

OPERATOR: **Extraction Oil & Gas**
WELL NAME: **Northwest A S20-25-12N**
FIELD NAME: DJ Basin - Wattenberg
DRILLING RIG: Patterson 901
API #: 05-014-20786

LAT/LONG: 39.98318, -105.012792
SURFACE HOLE: NWNW S9-T1S-R68W, 1281' FNL, 849' FWL
BOTTOM HOLE: S20-T1S-R68W, 2196' FNL, 2094' FEL

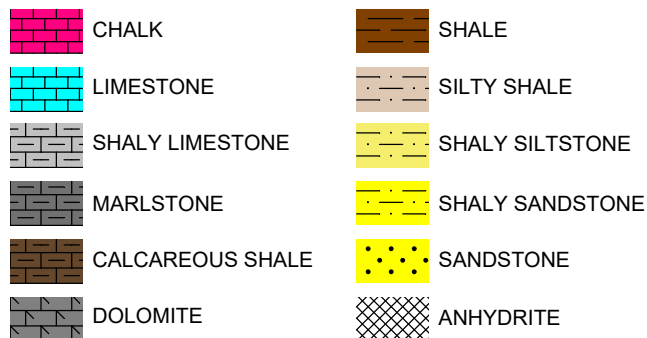


Earth Science Agency, LLC

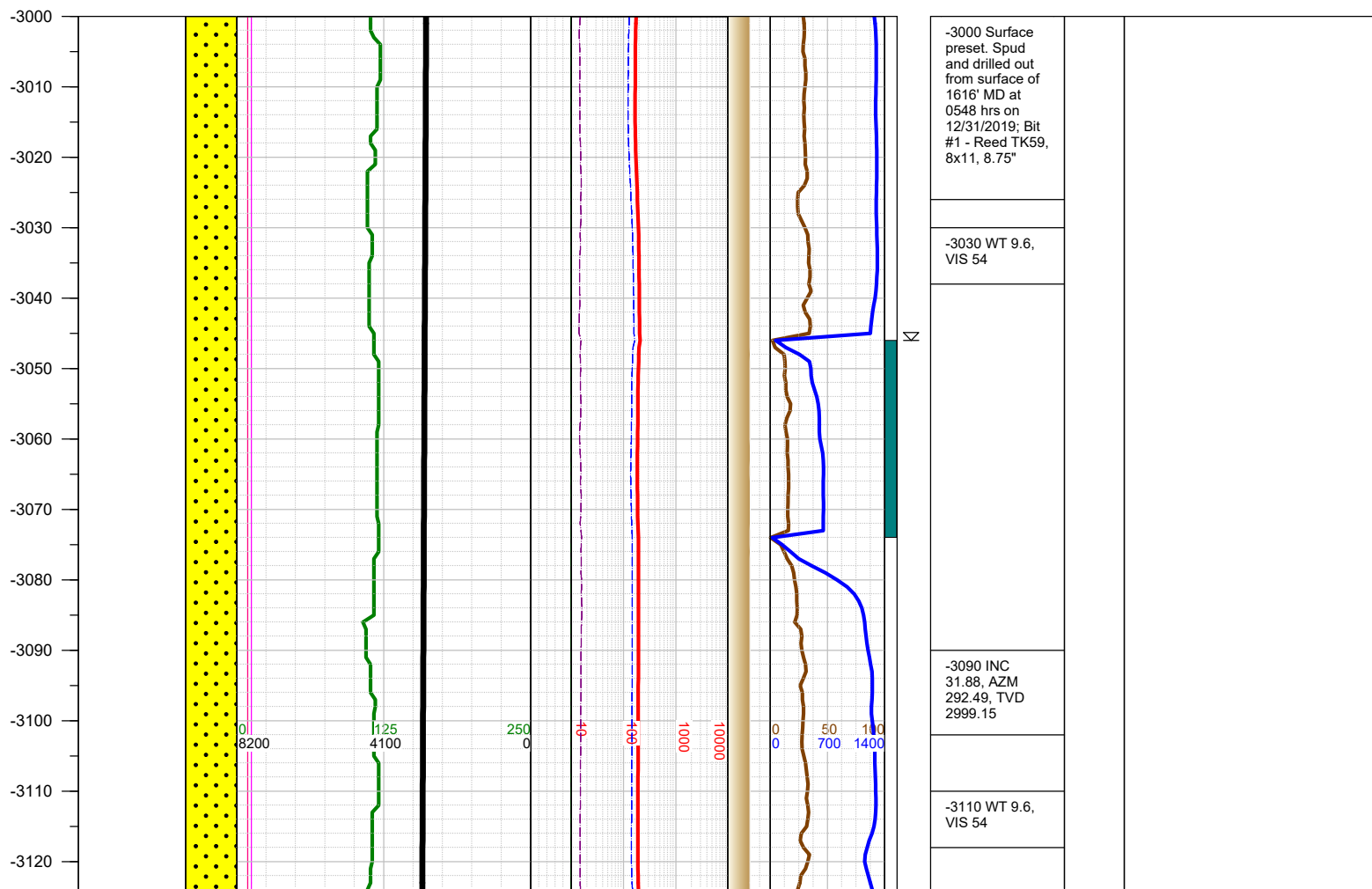
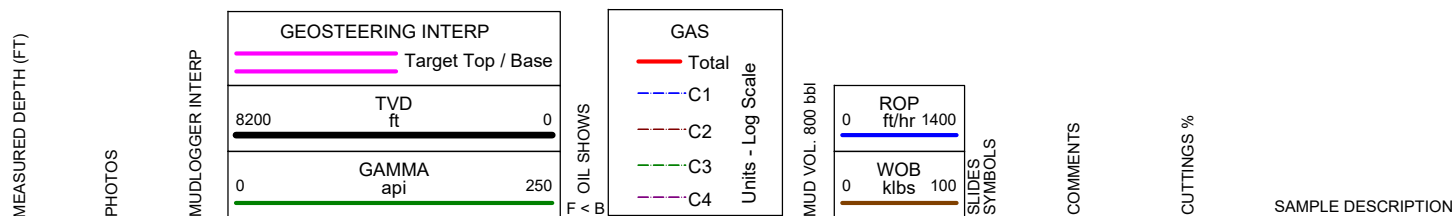
COUNTY: Broomfield
STATE: Colorado
GROUND ELEVATION: 5314'
KELLY BUSHING: 5343'
DRILLING FLUID: OBM
TVD VS. MD: 7889' / 21610'
SPUD DATE: December 31, 2019
TD DATE: January 3, 2019

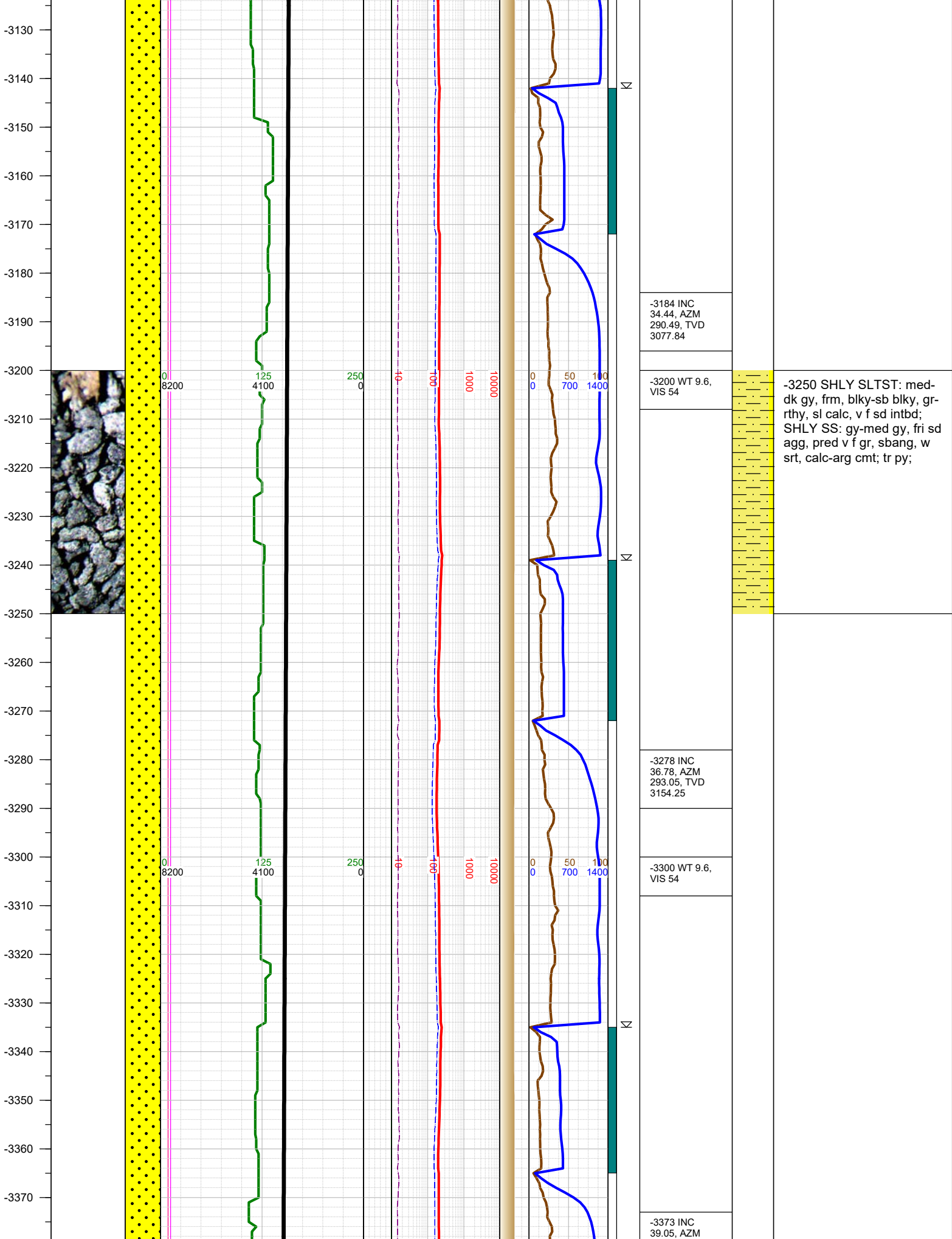
DEPTHS LOGGED: 3000' - 21610'
DATES LOGGED: December 31, 2019 - January 3, 2019
GEOLOGISTS: Kyle Newman, Dominic Pitre
SCALE: 5" = 100'

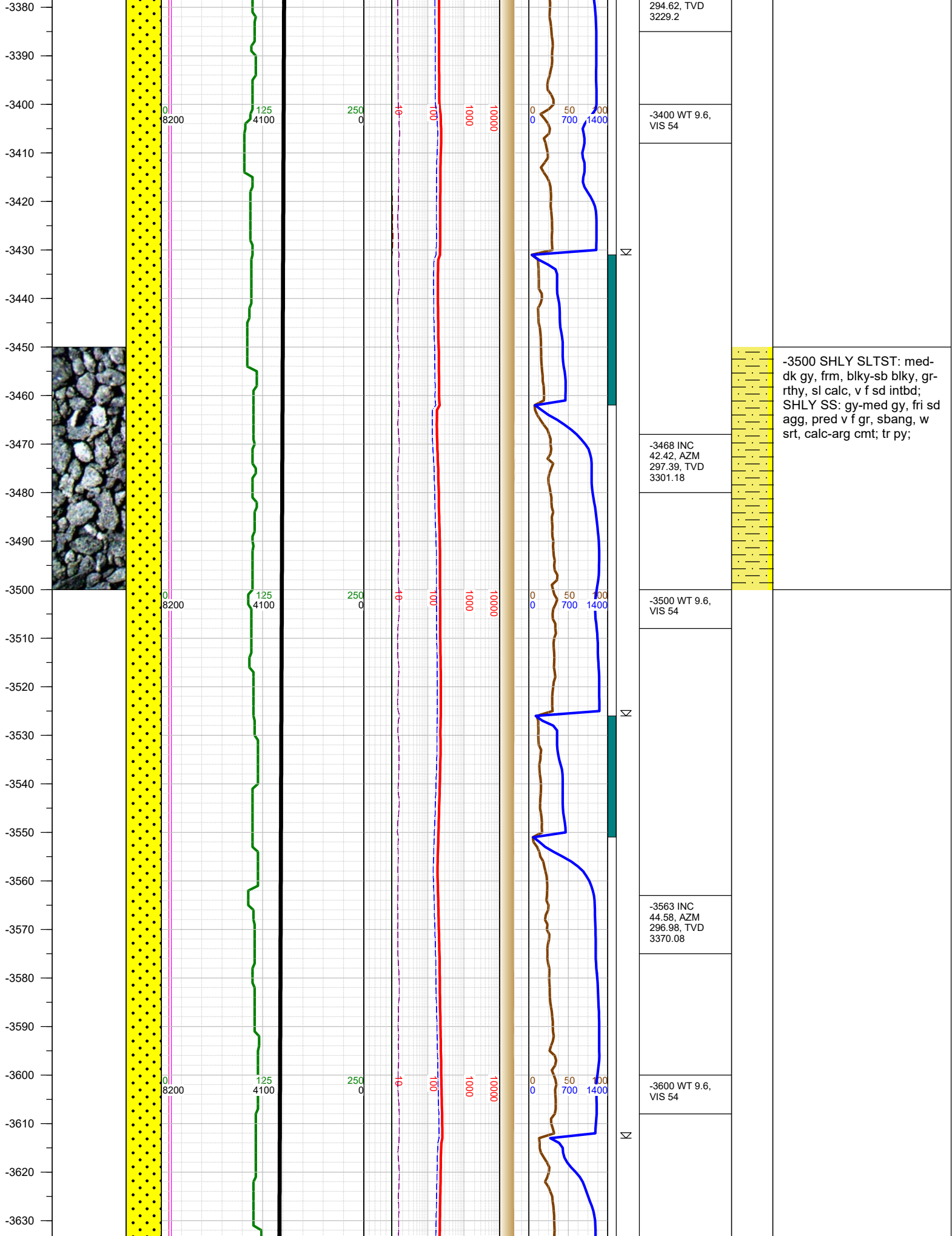
LEGEND

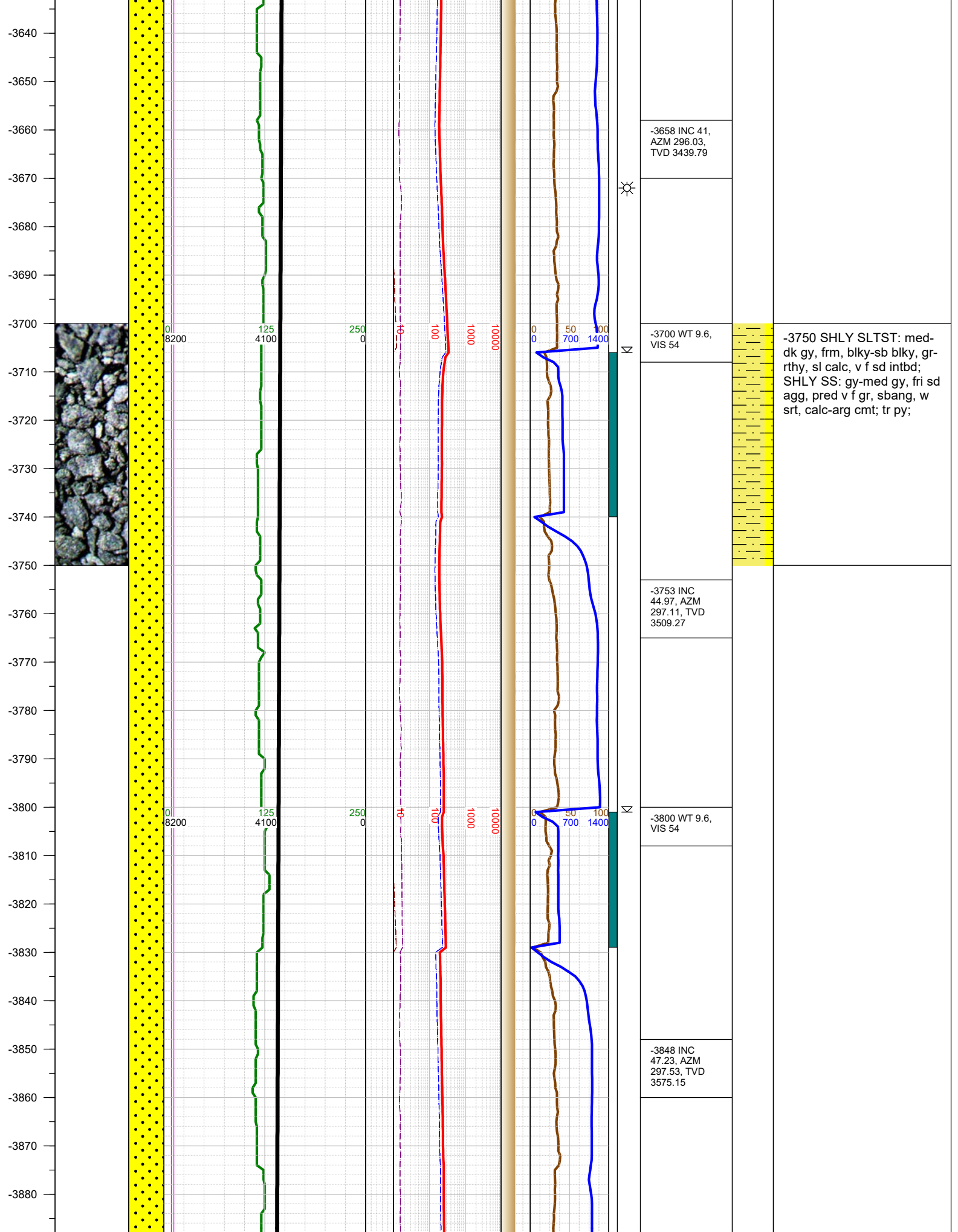


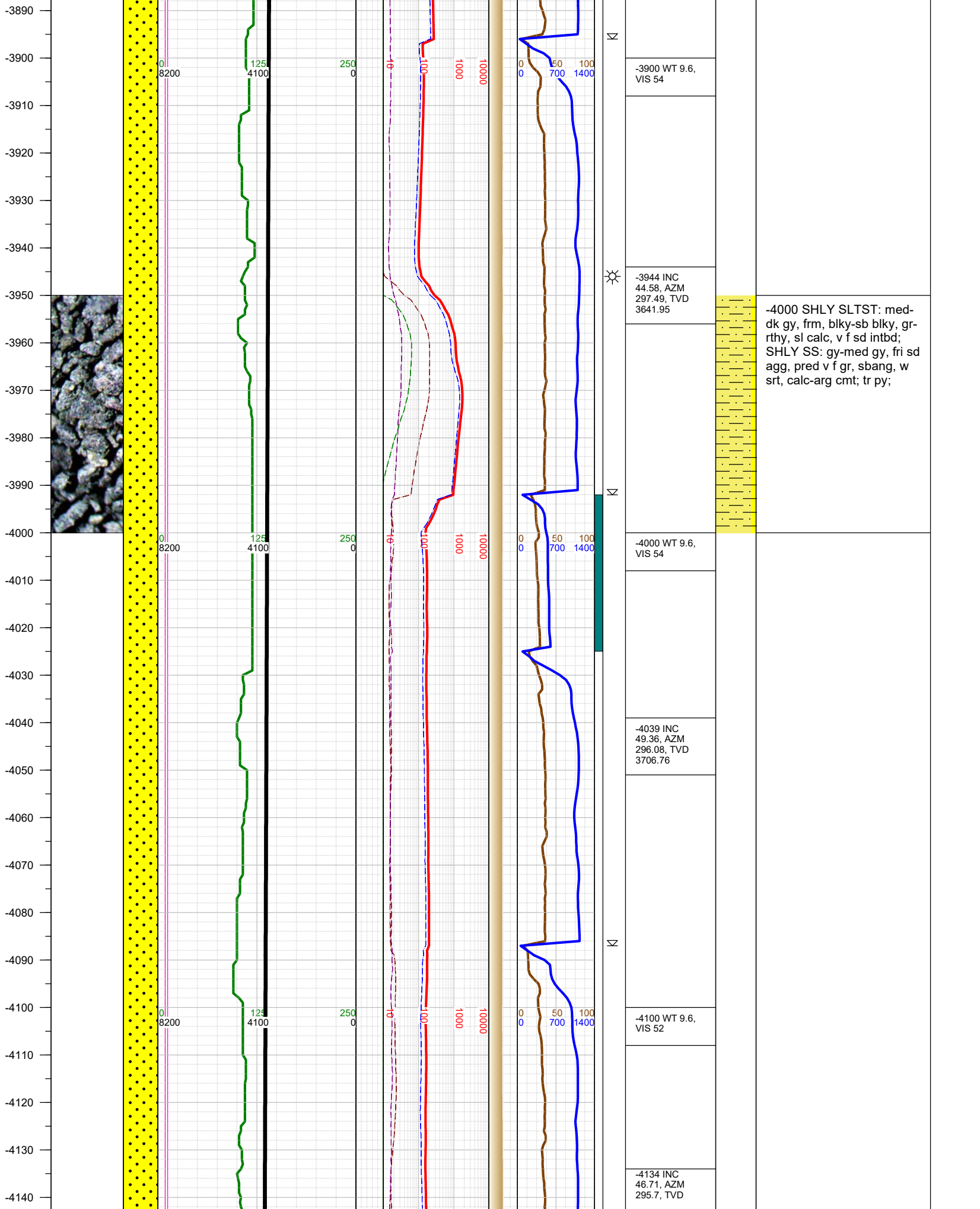
FORMATION CONNECTION MIDNIGHT NEW BIT GAS SHOW FAULT

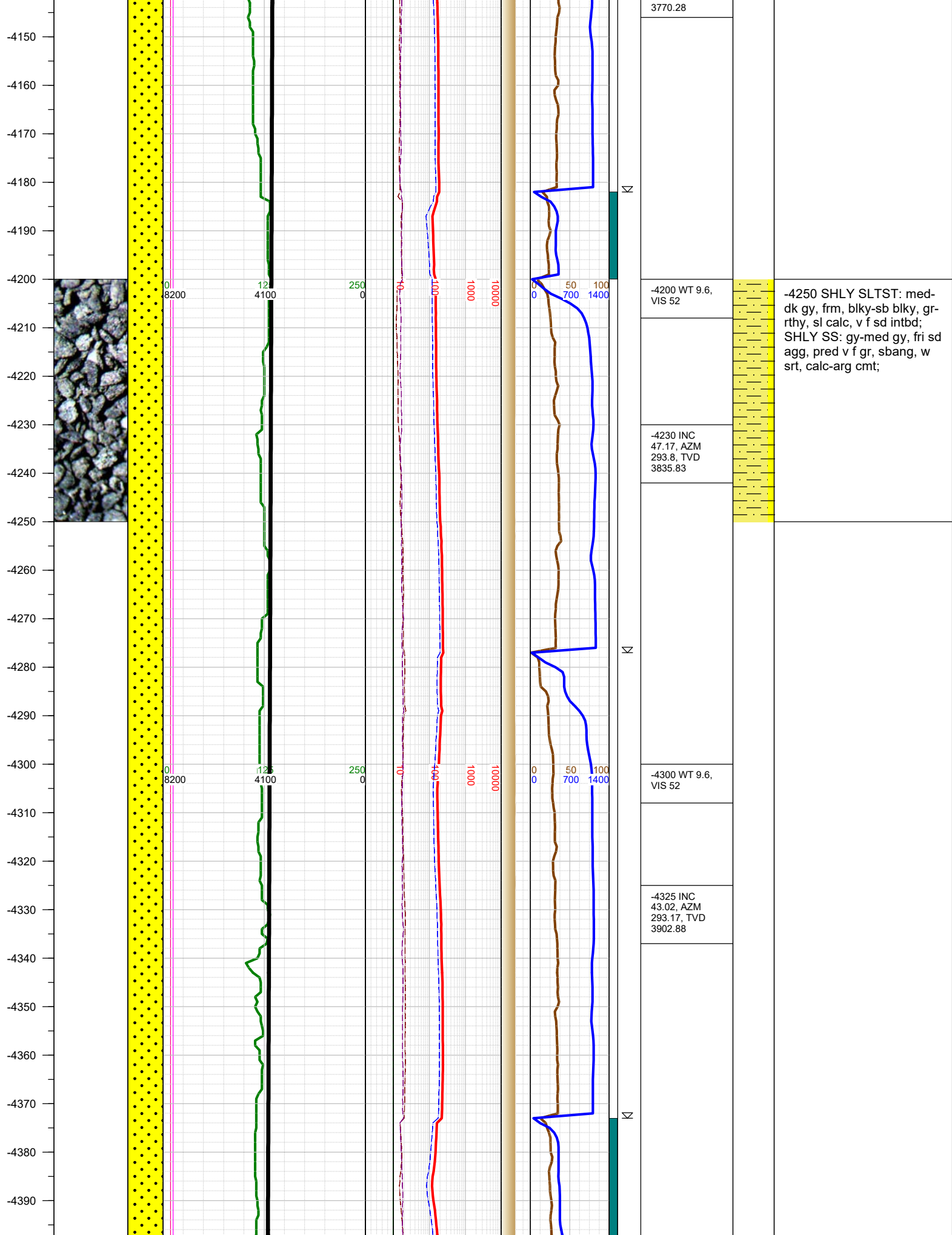


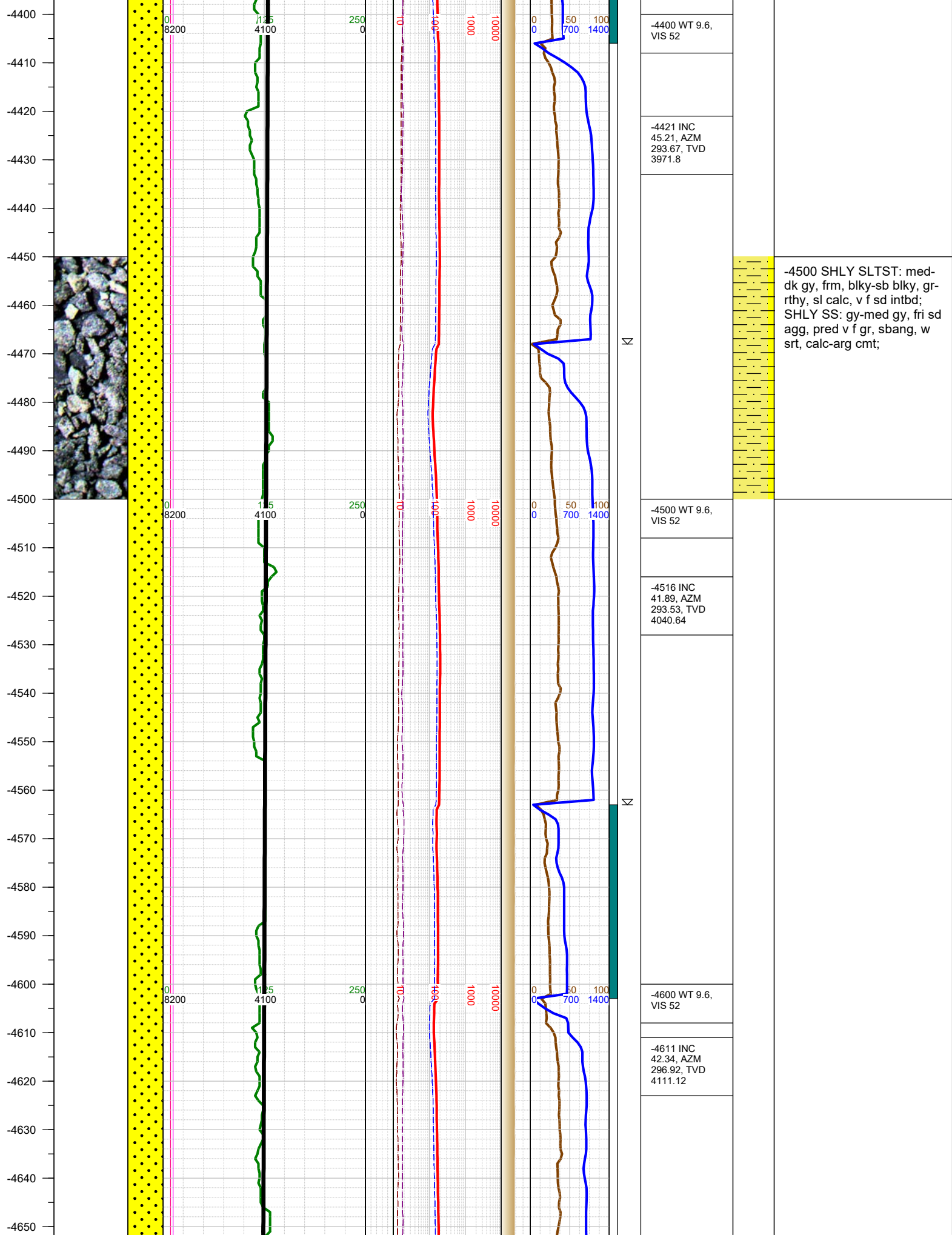




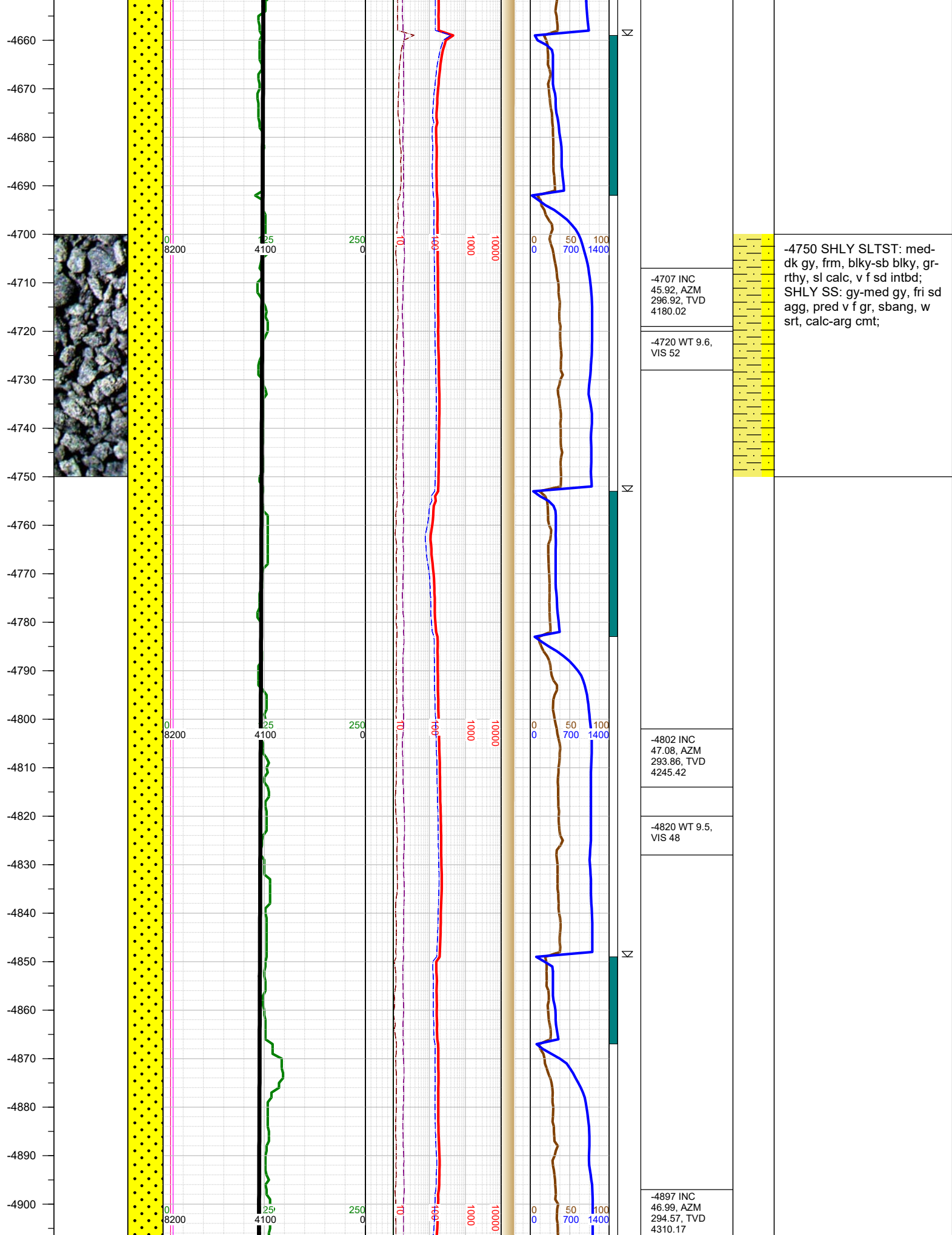






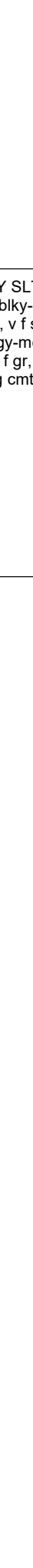
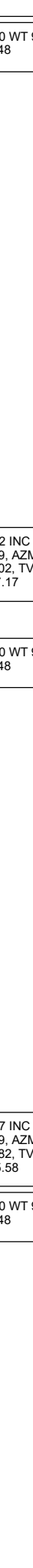
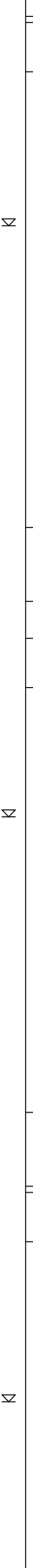
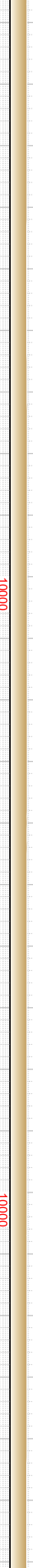
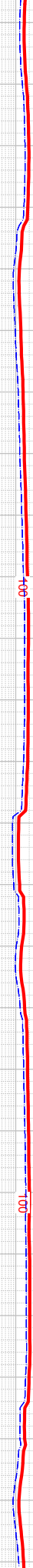


