

OPERATOR: **Extraction Oil & Gas**

WELL NAME: **Livingston S20-25-3N**

FIELD NAME: DJ Basin - Wattenberg

DRILLING RIG: Patterson 901

API #: 05-014-20798

LAT/LONG: 39.97856, -105.039094

SURFACE HOLE: NESE S7-T1S-R68W, 2330' FSL, 1240' FEL

BOTTOM HOLE: S20-T1S-R68W, 2185' FNL, 552' FWL

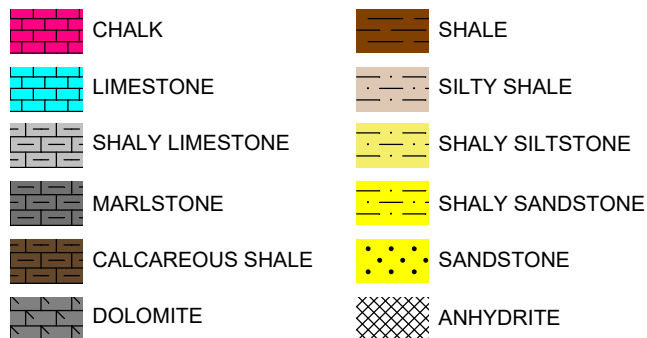


Earth Science Agency, LLC

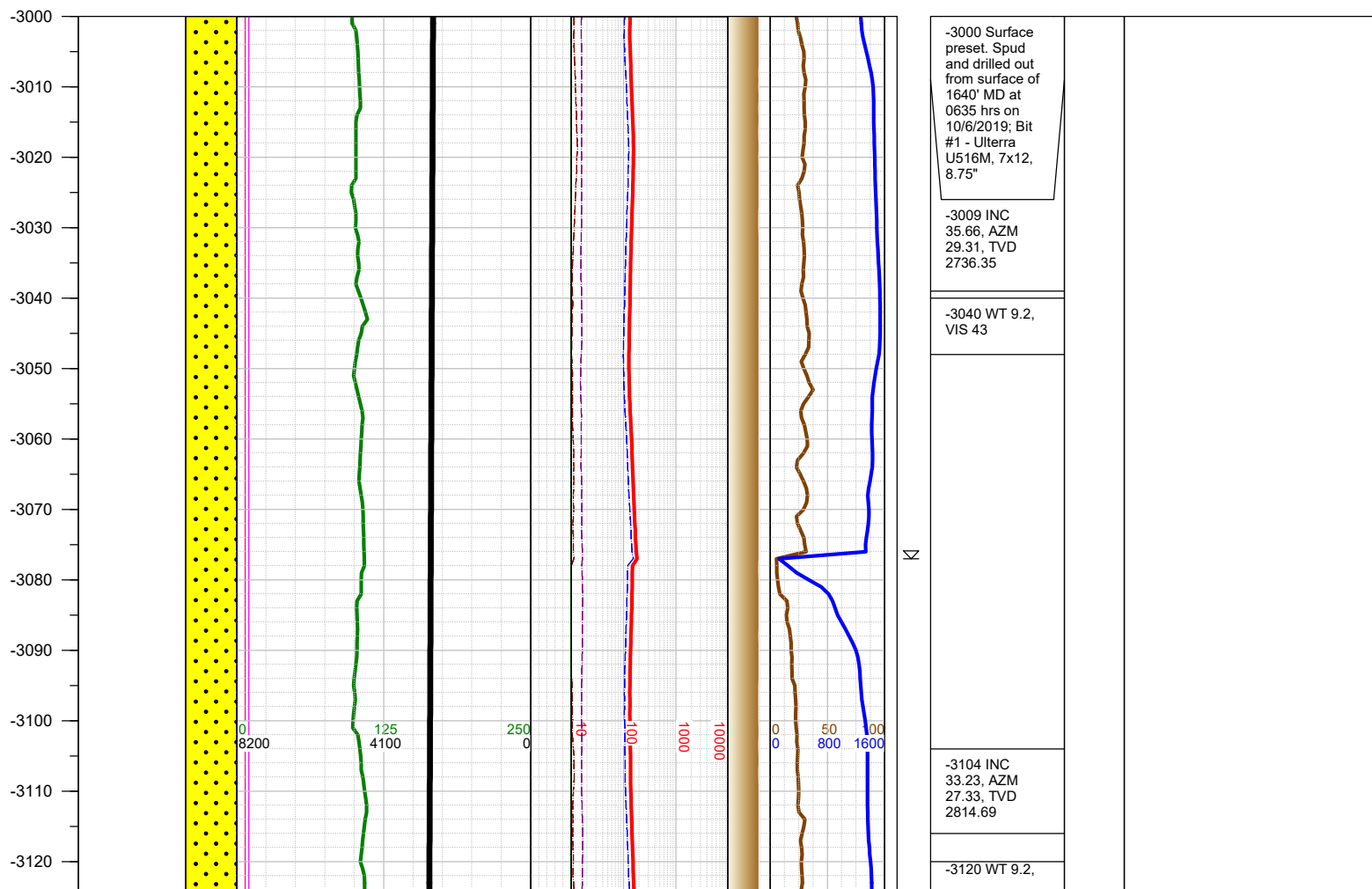
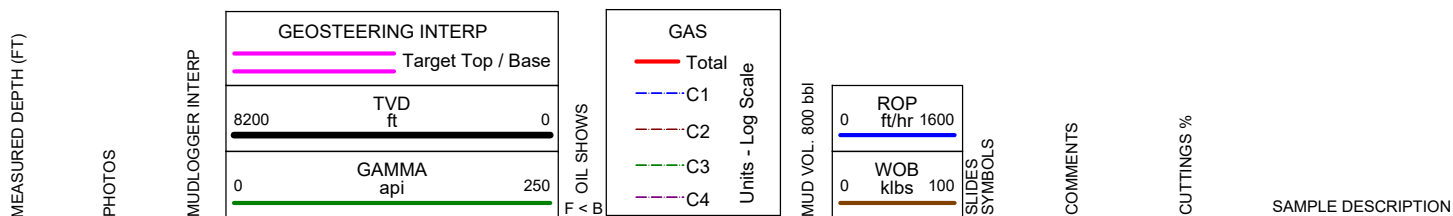
COUNTY: Broomfield  
STATE: Colorado  
GROUND ELEVATION: 5329'  
KELLY BUSHING: 5358'  
DRILLING FLUID: OBM  
TVD VS. MD: 8049' / 21485'  
SPUD DATE: October 6, 2019  
TD DATE: October 11, 2019

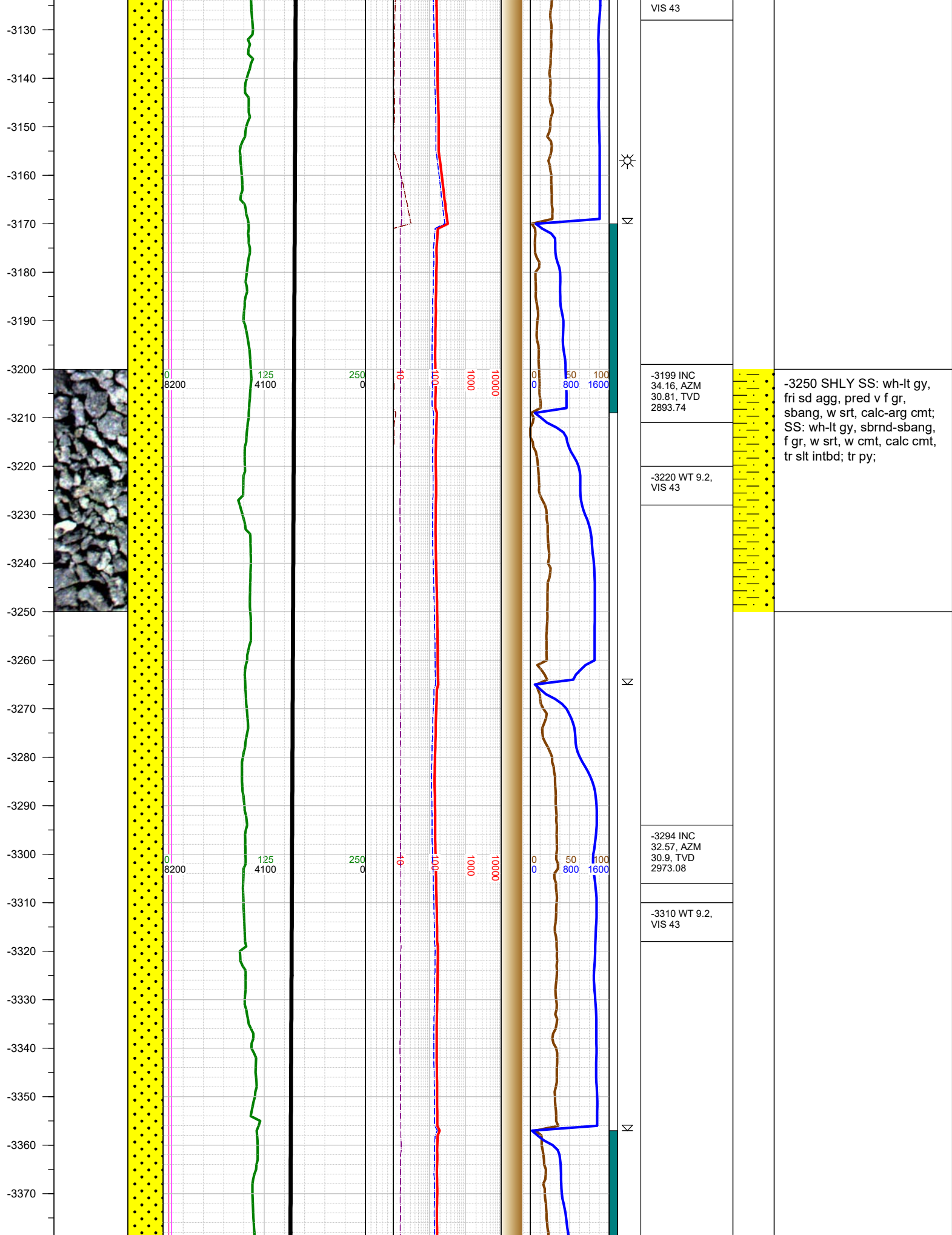
DEPTHS LOGGED: 3000' - 21485'  
DATES LOGGED: October 6, 2019 - October 11, 2019  
GEOLOGISTS: Curtis Magnino, Ross Apodaca  
SCALE: 5" = 100'

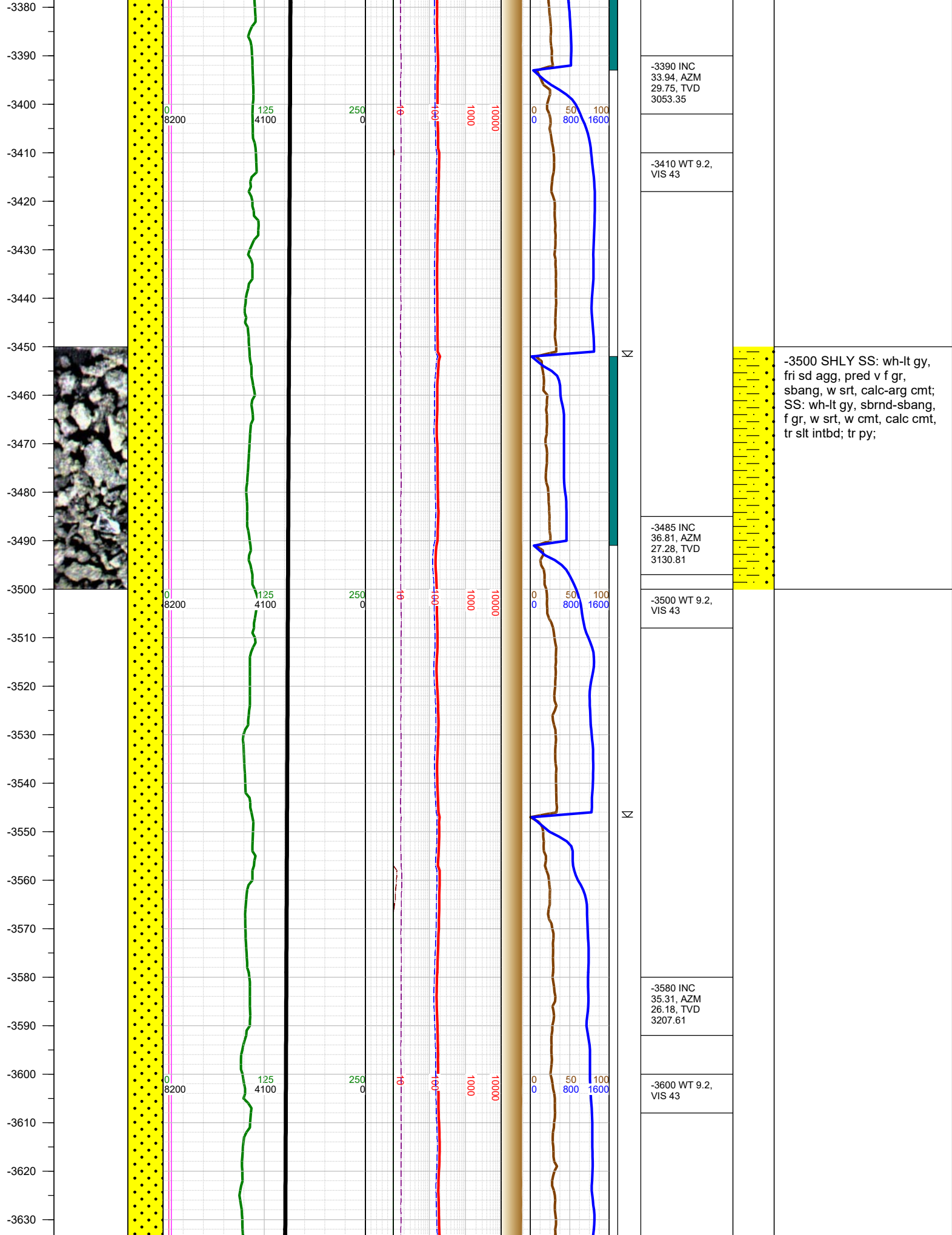
#### LEGEND

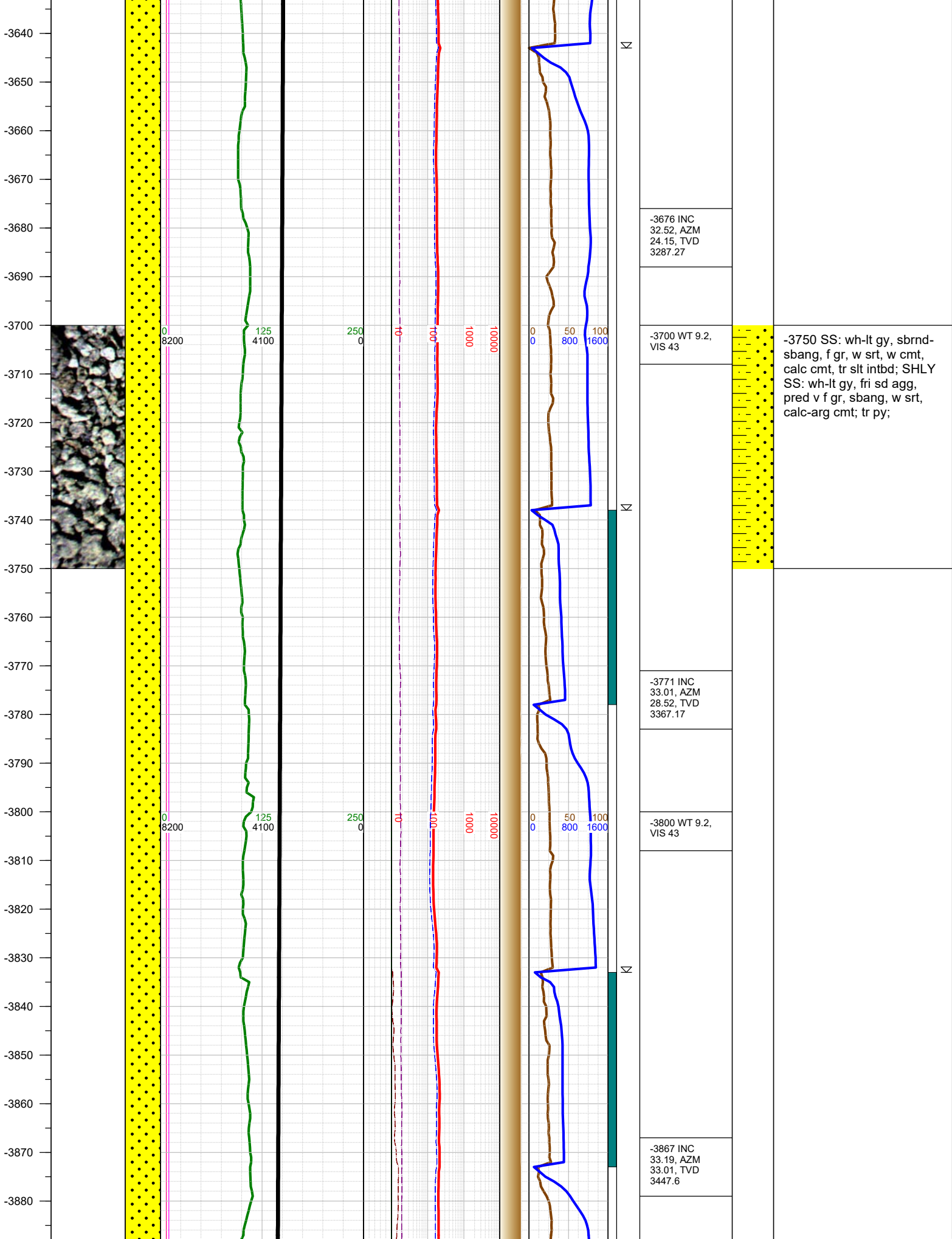


FORMATION  $\approx$  CONNECTION  $\Delta$  MIDNIGHT NEW BIT GAS SHOW FAULT



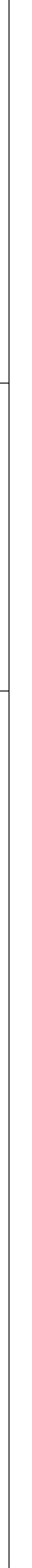
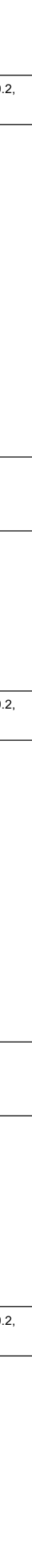
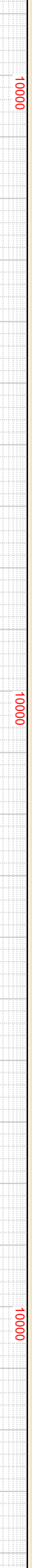
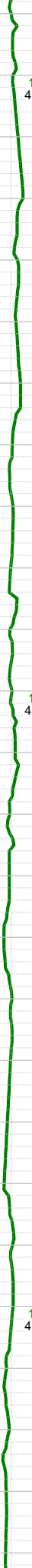
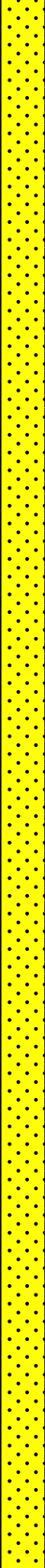
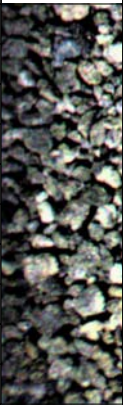








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-4120  
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-4140



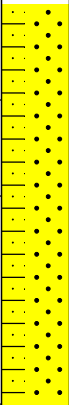
-3900 WT 9.2,  
VIS 43

-3962 INC  
33.32, AZM  
34.77, TVD  
3527.04

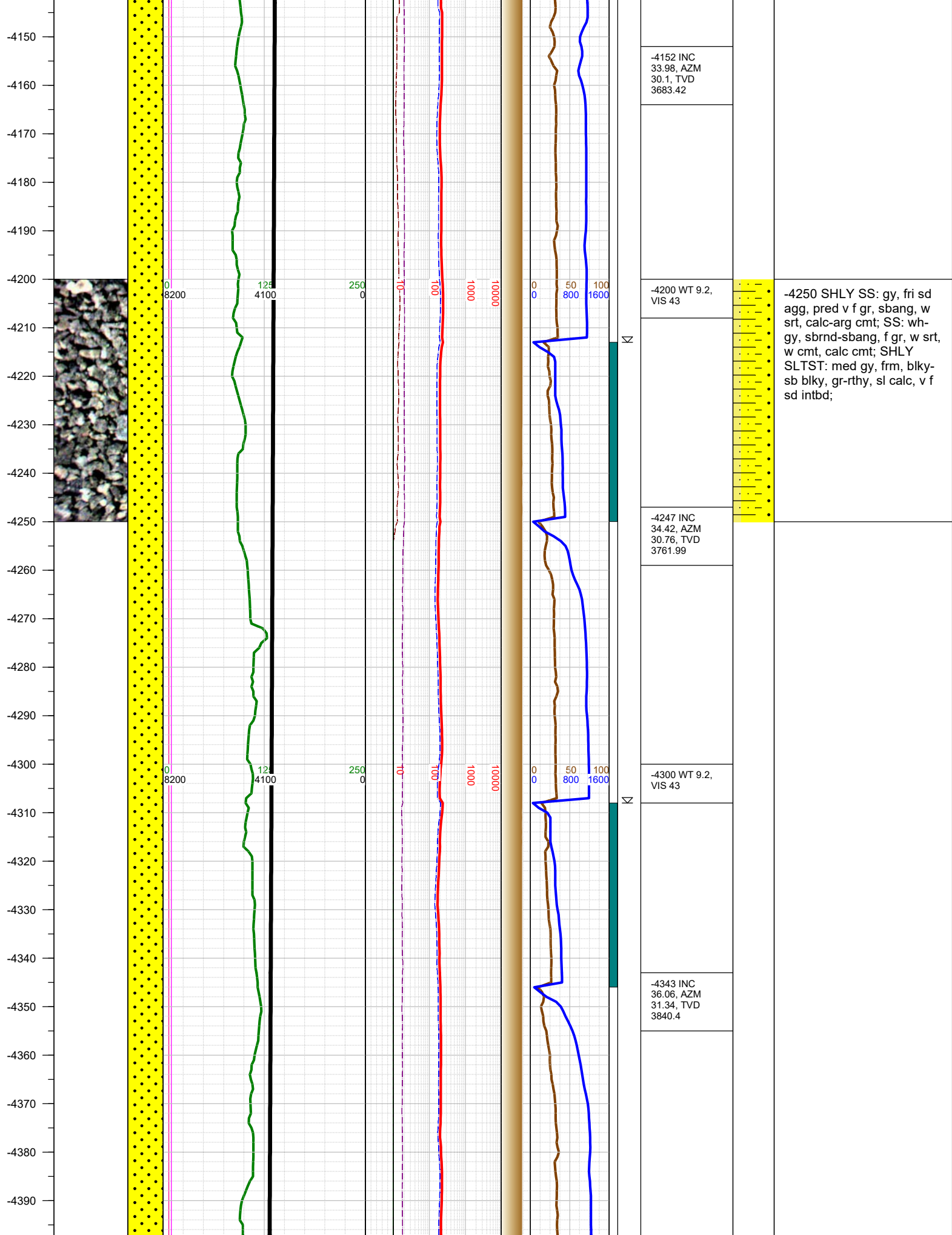
-4000 WT 9.2,  
VIS 43

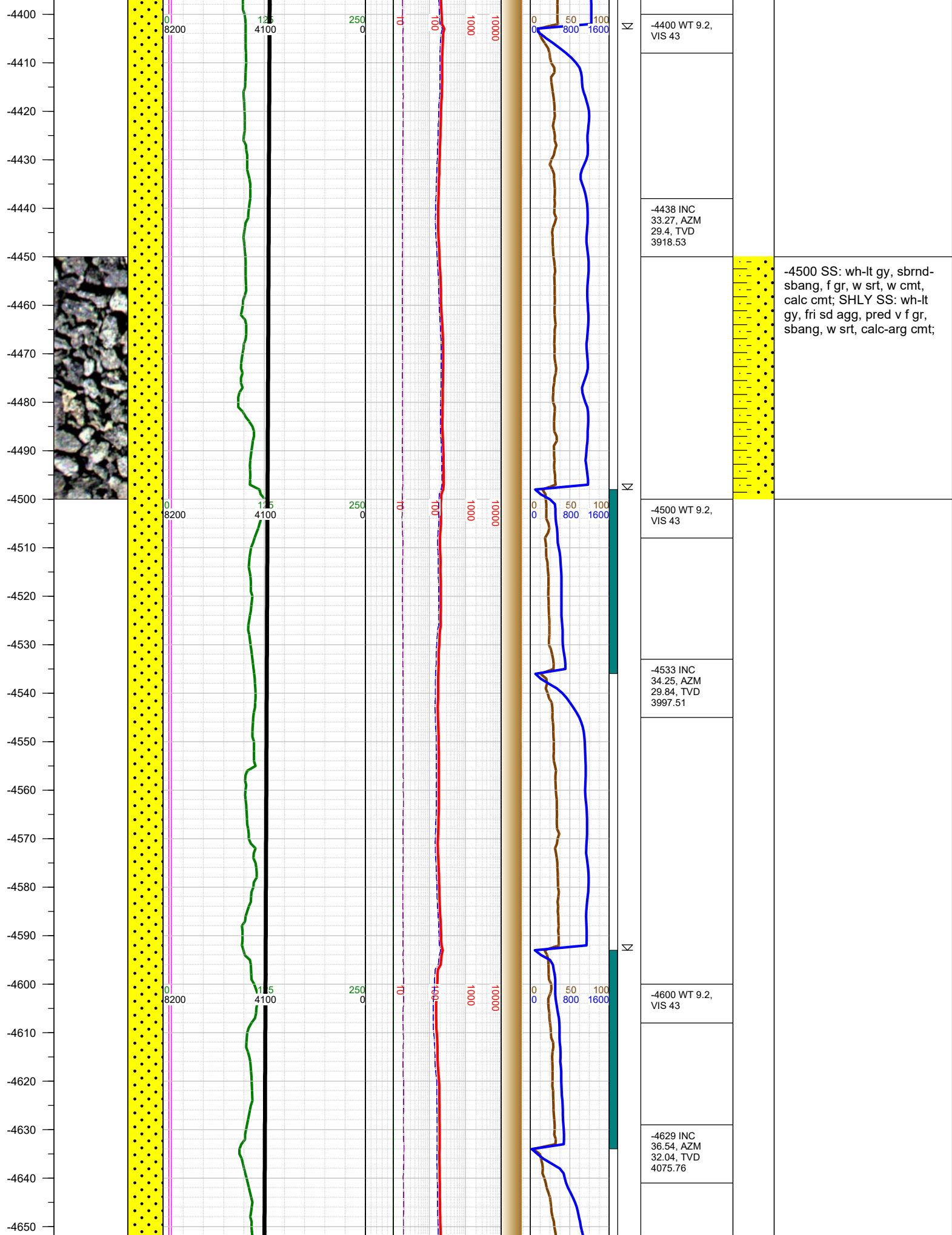
-4057 INC  
35.57, AZM  
31.6, TVD  
3605.39

