



Scale: 5" / 100'
Measured Depth Log

Well Name Pronghorn T-P-3HNB

Location SE SEC 03 T5N R61W

State COLORADO

Country USA

API Number 05-123-36416-00

County WELD

Rig Number 128

Field WILDCAT

Spud Date 3/23/2013

Drilling Completed 4/1/2013

Surface Coordinates 430 FSL X 1222 FEL 40.4243/-104.18943

Bottom Hole Coordinates 531 FNL X 1365 FEL (LAT:40.42440, -104.18994)

Ground Elevation 4,753

K.B. Elevation 4,768

Logged Interval 5,700 To 10,756

Total Depth 10,756

Formation NIOBRARA B-CHALK

Type of Drilling Fluid H2O, LSND

Company Bonanza Creek
Address 410 17th Street
Denver, CO 802

Name Paul McKay
Company Bonanza Creek
410 17th Street
Denver, CO 802

Wellsite Geologists



Operator

Energy Inc.

Suite 1500
202

Geologist

Energy Inc.

Suite 1500
202

Other

Kevin Geraghty
David Brooks

Rock Types

CONGLOMERATE	METAMORPHIC	SHALY SILTSTONE
DOLOMITE	NO SAMPLE	SILTY SHALE
GRANITE	SALT	SILTSTONE
GYPSUM	SANDSTONE	TILL
IGNEOUS	SALT-PEPPER SALT	TUFF
SIDERITE or LIMONITE	SHALE	WELDED TUFF
LIMESTONE	SHALE COLORED	
MARLSTONE	SHALE GRAY	
	SHALY SANDSTONE	

Accessories

Fossils	F FOSSIL	ARGILLACEOUS	GLAUCONITE	TUFFACEOUS
GASTROPOD	ARGILLITE GRAIN	GYPSIFEROUS		
ALGAE	OOLITE	B BENTONITE	HEAVY MINERAL	
AMPHIPORA	OSTRACOD	BITUMENOUS SUBSTANCE	INOCERAMUS	ANHYDRITE STRINGER
BELEMITE	PELECYPOD	BRECCIA FRAGMENTS	KAOLIN	BENTONITE STRINGER
BIOCLASTIC	PELLET	CALCAREOUS	MARLSTONE	COAL STRINGER
BRYOZOA	PISOLITE	CARBONACEOUS FLAKES	MINERAL CRYSTALS	DOLOMITE STRINGER
CEPHALOPOD	PLANT REMAINS	CHTDK	NODULES	GYPSUM STRINGER
CORAL	PLANT SPORES	CHTLT	PHOSPHATE PELLET:	LIMESTONE STRINGER
CRINOID	SCAPHOPOD	COAL - THIN BEDS	PYRITE	MARLSTONE (CALC) STRG
ECHINOID	STROMATOPOROID	DOLOMITIC	SALT CAST	MARLSTONE (DOL) STRG
FISH		FELDSPAR	SANDY	SANDSTONE STRINGER
FORAMINIFERA	ANHYDRITIC	FERRUGINOUS PELLET	SILICEOUS	SHALE STRINGER
			SILTY	SILTSTONE STRINGER

Other Symbols

Oil Show	MOLDIC	FAULT	WIRELINE TESTED - LEFT	E EARTHY
DEAD	ORGANIC	FORMATION TOP	WIRELINE TESTED - RT	FINELYXLN
EVEN	PINPOINT	GAS SHOW	MINDEPTH MN DEPTH	GRAINSTONE
QUESTIONABLE	VUGGY			L LITHOGRAPHIC
Engineering				
SPOTTED STAINING	BIT	NORMAL FAULT	ANGULAR	MX MICROXLN
	CONNECTION (LEFT)	OIL SHOW	ROUNDED	MS MUDSTONE
E EARTHY	CONNECTION (RIGHT)	OVERTURNED STRATA	SUBANG	PS PACKSTONE
FENESTRAL	CONNECTION GAS	REVERSE FAULT	SUBRND	WS WACKSTONE
	CONNECTION (LEFT)	SIDEWALL CORE (LEFT)		
	CONNECTION (RIGHT)	SIDEWALL CORE (RIGHT)		
Textures				
FRACTURE	CORE - LOST	SLIDE	BOUNDSTONE	M MODERATE
INTERCRYSTALLINE	CORE - RECOVERED	SURVEY	CHALKY	P POOR
INTEROOLITIC	DST INTERVAL	TRIP GAS	CRYPTOXLN	W WELL
Sorting				