-4500 SHLY SLTST: med-
dk gy, frm, blkly-sb blkly, gr-
rthy, sl calc, v f sd intbd;
SHLY SS: gy-med gy, fri sd
agg, pred v f gr, sbang, w
srt, calc-arg cmt;



-4750 SHLY SLTST: med-
dk gy, frm, blkly-sb blkly, gr-
rthy, sl calc, v f sd intbd;
SHLY SS: gy-med gy, fri sd
agg, pred v f gr, sbang, w
srt, calc-arg cmt;

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-4910 WT 9.5,
VIS 48

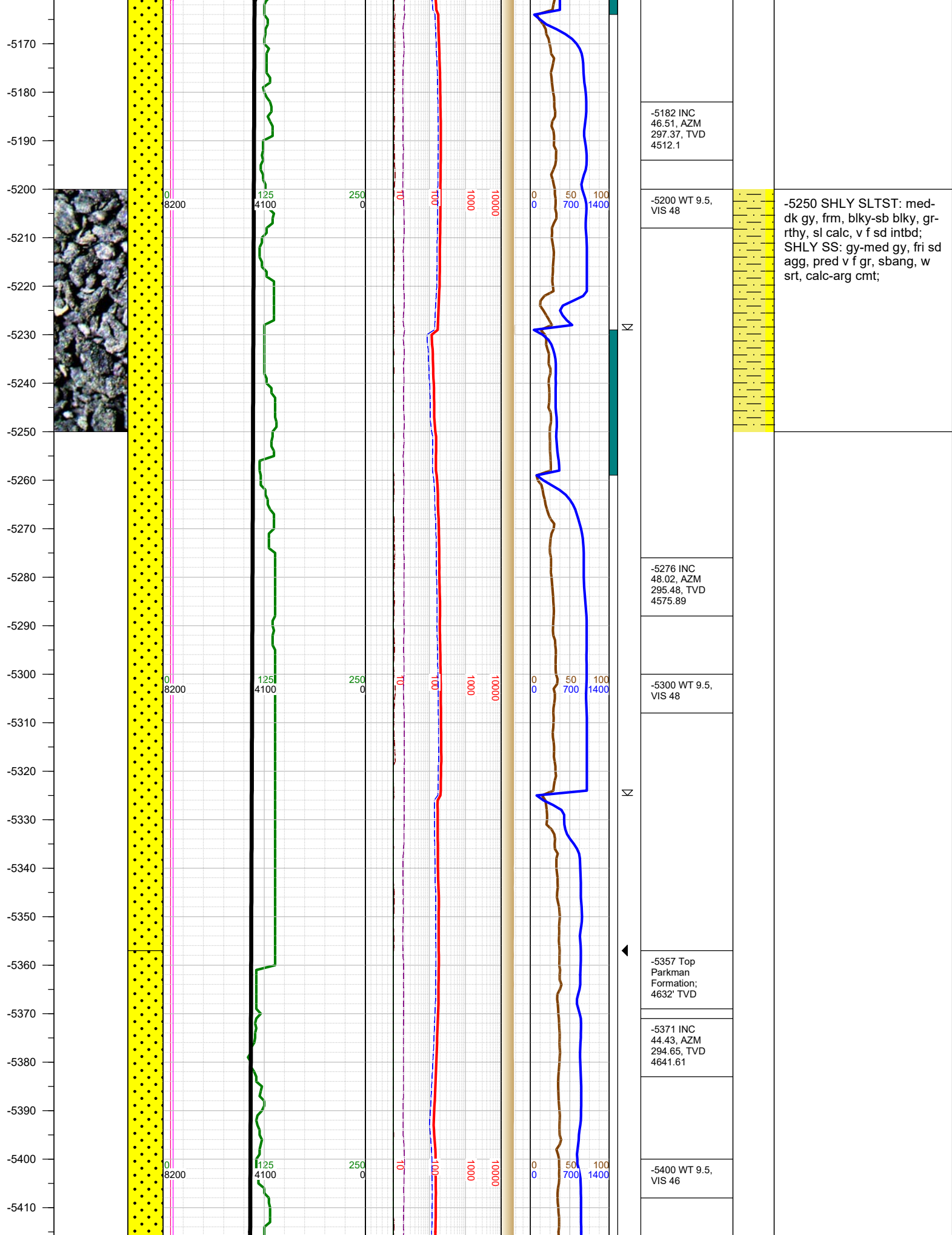
-4992 INC
43.29, AZM
294.02, TVD
4377.17

-5010 WT 9.5,
VIS 48

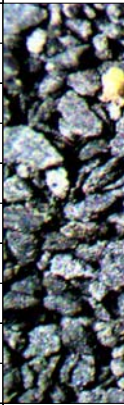
-5087 INC
44.59, AZM
296.82, TVD
4445.58

-5100 WT 9.5,
VIS 48

-5000 SHLY SLTST: med-
dk gy, frm, blk-y-sb blk-y, gr-
rthy, sl calc, v f sd intbd;
SHLY SS: gy-med gy, fri sd
agg, pred v f gr, sbang, w
srt, calc-arg cmt;



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-5465 INC
45.34, AZM
292.43, TVD
4708.21

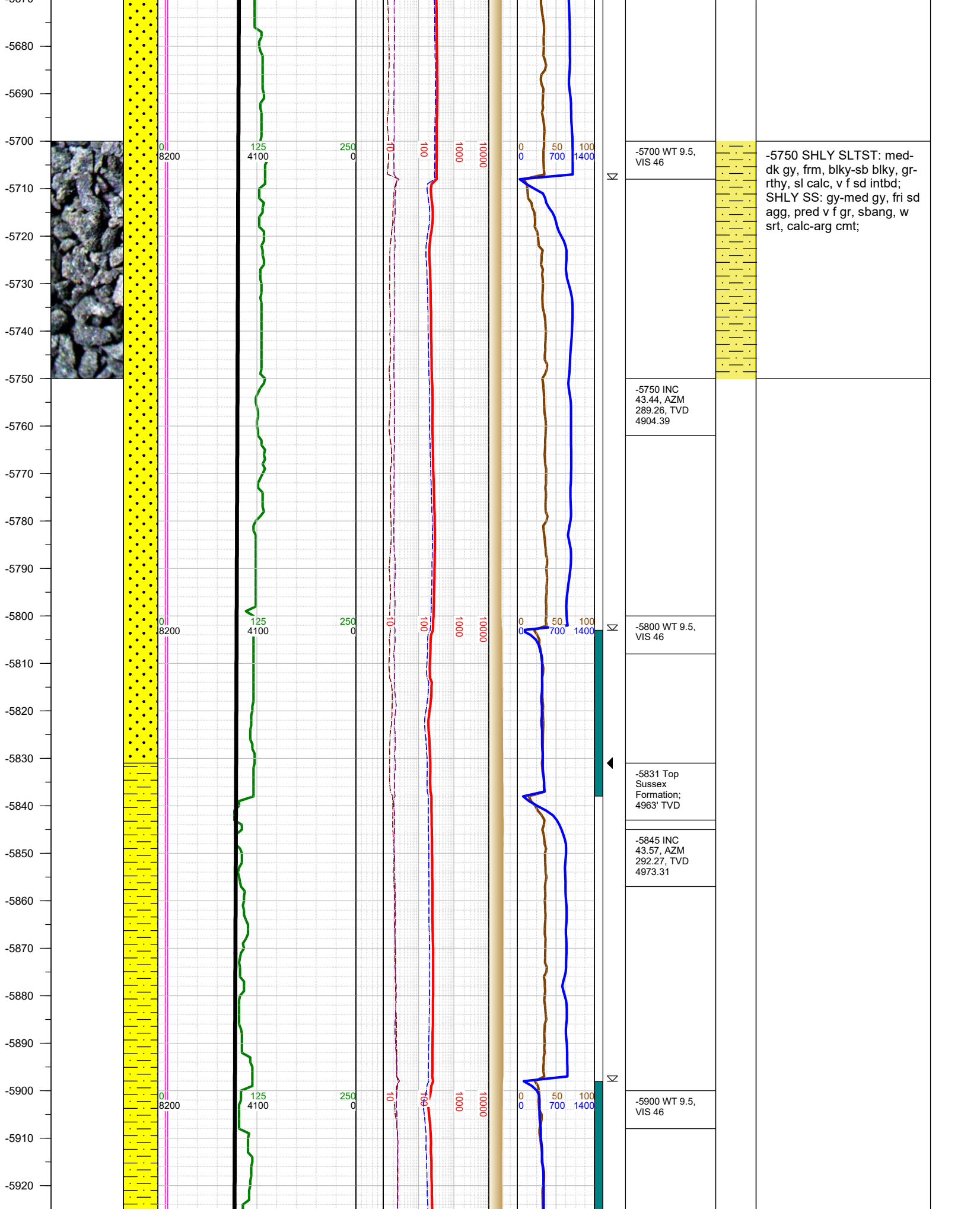
-5500 WT 9.5,
VIS 46

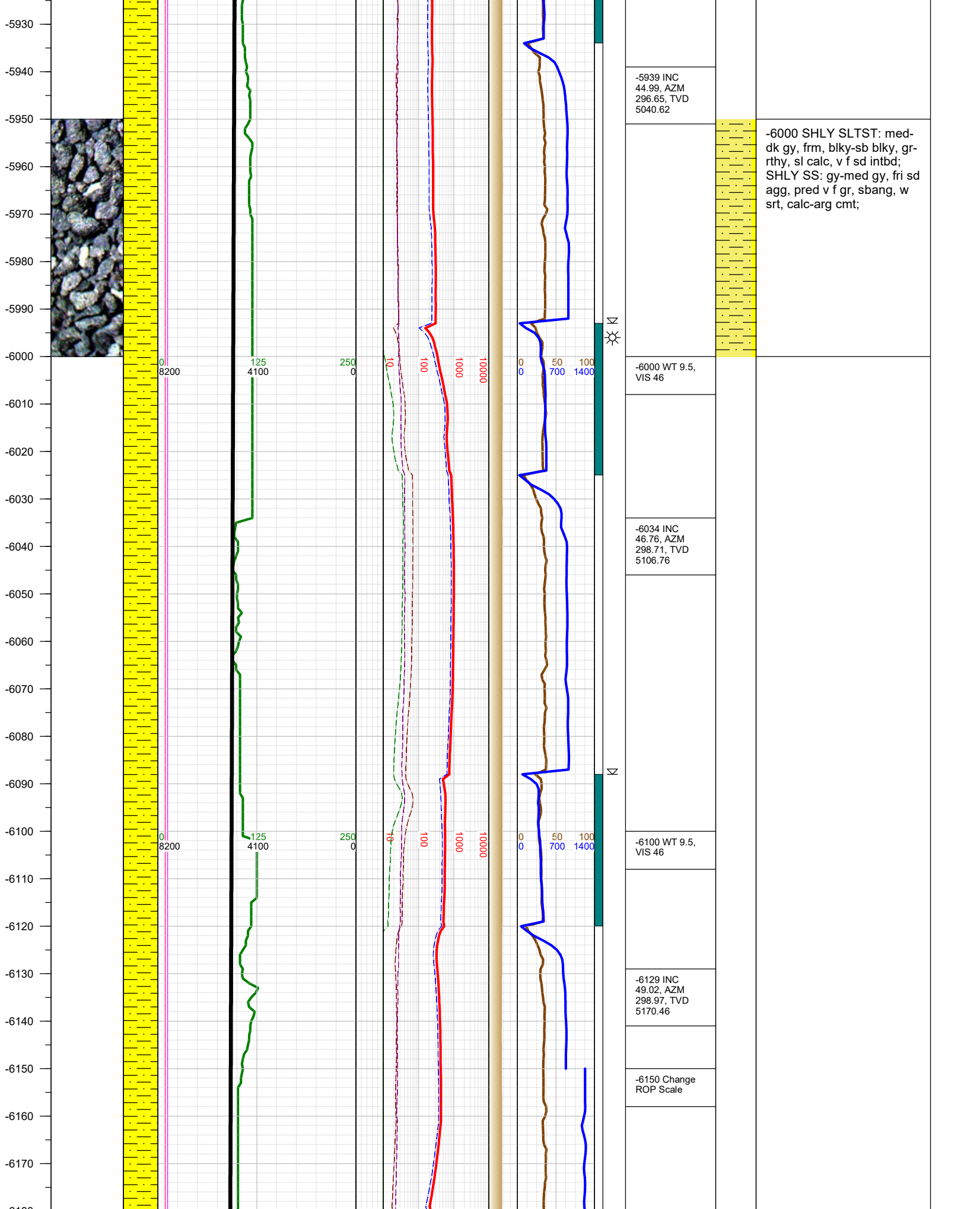
-5560 INC
47.46, AZM
292.29, TVD
4773.72

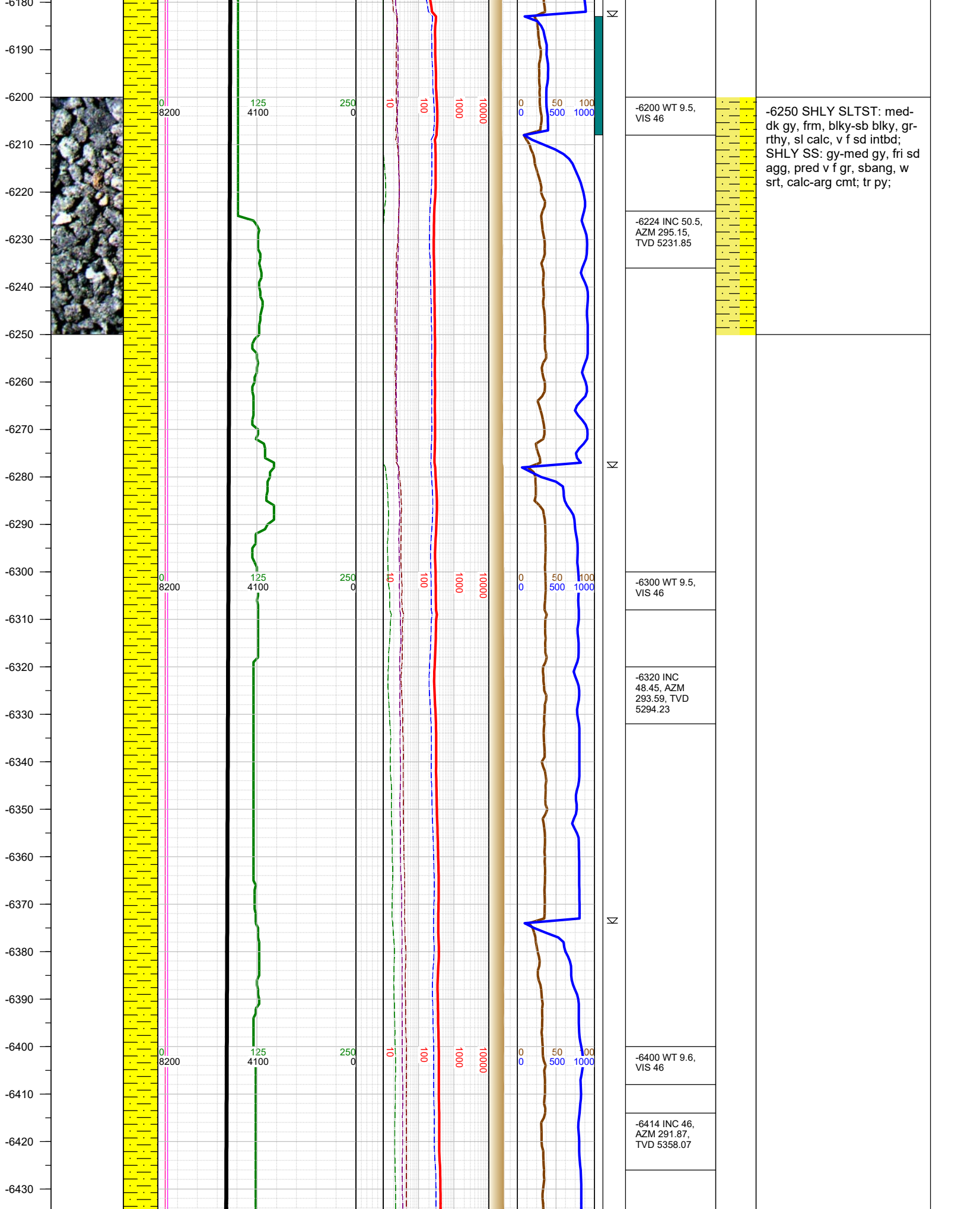
-5600 WT 9.5,
VIS 46

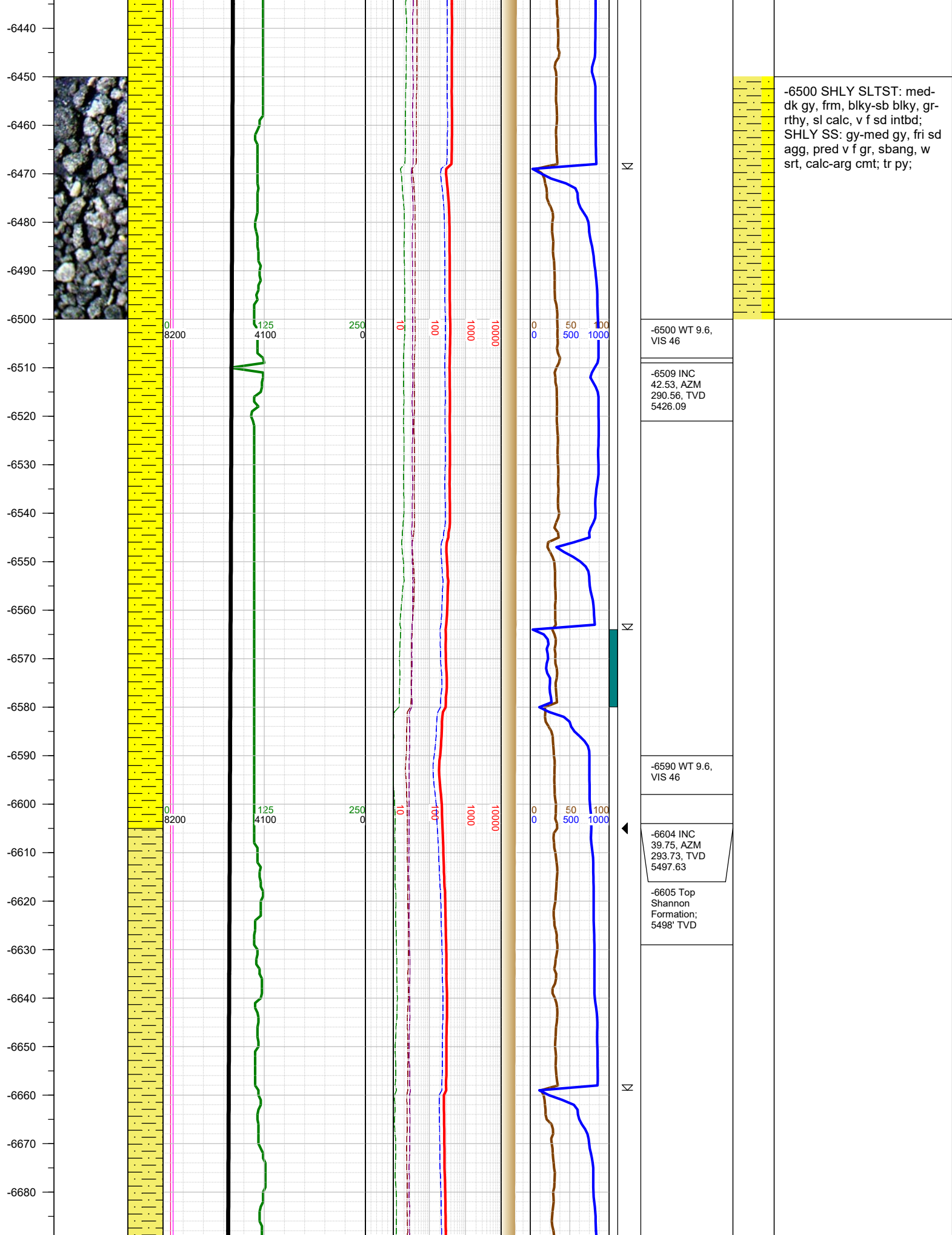
-5655 INC
47.63, AZM
292.84, TVD
4837.85

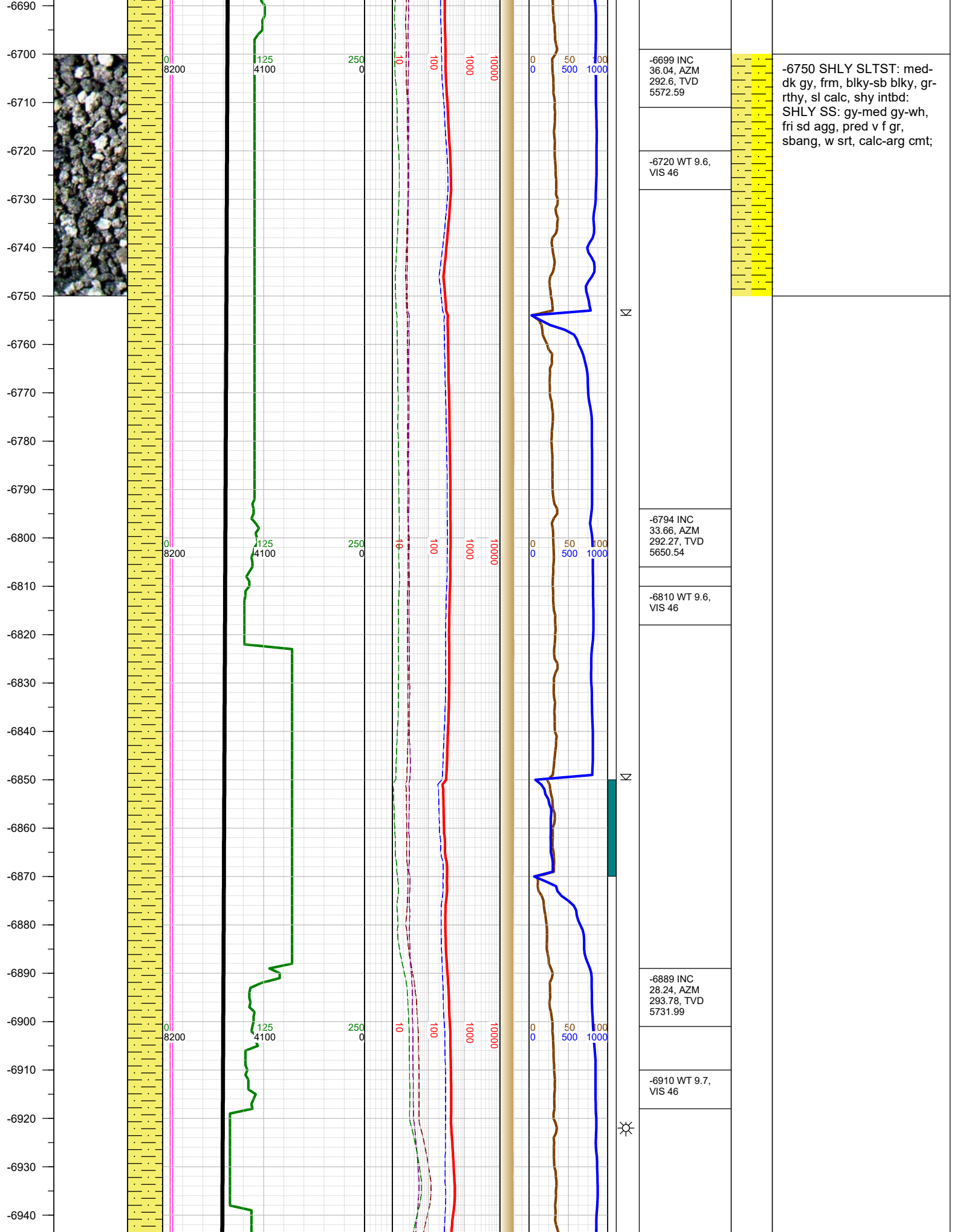
-5500 SHLY SLTST: med-
dk gy, frm, blkyl-sb blkyl, gr-
rthy, sl calc, v f sd intbd;
SHLY SS: gy-med gy, fri sd
agg, pred v f gr, sbang, w
srt, calc-arg cmt;