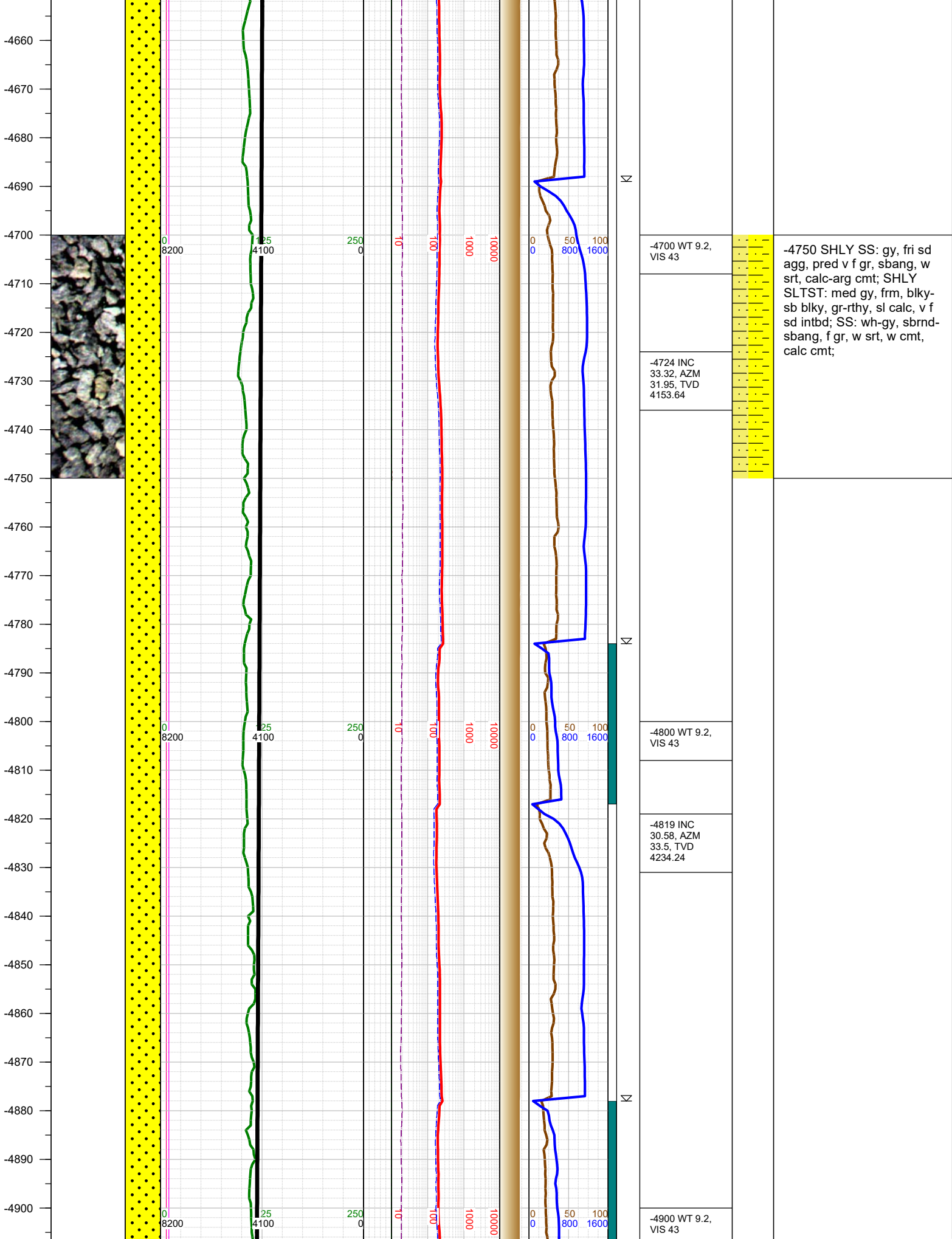
-4100 WT 9.2,  
VIS 43



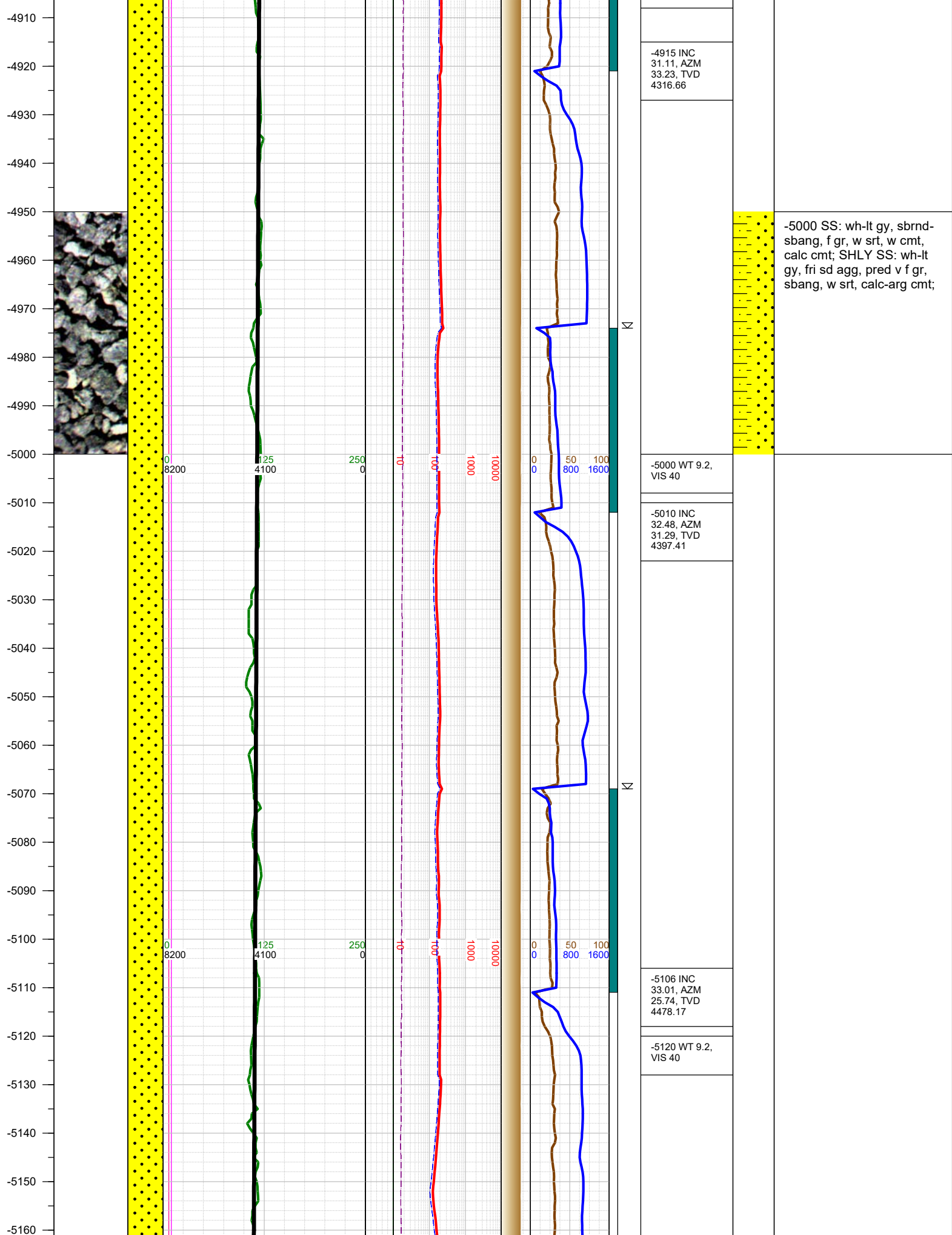
-4000 SS: wh-lt gy, sbrnd-  
sbang, f gr, w srt, w cmt,  
calc cmt, tr slt intbd; SHLY  
SS: wh-lt gy, fri sd agg,  
pred v f gr, sbang, w srt,  
calc-arg cmt; tr py;

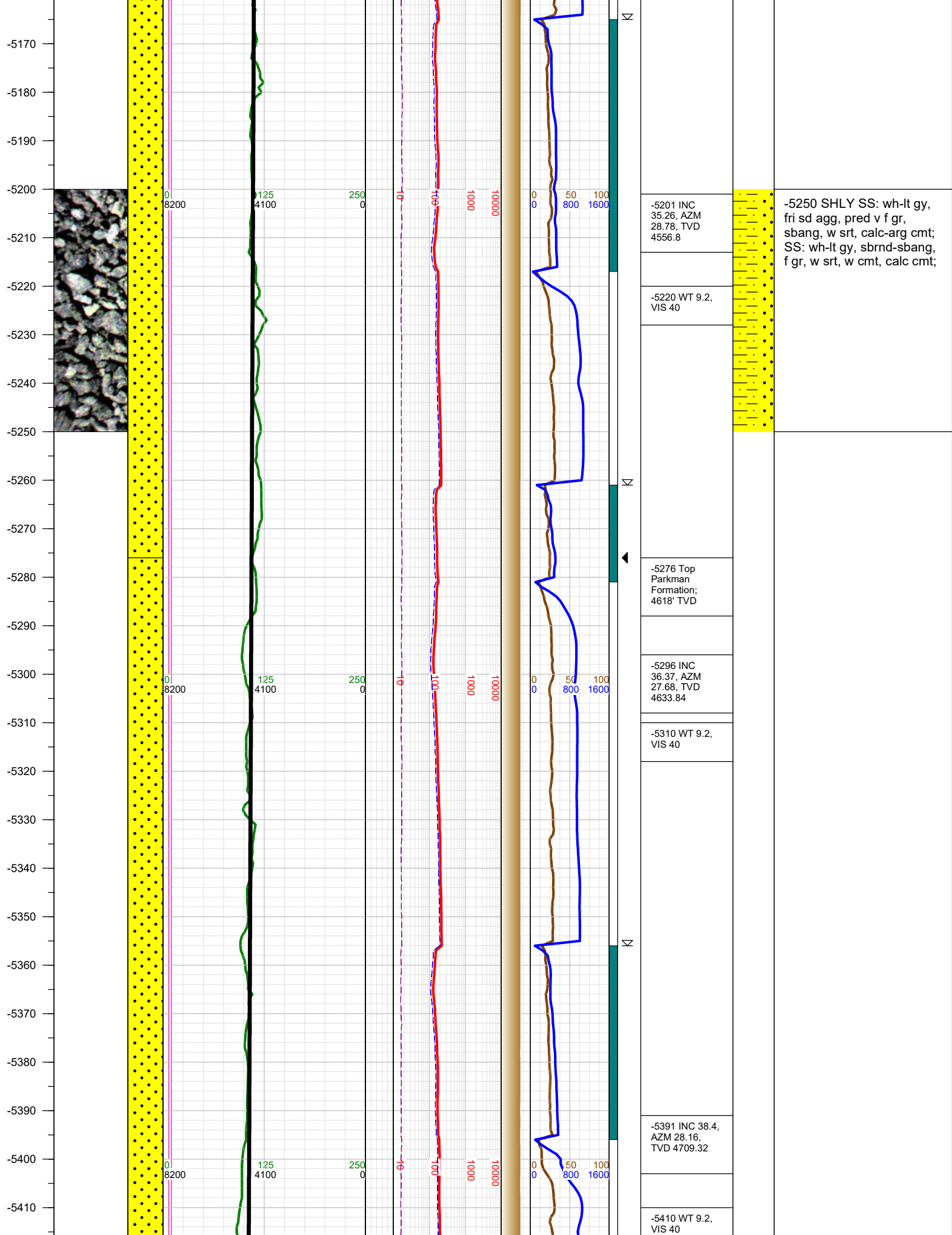




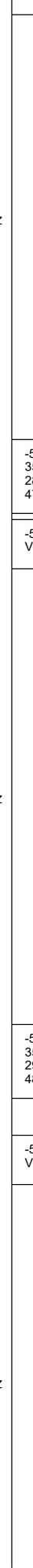
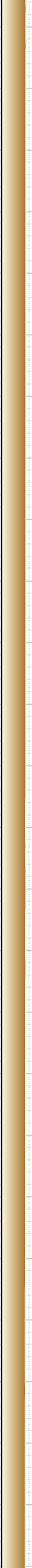
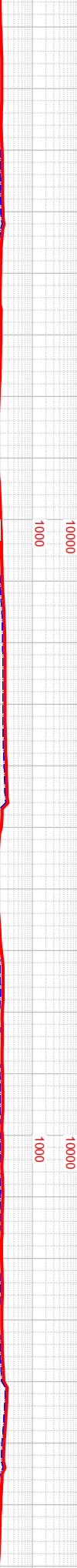
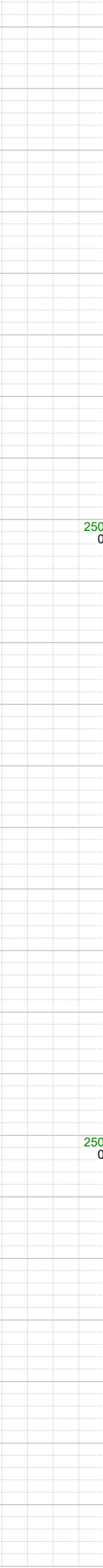
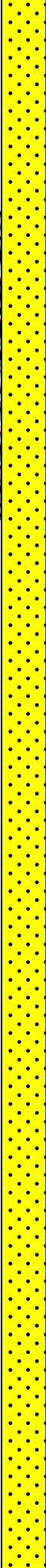
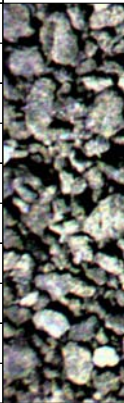








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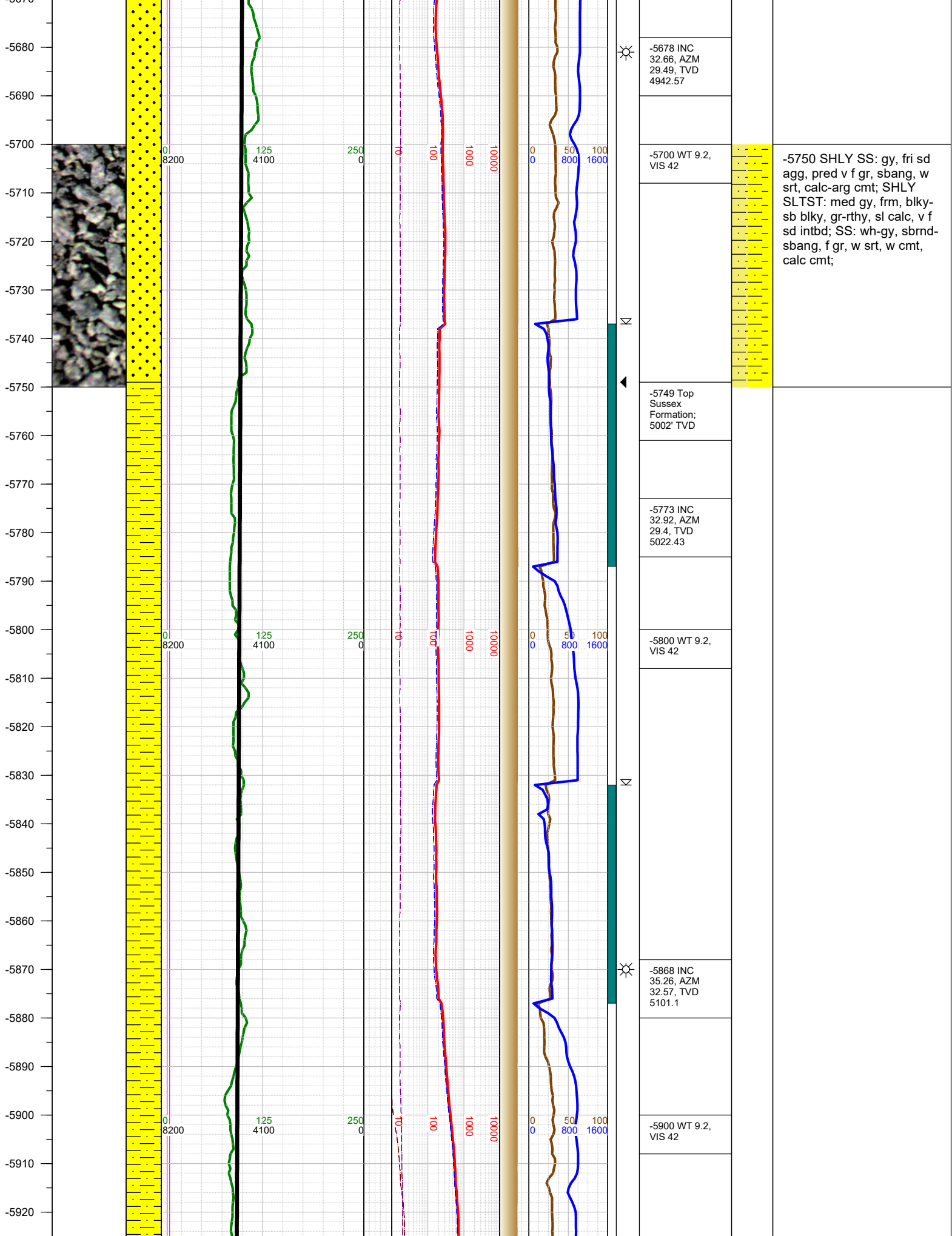
-5500 SS: wh-lt gy, sbrnd-sbang, f gr, w srt, w cmt, calc cmt; SHLY SS: wh-lt gy, fri sd agg, pred v f gr, sbang, w srt, calc-arg cmt;

-5487 INC  
35.79, AZM  
28.12, TVD  
4785.89

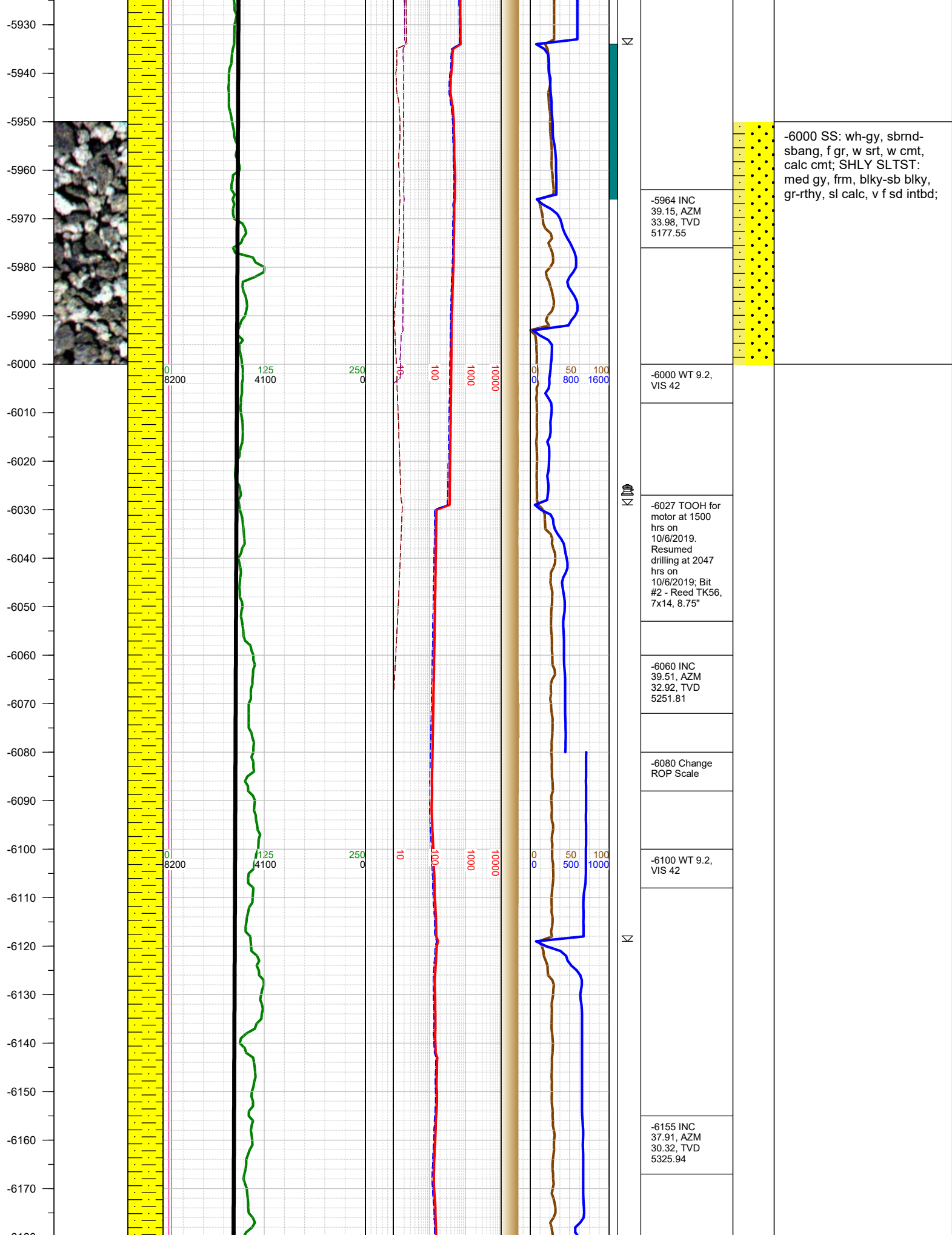
-5500 WT 9.2,  
VIS 40

-5582 INC  
35.53, AZM  
29.35, TVD  
4863.07

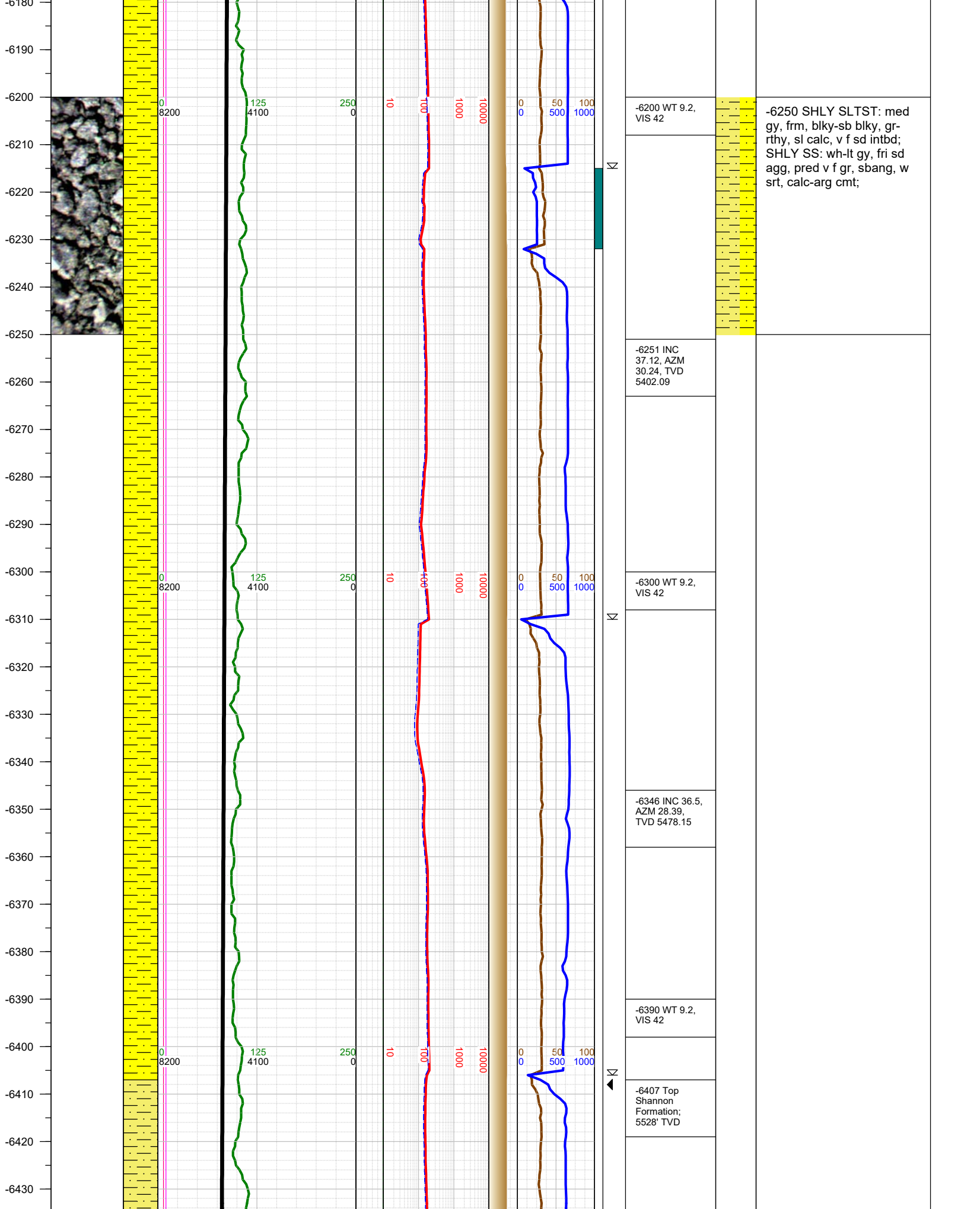
-5600 WT 9.2,  
VIS 42

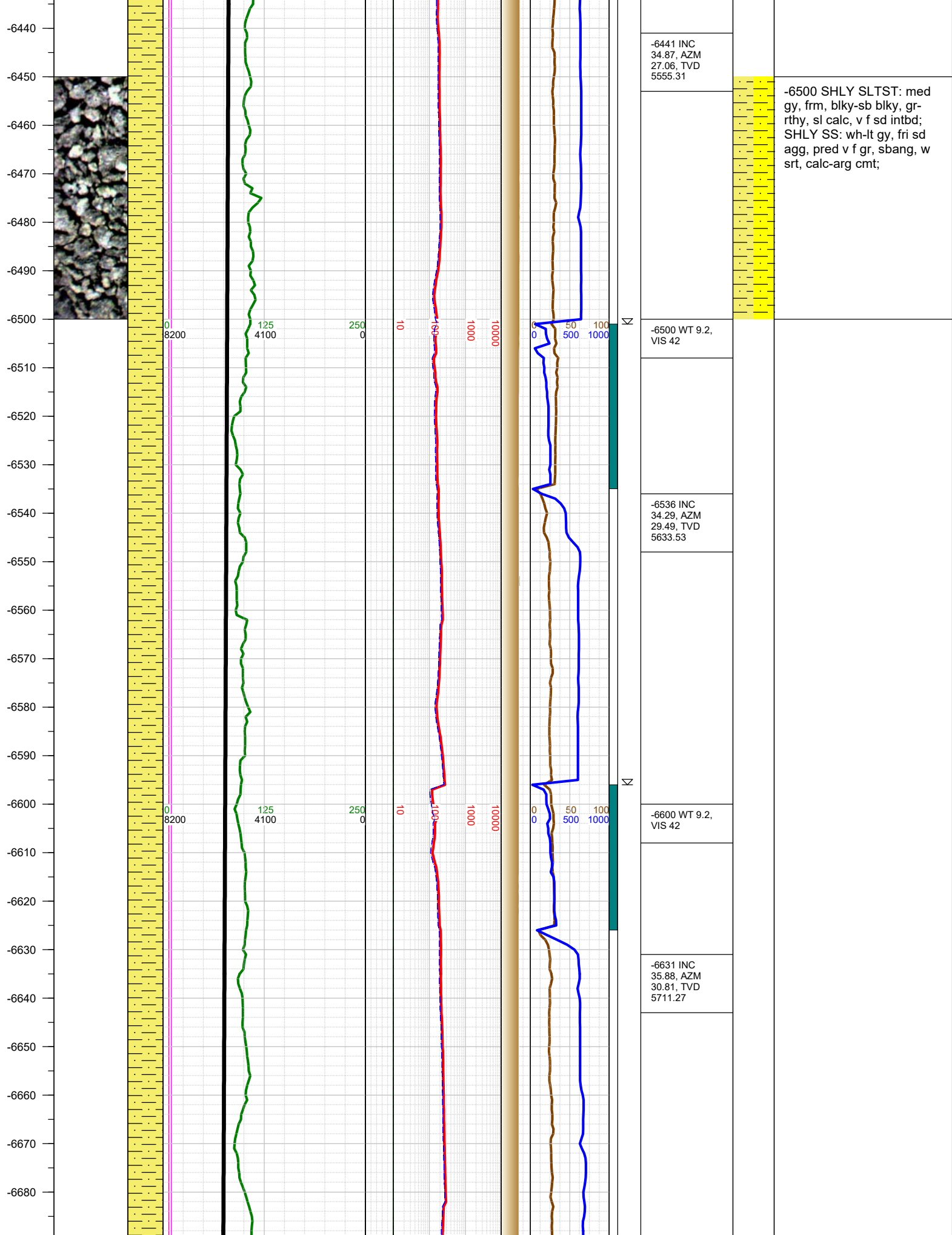


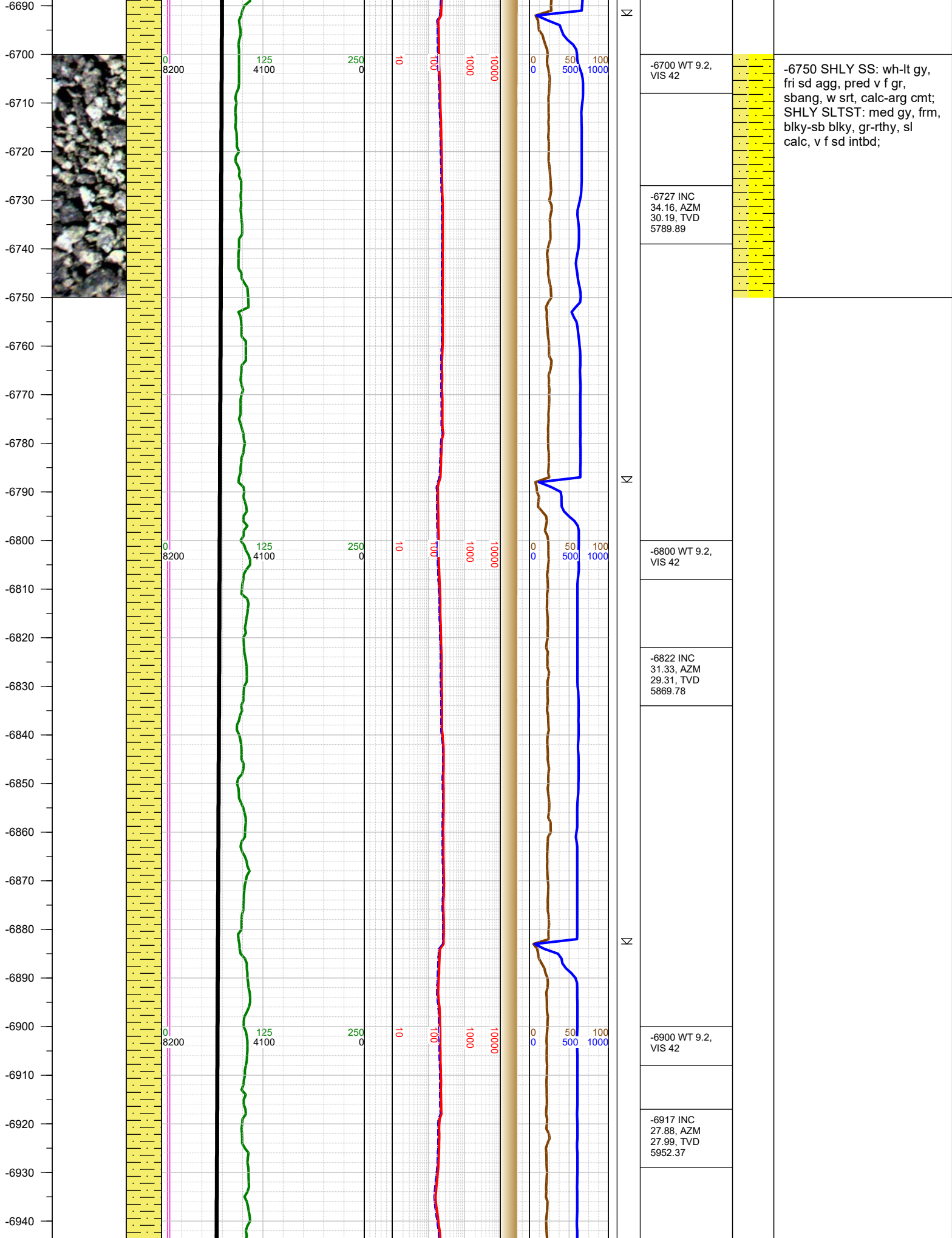




-6000 SS: wh-gy, sbrnd-sbang, f gr, w srt, w cmt, calc cmt; SHLY SLTST: med gy, frm, blk-sb blk, gr-rthy, sl calc, v f sd intbd;

