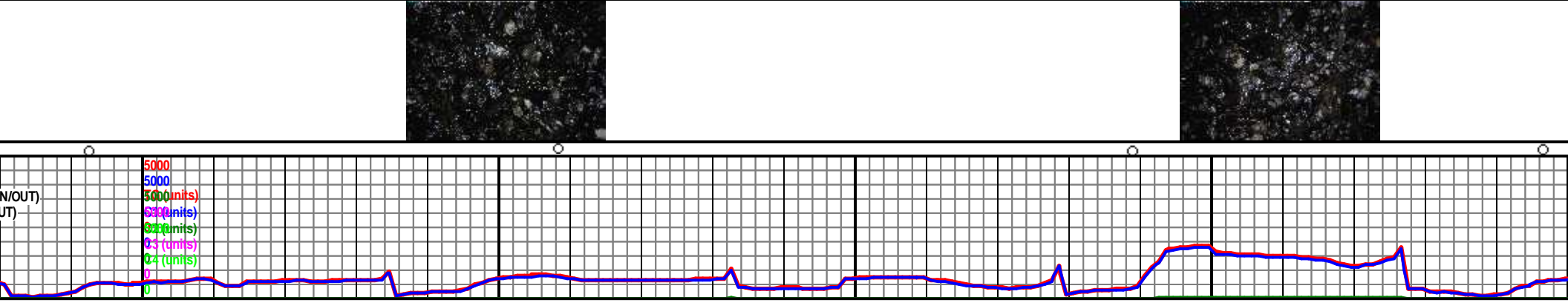
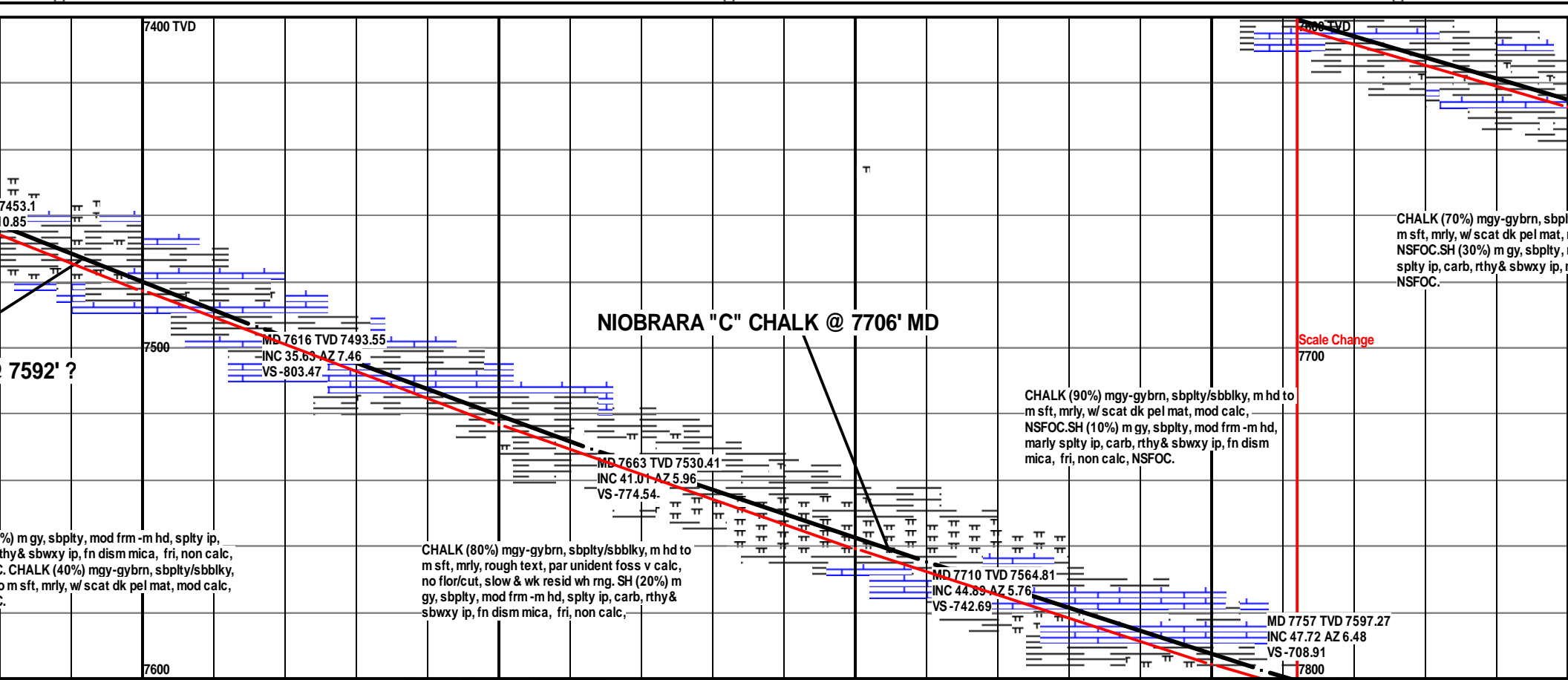
### SORTING

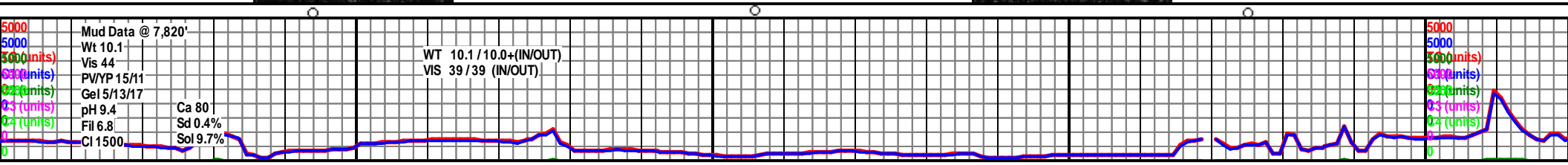
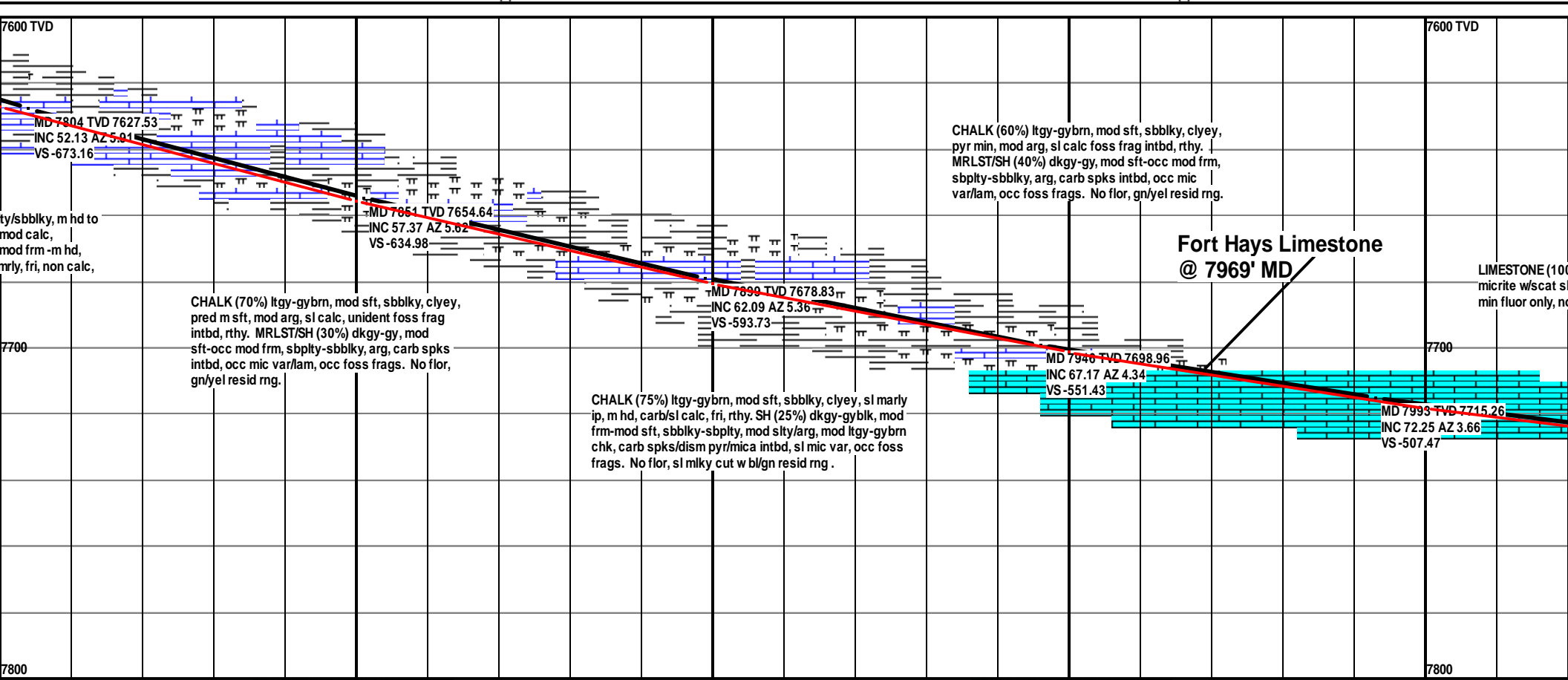
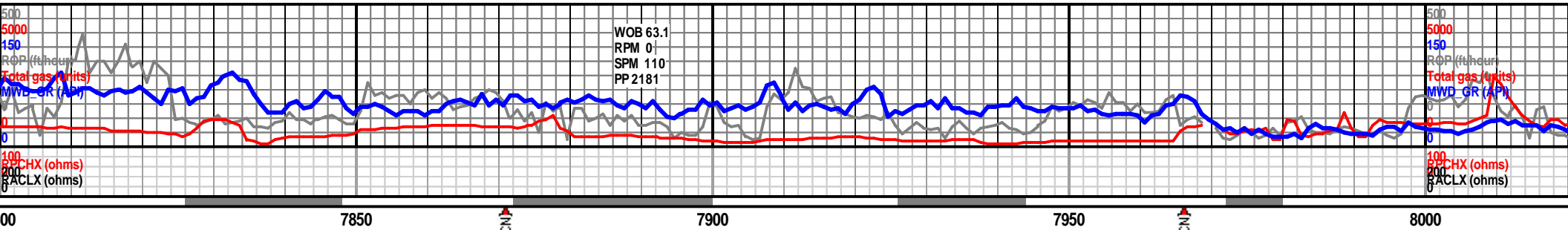
- ◻ W Well
- ◻ M Moderate
- ◻ P Poor



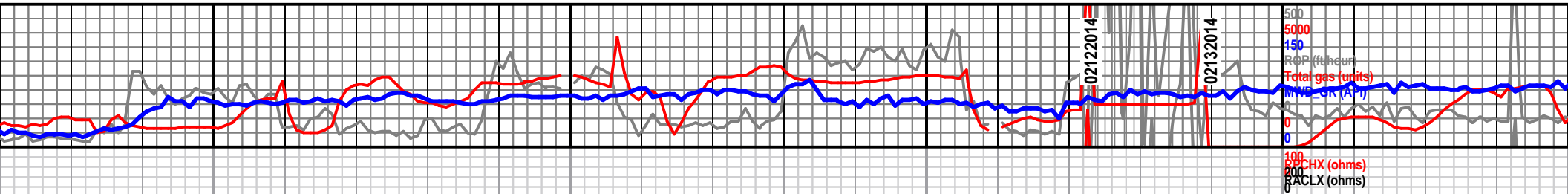












8050 8100 8150 8200

**Codell Sandstone  
@ 8040' MD**

**TD ICP @ 8190' md**

BHA #2: Bit # 2 - 6 1/8" PDC Smith  
SDi513, SN: JH4562; JETS 5x16;  
W/MWD GR/SURVEY & Dir MM  
(1.25°), 1.04 RPG IN @ 8190'; OUT @  
8750'; DRILLED 560 FT IN 8 HRS:  
AVG ROP 70 FT/HR.

0%): lt -md gry, micxtln fos  
haley ntrbd & p devel vug por,  
sig cut.

SAND (100%): clr -occ sl frstd, fn -vfg, p srtld, md  
-wl cons w/md -dk brn gry, carb mtx w/approx 5%  
feldspar xtls, scat dull grn flur, tr diffuse grn  
gold cut.

