OPERATOR: **Extraction Oil & Gas**
WELL NAME: **Livingston S19-25-10N**

FIELD NAME: DJ Basin - Wattenberg
DRILLING RIG: Patterson 901
API #: 05-014-20748

LAT/LONG: 39.978562, -105.039544
SURFACE HOLE: NWSE S7-T1S-R68W, 460' FSL, 1904' FEL
BOTTOM HOLE: S19-T1S-R68W, 460' FSL, 1904' FEL

Earth Science Agency, LLC

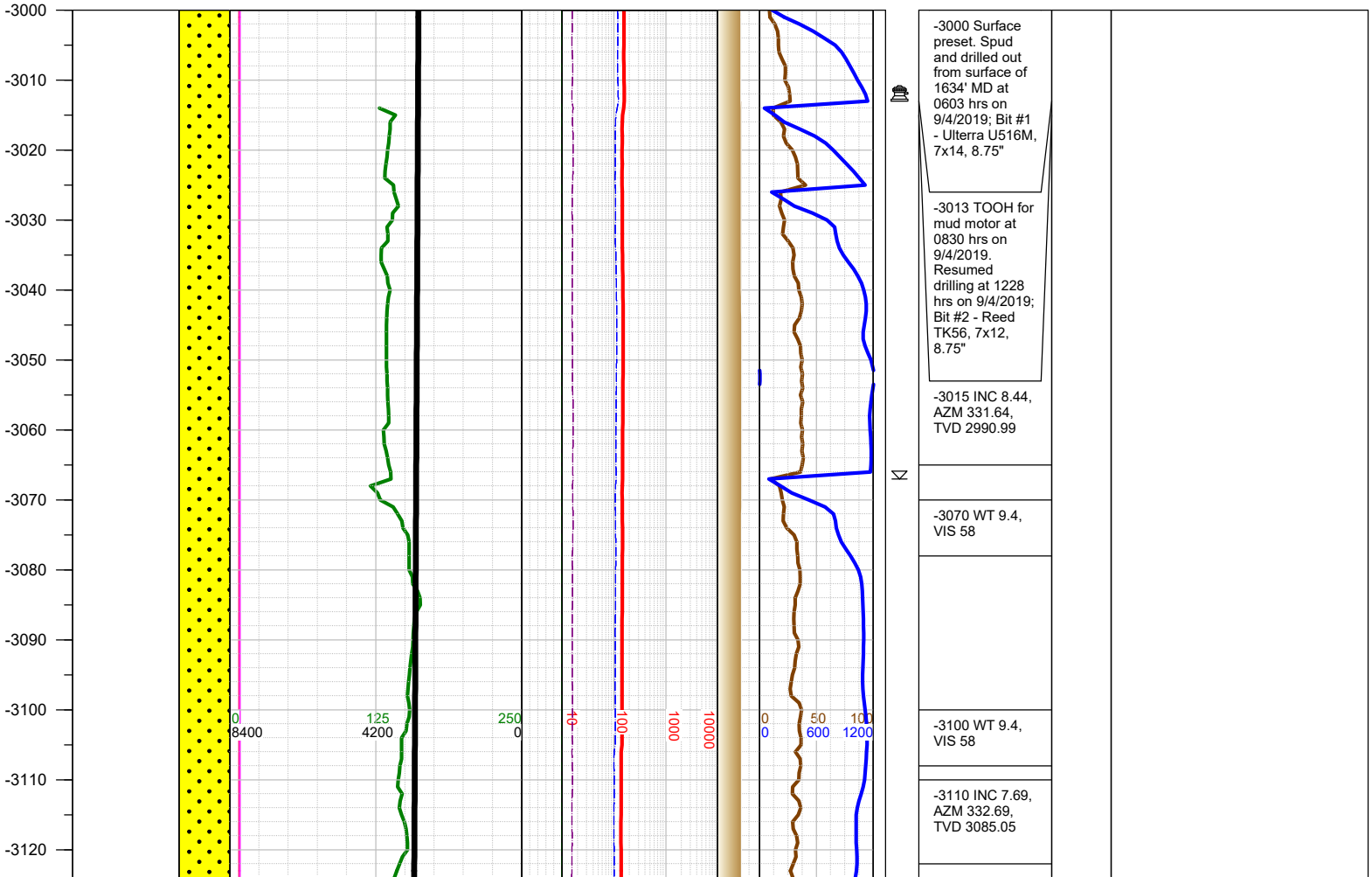
COUNTY:	Broomfield
STATE:	Colorado
GROUND ELEVATION:	5323'
KELLY BUSHING:	5352'
DRILLING FLUID:	OBM
TVD VS. MD:	8142' / 20924'
SPUD DATE:	September 4, 2019
TD DATE:	September 9, 2019
DEPTHS LOGGED:	3000' - 20924'
DATES LOGGED:	September 4, 2019 - September 9, 2019
GEOLOGISTS:	Ross Apodaca, Dominic Pitre
SCALE:	5" = 100'

LEGEND

- CHALK
- LIMESTONE
- SHALY LIMESTONE
- MARLSTONE
- CALCAREOUS SHALE
- DOLOMITE
- SHALE
- SILTY SHALE
- SHALY SILTSTONE
- SHALY SANDSTONE
- SANDSTONE
- ANHYDRITE

FORMATION | CONNECTION | MIDNIGHT | NEW BIT | GAS SHOW | FAULT

MEASURED DEPTH (FT) | PHOTOS | MUDLOGGER INTERP | GEOSTEERING INTERP: Target Top / Base | TVD ft: 8400 – 0 | GAMMA api: 0 – 250 | OIL SHOWS F < B | GAS: Total, C1, C2, C3, C4, Units - Log Scale | MUD VOL. 800 bbl | ROP ft/hr: 0 – 1200 | WOB klbs: 0 – 100 | SLIDES SYMBOLS | COMMENTS | CUTTINGS % | SAMPLE DESCRIPTION



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-3206 INC 6.63, AZM 328.65, TVD 3180.3

-3220 WT 9.3, VIS 57

-3301 INC 7.73, AZM 324.5, TVD 3274.56

-3320 WT 9.3, VIS 57

-3250 SHLY SS: wh-tn-gy, fri sd agg, pred v f gr, sbang, w srt, calc-arg cmt; SS: wh-tn-gy, sbrnd-sbang, f gr, w srt, w cmt, calc cmt; SHLY SLTST: med gy, frm, blky-sb blky, gr-rthy, sl calc, v f sd intbd; SLTY SH: med gy, sbfrm-frm, sbplty-sbblky, sl calc, v f sd intbd; tr lith frag; tr pyr;

-3380 Change ROP Scale

-3396 INC 6.94, AZM 323.58, TVD 3368.78

-3410 WT 9.3, VIS 57

-3492 INC 8.71, AZM 322.83, TVD 3463.88

-3500 SHLY SLTST: med gy, frm, blky-sb blky, gr-rthy, sl calc, v f sd intbd; SS: wh-tn-gy, sbrnd-sbang, f gr, w srt, w cmt, calc cmt; SHLY SS: wh-tn-gy, fri sd agg, pred v f gr, sbang, w srt, calc-arg cmt; tr pyr;

-3510 WT 9.3, VIS 57

-3586 INC 7.78, AZM 321.77, TVD 3556.91

-3600 WT 9.3, VIS 57

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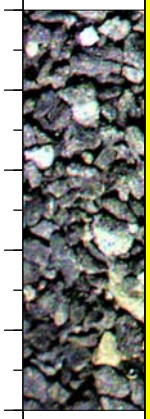


-3682 INC 6.81, AZM 317.98, TVD 3652.13

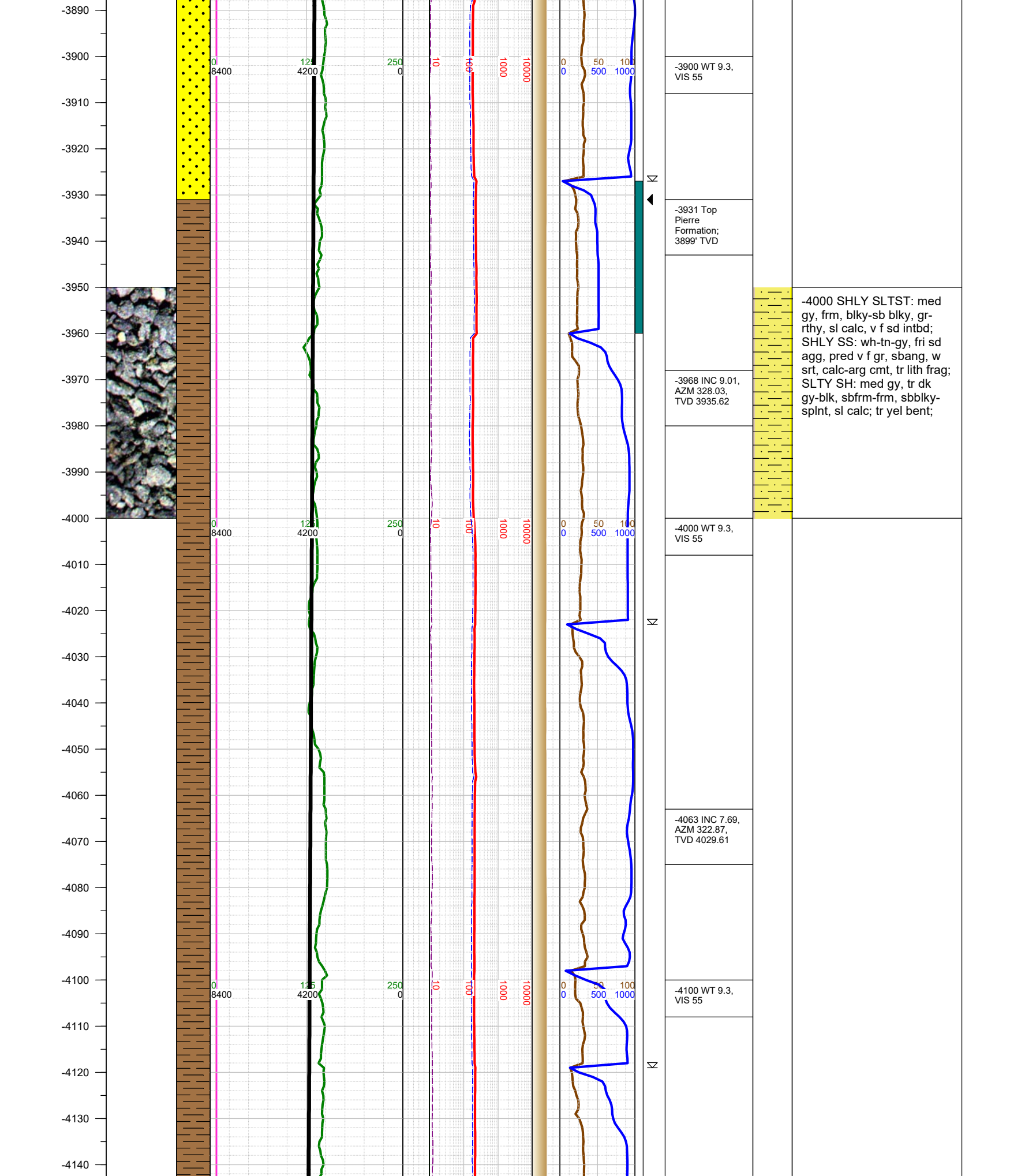
-3700 WT 9.3, VIS 55

-3750 SHLY SLTST: med gy, frm, blky-sb blky, gr-rthy, sl calc, v f sd intbd; SHLY SS: wh-tn-gy, fri sd agg, pred v f gr, sbang, w srt, calc-arg cmt; SS: wh-tn-gy, sbrnd-sbang, f gr, w srt, w cmt, calc cmt; tr pyr;

-3778 INC 8.04, AZM 331.11, TVD 3747.33

-3800 WT 9.3, VIS 55

-3873 INC 6.81, AZM 329.7, TVD 3841.53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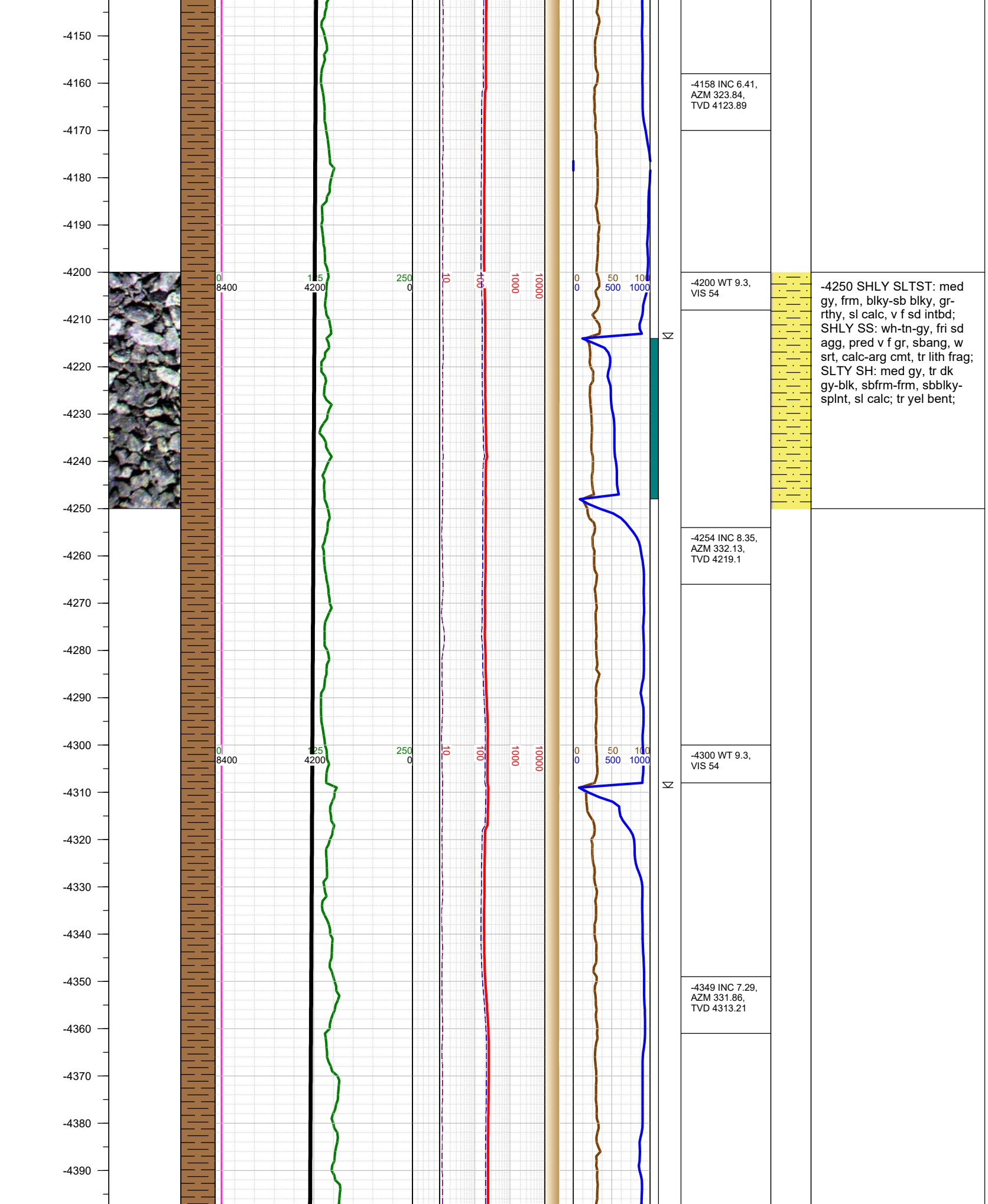
-3900 WT 9.3, VIS 55
-3931 Top Pierre Formation; 3899' TVD
-3968 INC 9.01, AZM 328.03, TVD 3935.62
-4000 WT 9.3, VIS 55
-4063 INC 7.69, AZM 322.87, TVD 4029.61
-4100 WT 9.3, VIS 55
-4000 SHLY SLTST: med gy, frm, blky-sb blky, gr-rthy, sl calc, v f sd intbd; SHLY SS: wh-tn-gy, fri sd agg, pred v f gr, sbang, w srt, calc-arg cmt, tr lith frag; SLTY SH: med gy, tr dk gy-blk, sbfrm-frm, sbblky-splnt, sl calc; tr yel bent;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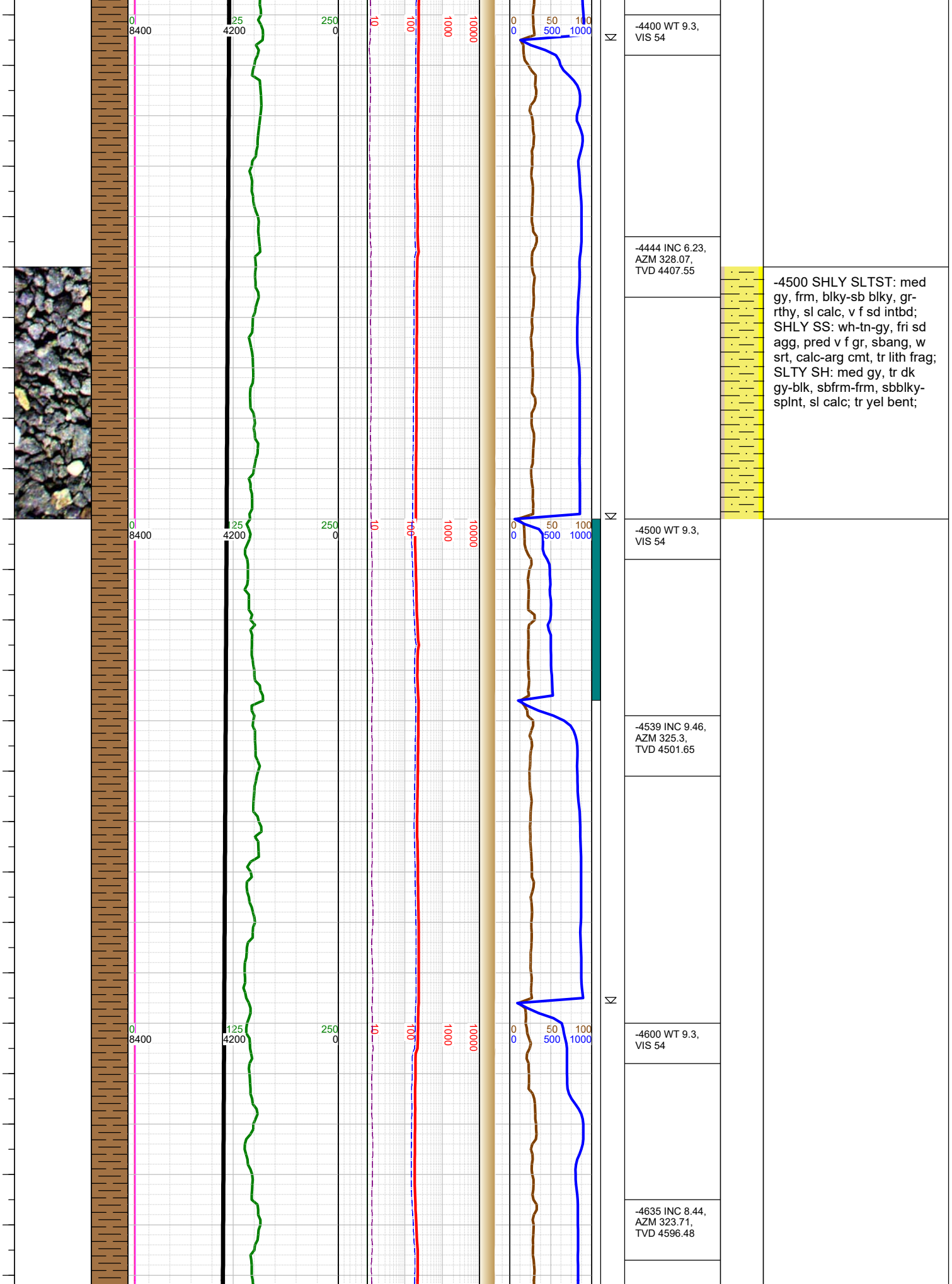
-4158 INC 6.41, AZM 323.84, TVD 4123.89
-4200 WT 9.3, VIS 54
-4250 SHLY SLTST: med gy, frm, blky-sb blky, gr-rthy, sl calc, v f sd intbd; SHLY SS: wh-tn-gy, fri sd agg, pred v f gr, sbang, w srt, calc-arg cmt, tr lith frag; SLTY SH: med gy, tr dk gy-blk, sbfrm-frm, sbblky-splnt, sl calc; tr yel bent;
-4254 INC 8.35, AZM 332.13, TVD 4219.1
-4300 WT 9.3, VIS 54
-4349 INC 7.29, AZM 331.86, TVD 4313.21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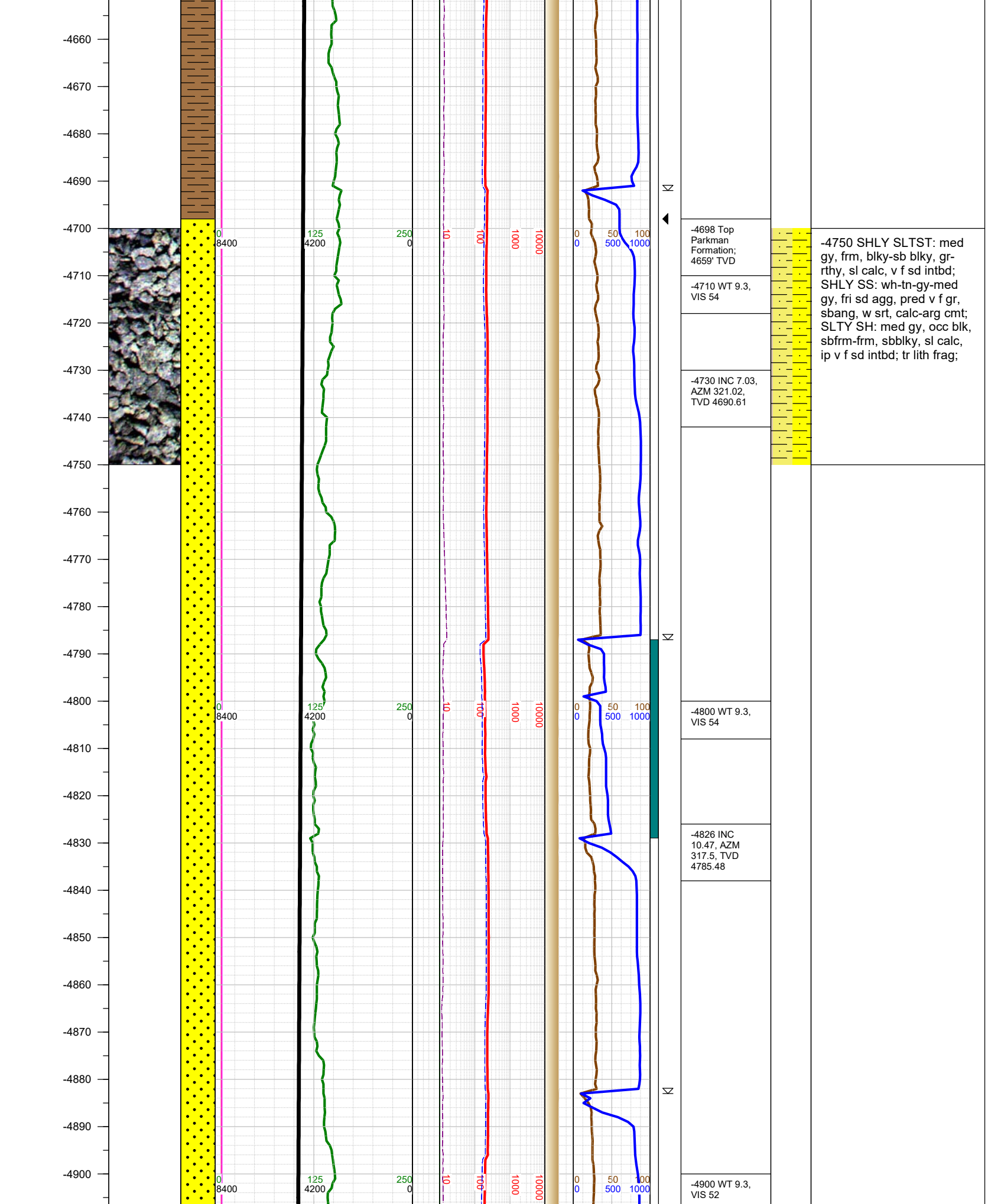
-4400 WT 9.3, VIS 54
-4444 INC 6.23, AZM 328.07, TVD 4407.55
-4500 SHLY SLTST: med gy, frm, blky-sb blky, gr-rthy, sl calc, v f sd intbd; SHLY SS: wh-tn-gy, fri sd agg, pred v f gr, sbang, w srt, calc-arg cmt, tr lith frag; SLTY SH: med gy, tr dk gy-blk, sbfrm-frm, sbblky-splnt, sl calc; tr yel bent;
-4500 WT 9.3, VIS 54
-4539 INC 9.46, AZM 325.3, TVD 4501.65
-4600 WT 9.3, VIS 54
-4635 INC 8.44, AZM 323.71, TVD 4596.48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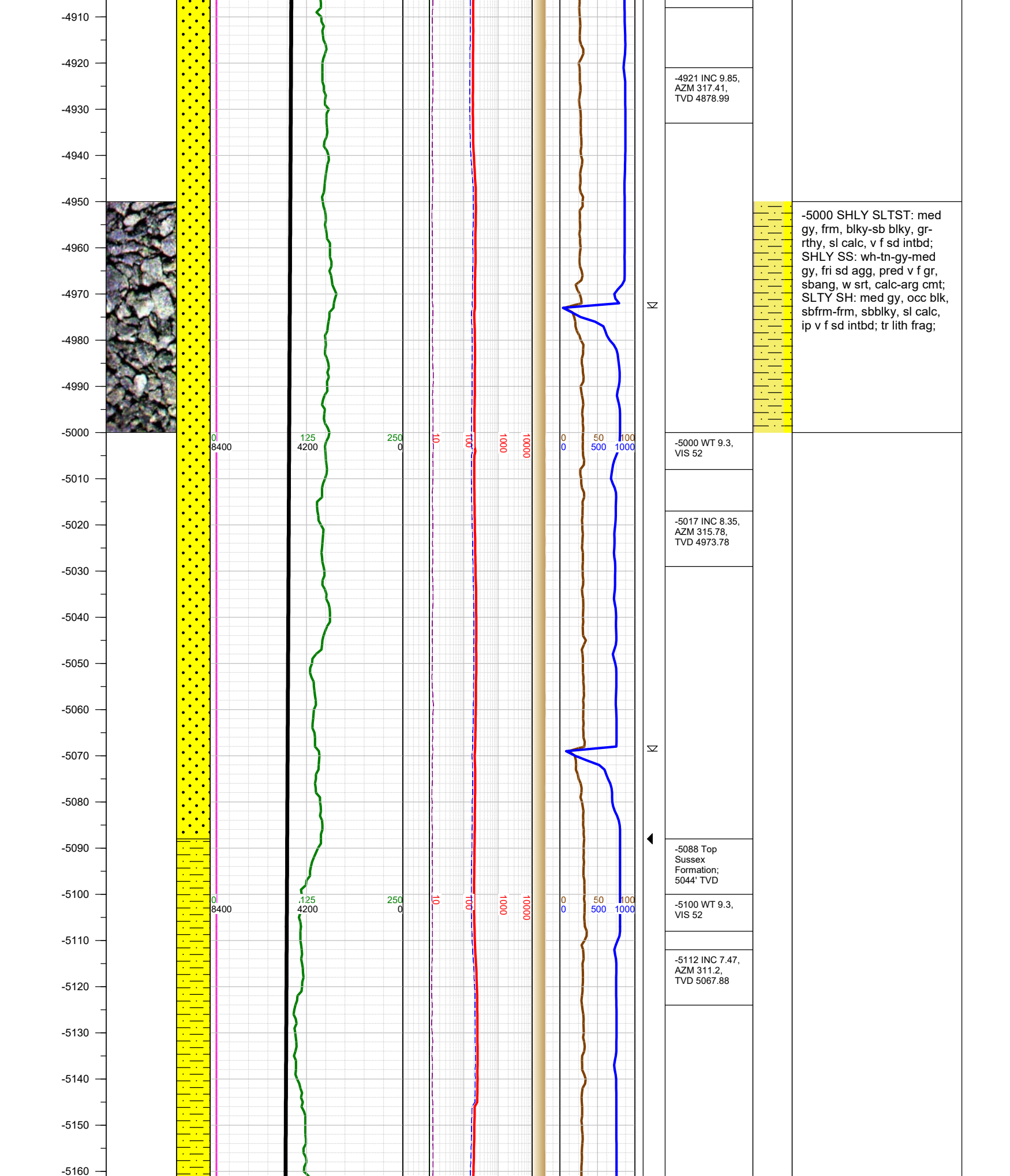
-4698 Top Parkman Formation; 4659' TVD
-4710 WT 9.3, VIS 54
-4730 INC 7.03, AZM 321.02, TVD 4690.61
-4800 WT 9.3, VIS 54
-4826 INC 10.47, AZM 317.5, TVD 4785.48
-4900 WT 9.3, VIS 52
-4750 SHLY SLTST: med gy, frm, blky-sb blky, gr-rthy, sl calc, v f sd intbd; SHLY SS: wh-tn-gy-med gy, fri sd agg, pred v f gr, sbang, w srt, calc-arg cmt; SLTY SH: med gy, occ blk, sbfrm-frm, sbblky, sl calc, ip v f sd intbd; tr lith frag;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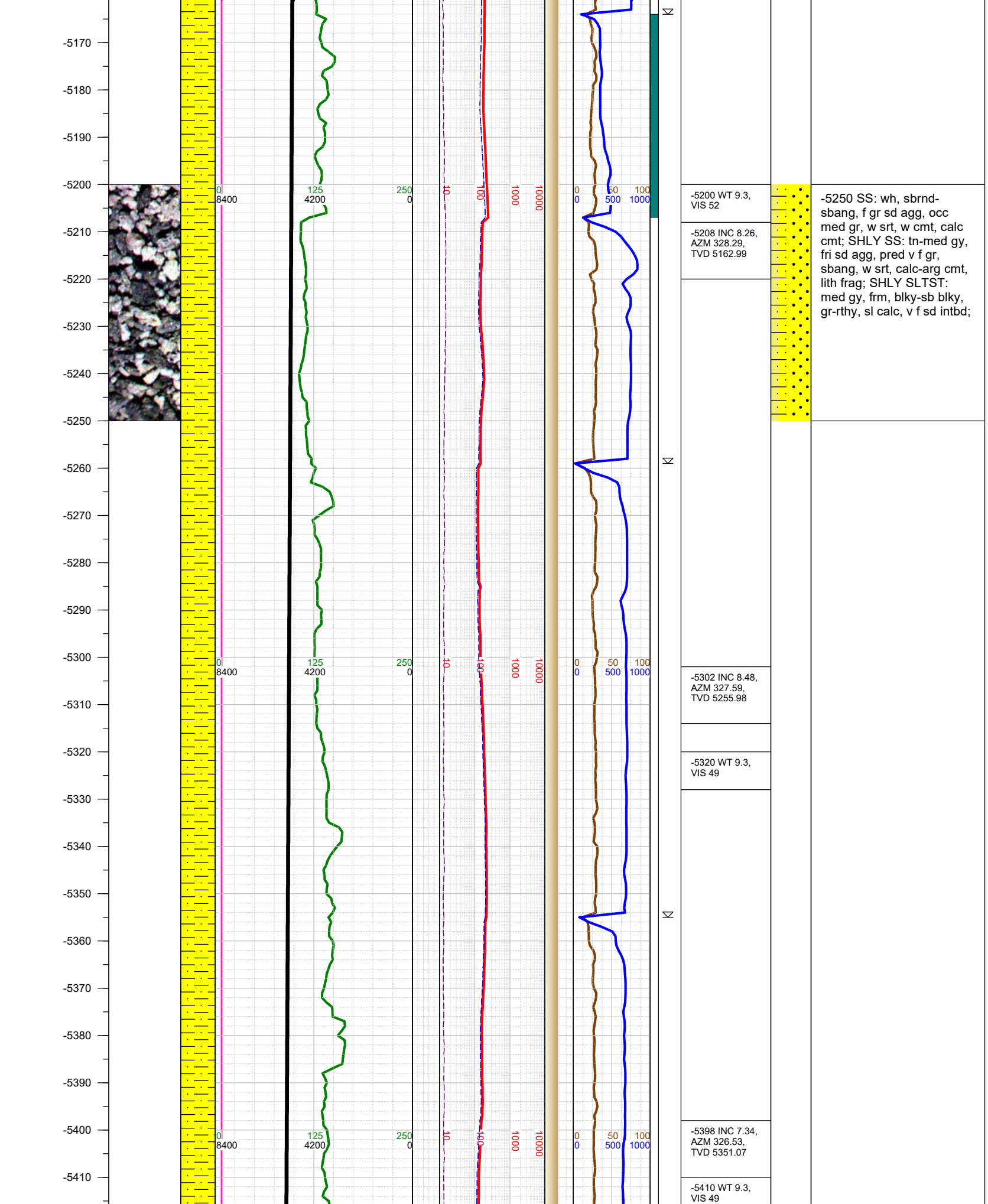
-4921 INC 9.85, AZM 317.41, TVD 4878.99
-5000 SHLY SLTST: med gy, frm, blky-sb blky, gr-rthy, sl calc, v f sd intbd; SHLY SS: wh-tn-gy-med gy, fri sd agg, pred v f gr, sbang, w srt, calc-arg cmt; SLTY SH: med gy, occ blk, sbfrm-frm, sbblky, sl calc, ip v f sd intbd; tr lith frag;
-5000 WT 9.3, VIS 52
-5017 INC 8.35, AZM 315.78, TVD 4973.78
-5088 Top Sussex Formation; 5044' TVD
-5100 WT 9.3, VIS 52
-5112 INC 7.47, AZM 311.2, TVD 5067.88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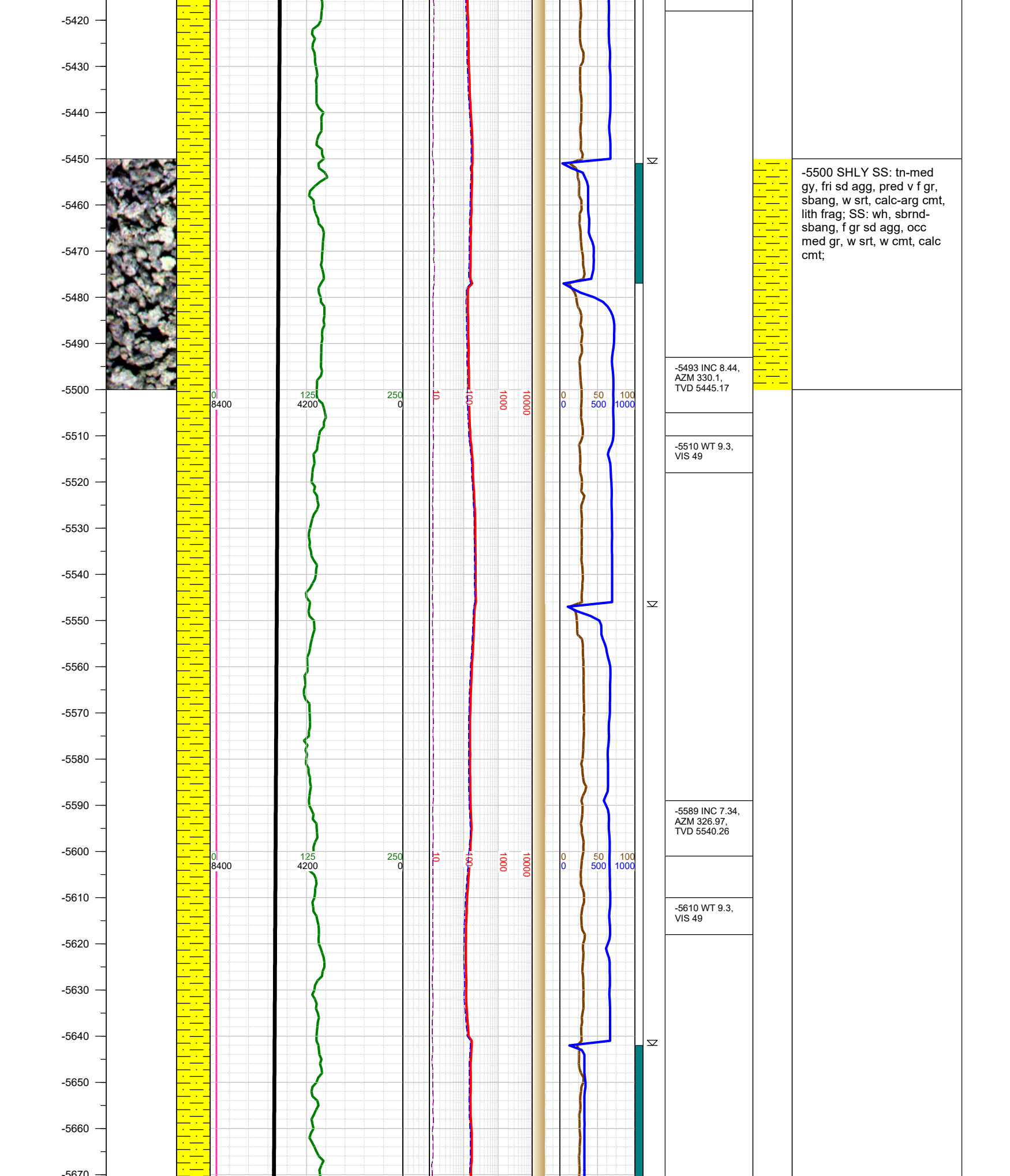
-5200 WT 9.3, VIS 52
-5208 INC 8.26, AZM 328.29, TVD 5162.99
-5250 SS: wh, sbrnd-sbang, f gr sd agg, occ med gr, w srt, w cmt, calc cmt; SHLY SS: tn-med gy, fri sd agg, pred v f gr, sbang, w srt, calc-arg cmt, lith frag; SHLY SLTST: med gy, frm, blky-sb blky, gr-rthy, sl calc, v f sd intbd;
-5302 INC 8.48, AZM 327.59, TVD 5255.98
-5320 WT 9.3, VIS 49
-5398 INC 7.34, AZM 326.53, TVD 5351.07
-5410 WT 9.3, VIS 49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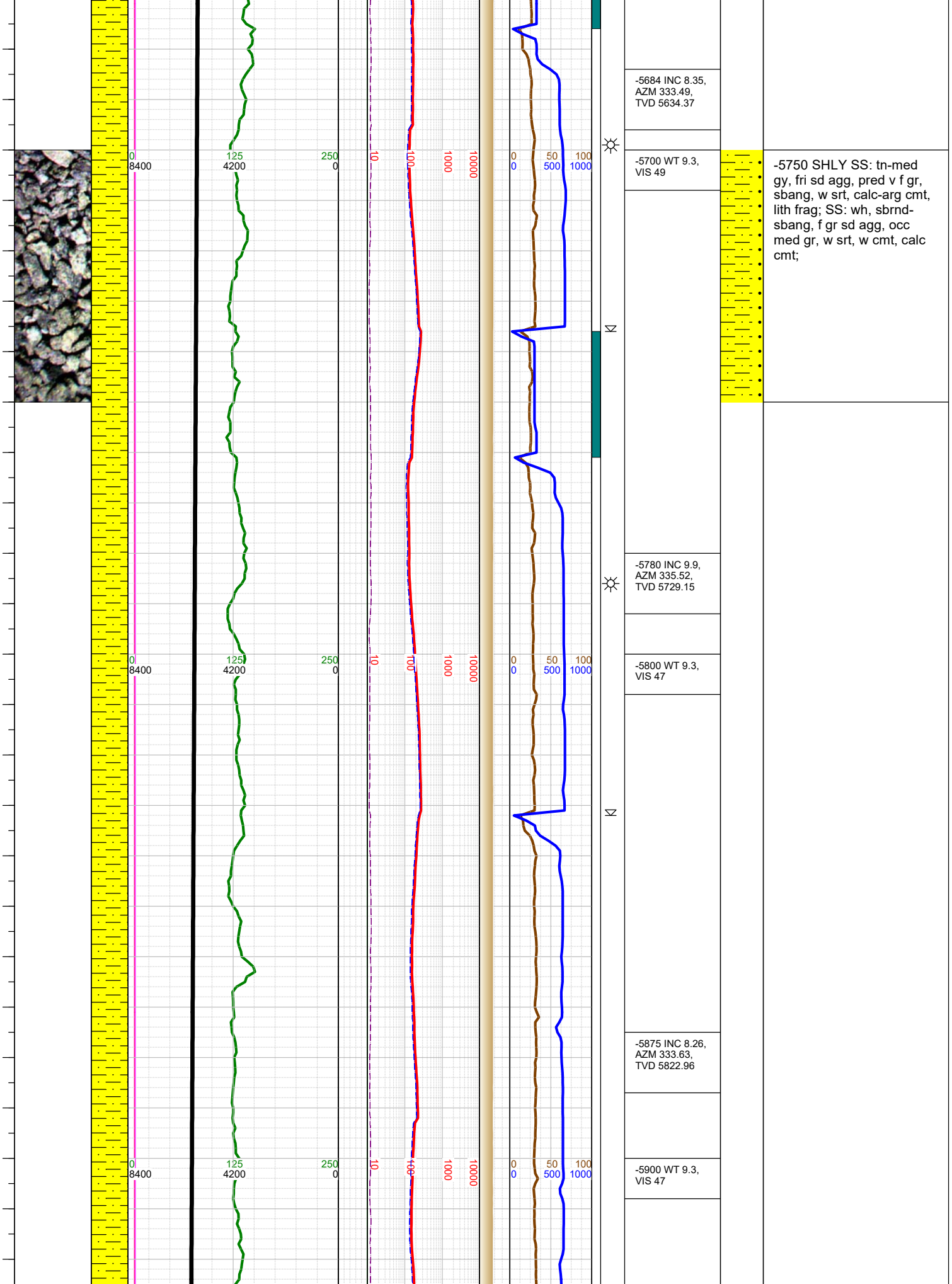
-5493 INC 8.44, AZM 330.1, TVD 5445.17
-5510 WT 9.3, VIS 49
-5589 INC 7.34, AZM 326.97, TVD 5540.26
-5610 WT 9.3, VIS 49
-5500 SHLY SS: tn-med gy, fri sd agg, pred v f gr, sbang, w srt, calc-arg cmt, lith frag; SS: wh, sbrnd-sbang, f gr sd agg, occ med gr, w srt, w cmt, calc cmt;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-5684 INC 8.35, AZM 333.49, TVD 5634.37
-5700 WT 9.3, VIS 49
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-5780 INC 9.9, AZM 335.52, TVD 5729.15
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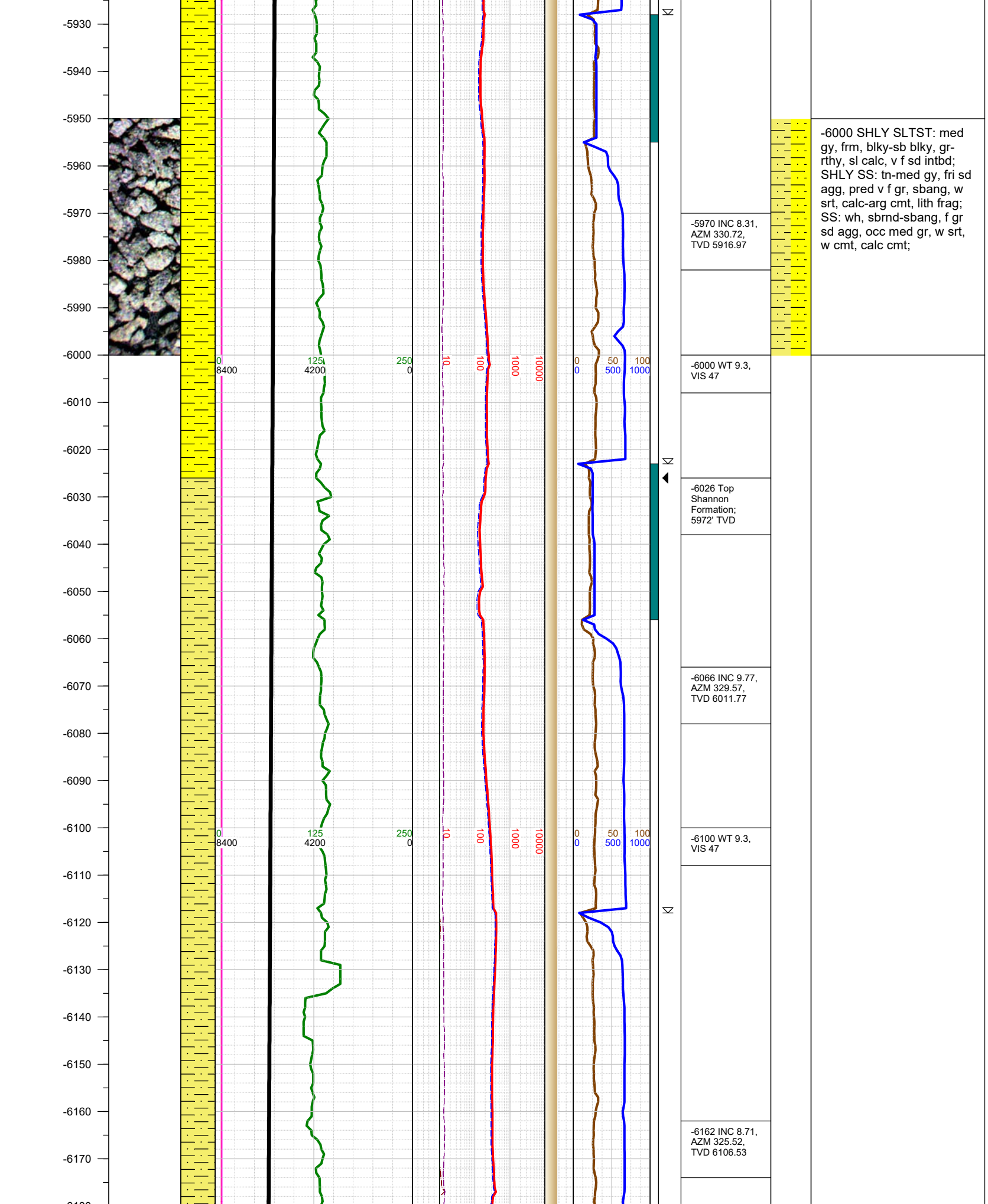
-5875 INC 8.26, AZM 333.63, TVD 5822.96
-5900 WT 9.3, VIS 47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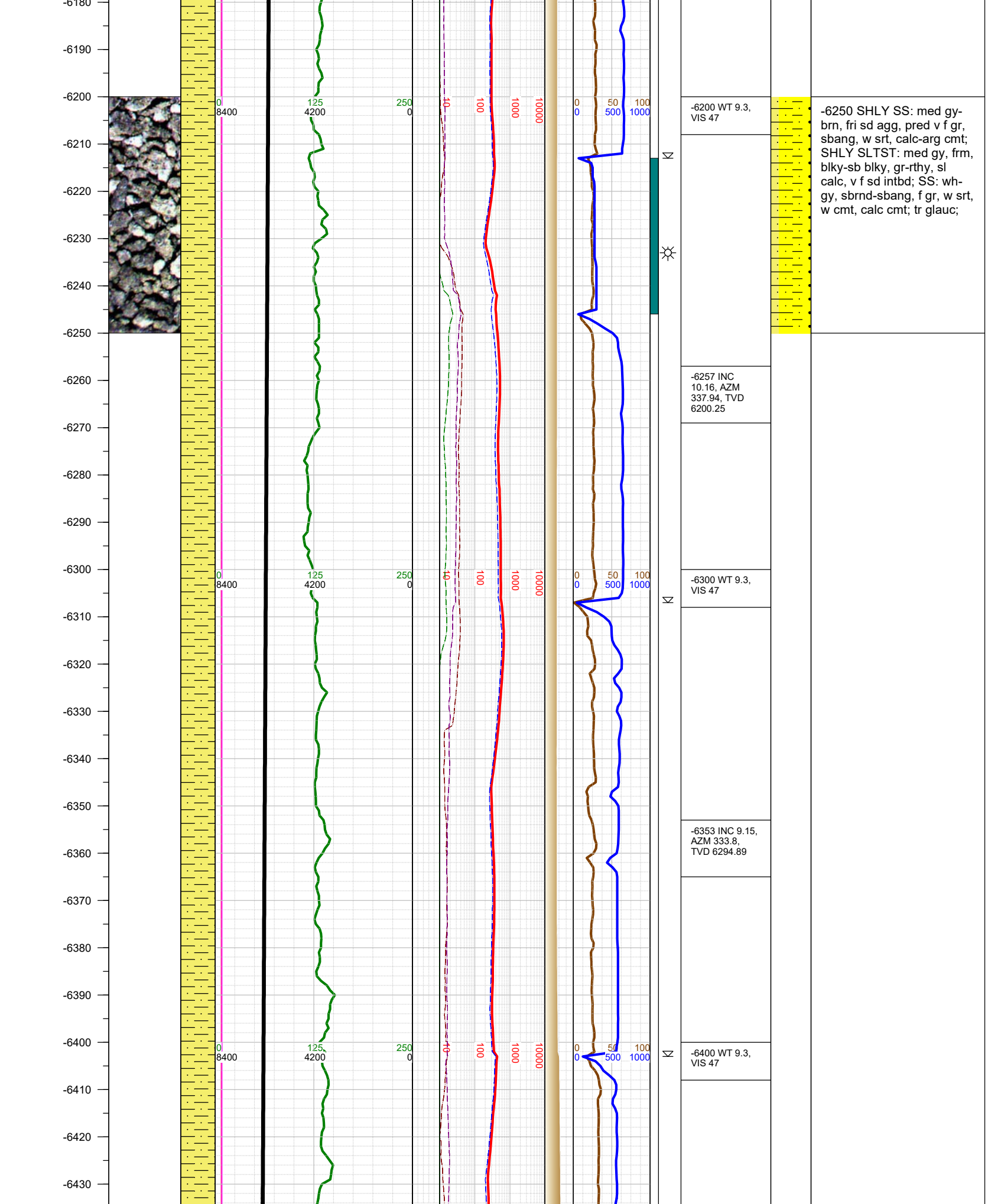
-5970 INC 8.31, AZM 330.72, TVD 5916.97
-6000 WT 9.3, VIS 47
-6026 Top Shannon Formation; 5972' TVD
-6066 INC 9.77, AZM 329.57, TVD 6011.77
-6100 WT 9.3, VIS 47
-6162 INC 8.71, AZM 325.52, TVD 6106.53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-6200 WT 9.3, VIS 47
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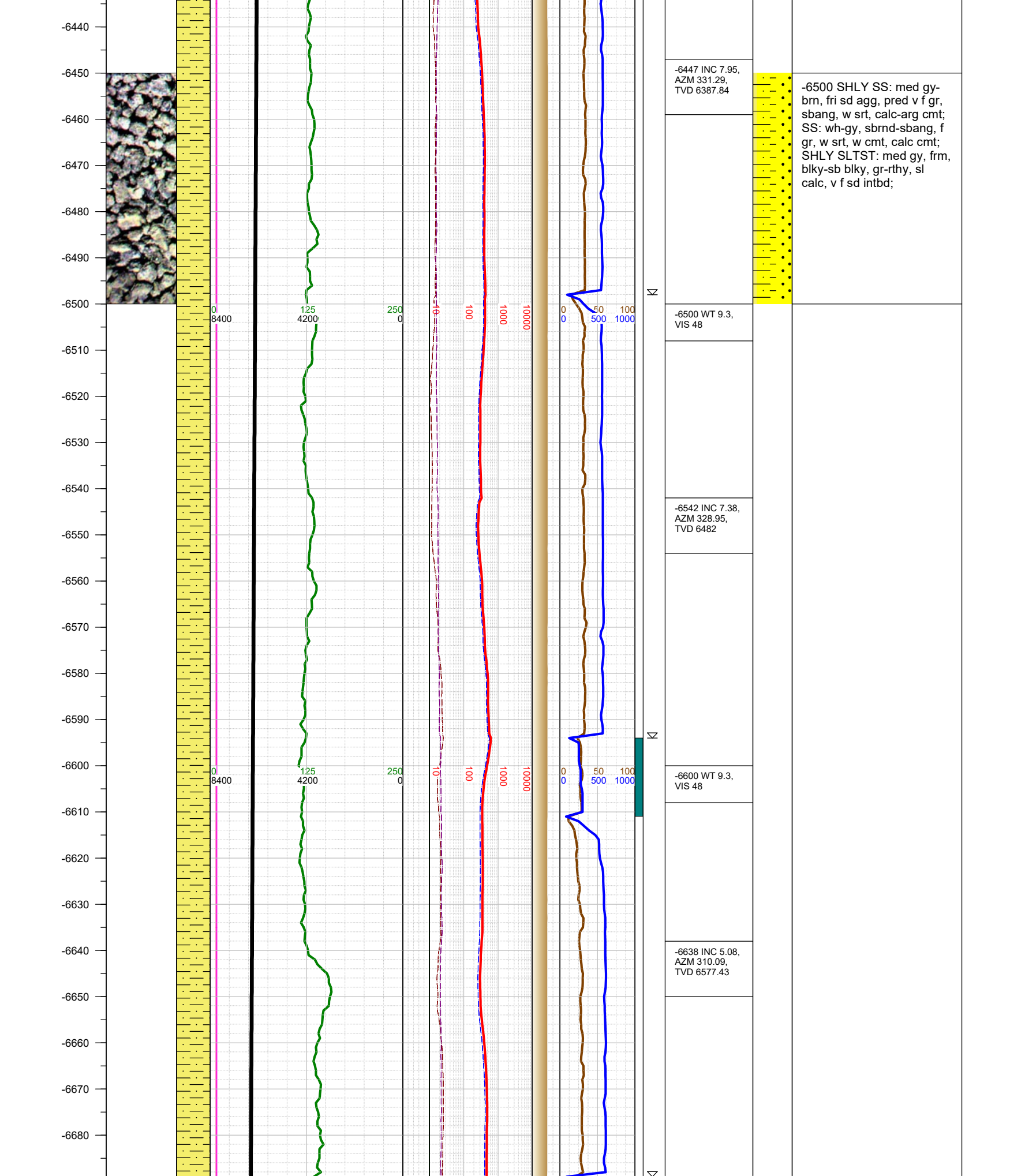
-6257 INC 10.16, AZM 337.94, TVD 6200.25
-6300 WT 9.3, VIS 47
-6353 INC 9.15, AZM 333.8, TVD 6294.89
-6400 WT 9.3, VIS 47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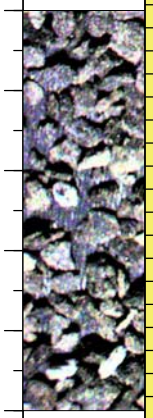
-6500 WT 9.3, VIS 48
-6542 INC 7.38, AZM 328.95, TVD 6482
-6600 WT 9.3, VIS 48
-6638 INC 5.08, AZM 310.09, TVD 6577.43