Slide/Rotate

ROP
ROF
GAMMA

Bit Data
 Bit #: 3
 Type: -HE04JMR5V
 Size: 8.75
 Depth In: 5,623 '
 Jets: 3/20
 S/N: 1335500

Total Gas & Chromatograph

COLUMBINE LOGGING
RIGGED UP ON
03/27/2013 MANNED
2-PERSON LOGGING
WITH BLOODHOUND GAS
CHROMATOGRAPH UNIT
#0312 BEGAN ON
03/27/2013

Depth Labels

% Lith

5,670	5,680	5,690	5,700	5,710	5,720	5,730	5,740	5,750	5,760	5,770	5,780	5,790	5,800	5,810	5,820	5,830	5,840	5,850
<p>5,670 5,680 5,690 5,700 5,710 5,720 5,730 5,740 5,750 5,760 5,770 5,780 5,790 5,800 5,810 5,820 5,830 5,840 5,850</p>																		

Well Bore
TV D —

TV_D (ft)

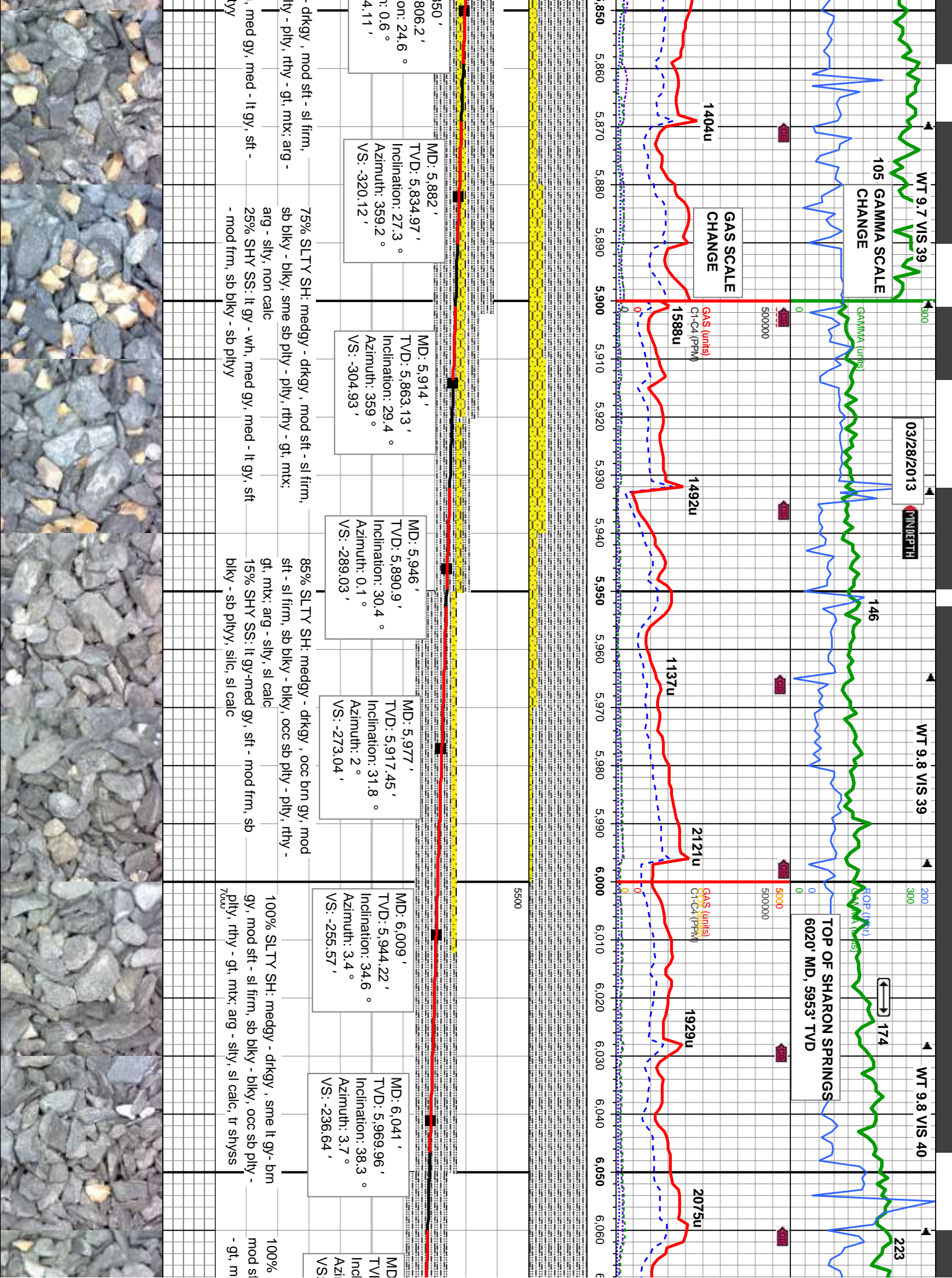
MD: 5.723	MD: 5.755	MD: 5.787	MD: 5.818	MD: 5.8
TVD: 5,686.61'	TVD: 5,747.47'	TVD: 5,747.85'	TVD: 5,776.82'	TVD: 5,776.82'
Inclination: 13.5°	Inclination: 17.1°	Inclination: 19.5°	Inclination: 22.1°	Inclination: 22.1°
Azimuth: 359°	Azimuth: 2.3°	Azimuth: 3.9°	Azimuth: 2.7°	Azimuth: 2.7°
VS: -376.18'	VS: -367.75'	VS: -357.74'	VS: -346.77'	VS: -336.77'
80% SLTY SH: medgy - drtgy, mod sft - sl firm, sb biky - biky, sme sb pty - pty, rthy - gt, mtk: arg - biky, sme sb pty - pty, rthy - gt, mtk: arg	75% SLTY SH: medgy - drtgy, mod sft - sl firm, sb biky - biky, sme sb pty - pty, rthy - gt, mtk: arg	75% SLTY SH: medgy - drtgy, mod sft - sl firm, sb biky - biky, sme sb pty - pty, rthy - gt, mtk: arg	85% SLTY SH: medgy - drtgy, mod sft - sl firm, sb biky - biky, sme sb pty - pty, rthy - gt, mtk: arg	85% SLTY SH: medgy - drtgy, mod sft - sl firm, sb biky - biky, sme sb pty - pty, rthy - gt, mtk: arg
- slty, non calc	25% SHY SS: It gy - wh, med gy, med - It gy, sft - firm, sb biky - sb pty	25% SHY SS: It gy - wh, med gy, med - It gy, sft - firm, sb biky - sb pty	15% SHY SS: It gy - wh, med gy, med - It gy, sft - firm, sb biky - sb pty	15% SHY SS: It gy - wh, med gy, med - It gy, sft - firm, sb biky - sb pty
mod firm, sb biky - sb pty			7000	