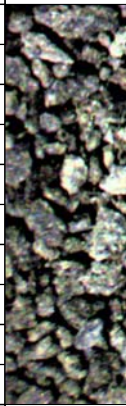








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1000

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-7000 WT 9.2,  
VIS 42

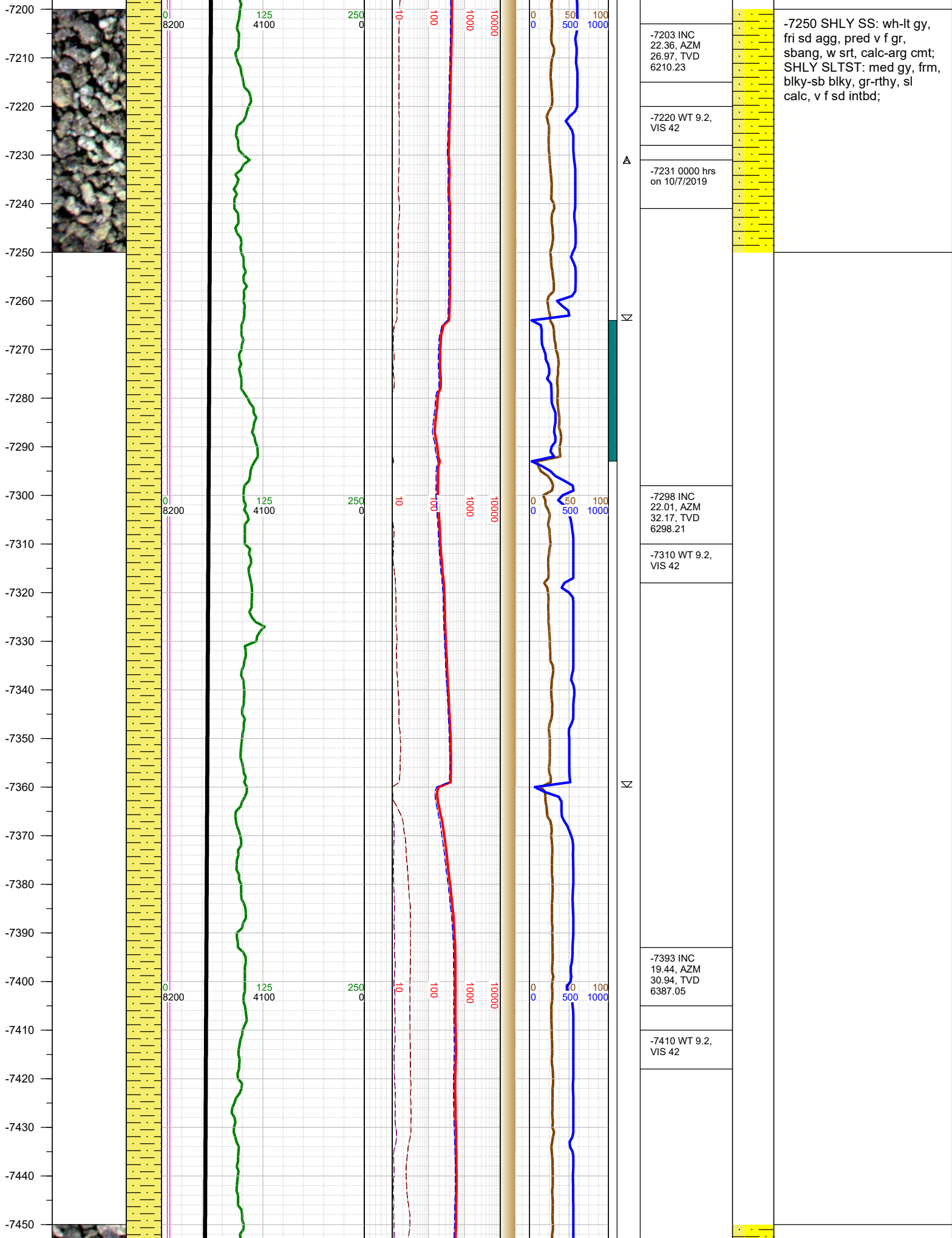
-7012 INC  
26.43, AZM  
29.53, TVD  
6036.89

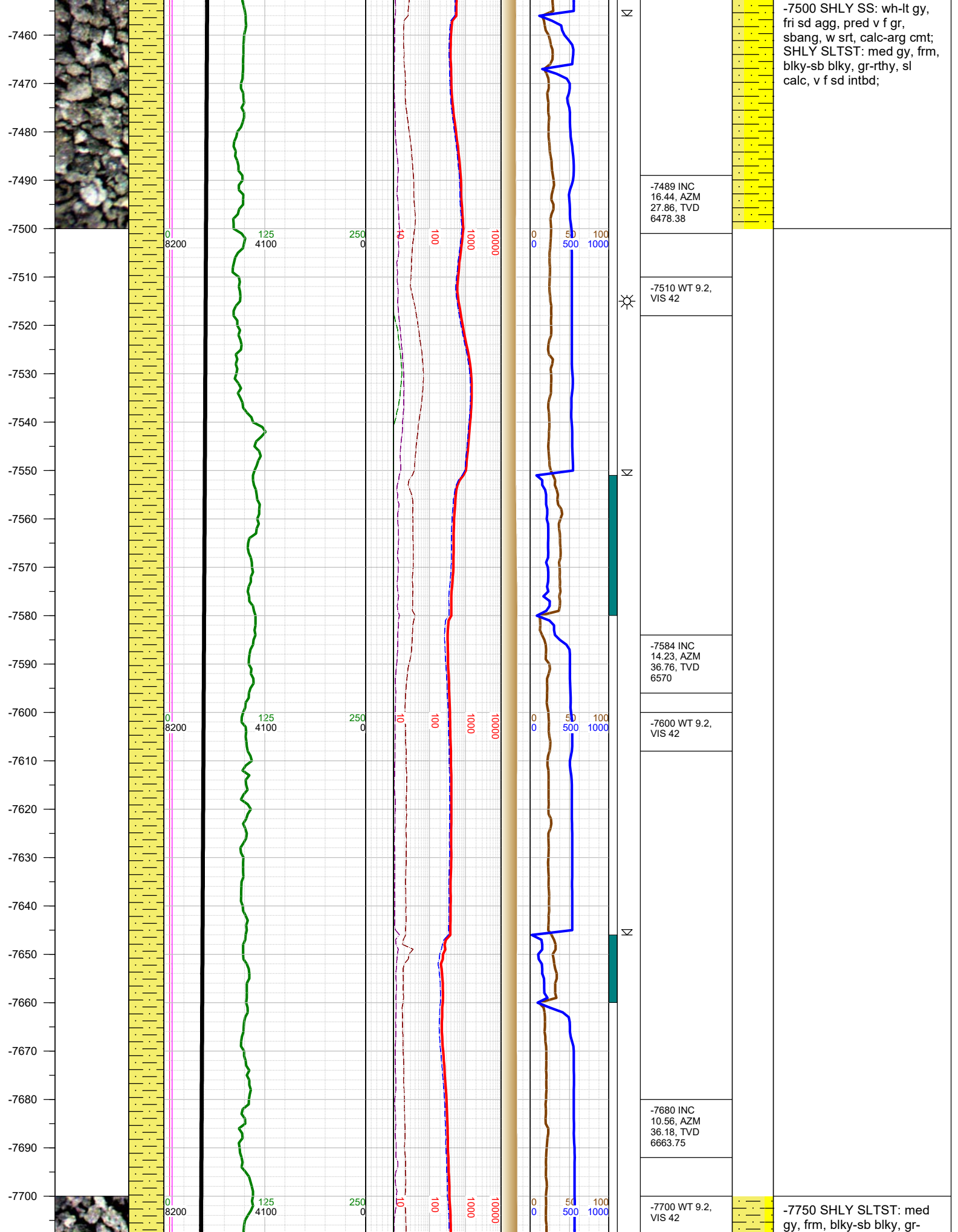
-7107 INC  
25.23, AZM  
28.43, TVD  
6122.4

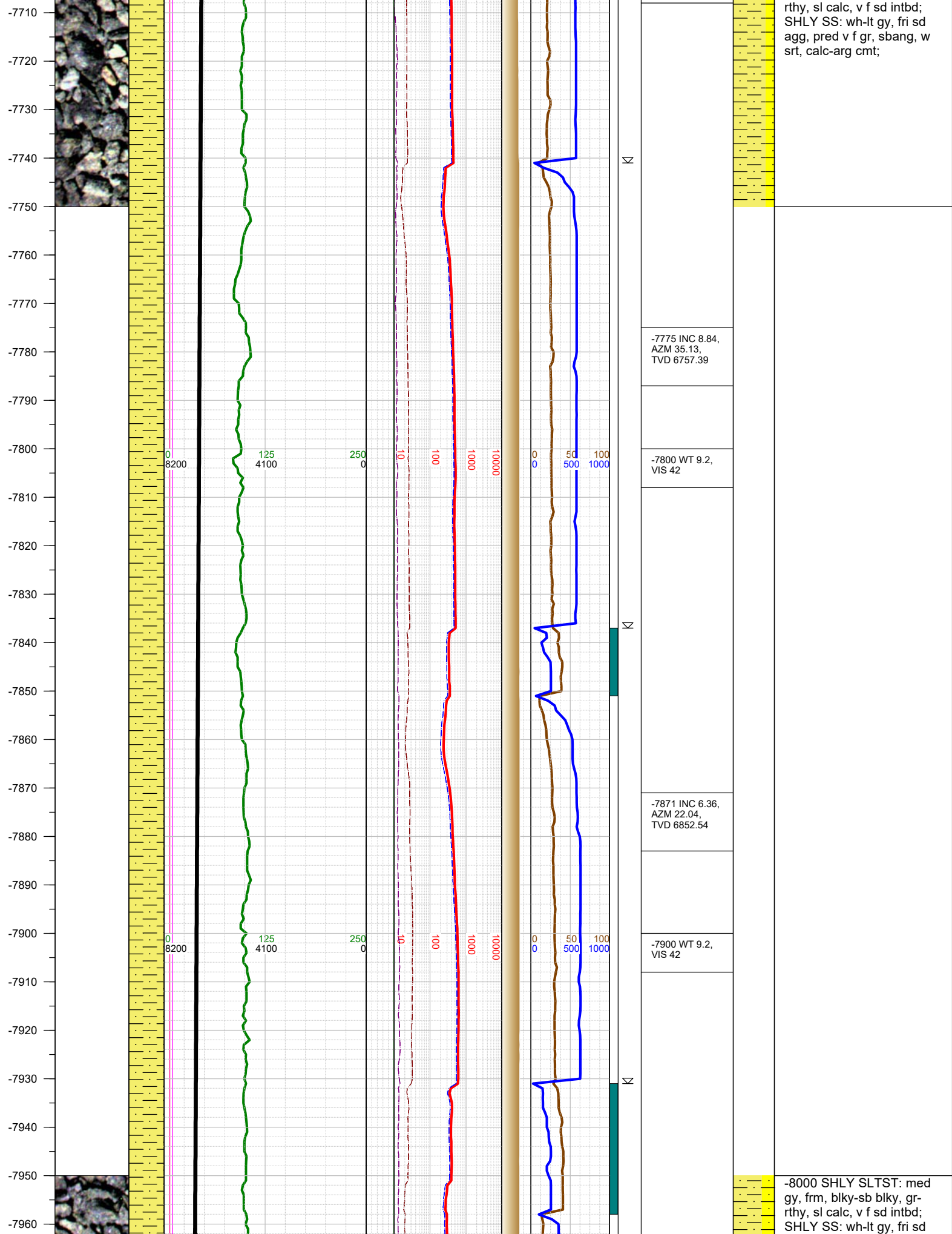
-7120 WT 9.2,  
VIS 42



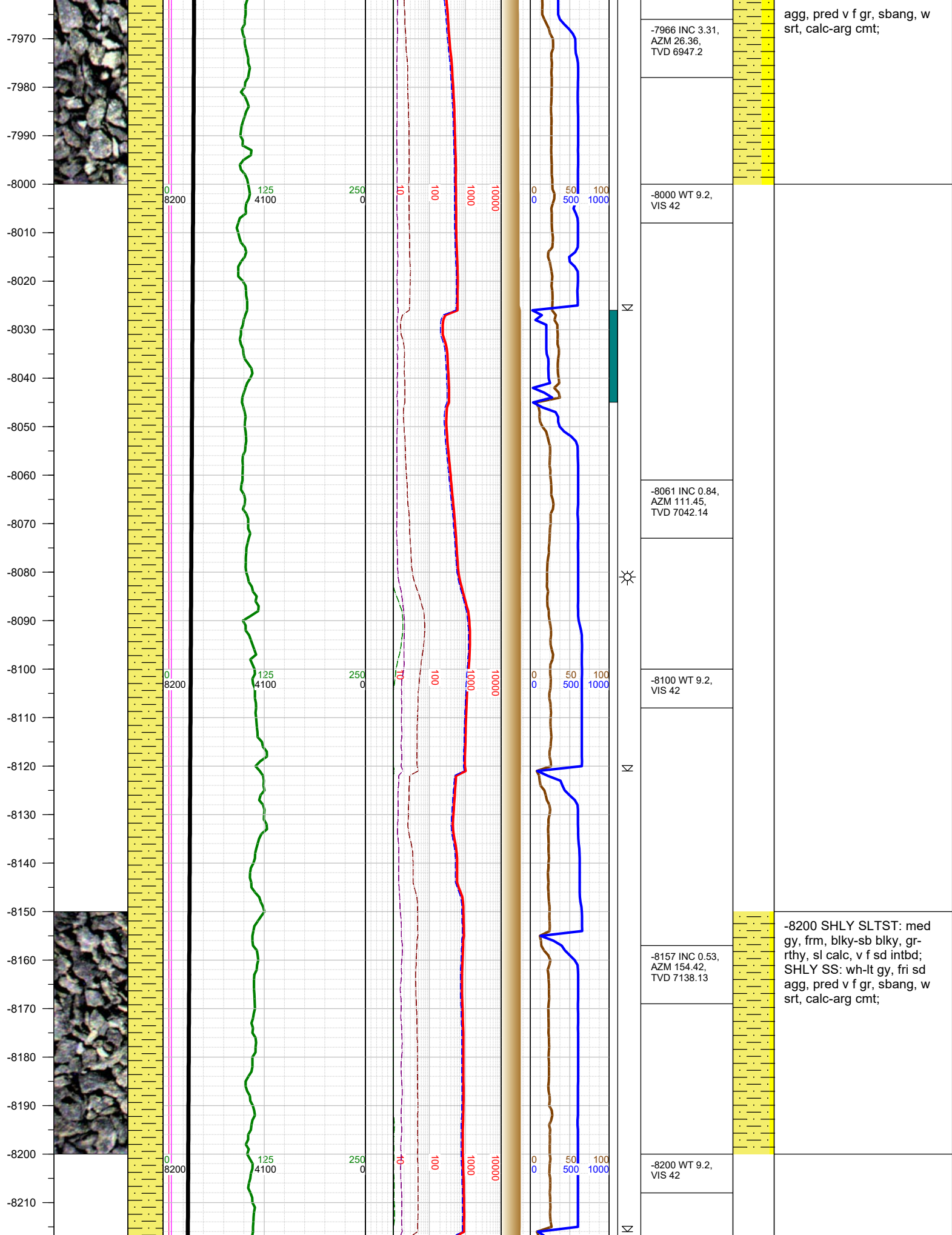
-7000 SHLY SLTST: med  
gy, frm, blkly-sb blkly, gr-  
rthy, sl calc, v f sd intbd;  
SHLY SS: wh-lt gy, fri sd  
agg, pred v f gr, sbang, w  
srt, calc-arg cmt;