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-6733 INC 4.2, AZM 333.05, TVD 6672.13

-6800 WT 9.3, VIS 48

-6828 INC 0.27, AZM 277.57, TVD 6767.04

-6900 WT 9.3, VIS 47

-6923 INC 0.09, AZM 226.23, TVD 6862.04

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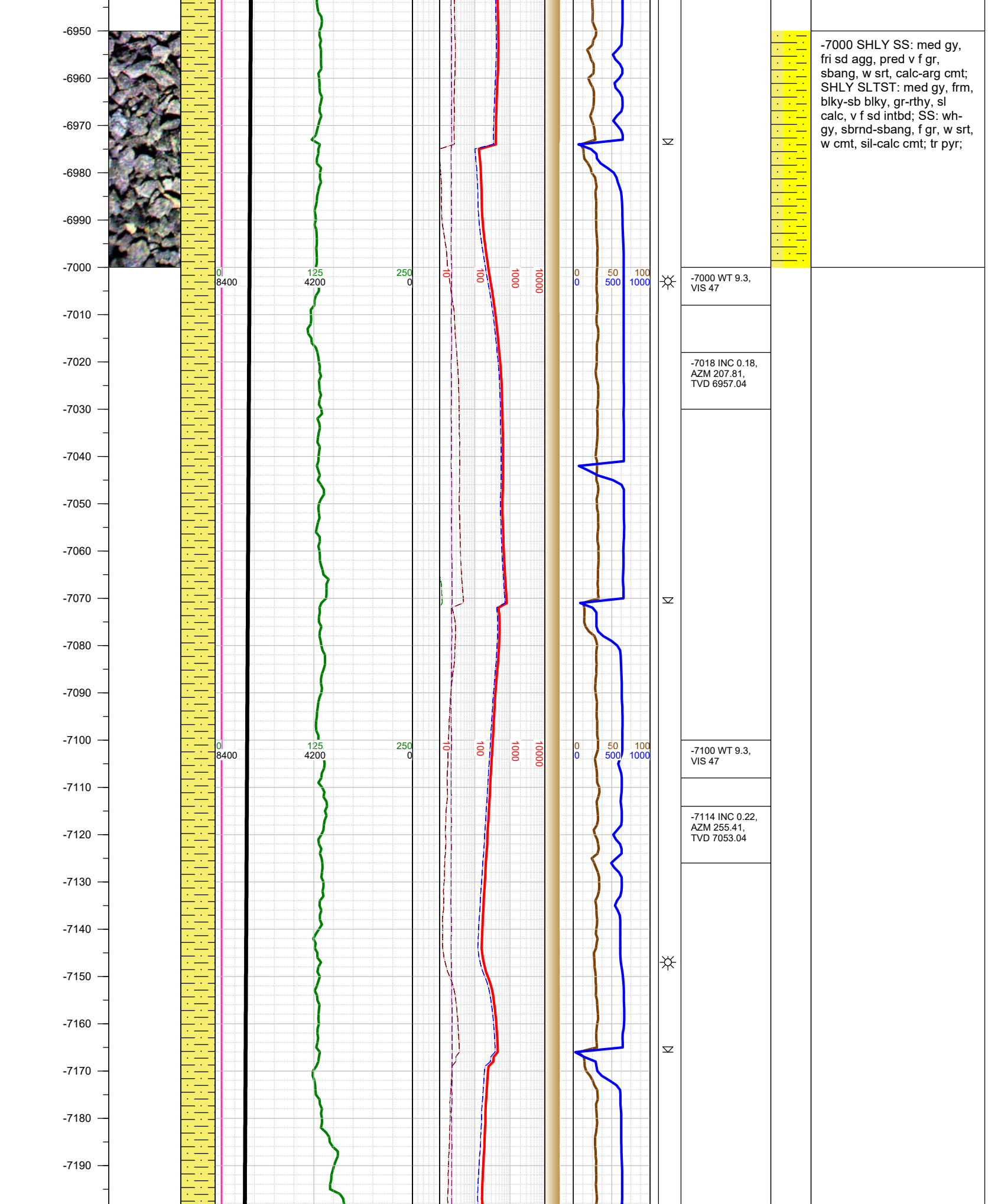
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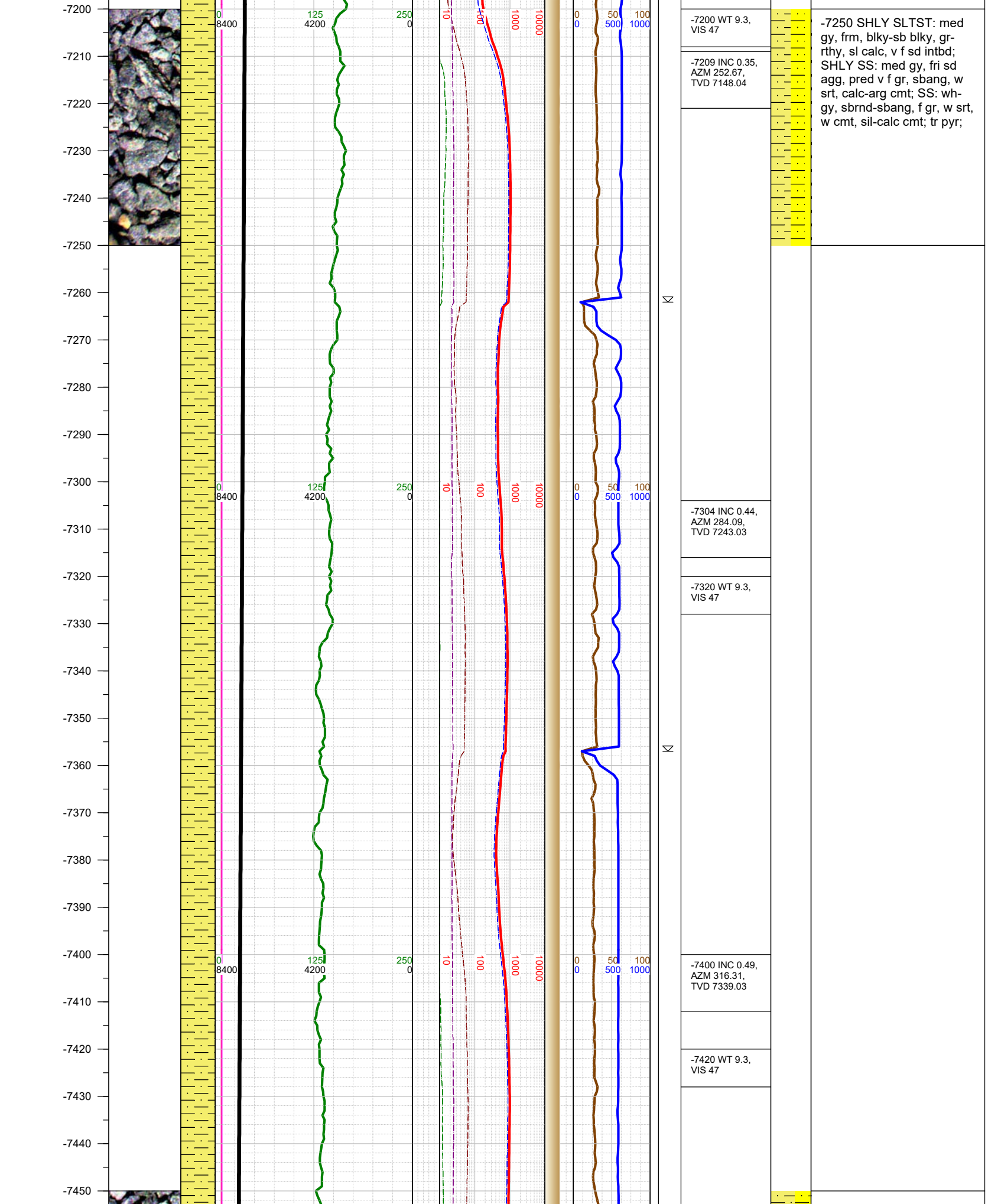
-7000 WT 9.3, VIS 47
-7018 INC 0.18, AZM 207.81, TVD 6957.04
-7100 WT 9.3, VIS 47
-7114 INC 0.22, AZM 255.41, TVD 7053.04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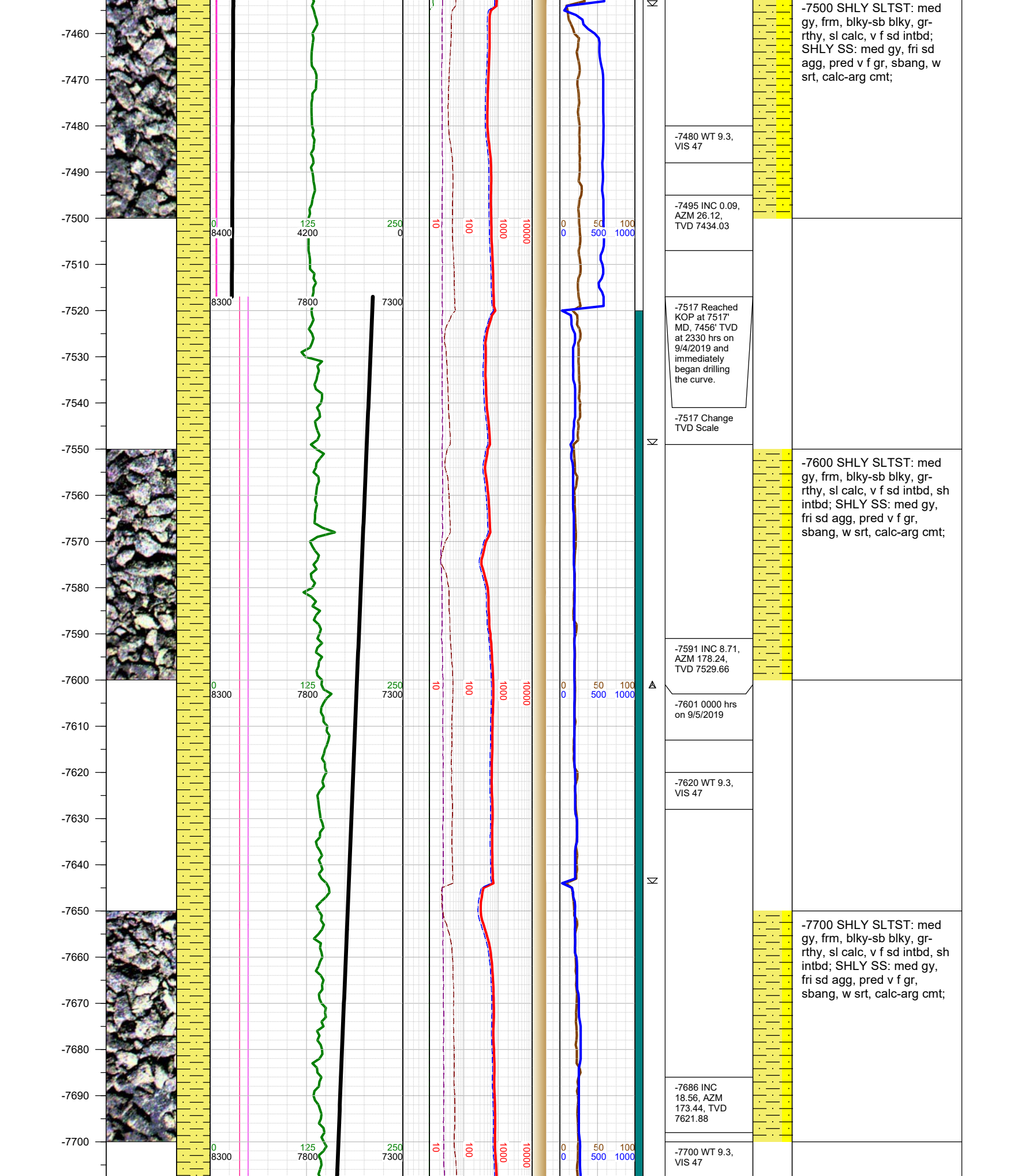
-7200 WT 9.3, VIS 47
-7209 INC 0.35, AZM 252.67, TVD 7148.04
-7250 SHLY SLTST: med gy, frm, blky-sb blky, gr-rthy, sl calc, v f sd intbd; SHLY SS: med gy, fri sd agg, pred v f gr, sbang, w srt, calc-arg cmt; SS: wh-gy, sbrnd-sbang, f gr, w srt, w cmt, sil-calc cmt; tr pyr;
-7304 INC 0.44, AZM 284.09, TVD 7243.03
-7320 WT 9.3, VIS 47
-7400 INC 0.49, AZM 316.31, TVD 7339.03
-7420 WT 9.3, VIS 47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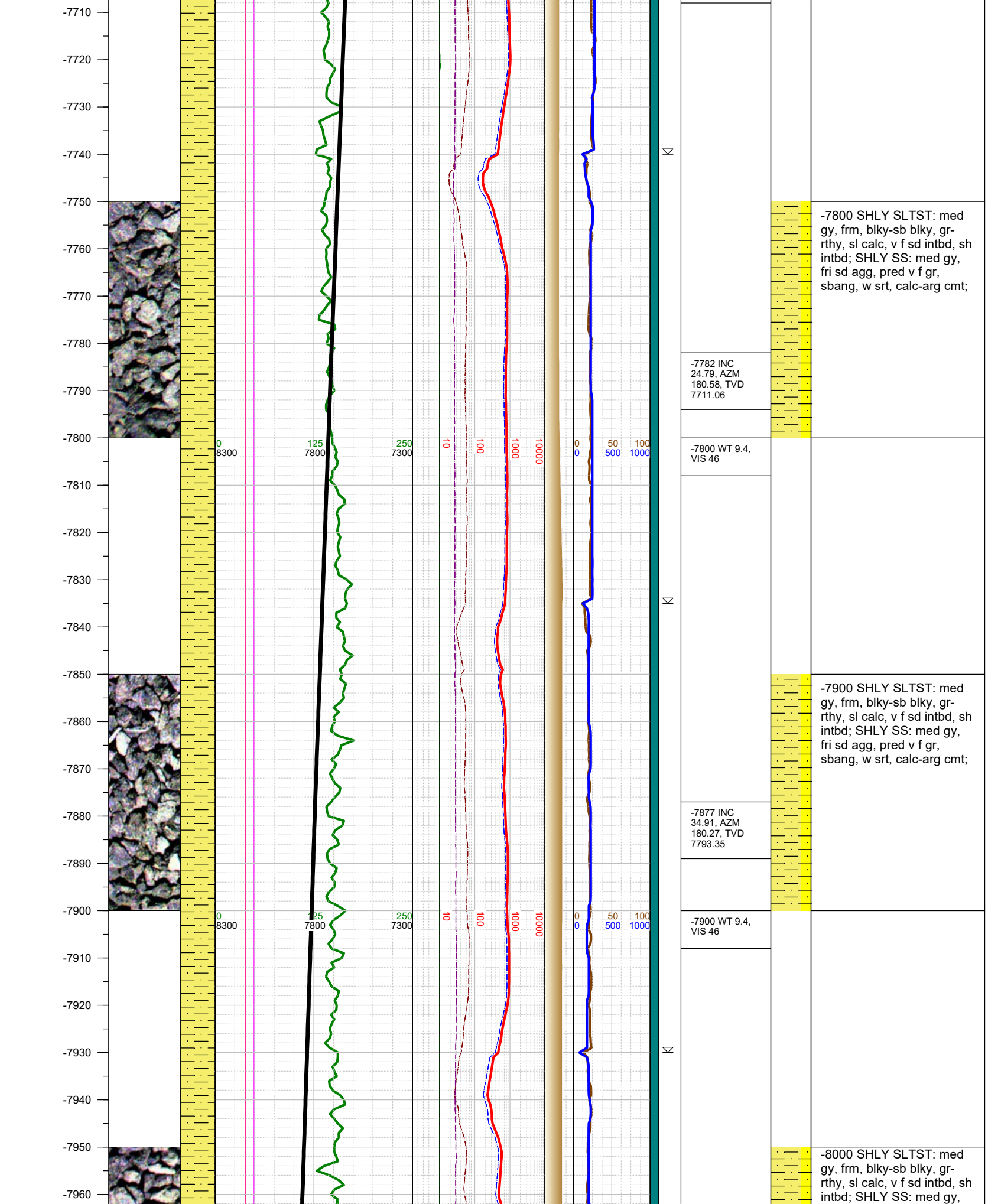
-7500 SHLY SLTST: med gy, frm, blky-sb blky, gr-rthy, sl calc, v f sd intbd; SHLY SS: med gy, fri sd agg, pred v f gr, sbang, w srt, calc-arg cmt;
-7480 WT 9.3, VIS 47
-7495 INC 0.09, AZM 26.12, TVD 7434.03
-7517 Reached KOP at 7517' MD, 7456' TVD at 2330 hrs on 9/4/2019 and immediately began drilling the curve.
-7517 Change TVD Scale
-7600 SHLY SLTST: med gy, frm, blky-sb blky, gr-rthy, sl calc, v f sd intbd, sh intbd; SHLY SS: med gy, fri sd agg, pred v f gr, sbang, w srt, calc-arg cmt;
-7591 INC 8.71, AZM 178.24, TVD 7529.66
-7601 0000 hrs on 9/5/2019
-7620 WT 9.3, VIS 47
-7700 SHLY SLTST: med gy, frm, blky-sb blky, gr-rthy, sl calc, v f sd intbd, sh intbd; SHLY SS: med gy, fri sd agg, pred v f gr, sbang, w srt, calc-arg cmt;
-7686 INC 18.56, AZM 173.44, TVD 7621.88
-7700 WT 9.3, VIS 47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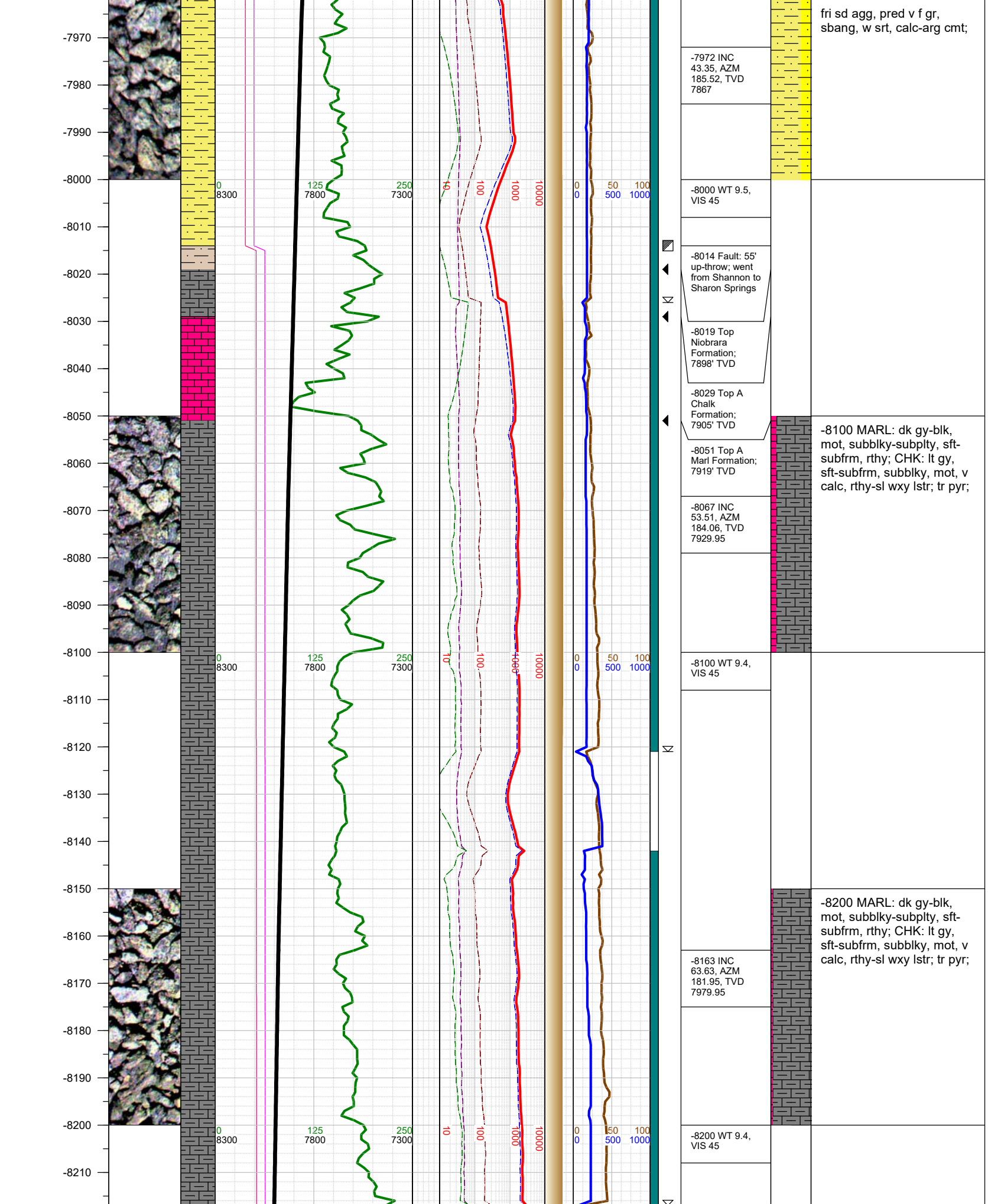
-7782 INC 24.79, AZM 180.58, TVD 7711.06
-7800 WT 9.4, VIS 46
-7877 INC 34.91, AZM 180.27, TVD 7793.35
-7900 WT 9.4, VIS 46
-7800 SHLY SLTST: med gy, frm, blky-sb blky, gr-rthy, sl calc, v f sd intbd, sh intbd; SHLY SS: med gy, fri sd agg, pred v f gr, sbang, w srt, calc-arg cmt;
-7900 SHLY SLTST: med gy, frm, blky-sb blky, gr-rthy, sl calc, v f sd intbd, sh intbd; SHLY SS: med gy, fri sd agg, pred v f gr, sbang, w srt, calc-arg cmt;
-8000 SHLY SLTST: med gy, frm, blky-sb blky, gr-rthy, sl calc, v f sd intbd, sh intbd; SHLY SS: med gy,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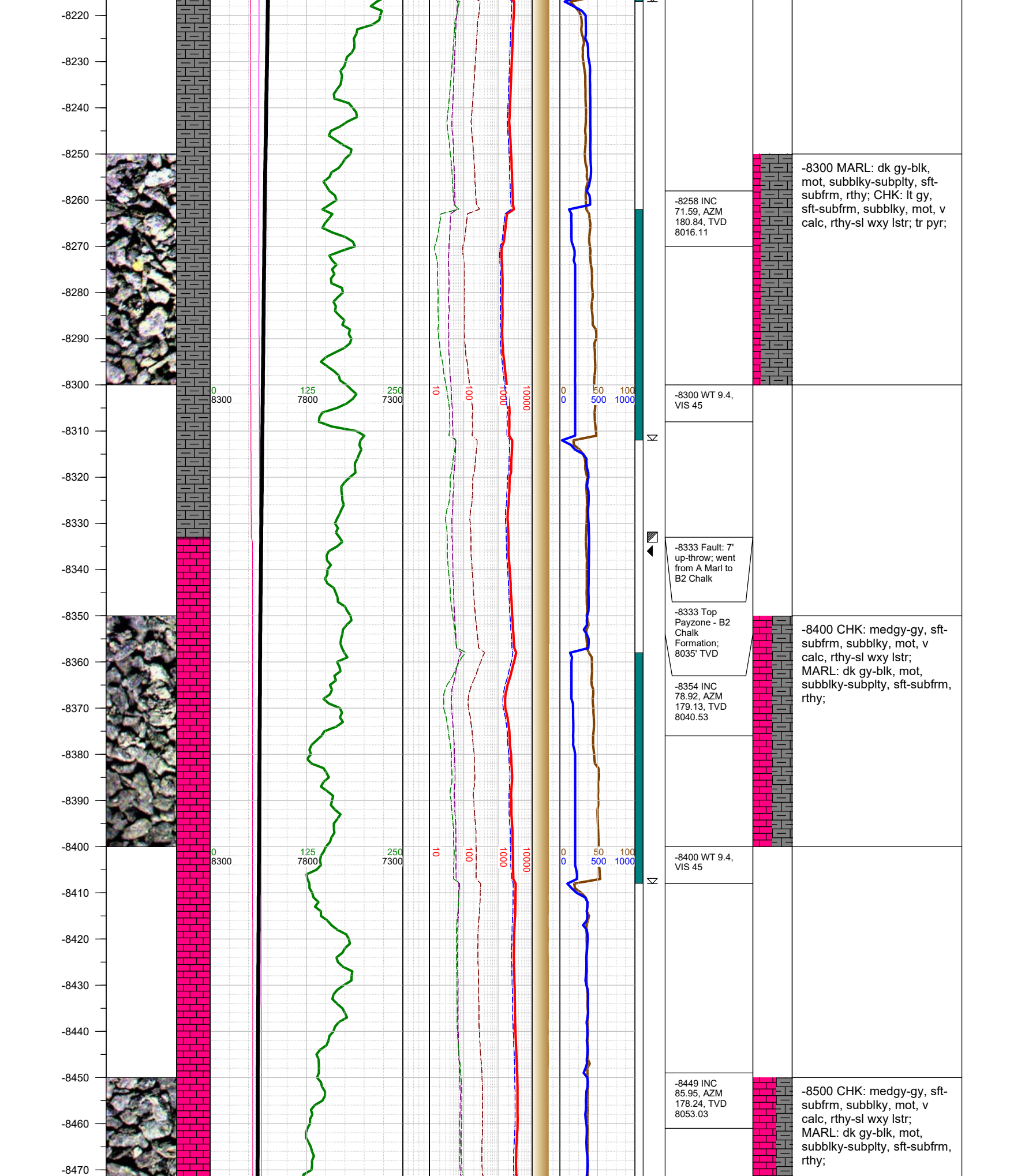
fri sd agg, pred v f gr, sbang, w srt, calc-arg cmt;
-7972 INC 43.35, AZM 185.52, TVD 7867
-8000 WT 9.5, VIS 45
-8014 Fault: 55' up-throw; went from Shannon to Sharon Springs
-8019 Top Niobrara Formation; 7898' TVD
-8029 Top A Chalk Formation; 7905' TVD
-8051 Top A Marl Formation; 7919' TVD
-8067 INC 53.51, AZM 184.06, TVD 7929.95
-8100 MARL: dk gy-blk, mot, subblky-subplty, sft-subfrm, rthy; CHK: lt gy, sft-subfrm, subblky, mot, v calc, rthy-sl wxy lstr; tr pyr;
-8100 WT 9.4, VIS 45
-8163 INC 63.63, AZM 181.95, TVD 7979.95
-8200 MARL: dk gy-blk, mot, subblky-subplty, sft-subfrm, rthy; CHK: lt gy, sft-subfrm, subblky, mot, v calc, rthy-sl wxy lstr; tr pyr;
-8200 WT 9.4, VIS 45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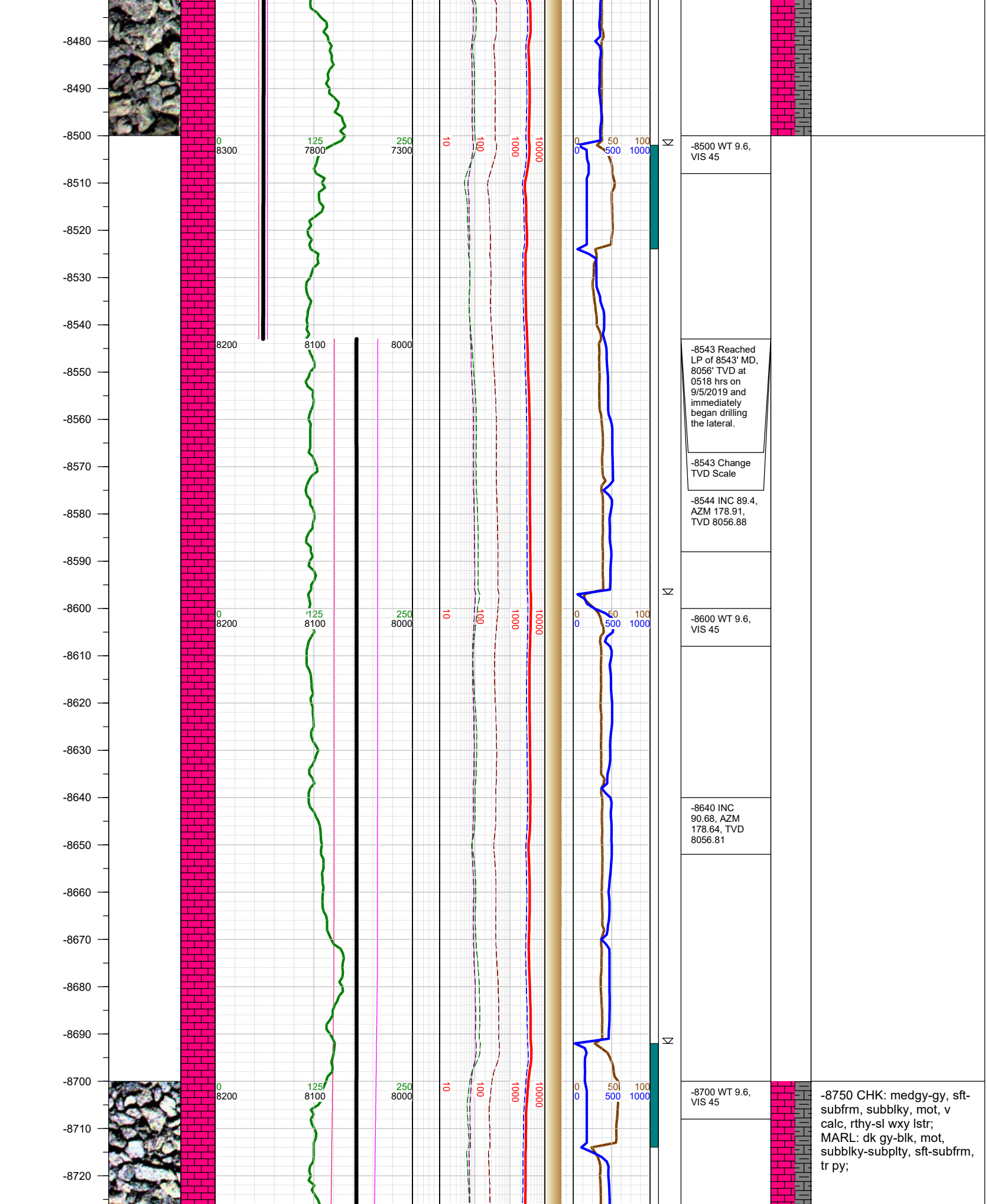
-8258 INC 71.59, AZM 180.84, TVD 8016.11
-8300 MARL: dk gy-blk, mot, subblky-subplty, sft-subfrm, rthy; CHK: lt gy, sft-subfrm, subblky, mot, v calc, rthy-sl wxy lstr; tr pyr;
-8300 WT 9.4, VIS 45
-8333 Fault: 7' up-throw; went from A Marl to B2 Chalk
-8333 Top Payzone - B2 Chalk Formation; 8035' TVD
-8400 CHK: medgy-gy, sft-subfrm, subblky, mot, v calc, rthy-sl wxy lstr; MARL: dk gy-blk, mot, subblky-subplty, sft-subfrm, rthy;
-8354 INC 78.92, AZM 179.13, TVD 8040.53
-8400 WT 9.4, VIS 45
-8449 INC 85.95, AZM 178.24, TVD 8053.03
-8500 CHK: medgy-gy, sft-subfrm, subblky, mot, v calc, rthy-sl wxy lstr; MARL: dk gy-blk, mot, subblky-subplty, sft-subfrm, rthy;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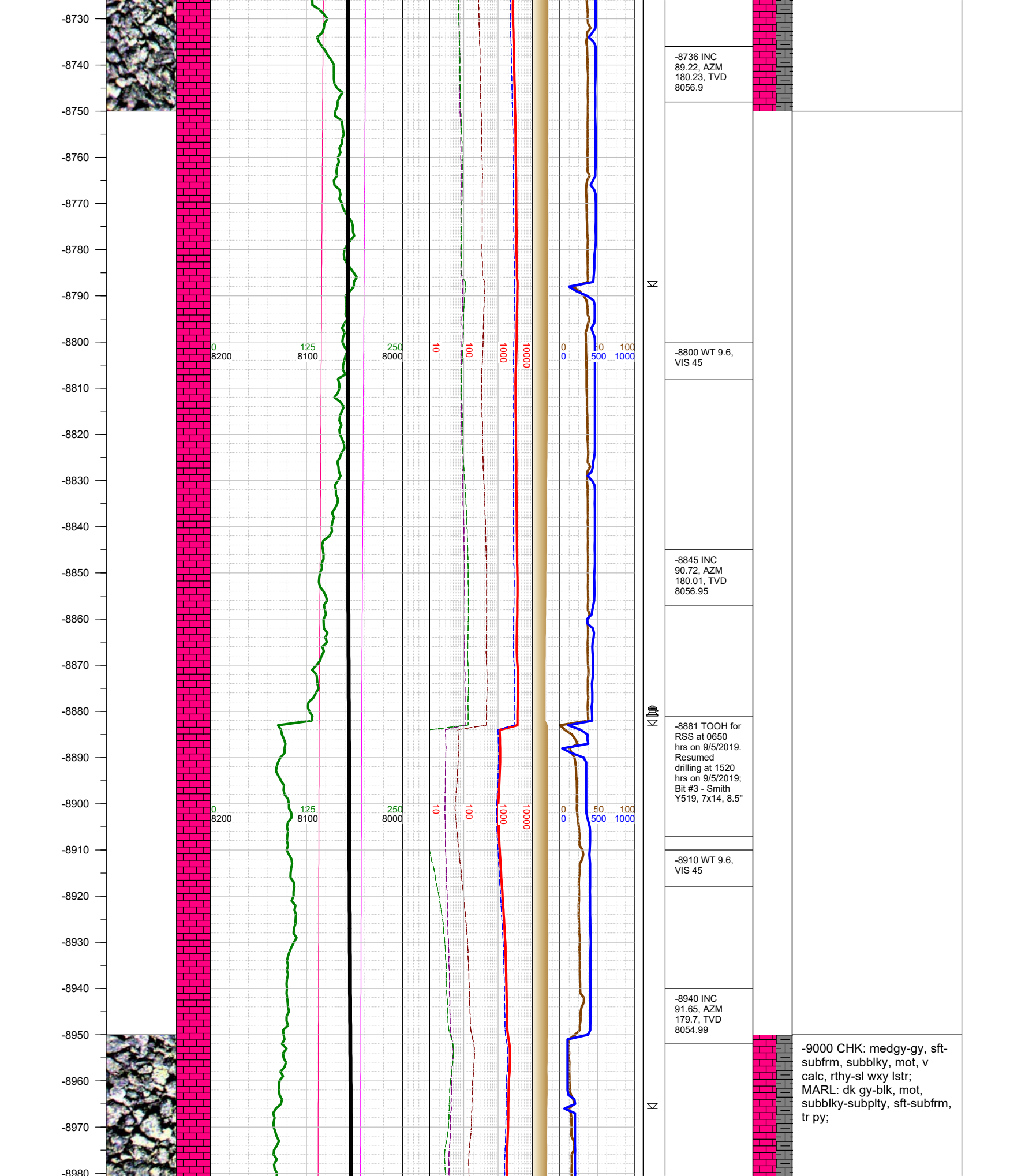
-8500 WT 9.6, VIS 45
-8543 Reached LP of 8543' MD, 8056' TVD at 0518 hrs on 9/5/2019 and immediately began drilling the lateral.
-8543 Change TVD Scale
-8544 INC 89.4, AZM 178.91, TVD 8056.88
-8600 WT 9.6, VIS 45
-8640 INC 90.68, AZM 178.64, TVD 8056.81
-8700 WT 9.6, VIS 45
-8750 CHK: medgy-gy, sft-subfrm, subblky, mot, v calc, rthy-sl wxy lstr; MARL: dk gy-blk, mot, subblky-subplty, sft-subfrm, tr py;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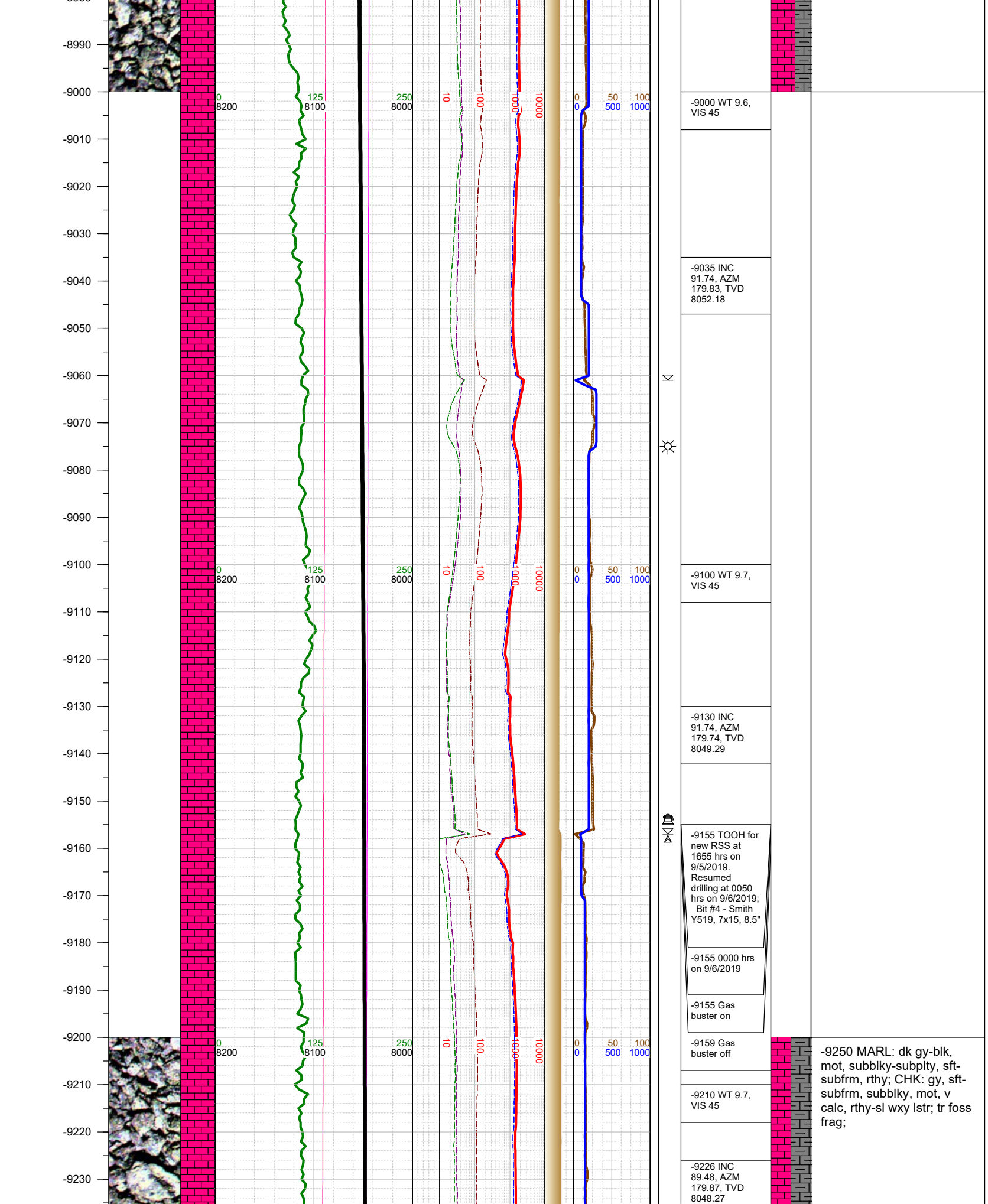
-8736 INC 89.22, AZM 180.23, TVD 8056.9