Oil Show

TR
P
FR
M G M

Images





186

154

174

03/29/2013

DEPTH

TOP OF B CHALK
6373' MD 6158' TVD

85

69

4310u

4153u

5000u

4267u

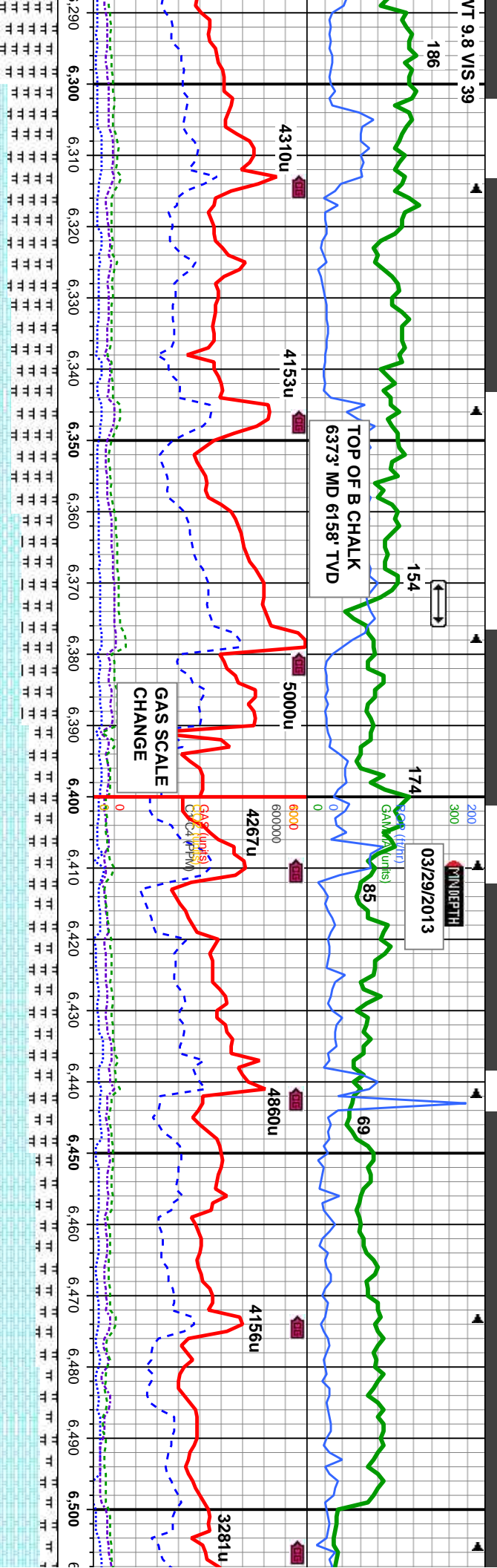
4860u

4156u

3281u

GAS SCALE
CHANGE

GAS (ppm)
GAS (ppm)
GAS (ppm)



D: 6.295 ' TVD: 6,128.49 ' Inclination: 64.5 ° Azimuth: 356.9 ° VS: -42.14 '	MD: 6.327 ' TVD: 6,141.35 ' Inclination: 68.1 ° Azimuth: 356.2 ° VS: -12.86 '	MD: 6.359 ' TVD: 6,152.87 ' Inclination: 69.7 ° Azimuth: 355.7 ° VS: 16.97 '	MD: 6.391 ' TVD: 6,163.29 ' Inclination: 72.3 ° Azimuth: 355.5 ° VS: 47.19 '	MD: 6.423 ' TVD: 6,172.05 ' Inclination: 75.9 ° Azimuth: 355.8 ° VS: 77.93 '	MD: 6.454 ' TVD: 6,178.42 ' Inclination: 80.4 ° Azimuth: 356.5 ° VS: 108.24 '	MD: 6.482 ' TVD: 6,181.8 ' Inclination: 85.1 ° Azimuth: 357.6 ° VS: 136.05 '
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70% MRLST: blk - dk gy, blkly - sb blkly, sme sb ply, sft - firm, rthy, mtx; aren - silty, mod calc, 30% CHK: lt gy - med gy, occ wht-crm, mod mot, blkly - sb blkly, occ sb ply, mod sft-mod firm, chky - sbwxy, mtx; v calc; 50% MRLST: blk - dk gy, blkly - sb blkly, sme