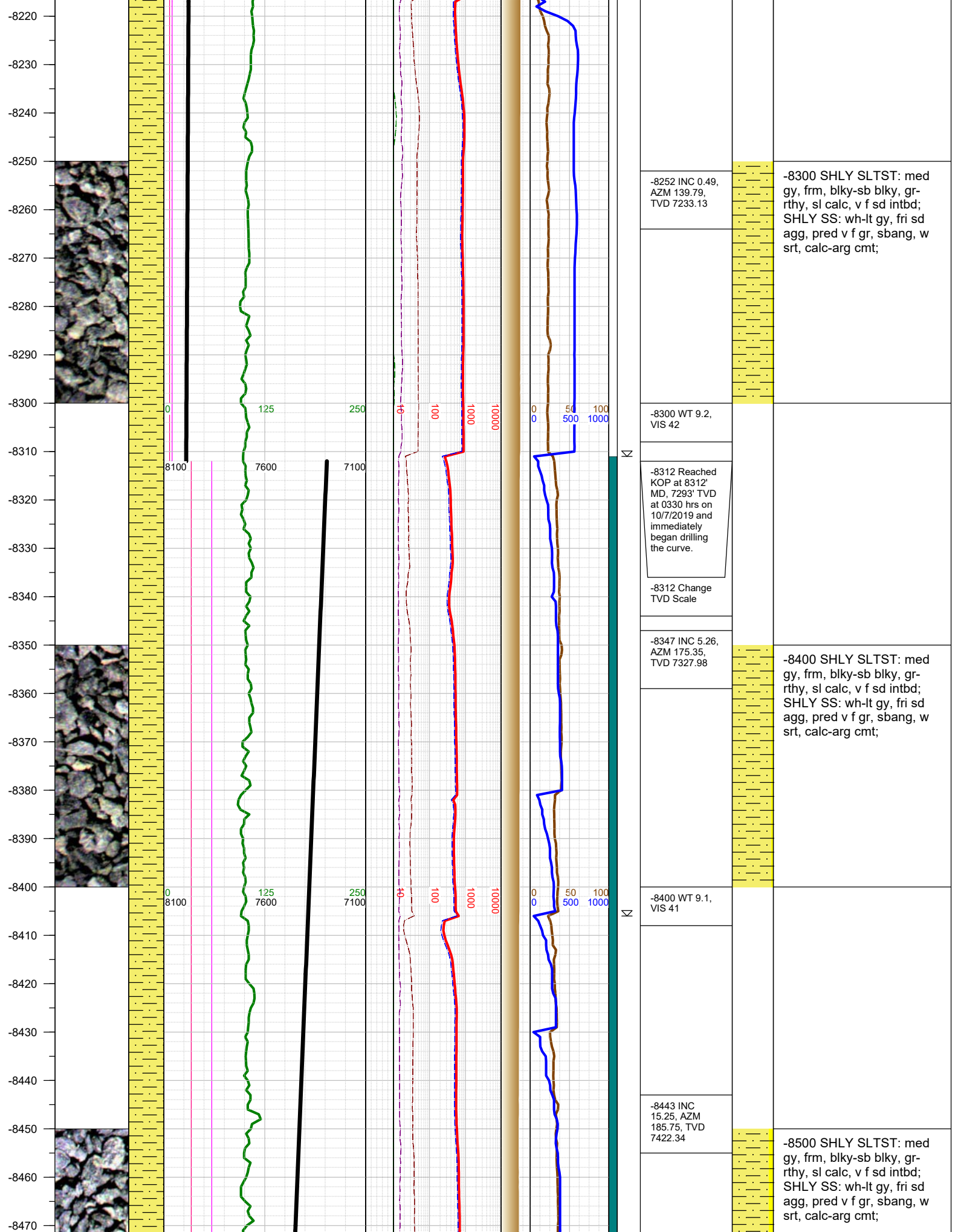


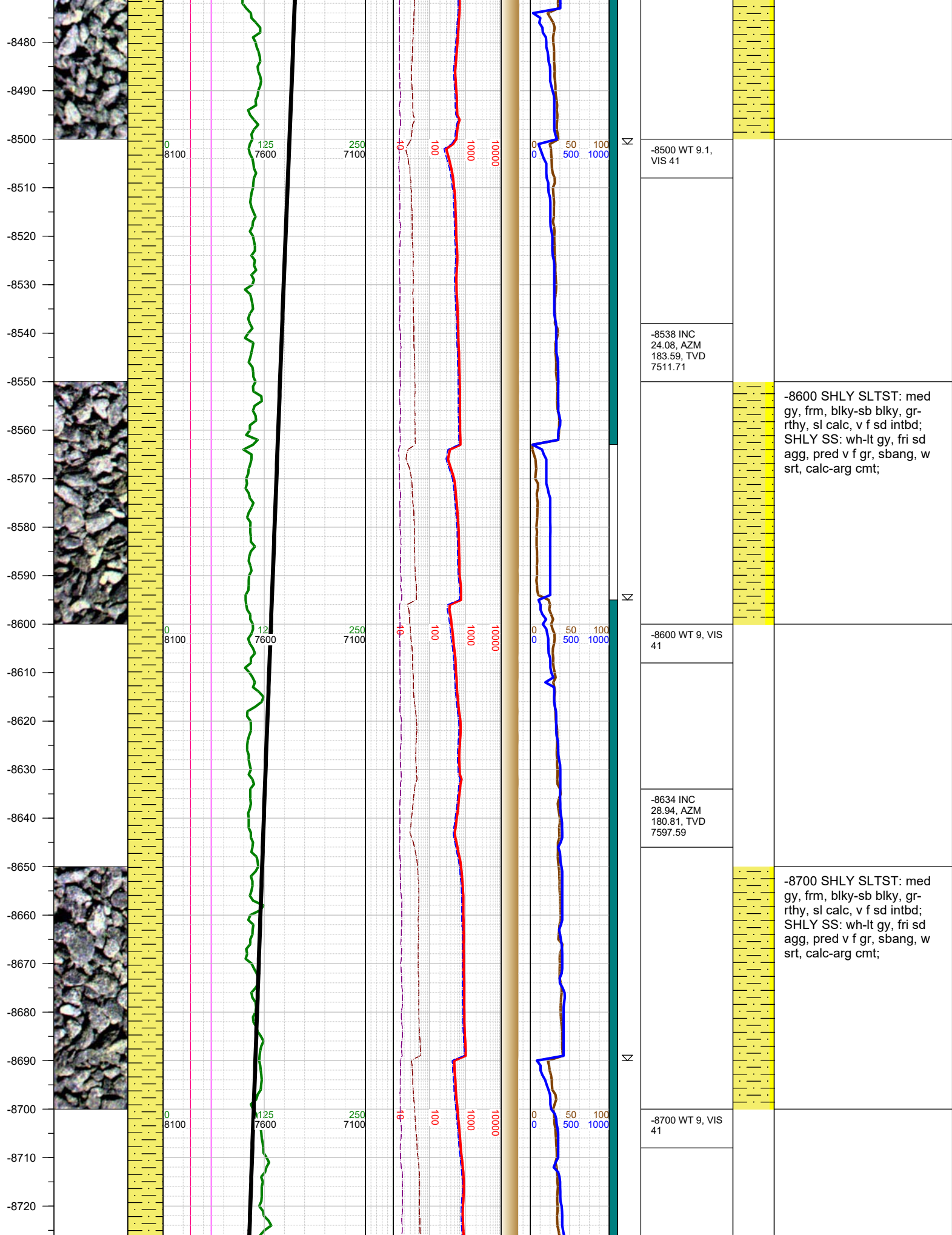




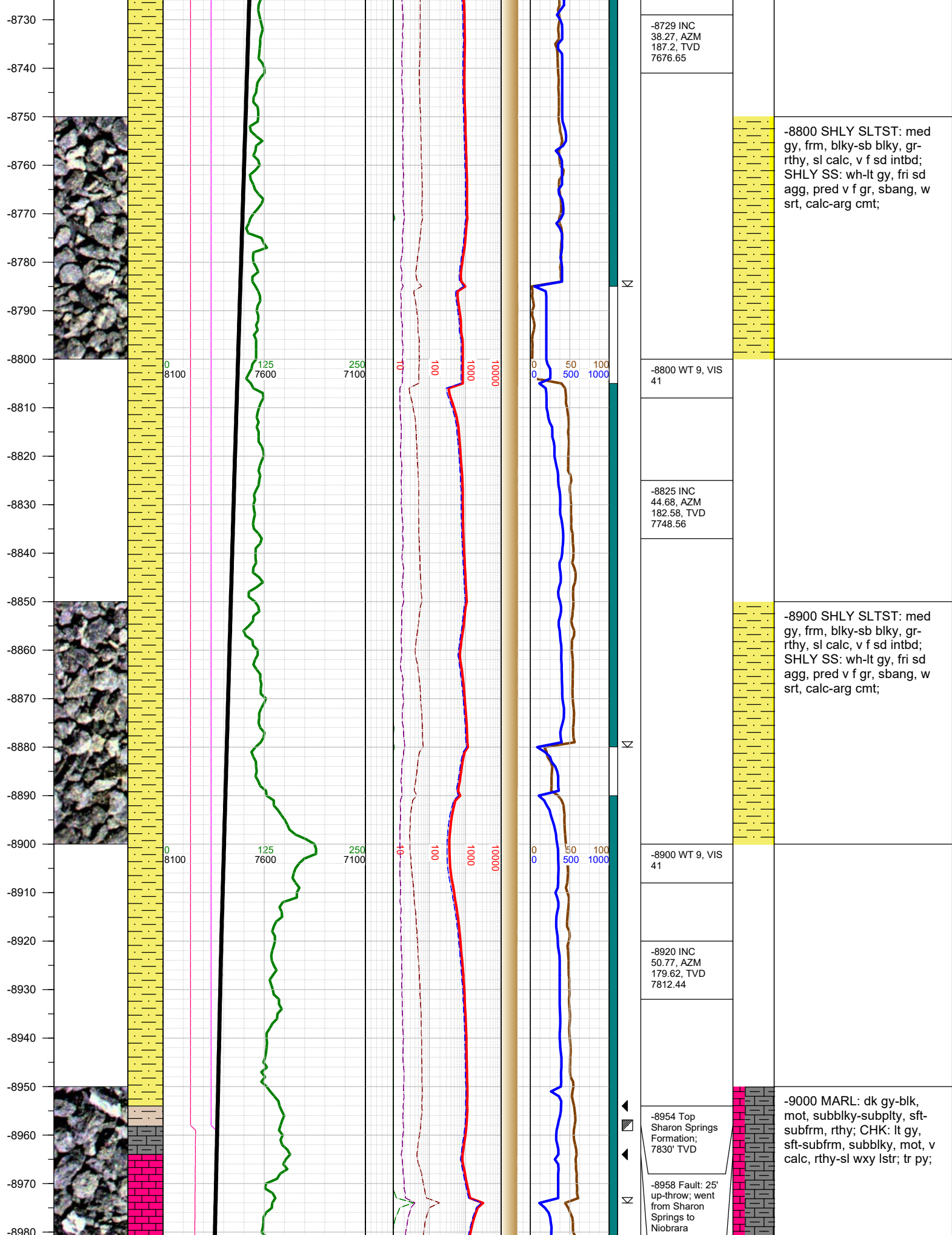




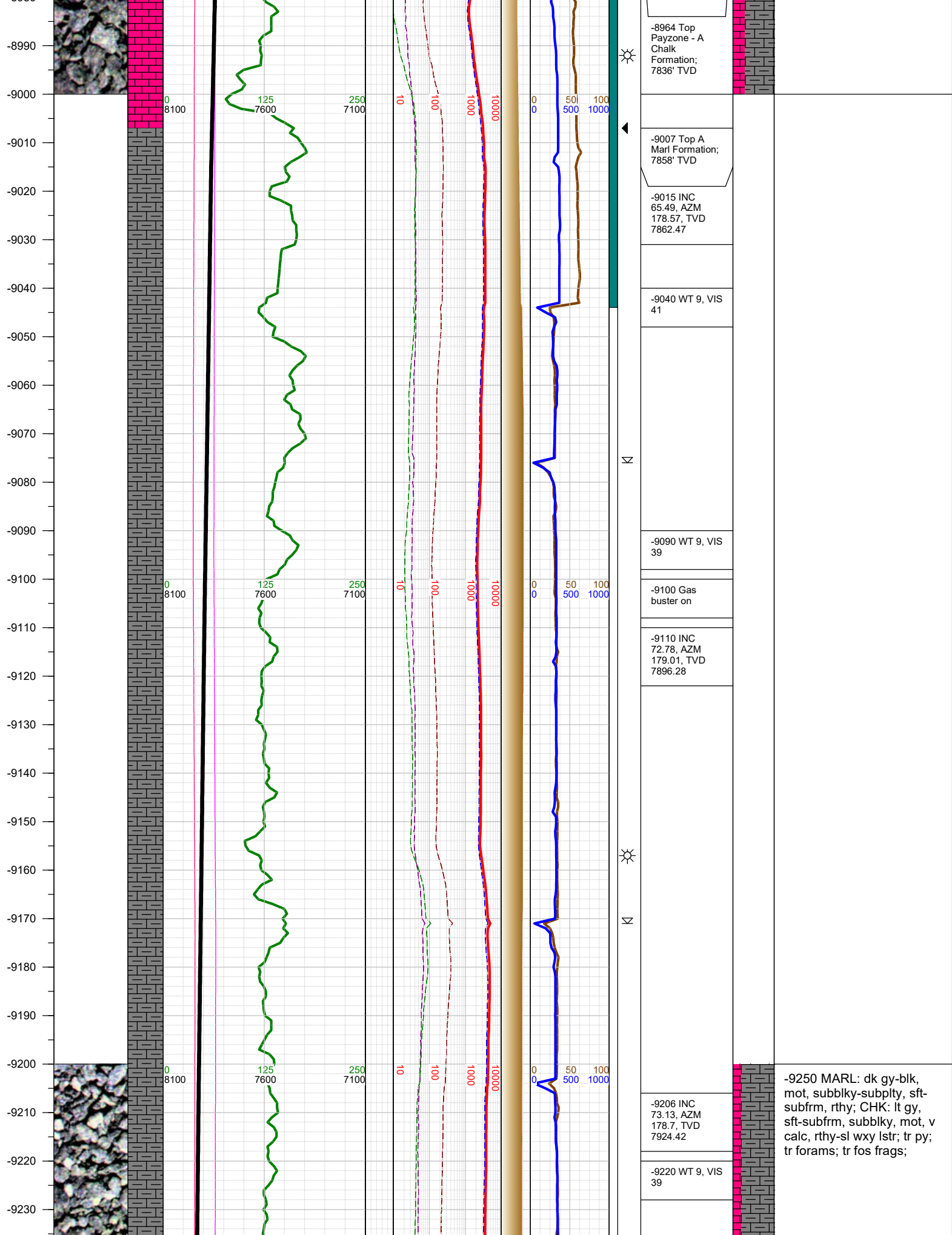


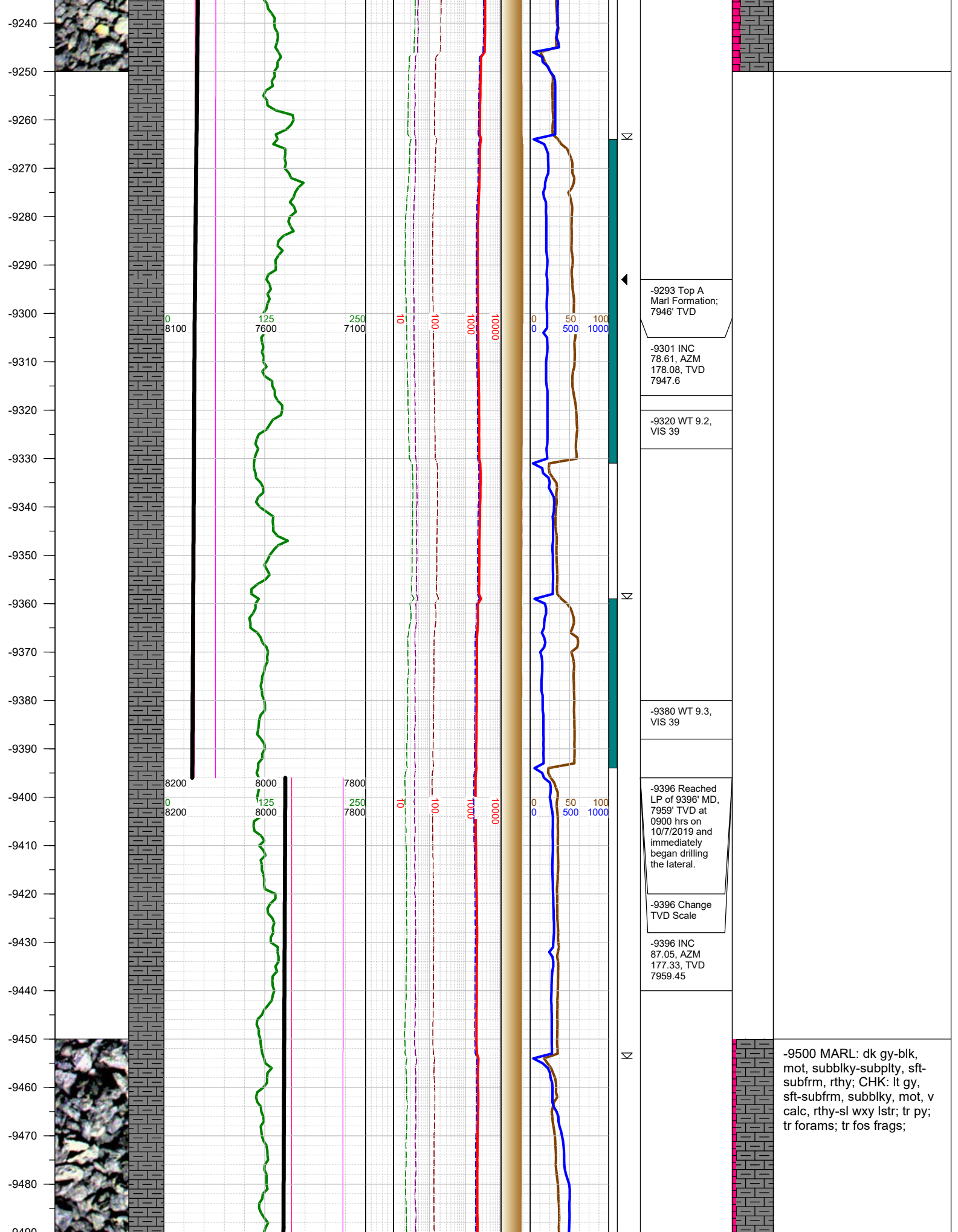


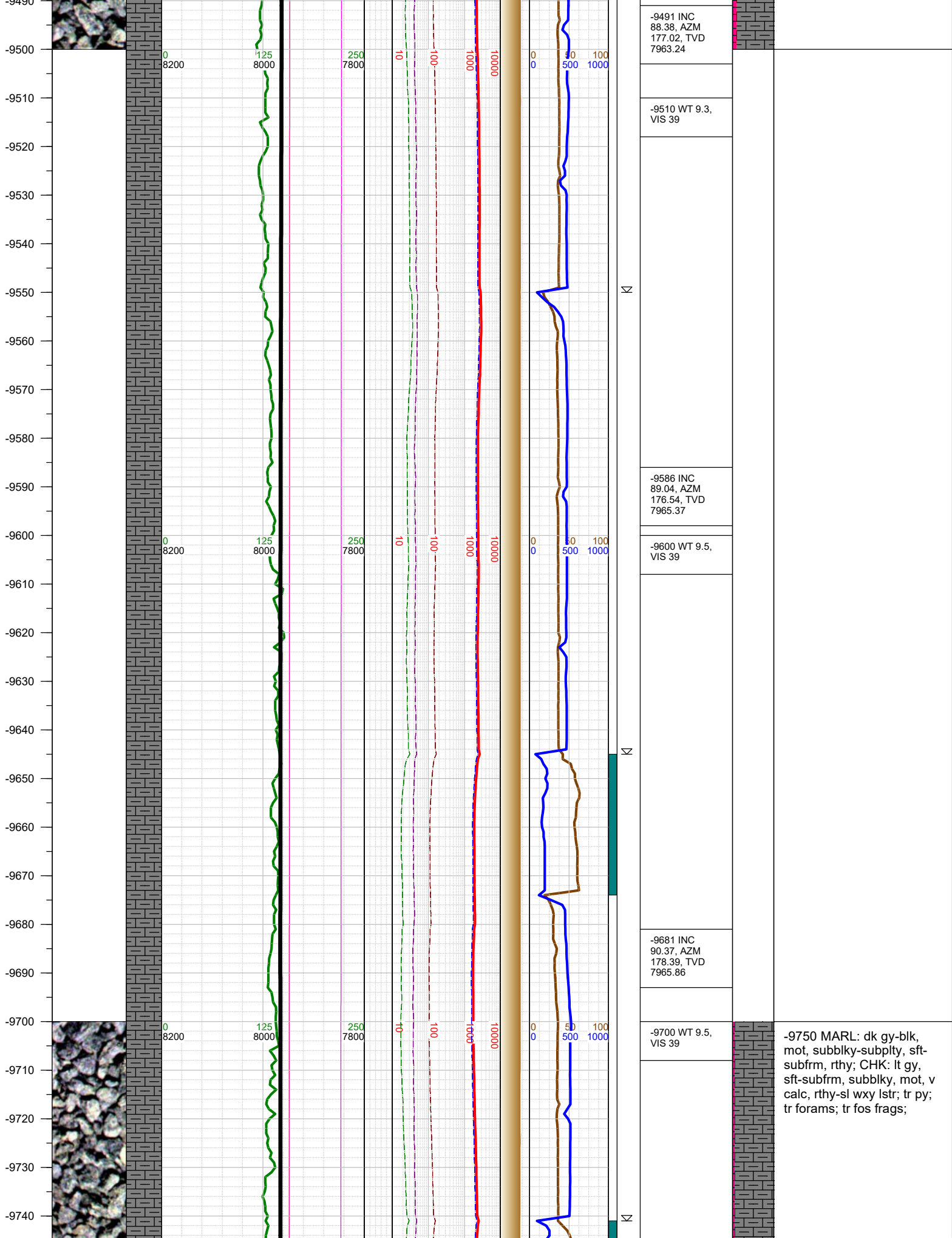




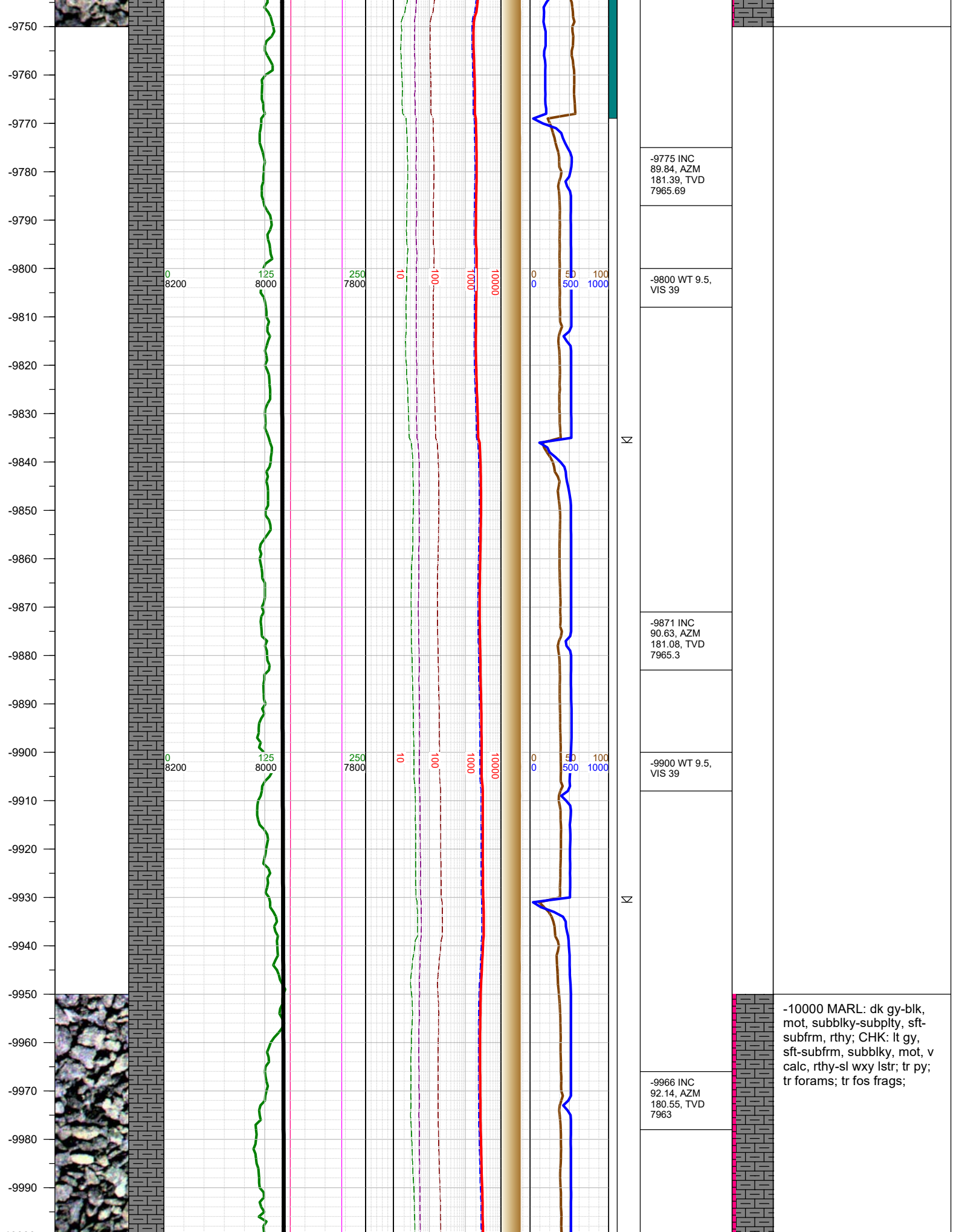




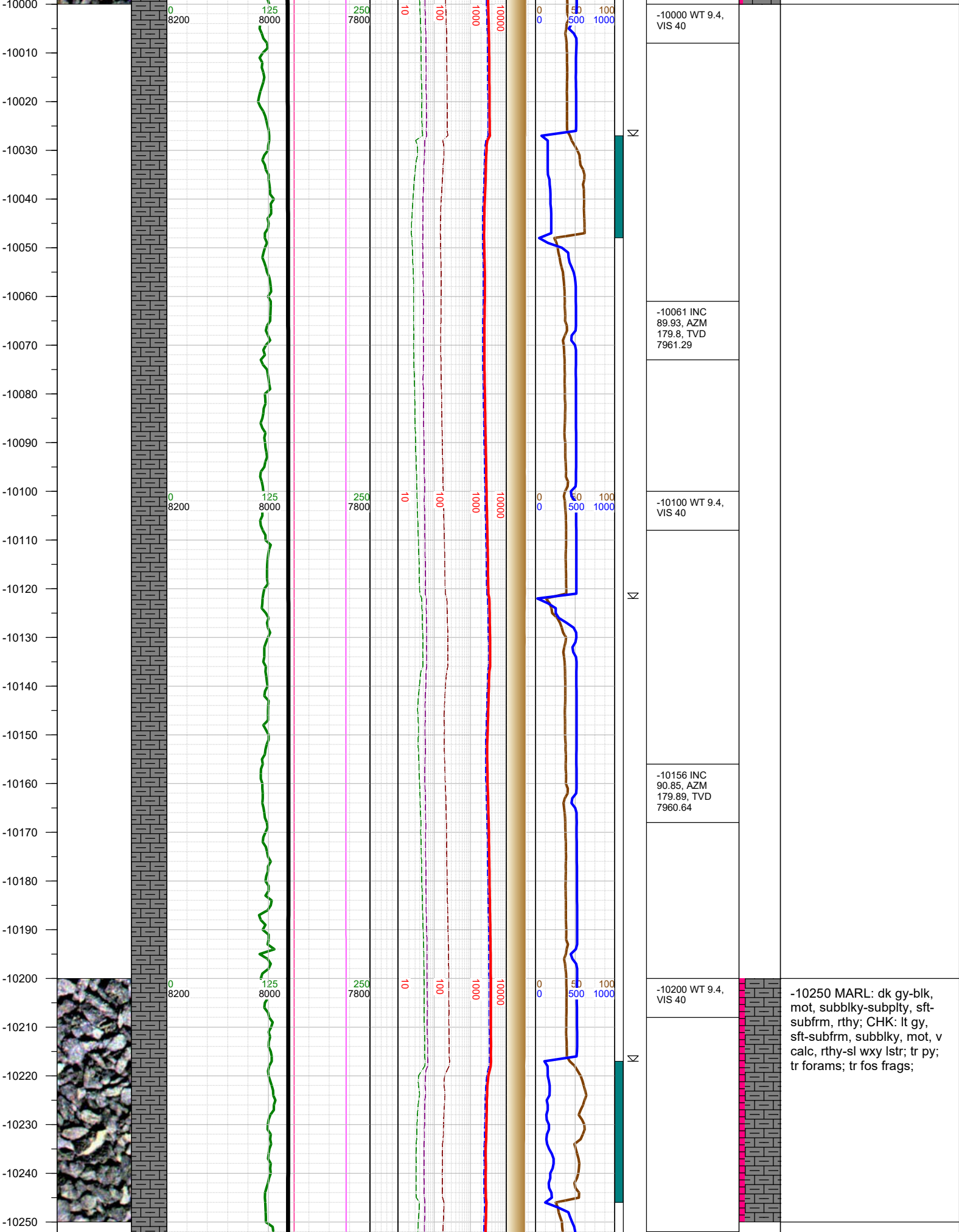


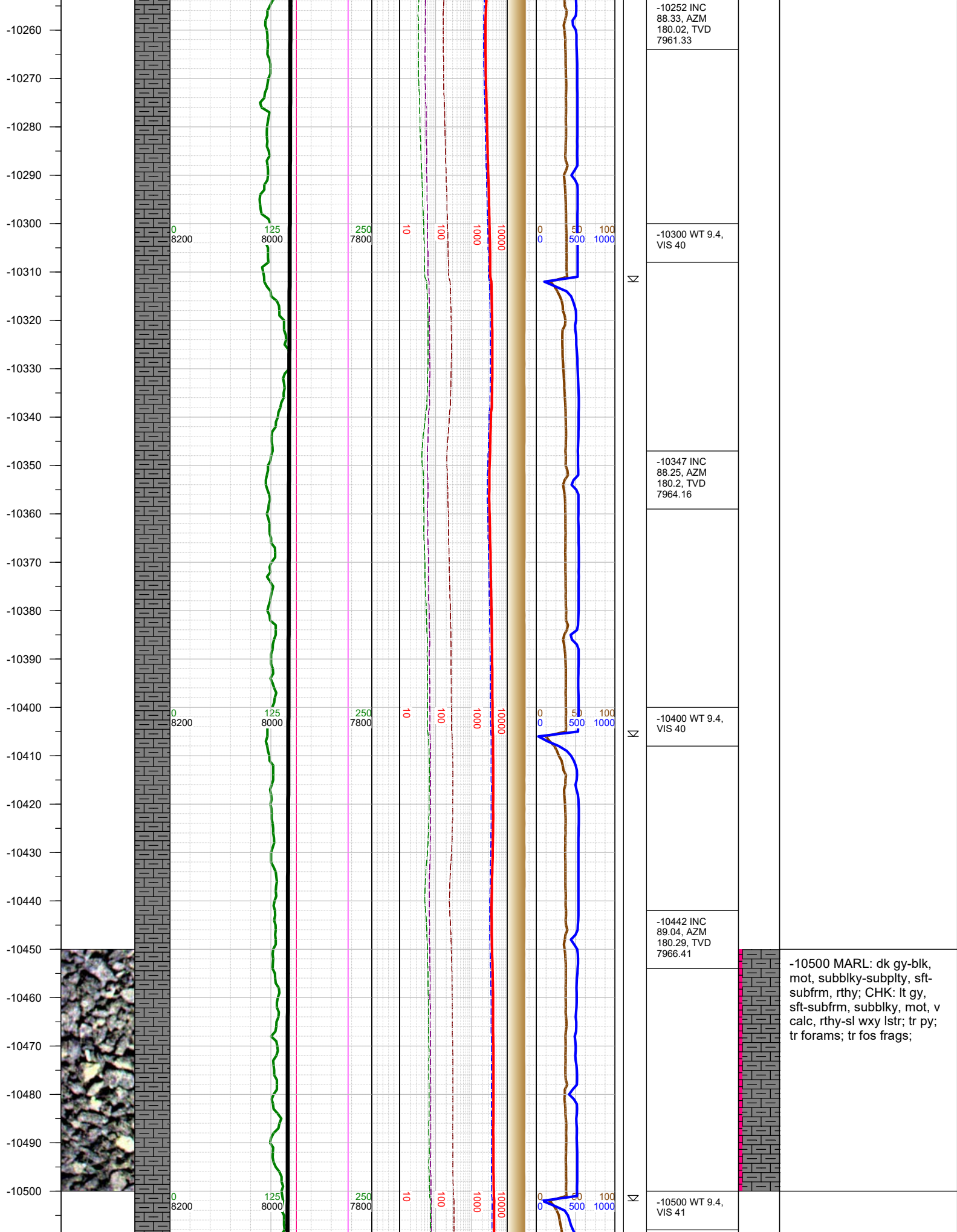


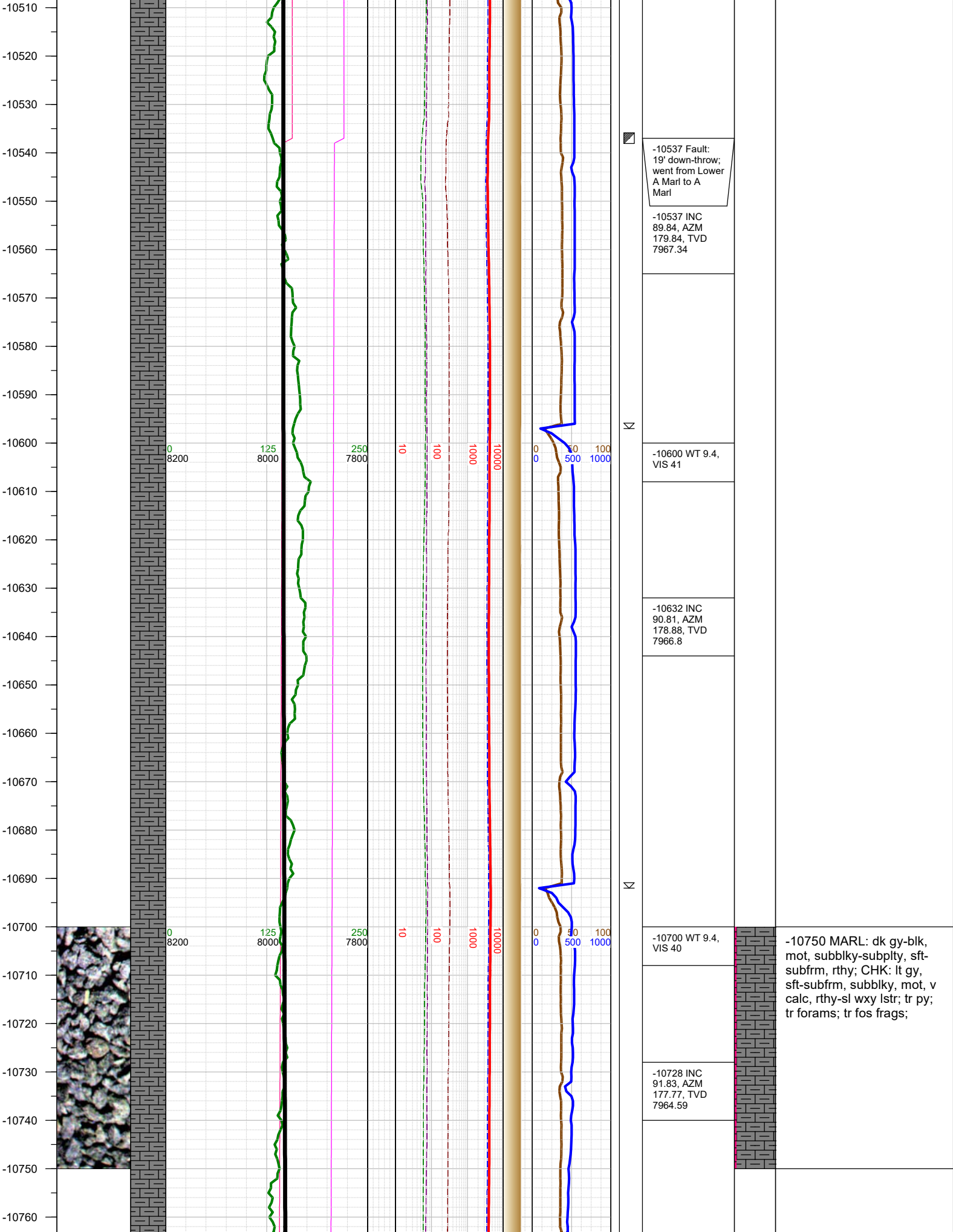




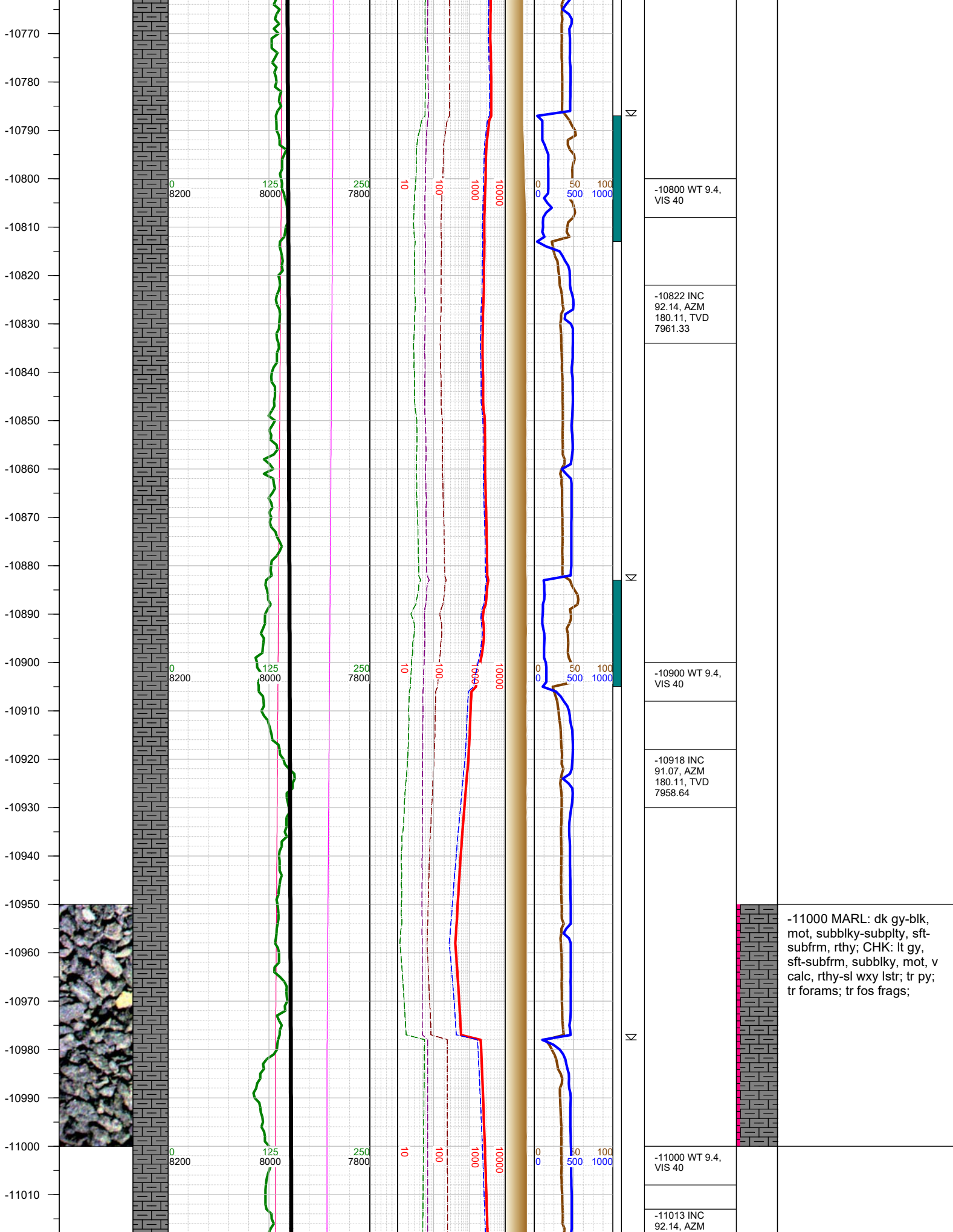




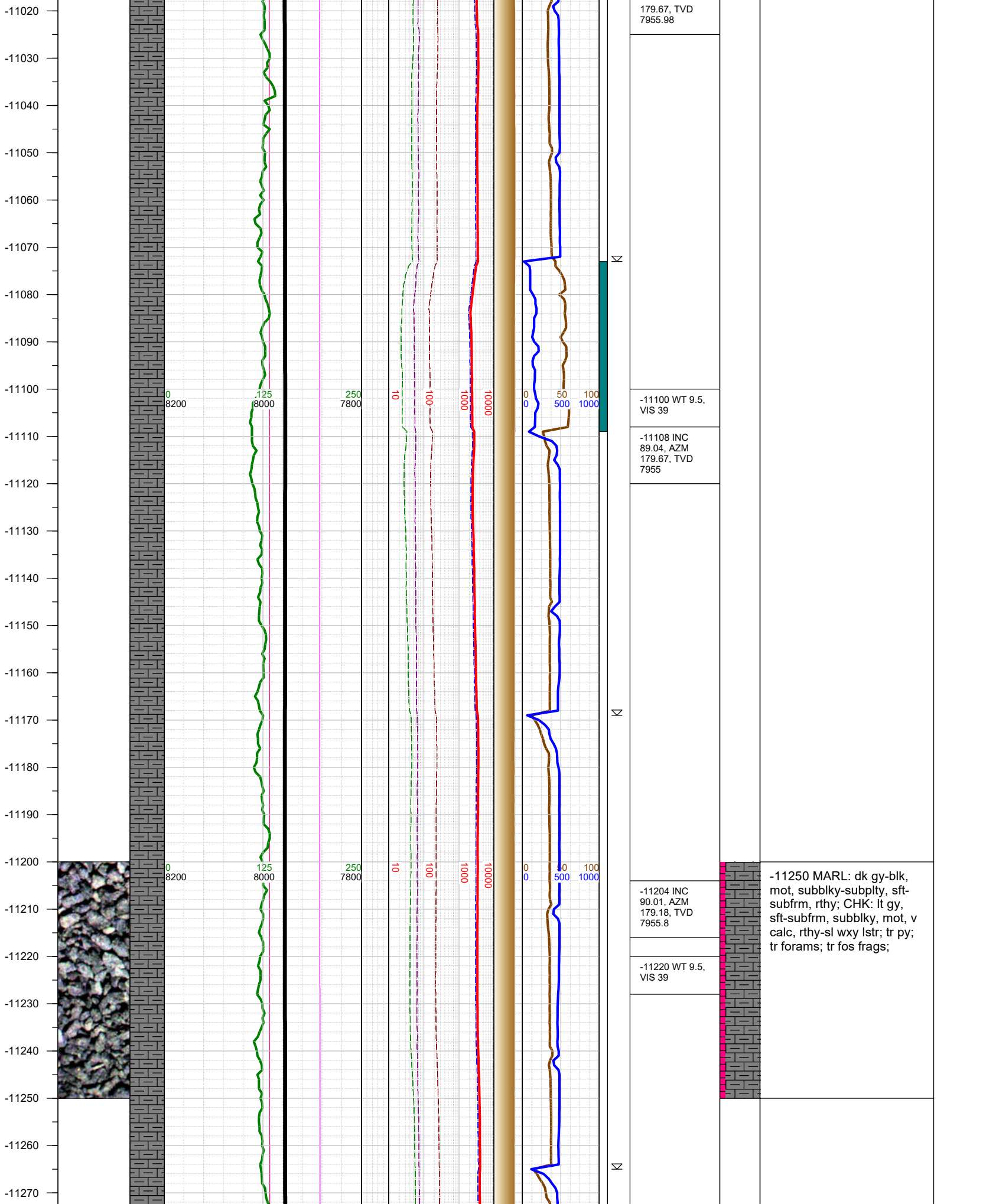


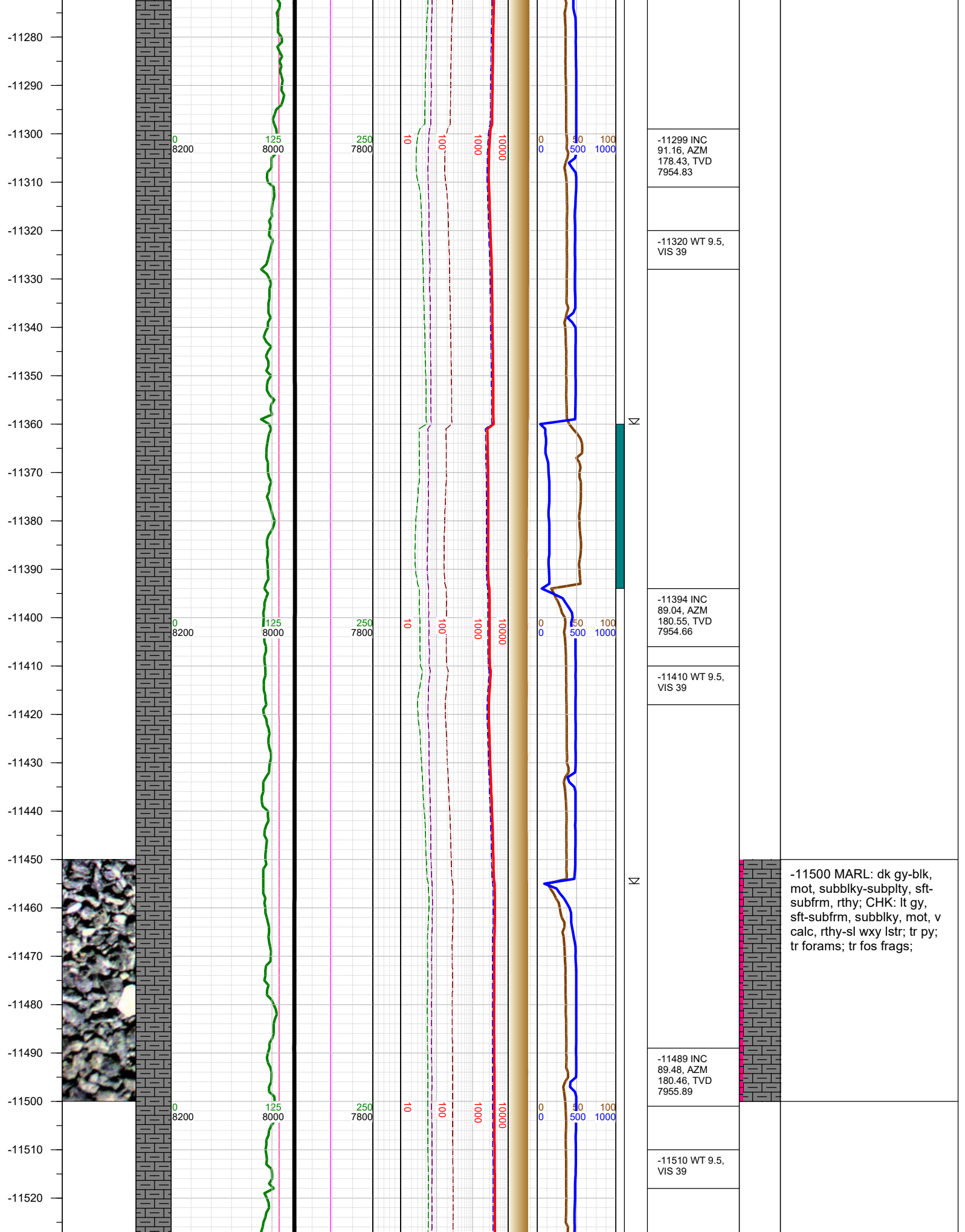


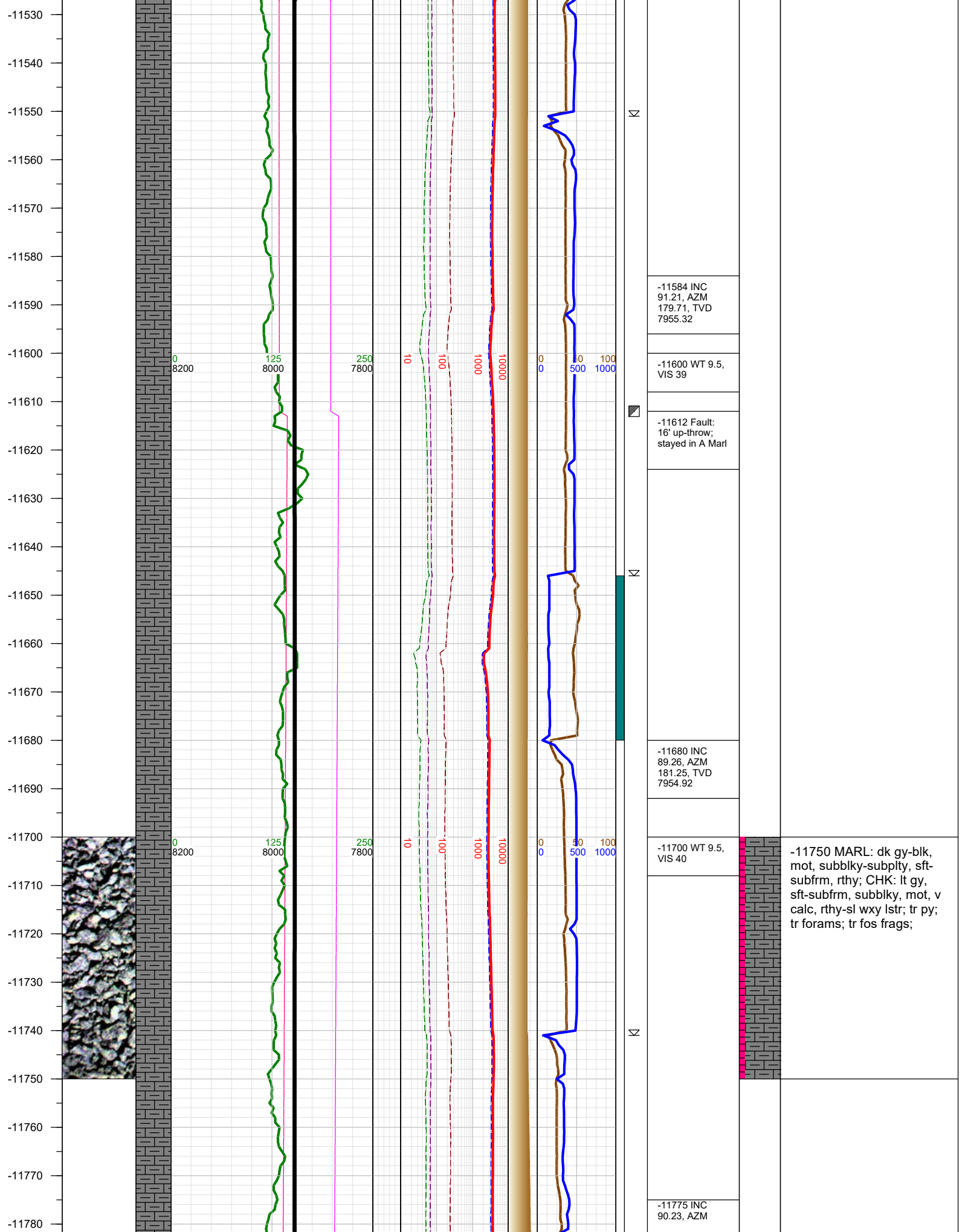




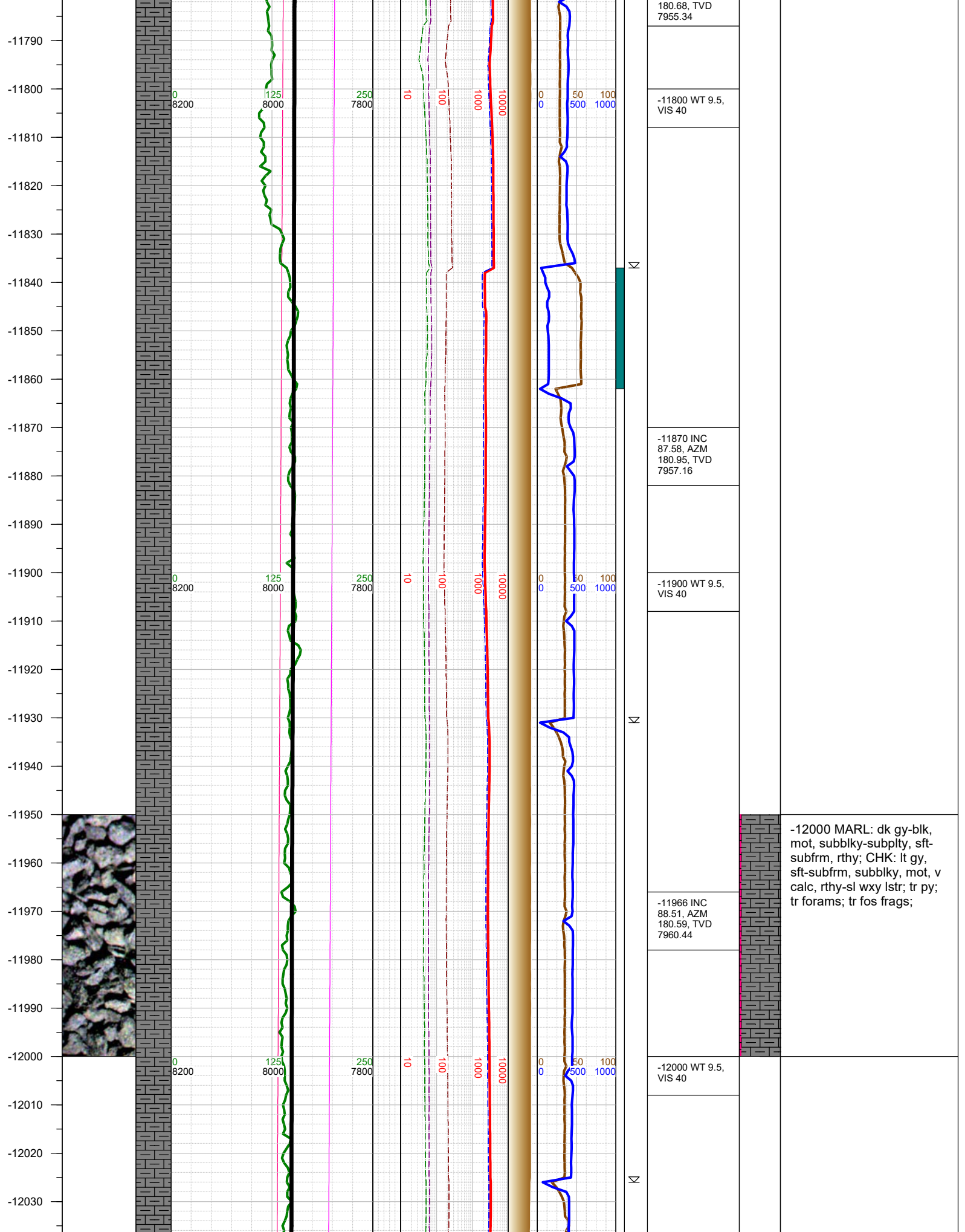




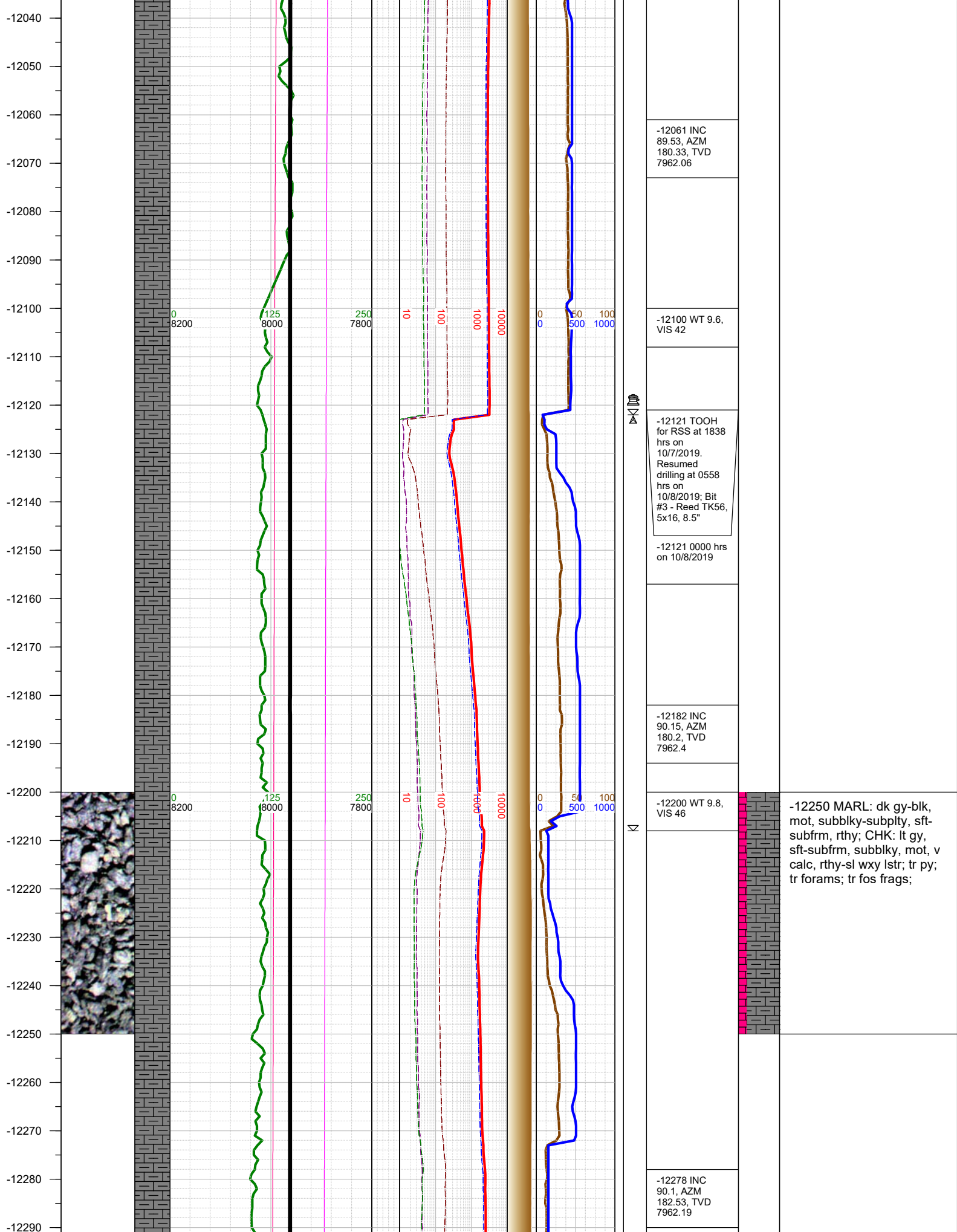