-8800 WT 9.6, VIS 45
-8845 INC 90.72, AZM 180.01, TVD 8056.95
-8881 TOOH for RSS at 0650 hrs on 9/5/2019. Resumed drilling at 1520 hrs on 9/5/2019; Bit #3 - Smith Y519, 7x14, 8.5"
-8910 WT 9.6, VIS 45
-8940 INC 91.65, AZM 179.7, TVD 8054.99
-9000 CHK: medgy-gy, sft-subfrm, subblky, mot, v calc, rthy-sl wxy lstr; MARL: dk gy-blk, mot, subblky-subplty, sft-subfrm, tr py;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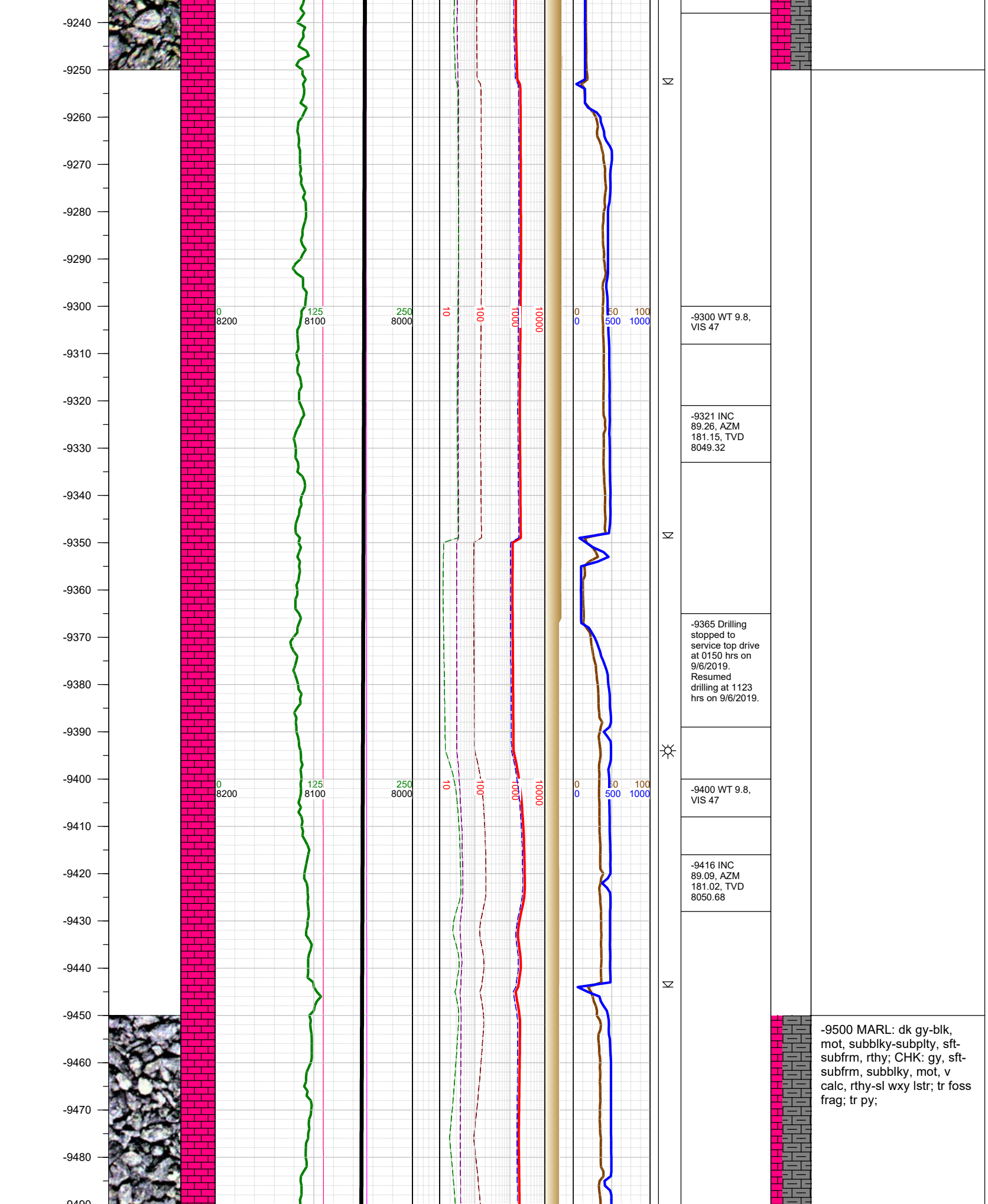
-9000 WT 9.6, VIS 45
-9035 INC 91.74, AZM 179.83, TVD 8052.18
-9100 WT 9.7, VIS 45
-9130 INC 91.74, AZM 179.74, TVD 8049.29
-9155 TOOH for new RSS at 1655 hrs on 9/5/2019. Resumed drilling at 0050 hrs on 9/6/2019; Bit #4 - Smith Y519, 7x15, 8.5"
-9155 0000 hrs on 9/6/2019
-9155 Gas buster on
-9159 Gas buster off
-9210 WT 9.7, VIS 45
-9226 INC 89.48, AZM 179.87, TVD 8048.27
-9250 MARL: dk gy-blk, mot, subblky-subplty, sft-subfrm, rthy; CHK: gy, sft-subfrm, subblky, mot, v calc, rthy-sl wxy lstr; tr foss frag;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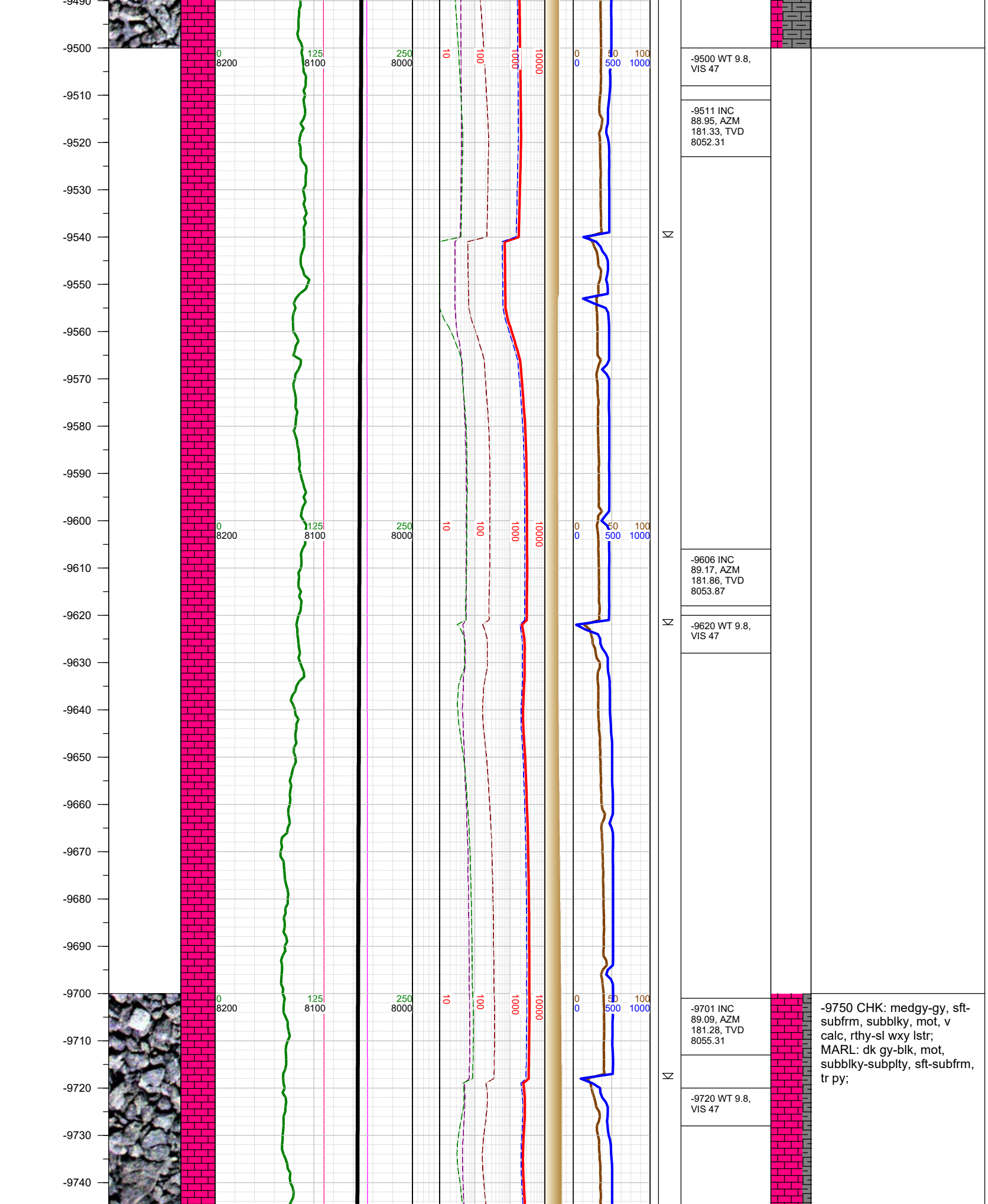
-9300 WT 9.8, VIS 47
-9321 INC 89.26, AZM 181.15, TVD 8049.32
-9365 Drilling stopped to service top drive at 0150 hrs on 9/6/2019. Resumed drilling at 1123 hrs on 9/6/2019.
-9400 WT 9.8, VIS 47
-9416 INC 89.09, AZM 181.02, TVD 8050.68
-9500 MARL: dk gy-blk, mot, subblky-subplty, sft-subfrm, rthy; CHK: gy, sft-subfrm, subblky, mot, v calc, rthy-sl wxy lstr; tr foss frag; tr py;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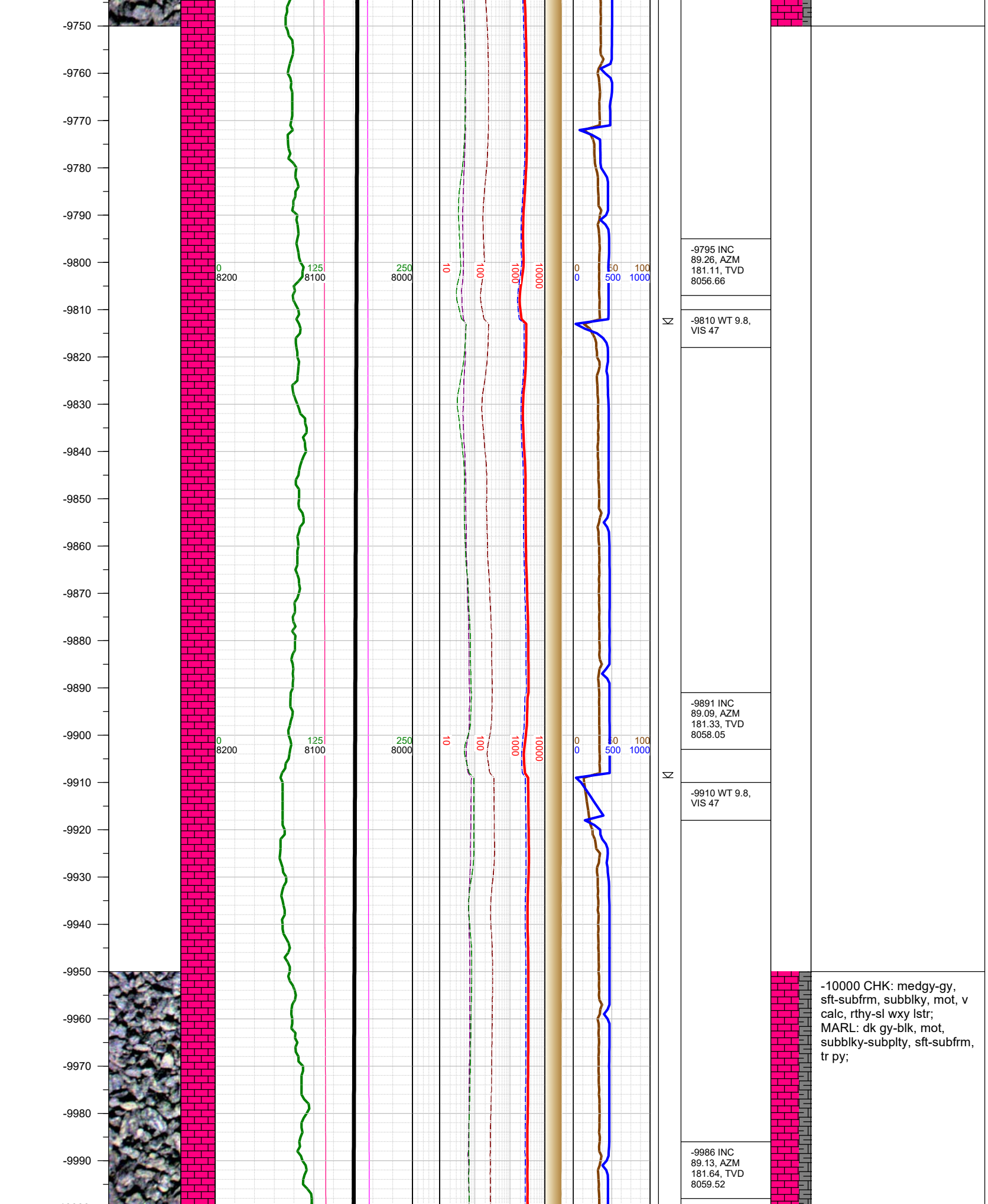
-9500 WT 9.8, VIS 47
-9511 INC 88.95, AZM 181.33, TVD 8052.31
-9606 INC 89.17, AZM 181.86, TVD 8053.87
-9620 WT 9.8, VIS 47
-9701 INC 89.09, AZM 181.28, TVD 8055.31
-9720 WT 9.8, VIS 47
-9750 CHK: medgy-gy, sft-subfrm, subblky, mot, v calc, rthy-sl wxy lstr; MARL: dk gy-blk, mot, subblky-subplty, sft-subfrm, tr py;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-9795 INC
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-9891 INC
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-9910 WT 9.8,
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-9986 INC
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181.64, TVD
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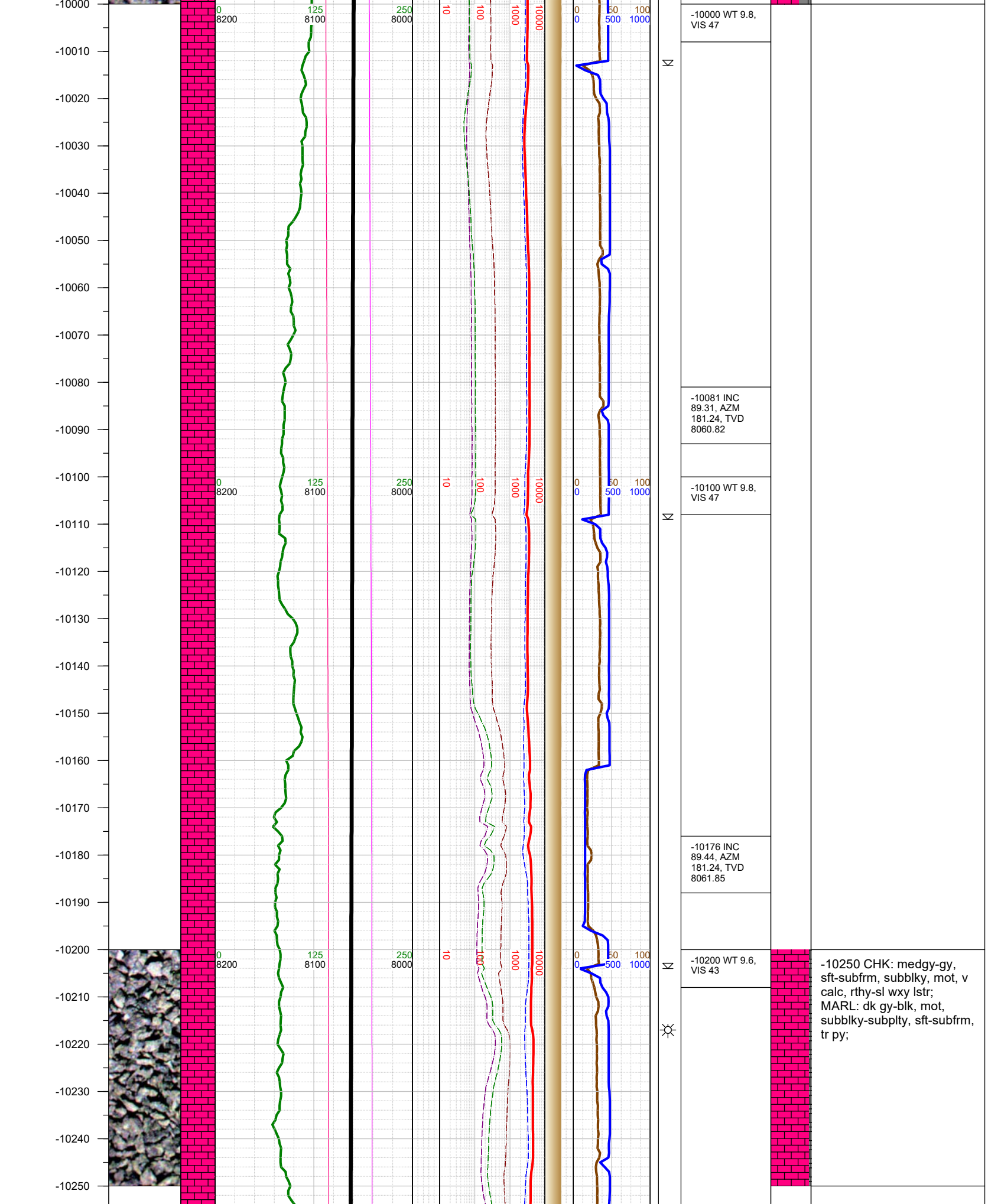
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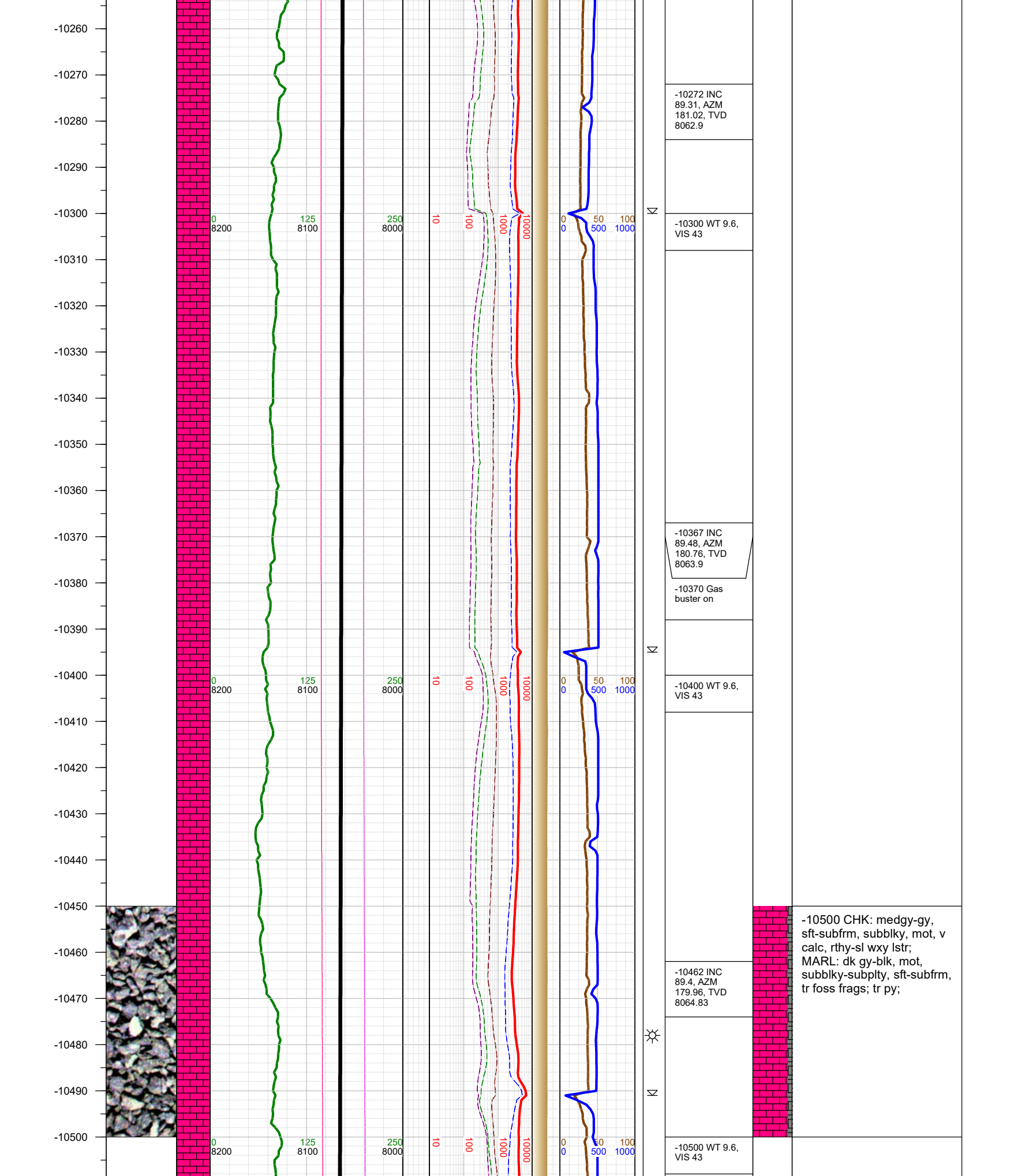
-10081 INC 89.31, AZM 181.24, TVD 8060.82
-10100 WT 9.8, VIS 47
-10176 INC 89.44, AZM 181.24, TVD 8061.85
-10200 WT 9.6, VIS 43
-10250 CHK: medgy-gy, sft-subfrm, subblky, mot, v calc, rthy-sl wxy lstr; MARL: dk gy-blk, mot, subblky-subplty, sft-subfrm, tr py;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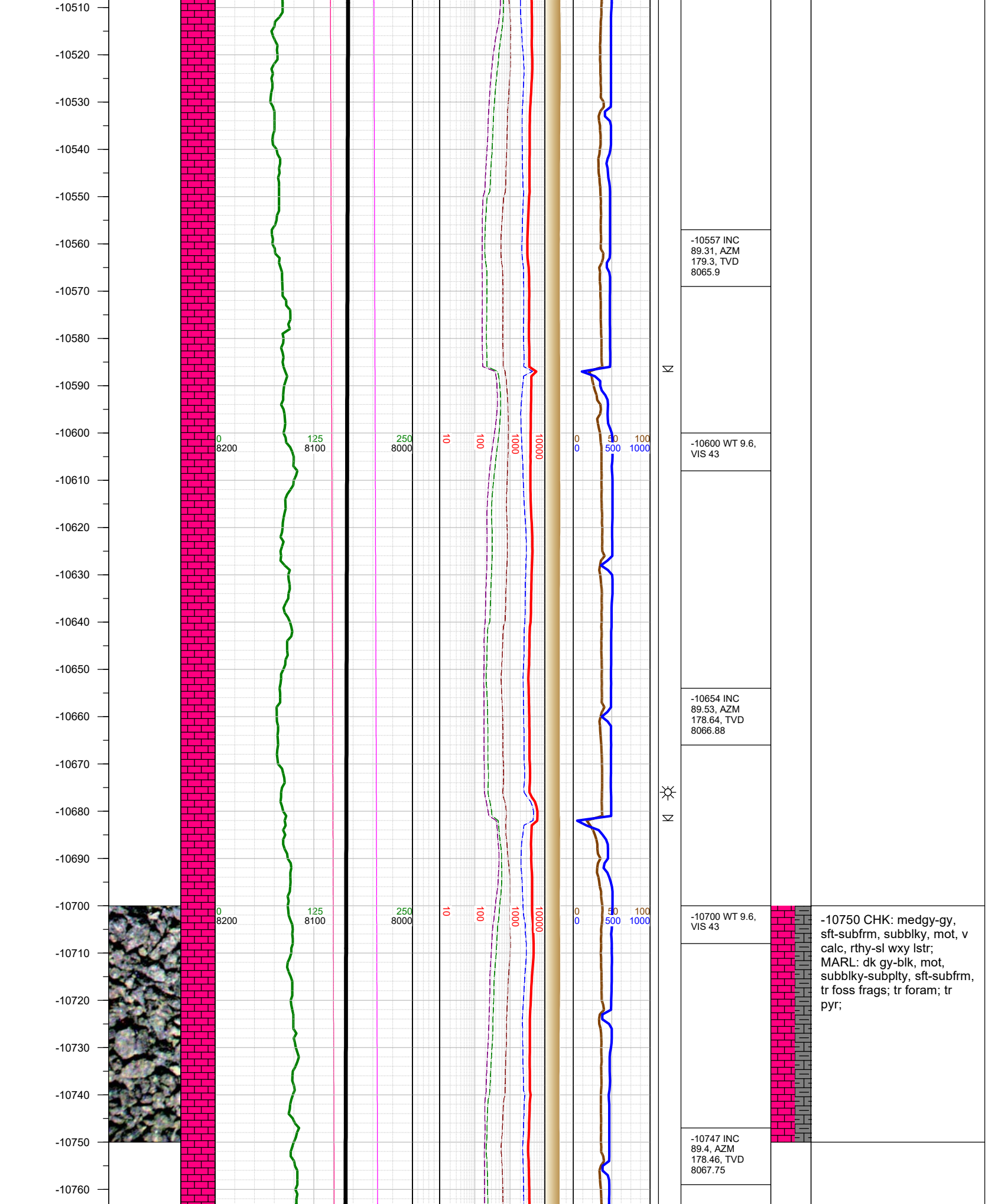
-10272 INC 89.31, AZM 181.02, TVD 8062.9
-10300 WT 9.6, VIS 43
-10367 INC 89.48, AZM 180.76, TVD 8063.9
-10370 Gas buster on
-10400 WT 9.6, VIS 43
-10462 INC 89.4, AZM 179.96, TVD 8064.83
-10500 WT 9.6, VIS 43
-10500 CHK: medgy-gy, sft-subfrm, subblky, mot, v calc, rthy-sl wxy lstr; MARL: dk gy-blk, mot, subblky-subplty, sft-subfrm, tr foss frags; tr py;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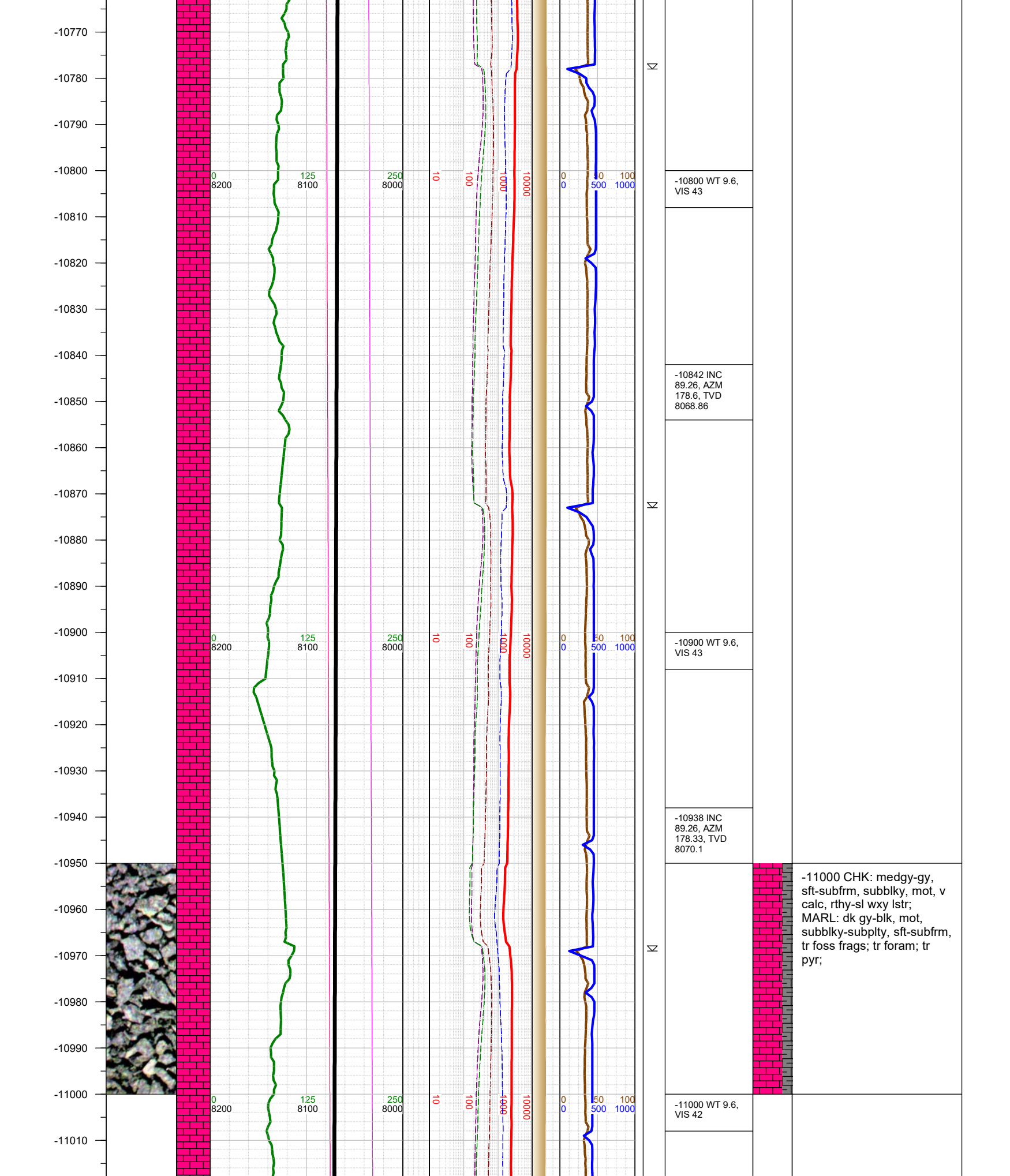
-10557 INC 89.31, AZM 179.3, TVD 8065.9
-10600 WT 9.6, VIS 43
-10654 INC 89.53, AZM 178.64, TVD 8066.88
-10700 WT 9.6, VIS 43
-10747 INC 89.4, AZM 178.46, TVD 8067.75
-10750 CHK: medgy-gy, sft-subfrm, subblky, mot, v calc, rthy-sl wxy lstr; MARL: dk gy-blk, mot, subblky-subplty, sft-subfrm, tr foss frags; tr foram; tr pyr;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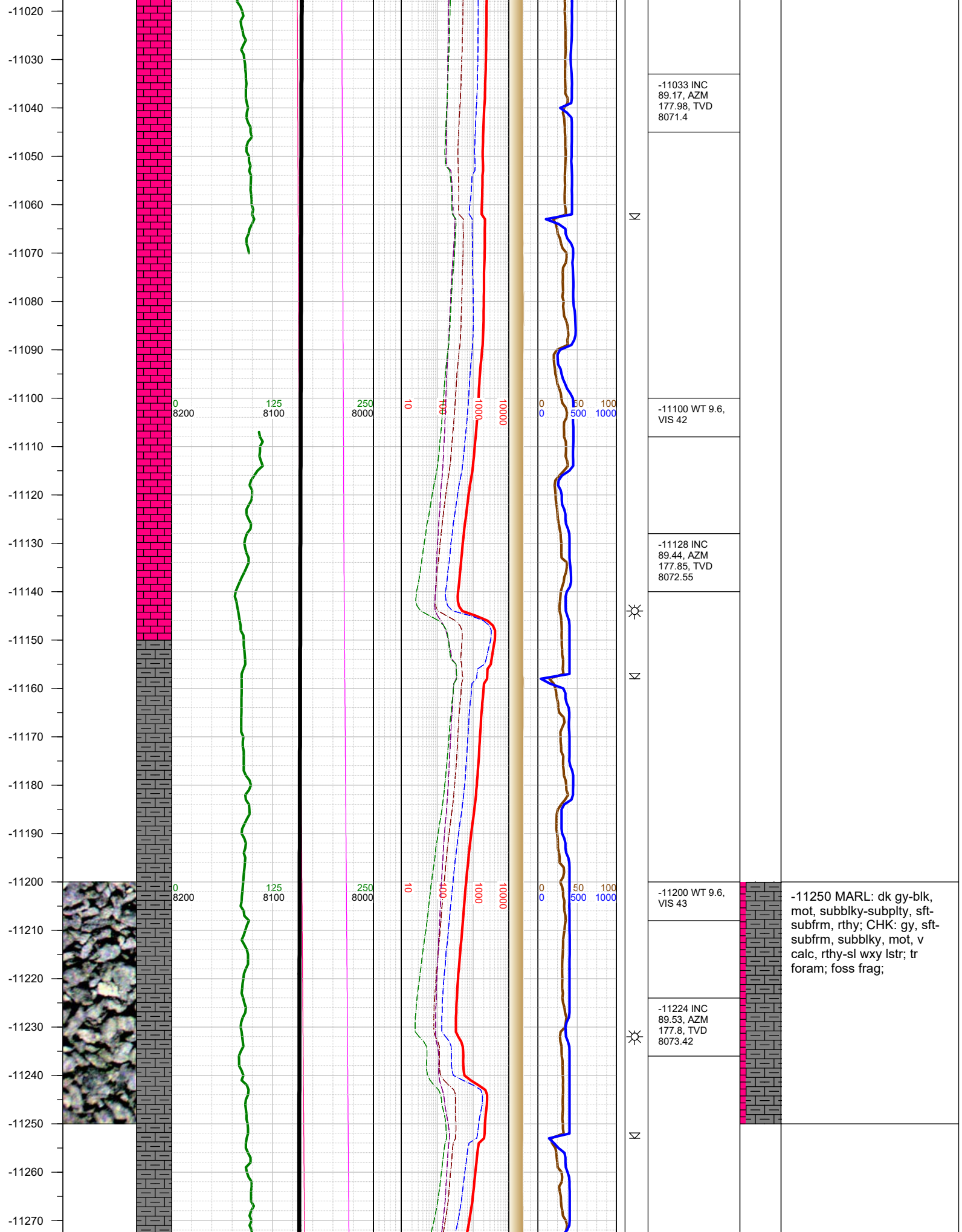
-10842 INC 89.26, AZM 178.6, TVD 8068.86
-10900 WT 9.6, VIS 43
-10938 INC 89.26, AZM 178.33, TVD 8070.1
-11000 CHK: medgy-gy, sft-subfrm, subblky, mot, v calc, rthy-sl wxy lstr; MARL: dk gy-blk, mot, subblky-subplty, sft-subfrm, tr foss frags; tr foram; tr pyr;
-11000 WT 9.6, VIS 42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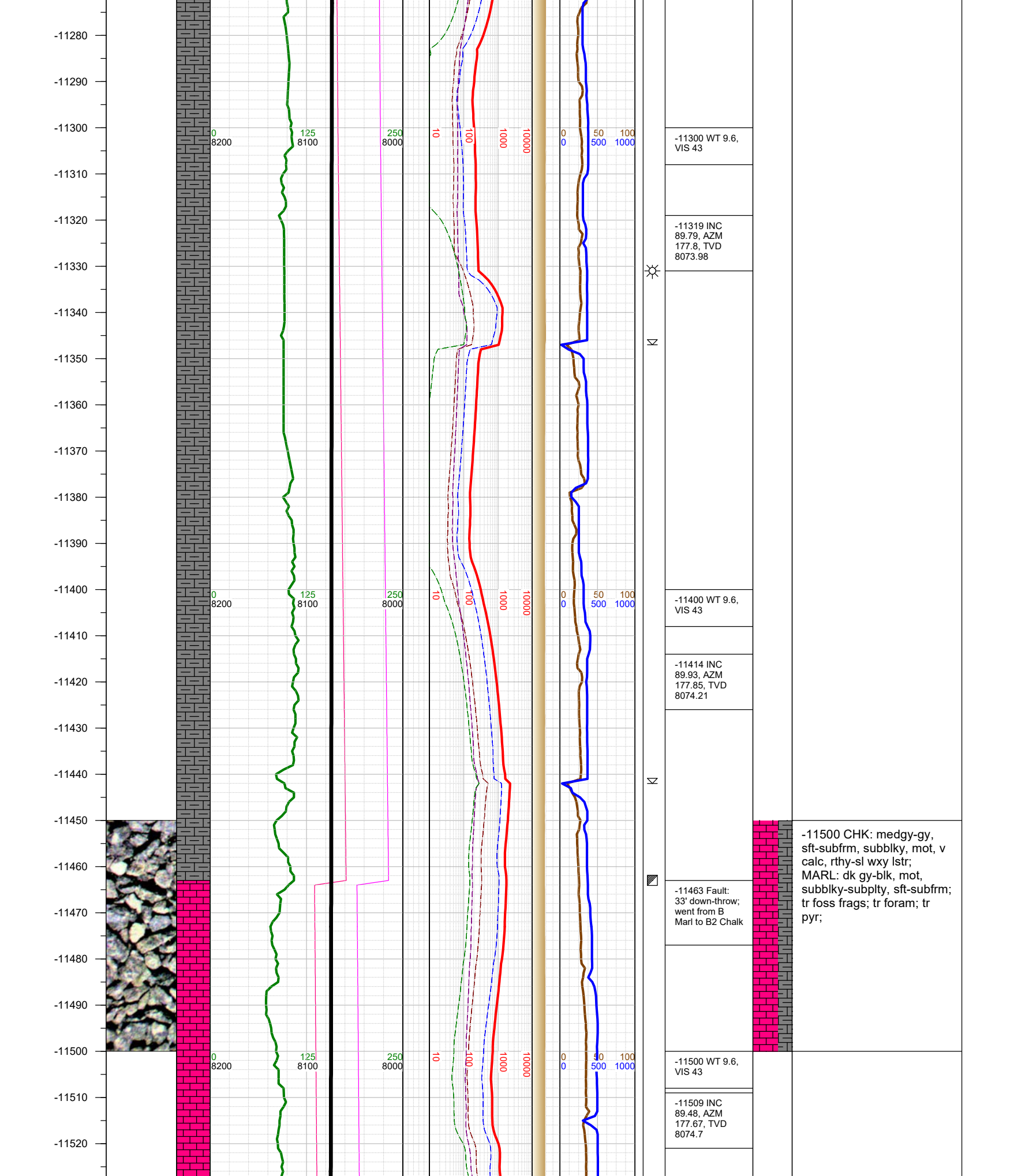
-11128 INC 89.44, AZM 177.85, TVD 8072.55
-11200 WT 9.6, VIS 43
-11224 INC 89.53, AZM 177.8, TVD 8073.42
-11250 MARL: dk gy-blk, mot, subblky-subplty, sft-subfrm, rthy; CHK: gy, sft-subfrm, subblky, mot, v calc, rthy-sl wxy lstr; tr foram; foss frag;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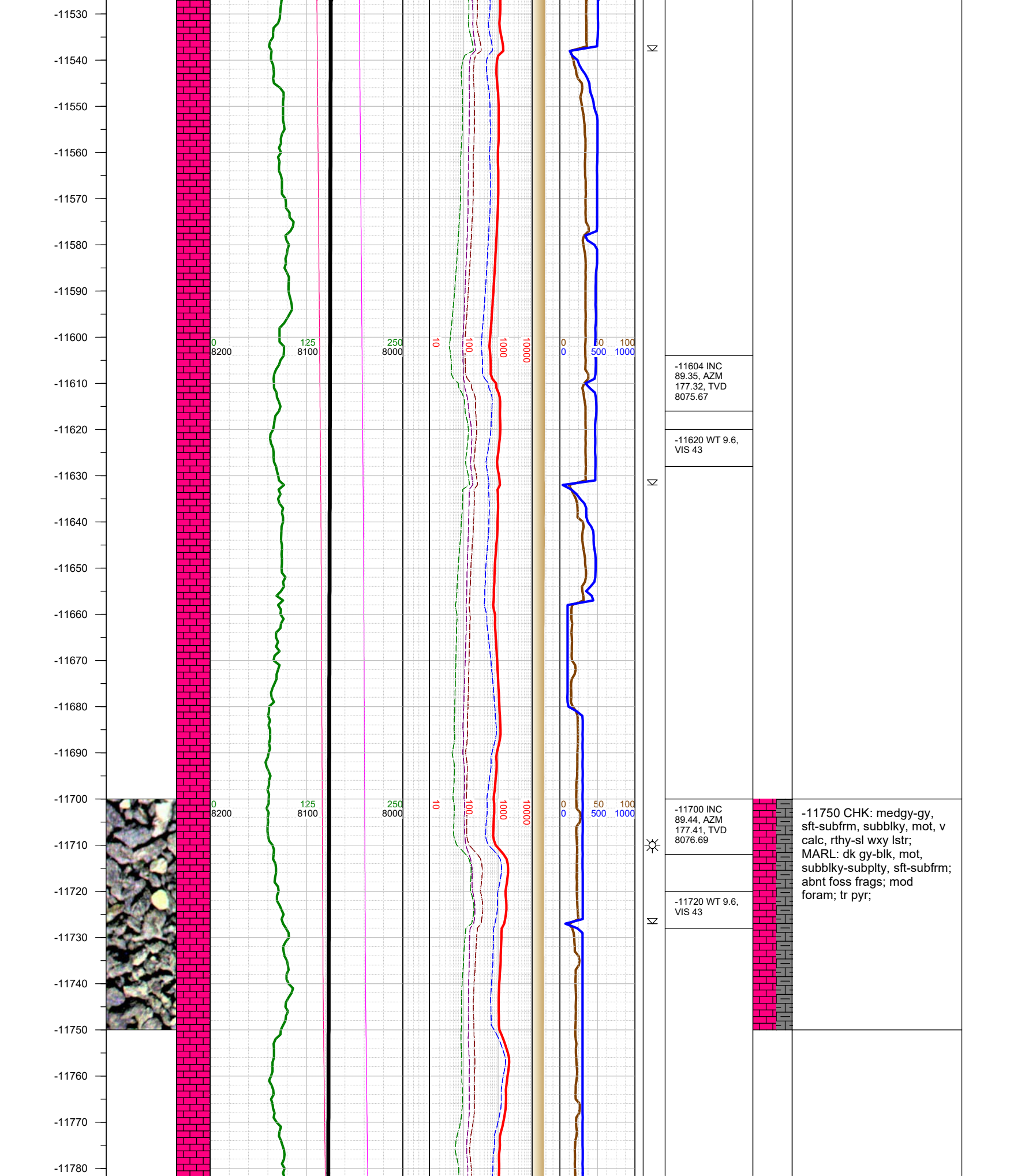
-11300 WT 9.6, VIS 43
-11319 INC 89.79, AZM 177.8, TVD 8073.98
-11400 WT 9.6, VIS 43
-11414 INC 89.93, AZM 177.85, TVD 8074.21
-11463 Fault: 33' down-throw; went from B Marl to B2 Chalk
-11500 WT 9.6, VIS 43
-11509 INC 89.48, AZM 177.67, TVD 8074.7
-11500 CHK: medgy-gy, sft-subfrm, subblky, mot, v calc, rthy-sl wxy lstr; MARL: dk gy-blk, mot, subblky-subplty, sft-subfrm; tr foss frags; tr foram; tr pyr;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-11604 INC