sb ply, sft - firm, rthy, mtx; aren - silty, mod calc, slow bishwh mky, thn uneven sbwxy, mtx; v calc, slow bishwh mky, thn uneven yel-amb resdl ring, sl bl flr	50% CHK: lt gy - med gy, occ wht-crm, mod mot, blkly - sb blkly, occ sb ply, mod sft-mod firm, chky - sbwxy, mtx; v calc; 50% MRLST: blk - dk gy, blkly - sb blkly, sme sb ply, sft - firm, rthy, mtx; aren - silty, mod calc, slow bishwh mky, thn uneven yel-amb resdl ring, sl bl flr	60% CHK: lt gy - med gy, mod mot, blkly - sb blkly, occ sb ply, mod sft-mod firm, chky - sbwxy, mtx; v calc; 40% MRLST: blk - dk gy, blkly - sb blkly, sme sb ply, sft - firm, rthy, mtx; aren - silty, mod calc, tr gy/shgn bent, tr pyr, tr cal, mod bishwh stmg, mod even yel resdl ring, mod bl flr	75% CHK: lt gy - med gy, mod mot, blkly - sb blkly, occ sb ply, mod sft-mod firm, chky - sbwxy, mtx; v calc; 25% MRLST: blk - dk gy, blkly - sb blkly, sme sb ply, sft - firm, rthy, mod calc, tr gy/shgn bent, tr pyr, tr cal, mod bishwh stmg, mod even yel resdl ring, mod bl flr
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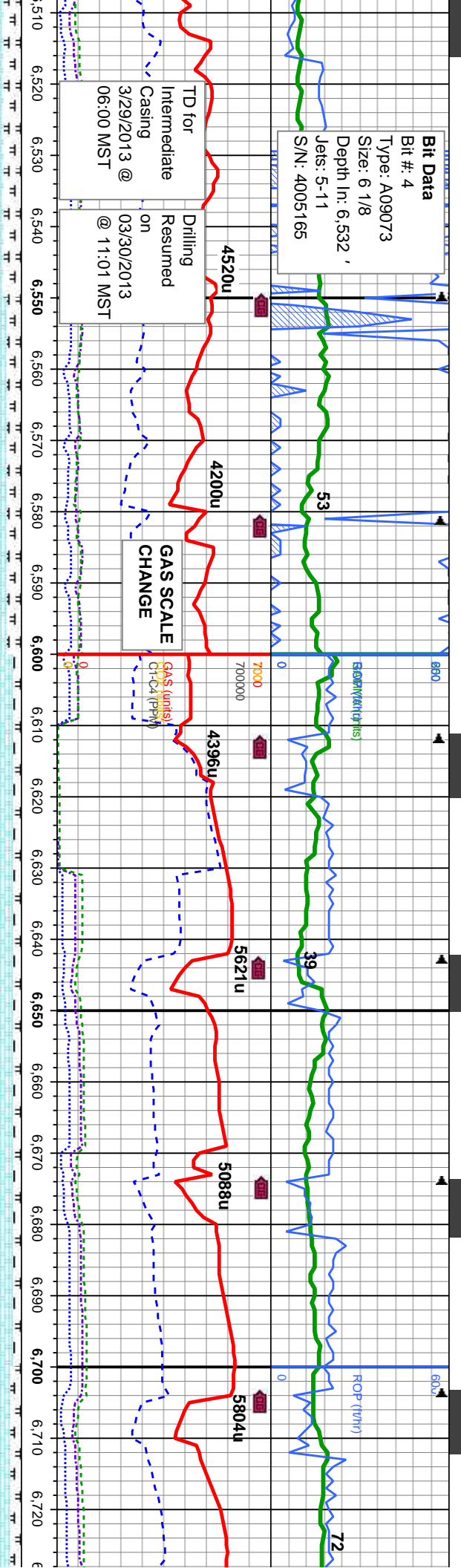