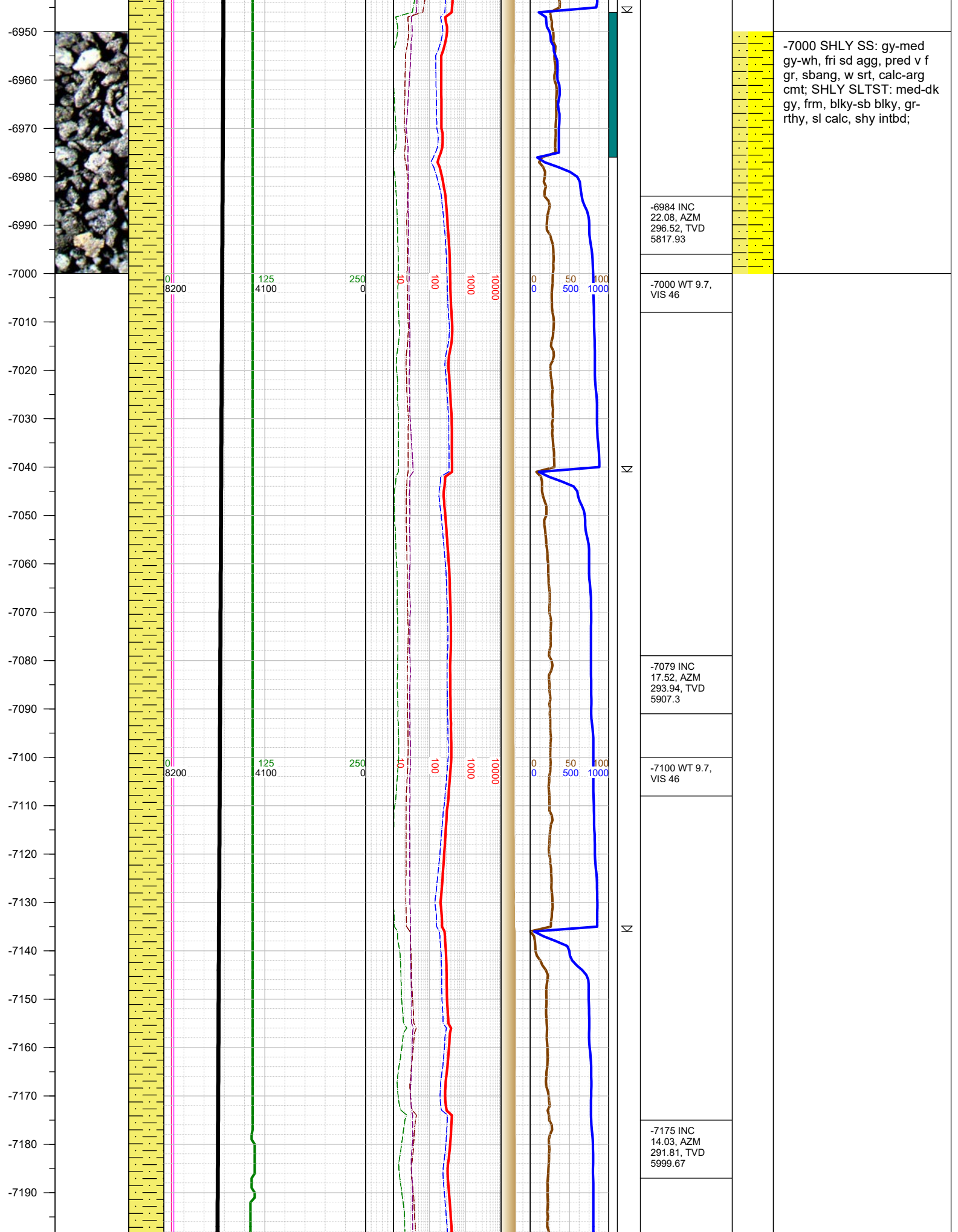


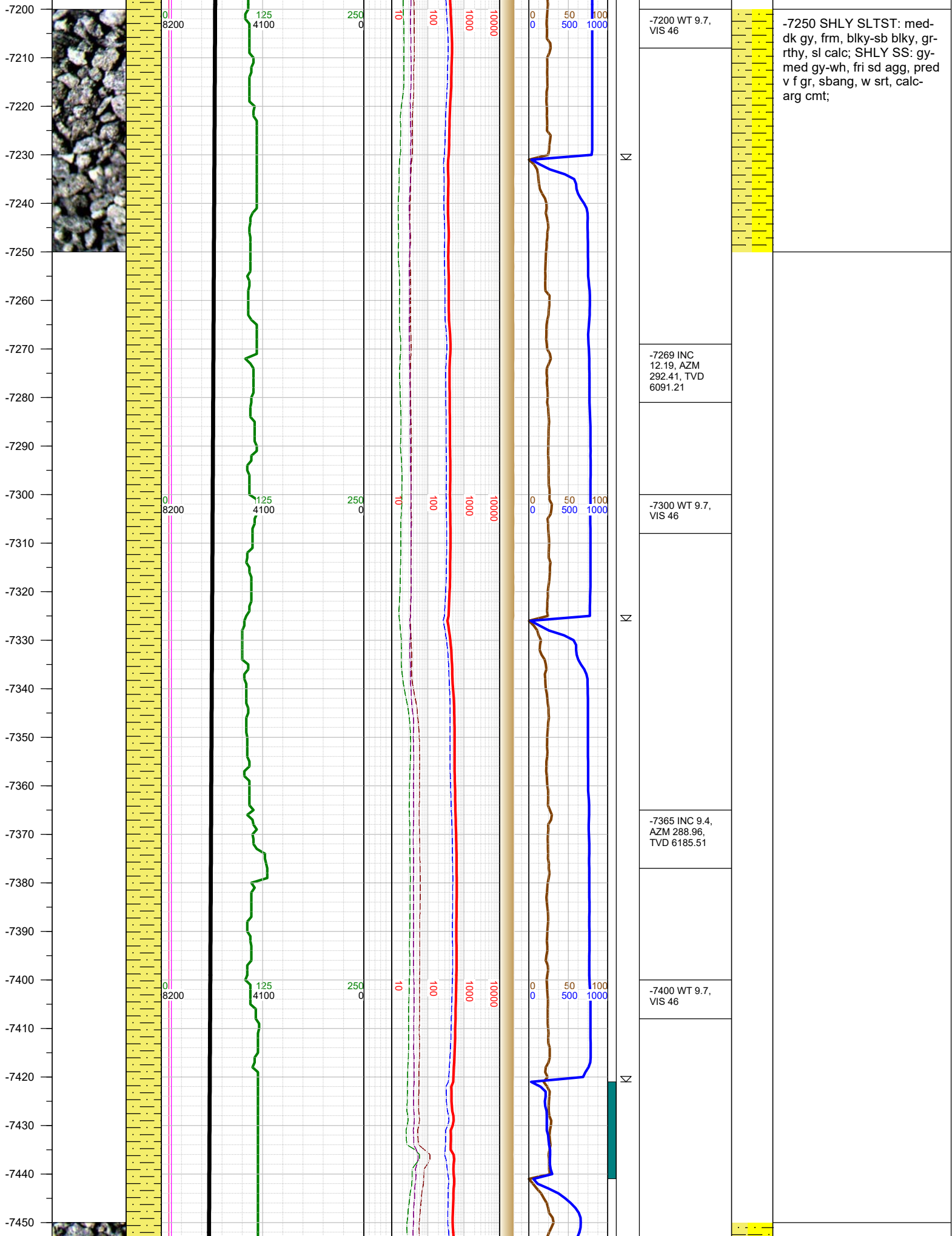


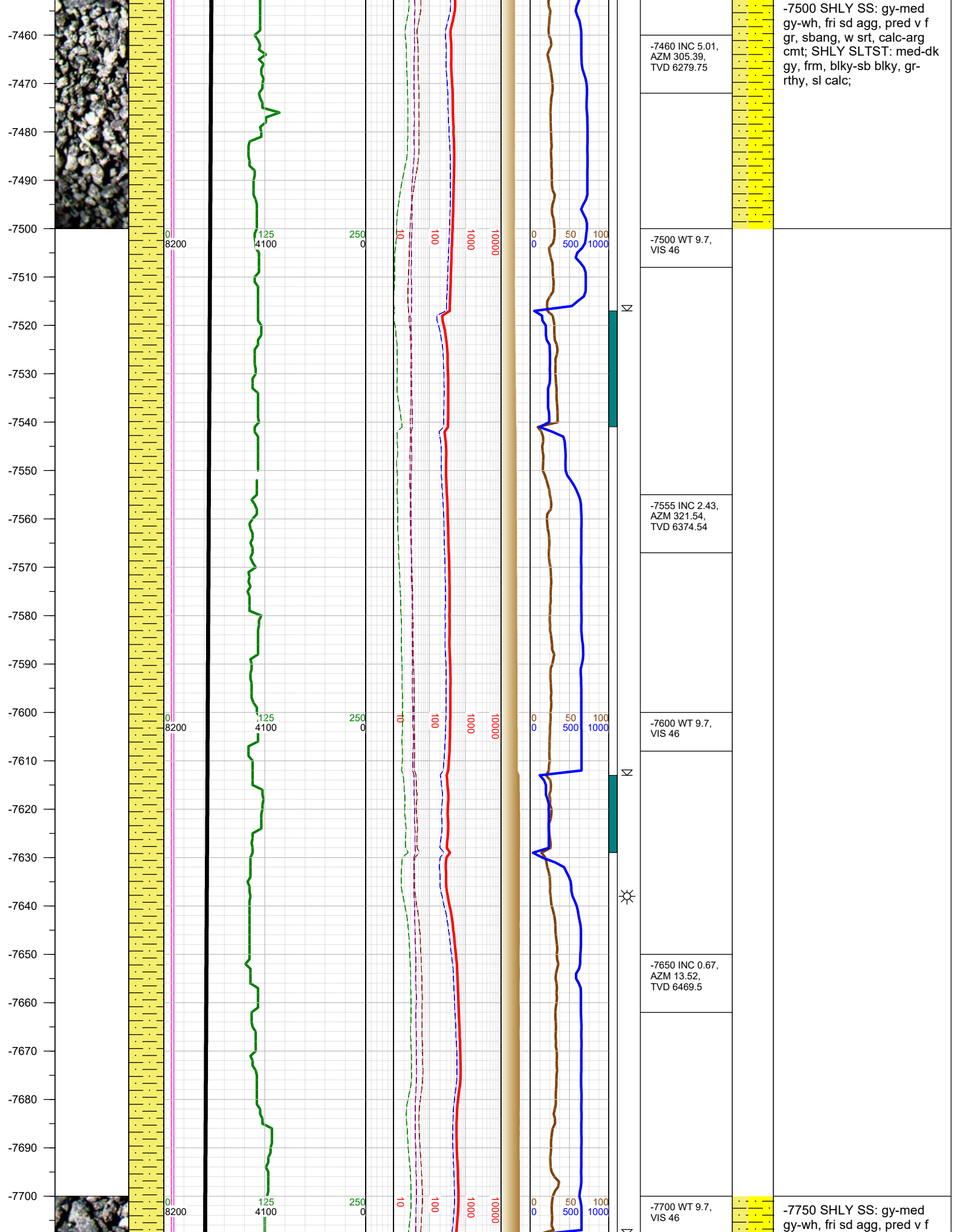


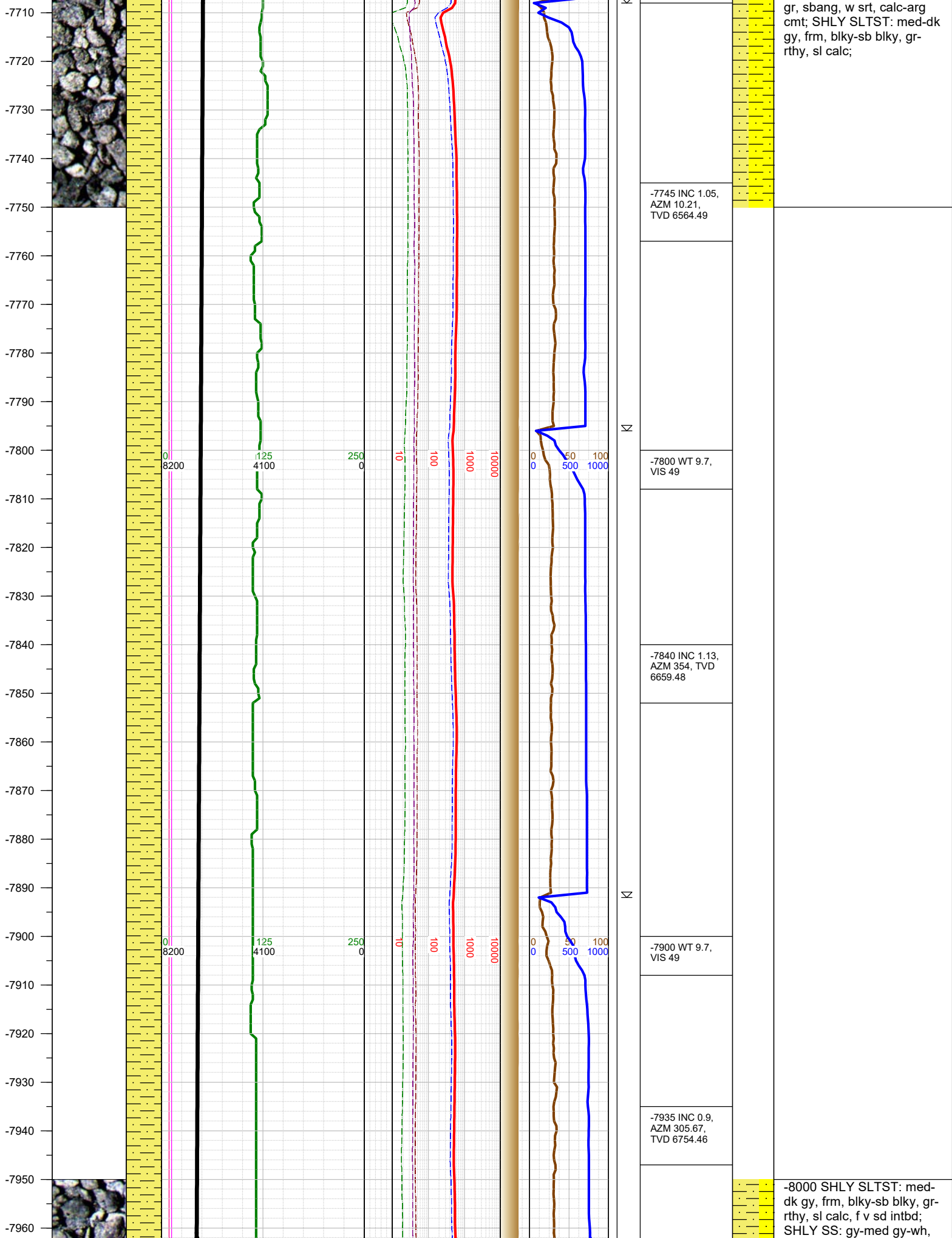


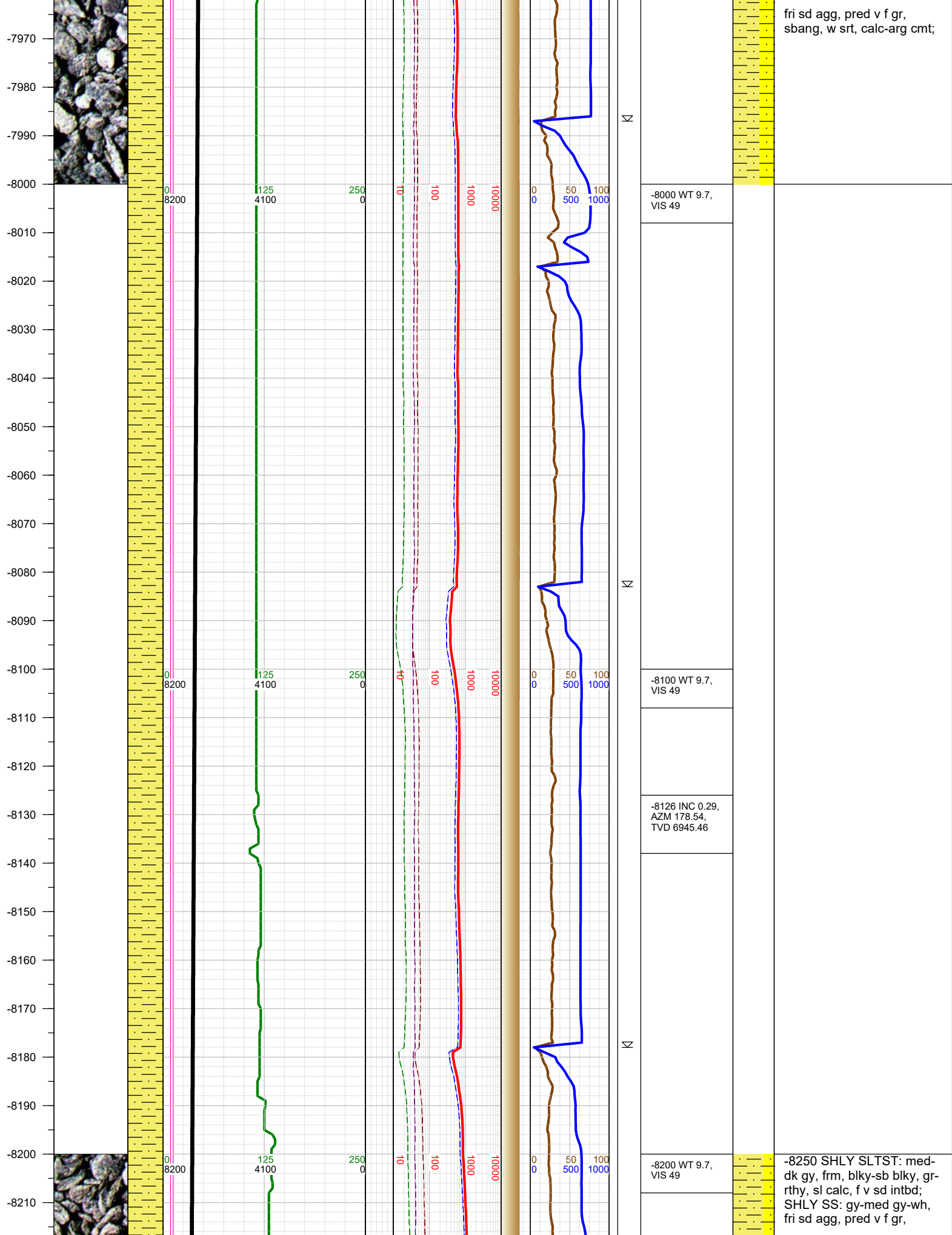




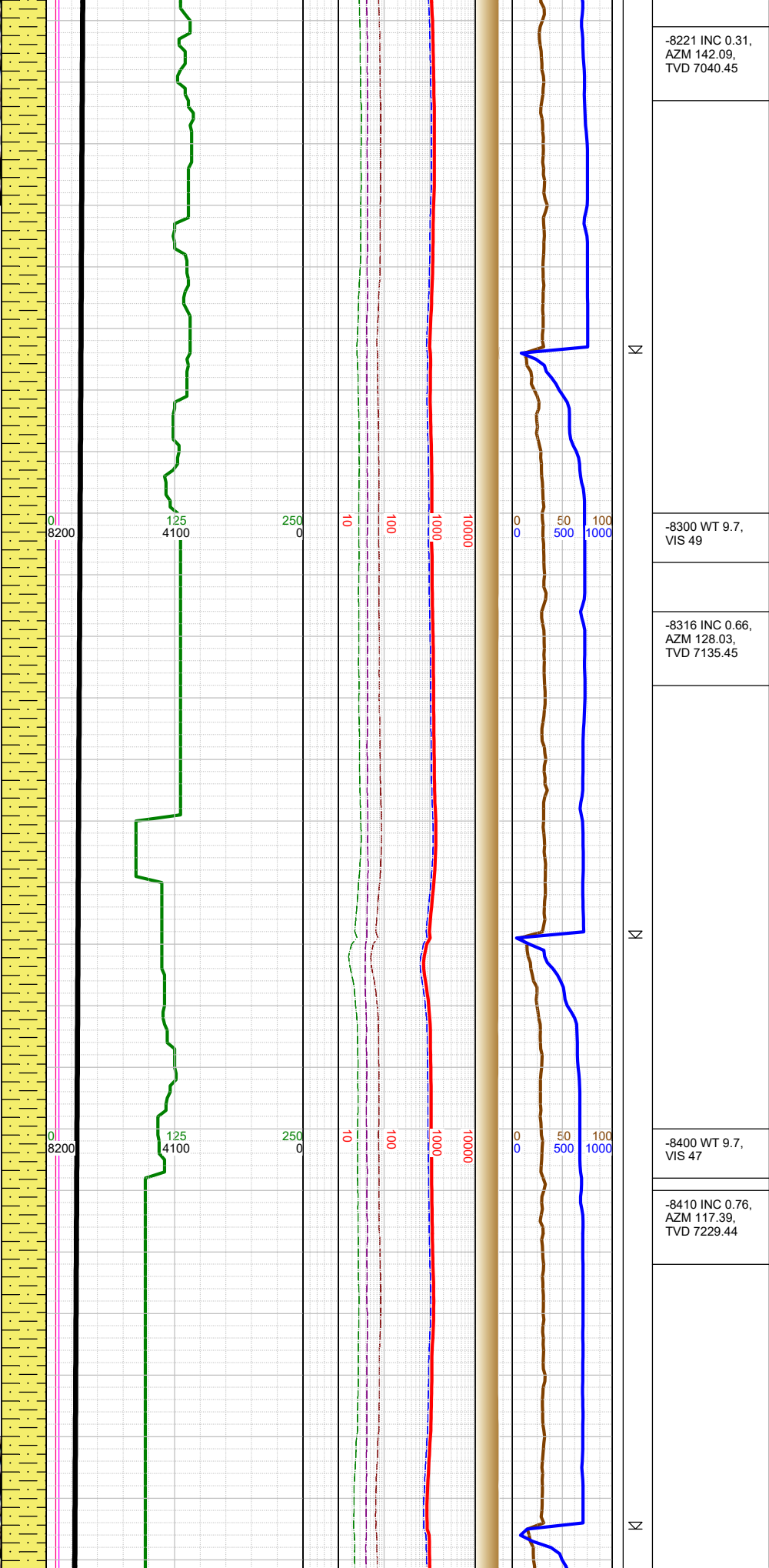
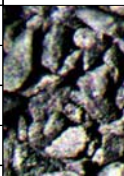








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-8470



-8221 INC 0.31,
AZM 142.09,
TVD 7040.45

-8300 WT 9.7,
VIS 49

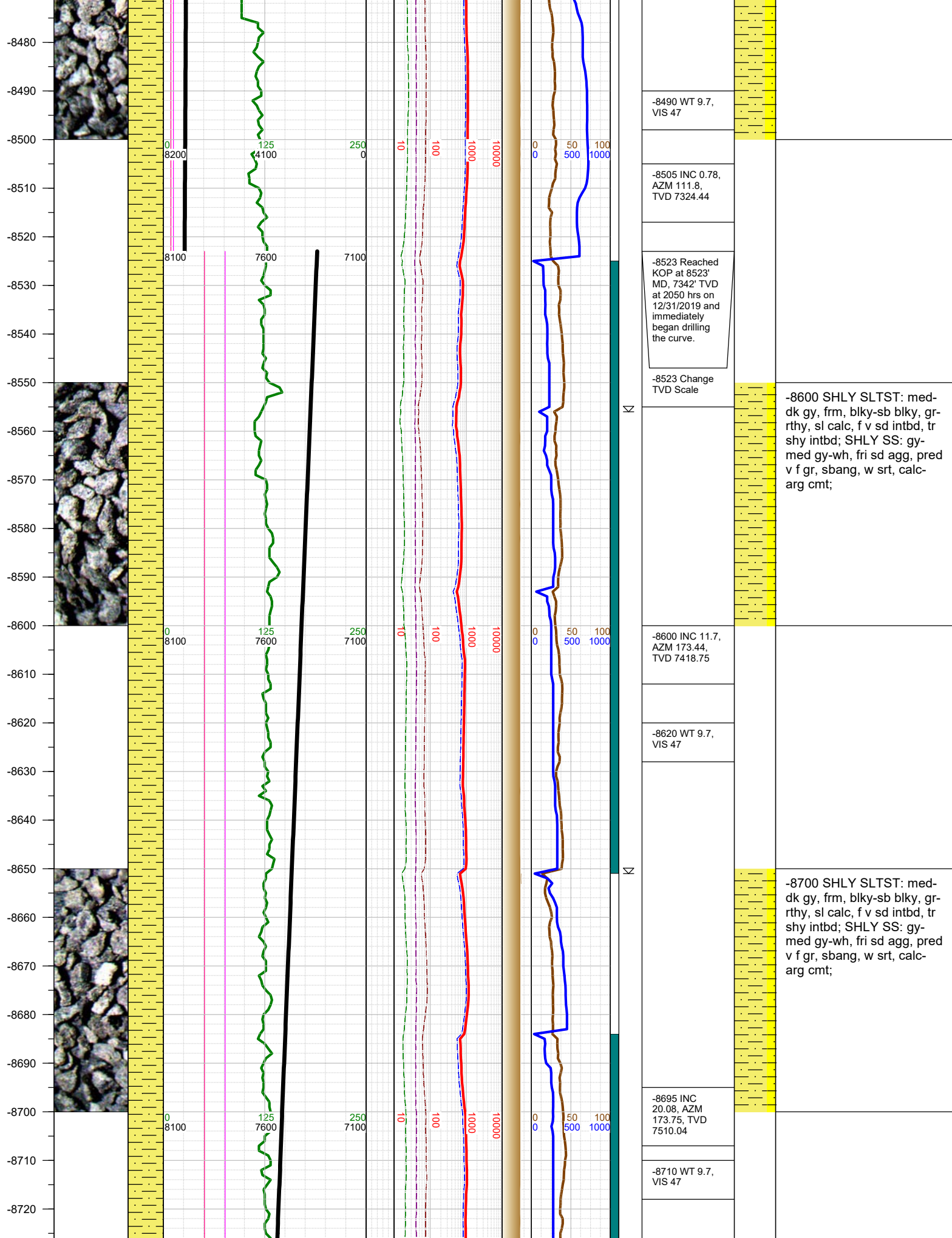
-8316 INC 0.66,
AZM 128.03,
TVD 7135.45

-8400 WT 9.7,
VIS 47

-8410 INC 0.76,
AZM 117.39,
TVD 7229.44

sbang, w srt, calc-arg cmt;

-8500 SHLY SLTST: med-
dk gy, frm, blk-y-sb blk-y, gr-
rthy, sl calc, f v sd intbd;
SHLY SS: gy-med gy-wh,
fri sd agg, pred v f gr,
sbang, w srt, calc-arg cmt;



-8490 WT 9.7,
VIS 47

-8505 INC 0.78,
AZM 111.8,
TVD 7324.44

-8523 Reached
KOP at 8523'
MD, 7342' TVD
at 2050 hrs on
12/31/2019 and
immediately
began drilling
the curve.

-8523 Change
TVD Scale

-8600 INC 11.7,
AZM 173.44,
TVD 7418.75

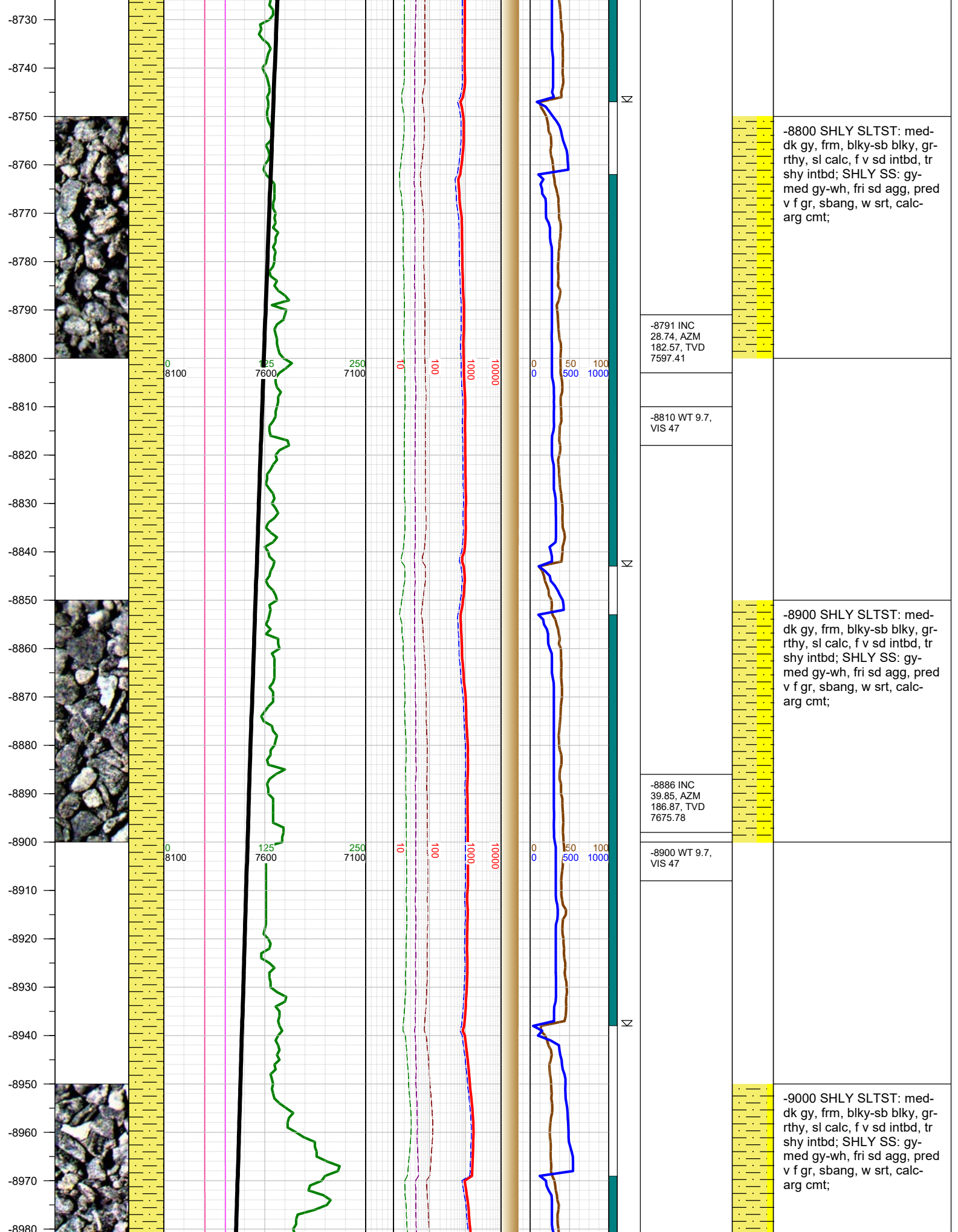
-8620 WT 9.7,
VIS 47

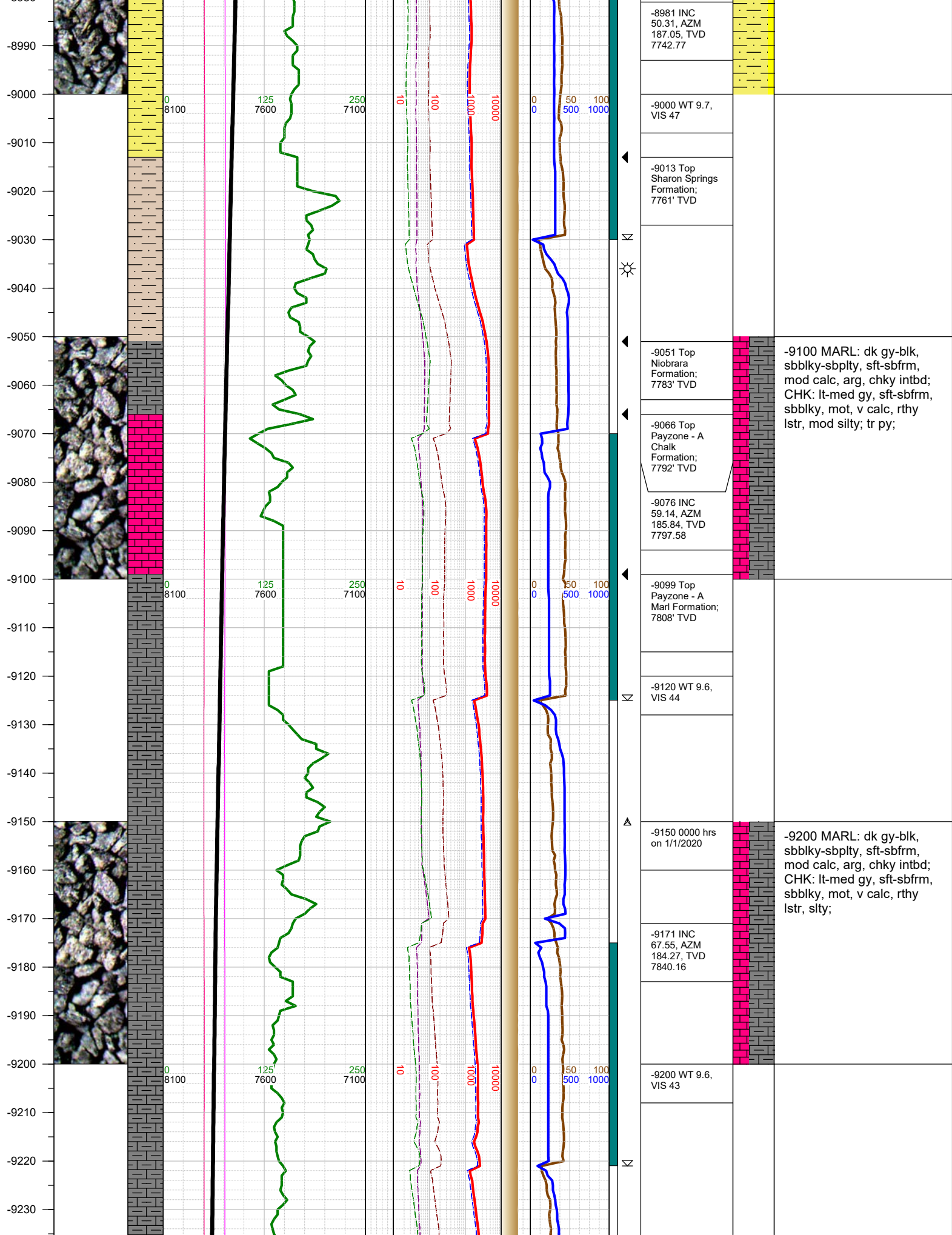
-8695 INC
20.08, AZM
173.75, TVD
7510.04