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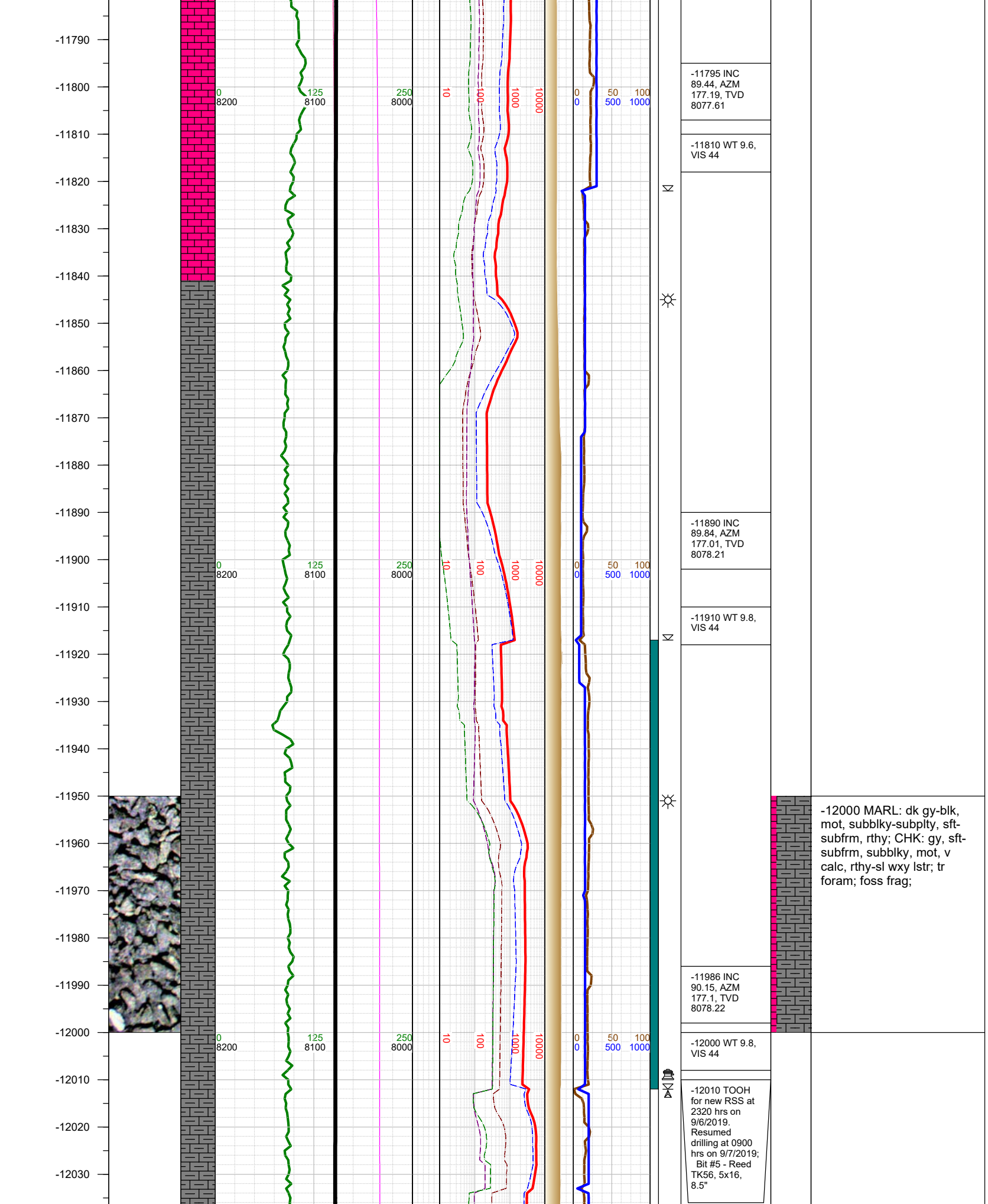
177.32, TVD
8075.67
-11620 WT 9.6,
VIS 43
-11700 INC
89.44, AZM
177.41, TVD
8076.69
-11720 WT 9.6,
VIS 43
-11750 CHK: medgy-gy, sft-subfrm, subblky, mot, v calc, rthy-sl wxy lstr; MARL: dk gy-blk, mot, subblky-subplty, sft-subfrm; abnt foss frags; mod foram; tr pyr;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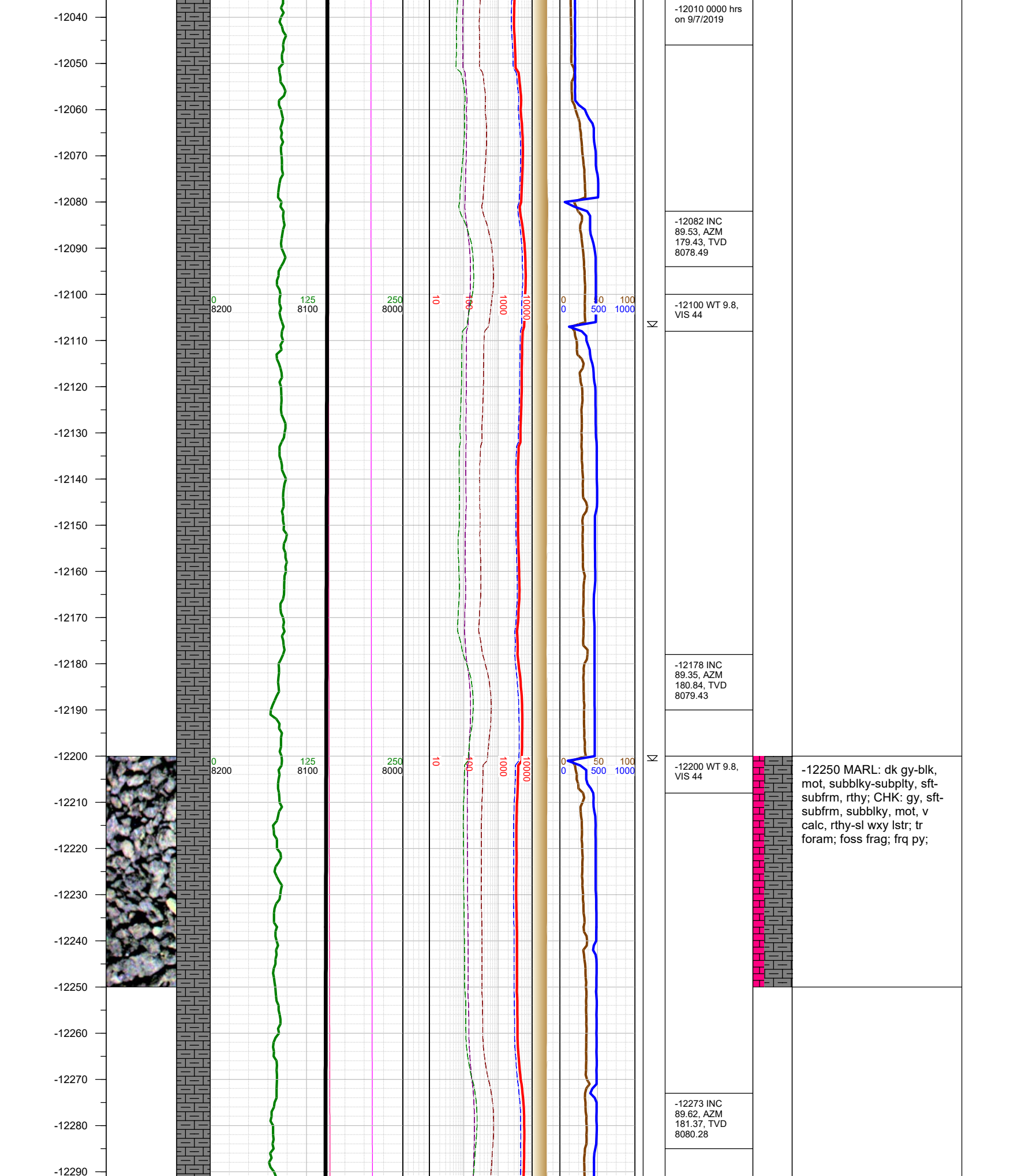
-11795 INC 89.44, AZM 177.19, TVD 8077.61
-11810 WT 9.6, VIS 44
-11890 INC 89.84, AZM 177.01, TVD 8078.21
-11910 WT 9.8, VIS 44
-11986 INC 90.15, AZM 177.1, TVD 8078.22
-12000 WT 9.8, VIS 44
-12010 TOOH for new RSS at 2320 hrs on 9/6/2019. Resumed drilling at 0900 hrs on 9/7/2019; Bit #5 - Reed TK56, 5x16, 8.5"
-12000 MARL: dk gy-blk, mot, subblky-subplty, sft-subfrm, rthy; CHK: gy, sft-subfrm, subblky, mot, v calc, rthy-sl wxy lstr; tr foram; foss frag;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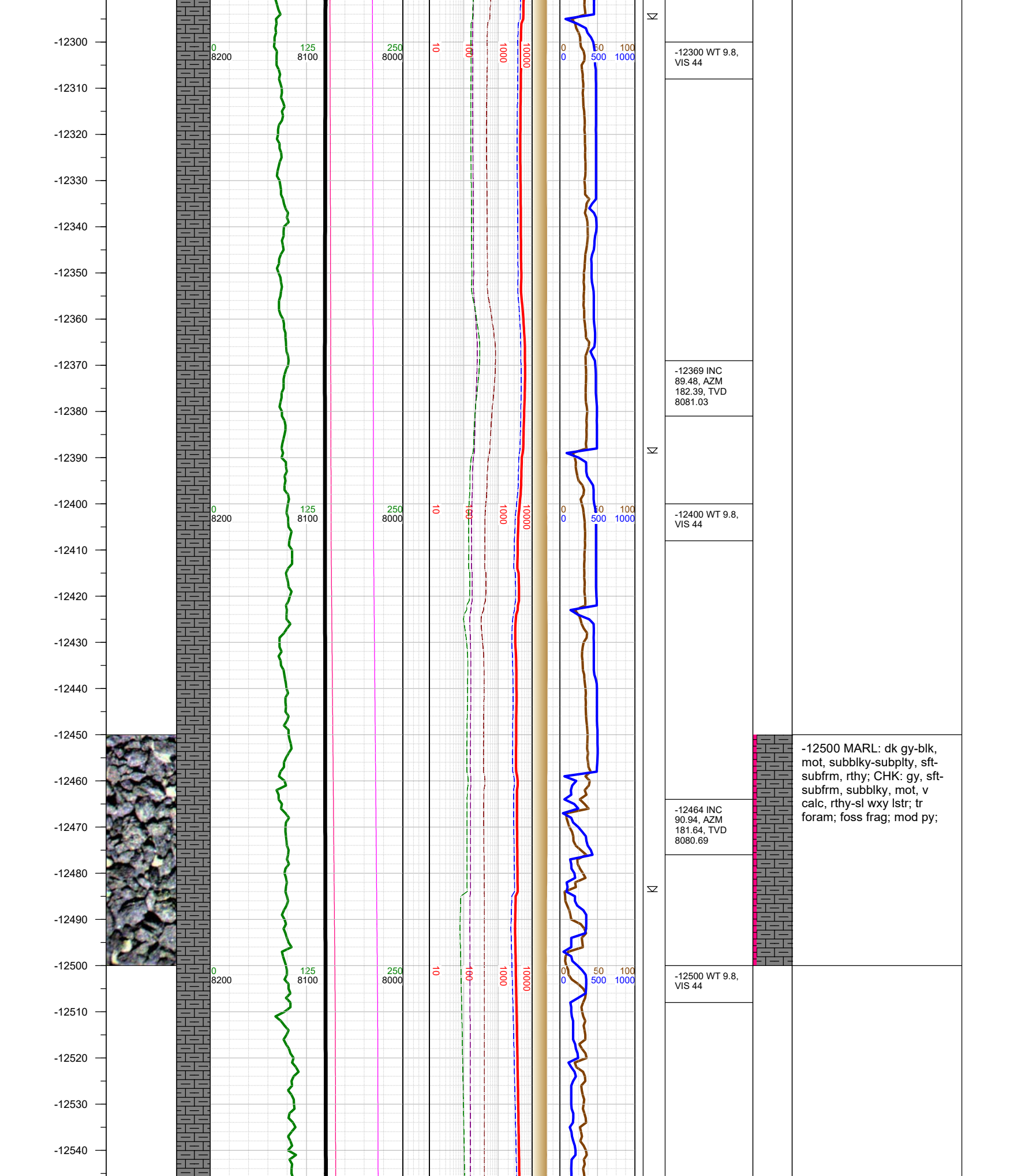
-12010 0000 hrs on 9/7/2019
-12082 INC 89.53, AZM 179.43, TVD 8078.49
-12100 WT 9.8, VIS 44
-12178 INC 89.35, AZM 180.84, TVD 8079.43
-12200 WT 9.8, VIS 44
-12250 MARL: dk gy-blk, mot, subblky-subplty, sft-subfrm, rthy; CHK: gy, sft-subfrm, subblky, mot, v calc, rthy-sl wxy lstr; tr foram; foss frag; frq py;
-12273 INC 89.62, AZM 181.37, TVD 8080.28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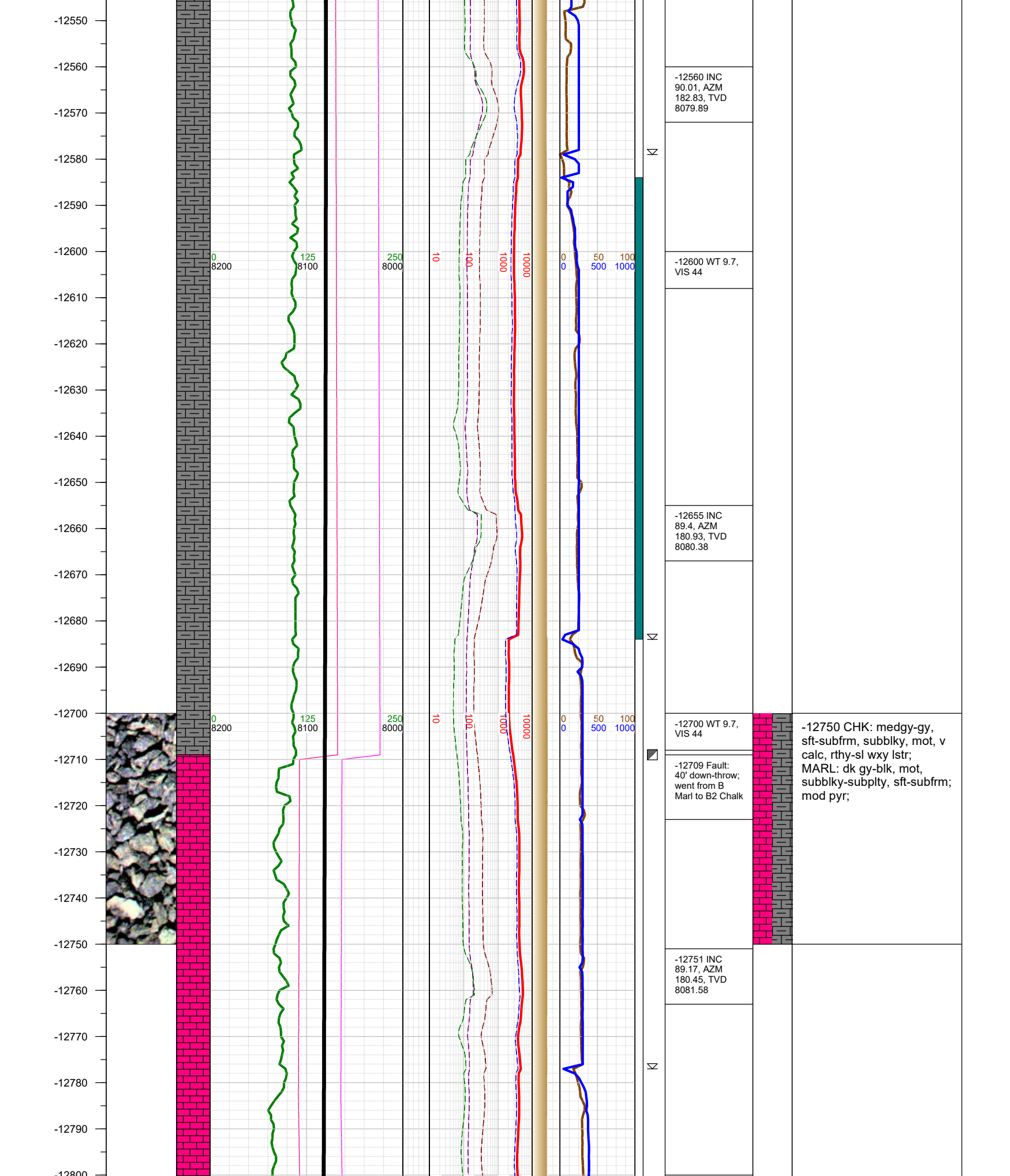
-12300 WT 9.8, VIS 44
-12369 INC 89.48, AZM 182.39, TVD 8081.03
-12400 WT 9.8, VIS 44
-12464 INC 90.94, AZM 181.64, TVD 8080.69
-12500 WT 9.8, VIS 44
-12500 MARL: dk gy-blk, mot, subblky-subplty, sft-subfrm, rthy; CHK: gy, sft-subfrm, subblky, mot, v calc, rthy-sl wxy lstr; tr foram; foss frag; mod py;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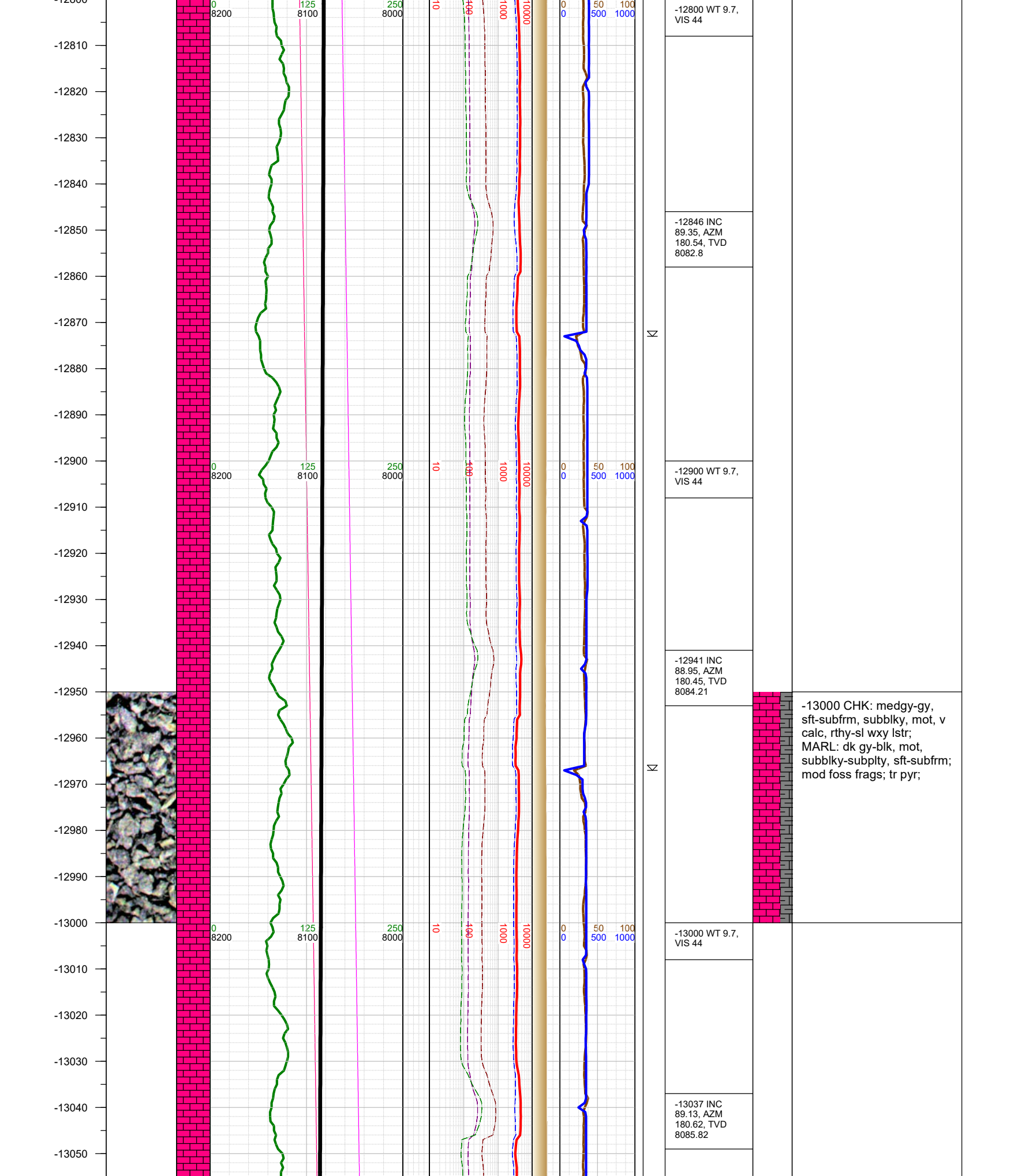
-12560 INC 90.01, AZM 182.83, TVD 8079.89
-12600 WT 9.7, VIS 44
-12655 INC 89.4, AZM 180.93, TVD 8080.38
-12700 WT 9.7, VIS 44
-12709 Fault: 40' down-throw; went from B Marl to B2 Chalk
-12750 CHK: medgy-gy, sft-subfrm, subblky, mot, v calc, rthy-sl wxy lstr; MARL: dk gy-blk, mot, subblky-subplty, sft-subfrm; mod pyr;
-12751 INC 89.17, AZM 180.45, TVD 8081.58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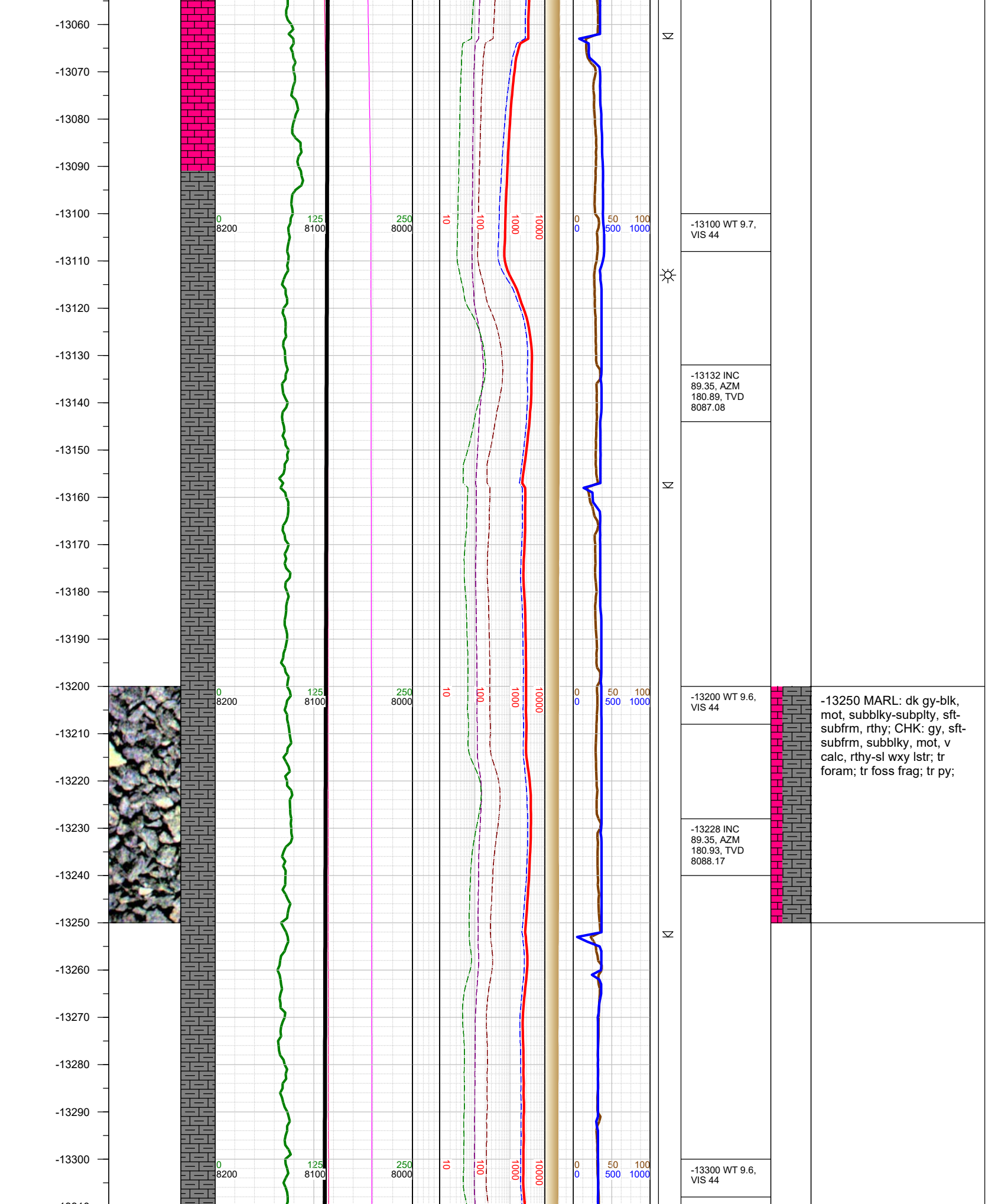
-12800 WT 9.7, VIS 44
-12846 INC 89.35, AZM 180.54, TVD 8082.8
-12900 WT 9.7, VIS 44
-12941 INC 88.95, AZM 180.45, TVD 8084.21
-13000 CHK: medgy-gy, sft-subfrm, subblky, mot, v calc, rthy-sl wxy lstr; MARL: dk gy-blk, mot, subblky-subplty, sft-subfrm; mod foss frags; tr pyr;
-13000 WT 9.7, VIS 44
-13037 INC 89.13, AZM 180.62, TVD 8085.82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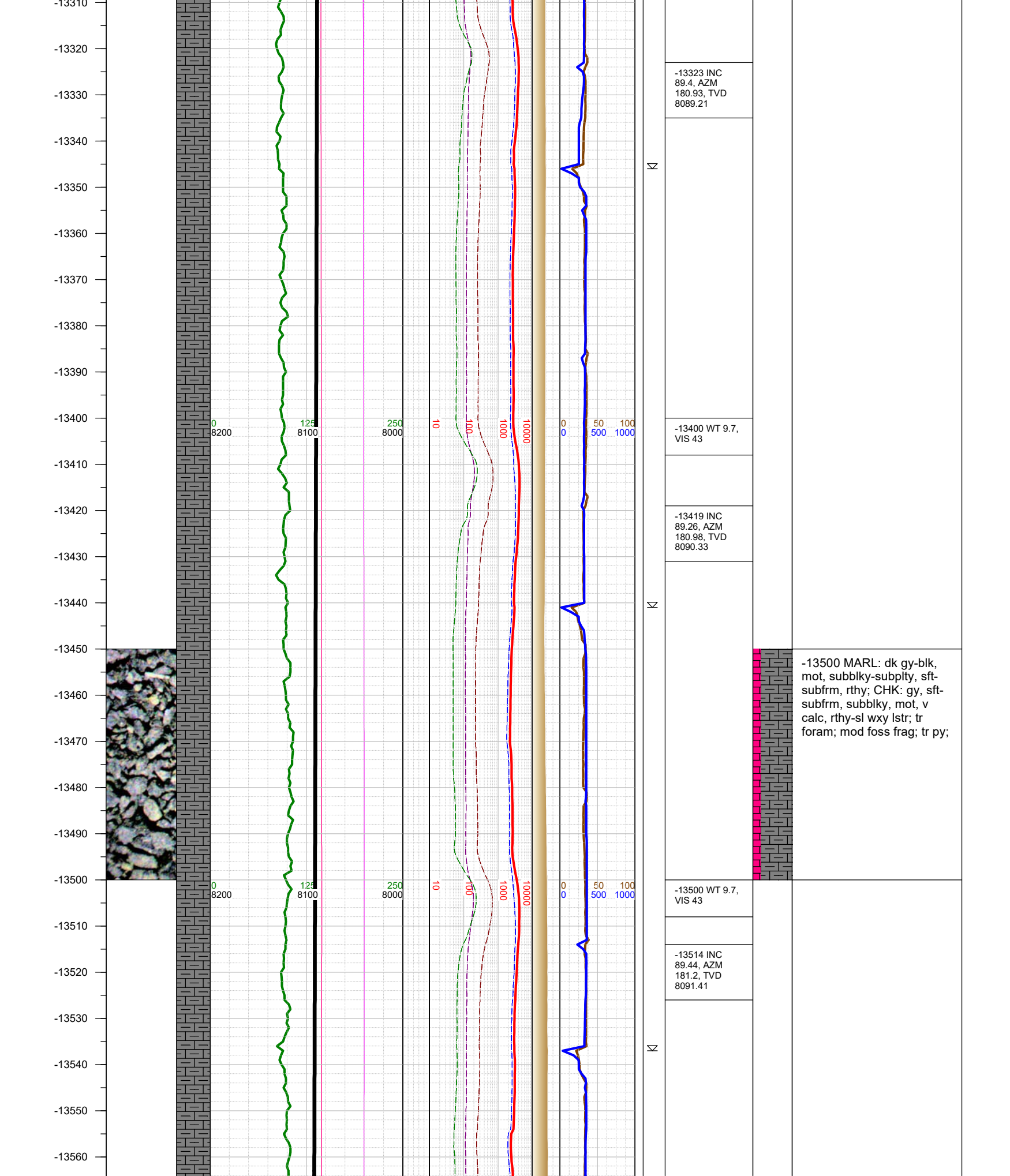
-13100 WT 9.7, VIS 44
-13132 INC 89.35, AZM 180.89, TVD 8087.08
-13200 WT 9.6, VIS 44
-13228 INC 89.35, AZM 180.93, TVD 8088.17
-13300 WT 9.6, VIS 44
-13250 MARL: dk gy-blk, mot, subblky-subplty, sft-subfrm, rthy; CHK: gy, sft-subfrm, subblky, mot, v calc, rthy-sl wxy lstr; tr foram; tr foss frag; tr py;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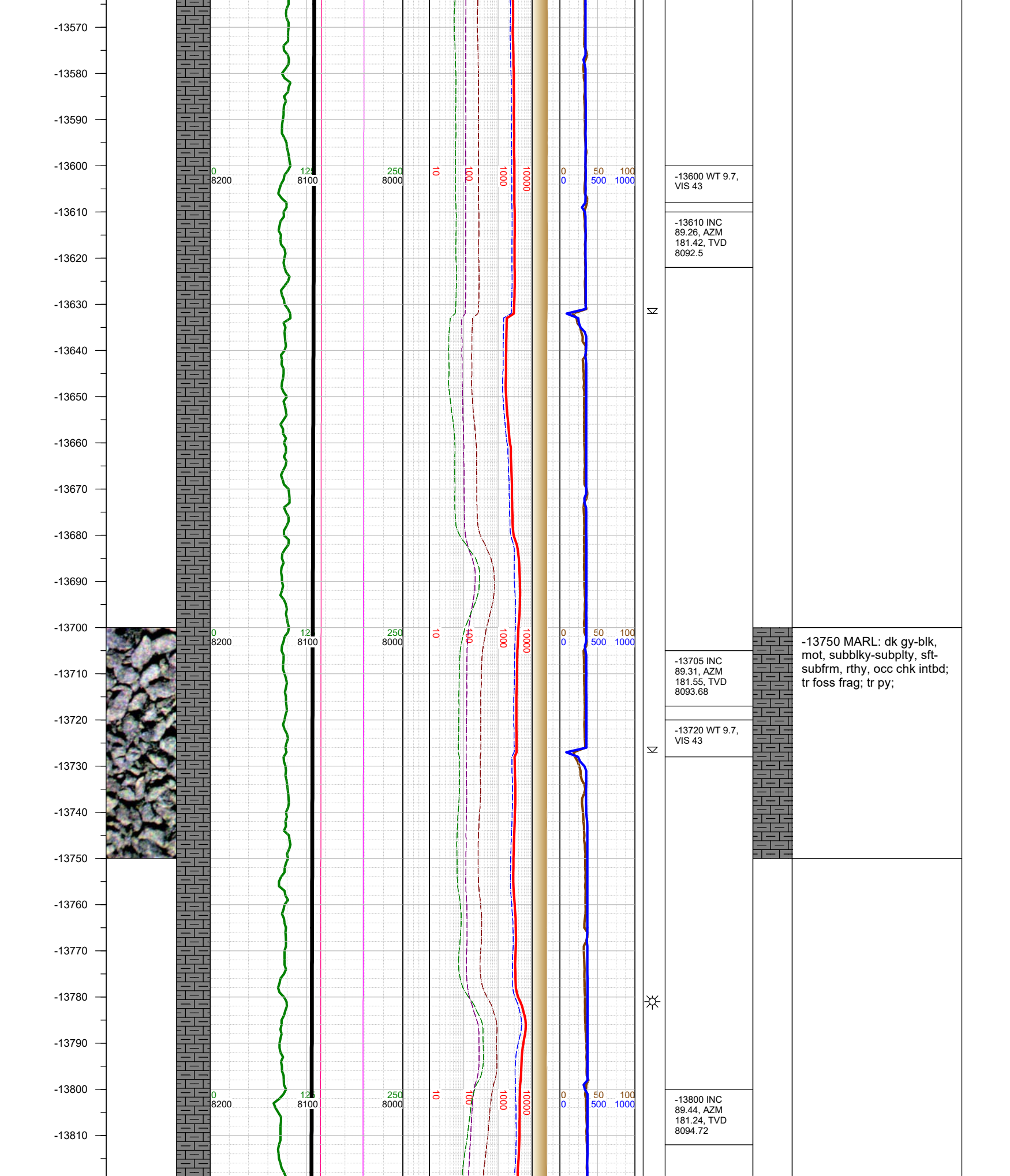
-13323 INC 89.4, AZM 180.93, TVD 8089.21
-13400 WT 9.7, VIS 43
-13419 INC 89.26, AZM 180.98, TVD 8090.33
-13500 MARL: dk gy-blk, mot, subblky-subplty, sft-subfrm, rthy; CHK: gy, sft-subfrm, subblky, mot, v calc, rthy-sl wxy lstr; tr foram; mod foss frag; tr py;
-13500 WT 9.7, VIS 43
-13514 INC 89.44, AZM 181.2, TVD 8091.41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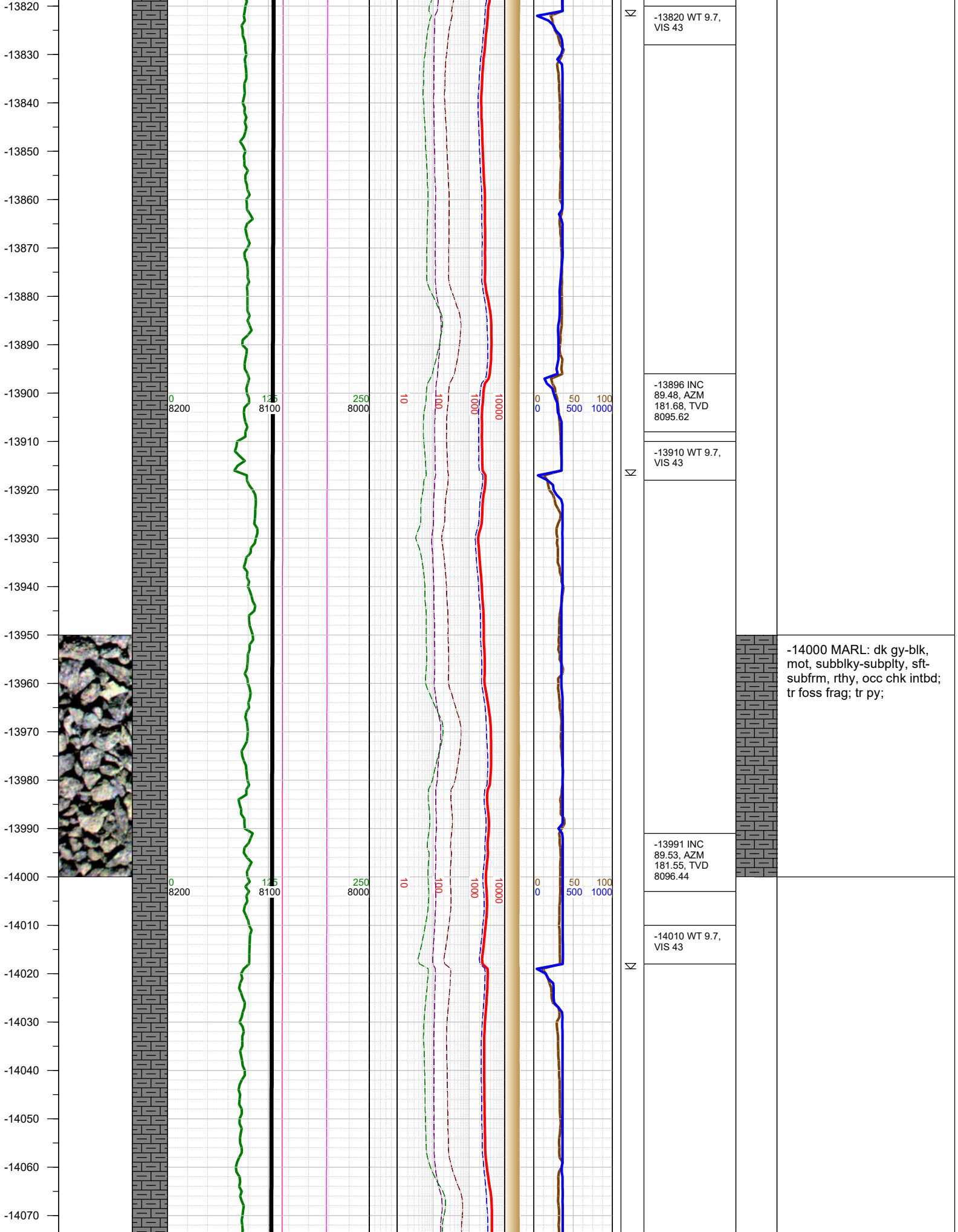
-13600 WT 9.7, VIS 43
-13610 INC 89.26, AZM 181.42, TVD 8092.5
-13705 INC 89.31, AZM 181.55, TVD 8093.68
-13720 WT 9.7, VIS 43
-13800 INC 89.44, AZM 181.24, TVD 8094.72
-13750 MARL: dk gy-blk, mot, subblky-subplty, sft-subfrm, rthy, occ chk intbd; tr foss frag; tr py;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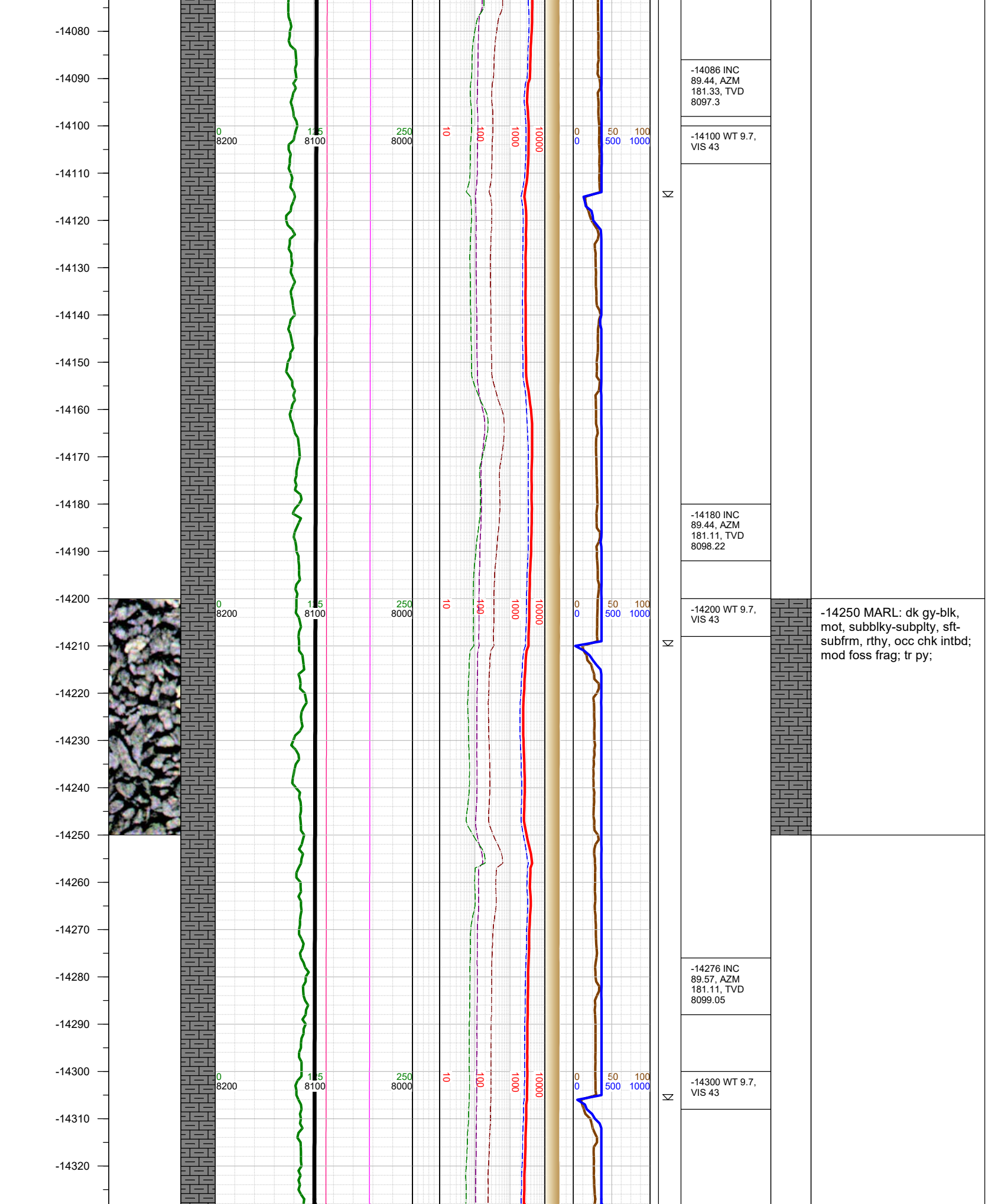
-13820 WT 9.7, VIS 43
-13896 INC 89.48, AZM 181.68, TVD 8095.62
-13910 WT 9.7, VIS 43
-13991 INC 89.53, AZM 181.55, TVD 8096.44
-14010 WT 9.7, VIS 43
-14000 MARL: dk gy-blk, mot, subblky-subplty, sft-subfrm, rthy, occ chk intbd; tr foss frag; tr py;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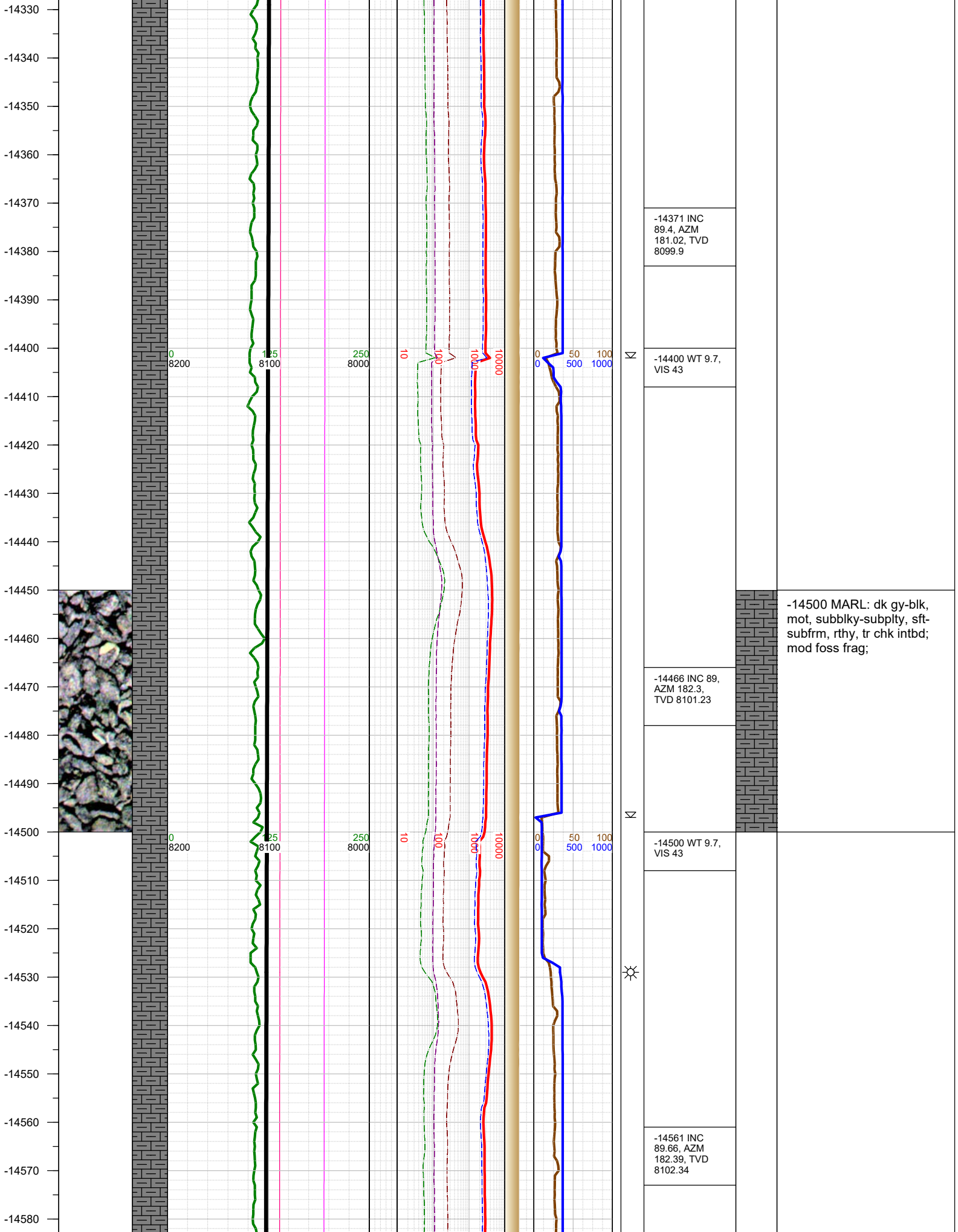
-14086 INC 89.44, AZM 181.33, TVD 8097.3
-14100 WT 9.7, VIS 43
-14180 INC 89.44, AZM 181.11, TVD 8098.22
-14200 WT 9.7, VIS 43
-14250 MARL: dk gy-blk, mot, subblky-subplty, sft-subfrm, rthy, occ chk intbd; mod foss frag; tr py;
-14276 INC 89.57, AZM 181.11, TVD 8099.05
-14300 WT 9.7, VIS 43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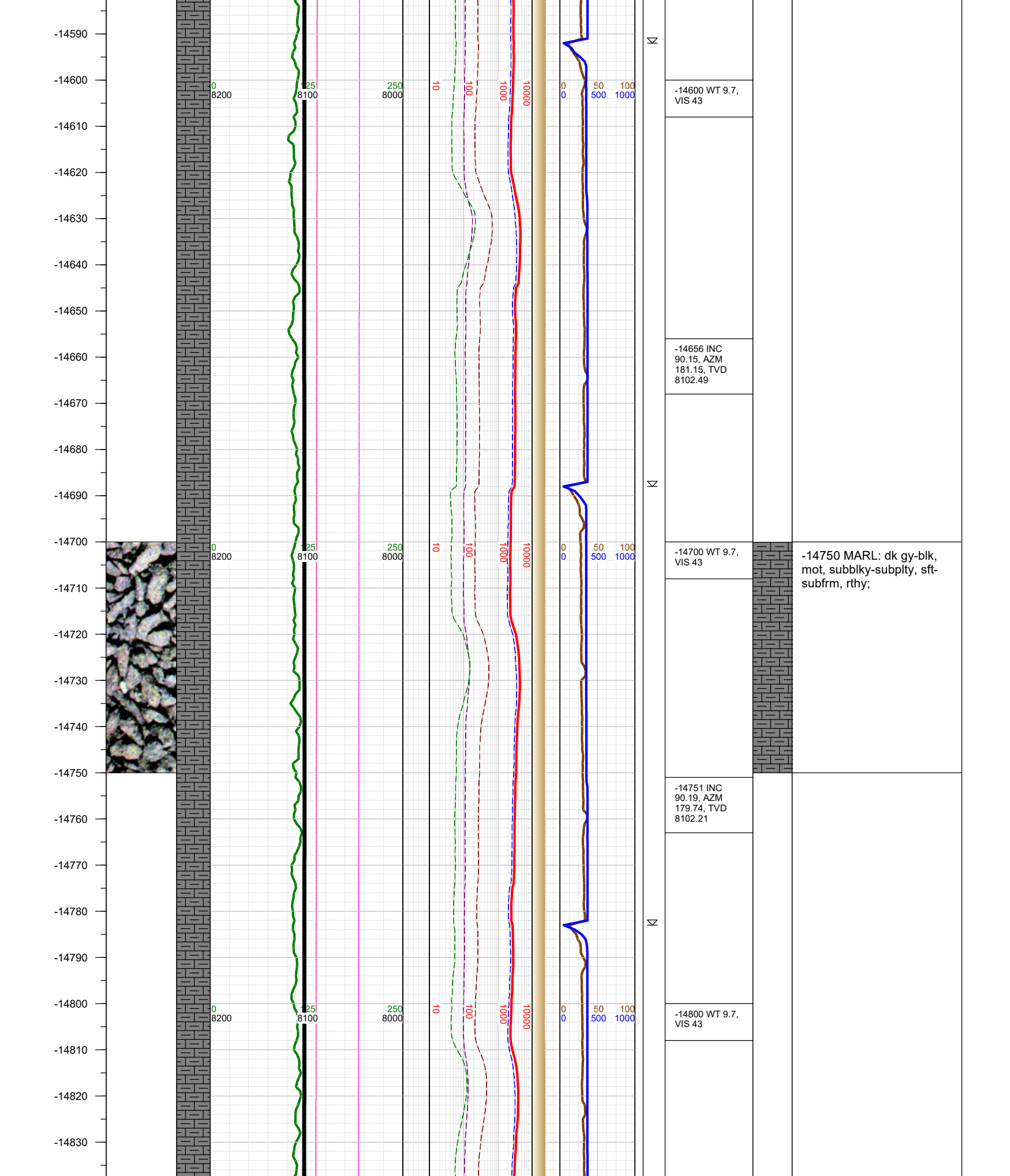