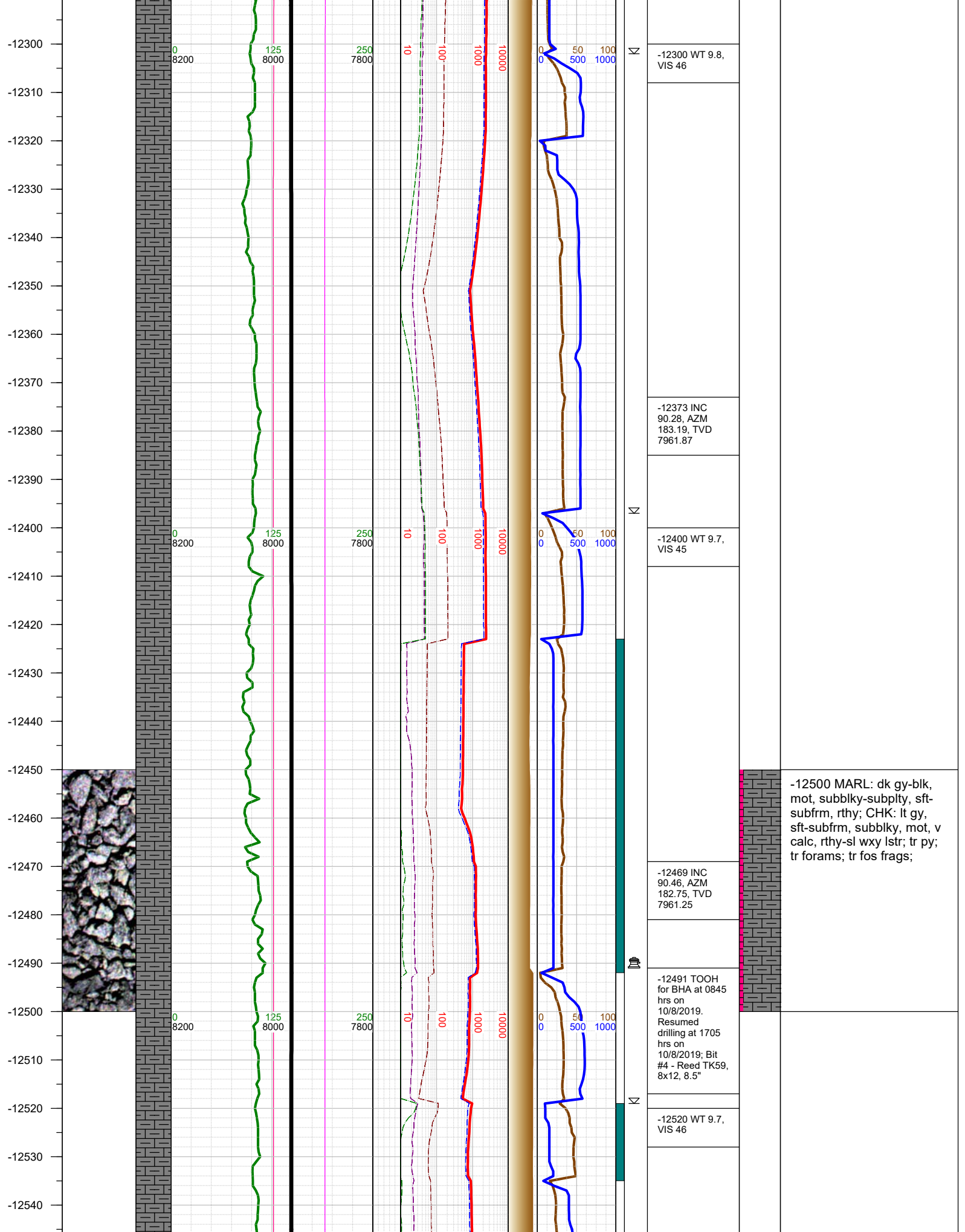




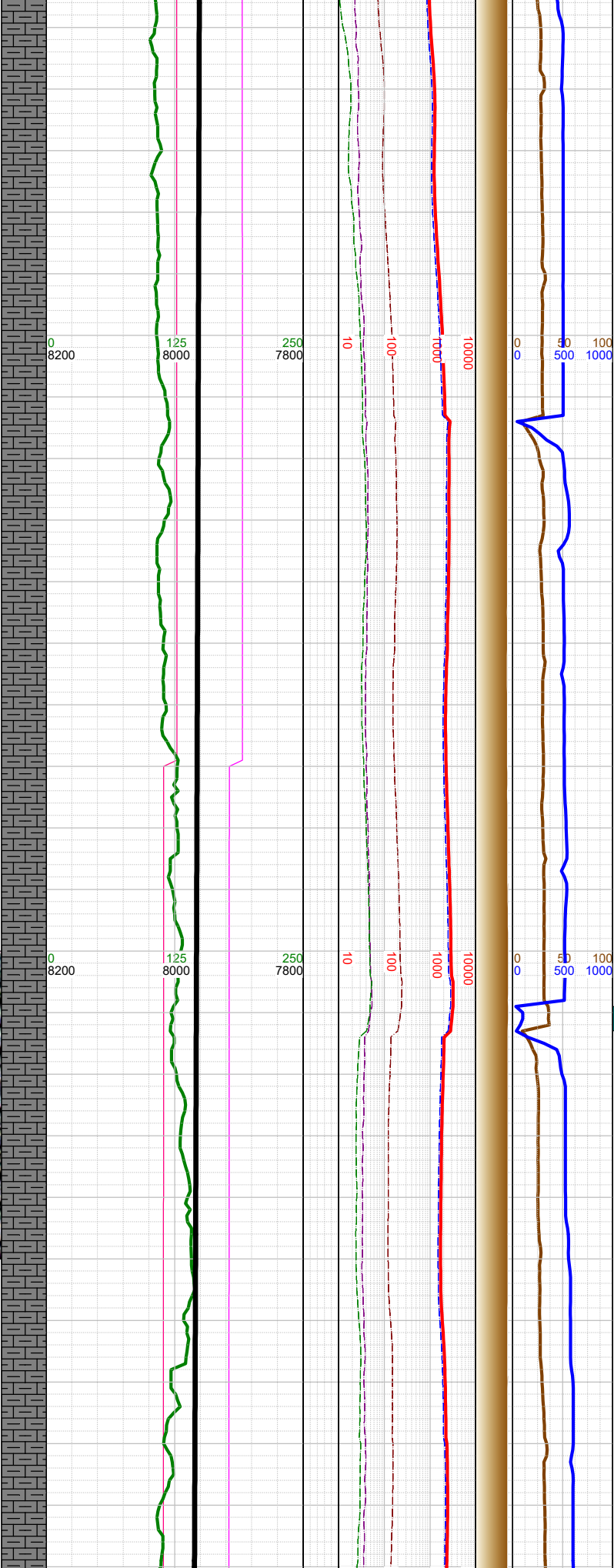
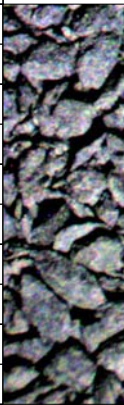








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-12554 INC  
88.47, AZM  
181.74, TVD  
7962.05

-12600 WT 9.7,  
VIS 46

-12650 INC  
88.33, AZM  
181.61, TVD  
7964.73

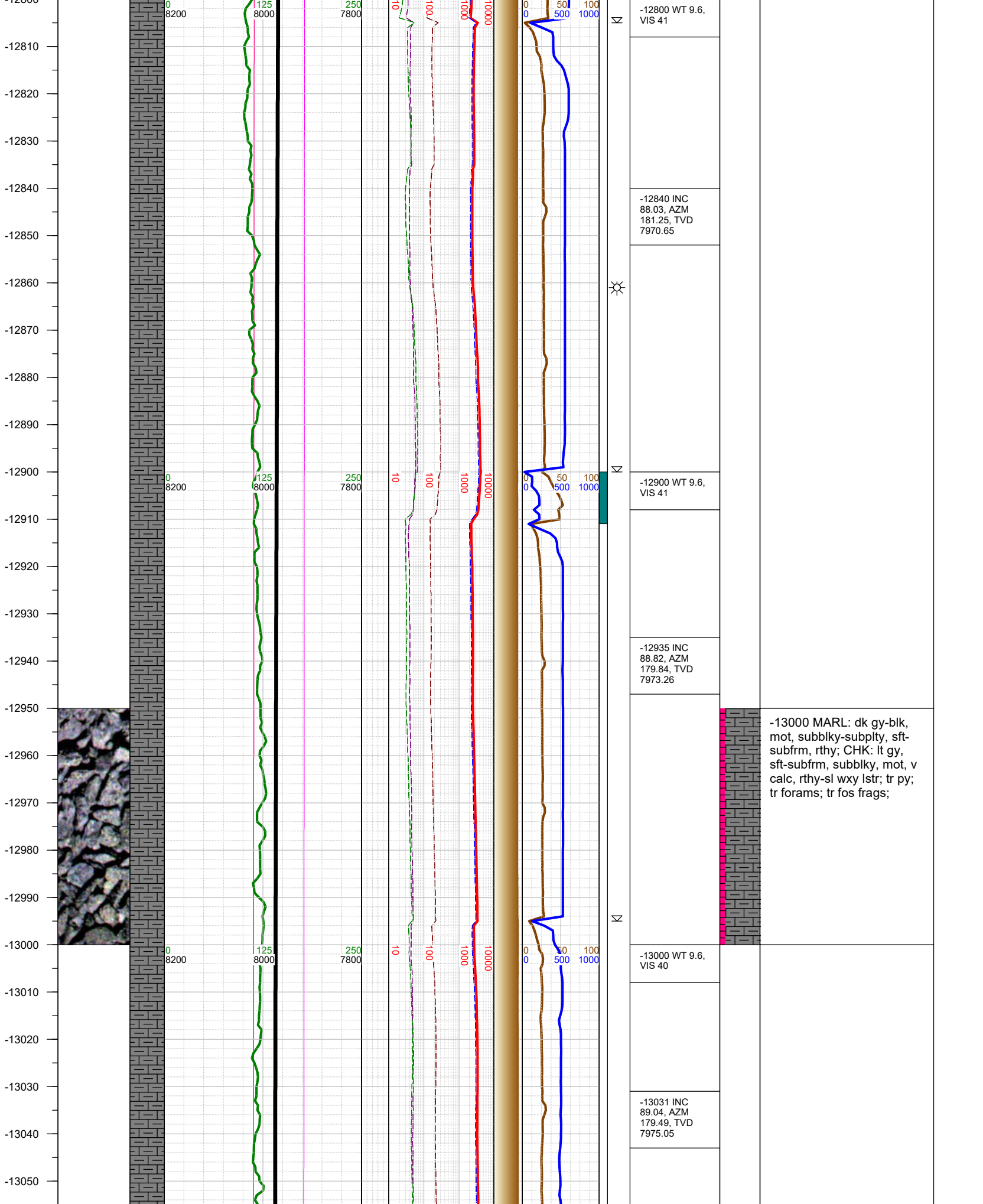
-12669 Fault:  
20' down-throw;  
stayed in A Marl

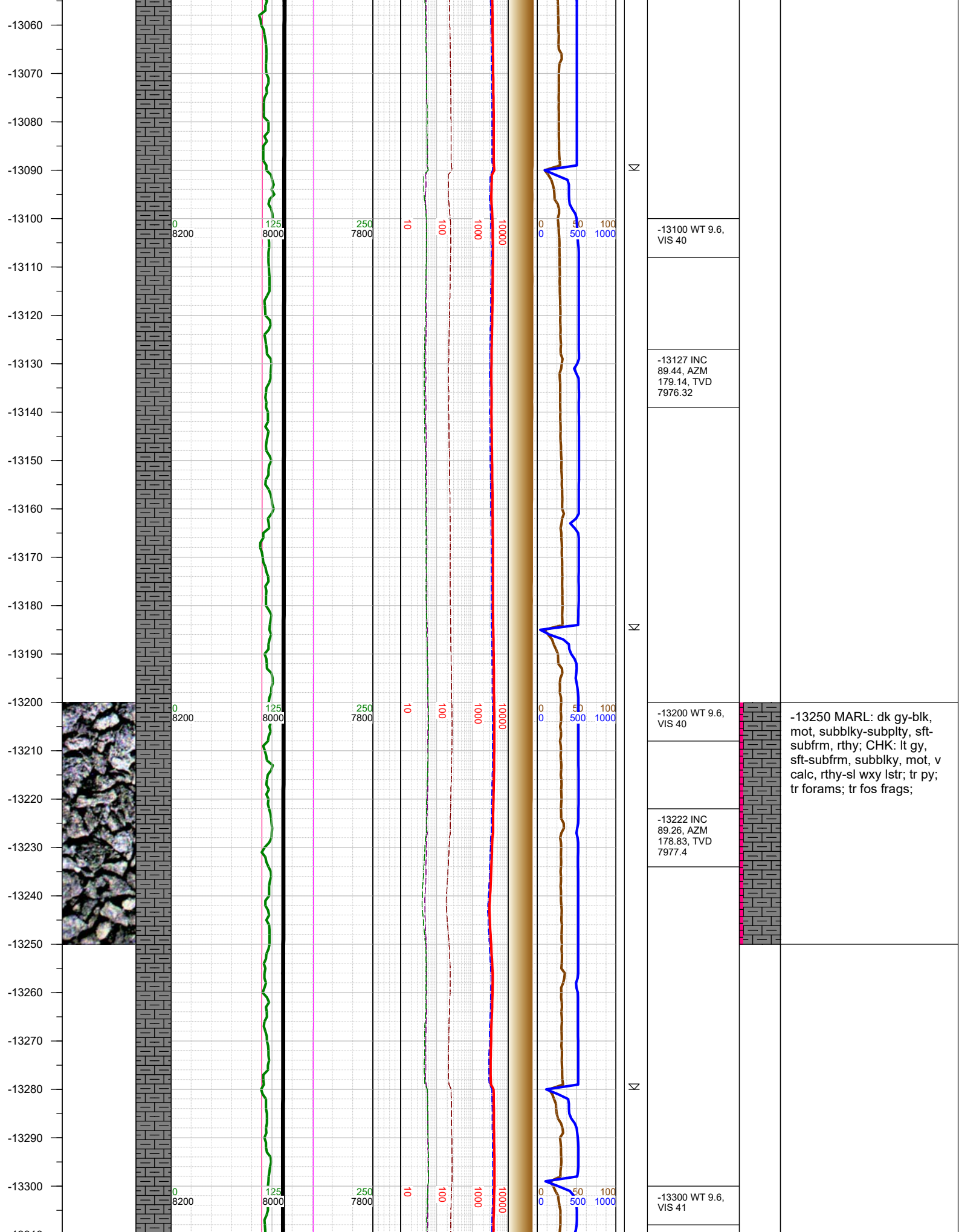
-12700 WT 9.6,  
VIS 41

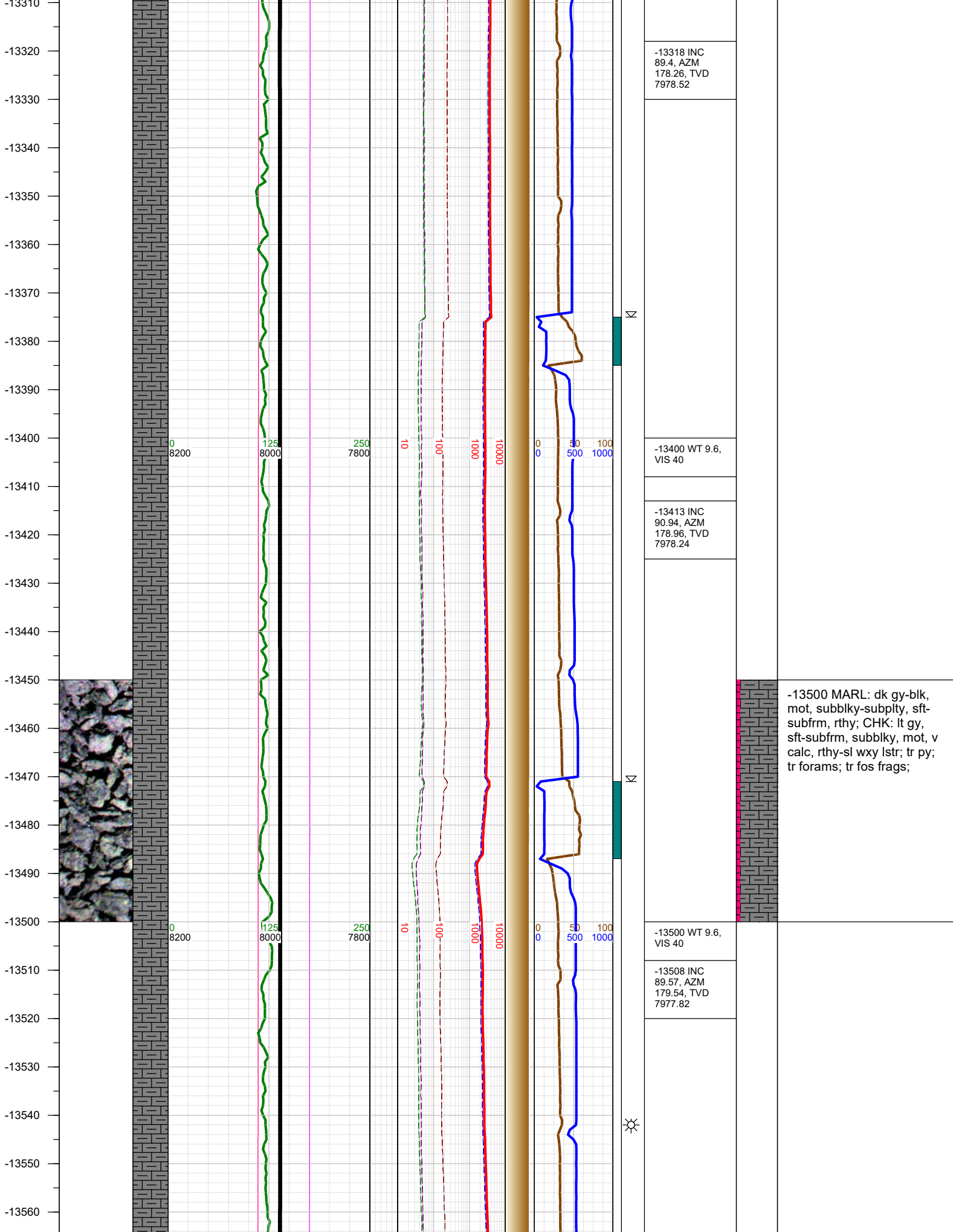
-12745 INC  
88.25, AZM  
181.25, TVD  
7967.56

-12750 MARL: dk gy-blk,  
mot, subblky-subplty, sft-  
subfrm, rthy; CHK: lt gy,  
sft-subfrm, subblky, mot, v  
calc, rthy-sl wxy lstr; tr py;  
tr forams; tr fos frags;