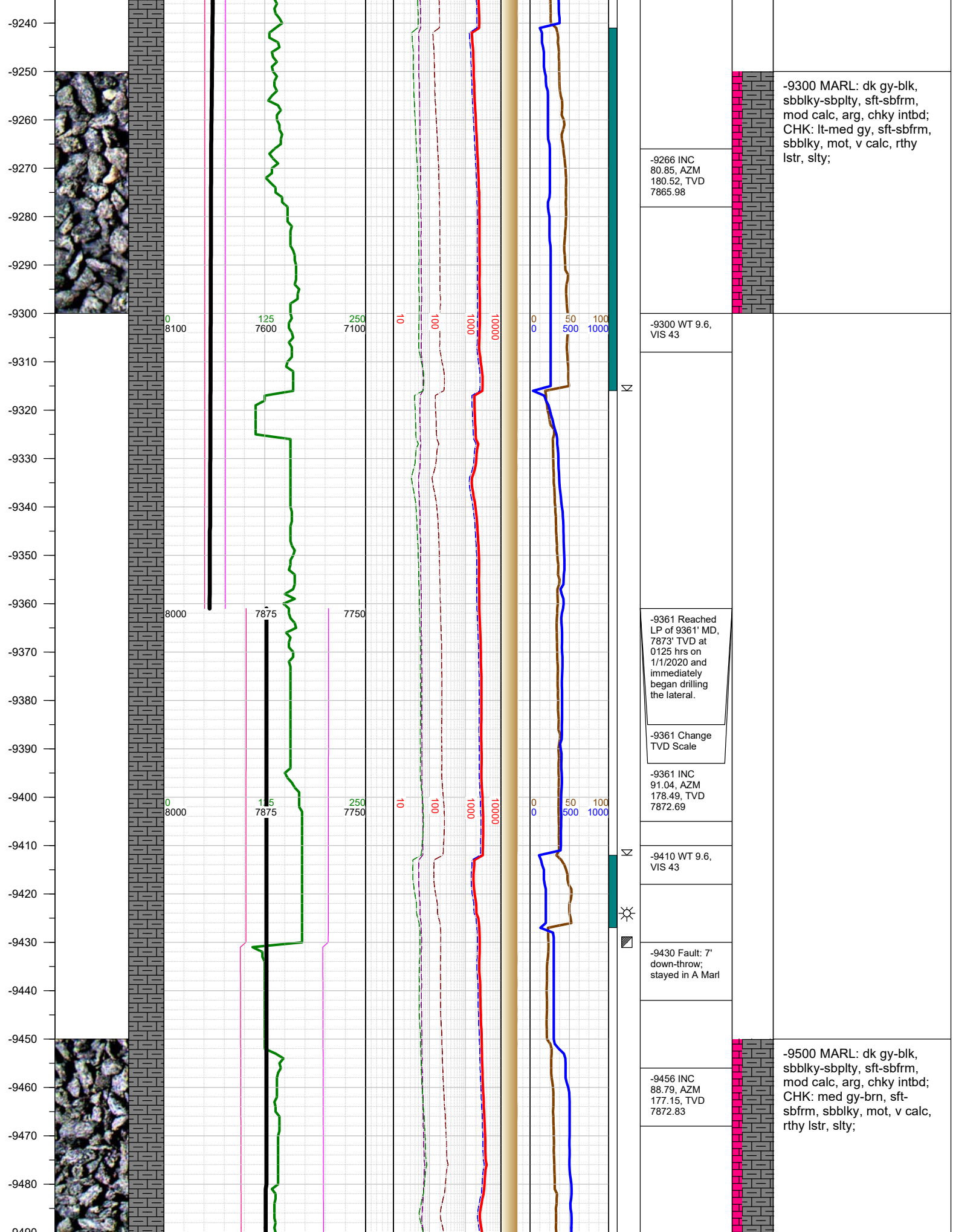
-8710 WT 9.7,
VIS 47

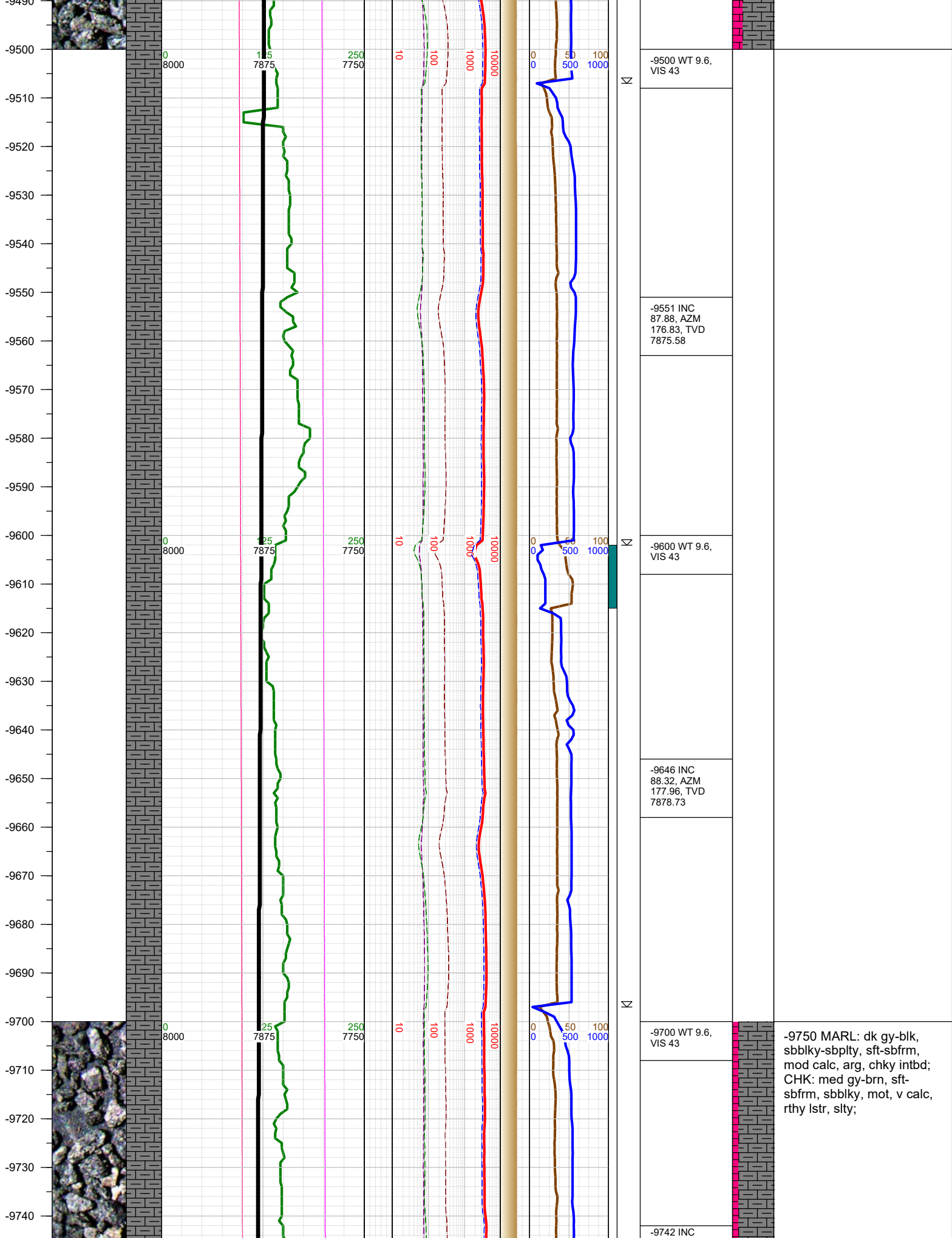
-8600 SHLY SLTST: med-
dk gy, frm, blk-y-sb blk-y, gr-
rthy, sl calc, f v sd intbd, tr
shy intbd; SHLY SS: gy-
med gy-wh, fri sd agg, pred
v f gr, sbang, w srt, calc-
arg cmt;

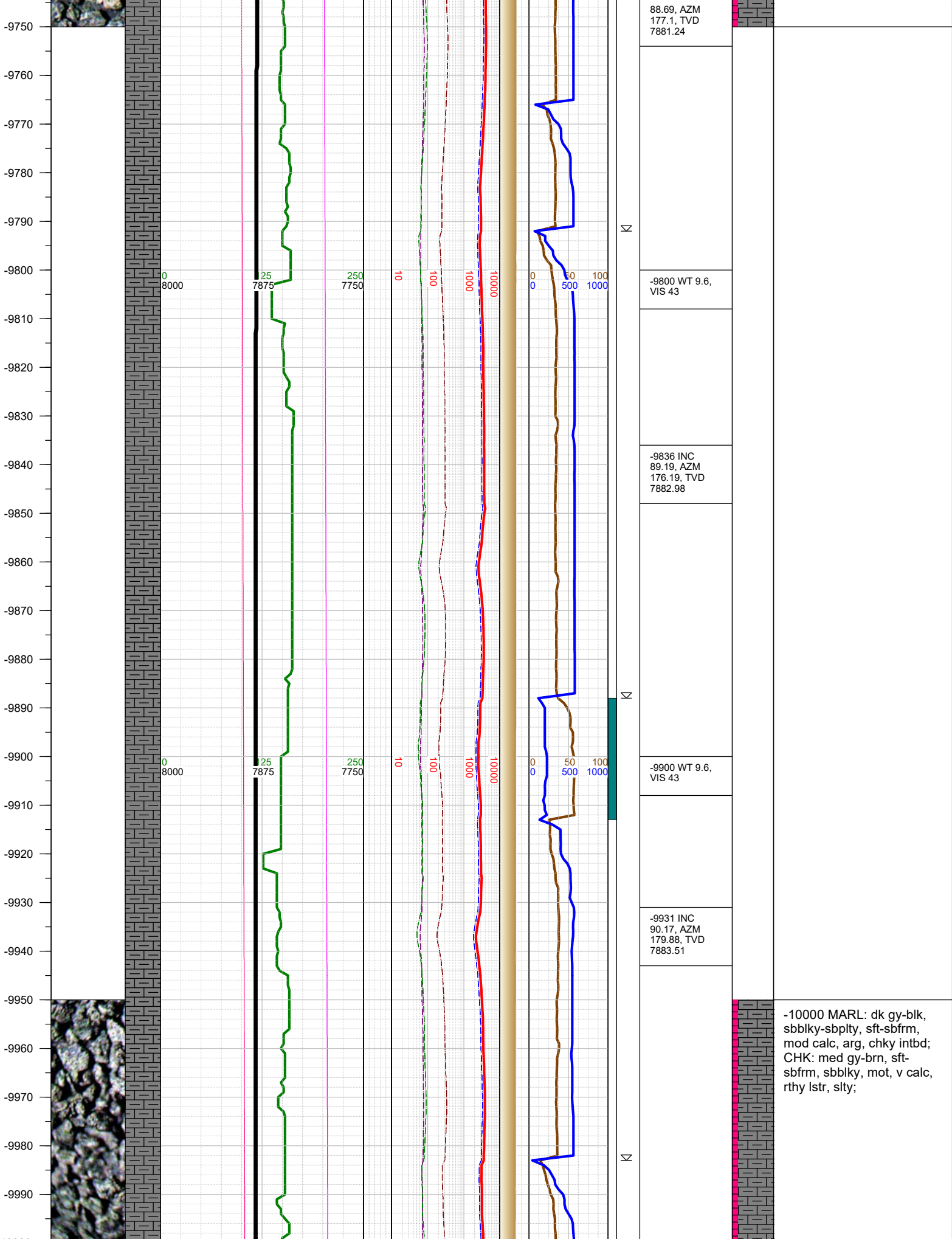
-8700 SHLY SLTST: med-
dk gy, frm, blk-y-sb blk-y, gr-
rthy, sl calc, f v sd intbd, tr
shy intbd; SHLY SS: gy-
med gy-wh, fri sd agg, pred
v f gr, sbang, w srt, calc-
arg cmt;

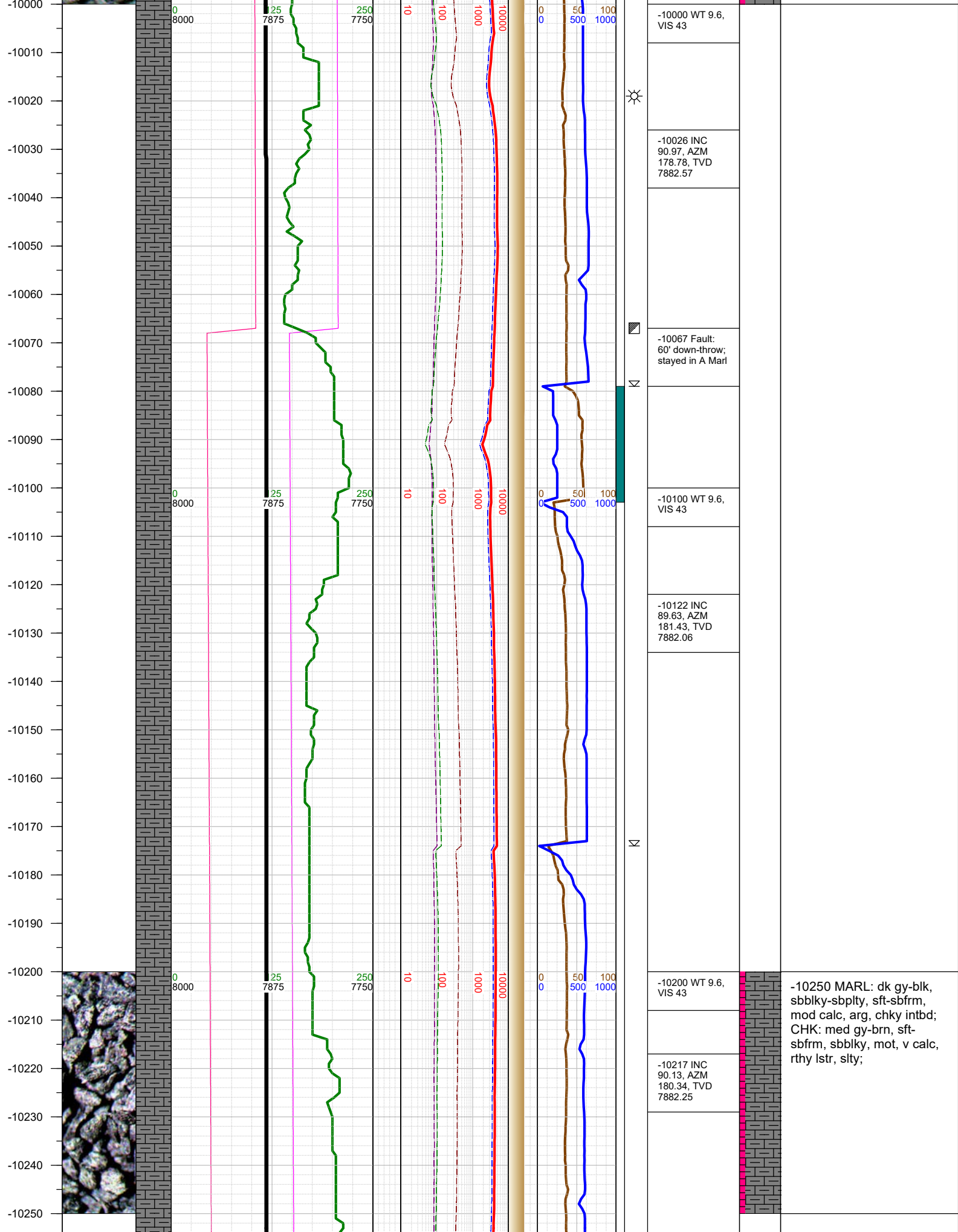


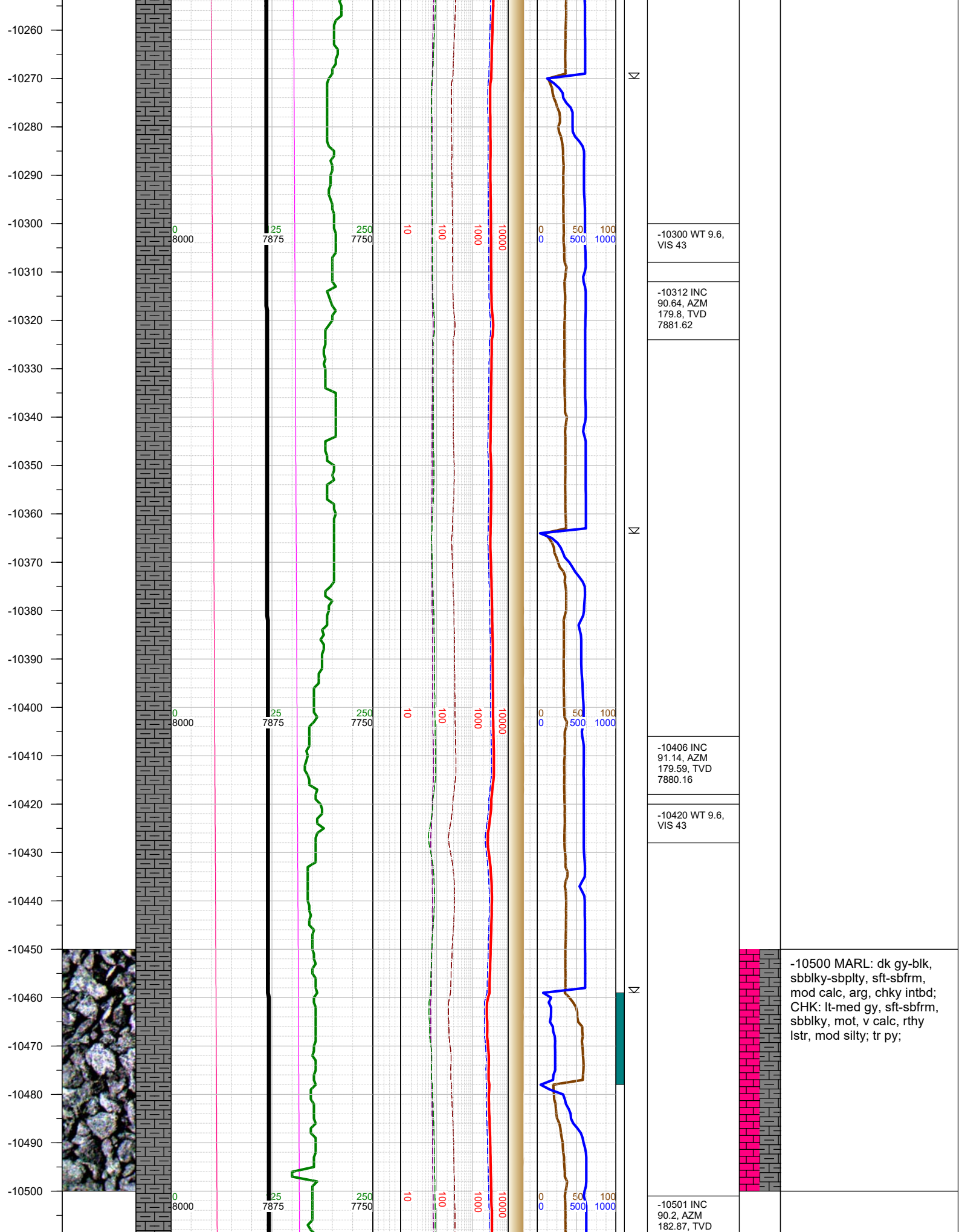


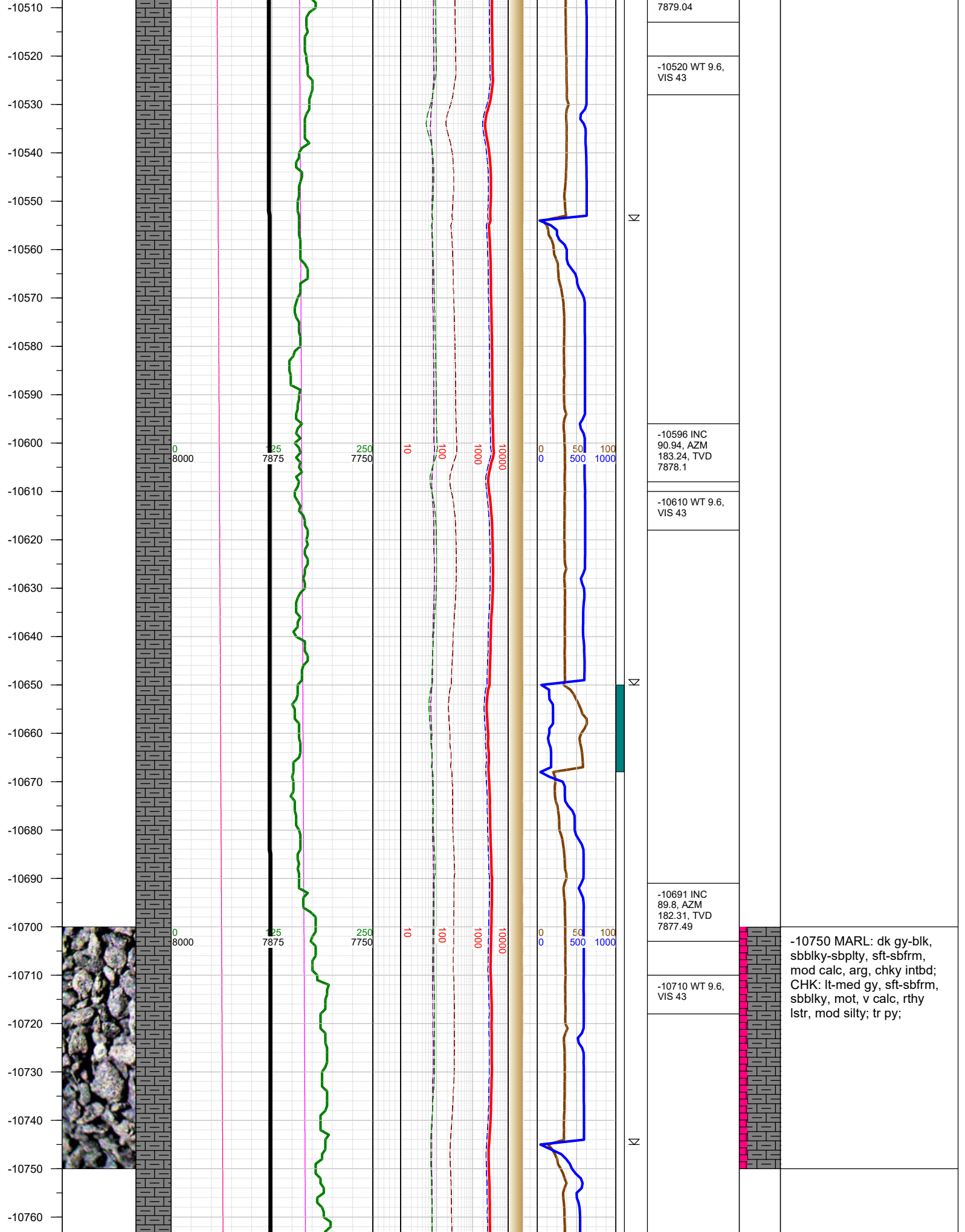


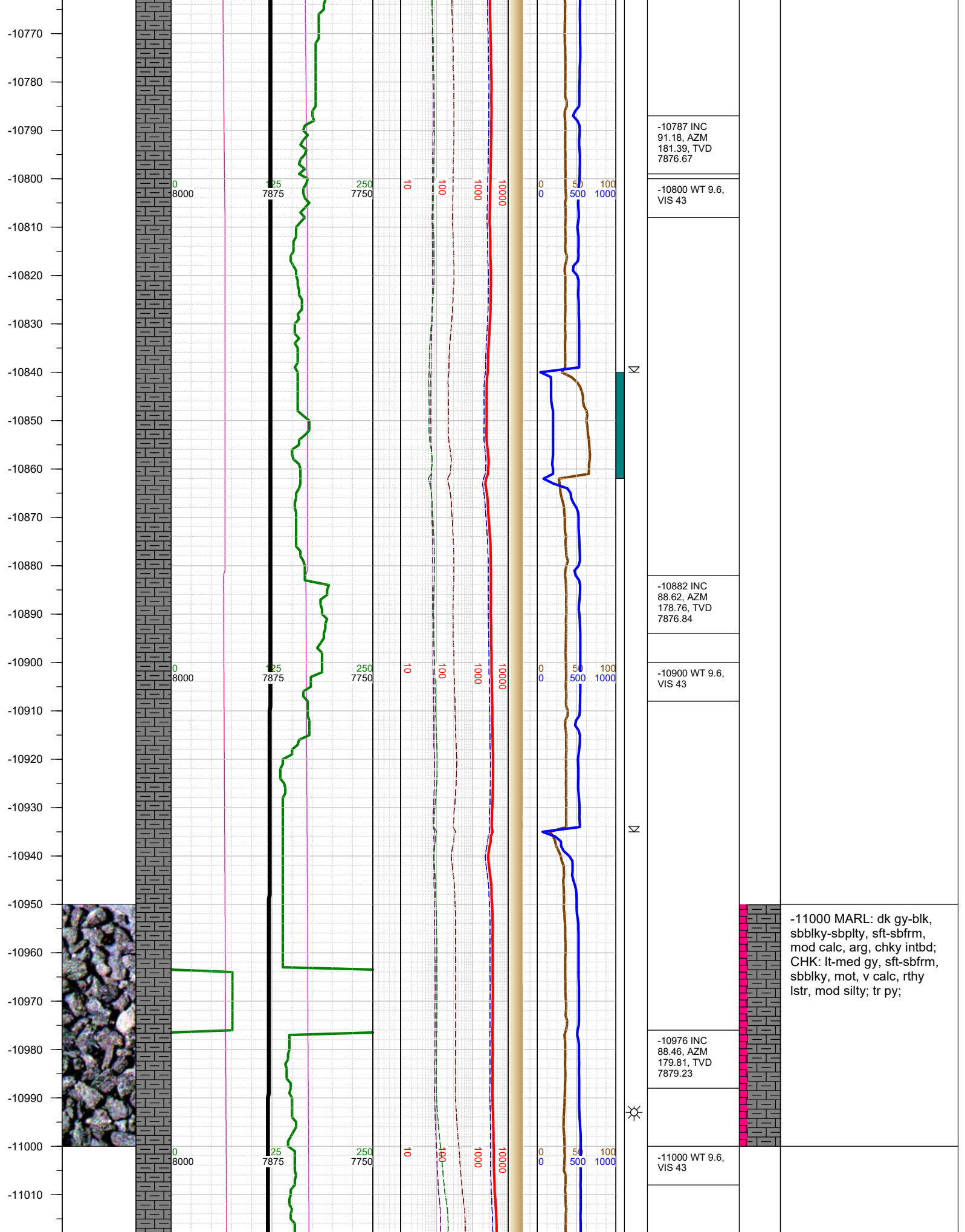


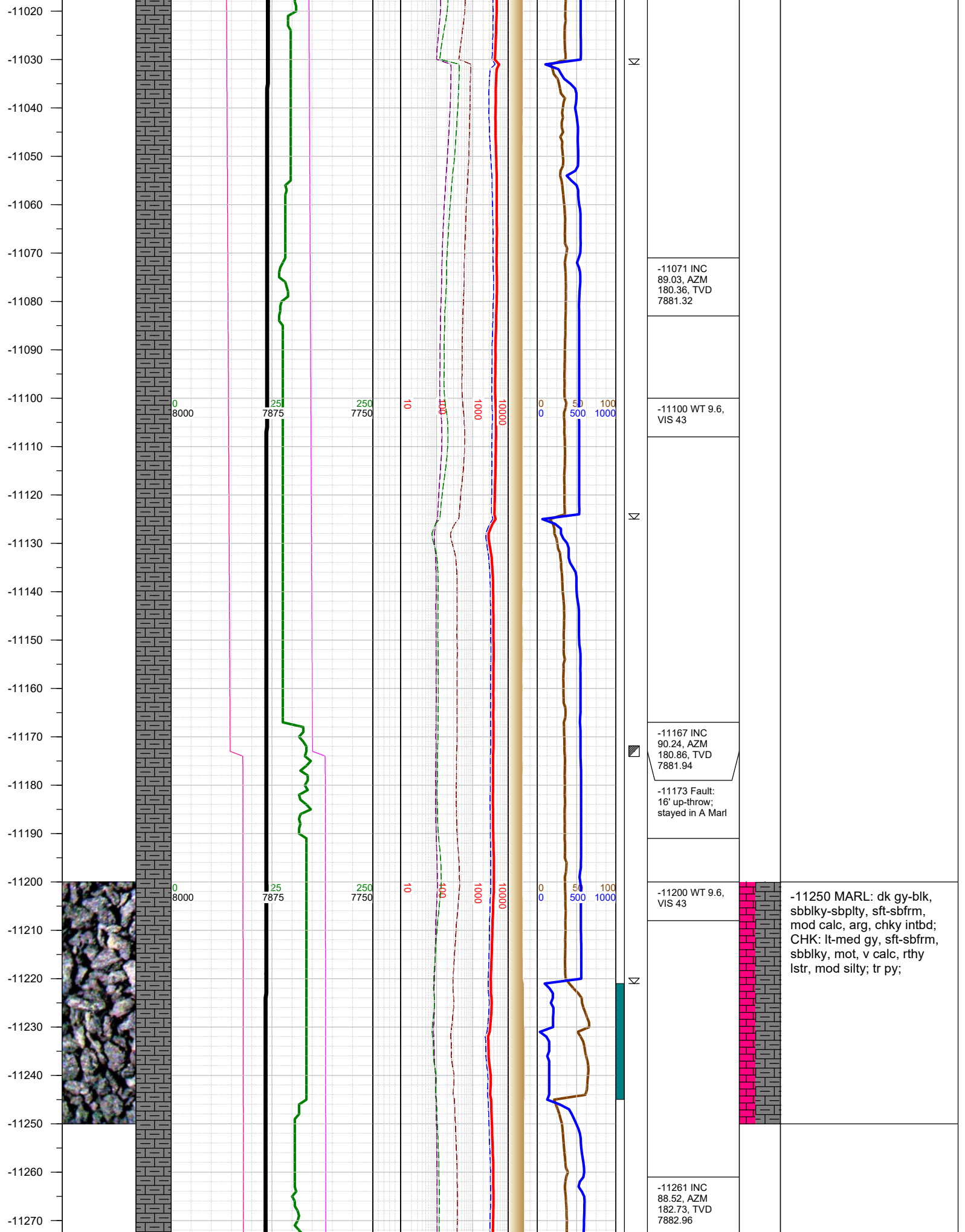




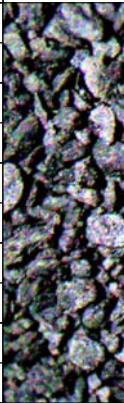








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7875

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500

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-11300 WT 9.6,
VIS 43

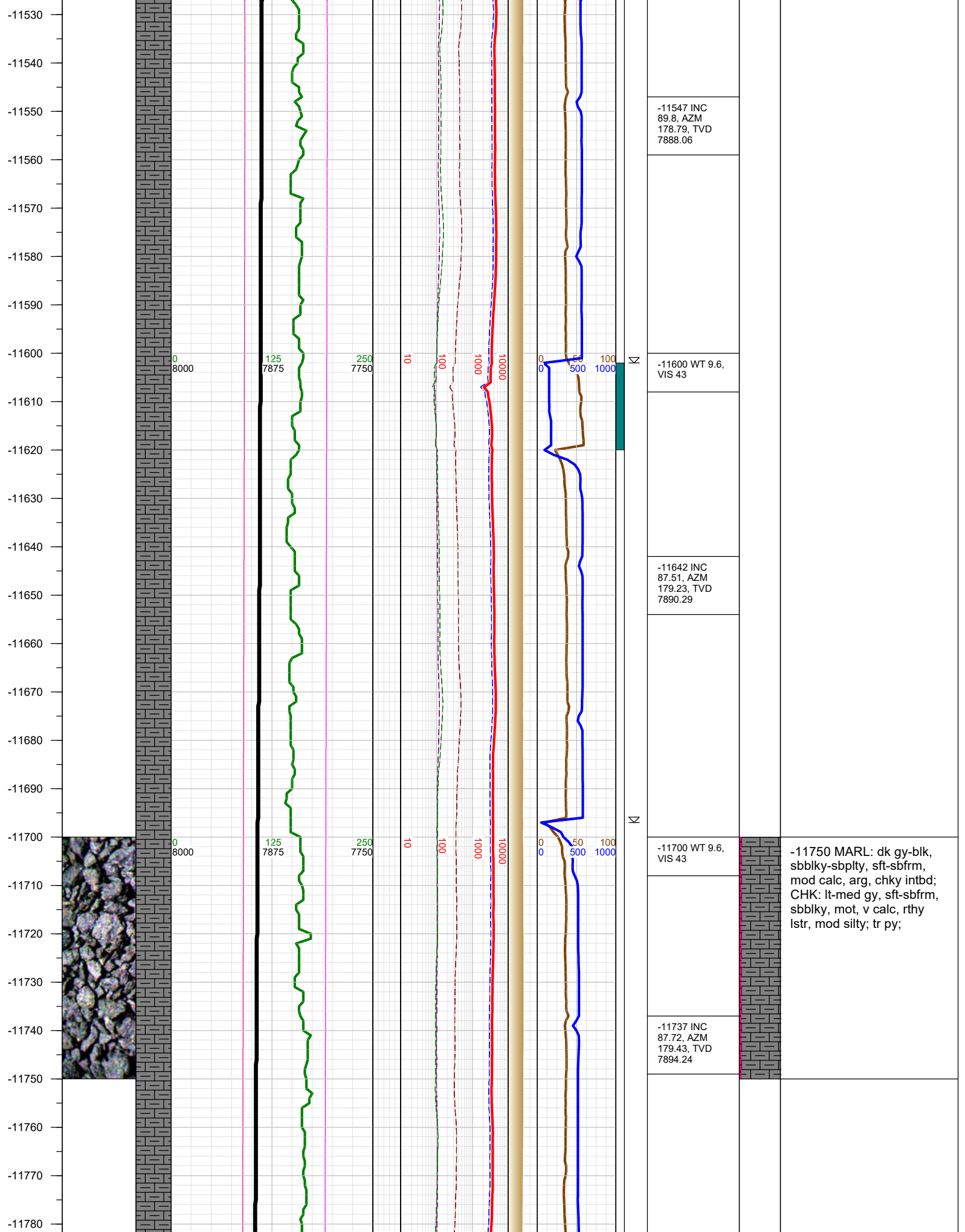
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89.46, AZM
179.04, TVD
7884.64