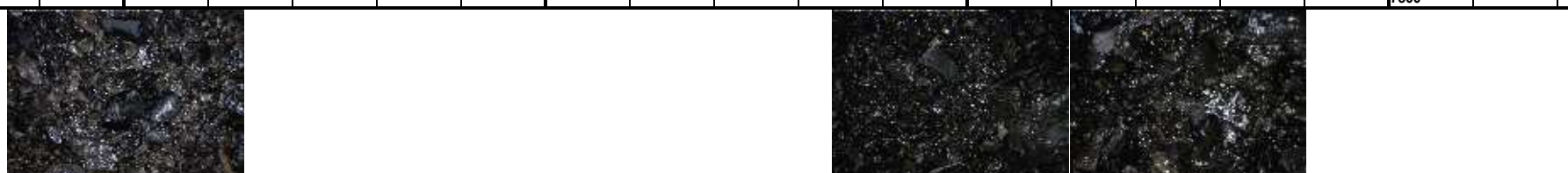
SAND (100%): clr -occ sl frstd, fn -vfg, p srtld, md  
-wl cons w/md -dk brn gry, carb mtx w/occ blk  
lam, tr feldspar xtls, scat fn clay pellets, tr grn  
flur, faint diffuse grn gold cut.

MD 8040 TVD 7727.04  
INC 76.5 AZ 3.78  
VS -462.31

MD 8088 TVD 7737.68  
INC 80 AZ 3.59  
VS -415.42

MD 8124 TVD 7742.81  
INC 83.64 AZ 3.24  
VS -379.86

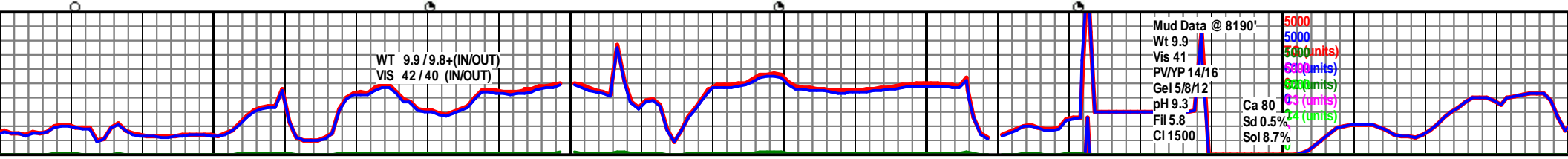
MD 8209 TVD 7749.16  
INC 87.78 AZ 2.7  
VS -295.23

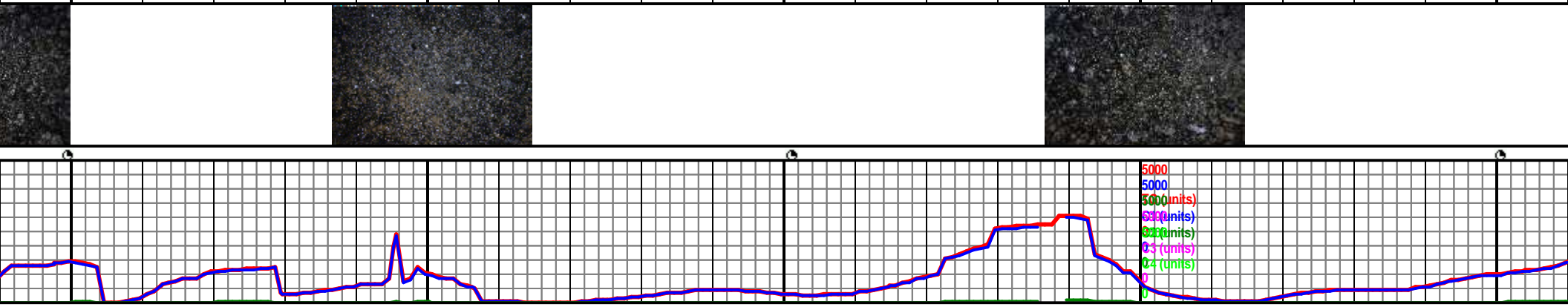
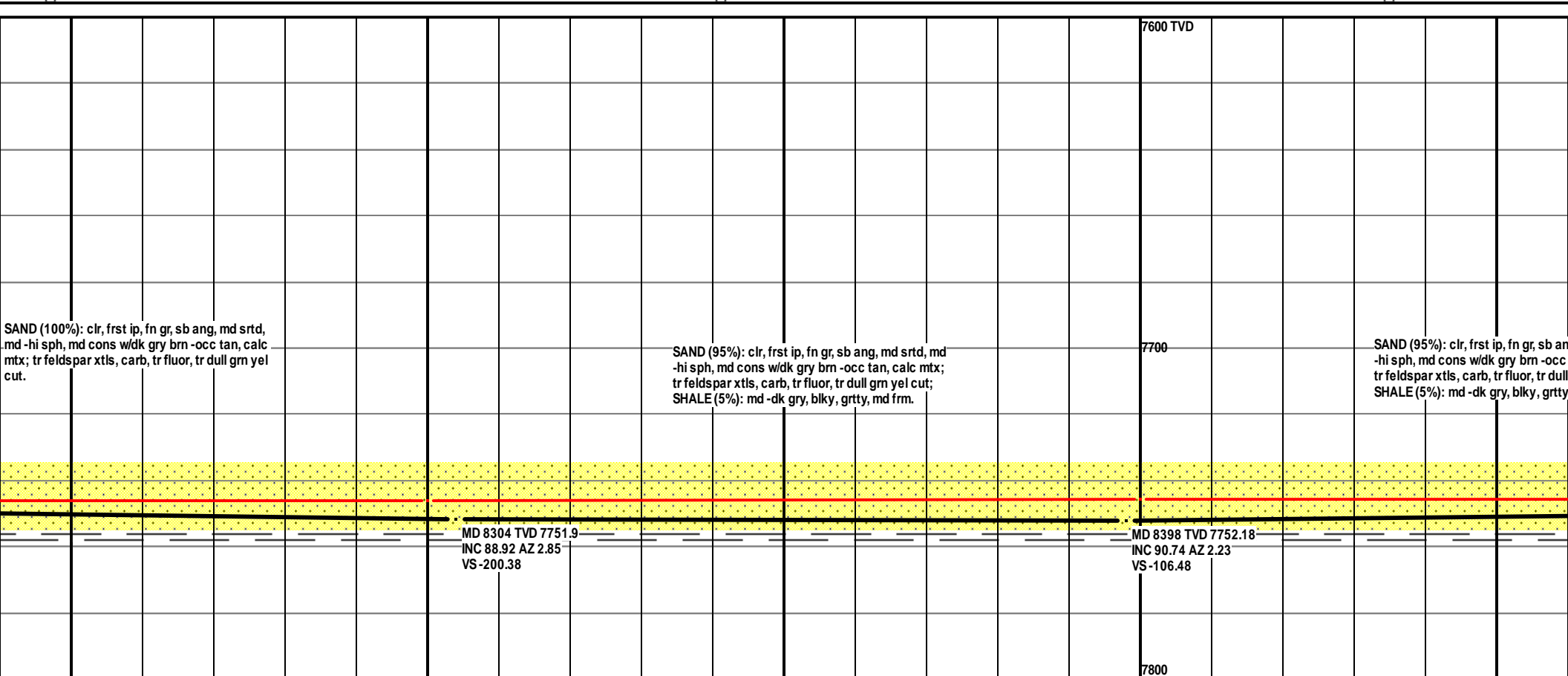


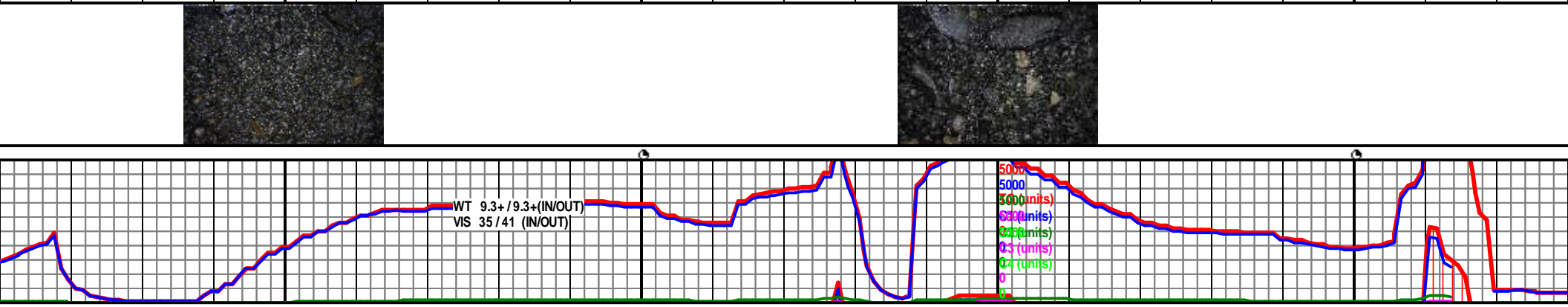
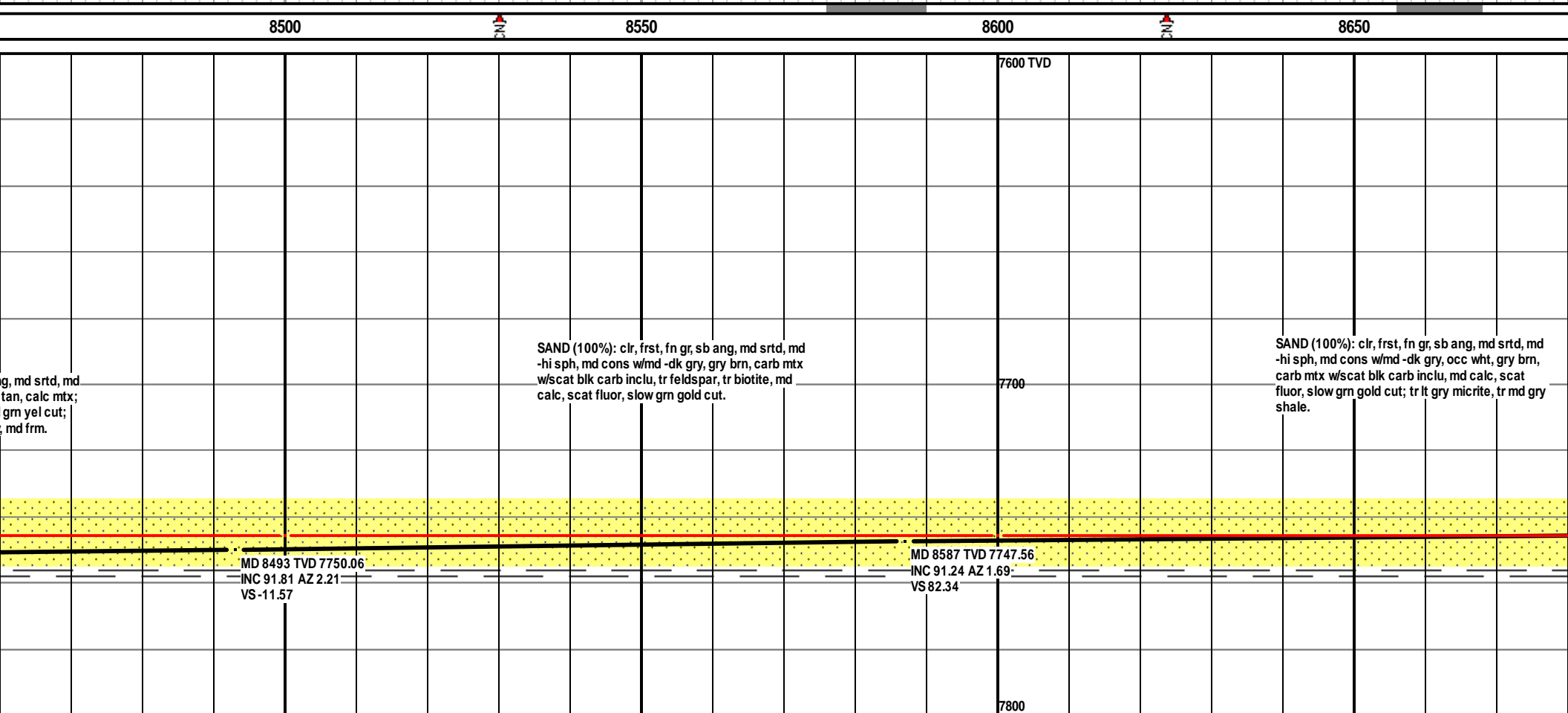
WT 9.9 / 9.8+ (IN/OUT)  
VIS 42 / 40 (IN/OUT)