-13318 INC  
89.4, AZM  
178.26, TVD  
7978.52

-13400 WT 9.6,  
VIS 40

-13413 INC  
90.94, AZM  
178.96, TVD  
7978.24

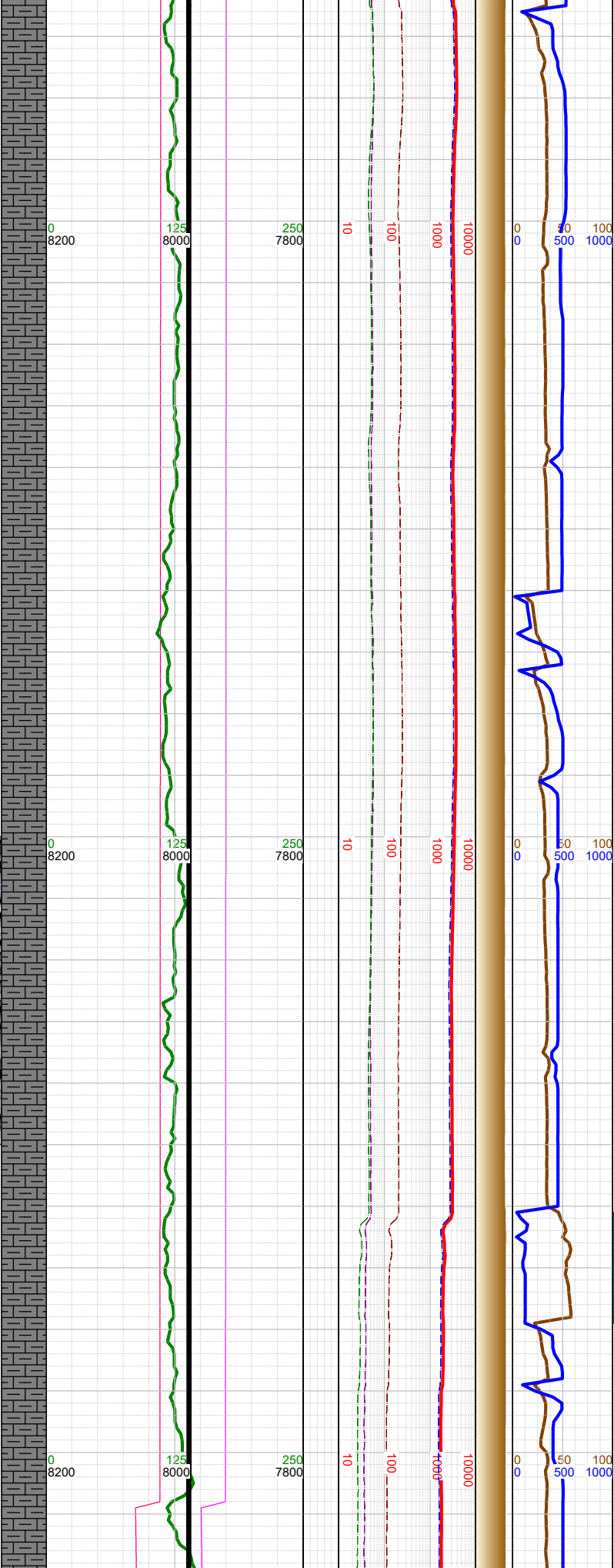
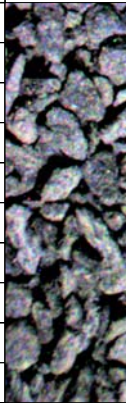
-13500 WT 9.6,  
VIS 40

-13508 INC  
89.57, AZM  
179.54, TVD  
7977.82

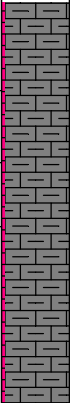
-13500 MARL: dk gy-blk,  
mot, subblky-subplty, sft-  
subfrm, rthy; CHK: lt gy,  
sft-subfrm, subblky, mot, v  
calc, rthy-sl wxy lstr; tr py;  
tr forams; tr fos frags;



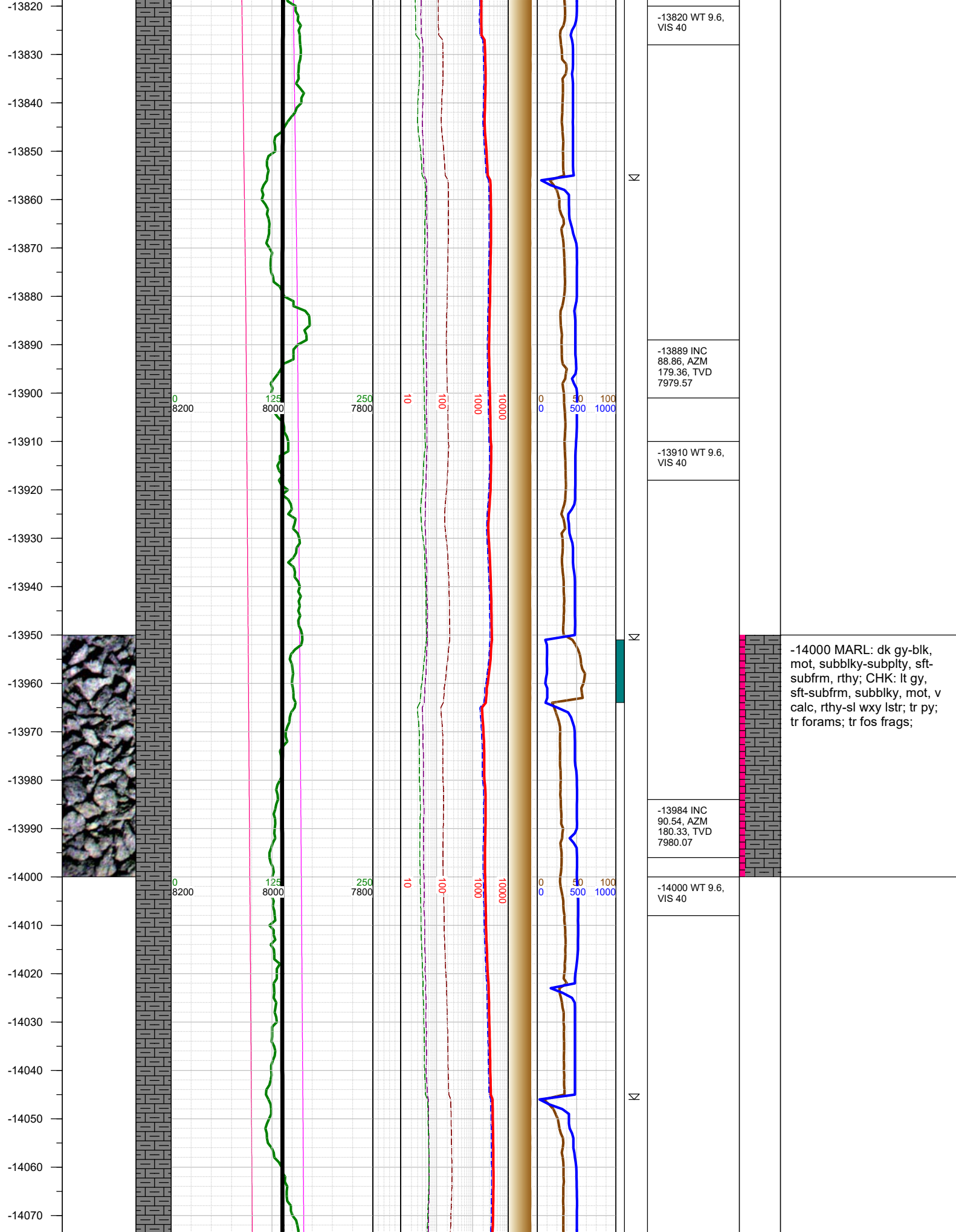
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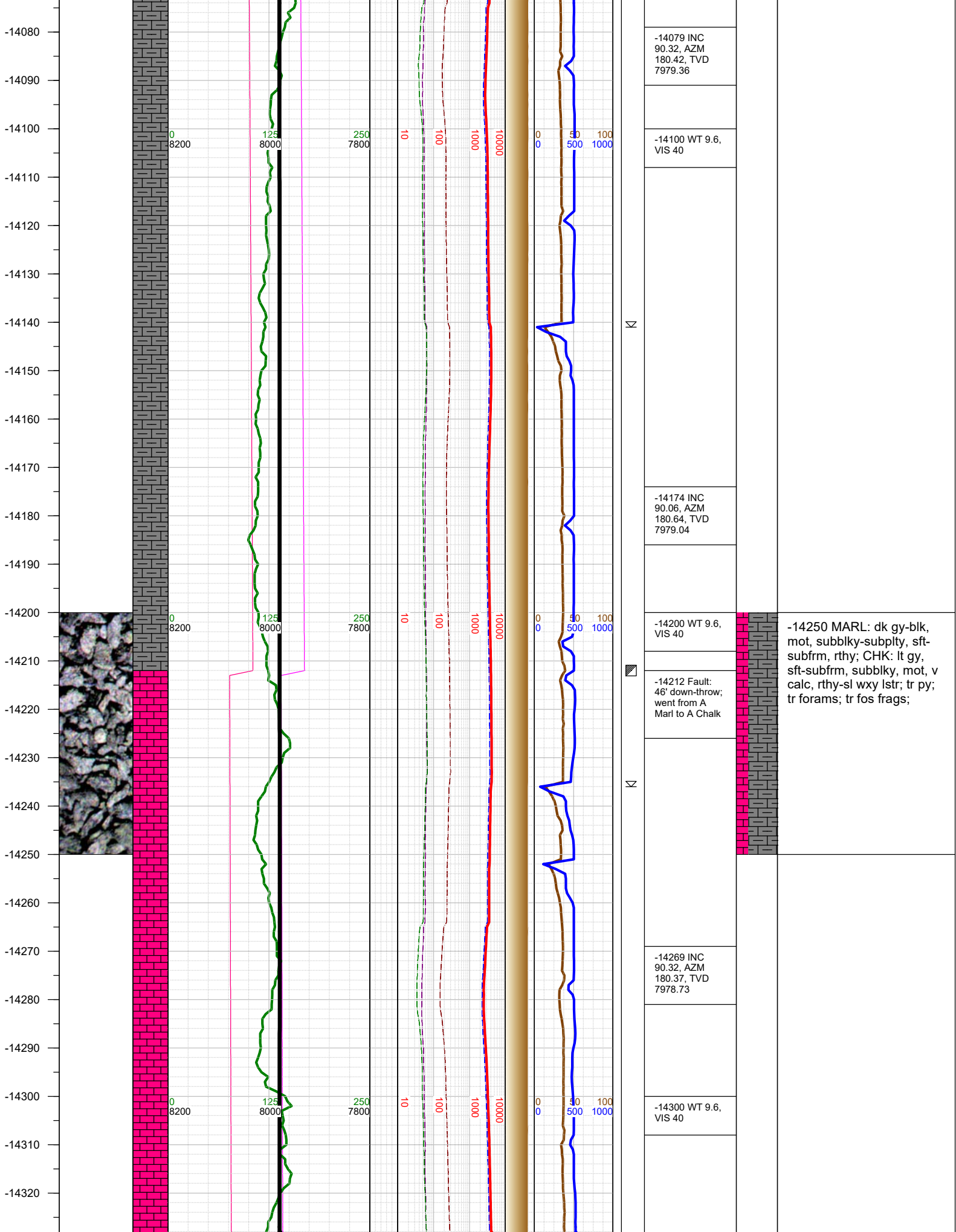


N	-13604 INC 89.79, AZM 179.18, TVD 7978.36
	-13620 WT 9.6, VIS 40
N	-13699 INC 90.77, AZM 178.79, TVD 7977.89
	-13720 WT 9.6, VIS 40
N	-13794 INC 89.17, AZM 179.49, TVD 7977.94
	-13808 Fault: 38' down-throw; stayed in A Marl

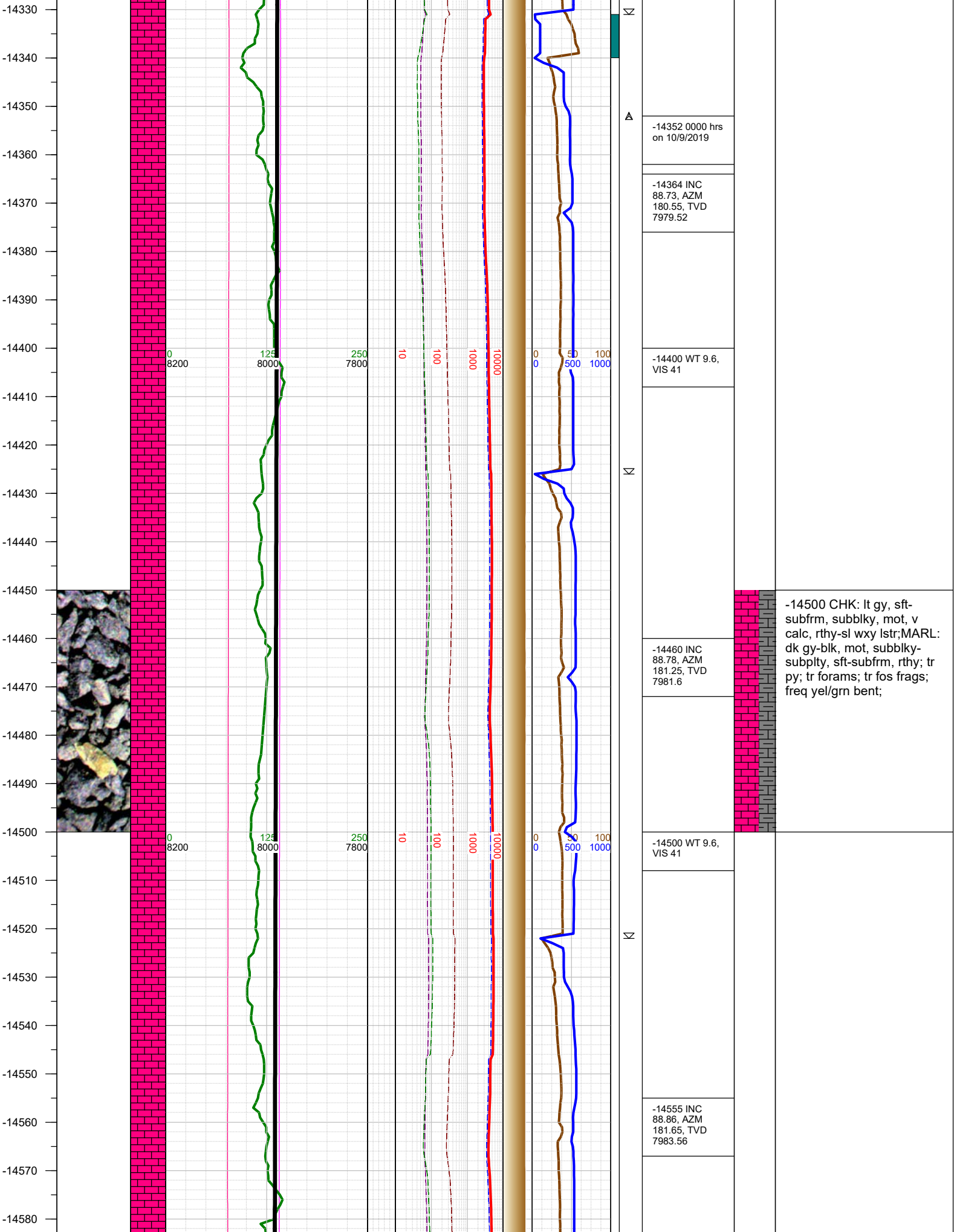


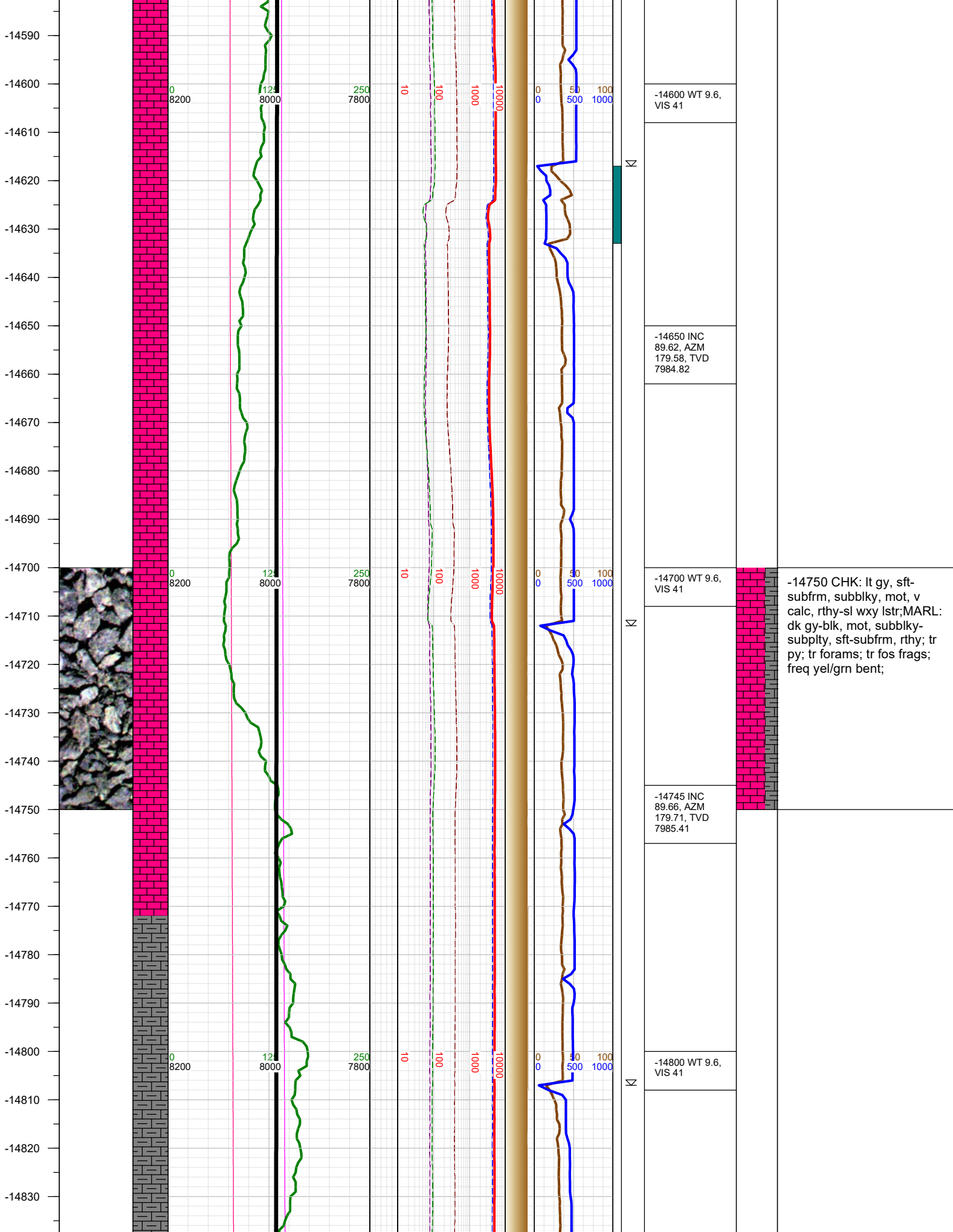
-13750 MARL: dk gy-blk,  
mot, subblky-subply, sft-  
subfrm, rthy; CHK: lt gy,  
sft-subfrm, subblky, mot, v  
calc, rthy-sl wxy lstr; tr py;  
tr forams; tr fos frags;



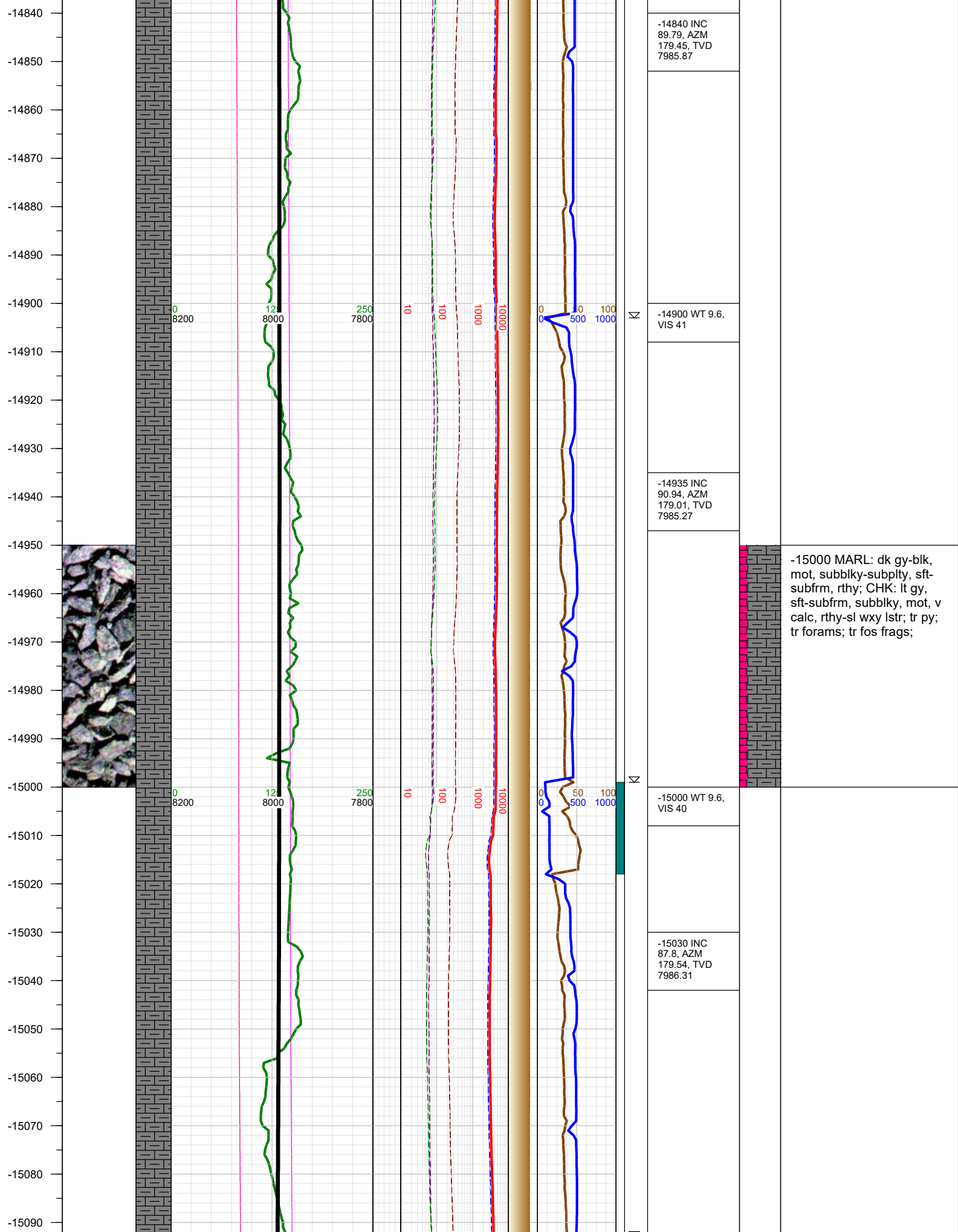




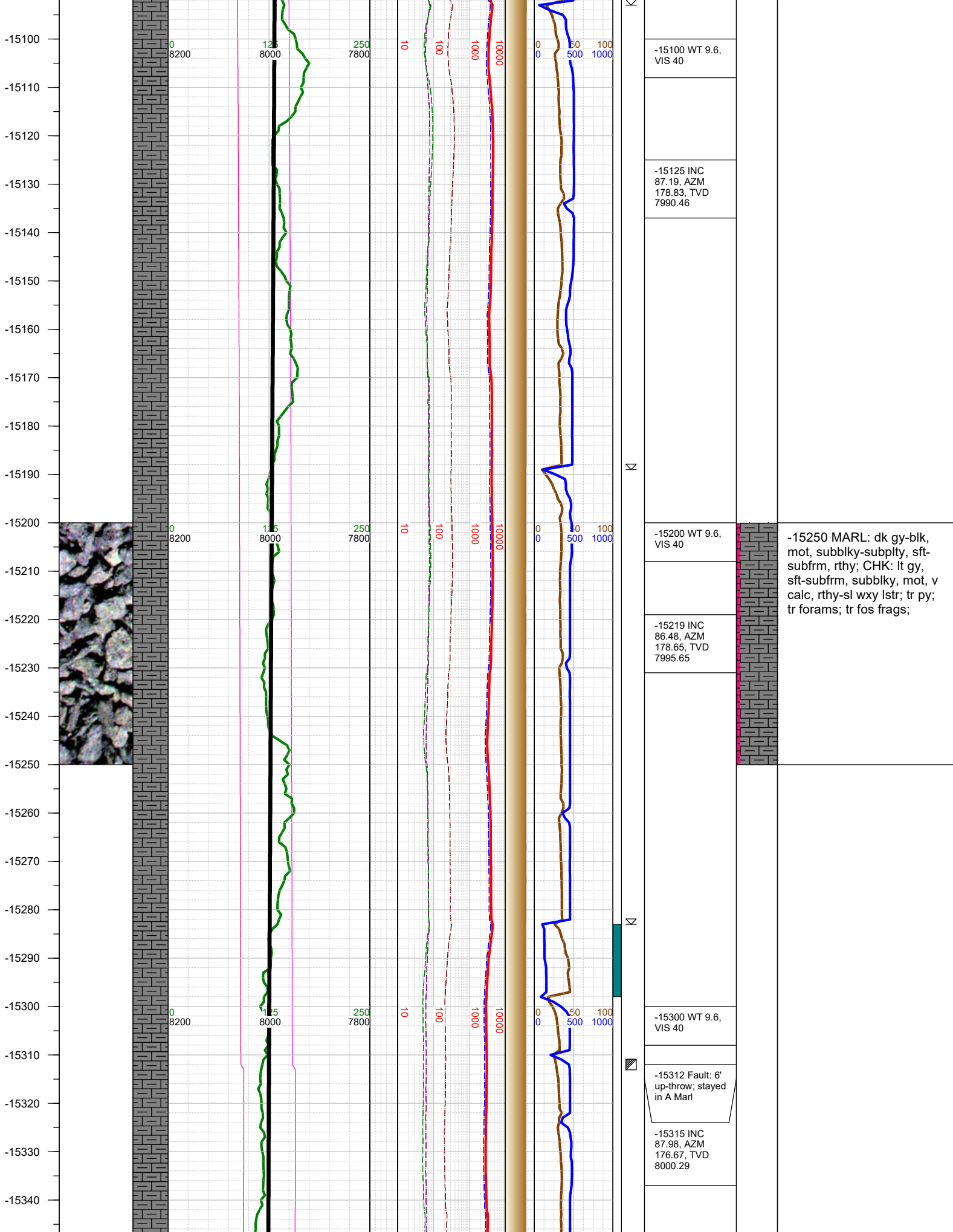




-14750 CHK: lt gy, sft-subfrm, subblky, mot, v calc, rthy-sl wxy lstr; MARL: dk gy-blk, mot, subblky-subply, sft-subfrm, rthy; tr py; tr forams; tr fos frags; freq yel/grn bent;

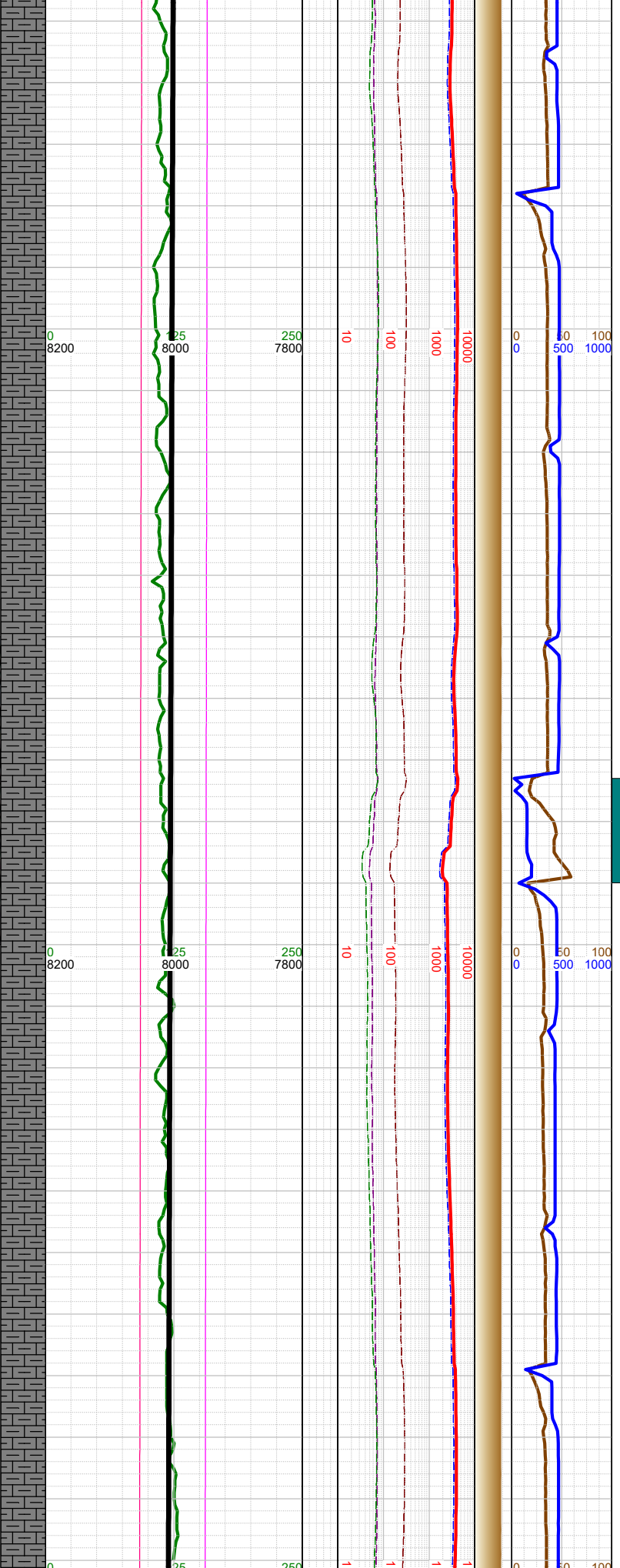
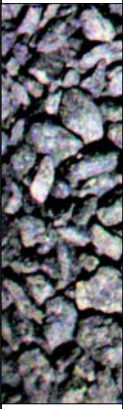






-15250 MARL: dk gy-blk, mot, subblky-subply, sft-subfrm, rthy; CHK: lt gy, sft-subfrm, subblky, mot, v calc, rthy-sl wxy lstr; tr py; tr forams; tr fos frags;