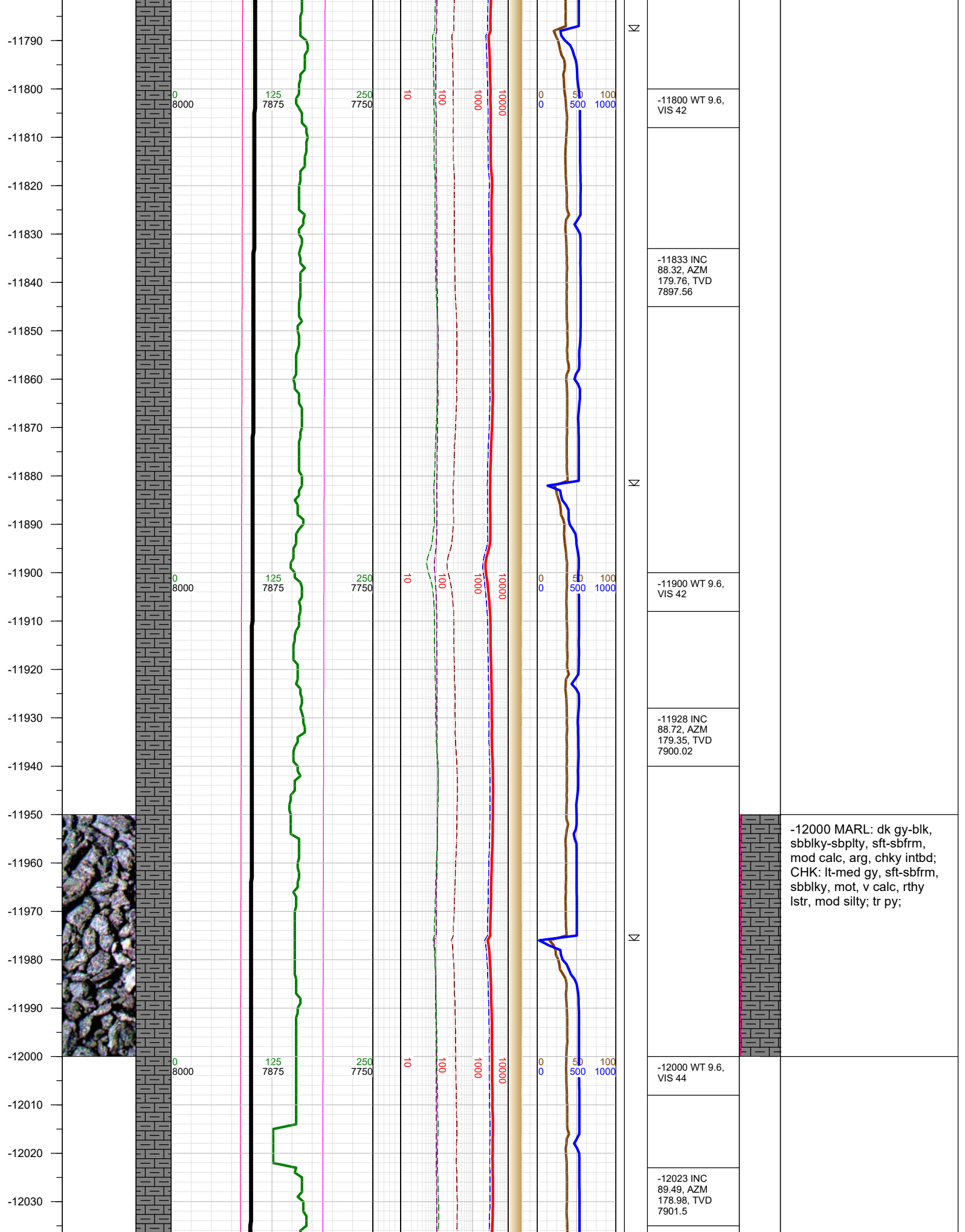
-11400 WT 9.6,
VIS 43

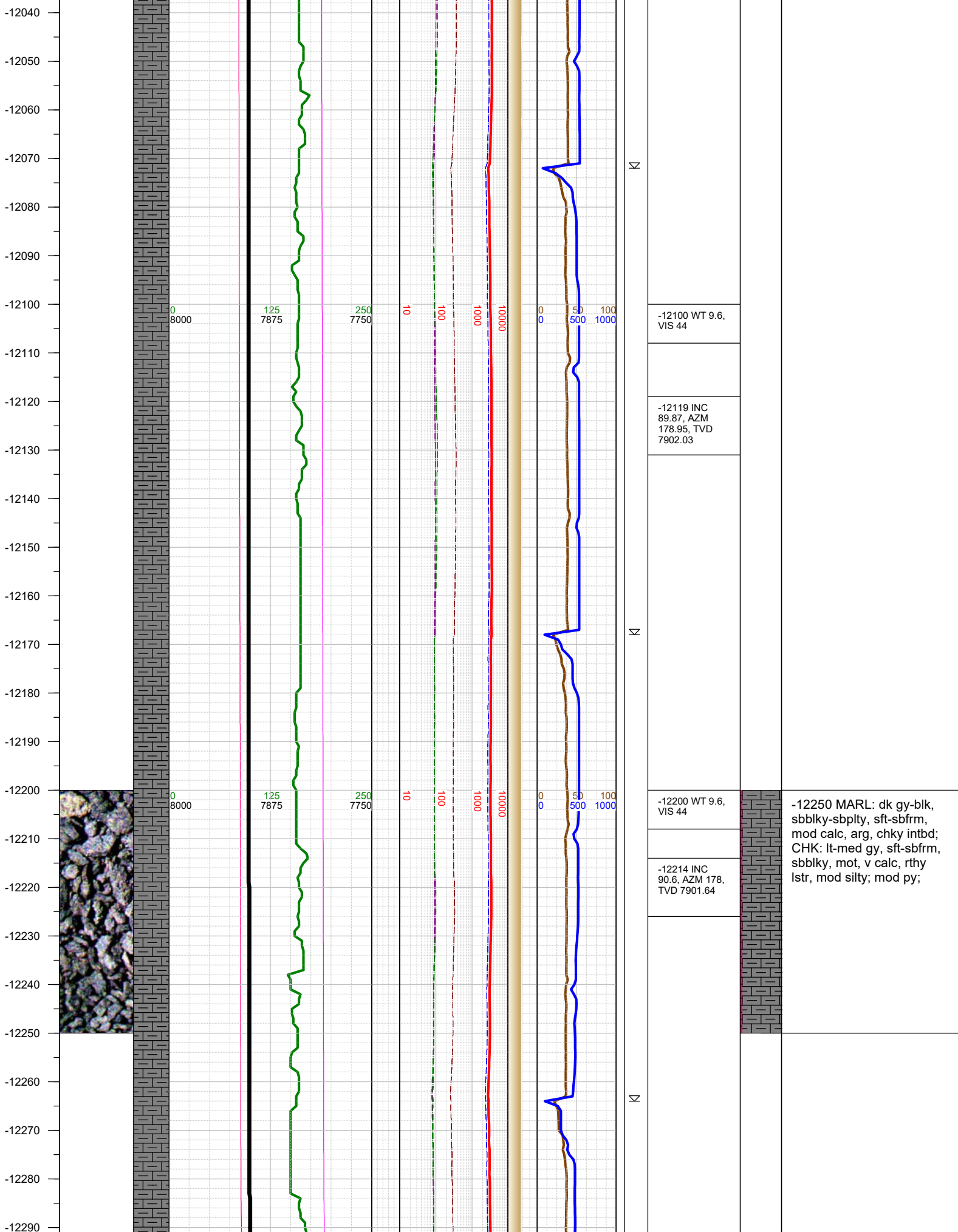
-11452 INC
88.32, AZM
178.34, TVD
7886.5

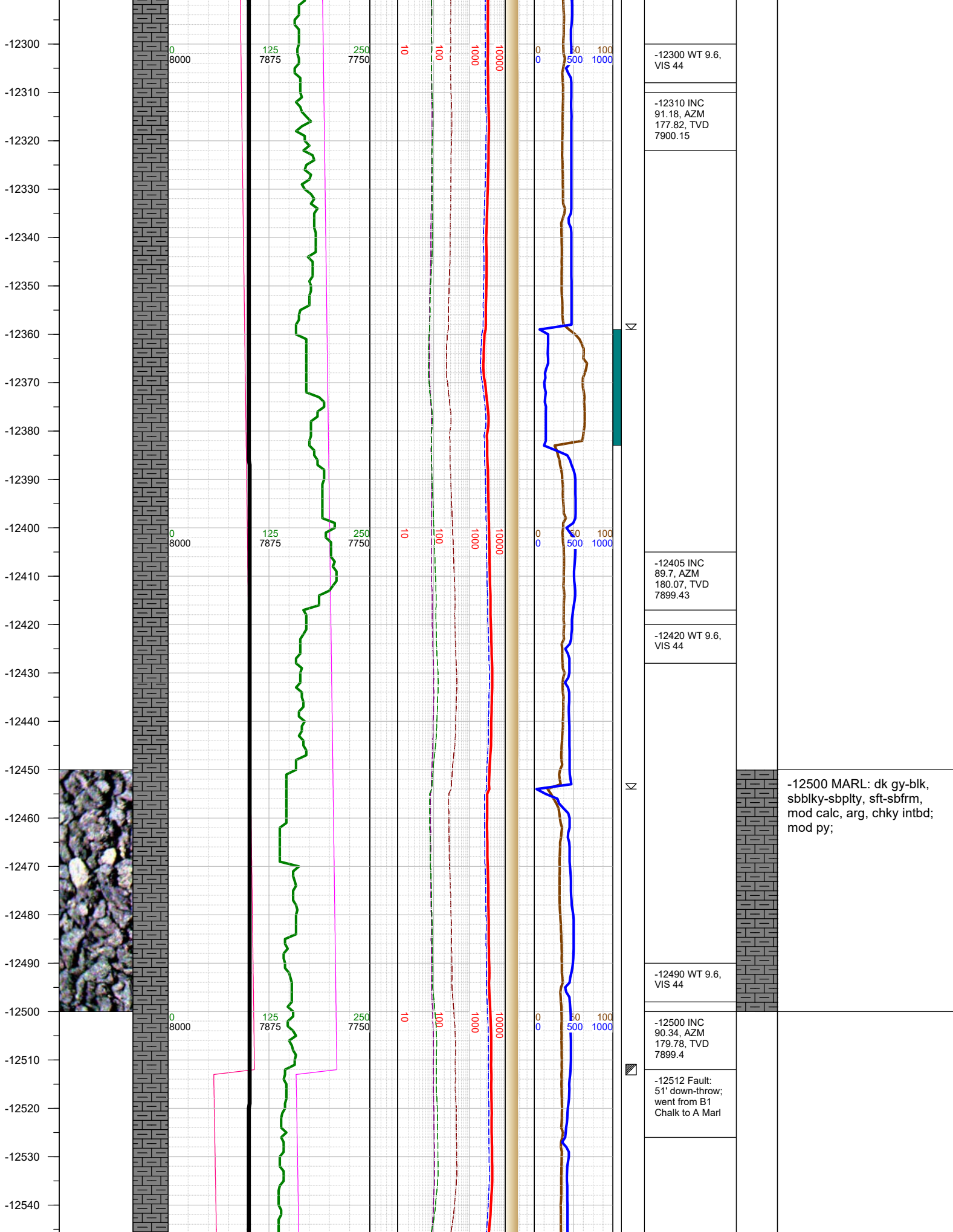
-11500 WT 9.6,
VIS 43

-11500 MARL: dk gy-blk,
sbbly-sbply, sft-sbfrm,
mod calc, arg, chky intbd;
CHK: lt-med gy, sft-sbfrm,
sbbly, mot, v calc, rthy
lstr, mod silty; tr py;

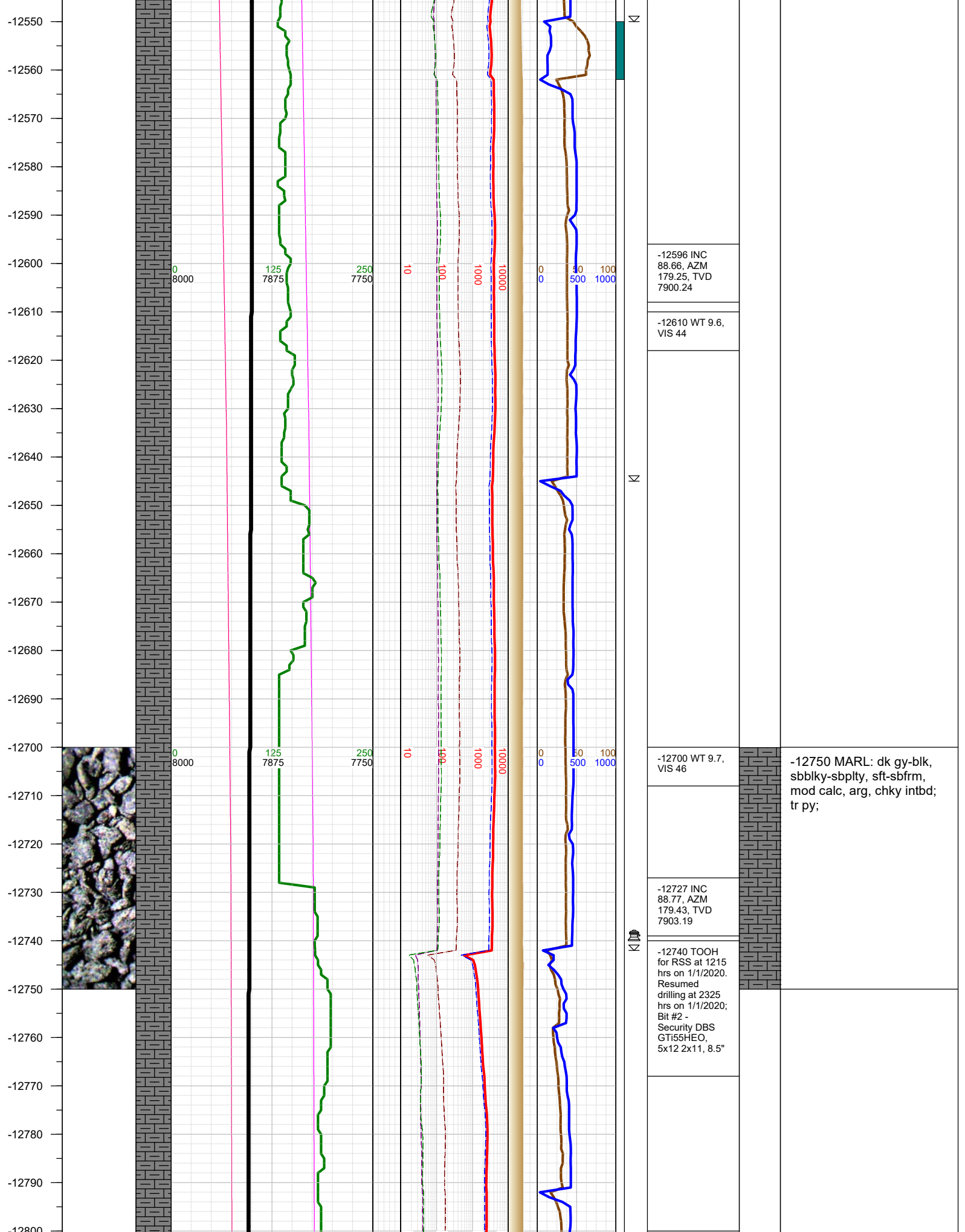


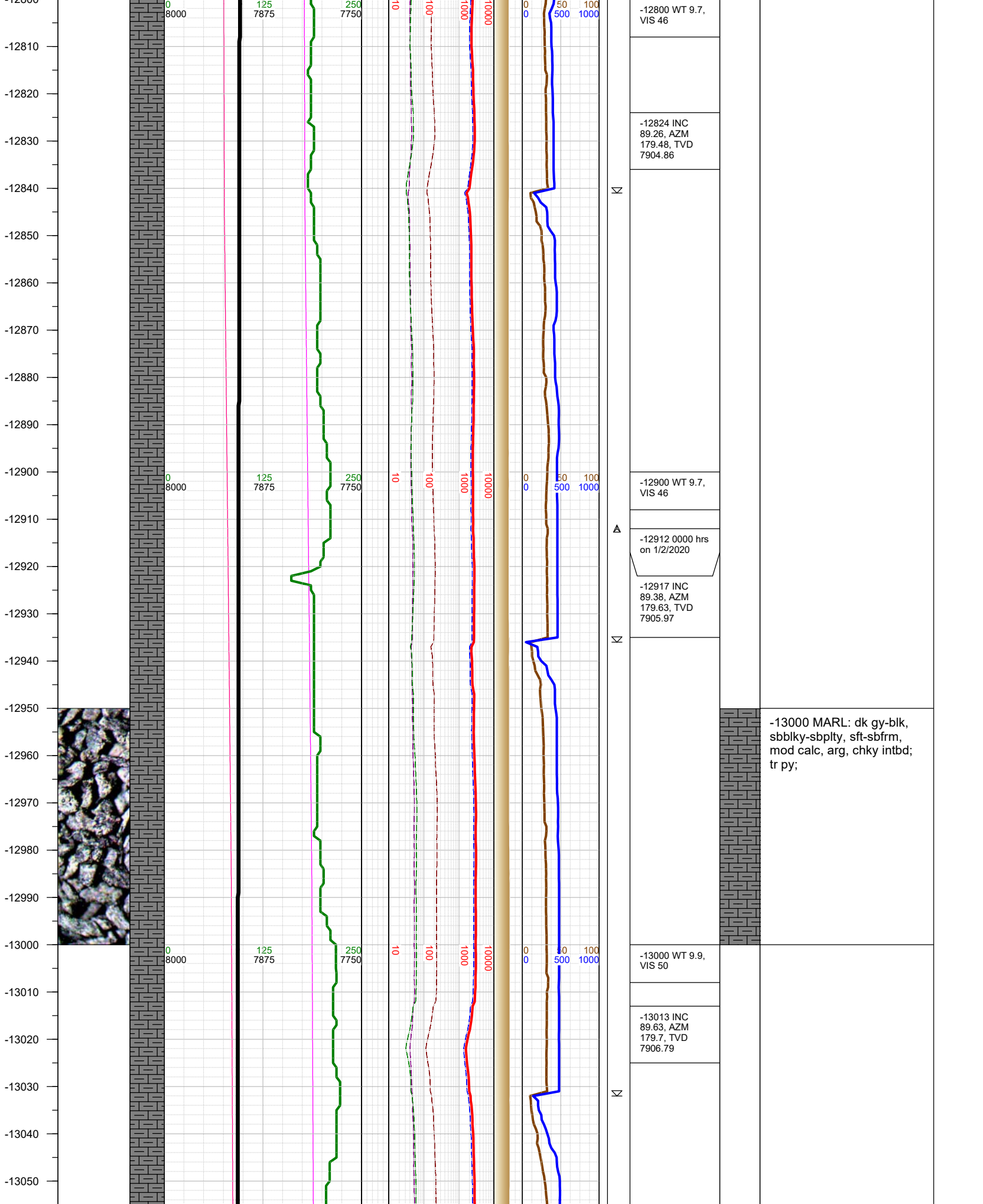


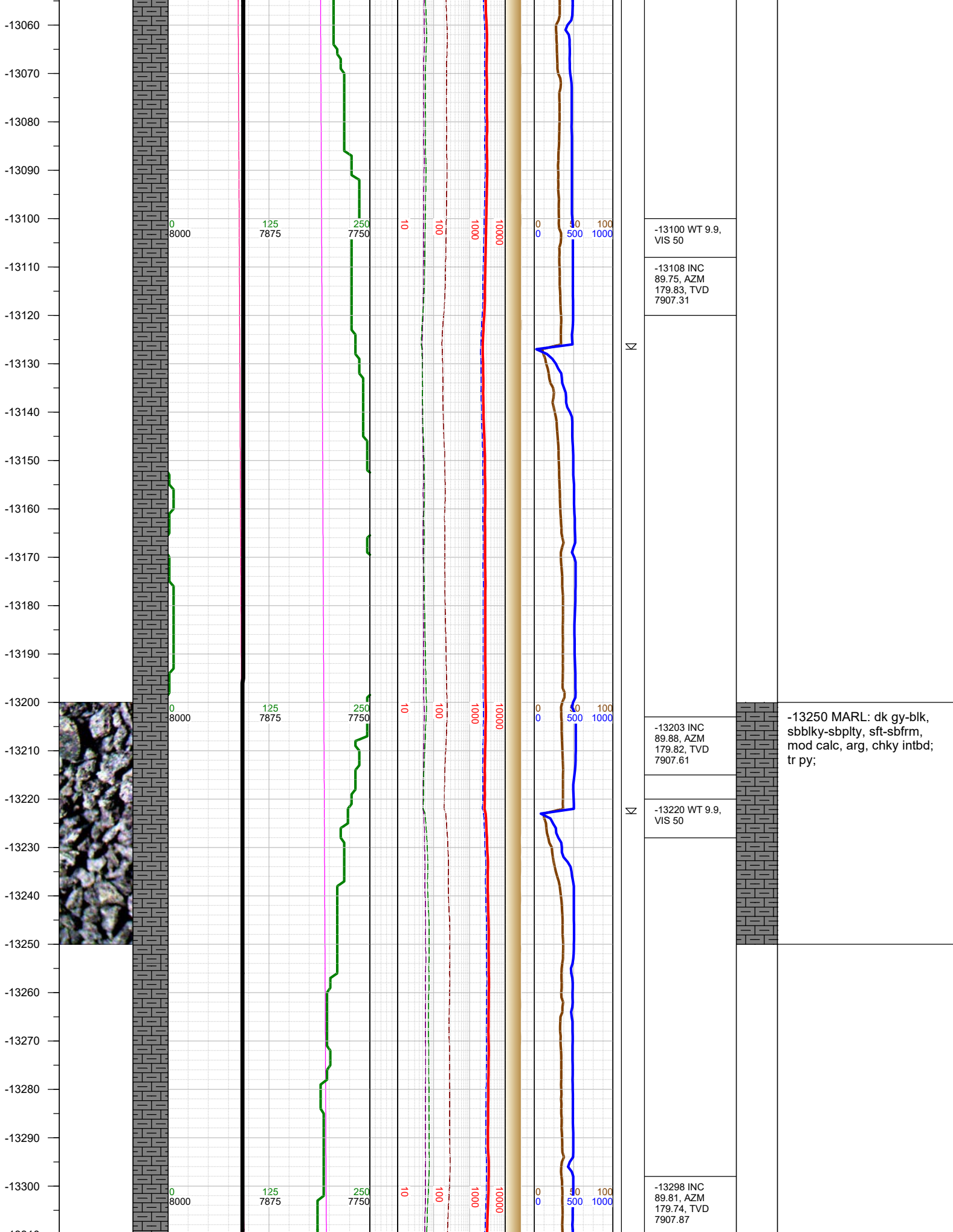


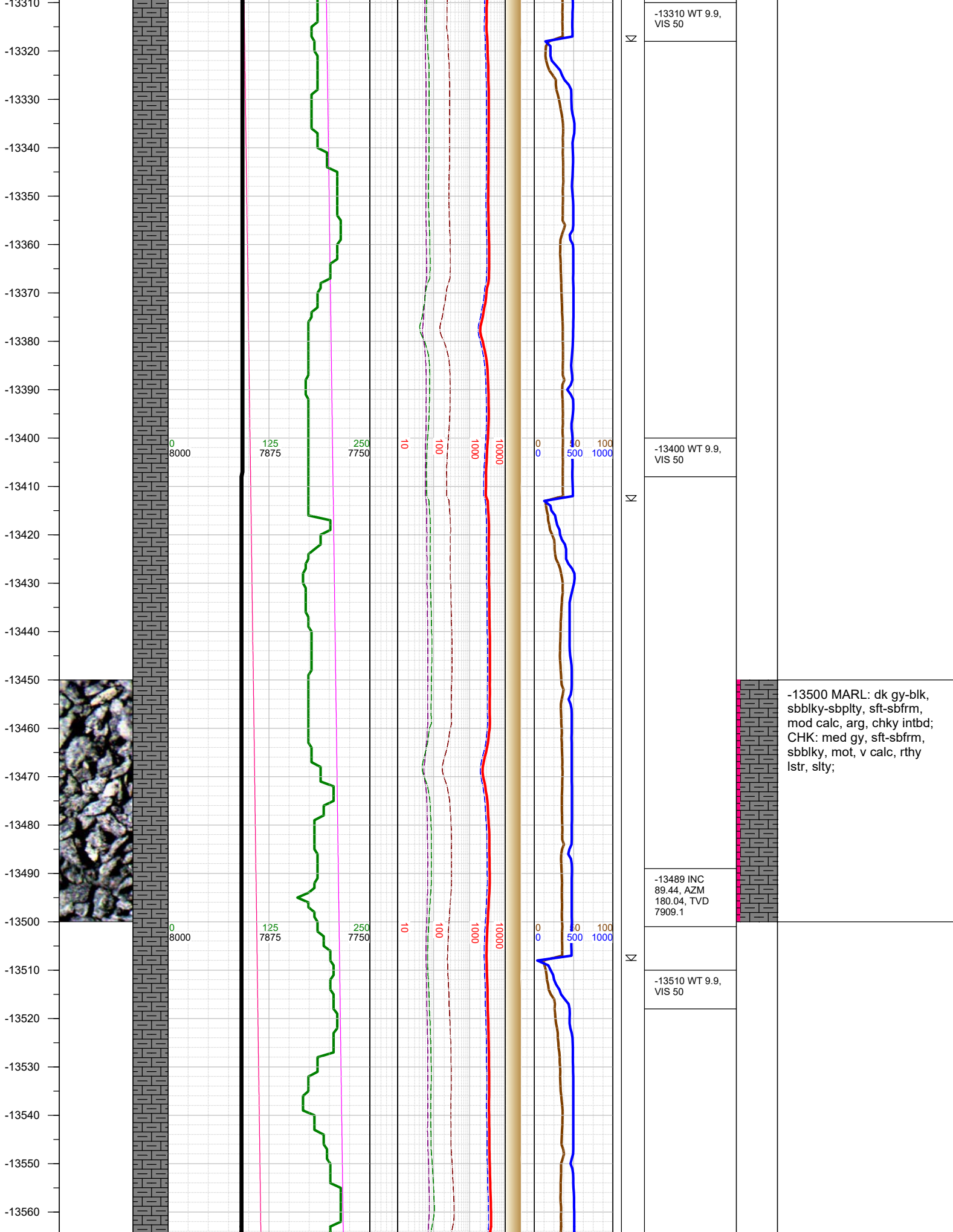


-12500 MARL: dk gy-blk, sbblky-sbplty, sft-sbfrm, mod calc, arg, chky intbd; mod py;

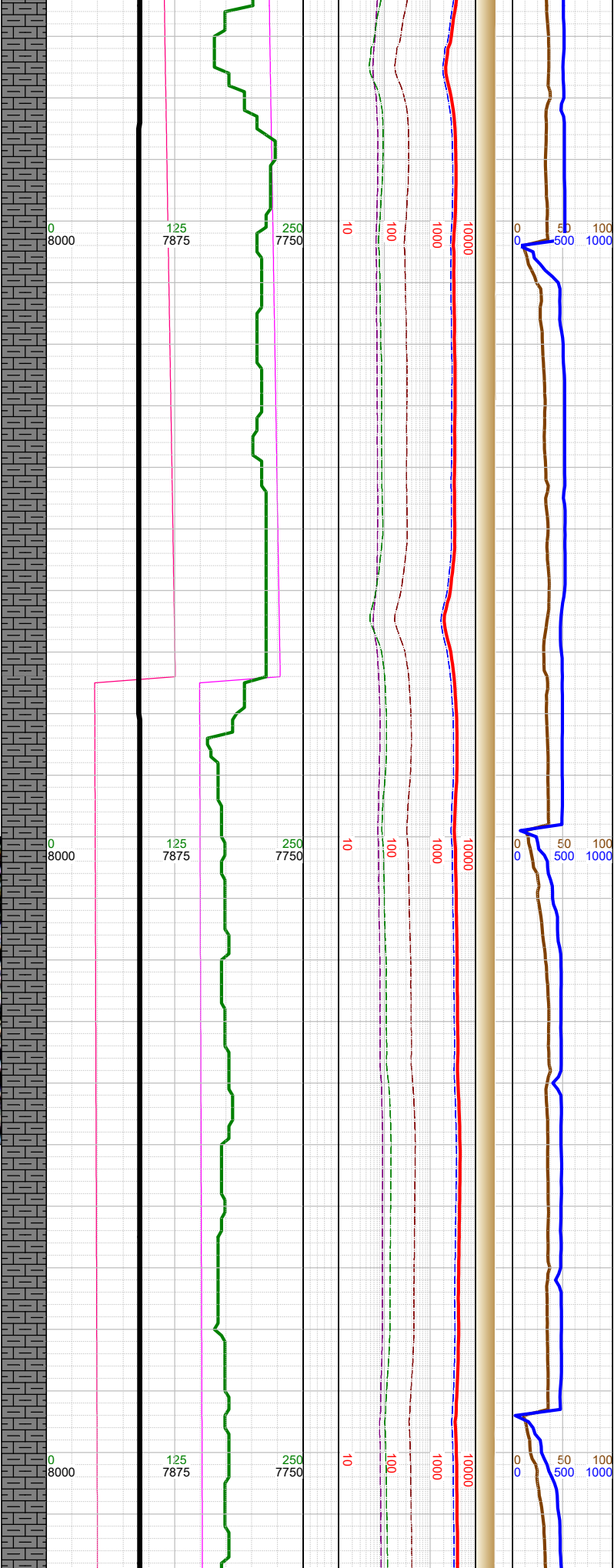
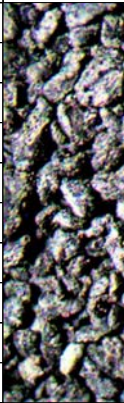








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-13790
-13800
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-13585 INC 90,
AZM 180.16,
TVD 7909.57