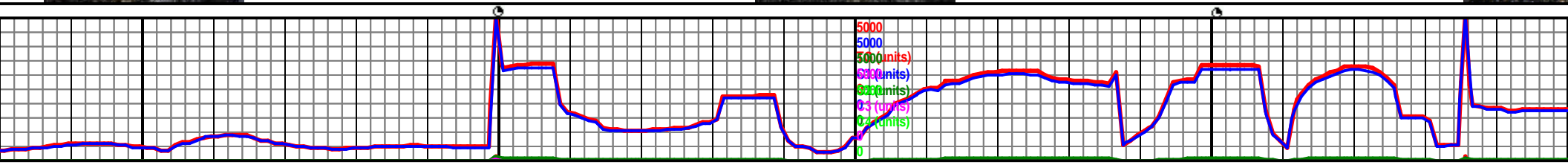
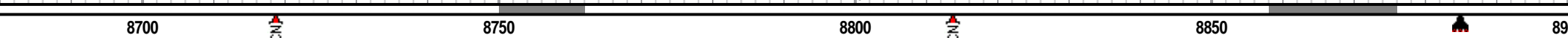
Mud Data @ 8190'  
Wt 9.9  
Vis 41  
PV/YP 14/16  
Gel 5/8/12  
pH 9.3  
Fil 5.8  
Cl 1500

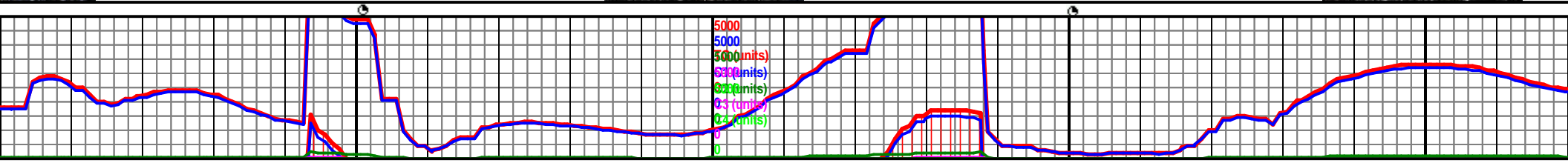
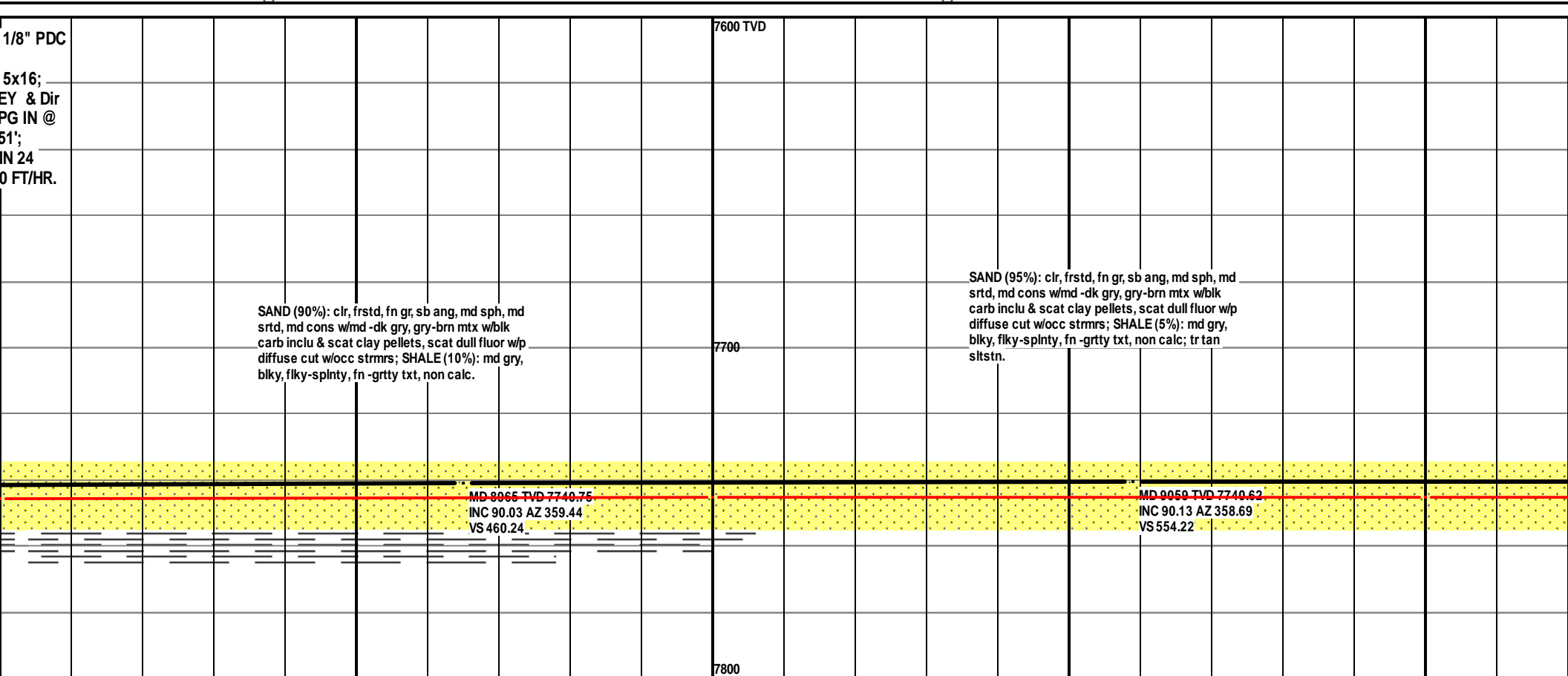
Ca 80  
Sd 0.5%  
Sol 8.7%

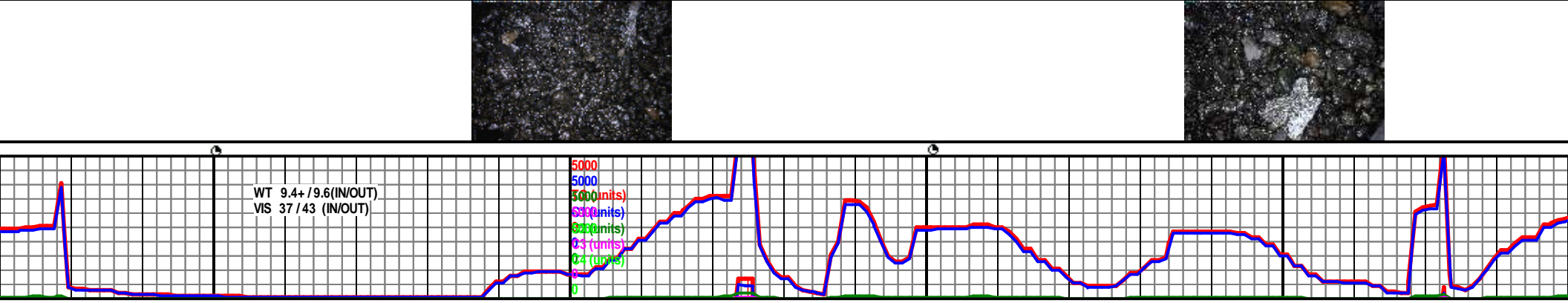
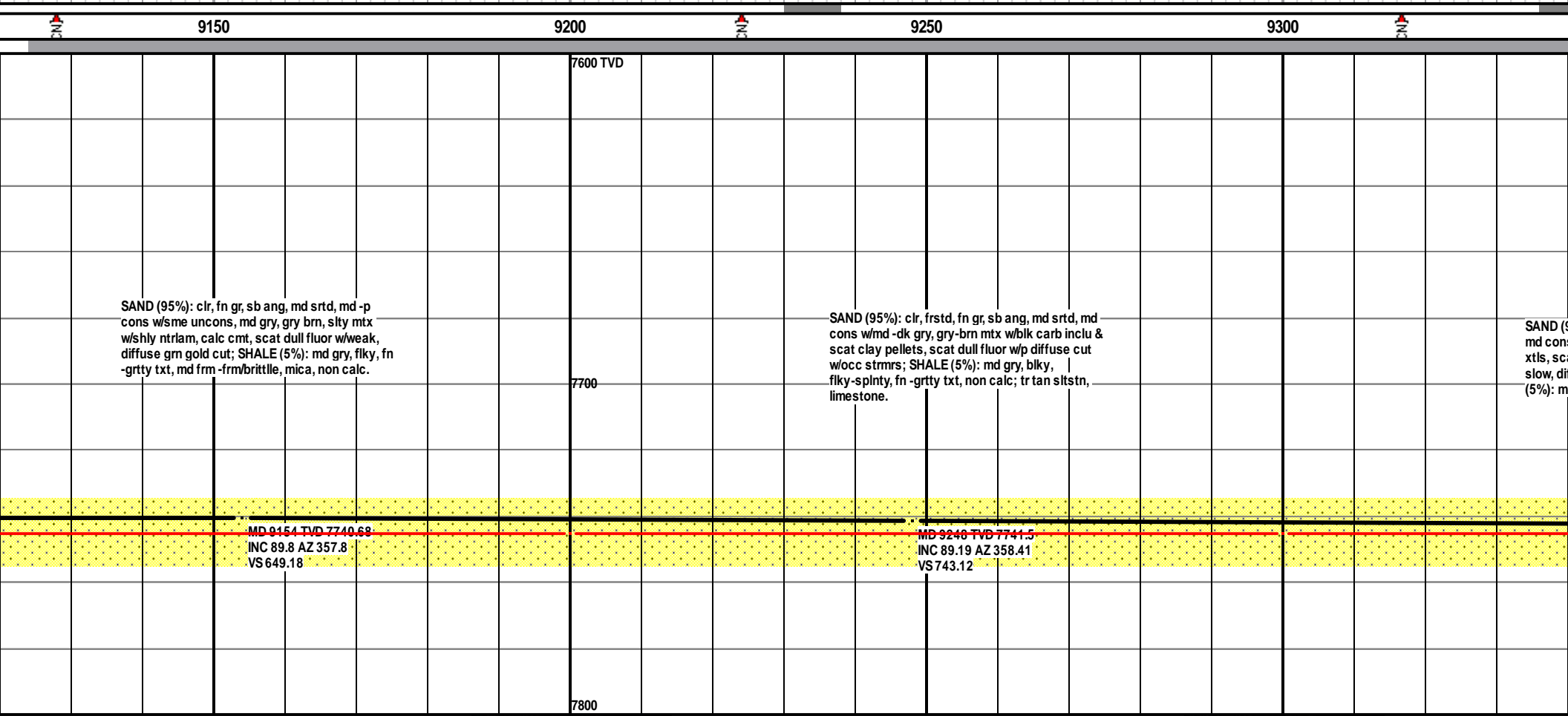