-14371 INC 89.4, AZM 181.02, TVD 8099.9
-14400 WT 9.7, VIS 43
-14466 INC 89, AZM 182.3, TVD 8101.23
-14500 WT 9.7, VIS 43
-14561 INC 89.66, AZM 182.39, TVD 8102.34
-14500 MARL: dk gy-blk, mot, subblky-subplty, sft-subfrm, rthy, tr chk intbd; mod foss frag;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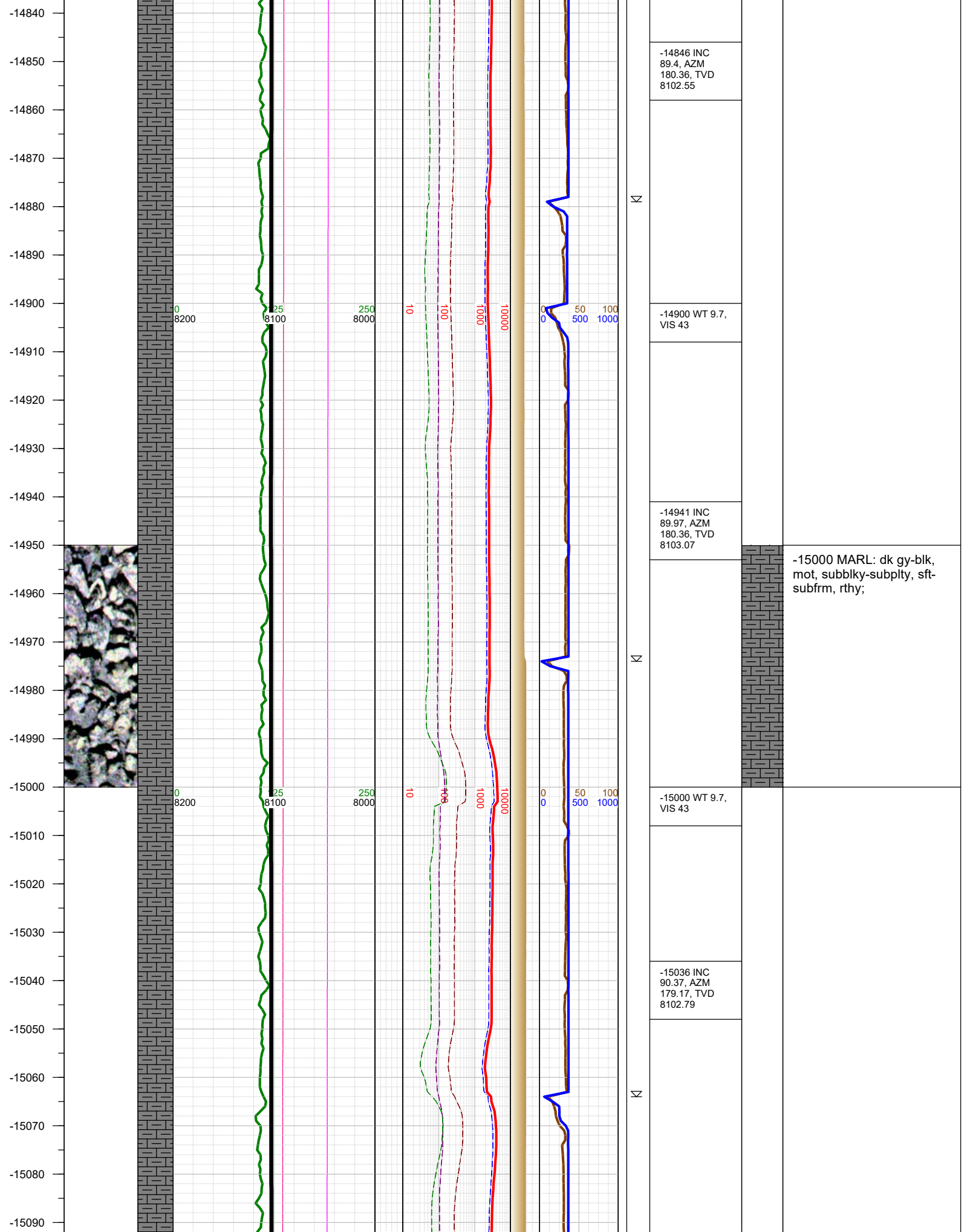
-14600 WT 9.7, VIS 43
-14656 INC 90.15, AZM 181.15, TVD 8102.49
-14700 WT 9.7, VIS 43
-14750 MARL: dk gy-blk, mot, subblky-subplty, sft-subfrm, rthy;
-14751 INC 90.19, AZM 179.74, TVD 8102.21
-14800 WT 9.7, VIS 43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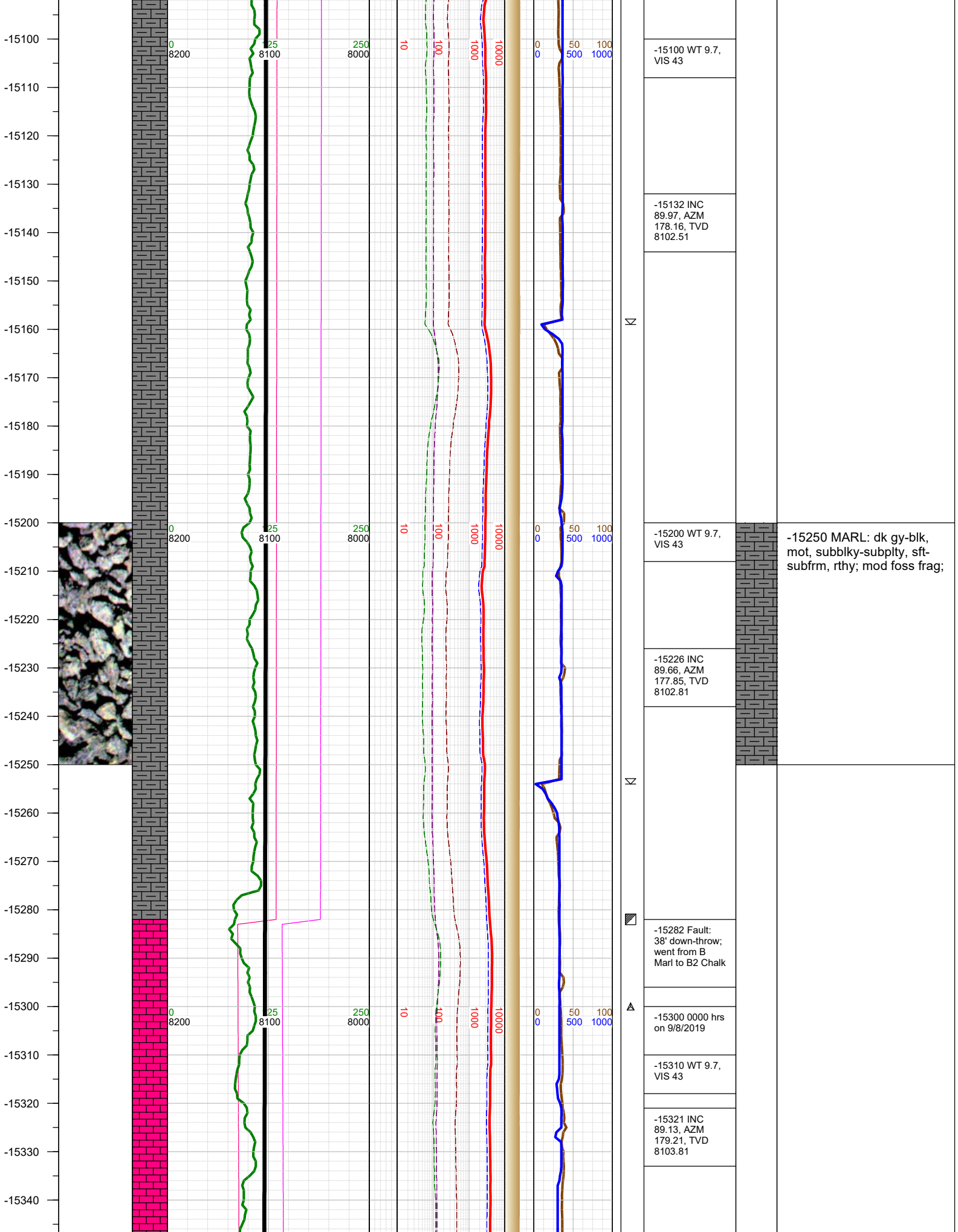
-14846 INC 89.4, AZM 180.36, TVD 8102.55
-14900 WT 9.7, VIS 43
-14941 INC 89.97, AZM 180.36, TVD 8103.07
-15000 MARL: dk gy-blk, mot, subblky-subplty, sft-subfrm, rthy;
-15000 WT 9.7, VIS 43
-15036 INC 90.37, AZM 179.17, TVD 8102.79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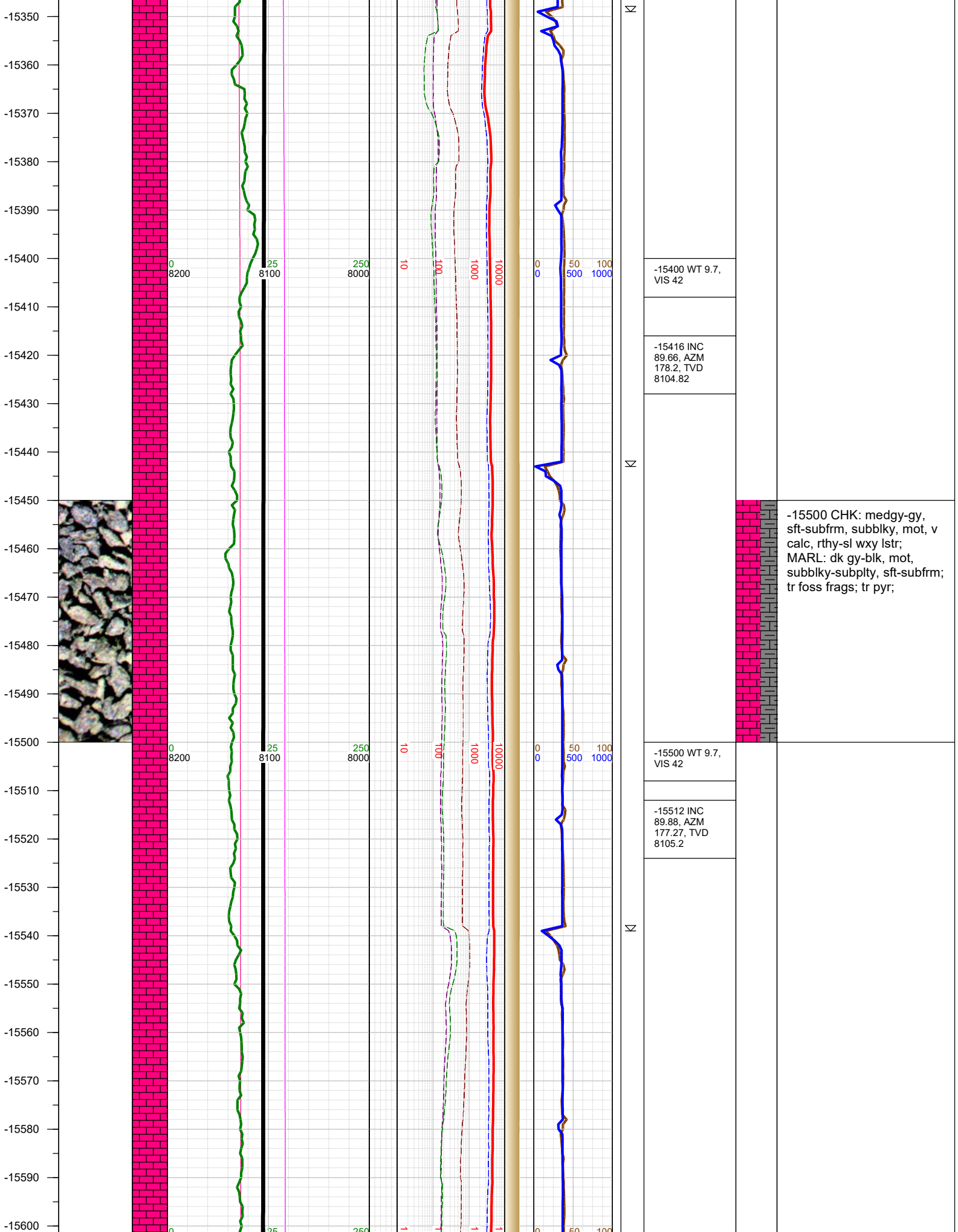
-15100 WT 9.7, VIS 43
-15132 INC 89.97, AZM 178.16, TVD 8102.51
-15200 WT 9.7, VIS 43
-15226 INC 89.66, AZM 177.85, TVD 8102.81
-15250 MARL: dk gy-blk, mot, subblky-subplty, sft-subfrm, rthy; mod foss frag;
-15282 Fault: 38' down-throw; went from B Marl to B2 Chalk
-15300 0000 hrs on 9/8/2019
-15310 WT 9.7, VIS 43
-15321 INC 89.13, AZM 179.21, TVD 8103.81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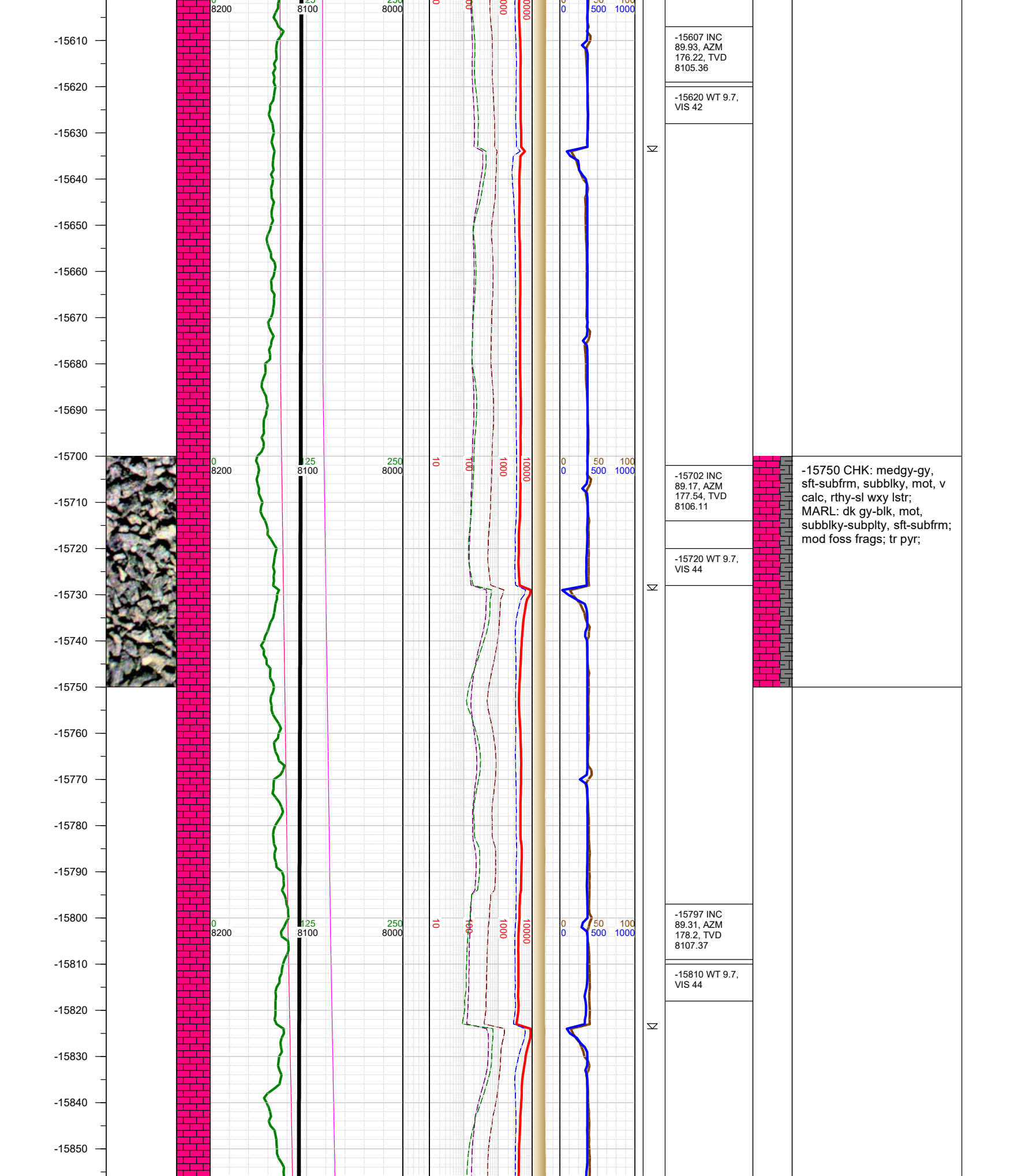
-15400 WT 9.7, VIS 42
-15416 INC 89.66, AZM 178.2, TVD 8104.82
-15500 CHK: medgy-gy, sft-subfrm, subblky, mot, v calc, rthy-sl wxy lstr; MARL: dk gy-blk, mot, subblky-subplty, sft-subfrm; tr foss frags; tr pyr;
-15500 WT 9.7, VIS 42
-15512 INC 89.88, AZM 177.27, TVD 8105.2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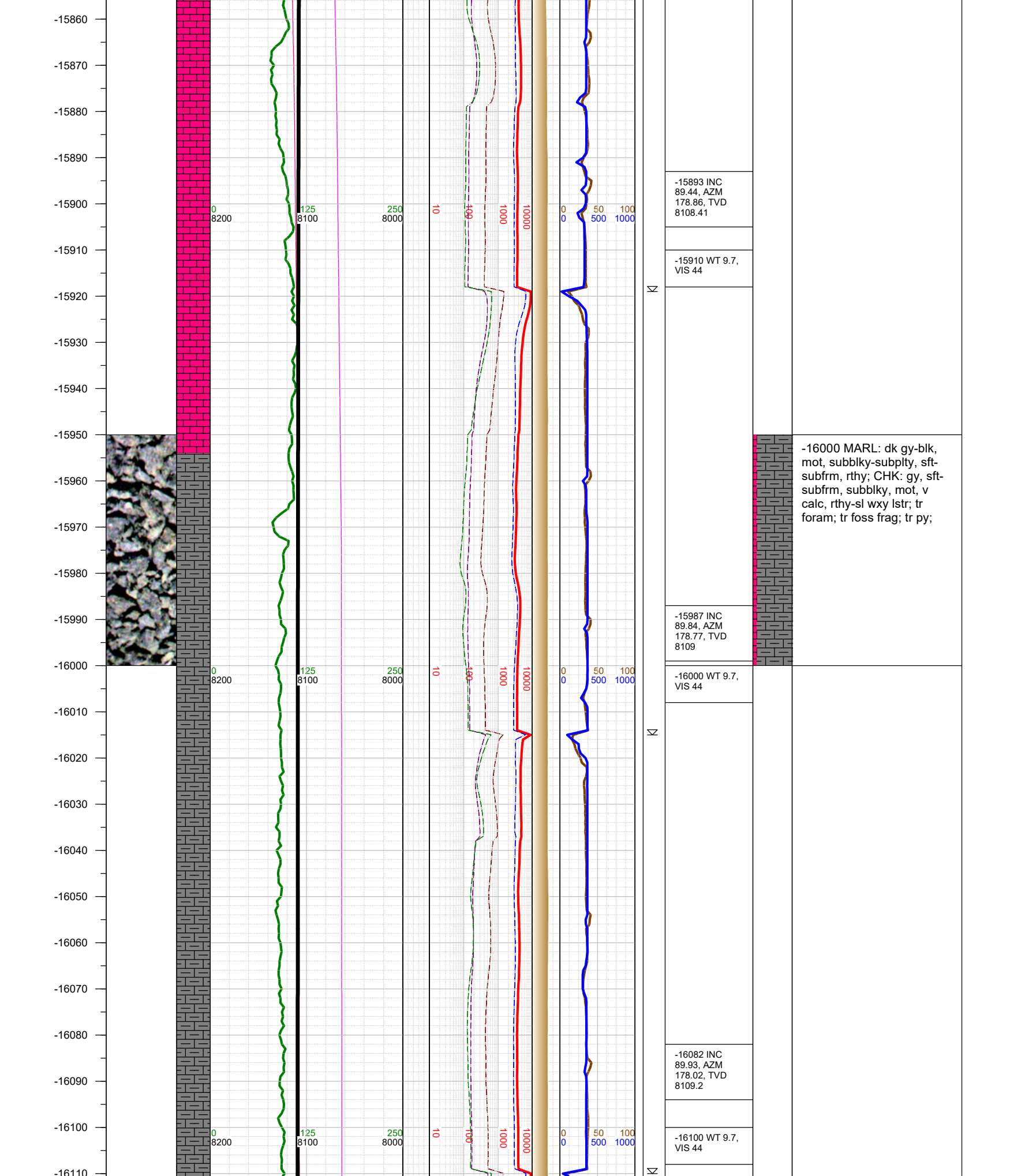
-15607 INC 89.93, AZM 176.22, TVD 8105.36
-15620 WT 9.7, VIS 42
-15702 INC 89.17, AZM 177.54, TVD 8106.11
-15720 WT 9.7, VIS 44
-15797 INC 89.31, AZM 178.2, TVD 8107.37
-15810 WT 9.7, VIS 44
-15750 CHK: medgy-gy, sft-subfrm, subblky, mot, v calc, rthy-sl wxy lstr; MARL: dk gy-blk, mot, subblky-subplty, sft-subfrm; mod foss frags; tr pyr;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-16000 MARL: dk gy-blk, mot, subblky-subplty, sft-subfrm, rthy; CHK: gy, sft-subfrm, subblky, mot, v calc, rthy-sl wxy lstr; tr foram; tr foss frag; tr py;
-15987 INC 89.84, AZM 178.77, TVD 8109
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-16082 INC 89.93, AZM 178.02, TVD 8109.2
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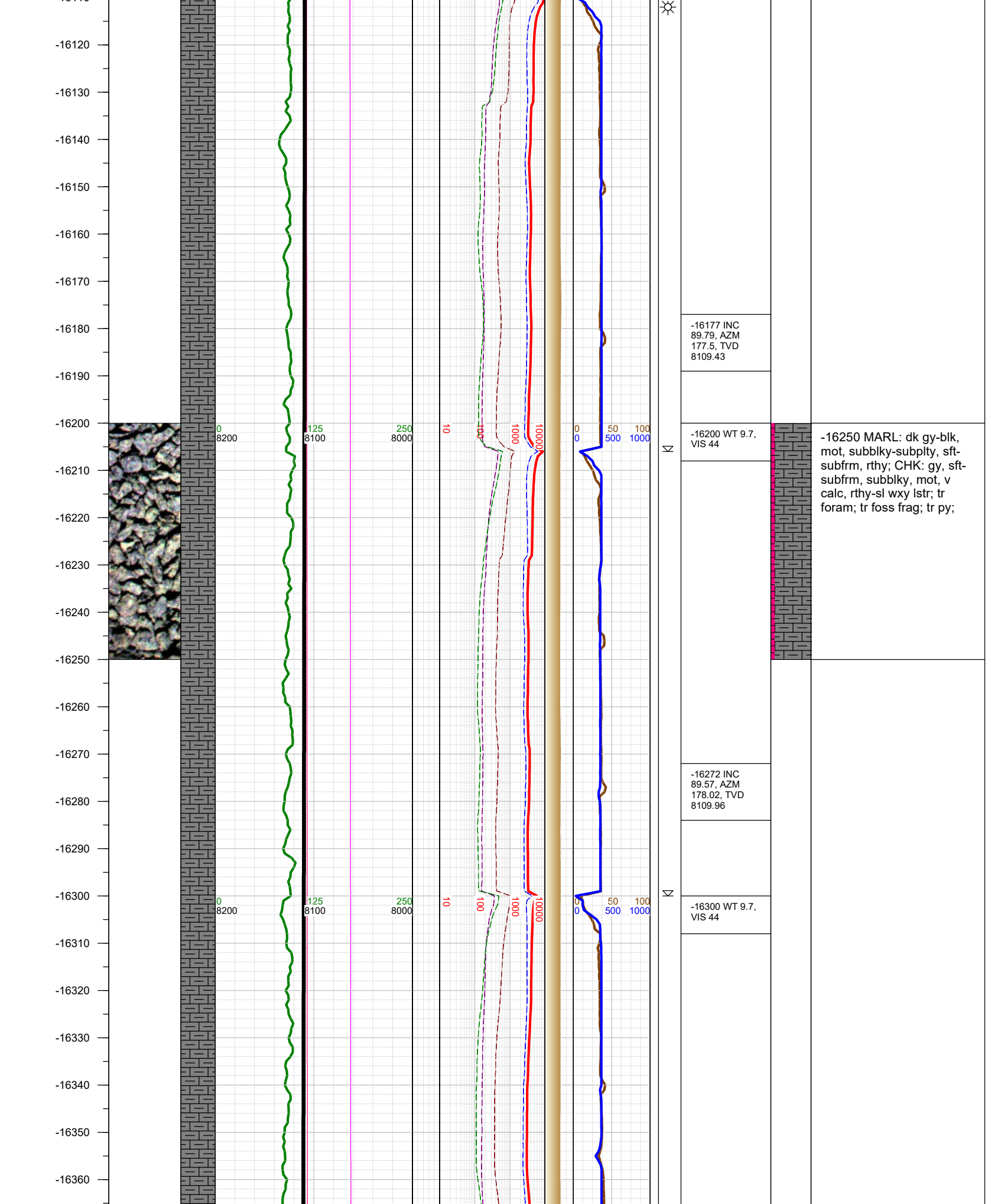
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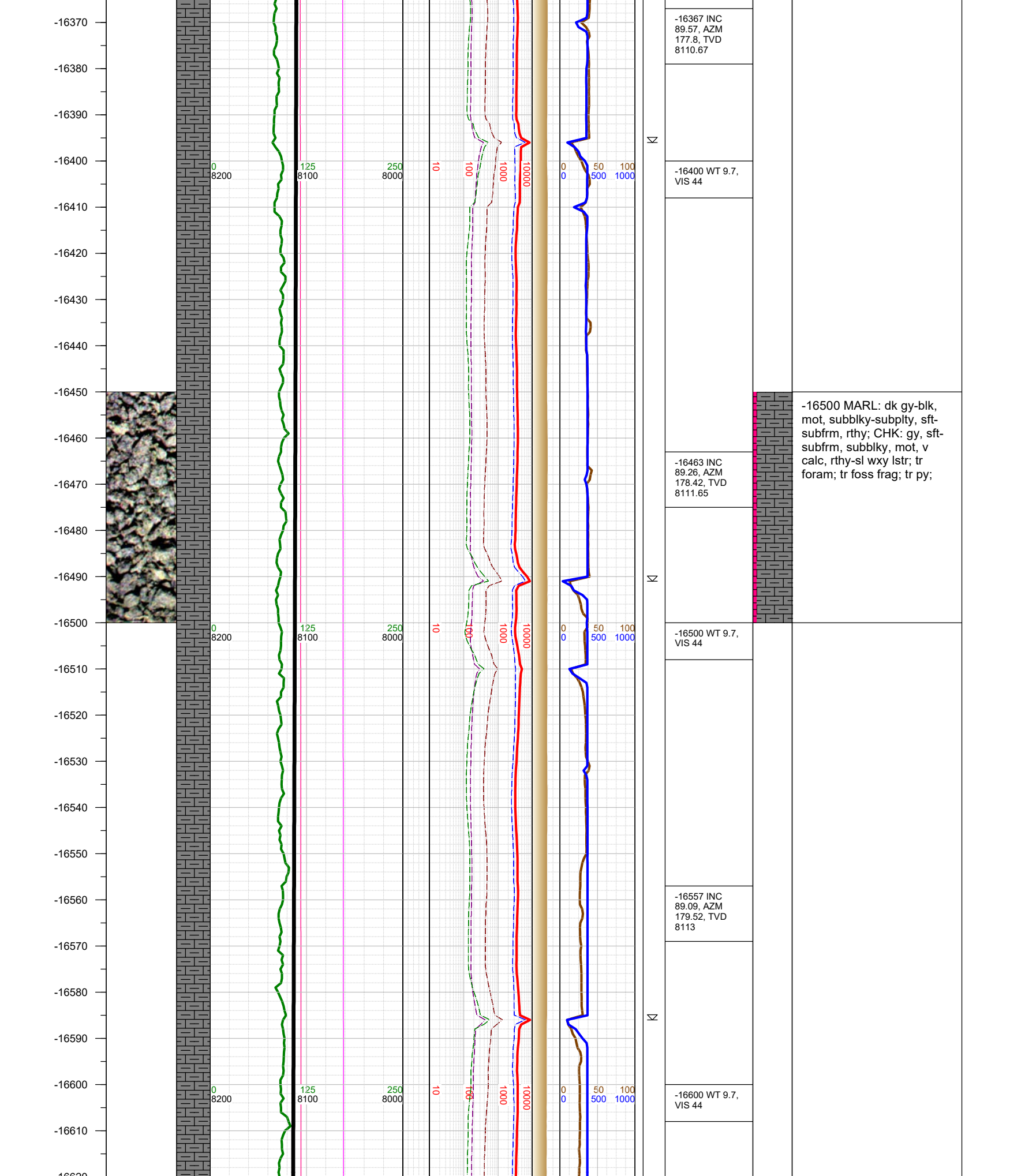
-16177 INC 89.79, AZM 177.5, TVD 8109.43
-16200 WT 9.7, VIS 44
-16250 MARL: dk gy-blk, mot, subblky-subplty, sft-subfrm, rthy; CHK: gy, sft-subfrm, subblky, mot, v calc, rthy-sl wxy lstr; tr foram; tr foss frag; tr py;
-16272 INC 89.57, AZM 178.02, TVD 8109.96
-16300 WT 9.7, VIS 44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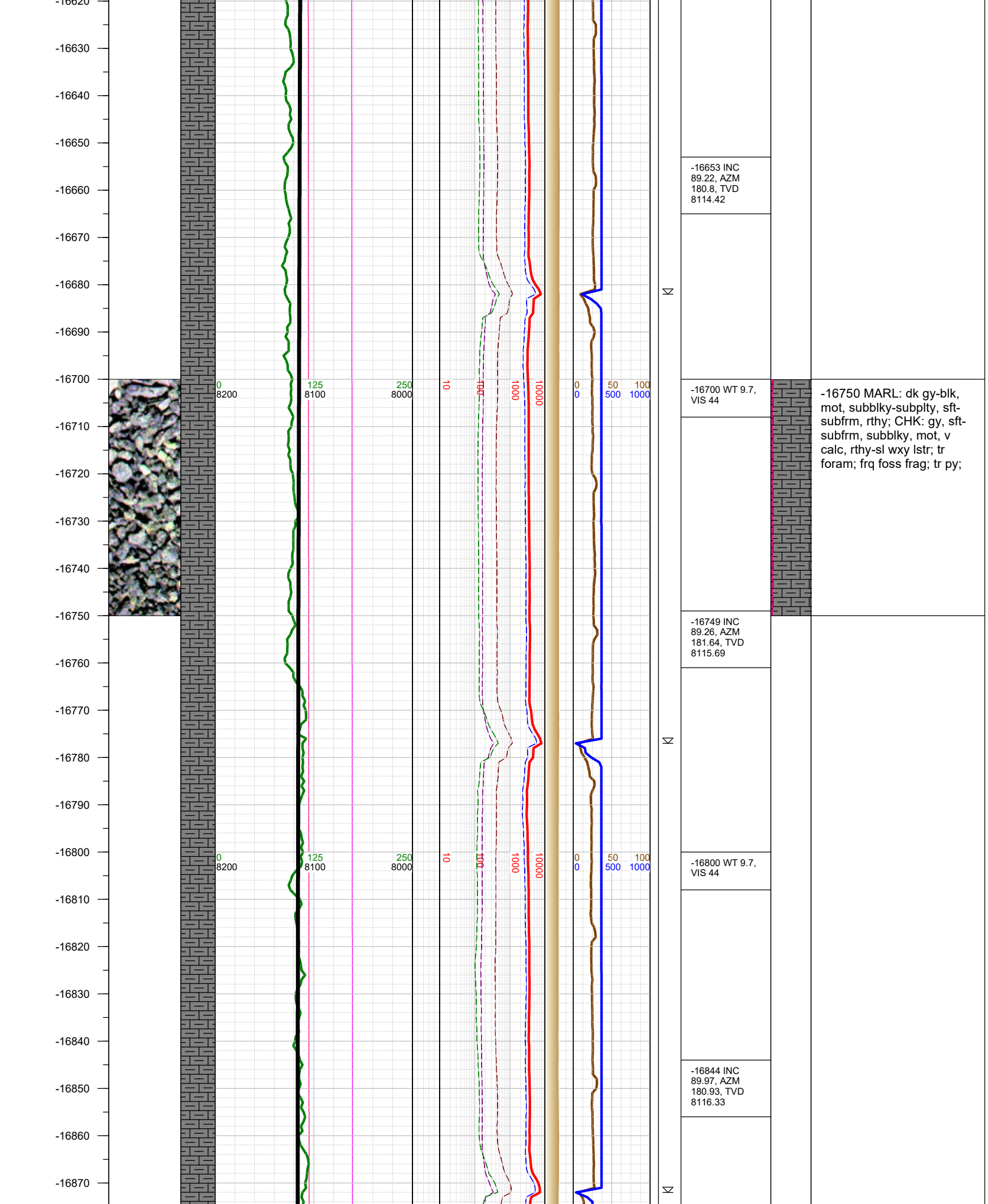
-16400 WT 9.7, VIS 44
-16463 INC 89.26, AZM 178.42, TVD 8111.65
-16500 WT 9.7, VIS 44
-16557 INC 89.09, AZM 179.52, TVD 8113
-16600 WT 9.7, VIS 44
-16500 MARL: dk gy-blk, mot, subblky-subplty, sft-subfrm, rthy; CHK: gy, sft-subfrm, subblky, mot, v calc, rthy-sl wxy lstr; tr foram; tr foss frag; tr py;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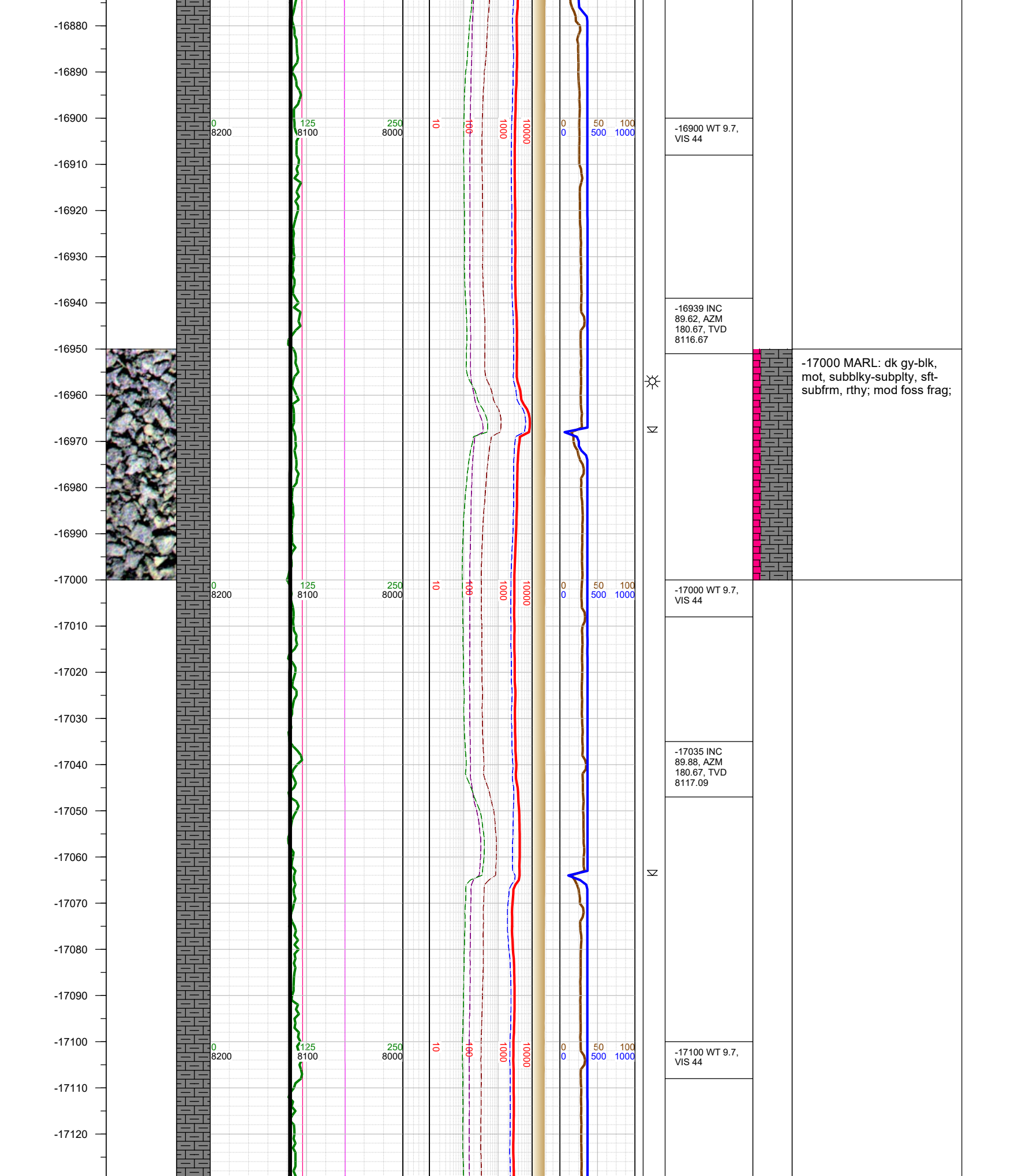
-16653 INC 89.22, AZM 180.8, TVD 8114.42
-16700 WT 9.7, VIS 44
-16750 MARL: dk gy-blk, mot, subblky-subplty, sft-subfrm, rthy; CHK: gy, sft-subfrm, subblky, mot, v calc, rthy-sl wxy lstr; tr foram; frq foss frag; tr py;
-16749 INC 89.26, AZM 181.64, TVD 8115.69
-16800 WT 9.7, VIS 44
-16844 INC 89.97, AZM 180.93, TVD 8116.33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-16939 INC 89.62, AZM 180.67, TVD 8116.67
-17000 MARL: dk gy-blk, mot, subblky-subplty, sft-subfrm, rthy; mod foss frag;
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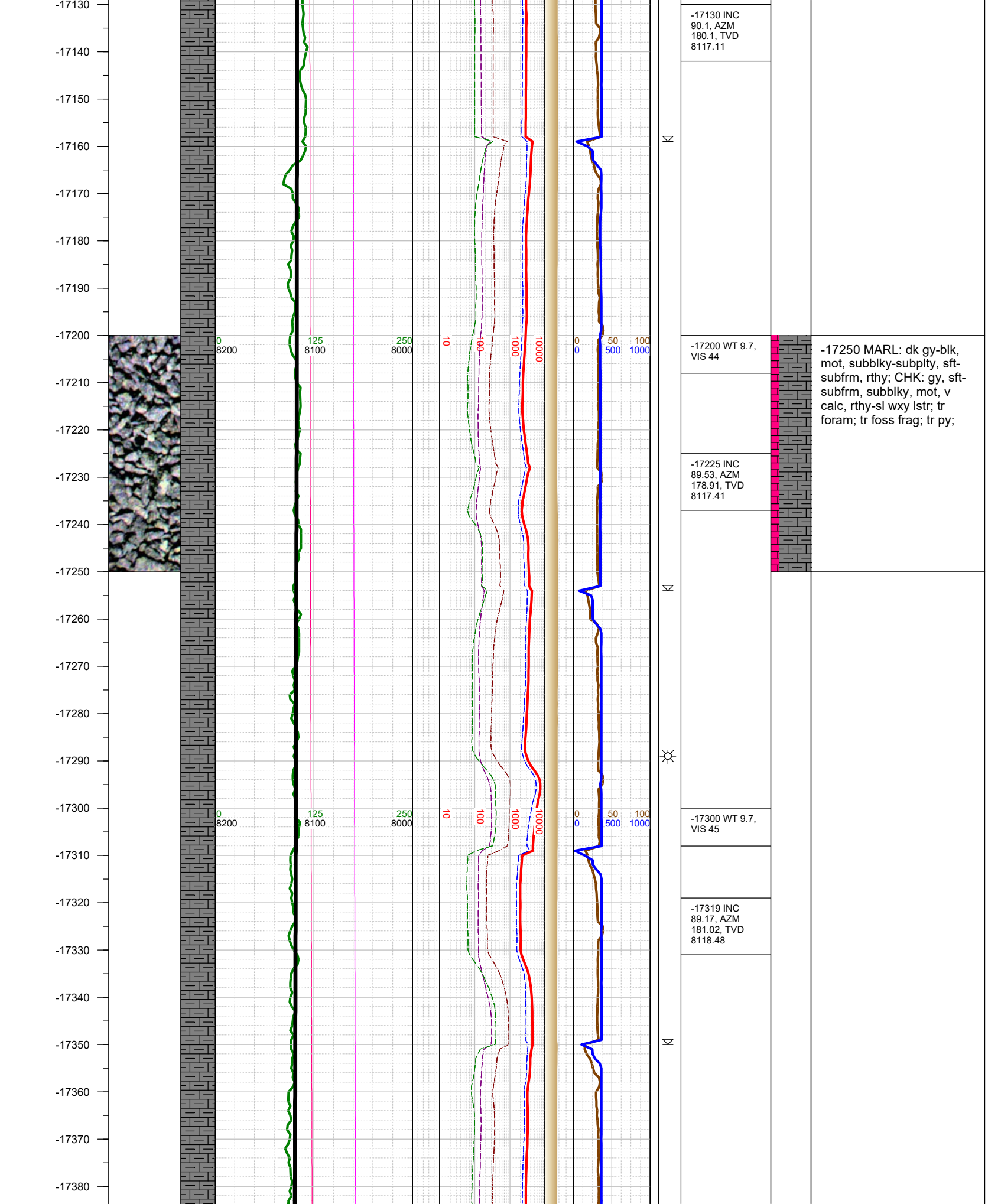
-17035 INC 89.88, AZM 180.67, TVD 8117.09
-17100 WT 9.7, VIS 44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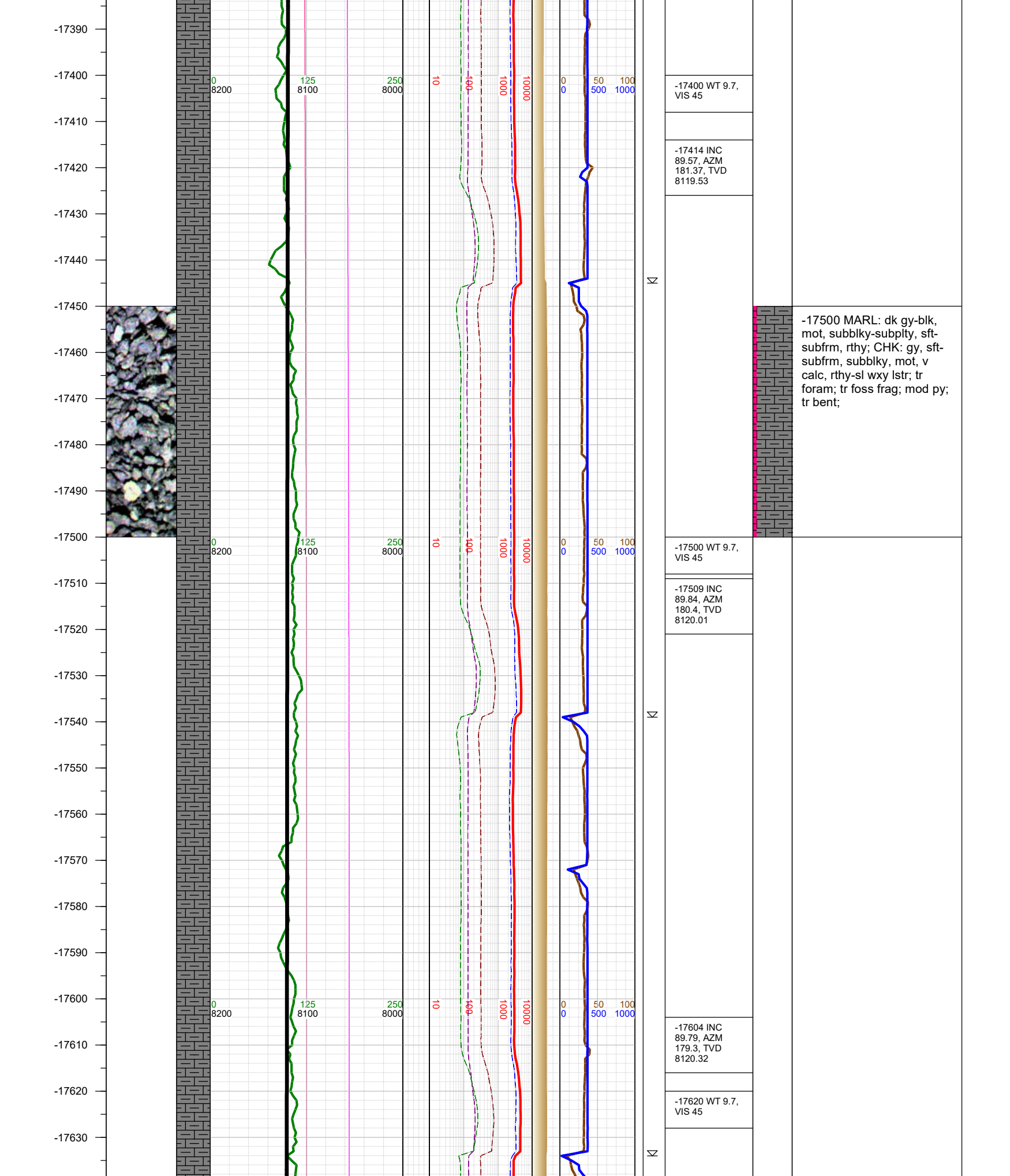
-17200 WT 9.7, VIS 44
-17225 INC 89.53, AZM 178.91, TVD 8117.41
-17300 WT 9.7, VIS 45
-17319 INC 89.17, AZM 181.02, TVD 8118.48
-17250 MARL: dk gy-blk, mot, subblky-subplty, sft-subfrm, rthy; CHK: gy, sft-subfrm, subblky, mot, v calc, rthy-sl wxy lstr; tr foram; tr foss frag; tr py;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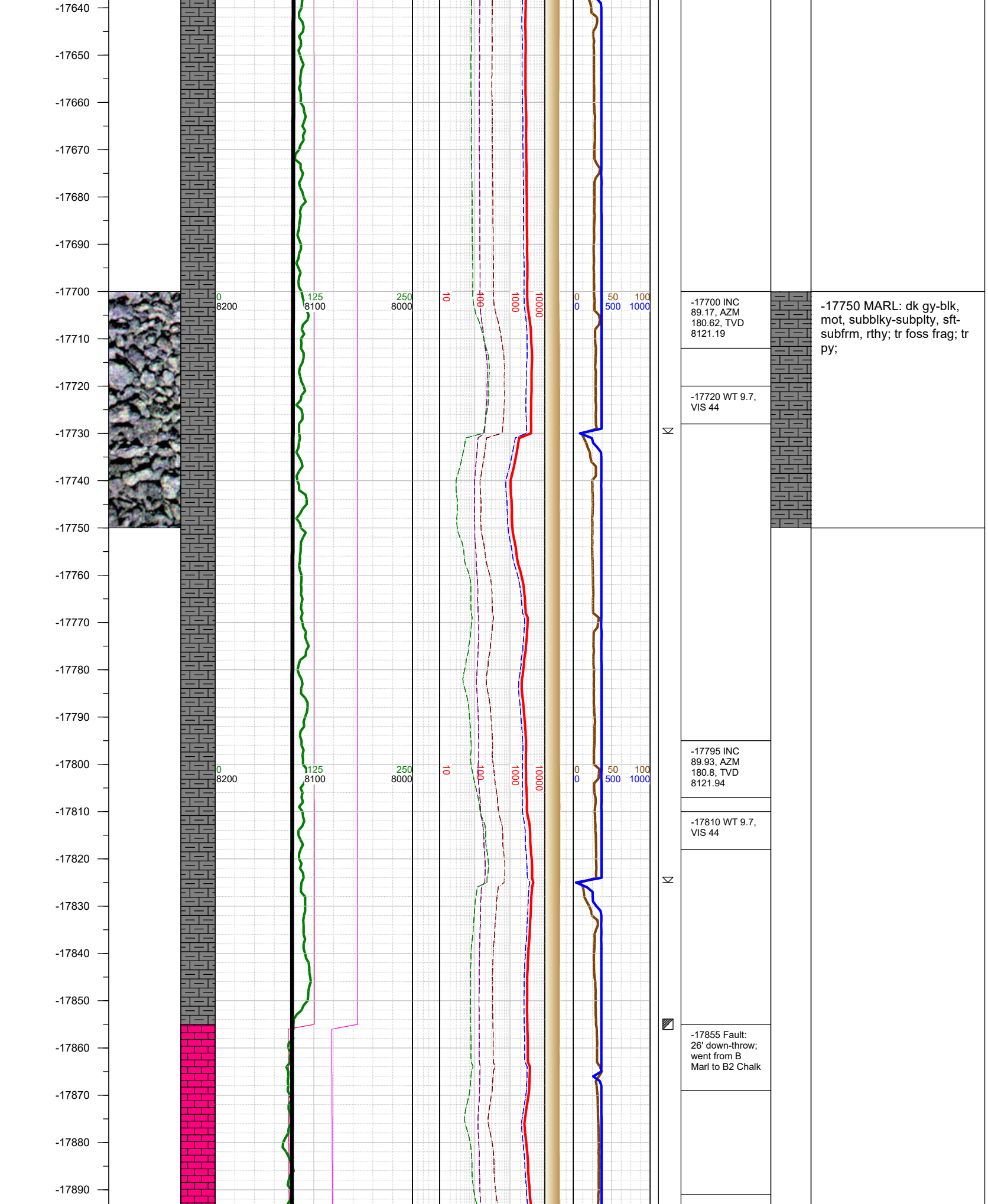
-17400 WT 9.7, VIS 45
-17414 INC 89.57, AZM 181.37, TVD 8119.53