-13600 WT 9.9,
VIS 50

-13674 Fault:
78' down-throw;
went from B1
Chalk to A Marl

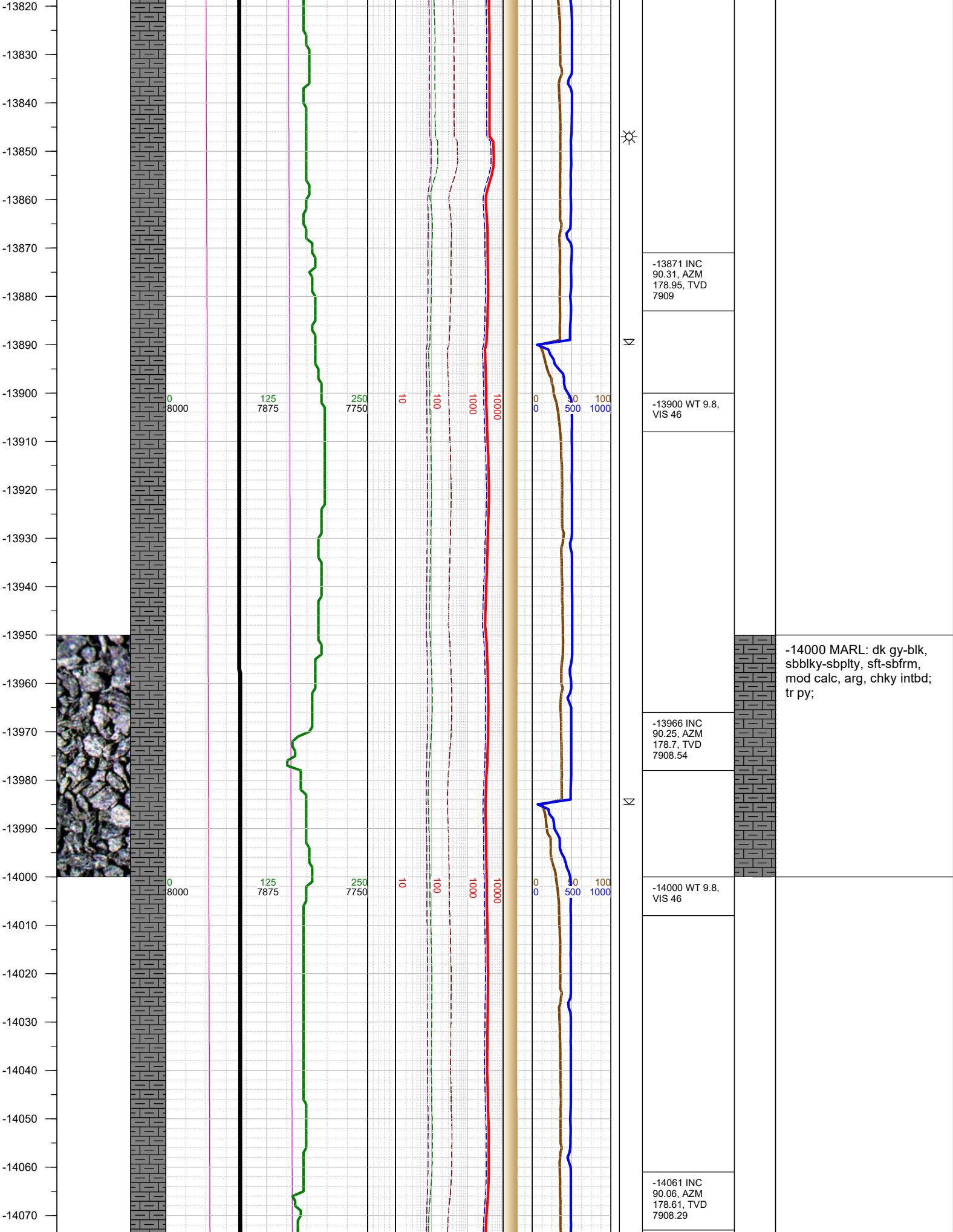
-13680 INC 90,
AZM 180.18,
TVD 7909.57

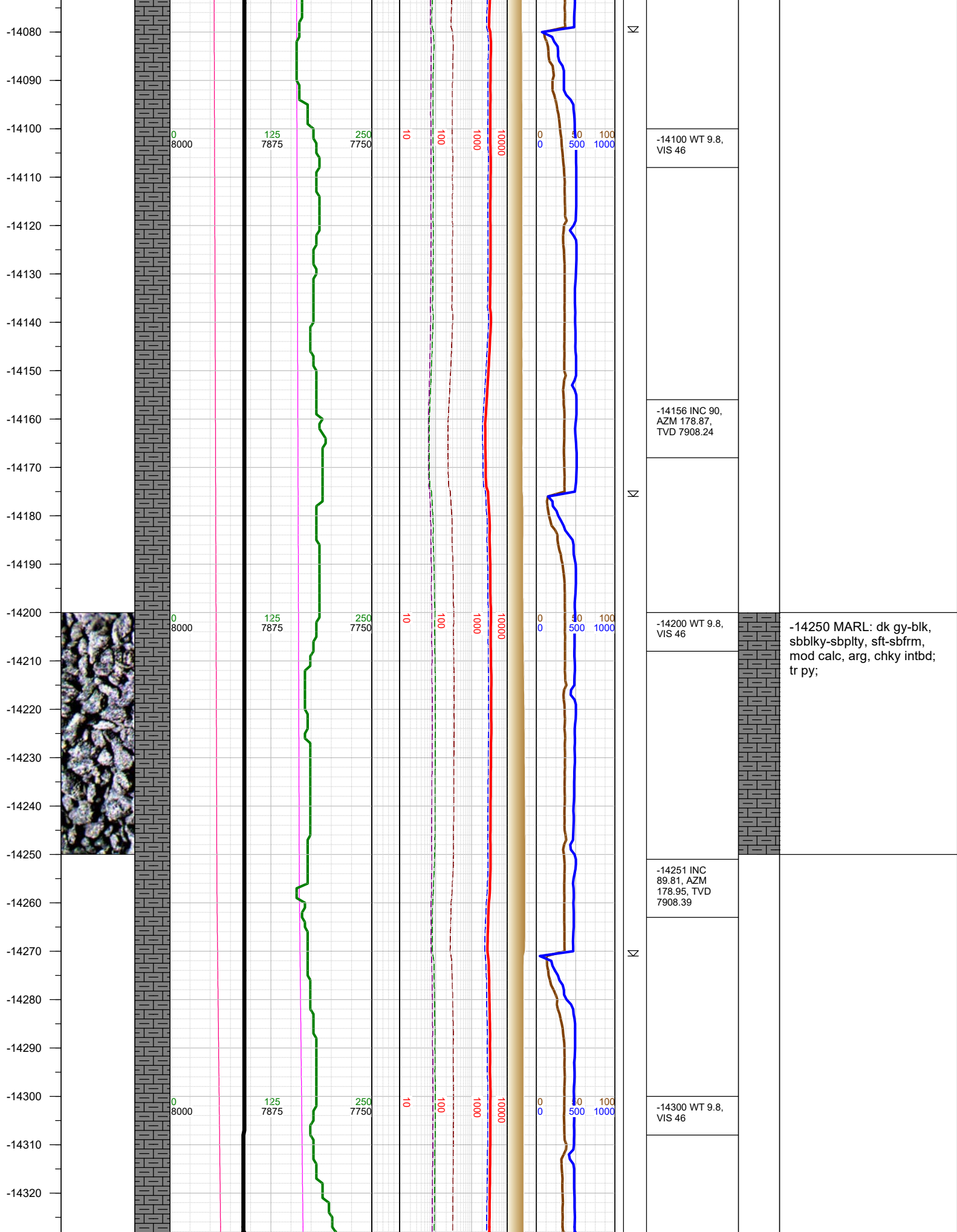
-13700 WT 9.9,
VIS 50

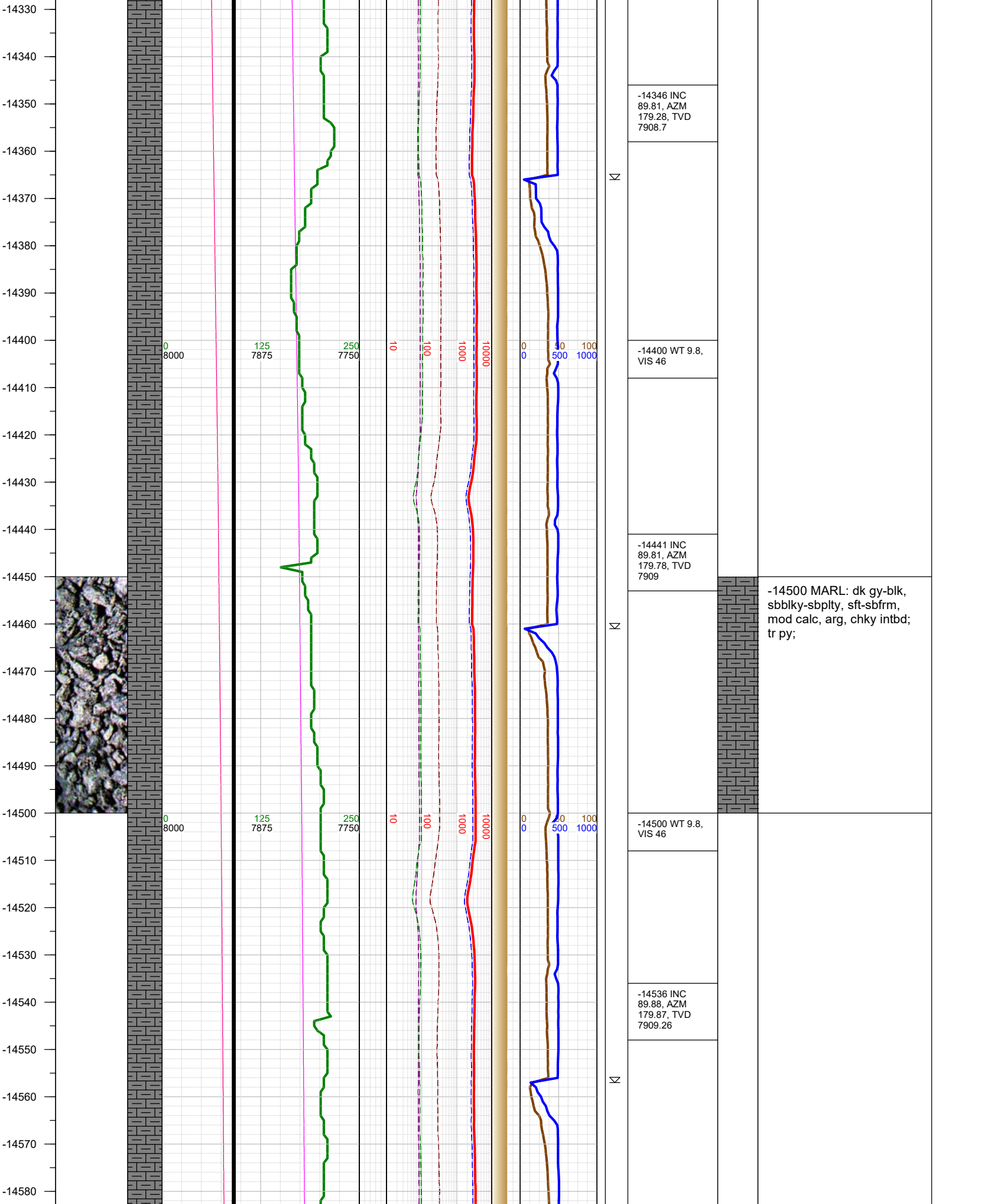
-13775 INC
90.19, AZM
179.51, TVD
7909.42

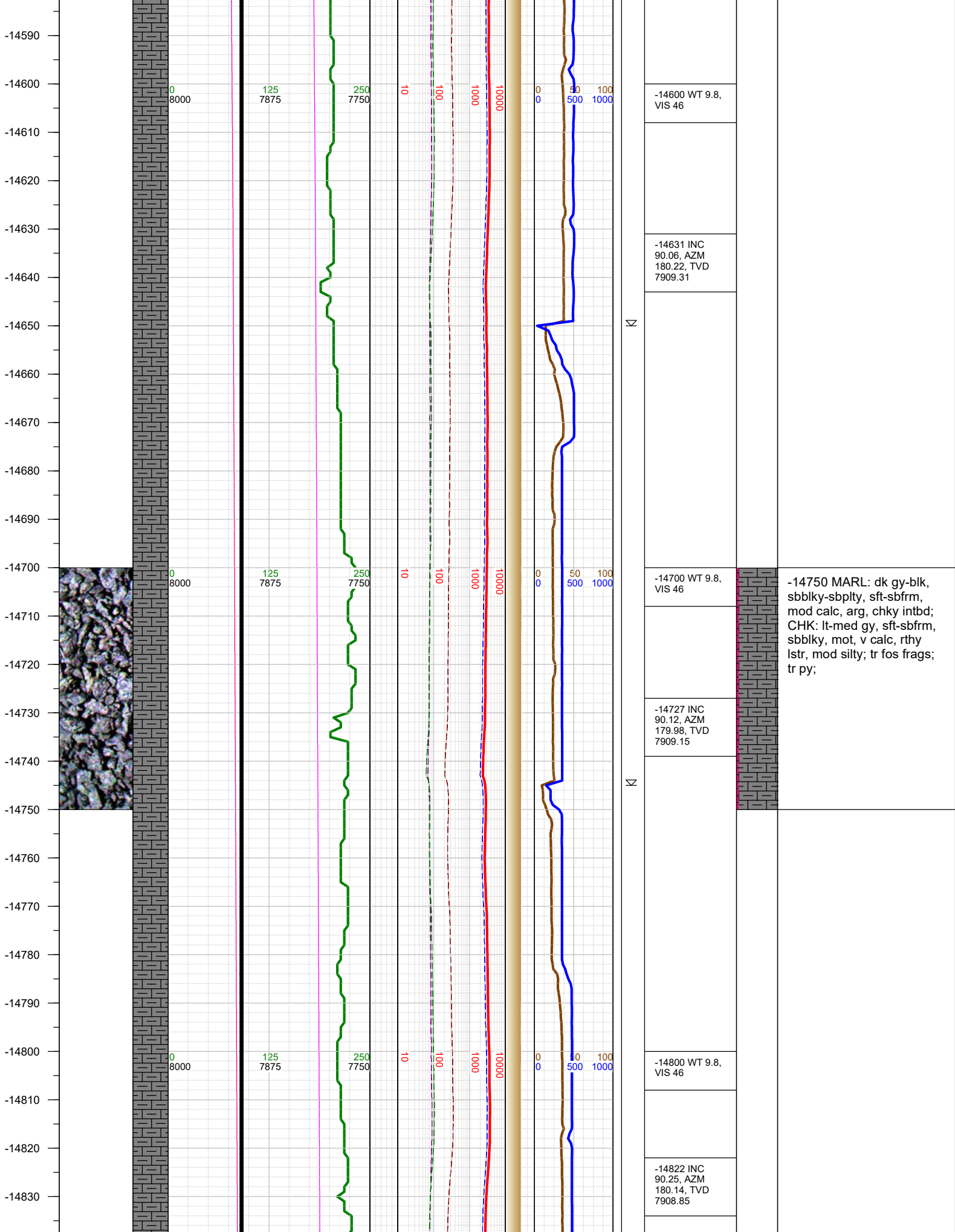
-13800 WT 9.9,
VIS 50

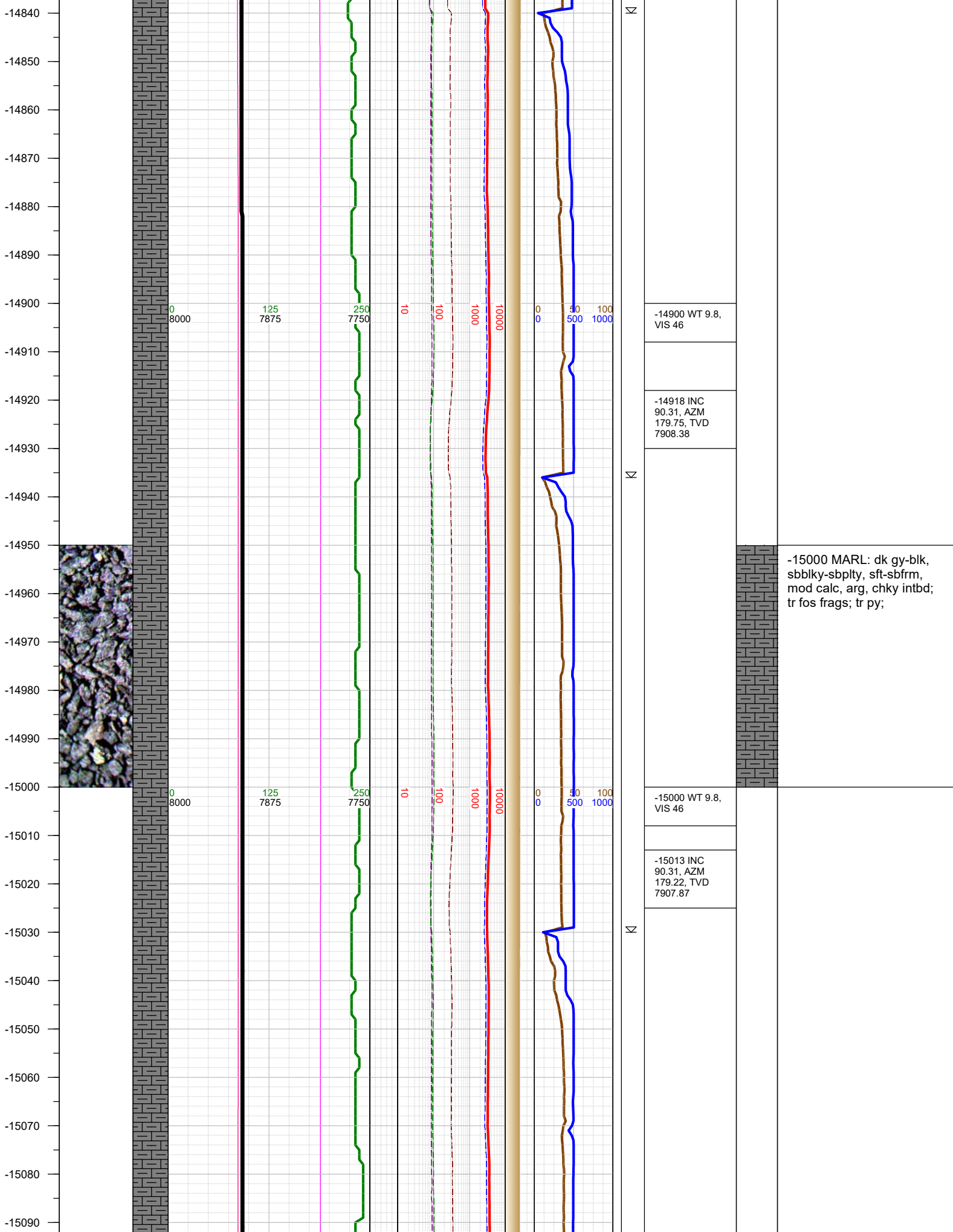
-13750 MARL: dk gy-blk,
sbbkly-sbply, sft-sbfrm,
mod calc, arg, chky intbd;
tr py;

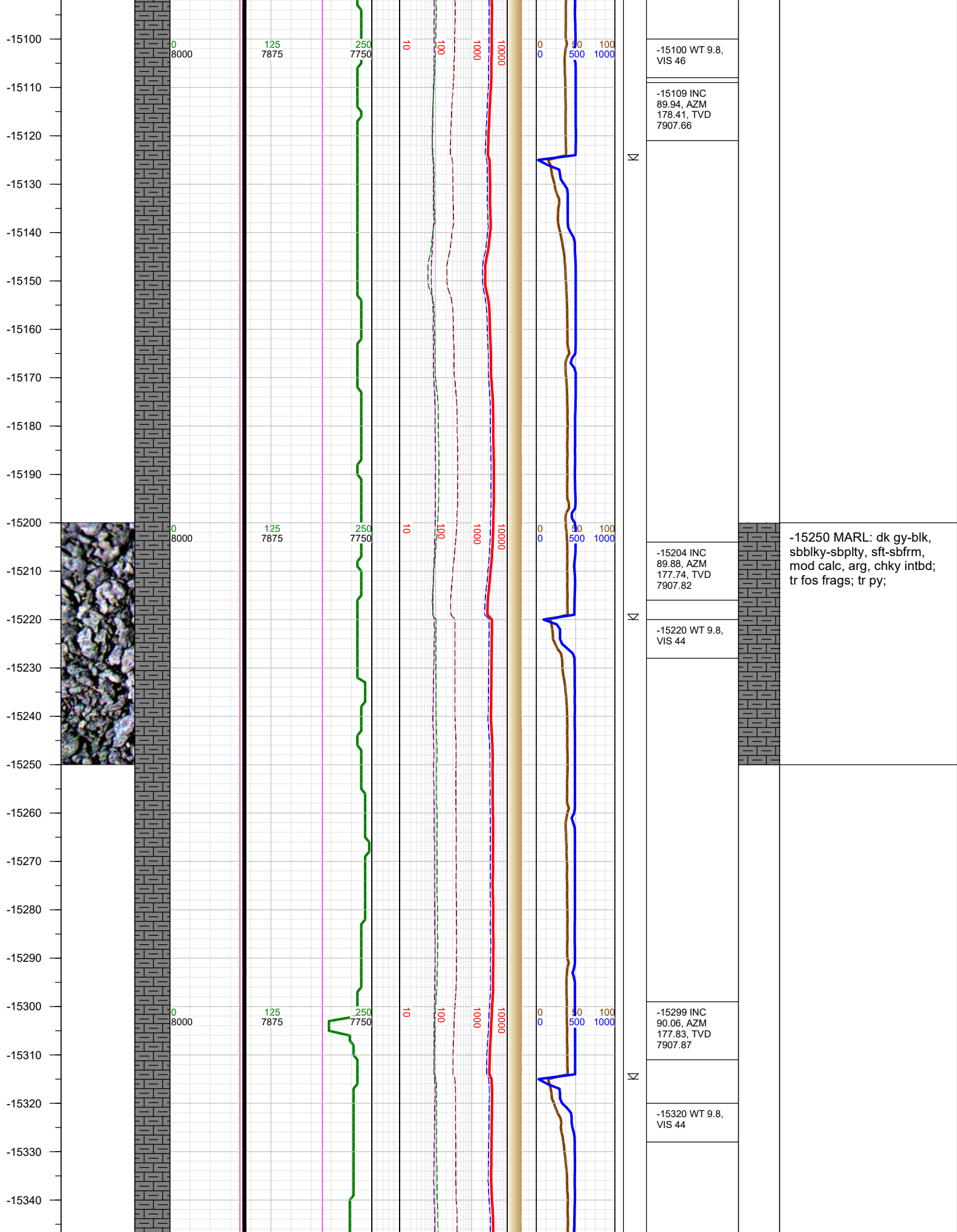


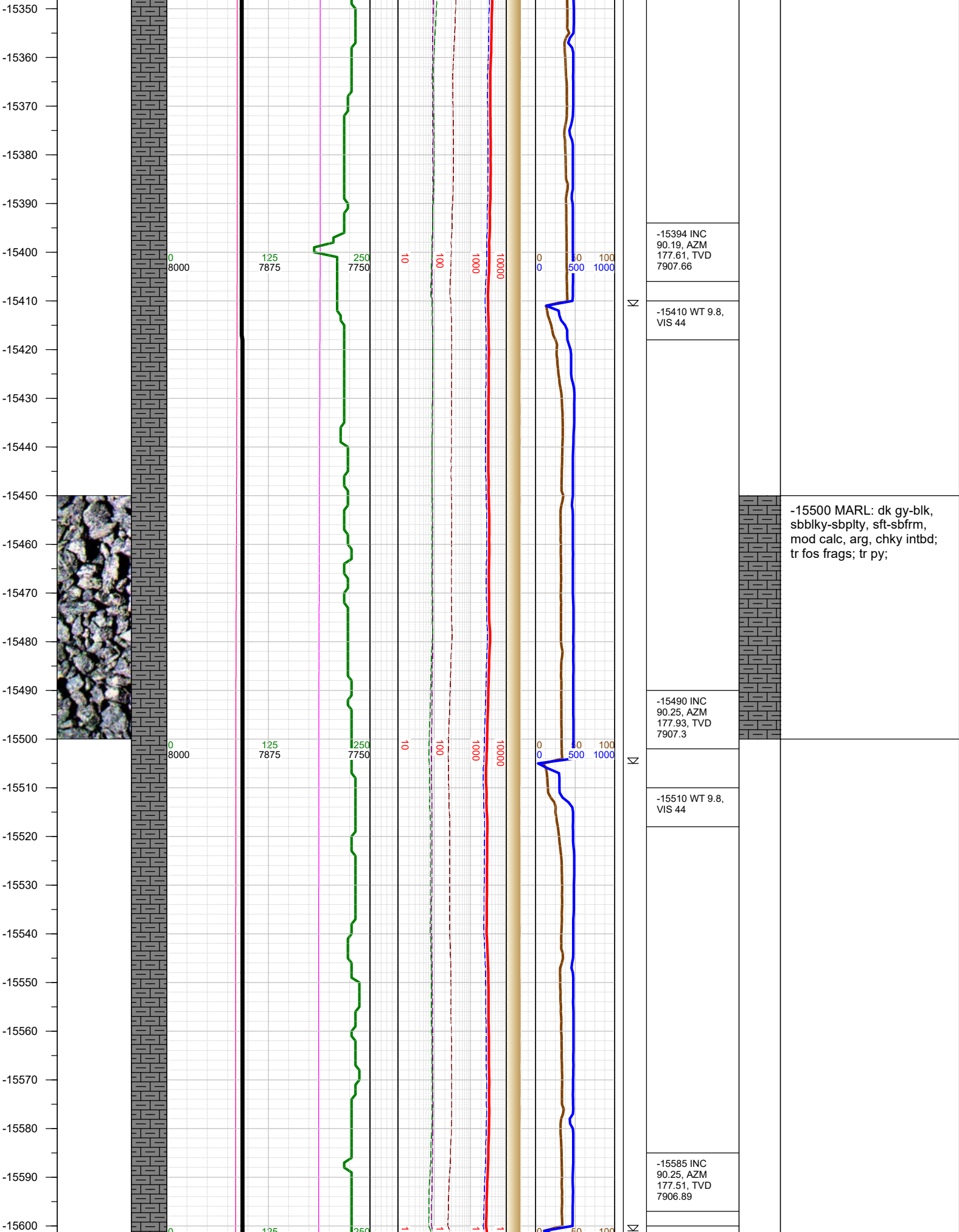


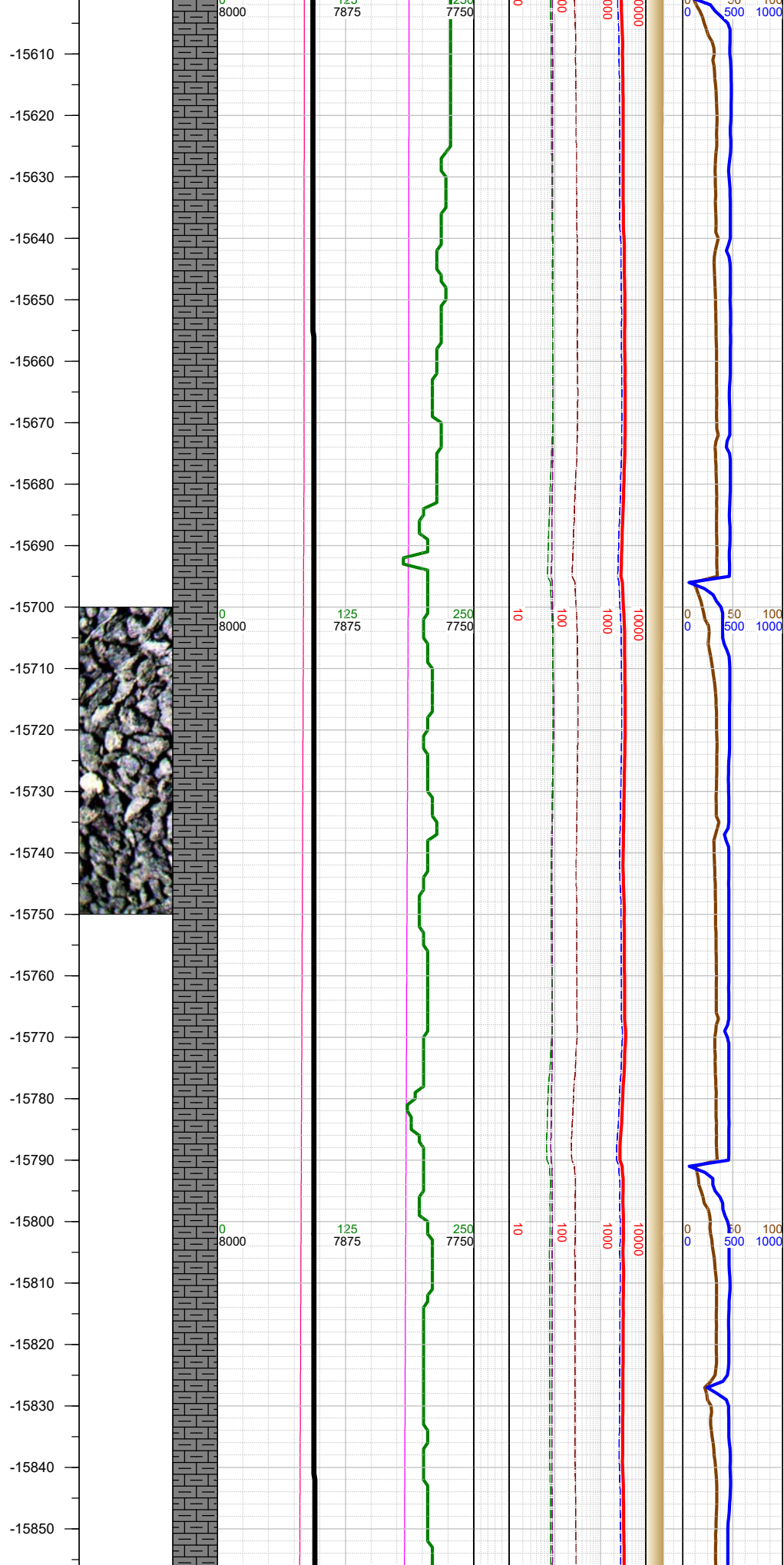












-15600 WT 9.8,
VIS 44

-15680 INC
90.25, AZM
177.71, TVD
7906.48

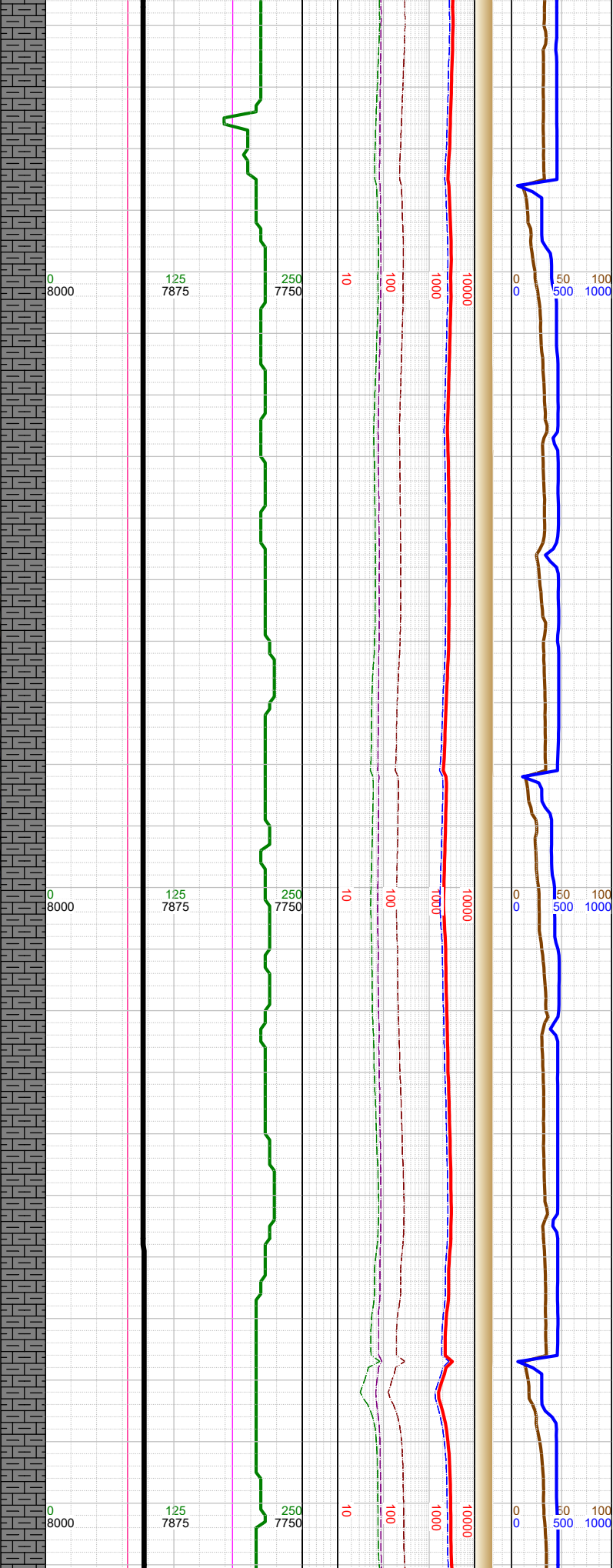
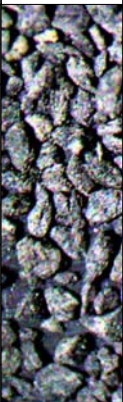
-15700 WT 9.8,
VIS 44

-15775 INC
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177.97, TVD
7906.02

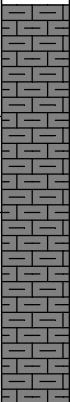
-15800 WT 9.9,
VIS 46

-15750 MARL: dk gy-blk, sbblky-sbplty, sft-sbfrm, mod calc, arg, chky intbd; CHK: lt-med gy, sft-sbfrm, sbblky, mot, v calc, rthy lstr, mod silty; tr fos frags; tr py;