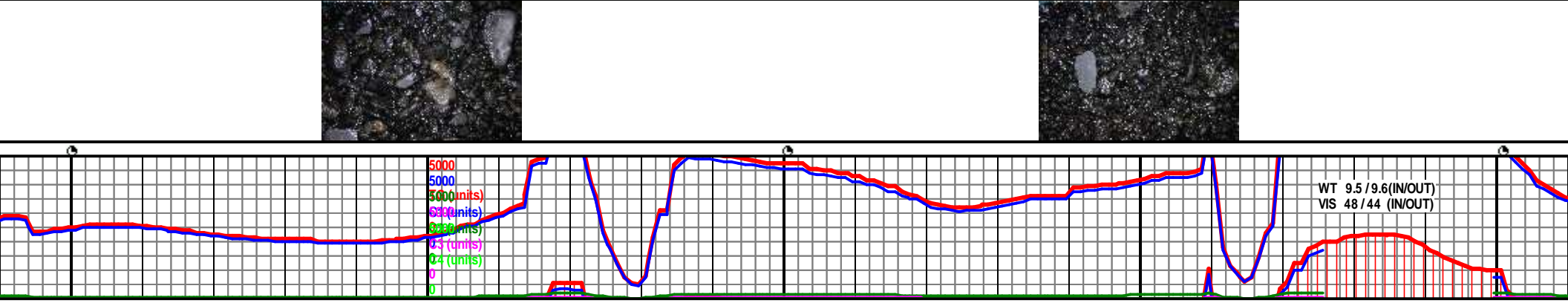
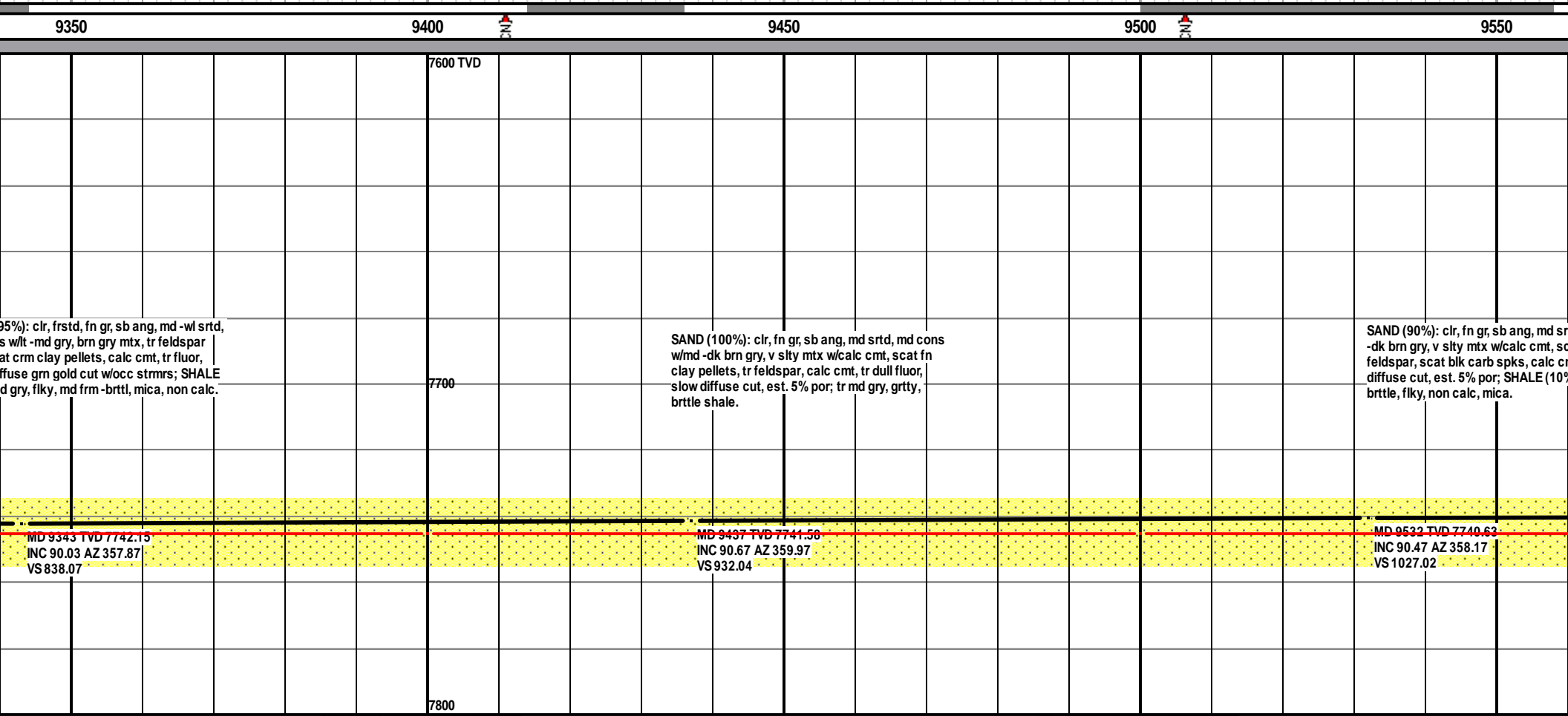


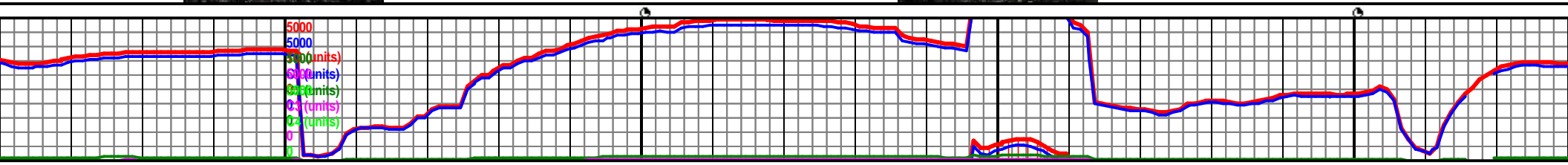
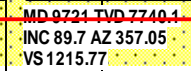






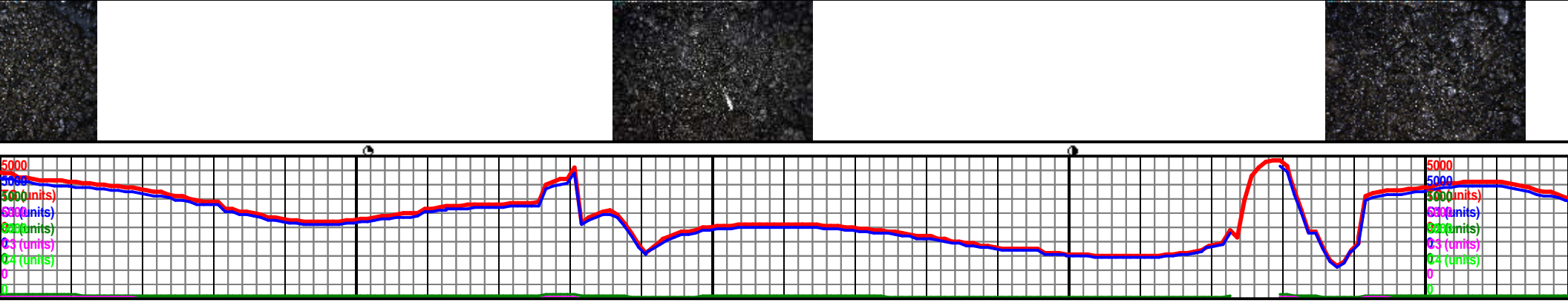
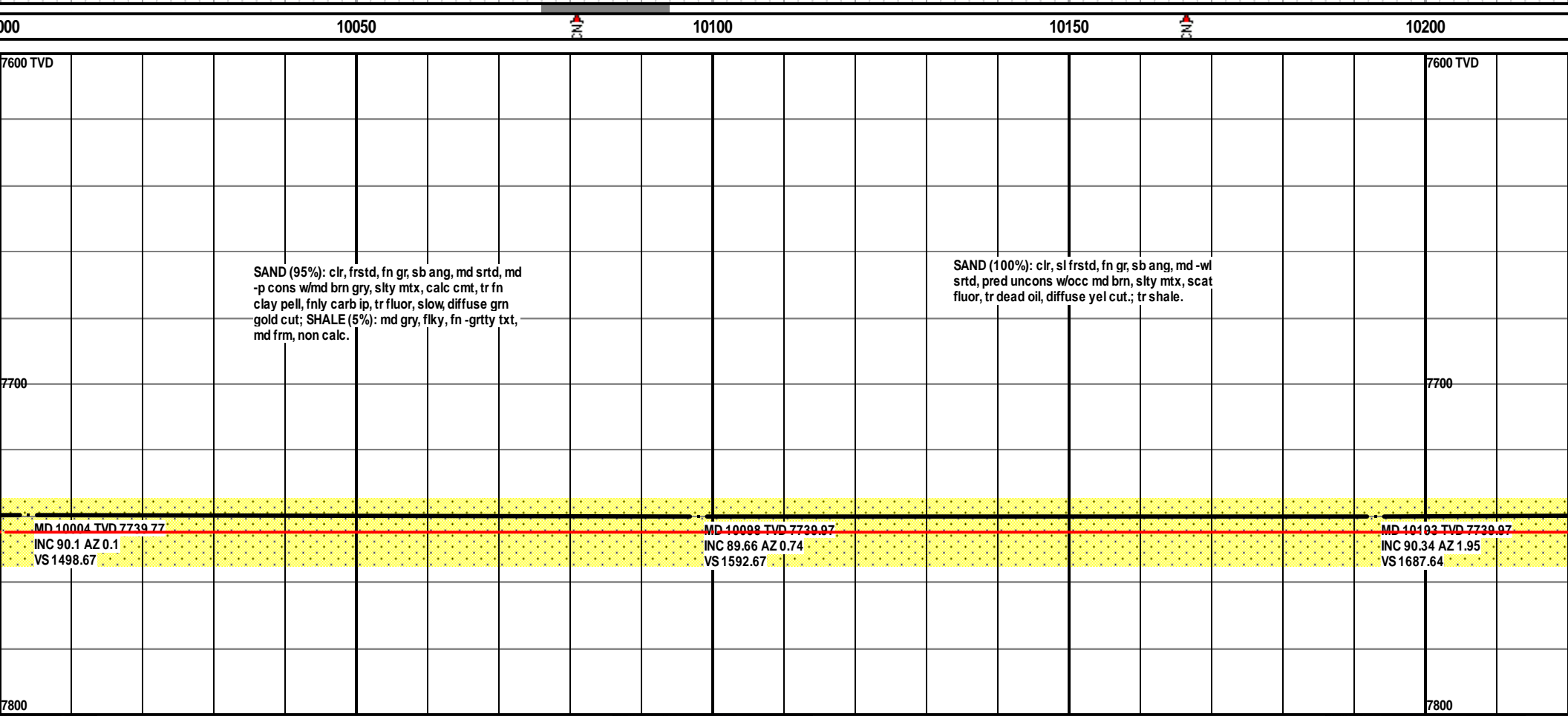
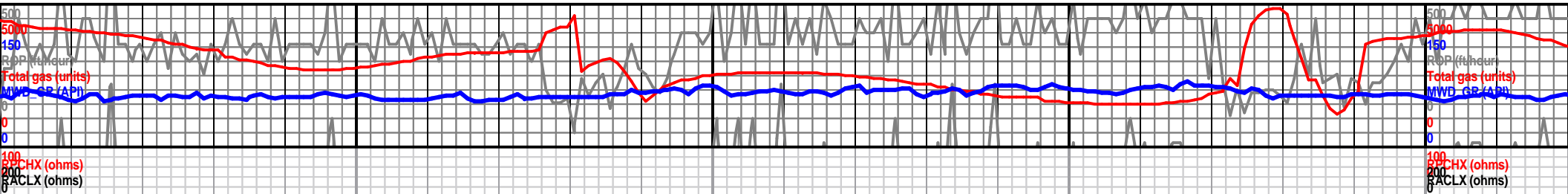