-17500 MARL: dk gy-blk, mot, subblky-subplty, sft-subfrm, rthy; CHK: gy, sft-subfrm, subblky, mot, v calc, rthy-sl wxy lstr; tr foram; tr foss frag; mod py; tr bent;
-17500 WT 9.7, VIS 45
-17509 INC 89.84, AZM 180.4, TVD 8120.01
-17604 INC 89.79, AZM 179.3, TVD 8120.32
-17620 WT 9.7, VIS 45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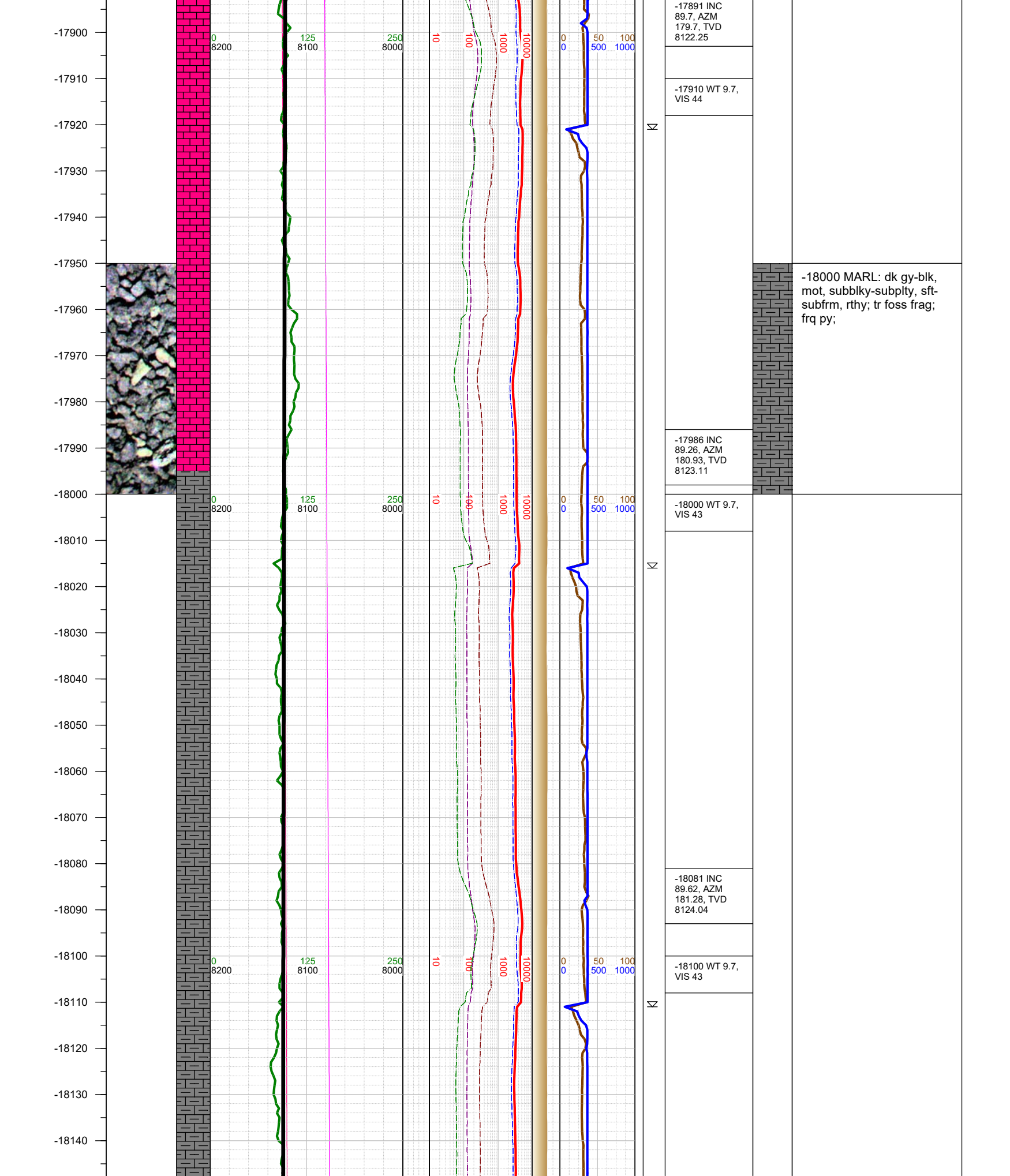
-17700 INC 89.17, AZM 180.62, TVD 8121.19
-17720 WT 9.7, VIS 44
-17750 MARL: dk gy-blk, mot, subblky-subplty, sft-subfrm, rthy; tr foss frag; tr py;
-17795 INC 89.93, AZM 180.8, TVD 8121.94
-17810 WT 9.7, VIS 44
-17855 Fault: 26' down-throw; went from B Marl to B2 Chalk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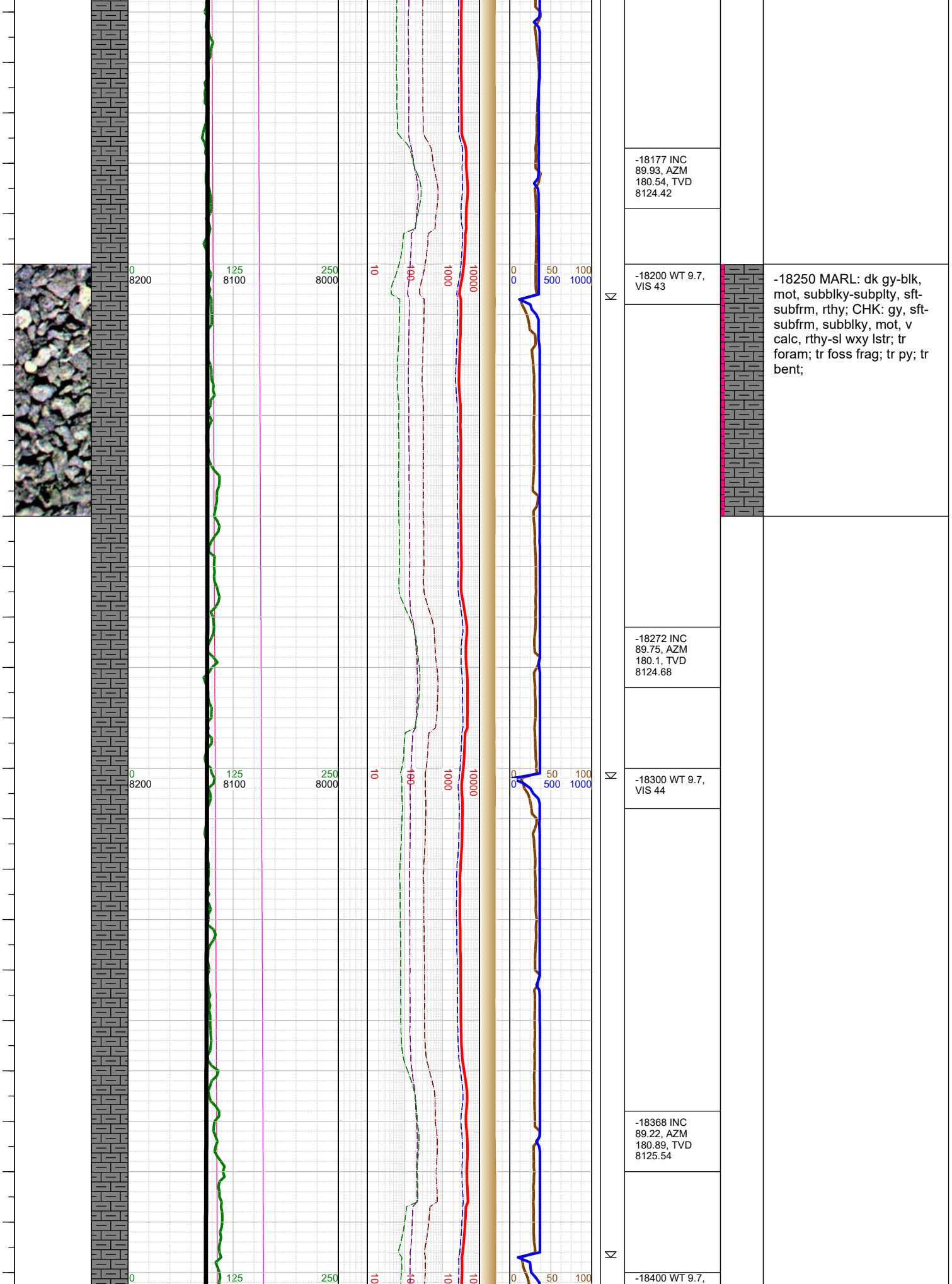
-17891 INC 89.7, AZM 179.7, TVD 8122.25
-17910 WT 9.7, VIS 44
-17986 INC 89.26, AZM 180.93, TVD 8123.11
-18000 WT 9.7, VIS 43
-18081 INC 89.62, AZM 181.28, TVD 8124.04
-18100 WT 9.7, VIS 43
-18000 MARL: dk gy-blk, mot, subblky-subplty, sft-subfrm, rthy; tr foss frag; frq py;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-18177 INC 89.93, AZM 180.54, TVD 8124.42
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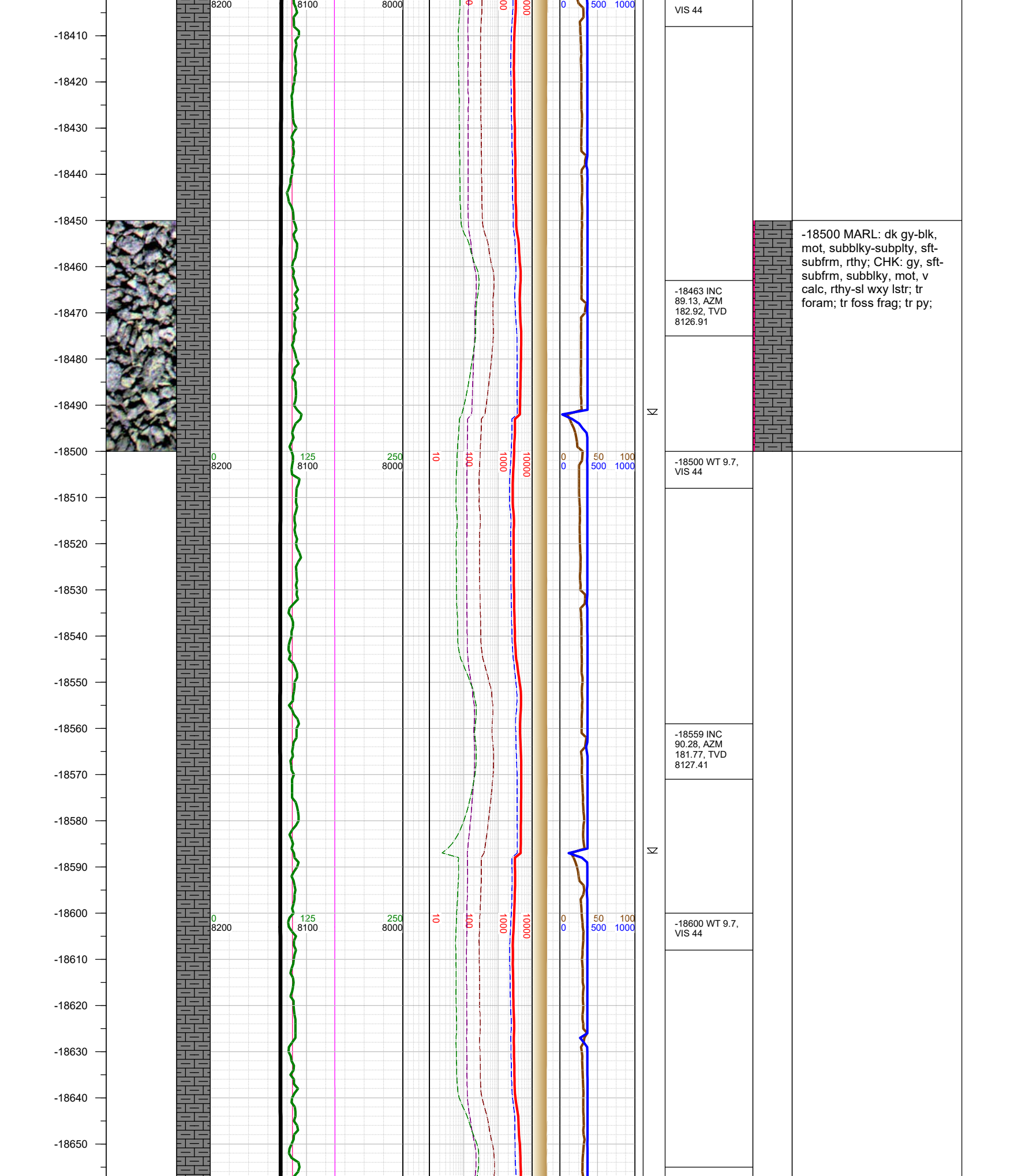
-18250 MARL: dk gy-blk, mot, subblky-subplty, sft-subfrm, rthy; CHK: gy, sft-subfrm, subblky, mot, v calc, rthy-sl wxy lstr; tr foram; tr foss frag; tr py; tr bent;
-18272 INC 89.75, AZM 180.1, TVD 8124.68
-18300 WT 9.7, VIS 44
-18368 INC 89.22, AZM 180.89, TVD 8125.54
-18400 WT 9.7,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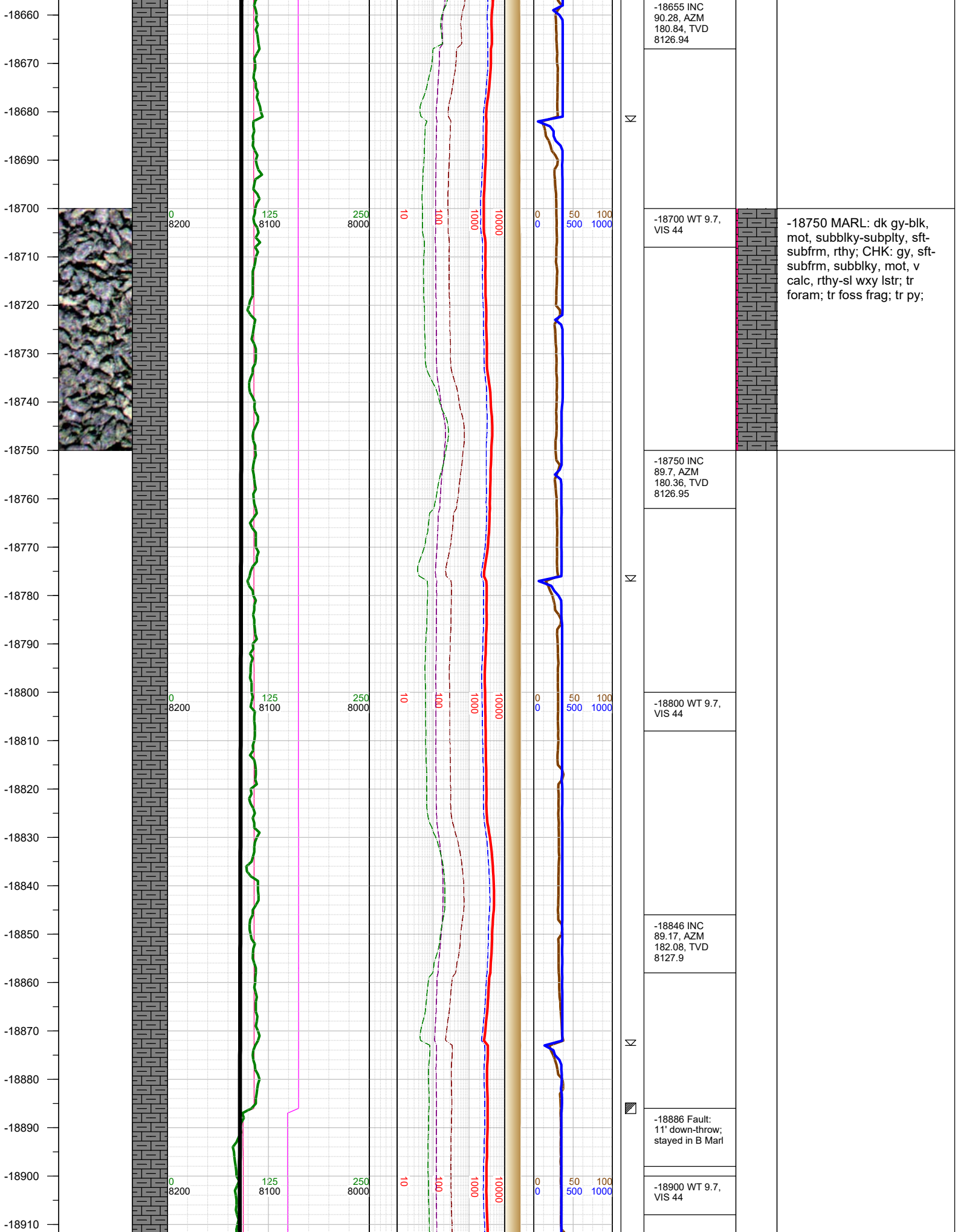
-18463 INC 89.13, AZM 182.92, TVD 8126.91
-18500 WT 9.7, VIS 44
-18559 INC 90.28, AZM 181.77, TVD 8127.41
-18600 WT 9.7, VIS 44
-18500 MARL: dk gy-blk, mot, subblky-subplty, sft-subfrm, rthy; CHK: gy, sft-subfrm, subblky, mot, v calc, rthy-sl wxy lstr; tr foram; tr foss frag; tr py;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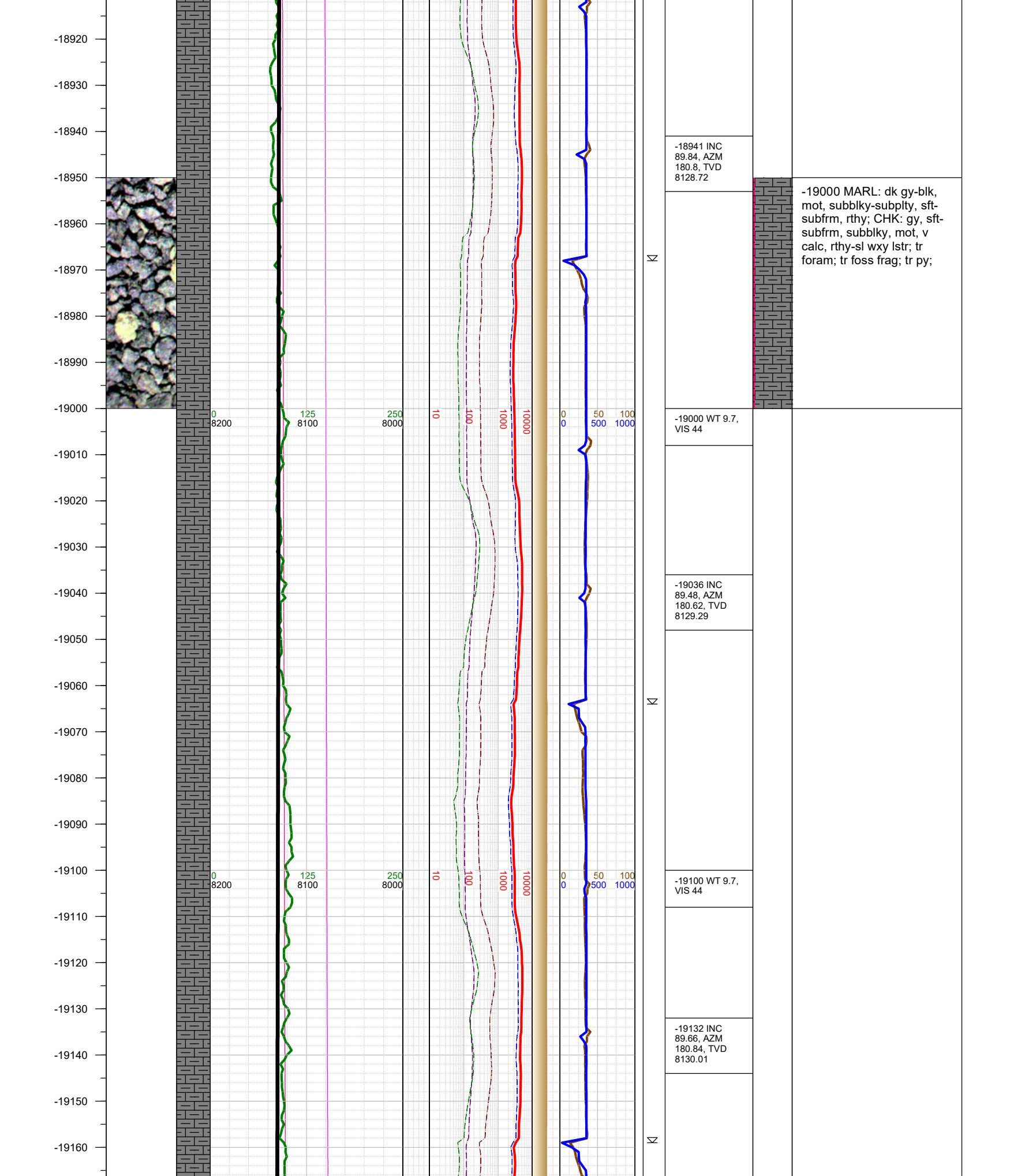
-18655 INC 90.28, AZM 180.84, TVD 8126.94
-18700 WT 9.7, VIS 44
-18750 MARL: dk gy-blk, mot, subblky-subplty, sft-subfrm, rthy; CHK: gy, sft-subfrm, subblky, mot, v calc, rthy-sl wxy lstr; tr foram; tr foss frag; tr py;
-18750 INC 89.7, AZM 180.36, TVD 8126.95
-18800 WT 9.7, VIS 44
-18846 INC 89.17, AZM 182.08, TVD 8127.9
-18886 Fault: 11' down-throw; stayed in B Marl
-18900 WT 9.7, VIS 44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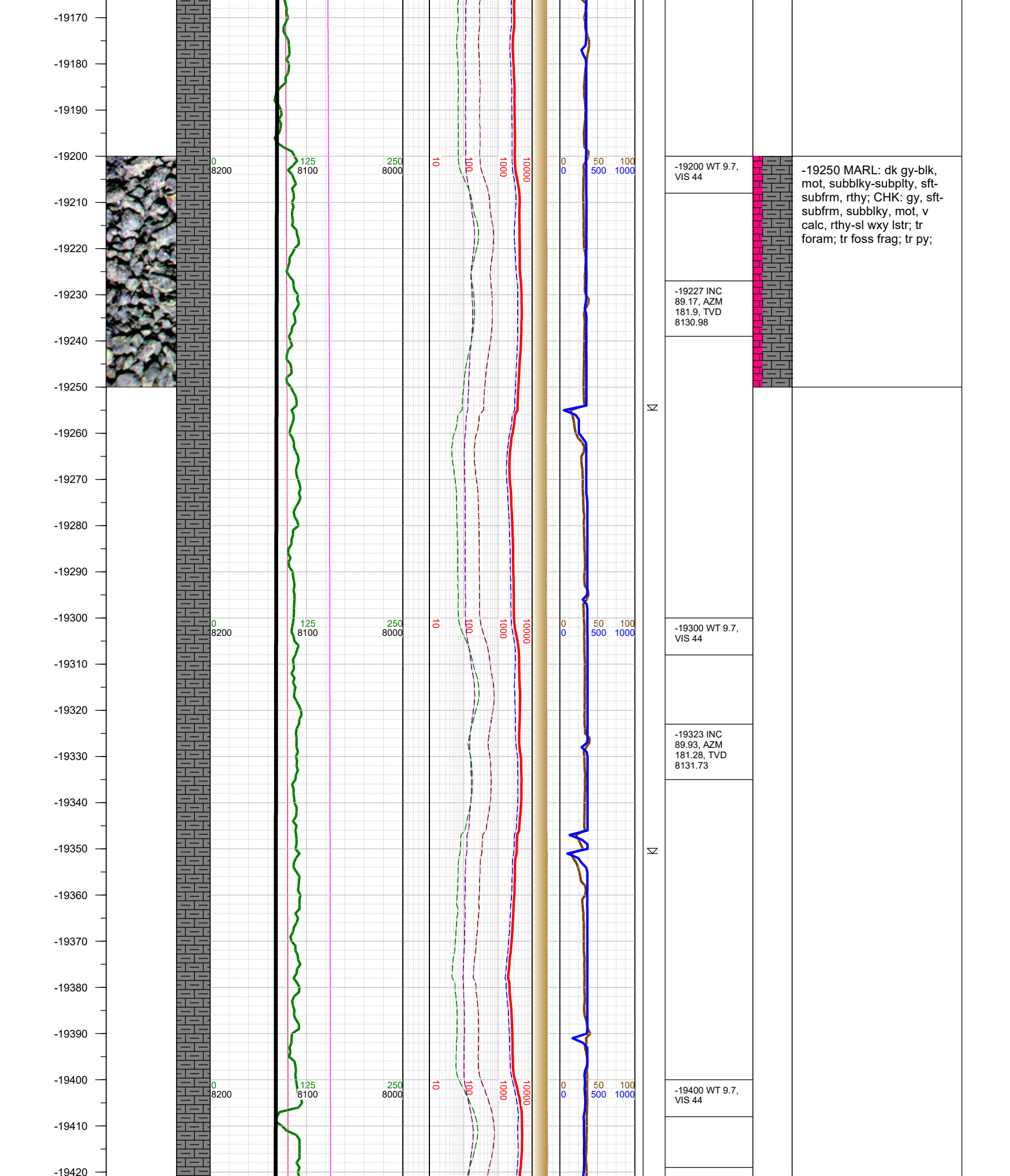
-18941 INC 89.84, AZM 180.8, TVD 8128.72
-19000 MARL: dk gy-blk, mot, subblky-subplty, sft-subfrm, rthy; CHK: gy, sft-subfrm, subblky, mot, v calc, rthy-sl wxy lstr; tr foram; tr foss frag; tr py;
-19000 WT 9.7, VIS 44
-19036 INC 89.48, AZM 180.62, TVD 8129.29
-19100 WT 9.7, VIS 44
-19132 INC 89.66, AZM 180.84, TVD 8130.01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-19200 WT 9.7, VIS 44
-19227 INC 89.17, AZM 181.9, TVD 8130.98
-19250 MARL: dk gy-blk, mot, subblky-subplty, sft-subfrm, rthy; CHK: gy, sft-subfrm, subblky, mot, v calc, rthy-sl wxy lstr; tr foram; tr foss frag; tr py;
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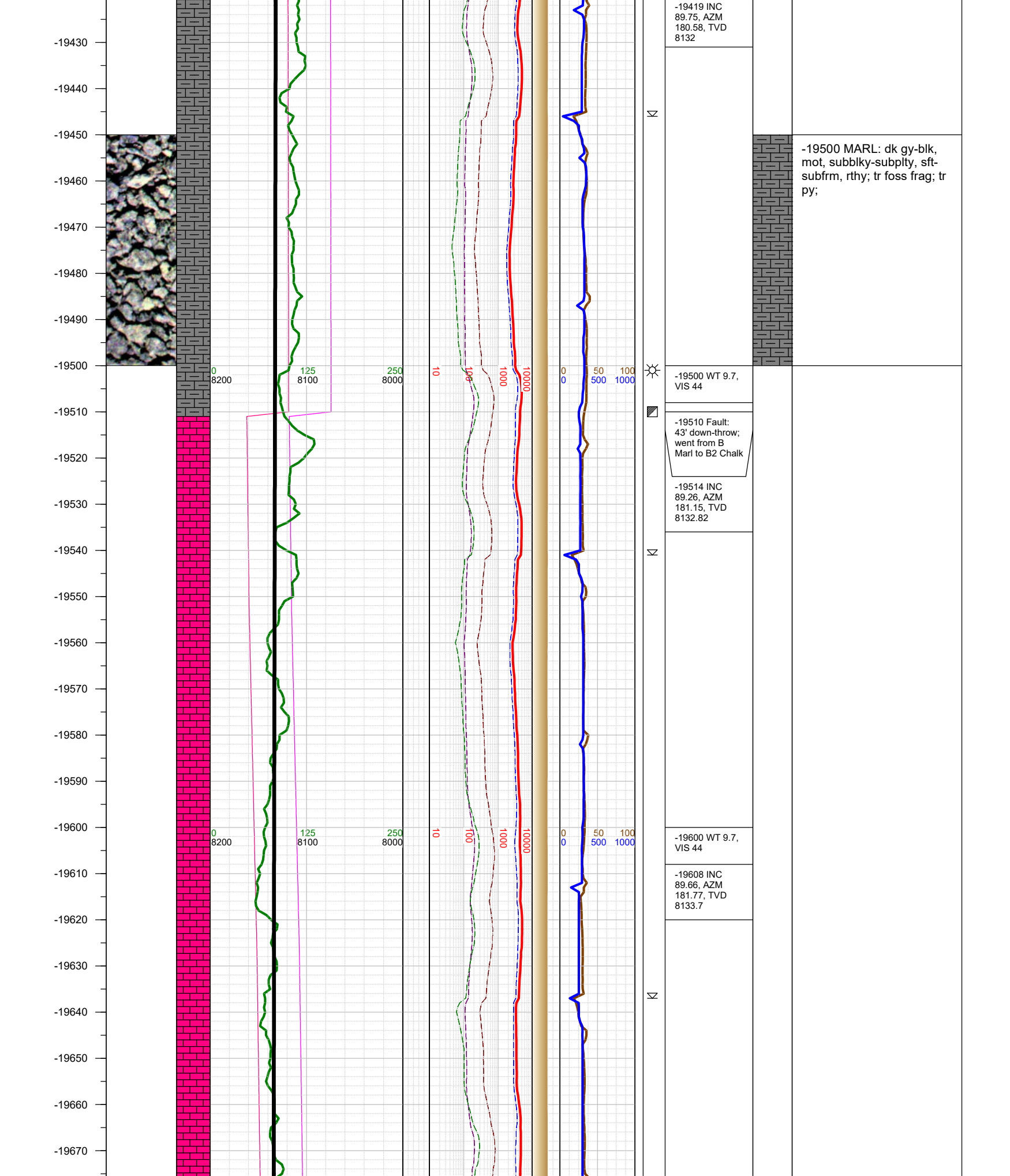
-19323 INC 89.93, AZM 181.28, TVD 8131.73
-19400 WT 9.7, VIS 44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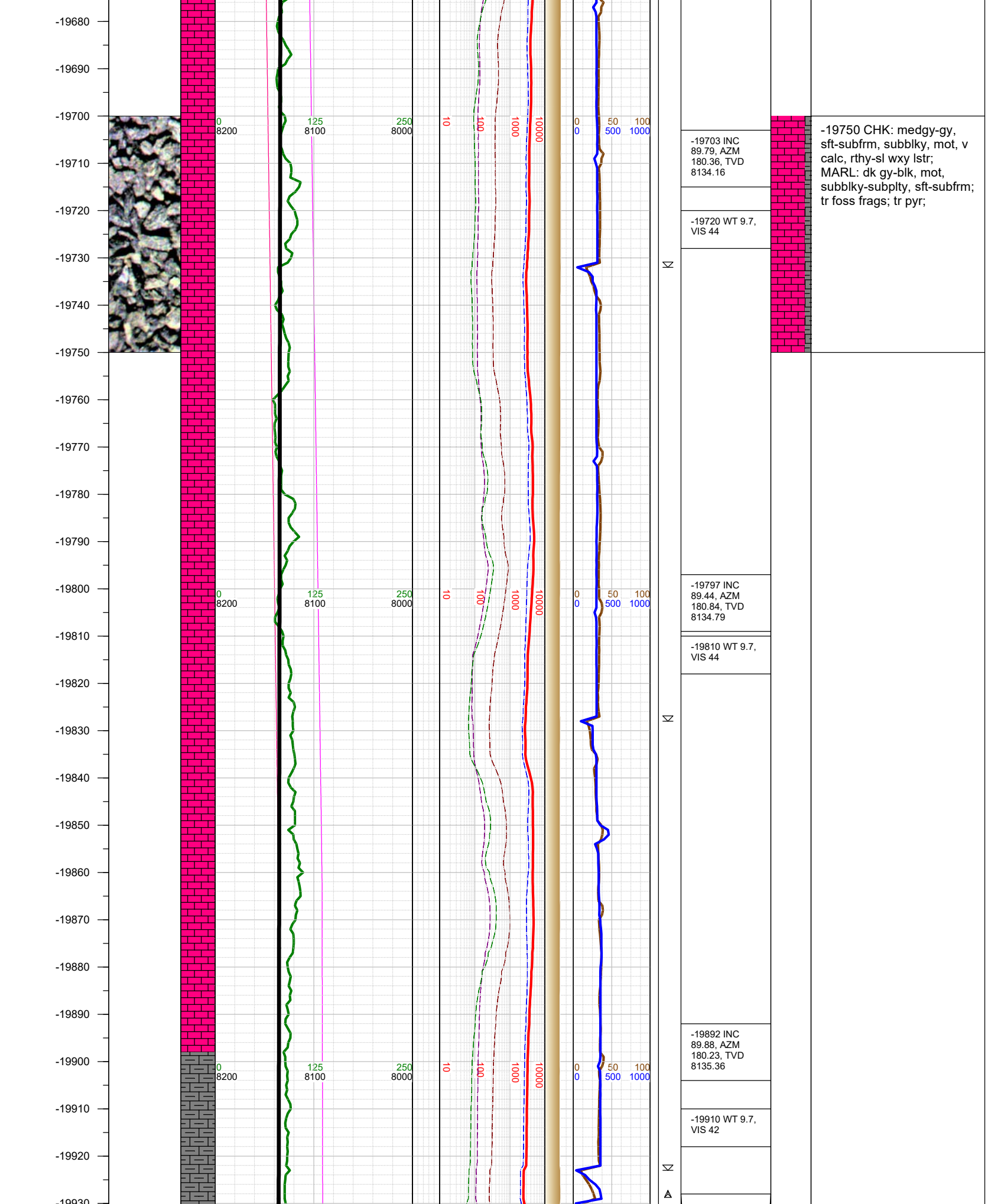
-19500 MARL: dk gy-blk, mot, subblky-subplty, sft-subfrm, rthy; tr foss frag; tr py;
-19500 WT 9.7, VIS 44
-19510 Fault: 43' down-throw; went from B Marl to B2 Chalk
-19514 INC 89.26, AZM 181.15, TVD 8132.82
-19600 WT 9.7, VIS 44
-19608 INC 89.66, AZM 181.77, TVD 8133.7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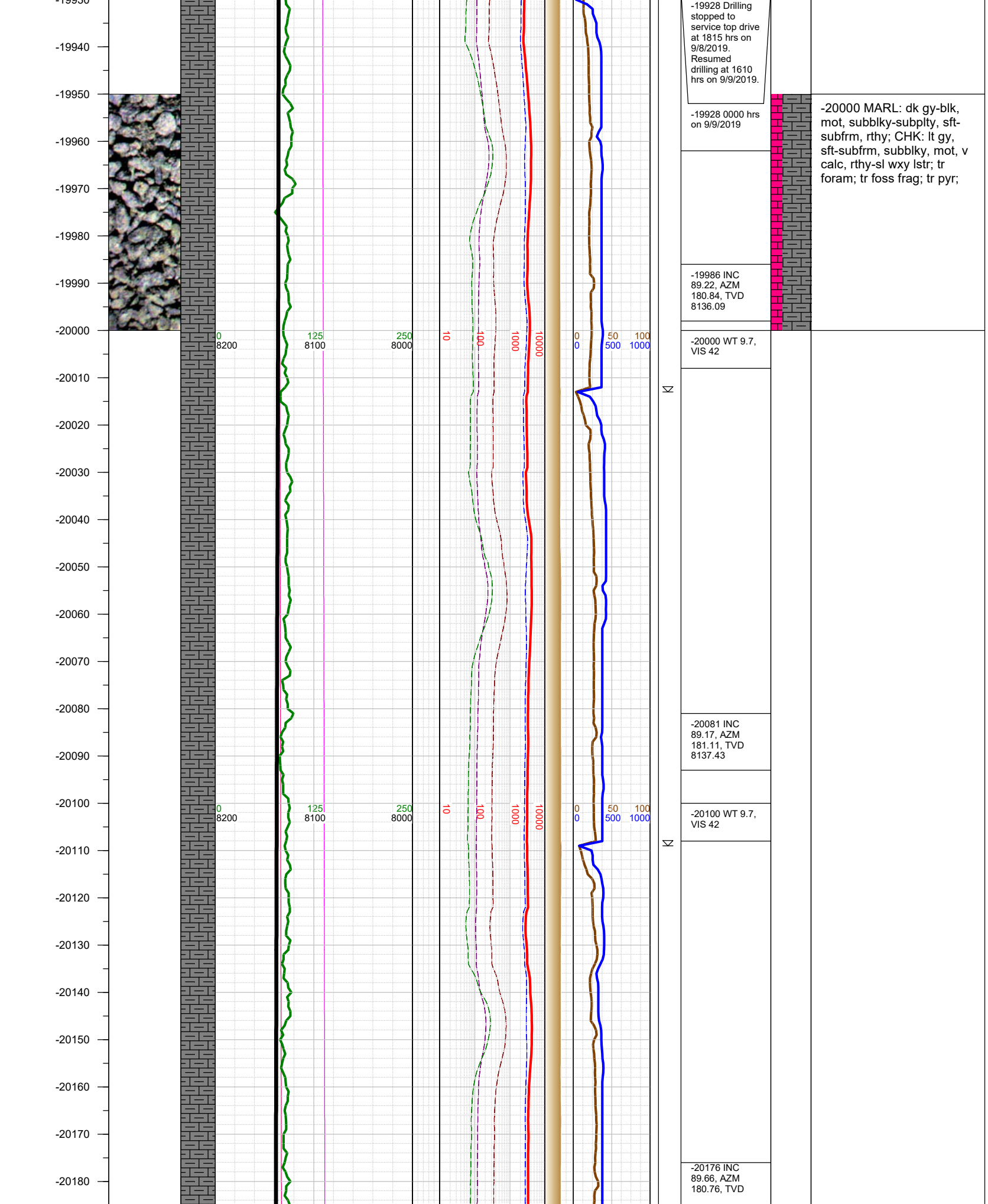
-19703 INC 89.79, AZM 180.36, TVD 8134.16
-19720 WT 9.7, VIS 44
-19750 CHK: medgy-gy, sft-subfrm, subblky, mot, v calc, rthy-sl wxy lstr; MARL: dk gy-blk, mot, subblky-subplty, sft-subfrm; tr foss frags; tr pyr;
-19797 INC 89.44, AZM 180.84, TVD 8134.79
-19810 WT 9.7, VIS 44
-19892 INC 89.88, AZM 180.23, TVD 8135.36
-19910 WT 9.7, VIS 42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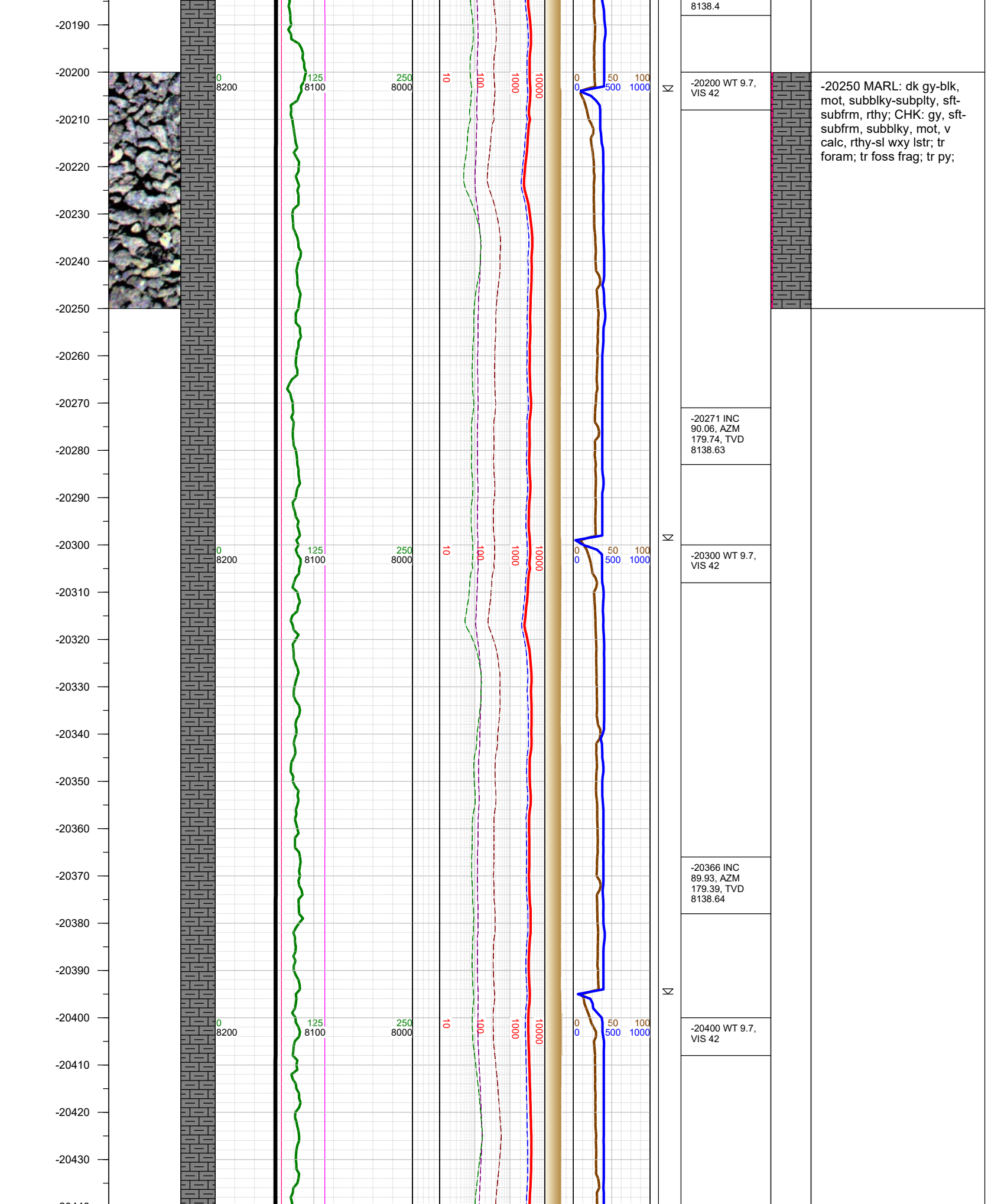
-20020
-20030
-20040
-20050
-20060
-20070
-20080
-20090
-20100
-20110
-20120
-20130
-20140
-20150
-20160
-20170
-20180
0
8200
125
8100
250
8000
10
100
1000
10000
0
0
50
500
100
1000
-19928 Drilling stopped to service top drive at 1815 hrs on 9/8/2019. Resumed drilling at 1610 hrs on 9/9/2019.
-19928 0000 hrs on 9/9/2019
-19986 INC 89.22, AZM 180.84, TVD 8136.09
-20000 WT 9.7, VIS 42
-20081 INC 89.17, AZM 181.11, TVD 8137.43
-20100 WT 9.7, VIS 42
-20176 INC 89.66, AZM 180.76, TVD
-20000 MARL: dk gy-blk, mot, subblky-subplty, sft-subfrm, rthy; CHK: lt gy, sft-subfrm, subblky, mot, v calc, rthy-sl wxy lstr; tr foram; tr foss frag; tr pyr;