Bit Data
Bit #: 4
Type: A09073
Size: 6 1/8
Depth In: 6,532 '
Jets: 5-11
S/N: 4005165

TD for Intermediate Casing
3/29/2013 @ 06:00 MST
Drilling Resumed on 03/30/2013 @ 11:01 MST

GAS SCALE CHANGE

GAS (units)
Gr-C4 (ppm)



MD: 6,556 '
TVD: 6,185.86 '
Inclination: 88.6 °
Azimuth: 358.8 °
VS: 209.93 '

MD: 6,586 '
TVD: 6,186.57 '
Inclination: 88.7 °
Azimuth: 358.5 °
VS: 239.92 '

MD: 6,617 '
TVD: 6,187.19 '
Inclination: 89 °
Azimuth: 358.6 °
VS: 270.91 '

MD: 6,648 '
TVD: 6,187.52 '
Inclination: 89.8 °
Azimuth: 359.2 °
VS: 301.91 '

MD: 6,679 '
TVD: 6,187.52 '
Inclination: 90.2 °
Azimuth: 359.3 °
VS: 332.9 '

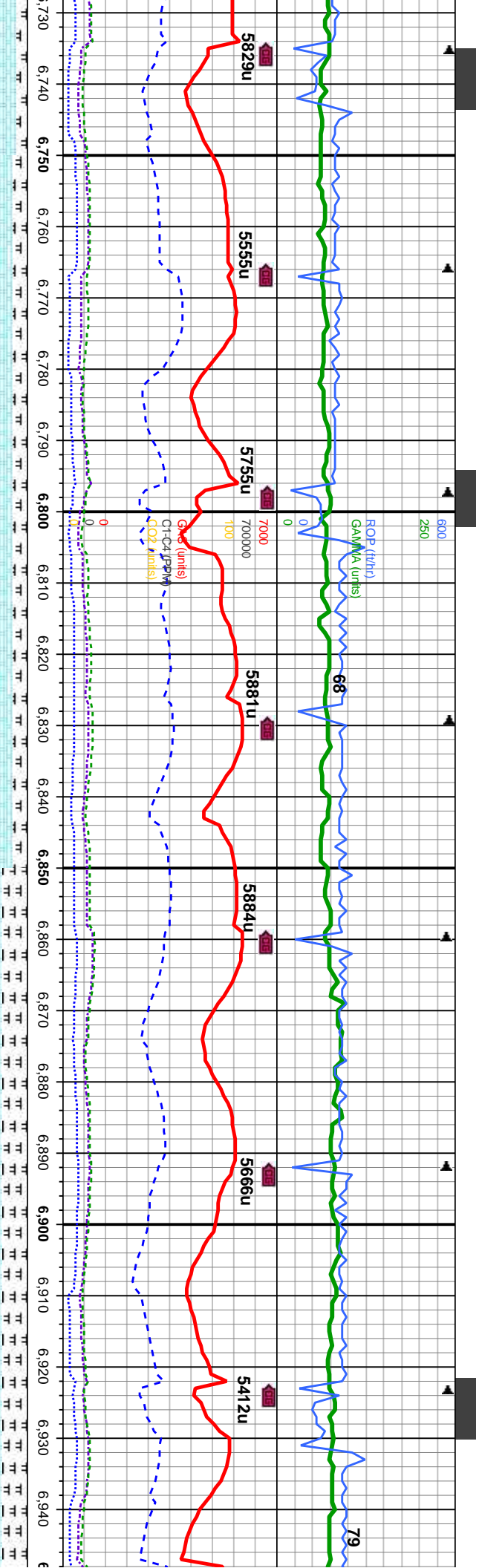
MD: 6,710 '
TVD: 6,187.38 '
Inclination: 90.3 °
Azimuth: 0.4 °
VS: 363.89 '