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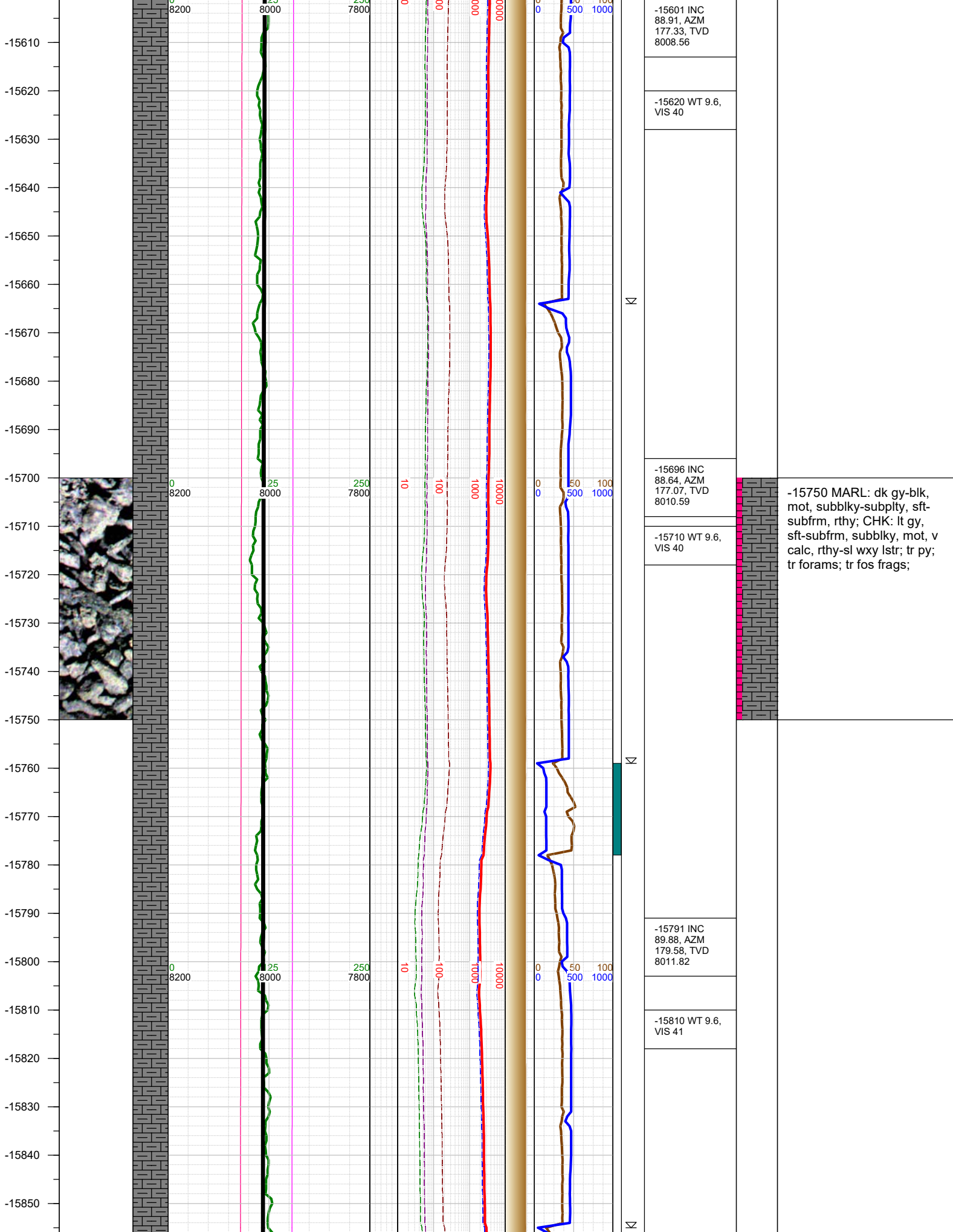
-15400 WT 9.6,  
VIS 40

-15410 INC  
88.2, AZM  
176.14, TVD  
8003.46

-15505 INC  
88.38, AZM  
177.95, TVD  
8006.29

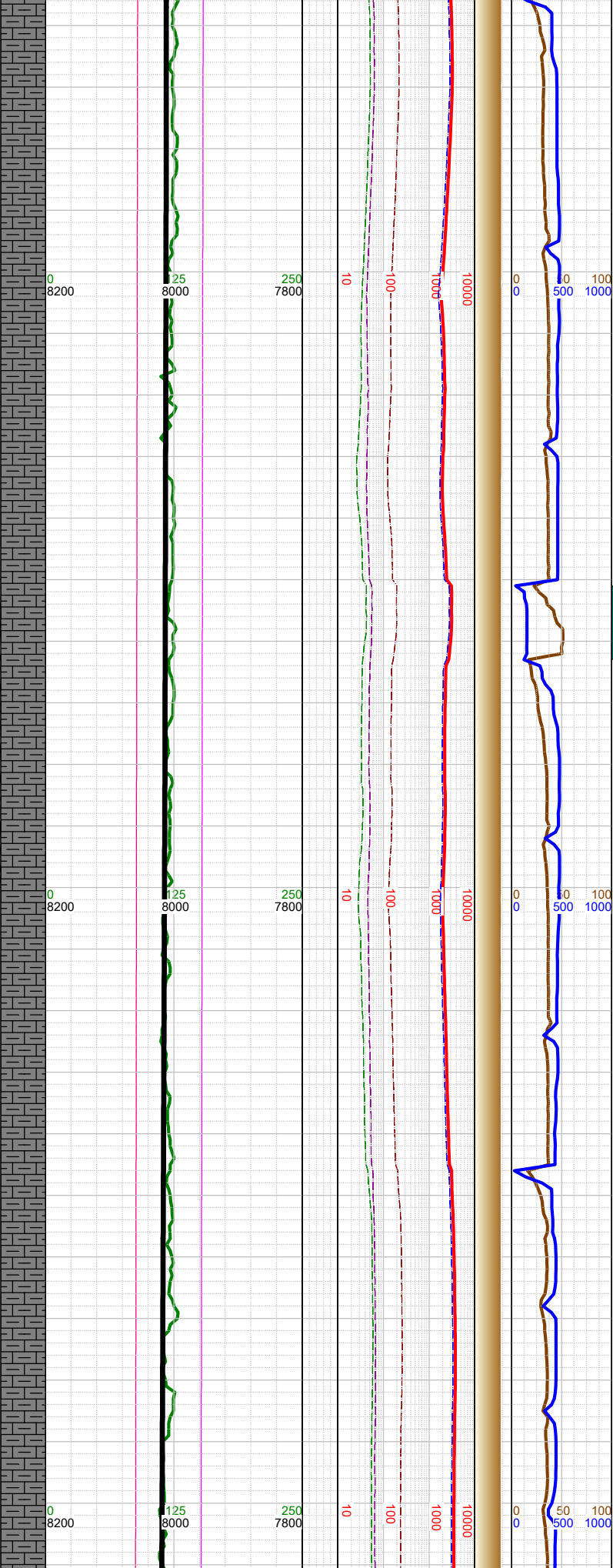
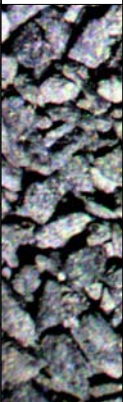
-15520 WT 9.6,  
VIS 40

-15500 MARL: dk gy-blk,  
mot, subblky-subply, sft-  
subfrm, rthy; CHK: lt gy,  
sft-subfrm, subblky, mot, v  
calc, rthy-sl wxy lstr; tr py;  
tr forams; tr fos frags;





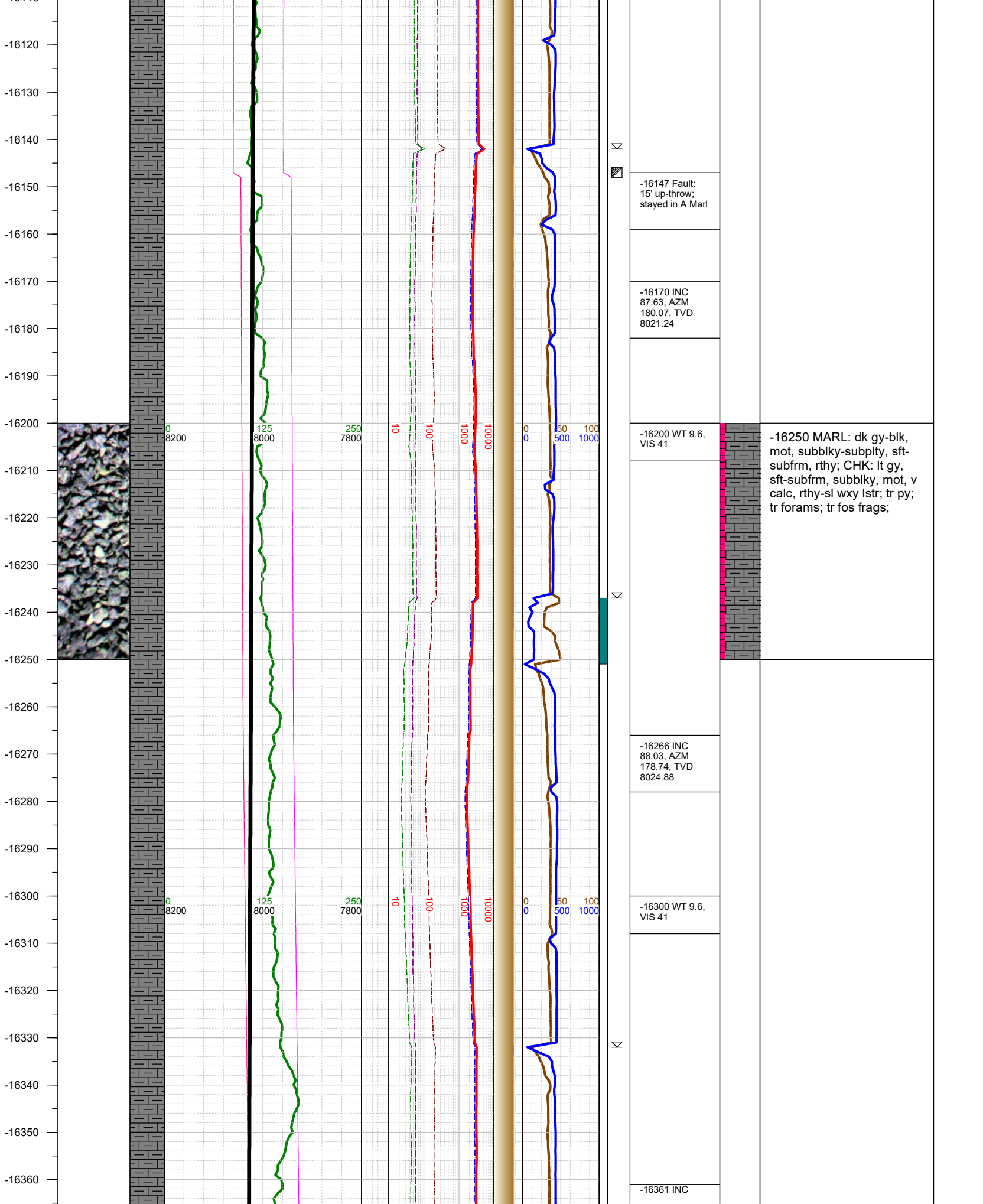
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-16110

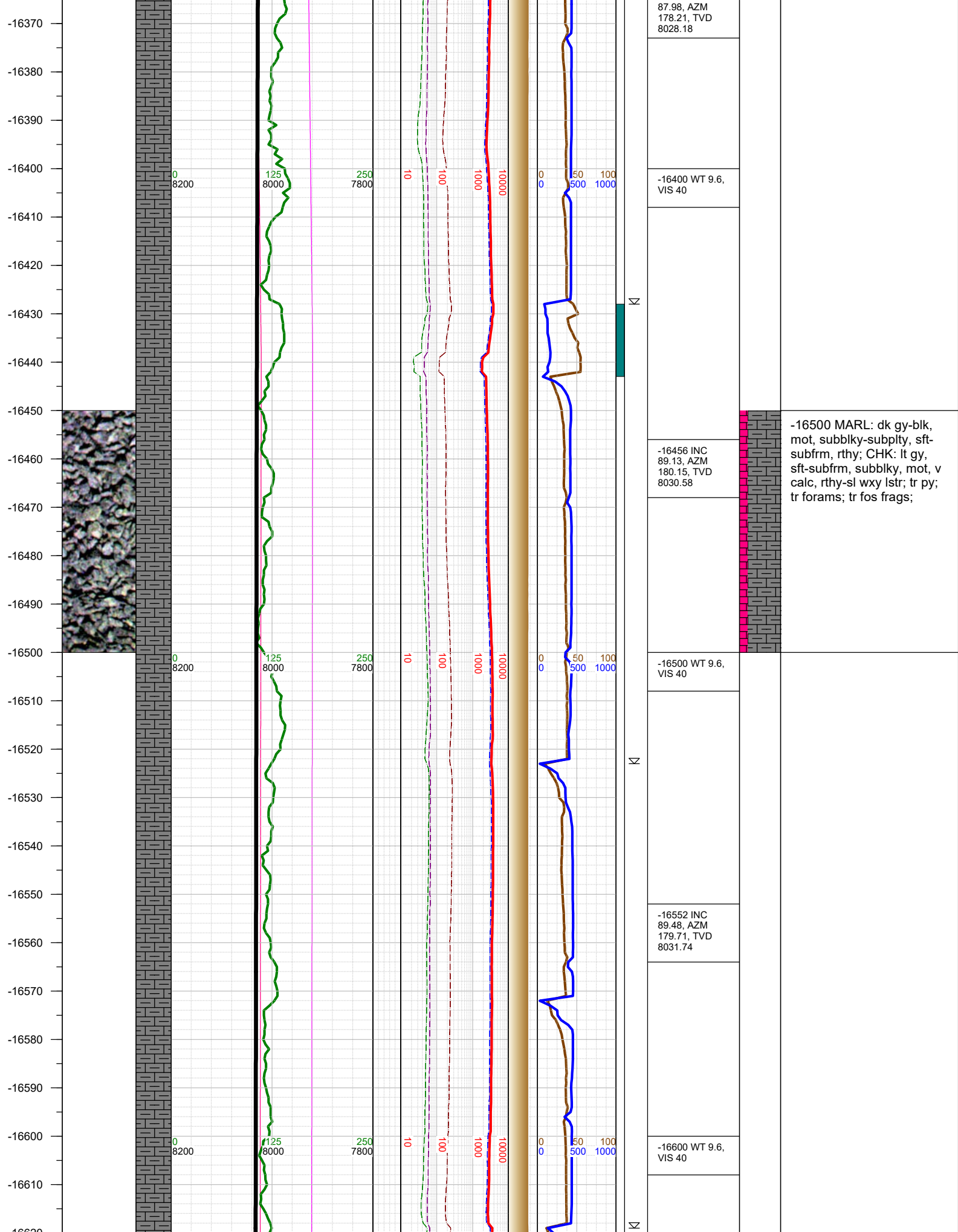


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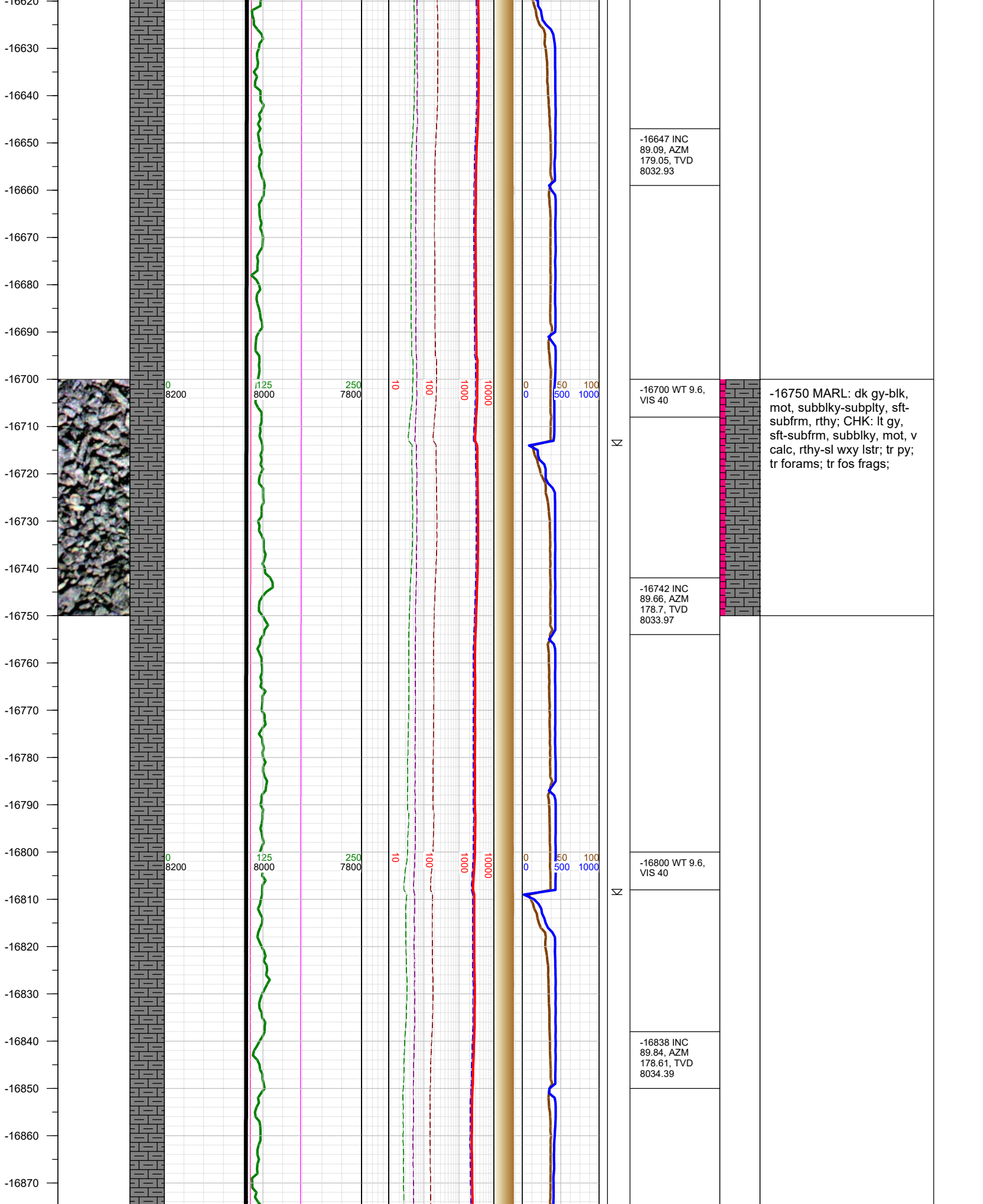
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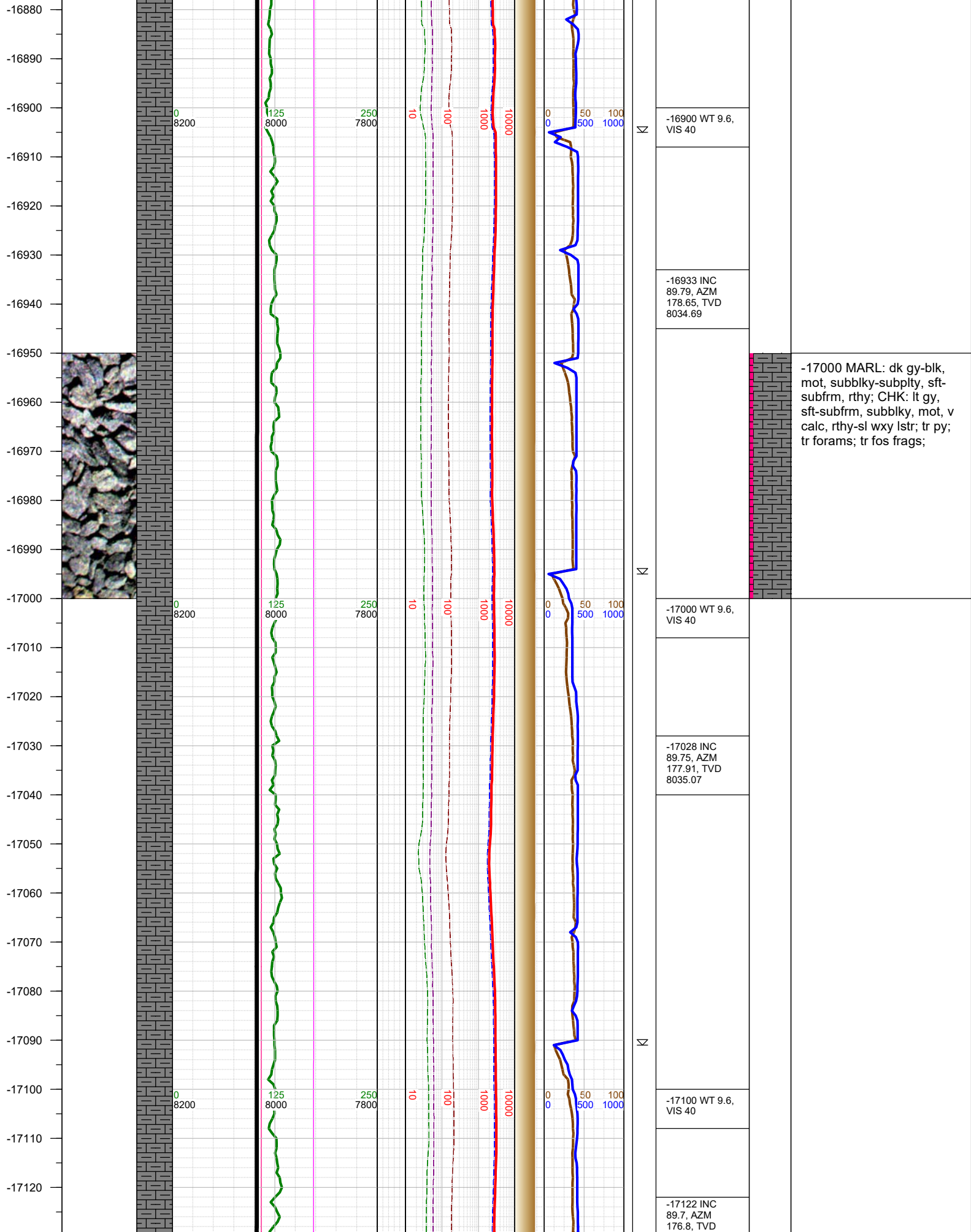
-15886 INC 89.75, AZM 179.36, TVD 8012.13	
-15900 WT 9.6, VIS 41	
-16000 MARL: dk gy-blk, mot, subblky-subply, sft- subfrm, rthy; CHK: lt gy, sft-subfrm, subblky, mot, v calc, rthy-sl wxy lstr; tr py; tr forams; tr fos frags;	
-15981 INC 87.94, AZM 180.24, TVD 8014.04	
-16000 WT 9.6, VIS 41	
-16075 INC 87.85, AZM 180.29, TVD 8017.5	
-16100 WT 9.6, VIS 41	