-20190
-20200
-20210
-20220
-20230
-20240
-20250
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-20270
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-20300
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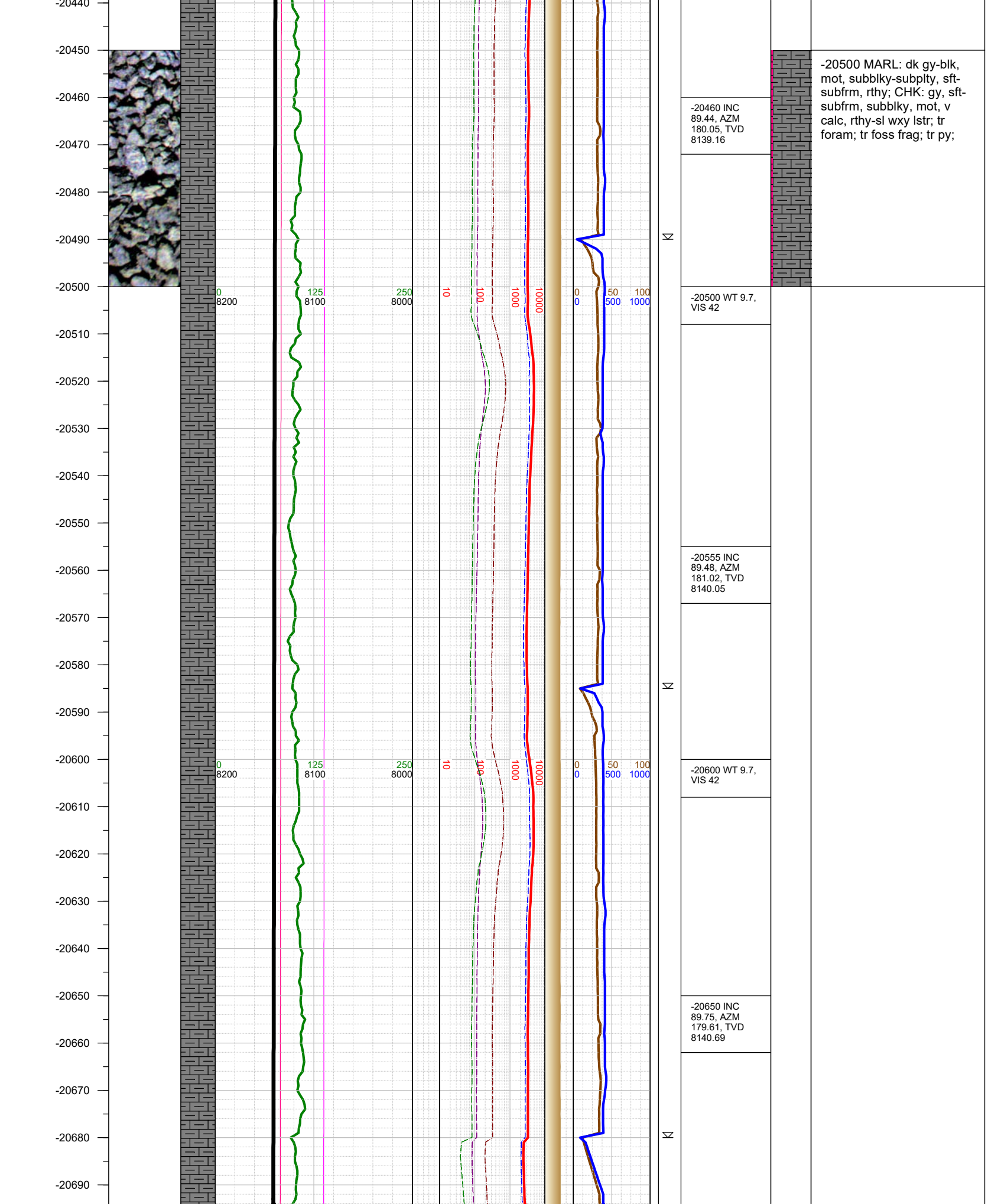
-20320
-20330
-20340
-20350
-20360
-20370
-20380
-20390
-20400
-20410
-20420
-20430
0
8200
125
8100
250
8000
10
100
1000
10000
0
50
100
500
1000
KI
8138.4
-20200 WT 9.7, VIS 42
-20250 MARL: dk gy-blk, mot, subblky-subplty, sft-subfrm, rthy; CHK: gy, sft-subfrm, subblky, mot, v calc, rthy-sl wxy lstr; tr foram; tr foss frag; tr py;
-20271 INC 90.06, AZM 179.74, TVD 8138.63
-20300 WT 9.7, VIS 42
-20366 INC 89.93, AZM 179.39, TVD 8138.64
-20400 WT 9.7, VIS 42