d gy, mod mot, blk - sb blk,
mod firm, chky - sbwxy, mt; v
blk - dk gy, blk - sb blk, sme
, mt; aren - stly, mod calc, tr
r cal, mod bishwh stmg, mod
mod bl flor

80% CHK: lt gy - med gy, mod mot, blk - sb blk, occ sb
ply, mod sft-mod firm, chky - sbwxy, mt; v calc; 20%
MRLST: blk - dk gy, blk - sb blk, sme sb ply, sft - firm,
rthy, mt; aren - stly, mod calc, tr bent, tr cal, mod bishwh
stmg, mod even yel resdl ring, mod bl flor

90% CHK: lt gy - med gy, wht-crm, mod mot, blk - sb
blk, occ sb ply, mod sft-mod firm, chky - sbwxy, mt; v
calc; 10% MRLST: blk - dk gy, blk - sb blk, sme sb ply
sft - firm, rthy, mt; aren - stly, mod calc, tr bent, tr cal,
mod bishwh stmg, mod even yel resdl ring, mod bl flor





MD: 6,740 '
TVD: 6,187.12 '
Inclination: 90.7 °
Azimuth: 0.8 °
VS: 393.86 '

MD: 6,772 '
TVD: 6,186.59 '
Inclination: 91.2 °
Azimuth: 0.9 °
VS: 425.83 '

MD: 6,804 '
TVD: 6,185.89 '
Inclination: 91.3 °
Azimuth: 1.1 °
VS: 457.78 '

MD: 6,835 '
TVD: 6,185.21 '
Inclination: 91.2 °
Azimuth: 1.3 °
VS: 488.74 '

MD: 6,867 '
TVD: 6,184.6 '
Inclination: 91 °
Azimuth: 0.8 °
VS: 520.69 '

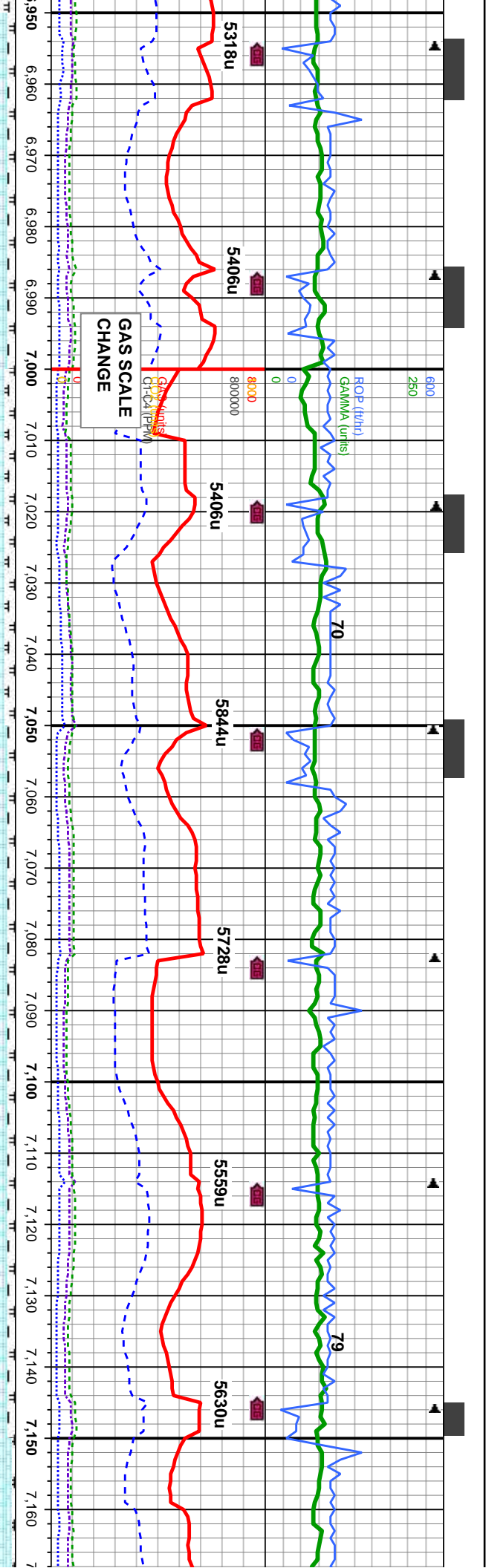
MD: 6,899 '
TVD: 6,184.1 '
Inclination: 90.8 °
Azimuth: 0.8 °
VS: 552.66 '