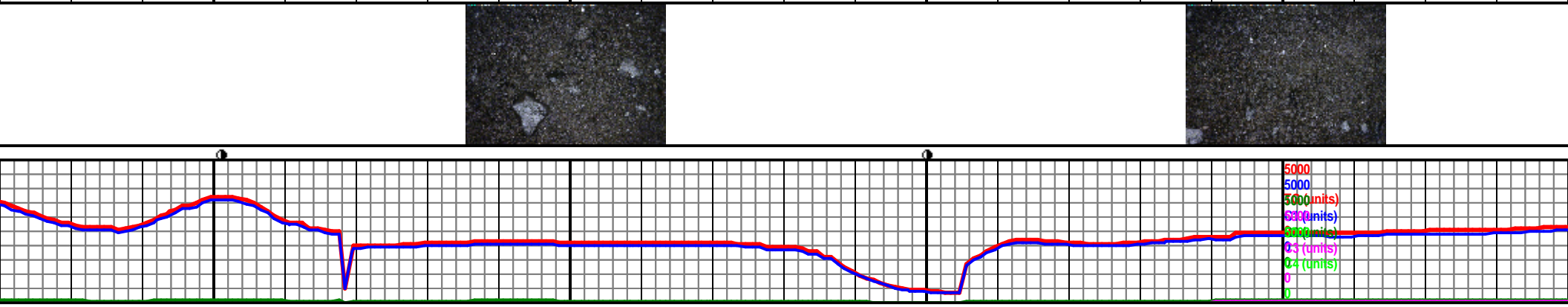
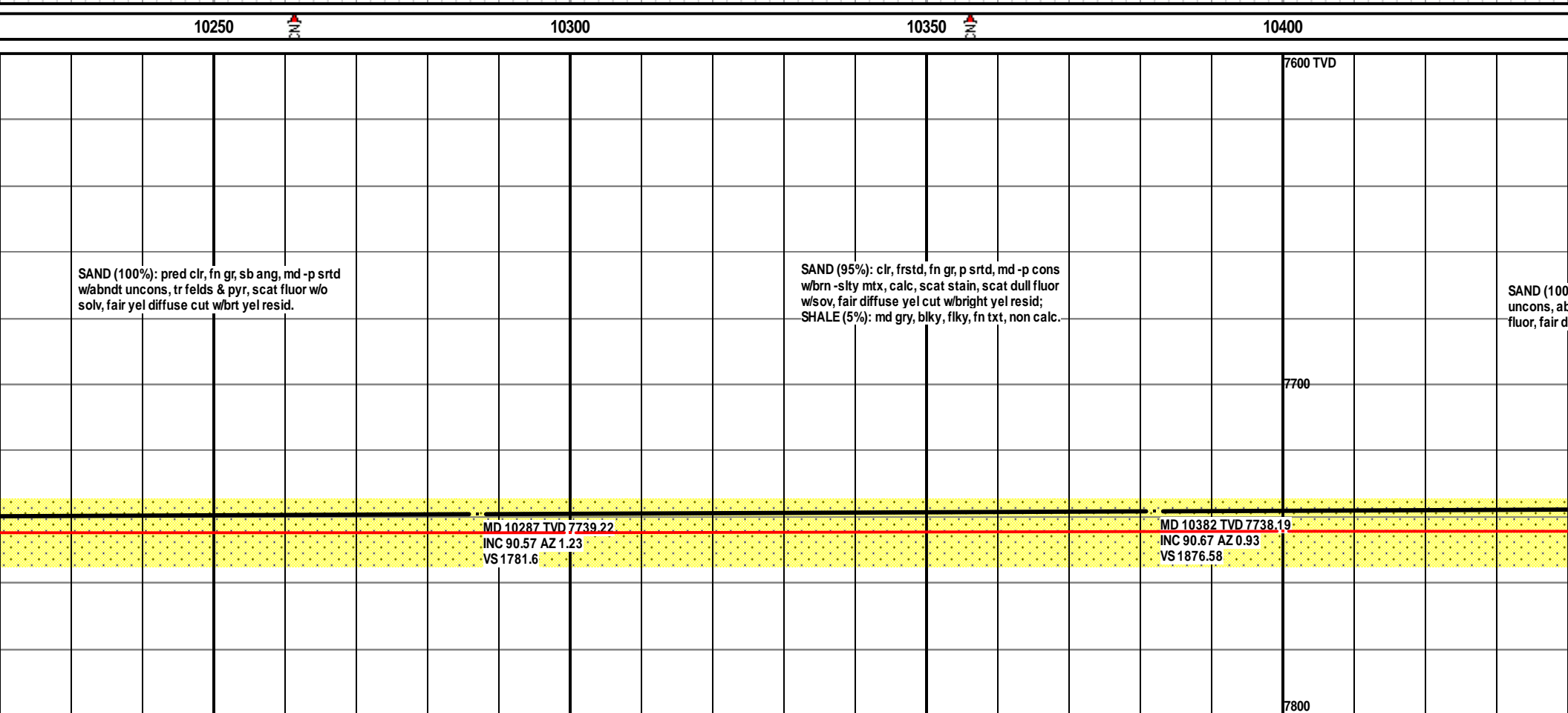


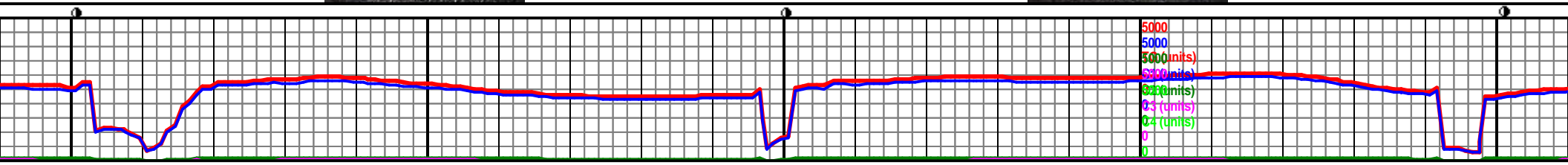
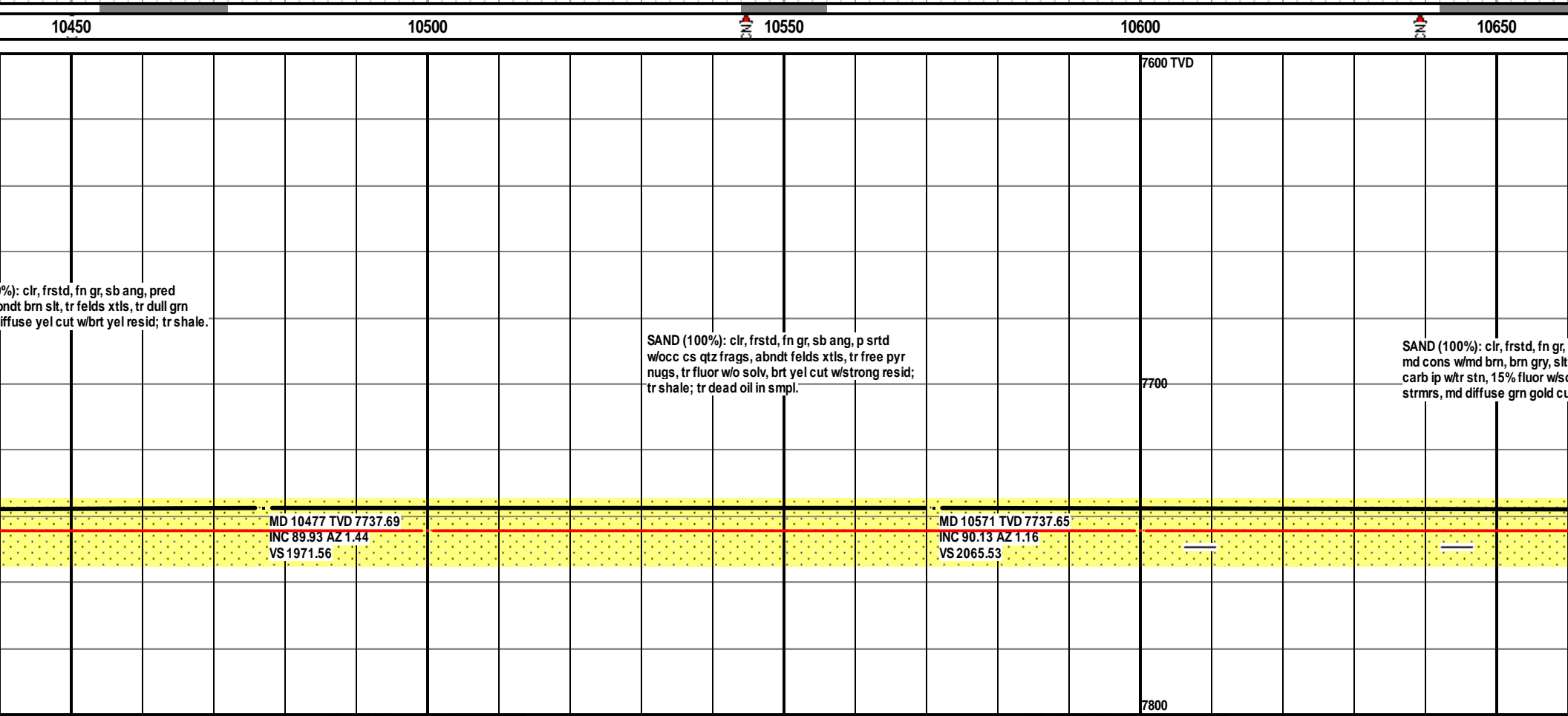
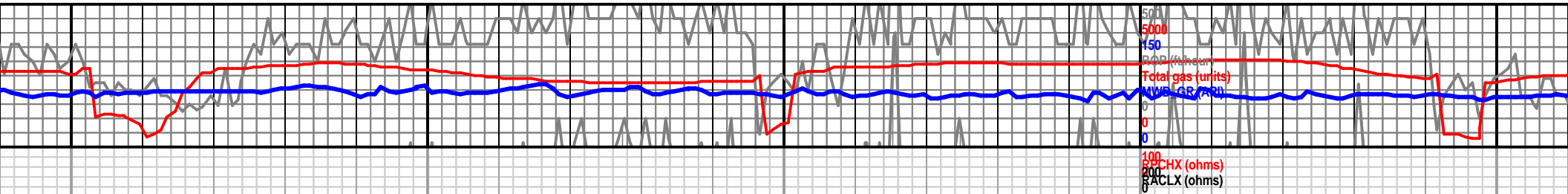


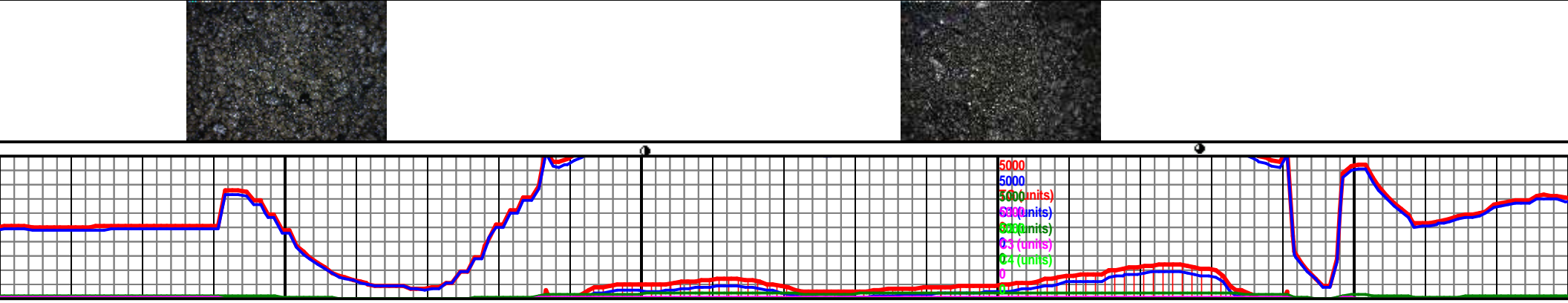
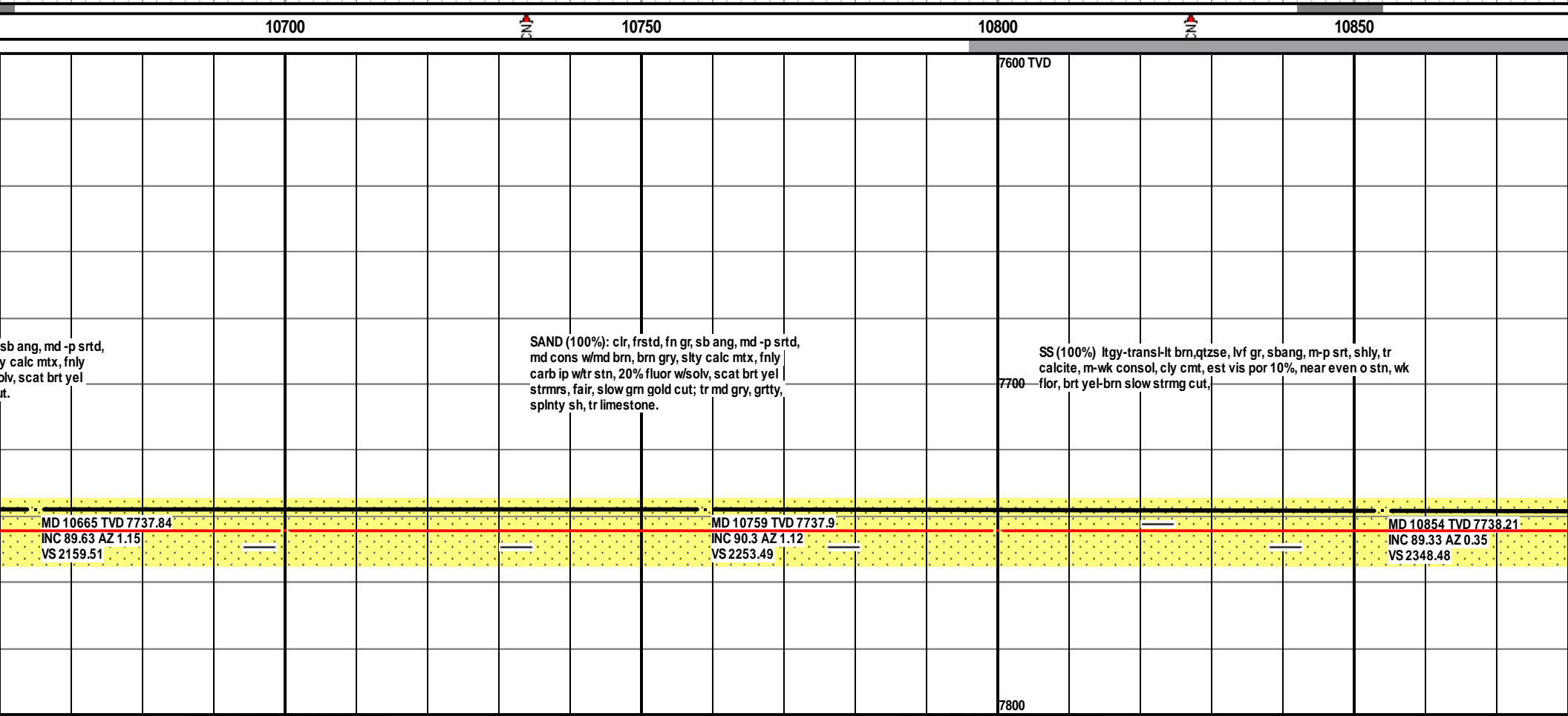