-20440
-20450
-20460
-20470
-20480
-20490
-20500
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-20570
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-20600
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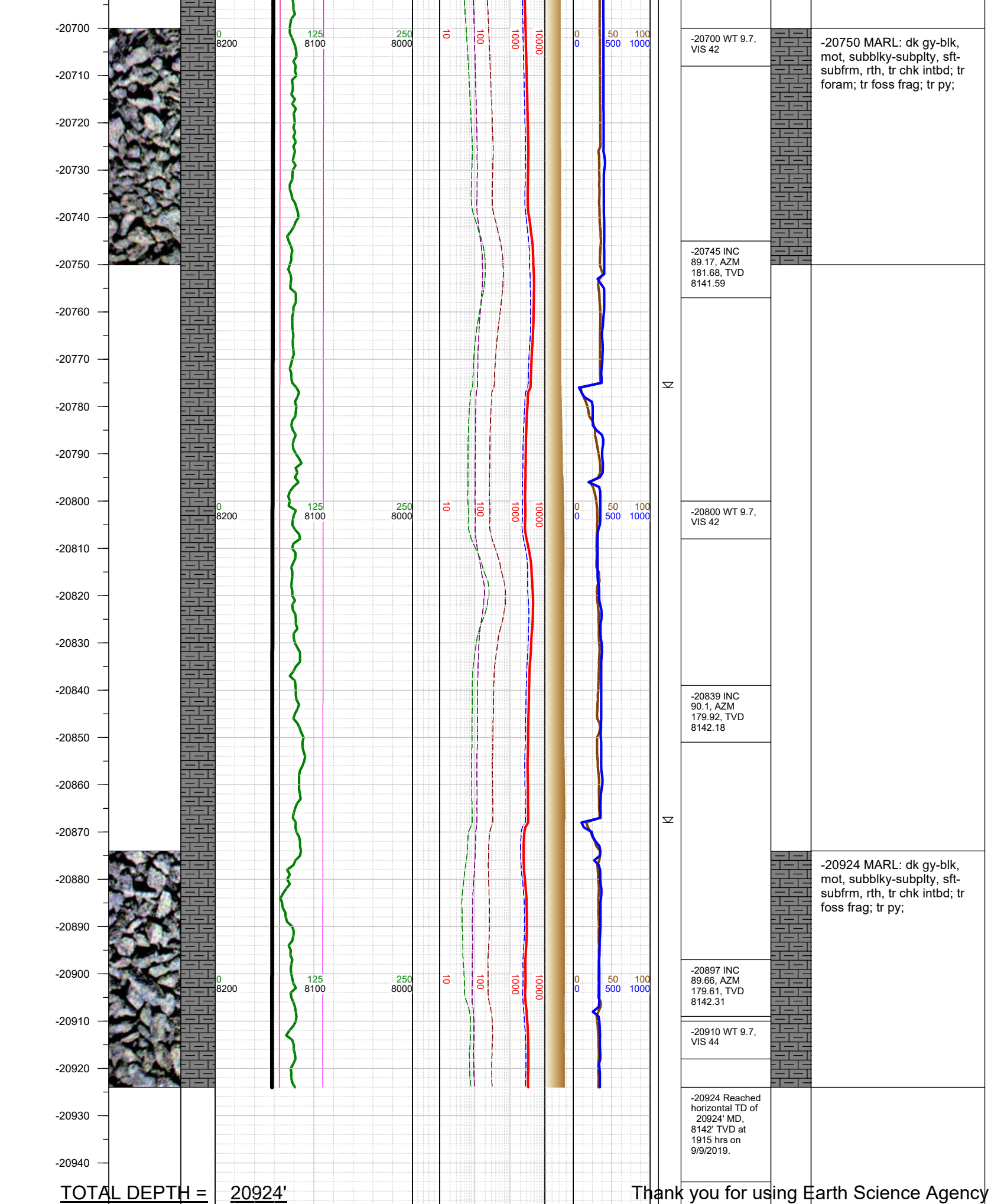
-20680
-20690
0
8200
125
8100
250
8000
10
100
1000
10000
0
0
50
500
100
1000
KI
-20460 INC 89.44, AZM 180.05, TVD 8139.16
-20500 MARL: dk gy-blk, mot, subblky-subplty, sft-subfrm, rthy; CHK: gy, sft-subfrm, subblky, mot, v calc, rthy-sl wxy lstr; tr foram; tr foss frag; tr py;
-20500 WT 9.7, VIS 42
-20555 INC 89.48, AZM 181.02, TVD 8140.05
-20600 WT 9.7, VIS 42
-20650 INC 89.75, AZM 179.61, TVD 8140.69



TOTAL DEPTH = 20924'

Thank you for using Earth Science Agency