MD: 6,931 '
TVD: 6,183.62 '
Inclination: 90.9 °
Azimuth: 0.6 °
VS: 584.63 '

80% CHK: lt gy - dk gy, occ wht-crm, mod mot, blk - sb
blk, occ sb pty, mod sft-mod firm, chky - sbwxy, mtx; v
calc; 20% MRLST: blk - dk gy, blk - sb blk, sme sb pty,
sft - firm, rthy, mtx; aren - silty, mod calc, tr cal, mod
bishwh string, mod even yel resdl ring, mod bl flr

65% CHK: lt gy - dk gy, occ wht-crm, mod mot, blk - sb
blk, occ sb pty, mod sft-mod firm, chky - sbwxy, mtx; v
calc; 35% MRLST: blk - dk gy, blk - sb blk, sme sb pty,
sft - firm, rthy, mtx; aren - silty, mod calc, tr lse & imbd cal,
sme imd fos frag, mod bishwh string, mod even yel resdl
ring, mod bl flr





MD: 6,963 '
TVD: 6,183.15 '
Inclination: 90.8 °
Azimuth: 1.3 °
VS: 616.59 '

MD: 6,995 '
TVD: 6,182.76 '
Inclination: 90.6 °
Azimuth: 1.5 °
VS: 648.54 '

MD: 7,026 '
TVD: 6,182.27 '
Inclination: 91.2 °
Azimuth: 2 °
VS: 679.48 '

MD: 7,058 '
TVD: 6,181.52 '
Inclination: 91.5 °
Azimuth: 1.3 °
VS: 711.42 '

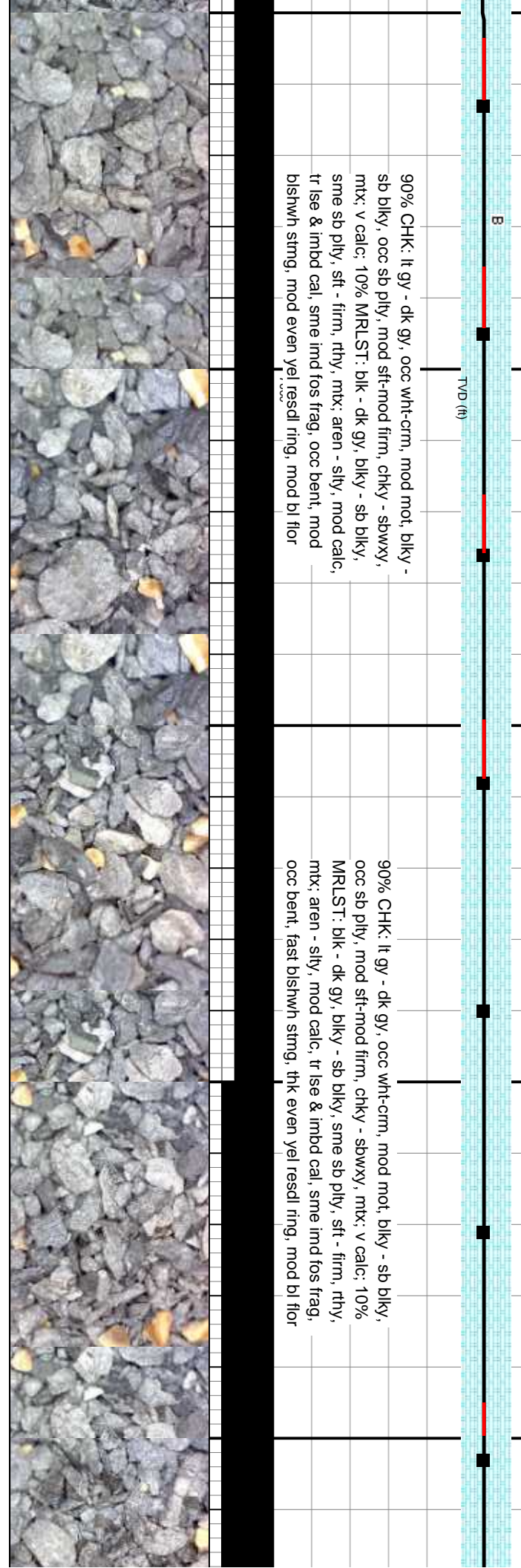
MD: 7,090 '
TVD: 6,180.65 '
Inclination: 91.6 °
Azimuth: 0.8 °
VS: 743.37 '