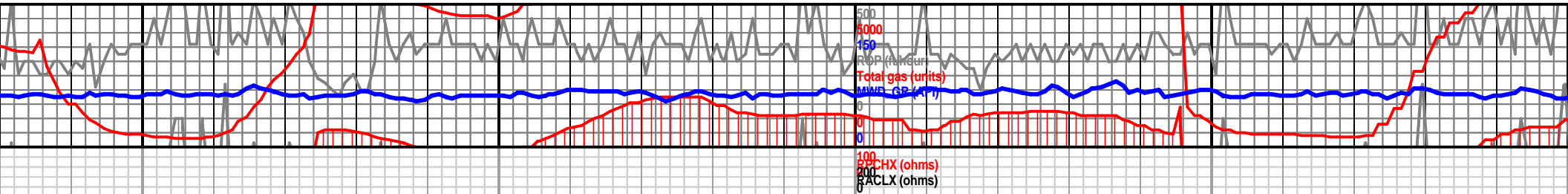












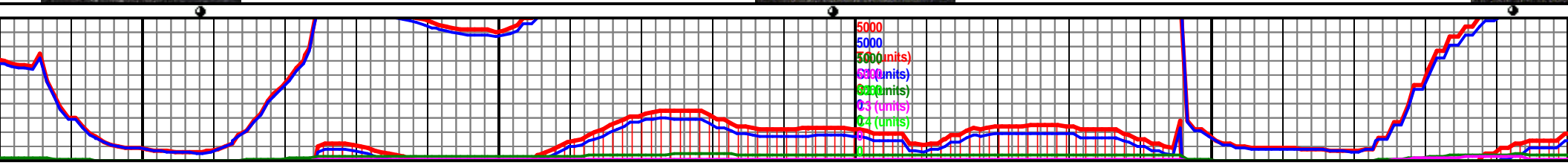
SS (100%) ltgy-transl-lt brn,qtzse, lvf gr, sbang, m-p  
srt, shly, tr calcite, m-wk consol, cly cmt, est vis por  
10%, as above.

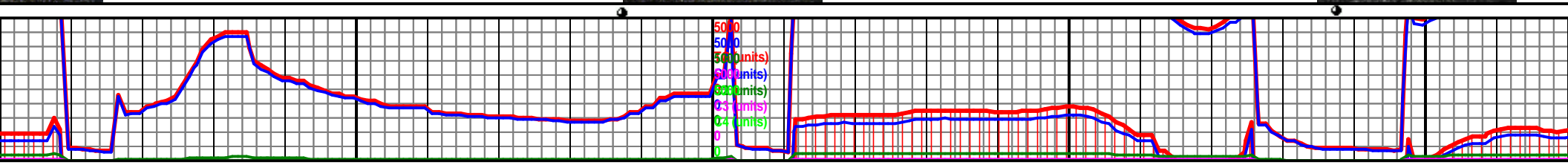
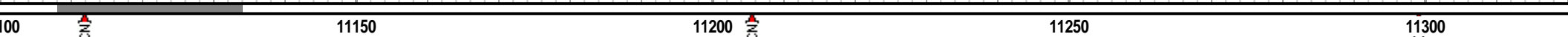
SS (90%) ltgy-transl-lt brn,qtzse, lvf gr, sbang, m-p  
srt, shly, tr calcite, m-wk consol, cly cmt, est vis por  
10%, near even o stn, wk flor, brt yel-brn slow strmg  
cut, SH (5%) dk gy, sbply, pred hd, fri, non calc.

SS (100%) ltgy-transl-lt brn, qt  
m-p srt, shly, tr calcite, m-wk co  
vis por 10%, near even o stn, w  
slow strmg cut,

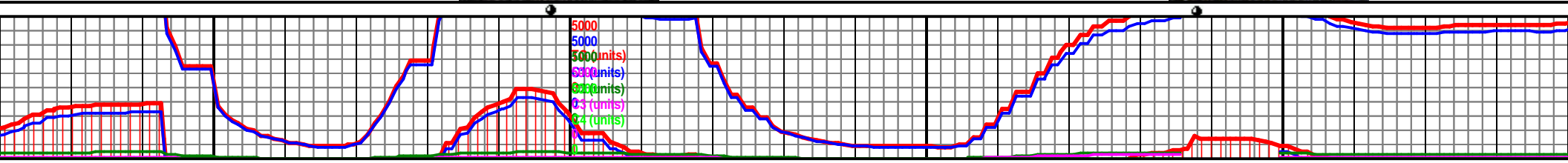
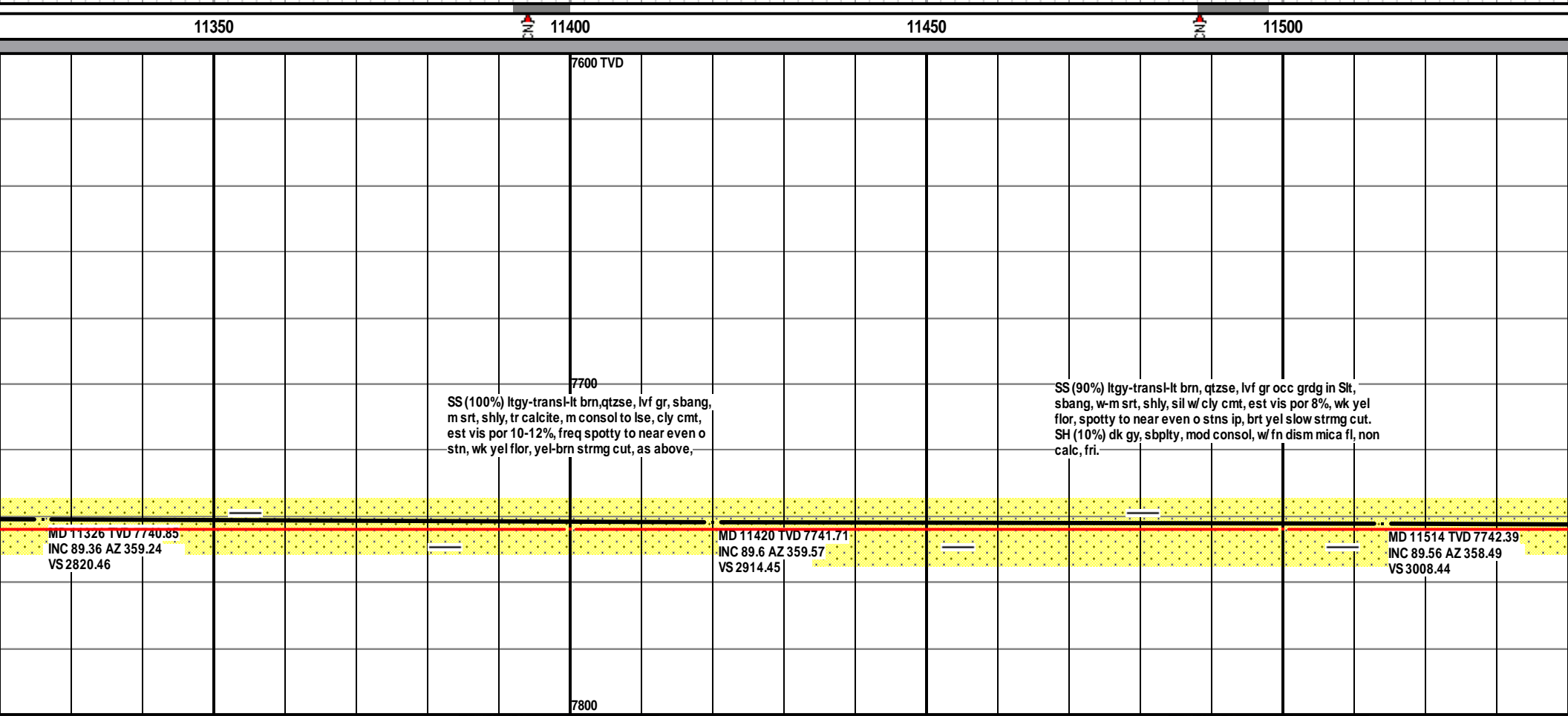
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INC 89.83 AZ 359.66  
VS 2442.48