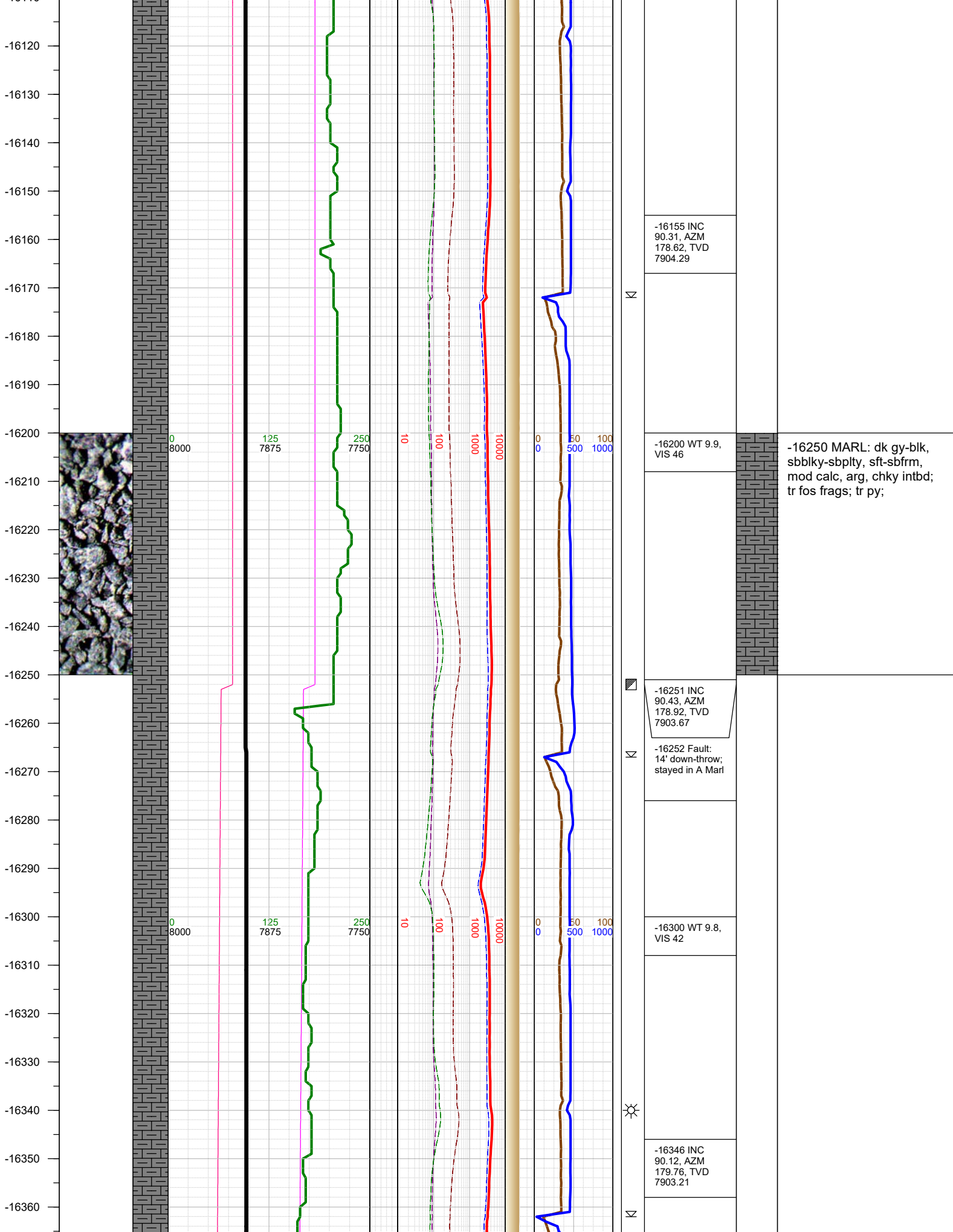
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-16080
-16090
-16100
-16110



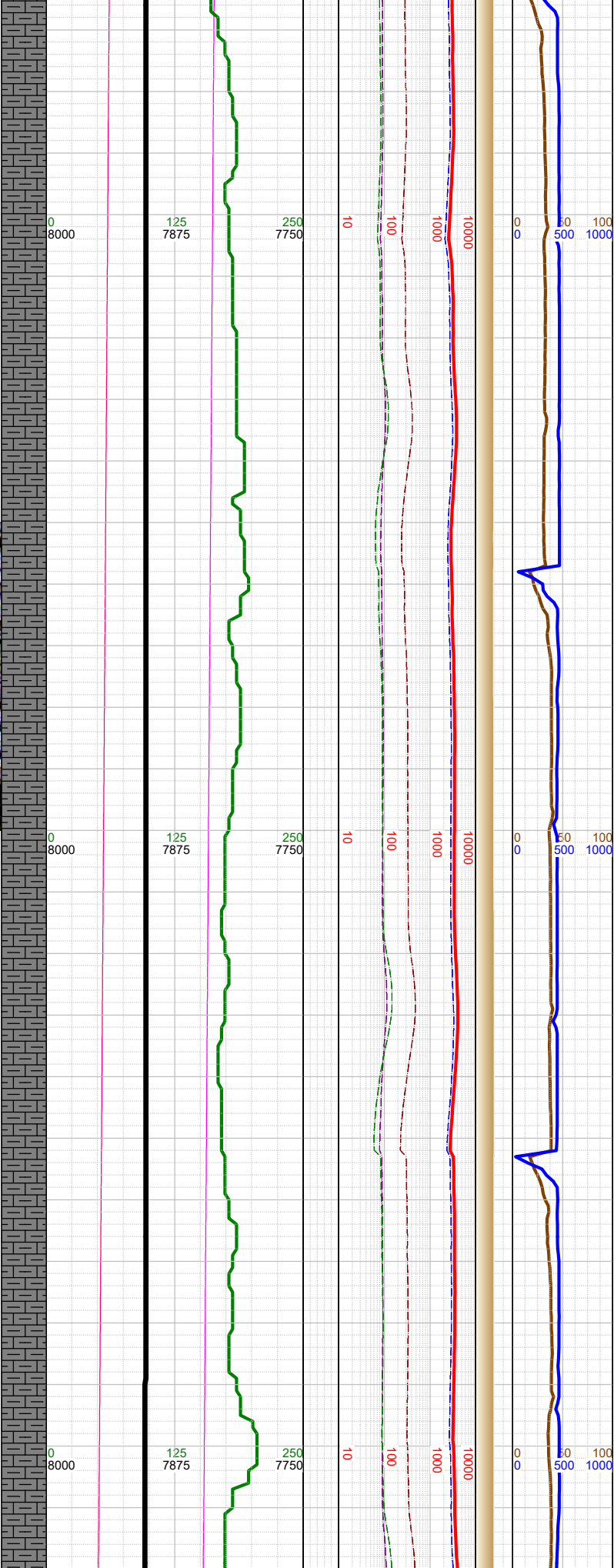
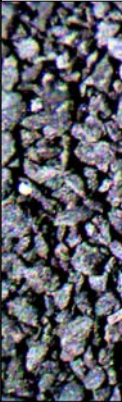
N	-15869 INC 90.43, AZM 178.24, TVD 7905.42
	-15900 WT 9.9, VIS 46
N	-15964 INC 90.25, AZM 178.59, TVD 7904.85
	-16000 WT 9.9, VIS 46
N	-16060 INC 90.06, AZM 178.29, TVD 7904.59
	-16100 WT 9.9, VIS 46



-16000 MARL: dk gy-blk,
sbbiky-sbplty, sft-sbfrm,
mod calc, arg, chky intbd;
tr fos frags; tr py;



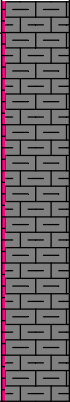
-16370
-16380
-16390
-16400
-16410
-16420
-16430
-16440
-16450
-16460
-16470
-16480
-16490
-16500
-16510
-16520
-16530
-16540
-16550
-16560
-16570
-16580
-16590
-16600
-16610
-16620



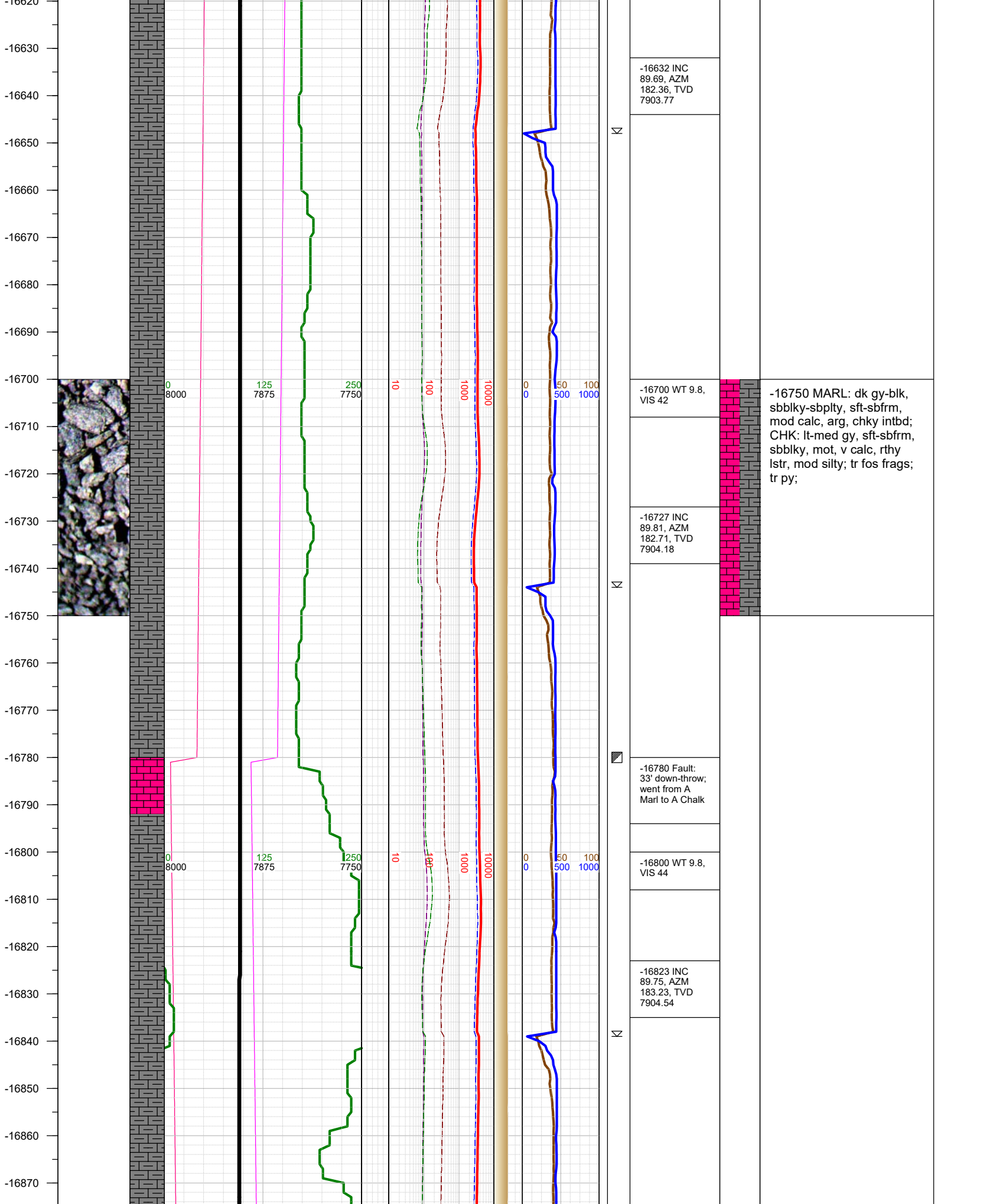
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-16400 WT 9.8, VIS 42
-16442 INC 89.94, AZM 180.41, TVD 7903.15
-16500 WT 9.8, VIS 42
-16537 INC 89.81, AZM 181.21, TVD 7903.36
-16600 WT 9.8, VIS 42



-16500 MARL: dk gy-blk,
sbbly-sbply, sft-sbfrm,
mod calc, arg, chky intbd;
CHK: lt-med gy, sft-sbfrm,
sbbly, mot, v calc, rthy
lstr, mod silty; tr fos frags;
tr py;



-16880
-16890
-16900
-16910
-16920
-16930
-16940
-16950
-16960
-16970
-16980
-16990
-17000
-17010
-17020
-17030
-17040
-17050
-17060
-17070
-17080
-17090
-17100
-17110
-17120



250
8000

375
7875

500
7750

10

100

1000

10000

0
0

50
500

100
1000



-16900 WT 9.8,
VIS 44

-16918 INC
89.26, AZM
183.5, TVD
7905.36



-17000 MARL: dk gy-blk,
sbbly-sbply, sft-sbfrm,
mod calc, arg, chky intbd;
CHK: lt-med gy, sft-sbfrm,
sbbly, mot, v calc, rthy
lstr, mod silty; tr fos frags;
tr py;

250
8000

375
7875

500
7750

10

100

1000

10000

0
0

50
500

100
1000



-17000 WT 9.8,
VIS 44

-17013 INC
89.38, AZM
183.58, TVD
7906.48



250
8000

375
7875

500
7750

10

100

1000

10000

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0

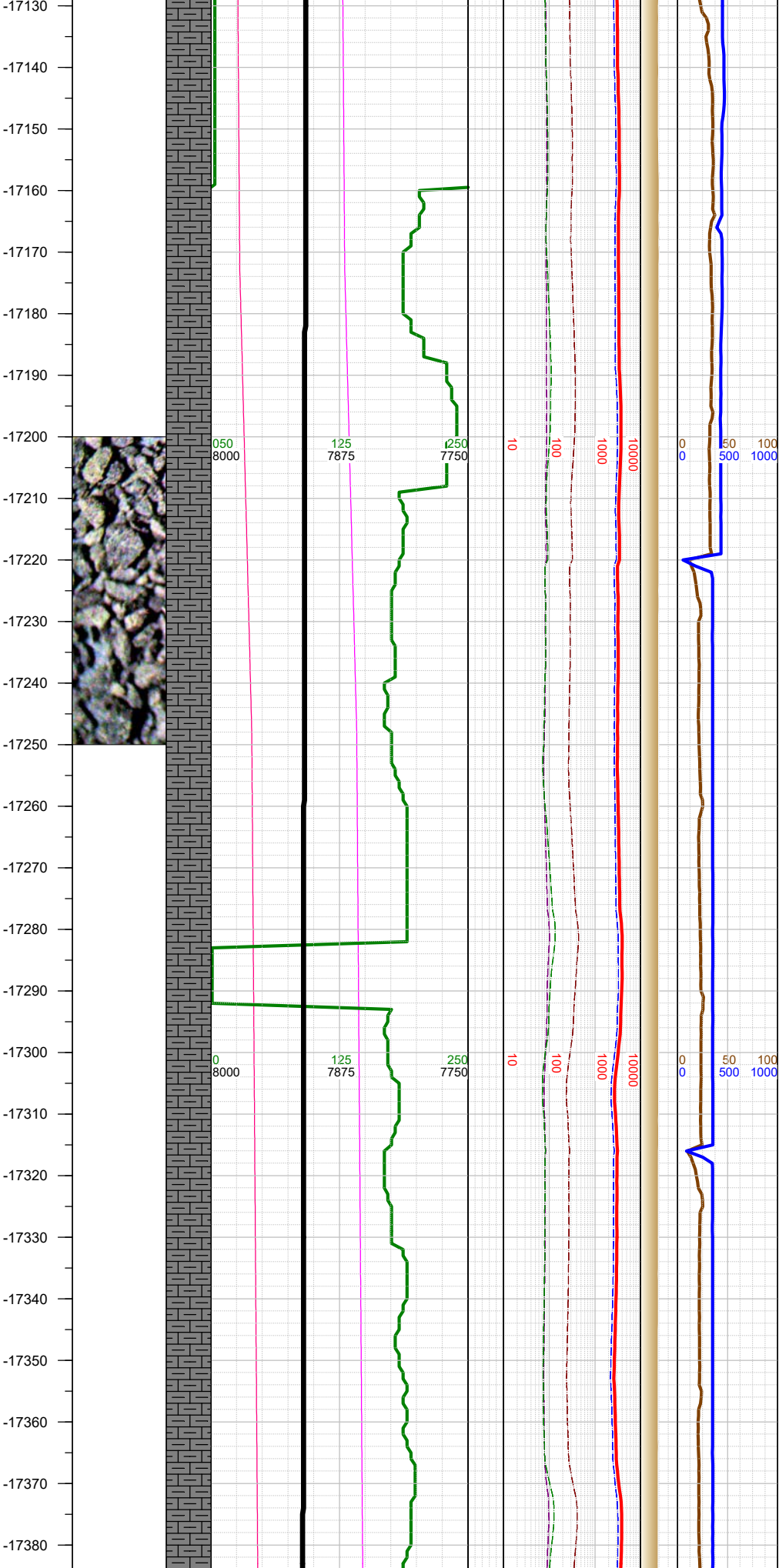
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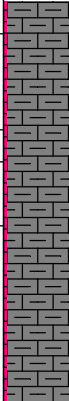
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1000

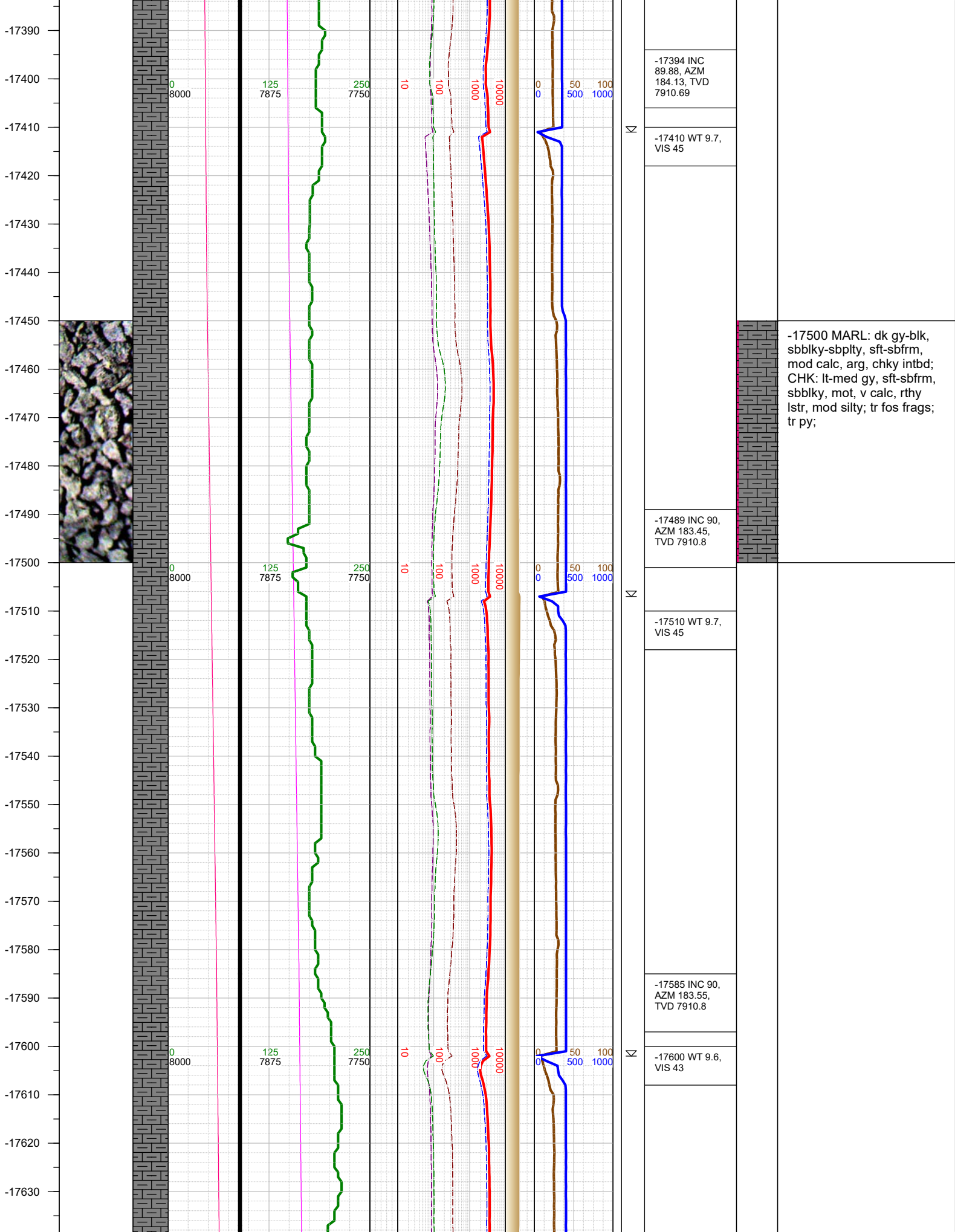


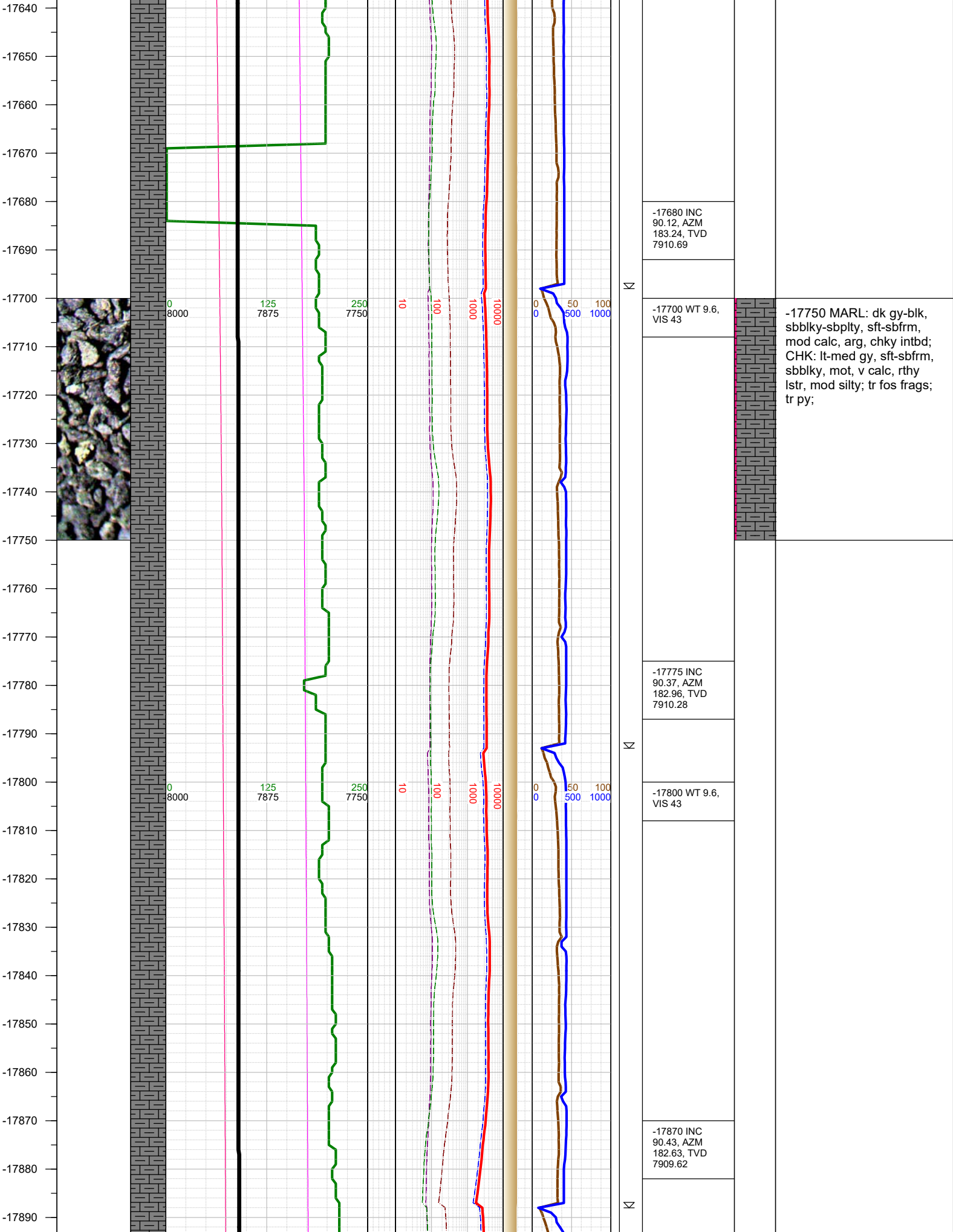
-17100 WT 9.8,
VIS 44

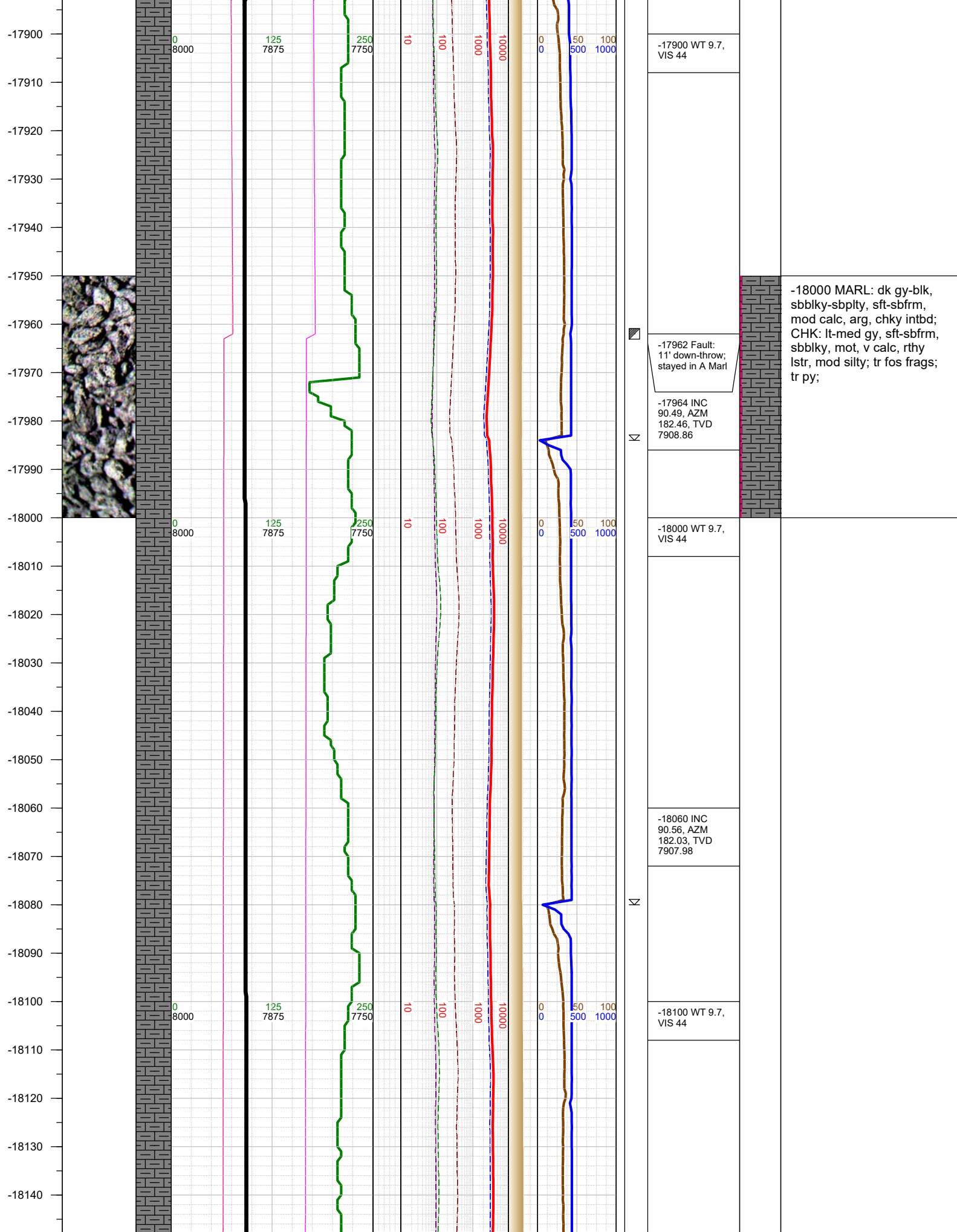
-17109 INC
89.32, AZM
184.14, TVD
7907.57

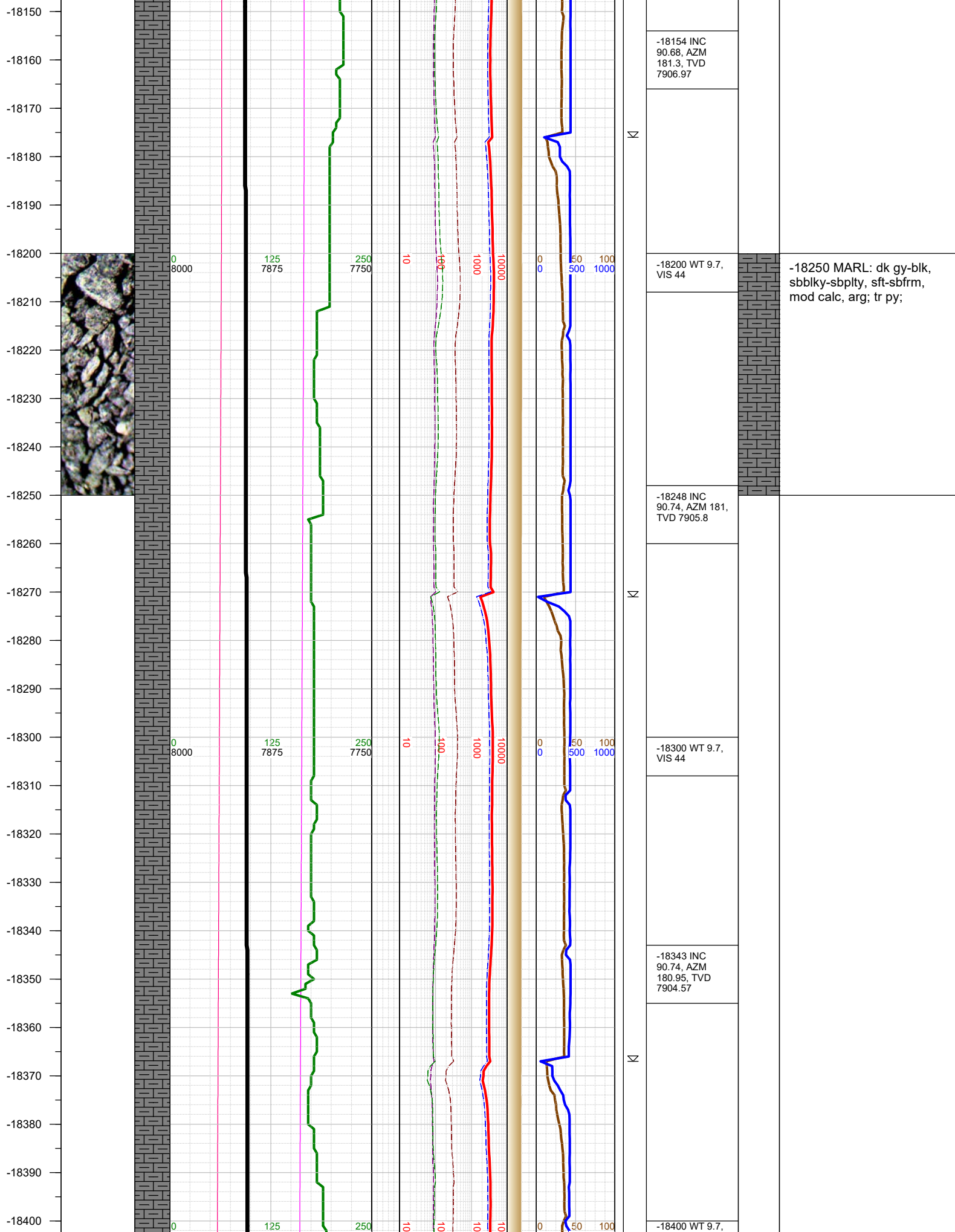


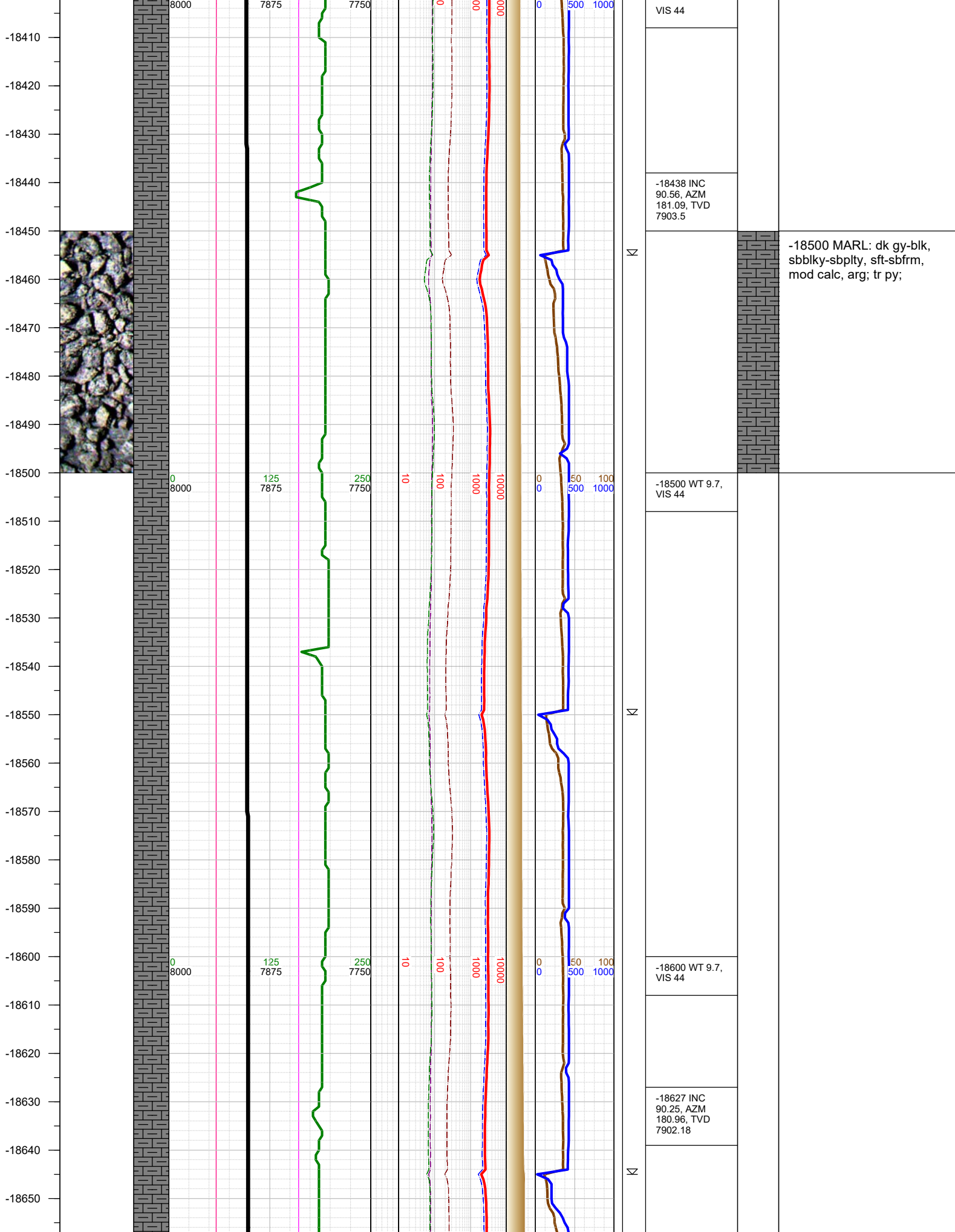
Σ				
	-17204 INC 89.14, AZM 184.29, TVD 7908.85		-17250 MARL: dk gy-blk, sbbly-sbply, sft-sbfrm, mod calc, arg, chky intbd; CHK: lt-med gy, sft-sbfrm, sbbly, mot, v calc, rthy lstr, mod silty; tr fos frags; tr py;	
-17220 WT 9.8, VIS 44				
Σ				
	-17299 INC 89.38, AZM 184.11, TVD 7910.08			
	-17320 WT 9.8, VIS 44			