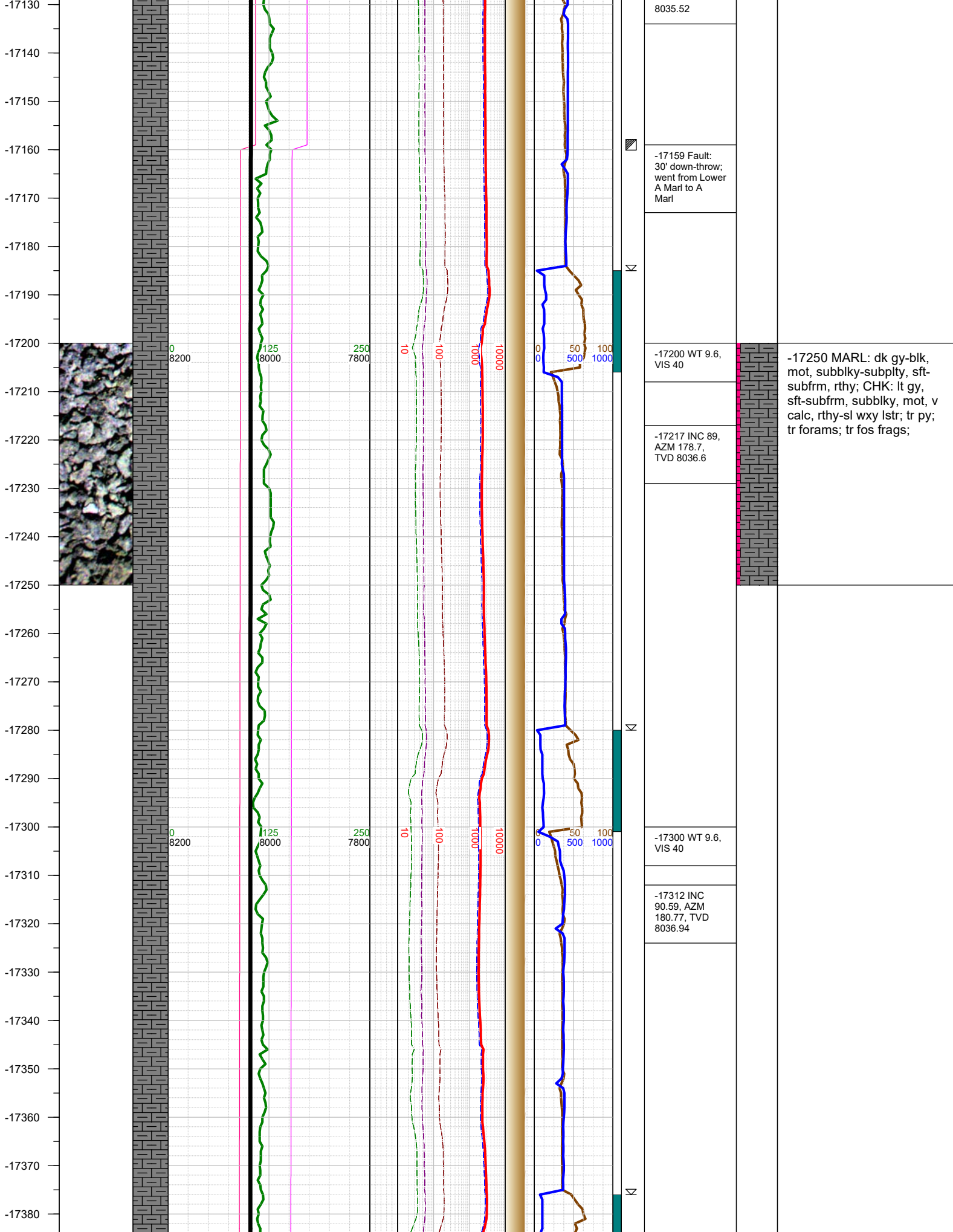




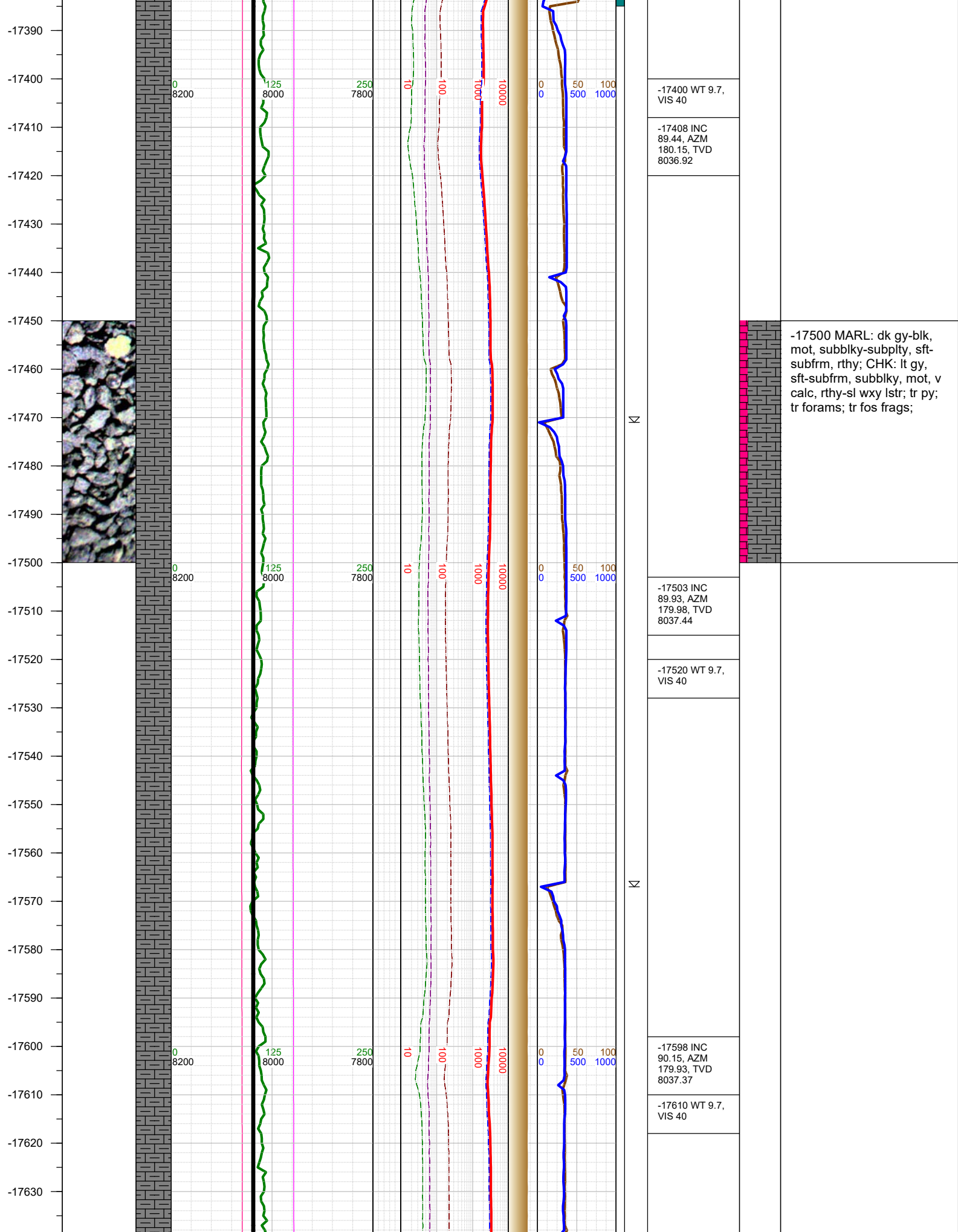


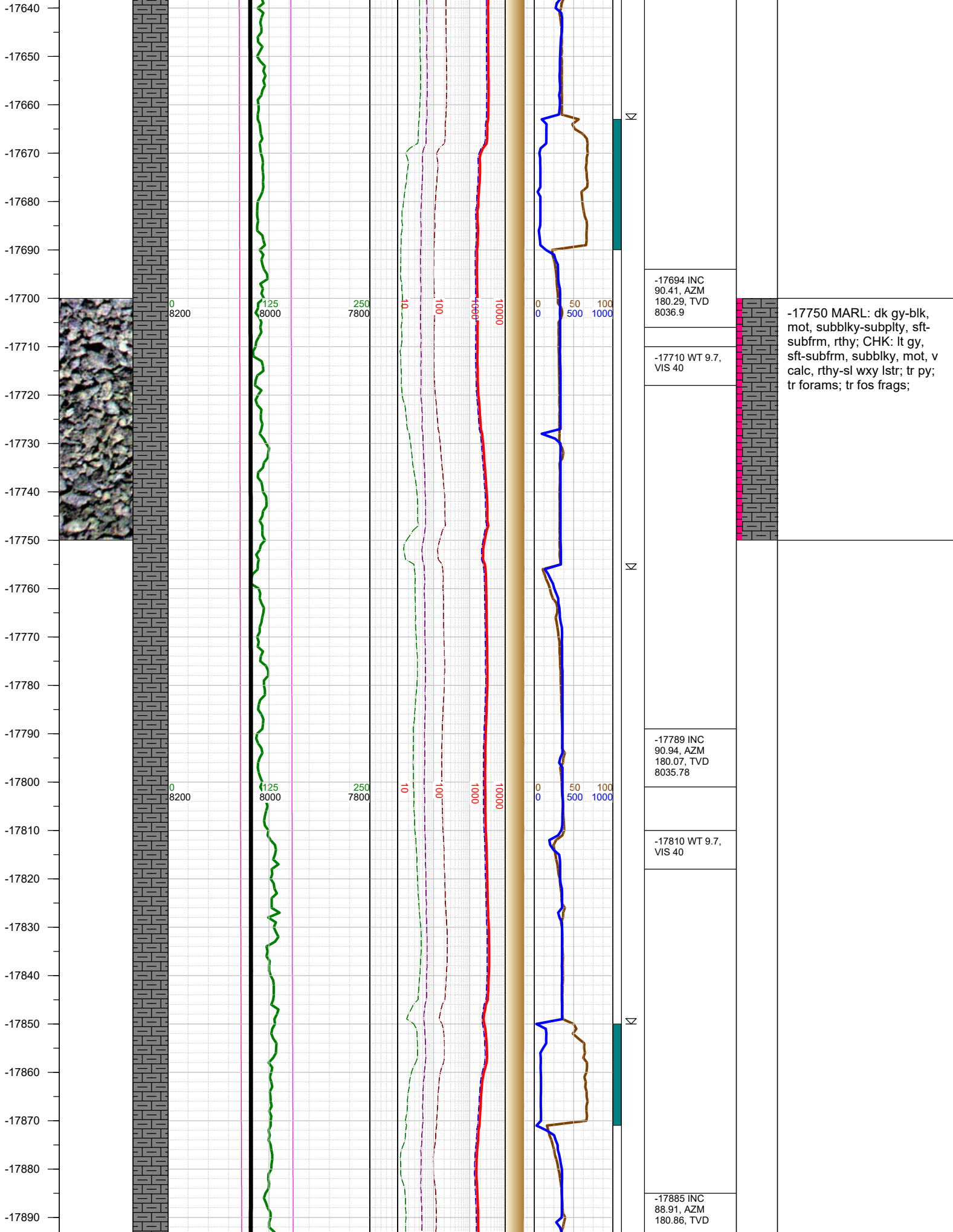


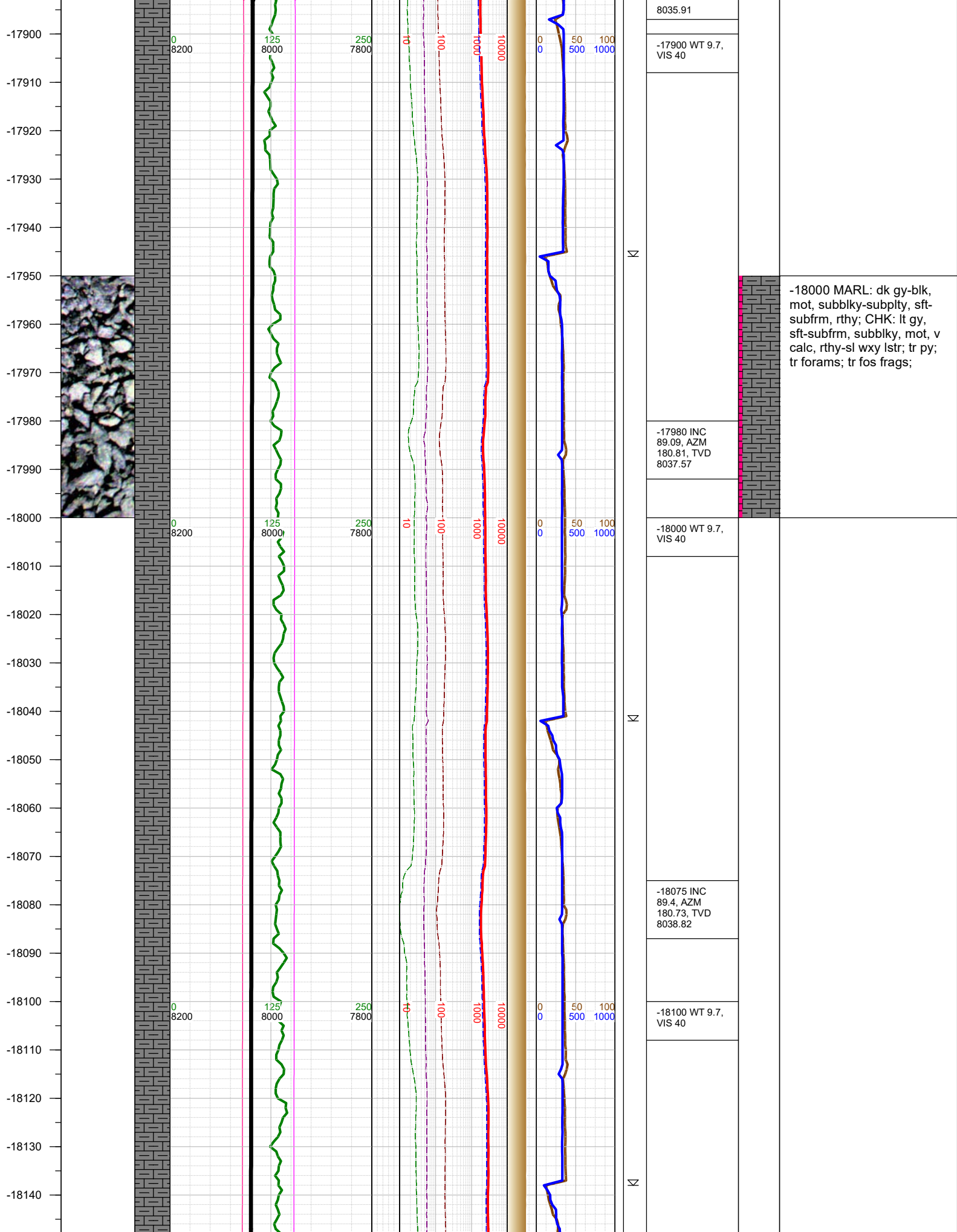




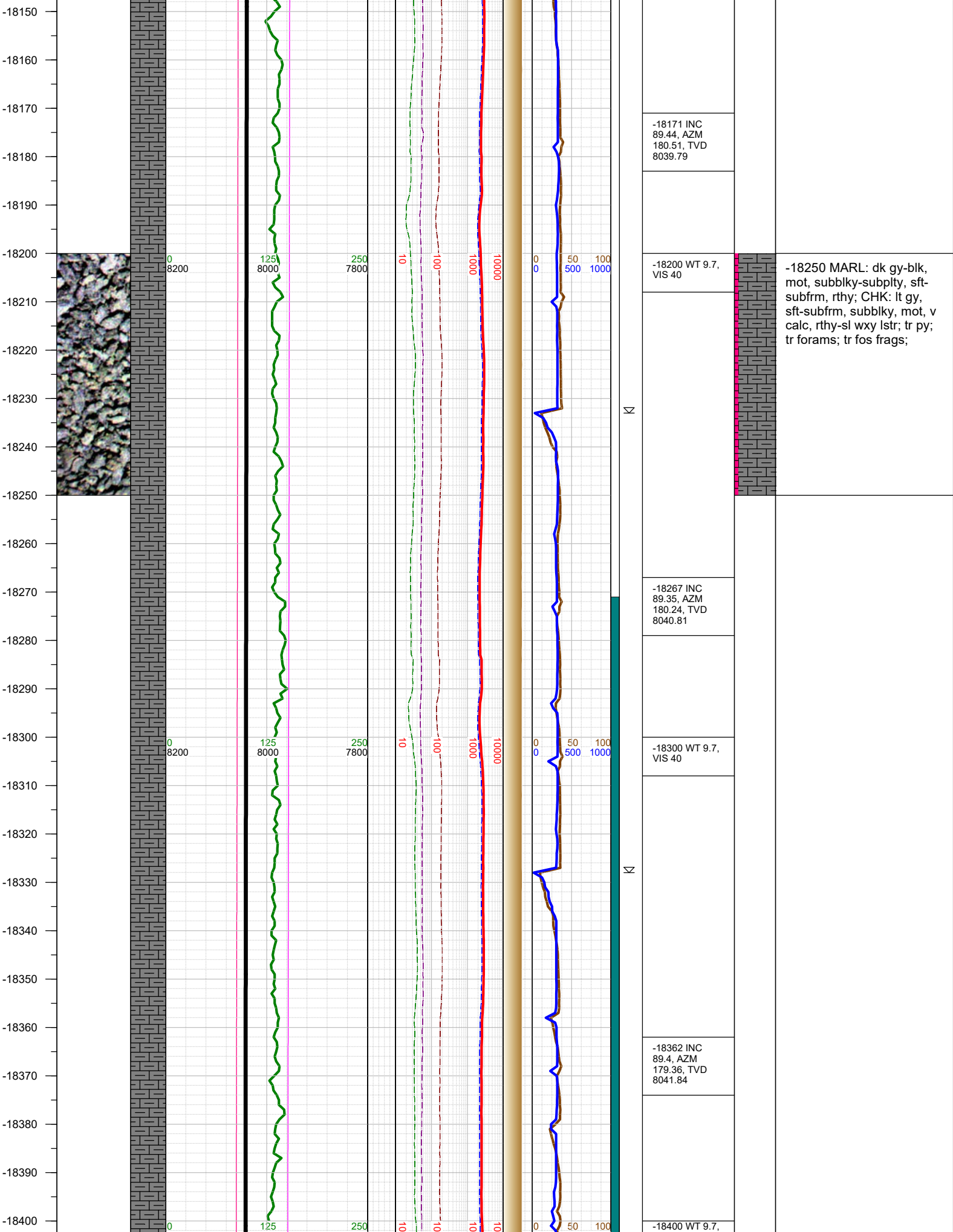


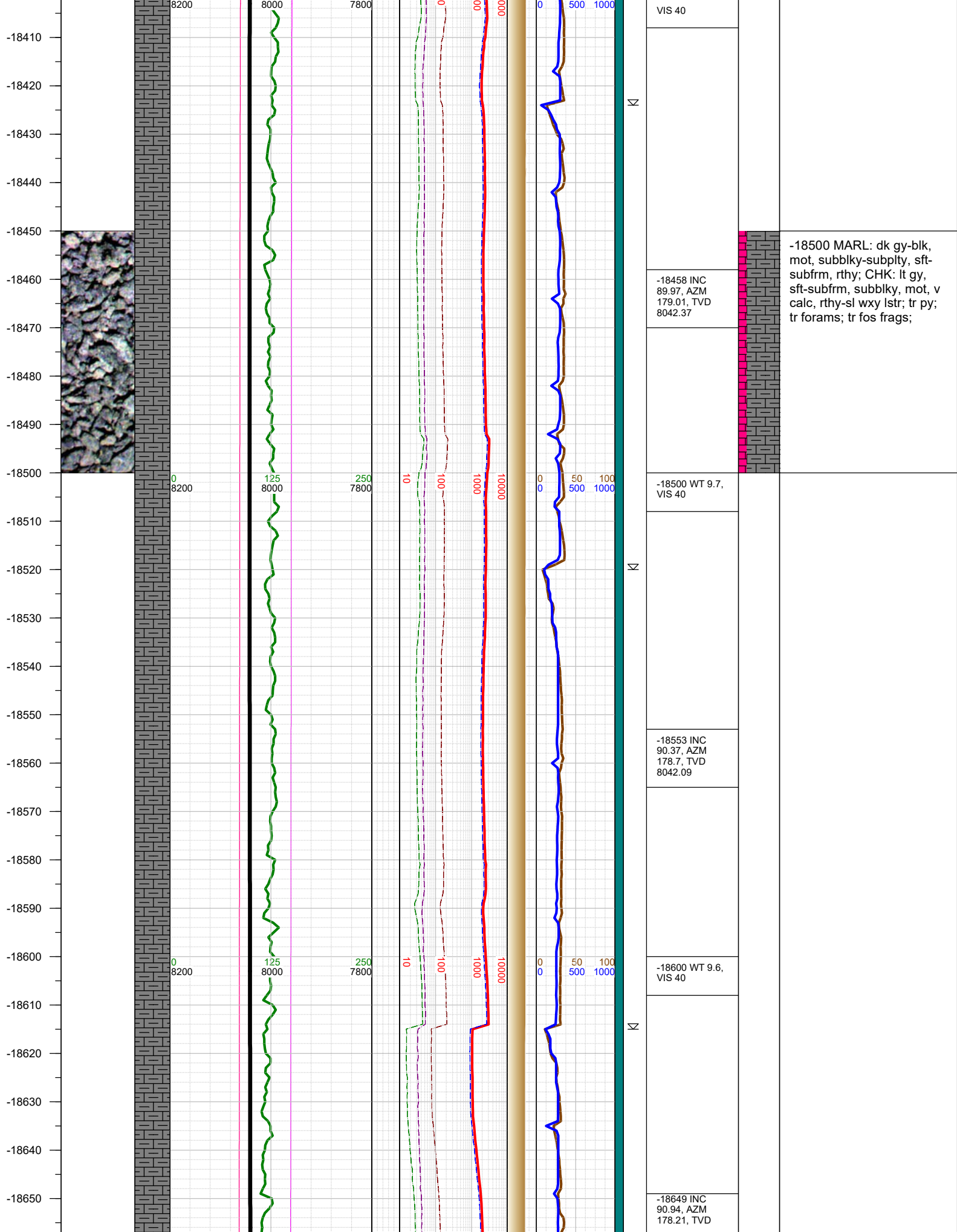


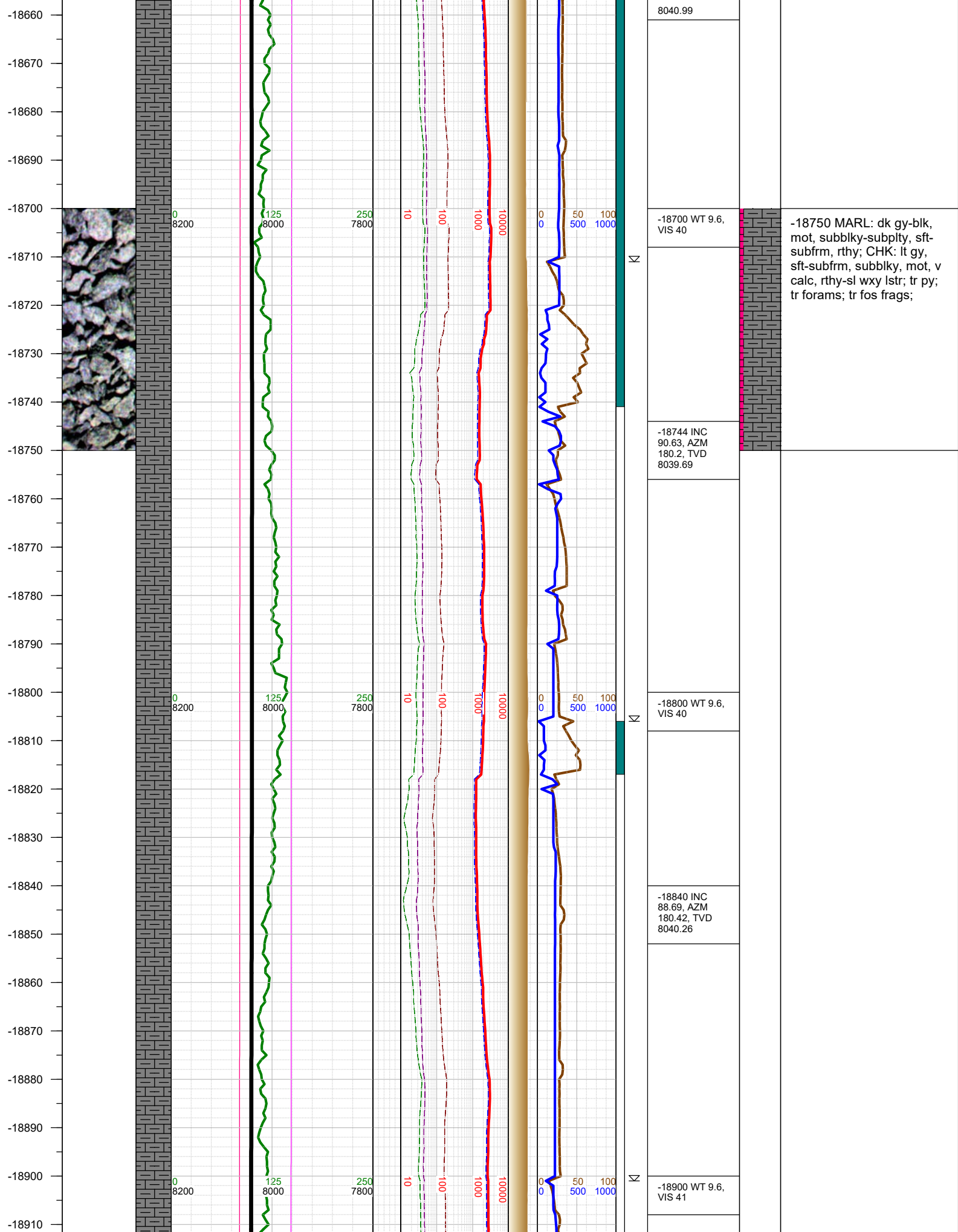




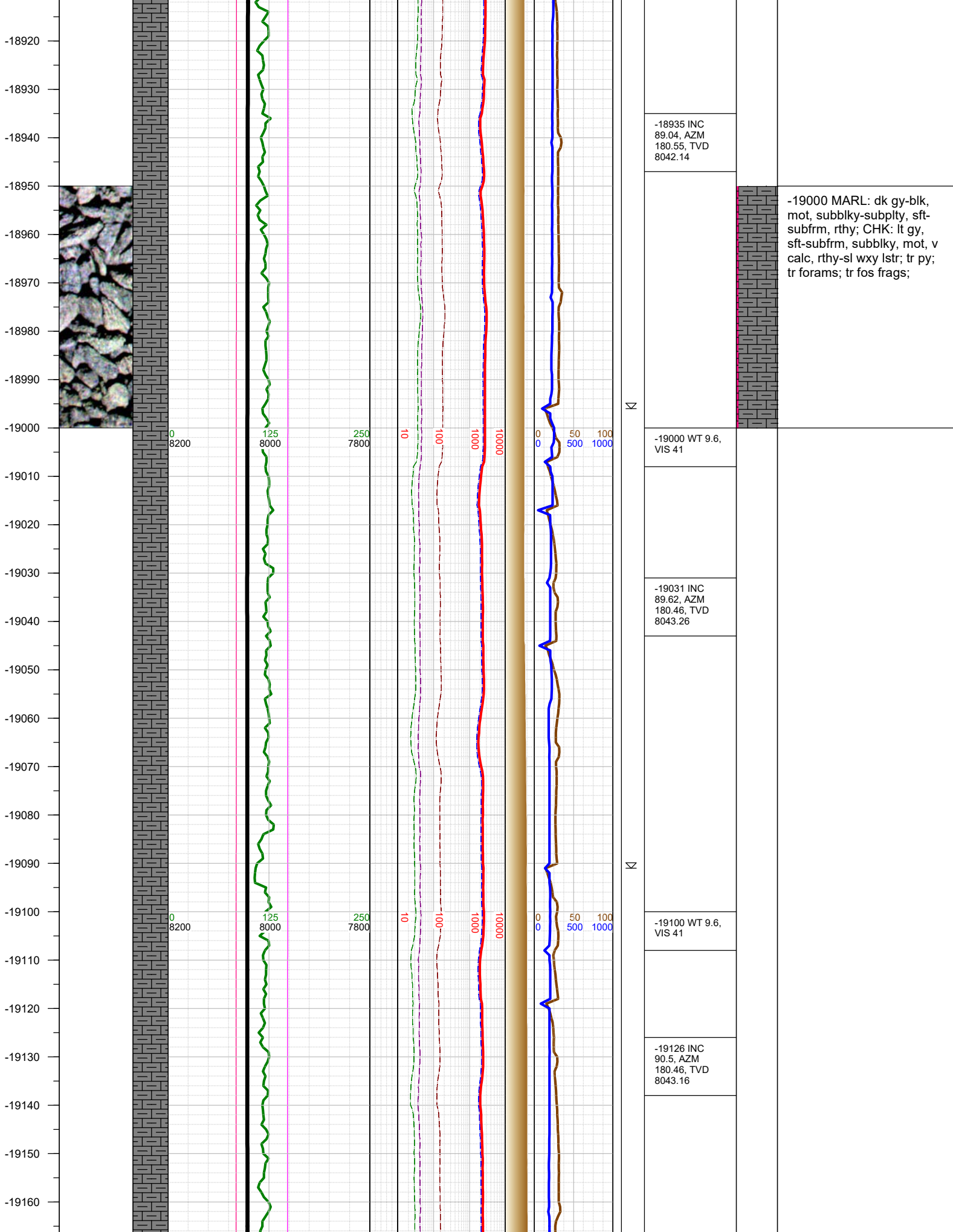


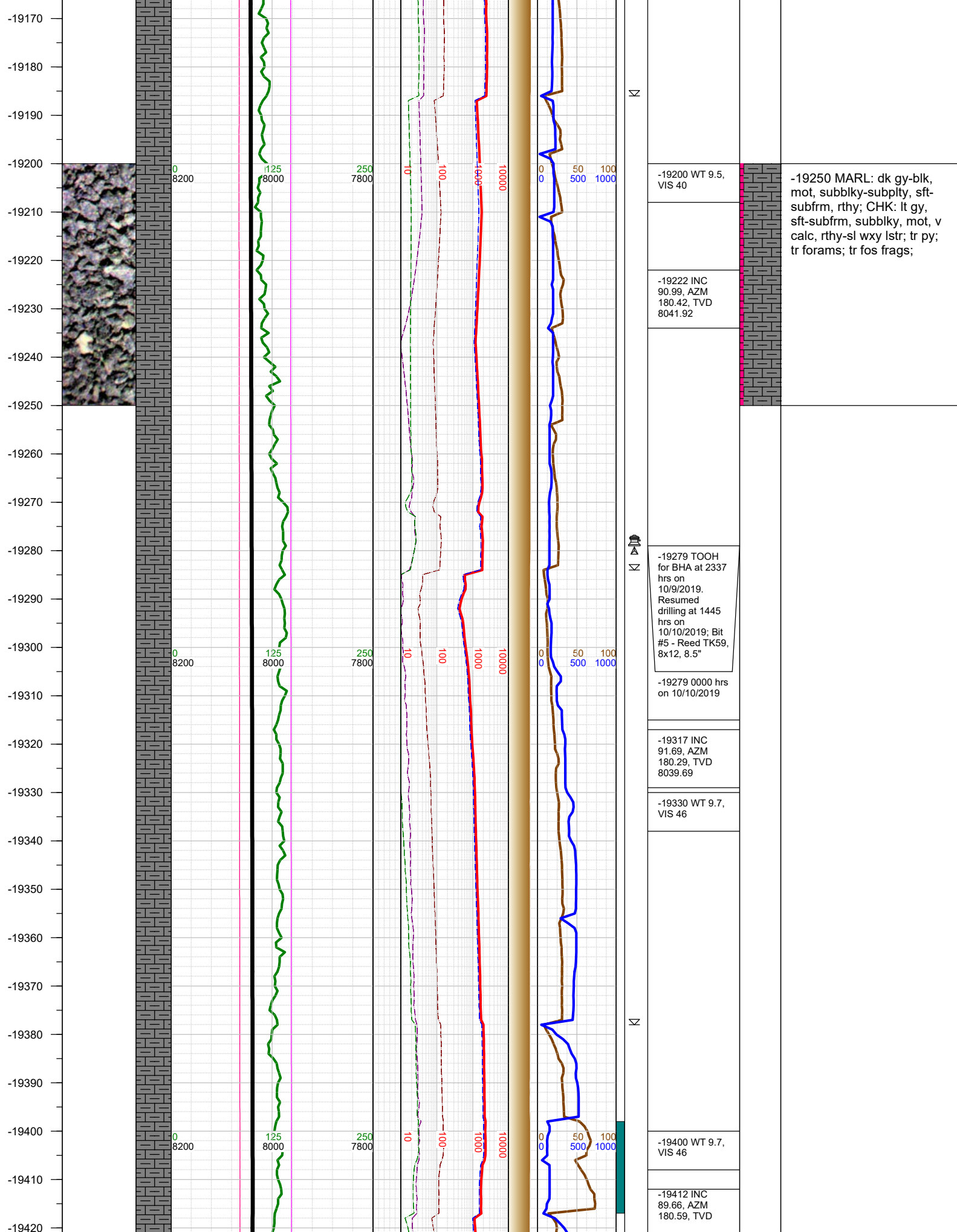


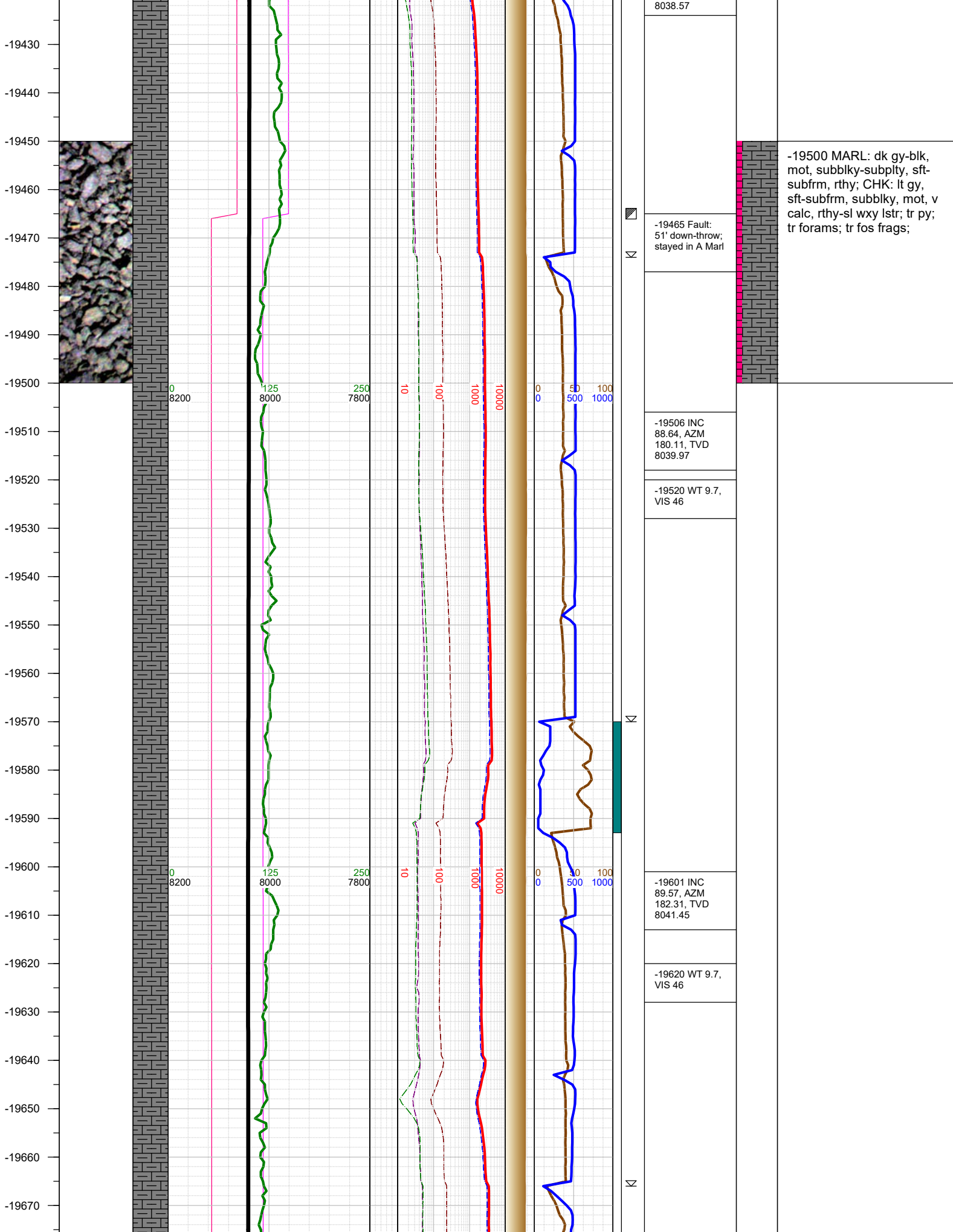






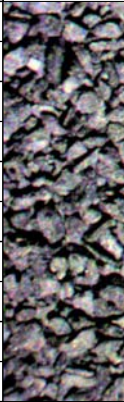








-19680  
-19690  
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-19696 INC  
90.81, AZM  
182.31, TVD  
8041.14

-19710 WT 9.7,  
VIS 46

-19790 INC  
91.87, AZM  
181.74, TVD  
8038.94

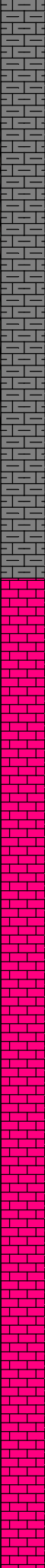
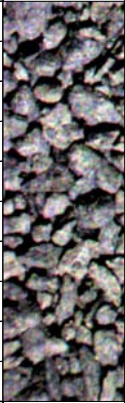
-19810 WT 9.7,  
VIS 43

-19885 INC  
91.6, AZM  
181.43, TVD  
8036.06

-19900 WT 9.7,  
VIS 43

-19750 MARL: dk gy-blk,  
mot, subblky-subply, sft-  
subfrm, rthy; CHK: lt gy,  
sft-subfrm, subblky, mot, v  
calc, rthy-sl wxy lstr; tr py;  
tr forams; tr fos frags;

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-19990  
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-20170  
-20180



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7800

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1000

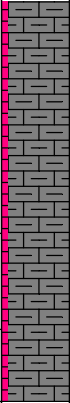
10000

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500 1000

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-20000 MARL: dk gy-blk, mot, subblky-subply, sft-subfrm, rthy; CHK: lt gy, sft-subfrm, subblky, mot, v calc, rthy-sl wxy lstr; tr py; tr forams; tr fos frags;

-19979 INC  
91.69, AZM  
181.34, TVD  
8033.37

-20000 WT 9.7,  
VIS 43

-20075 INC  
92.53, AZM  
181.78, TVD  
8029.83

-20100 WT 9.7,  
VIS 42

-20170 INC  
90.99, AZM  
180.42, TVD  
8026.91