MD 11042 TVD 7738.79  
INC 90.3 AZ 359.77  
VS 2536.48

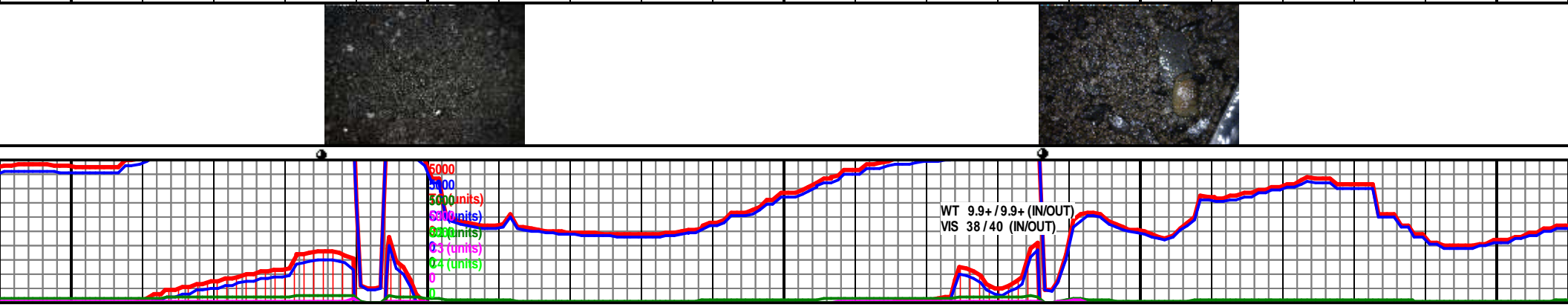
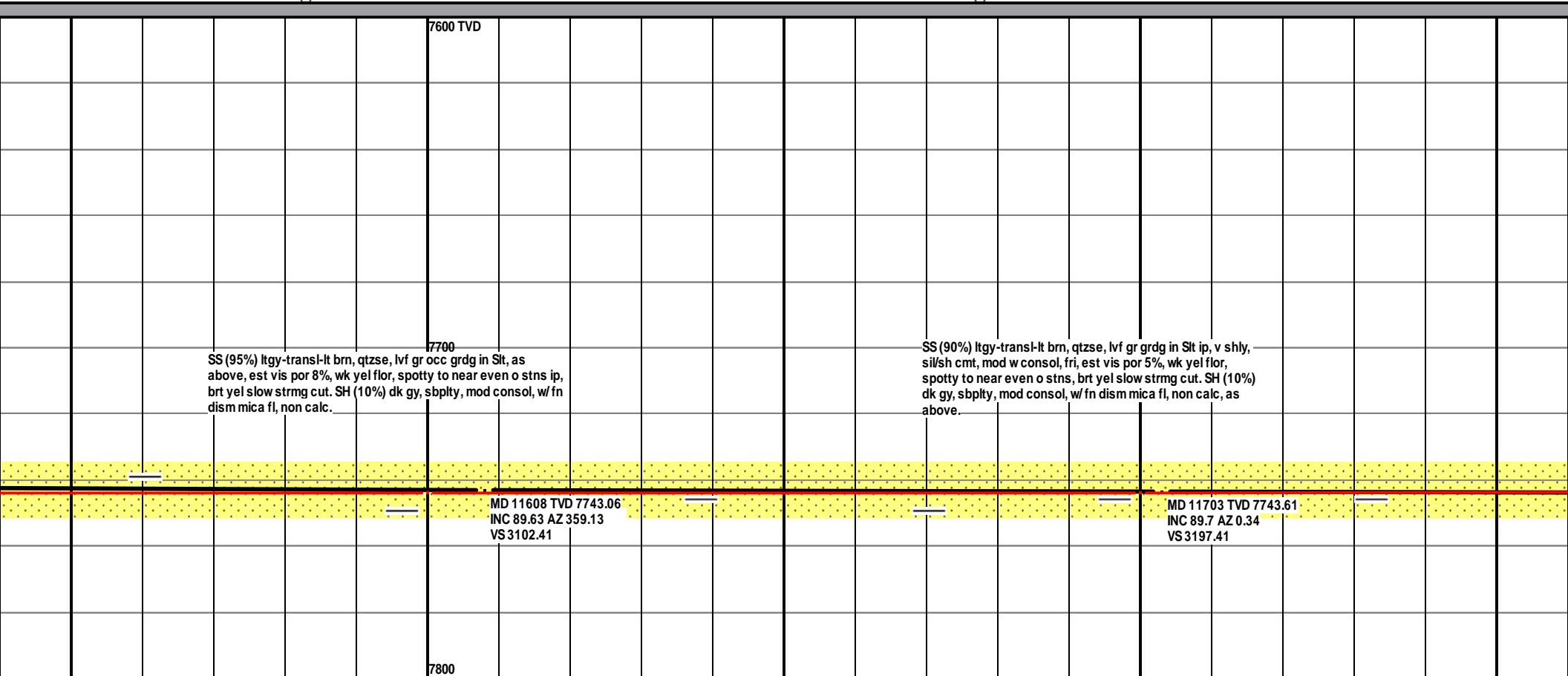


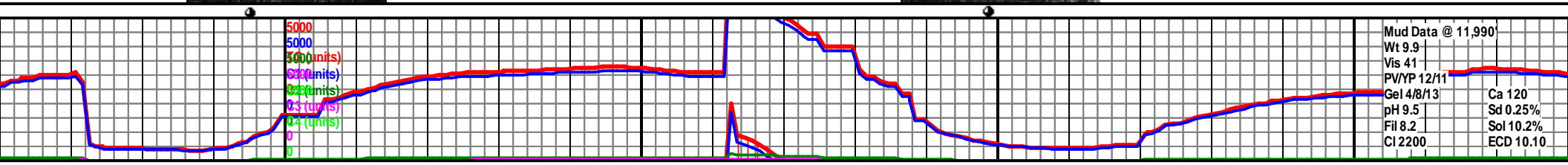
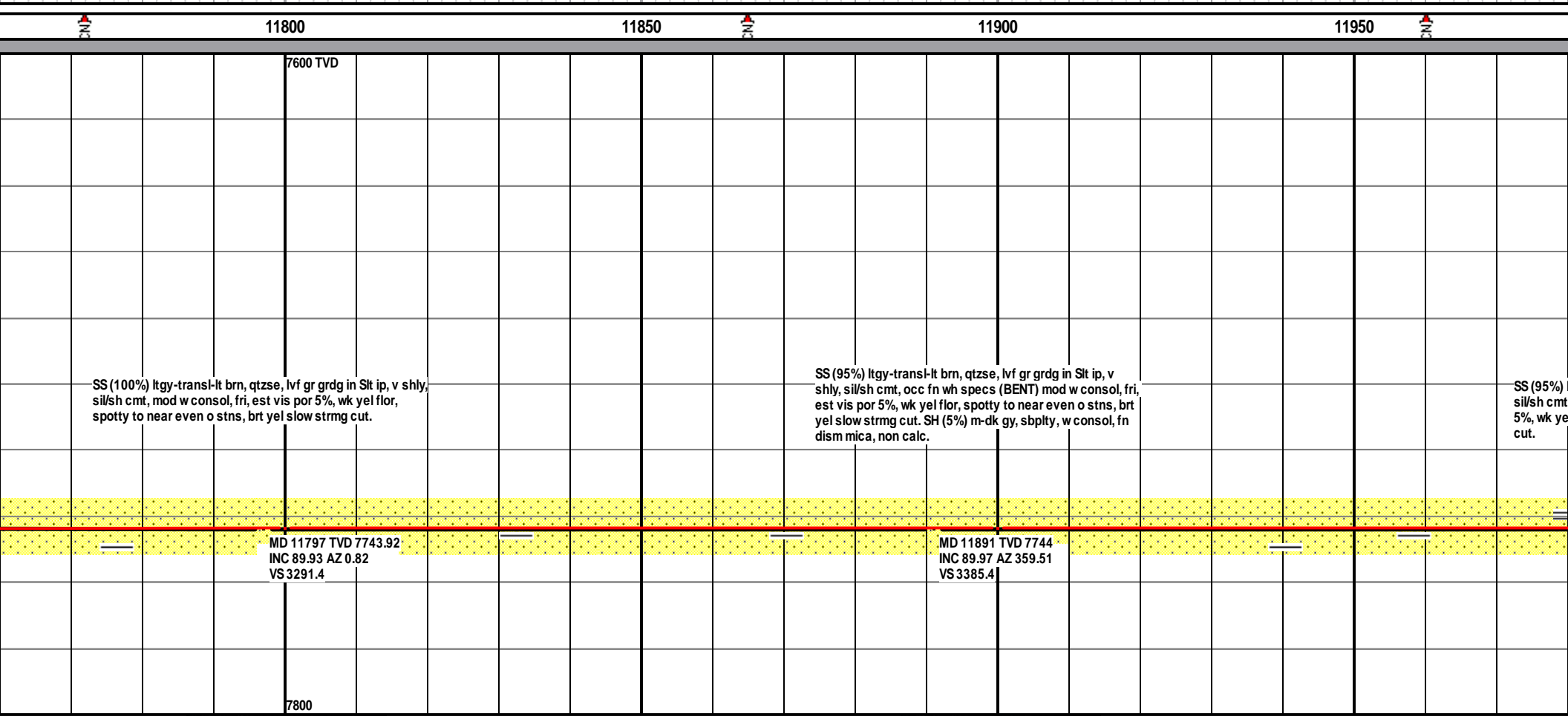
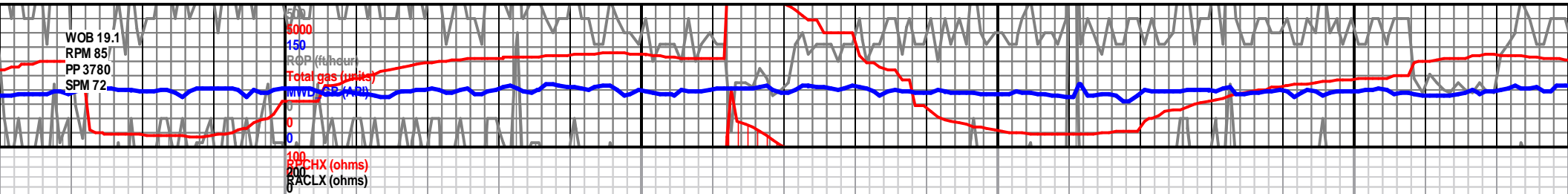


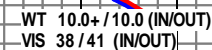
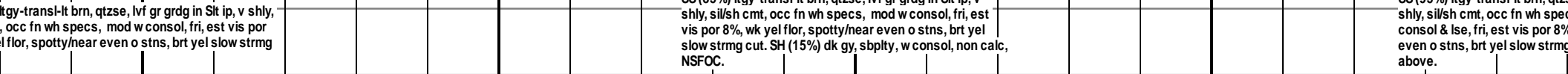


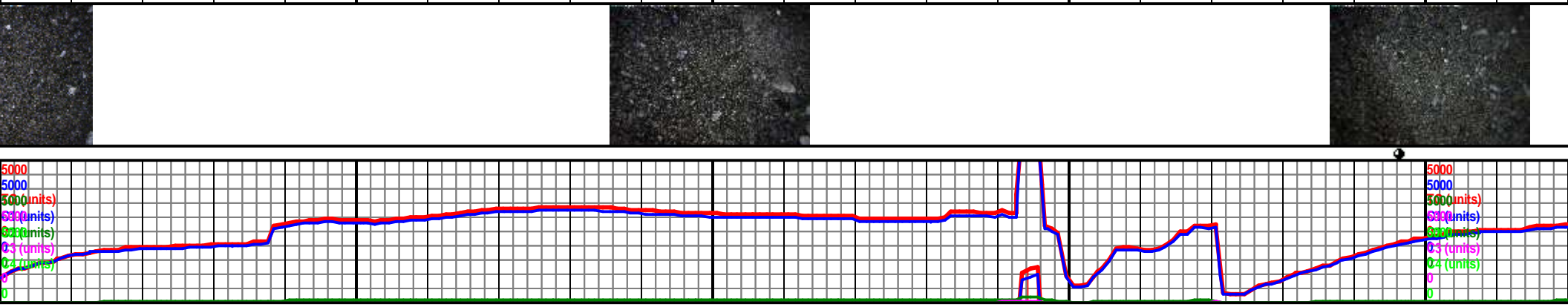
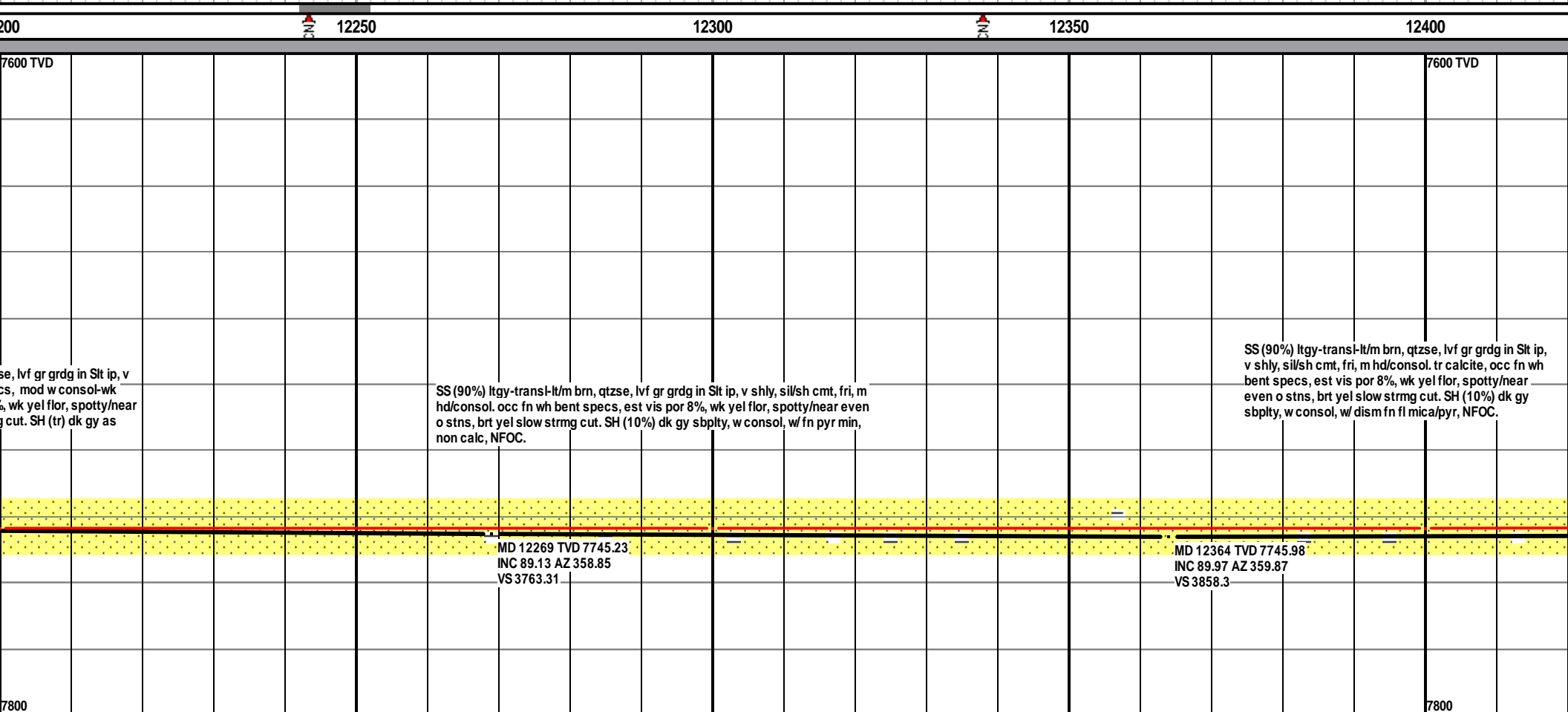