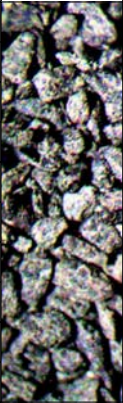
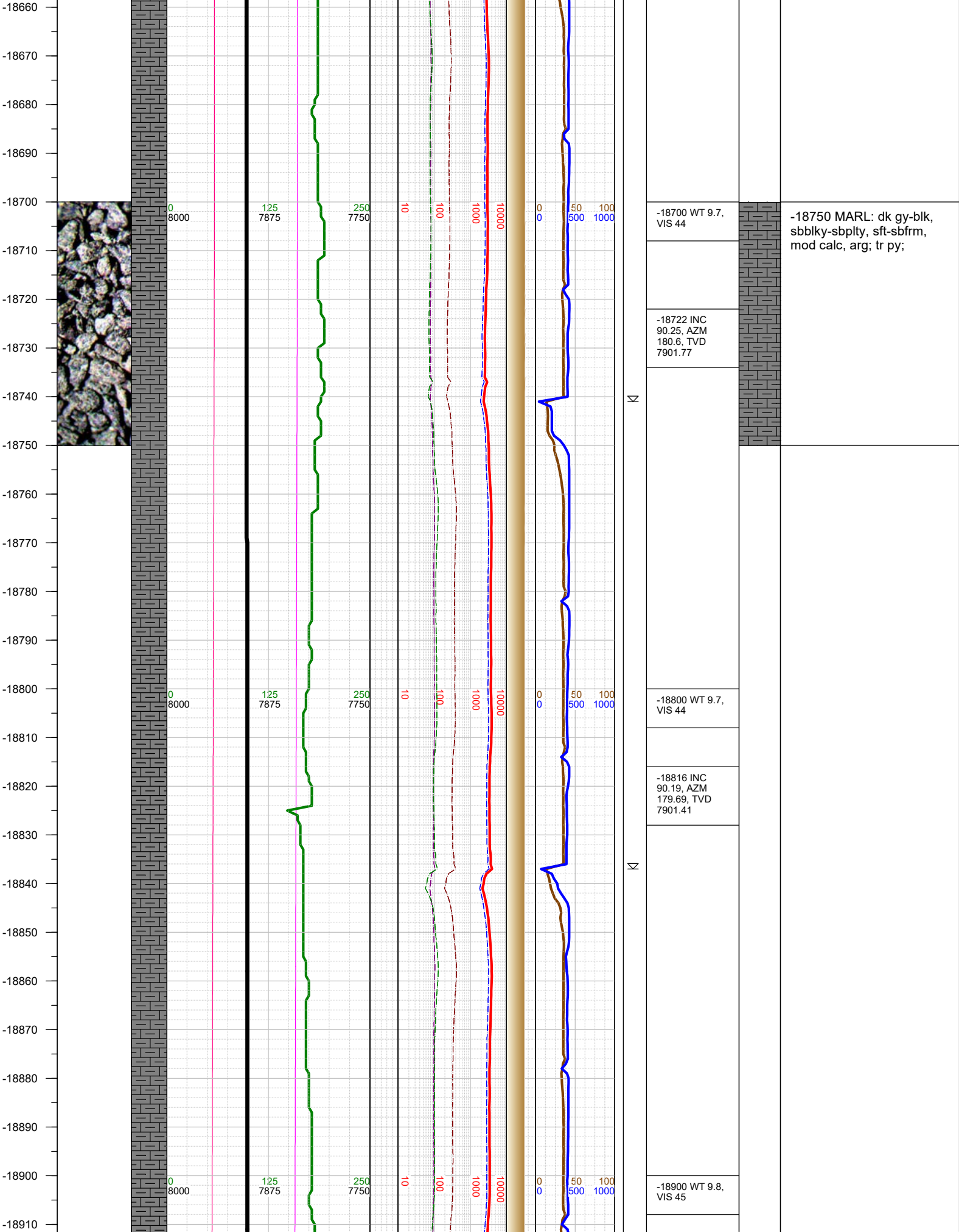




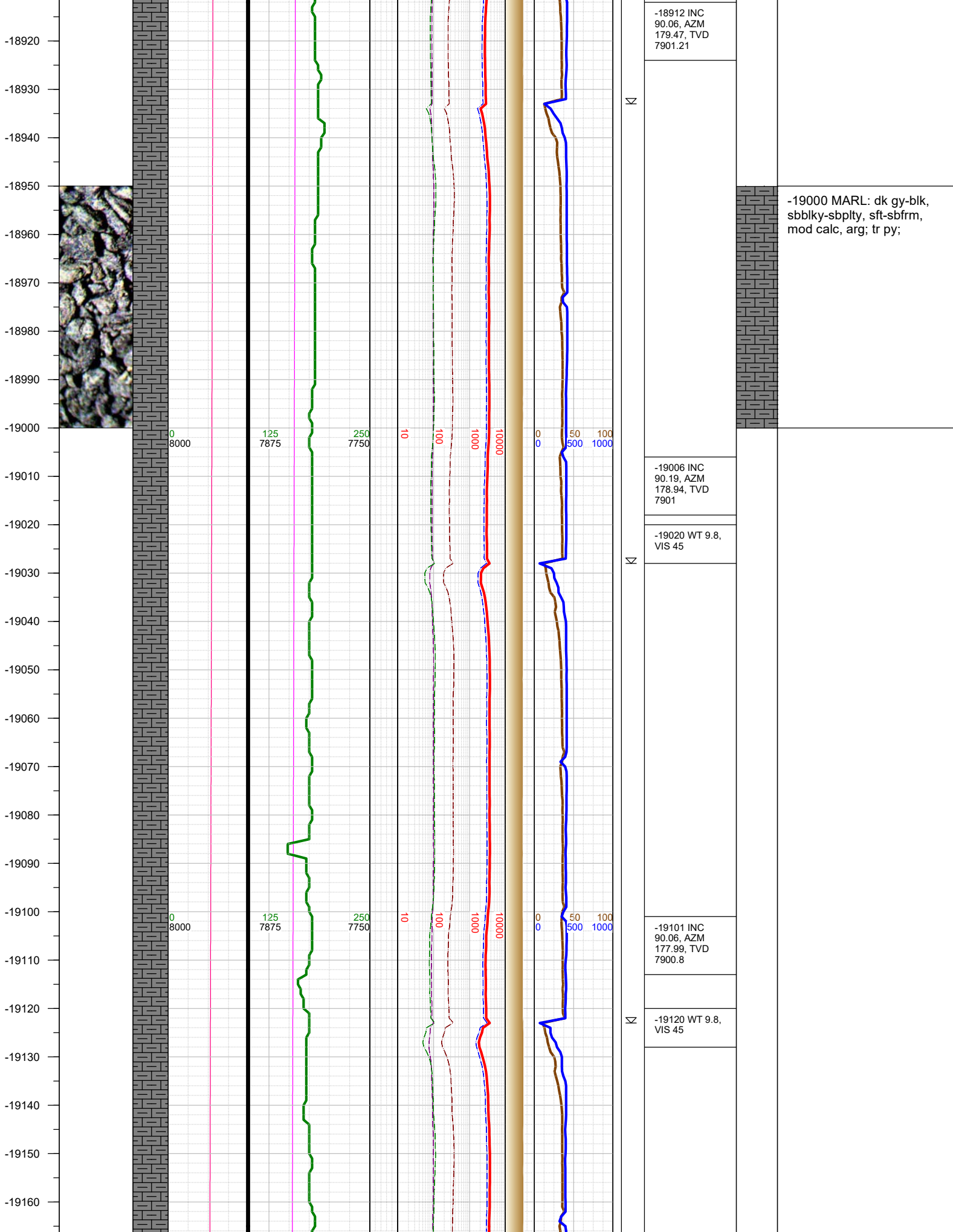




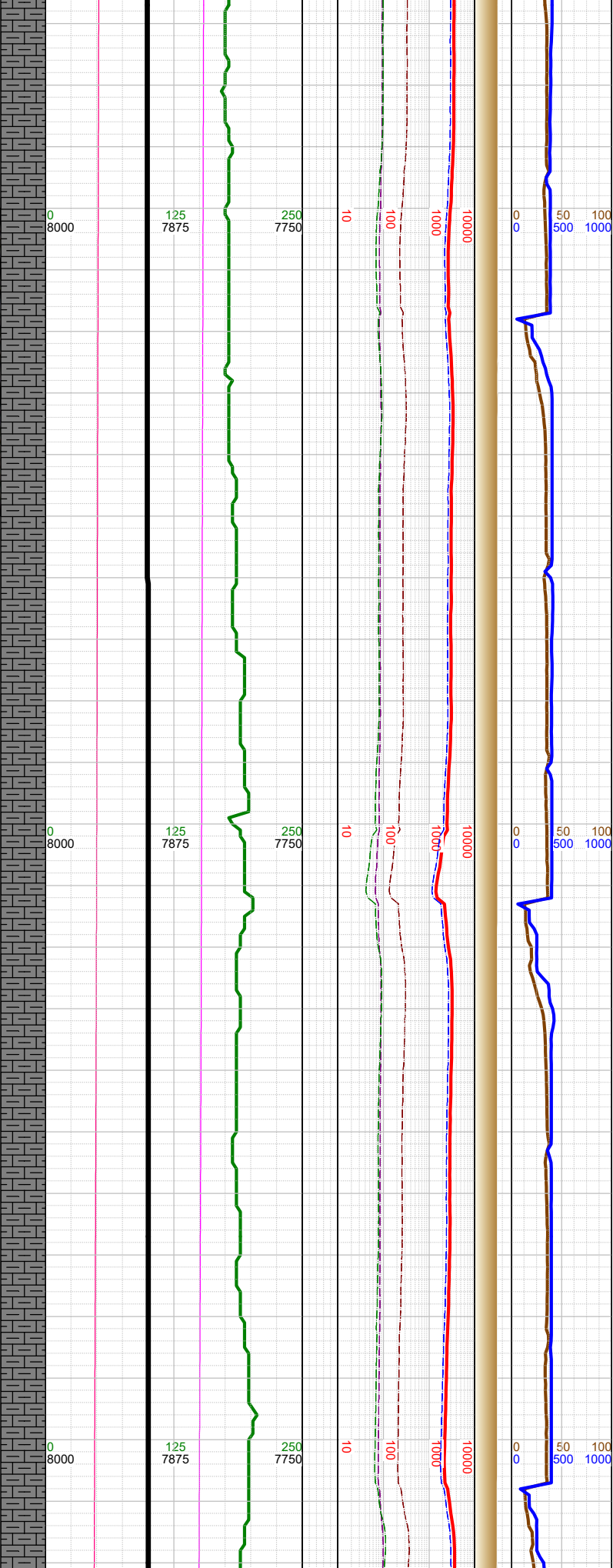
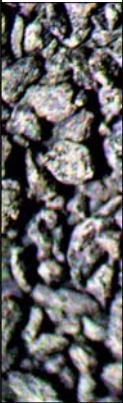




-18750 MARL: dk gy-blk, sbblky-sbplty, sft-sbfrm, mod calc, arg; tr py;



-19170
-19180
-19190
-19200
-19210
-19220
-19230
-19240
-19250
-19260
-19270
-19280
-19290
-19300
-19310
-19320
-19330
-19340
-19350
-19360
-19370
-19380
-19390
-19400
-19410
-19420



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-19196 INC
90.06, AZM
176.59, TVD
7900.7

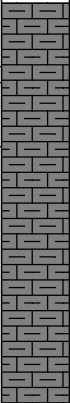
-19210 WT 9.8,
VIS 45

-19291 INC
90.12, AZM
177.3, TVD
7900.54

-19310 WT 9.8,
VIS 45

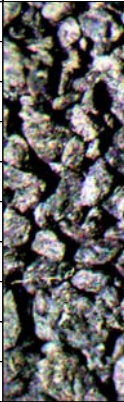
-19387 INC
90.06, AZM
177.69, TVD
7900.39

-19400 WT 9.8,
VIS 45



-19250 MARL: dk gy-blk,
sbbly-sbplty, sft-sbfrm,
mod calc, arg; tr py;

-19430
-19440
-19450
-19460
-19470
-19480
-19490
-19500
-19510
-19520
-19530
-19540
-19550
-19560
-19570
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-19590
-19600
-19610
-19620
-19630
-19640
-19650
-19660
-19670



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8000

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7875

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7750

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100

1000

10000

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0

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100

500

1000

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Σ

-19482 INC
89.81, AZM
178.72, TVD
7900.49

-19486 Fault:
10' down-throw;
stayed in A Marl

-19510 WT 9.8,
VIS 45

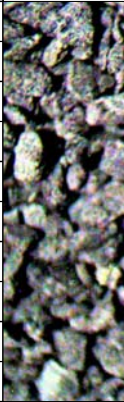
-19577 INC
89.94, AZM
179.31, TVD
7900.69

-19600 WT 9.8,
VIS 45

-19673 INC

-19500 MARL: dk gy-blk,
sbbly-sbply, sft-sbfrm,
mod calc, arg, chky intbd;
tr py; tr bent;

-19680
-19690
-19700
-19710
-19720
-19730
-19740
-19750
-19760
-19770
-19780
-19790
-19800
-19810
-19820
-19830
-19840
-19850
-19860
-19870
-19880
-19890
-19900
-19910
-19920
-19930



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8000

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7875

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1000

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90.19, AZM
179.34, TVD
7900.59

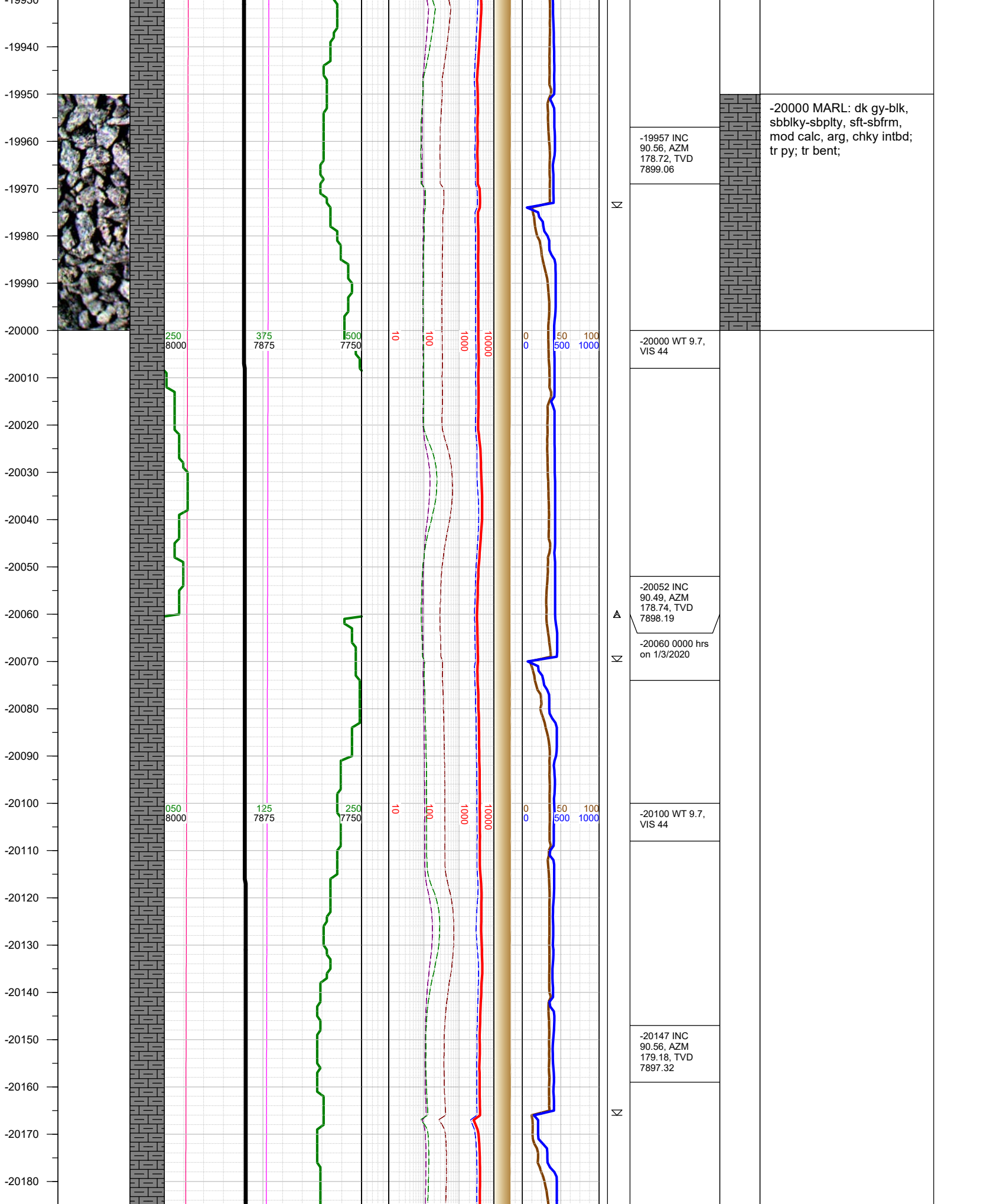
-19700 WT 9.8,
VIS 45

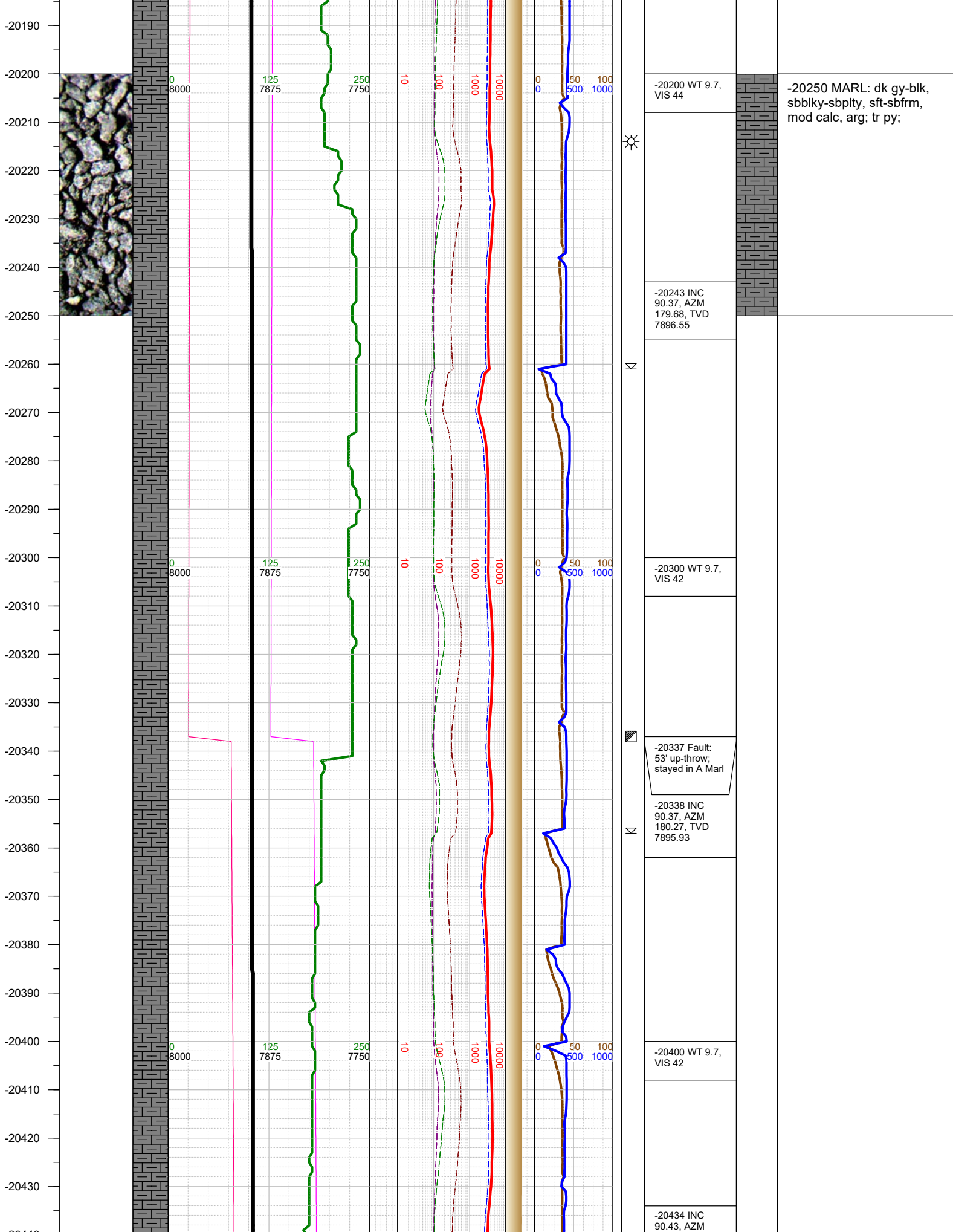
-19800 WT 9.8,
VIS 45

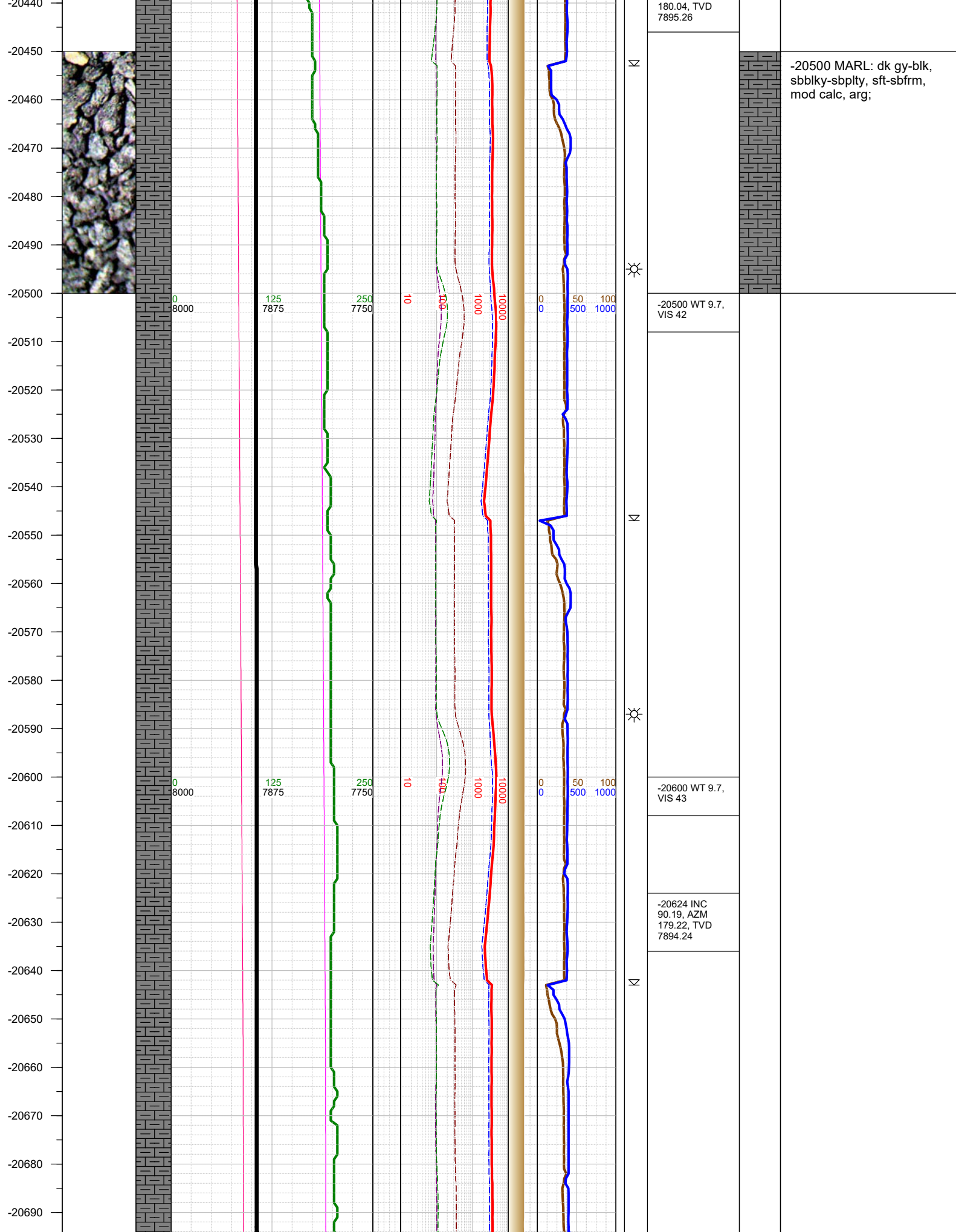
-19863 INC
90.31, AZM
178.64, TVD
7899.77

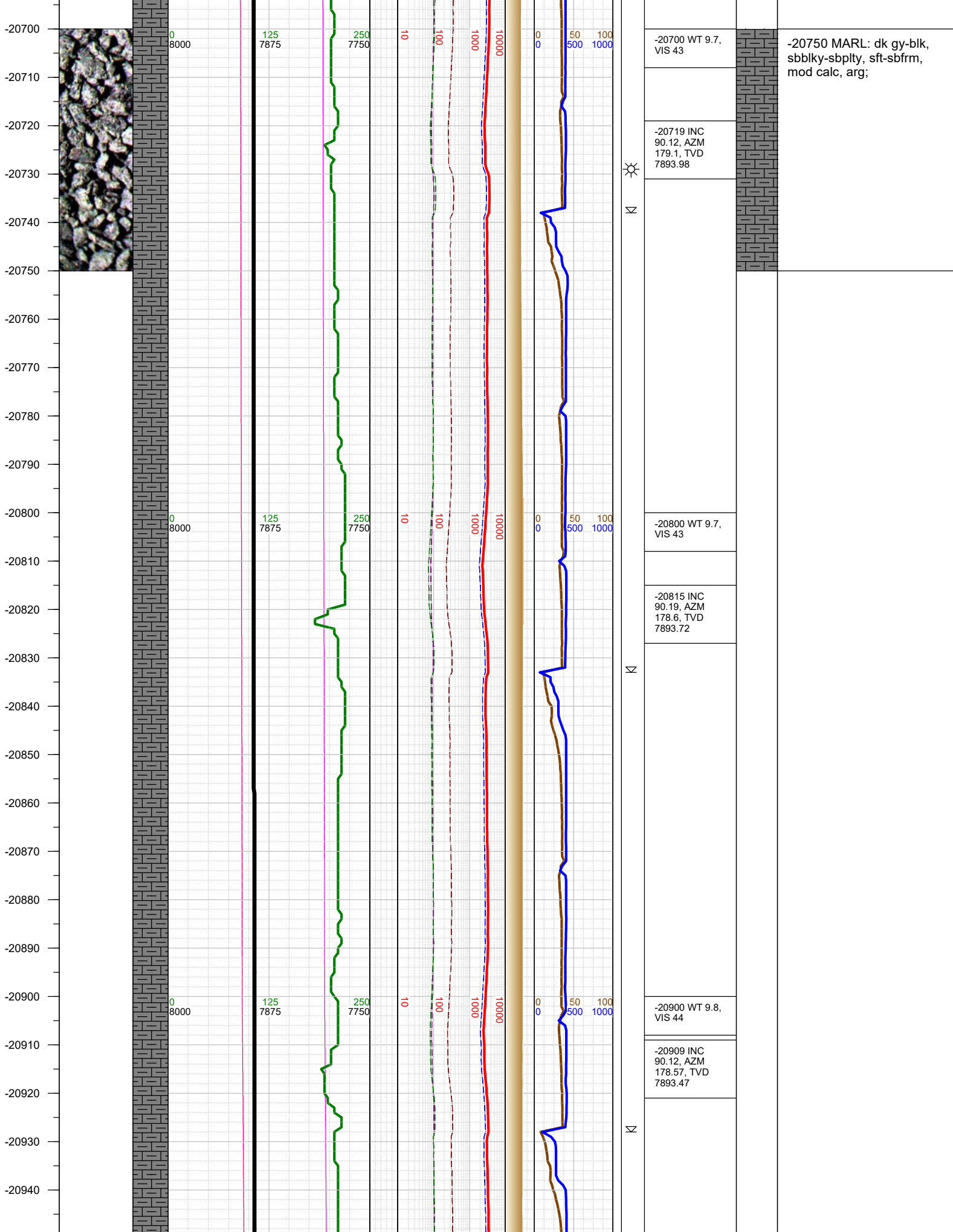
-19900 WT 9.7,
VIS 44

-19750 MARL: dk gy-blk,
sbbkly-sbply, sft-sbfrm,
mod calc, arg; tr py;









-20750 MARL: dk gy-blk, sbblky-sbplty, sft-sbfrm, mod calc, arg;