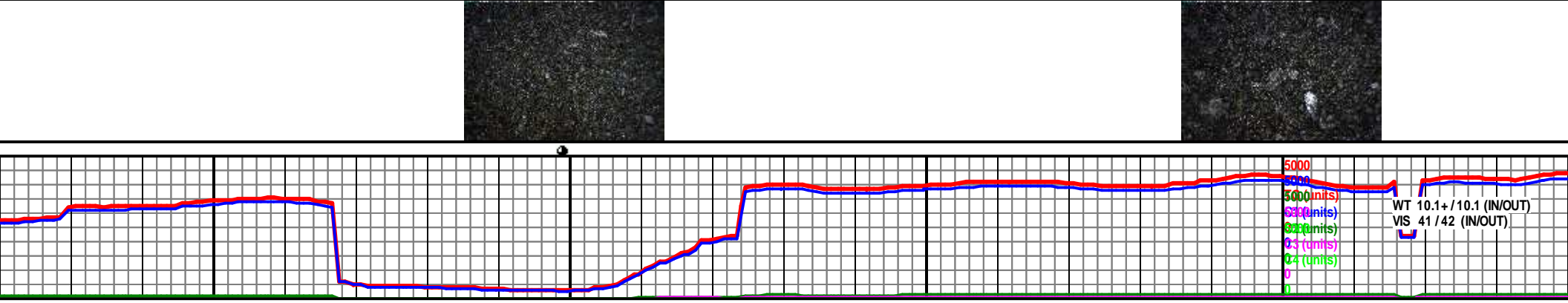
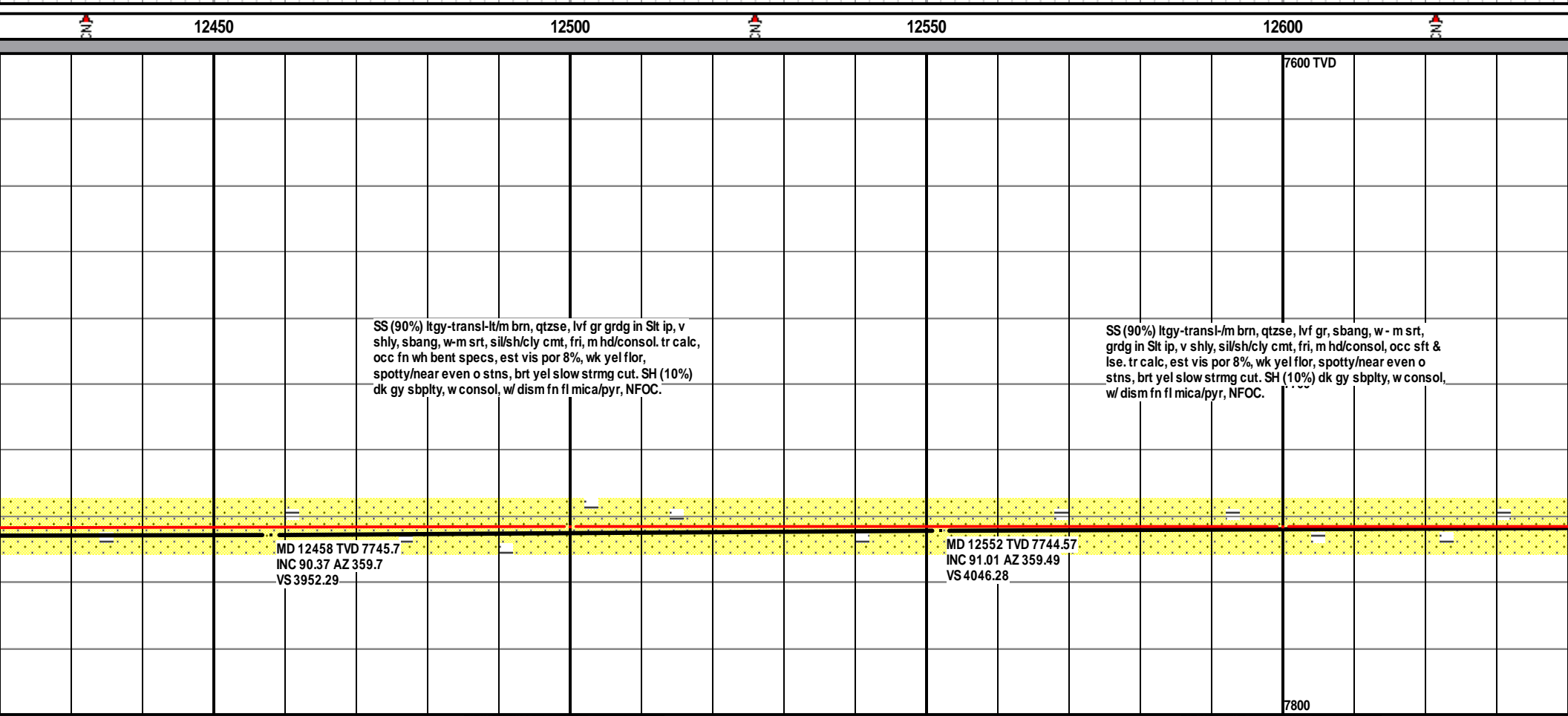


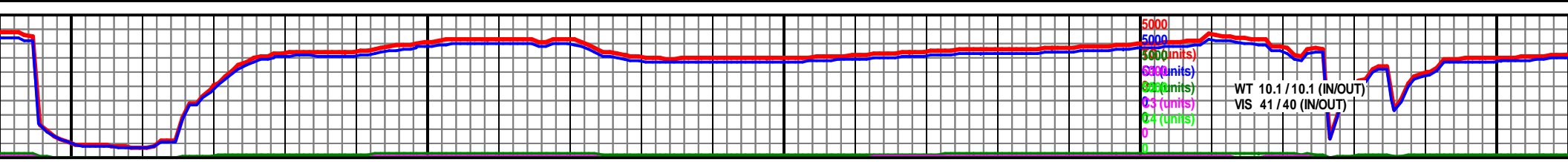
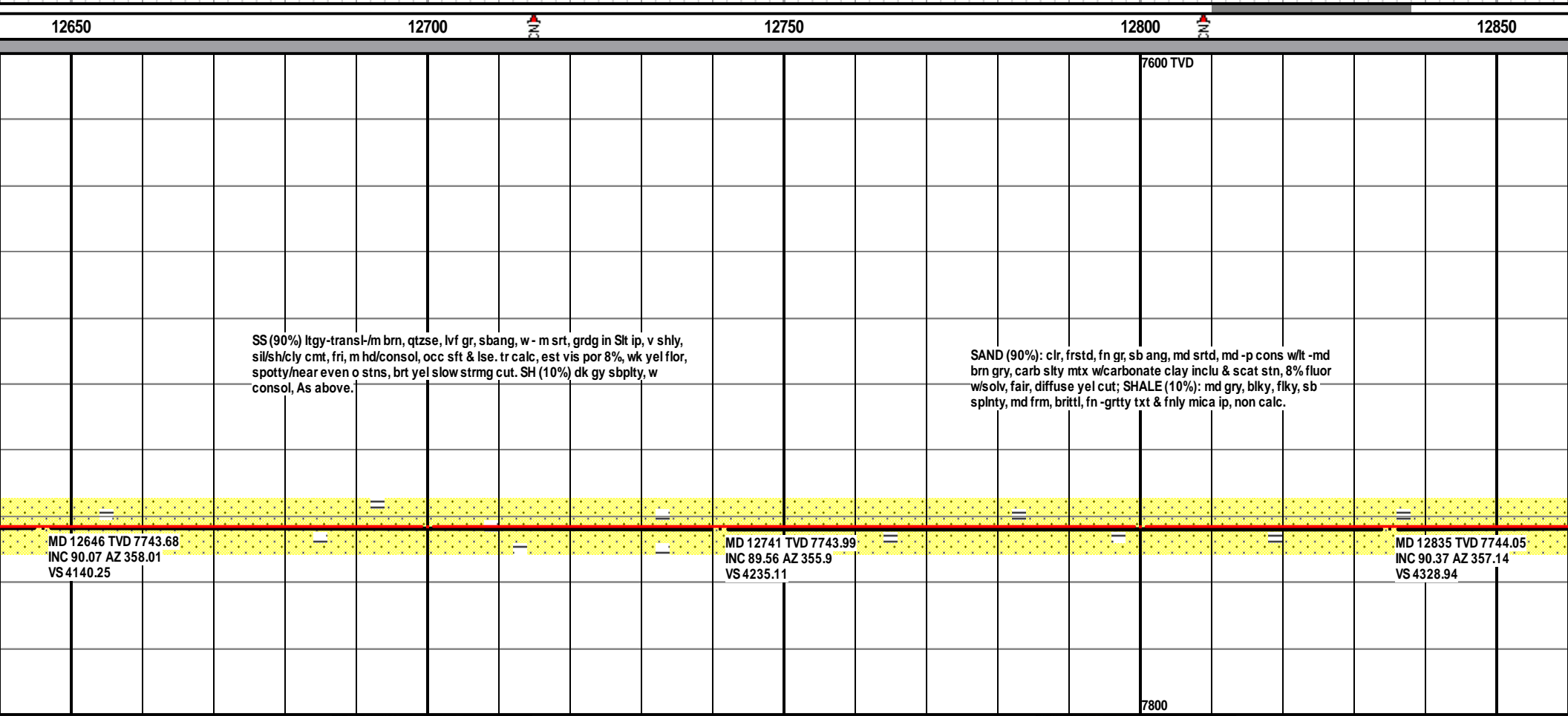
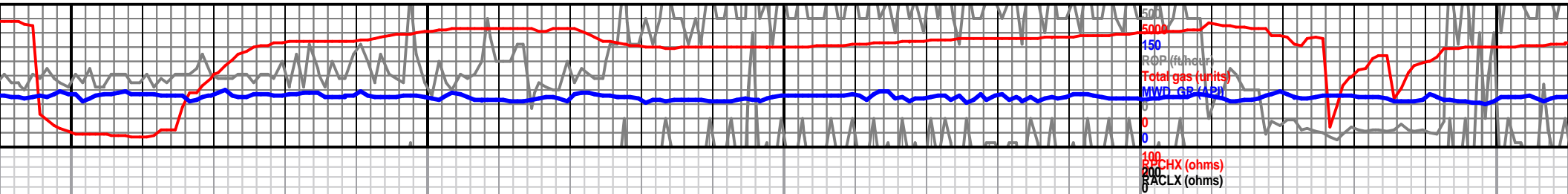


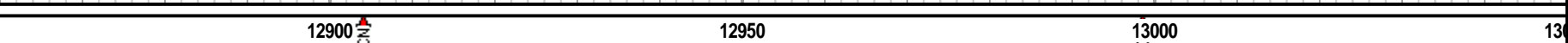






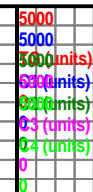






130

7800



5000
5000
5000 (units)
5000 (units)
5000 (units)
03 (units)
04 (units)
0
0