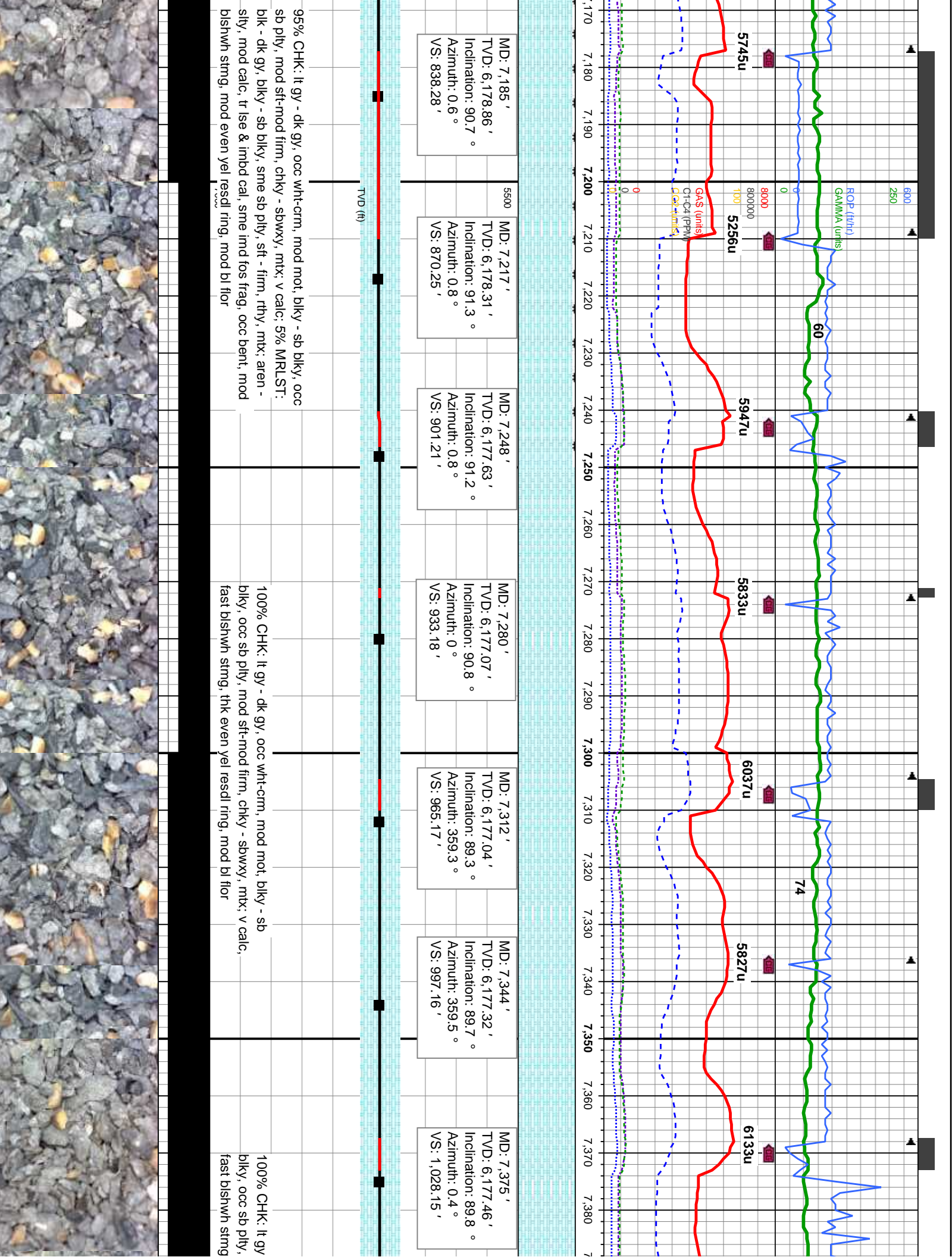
MD: 7,121 '
TVD: 6,179.76 '
Inclination: 91.7 °
Azimuth: 0.6 °
VS: 774.33 '

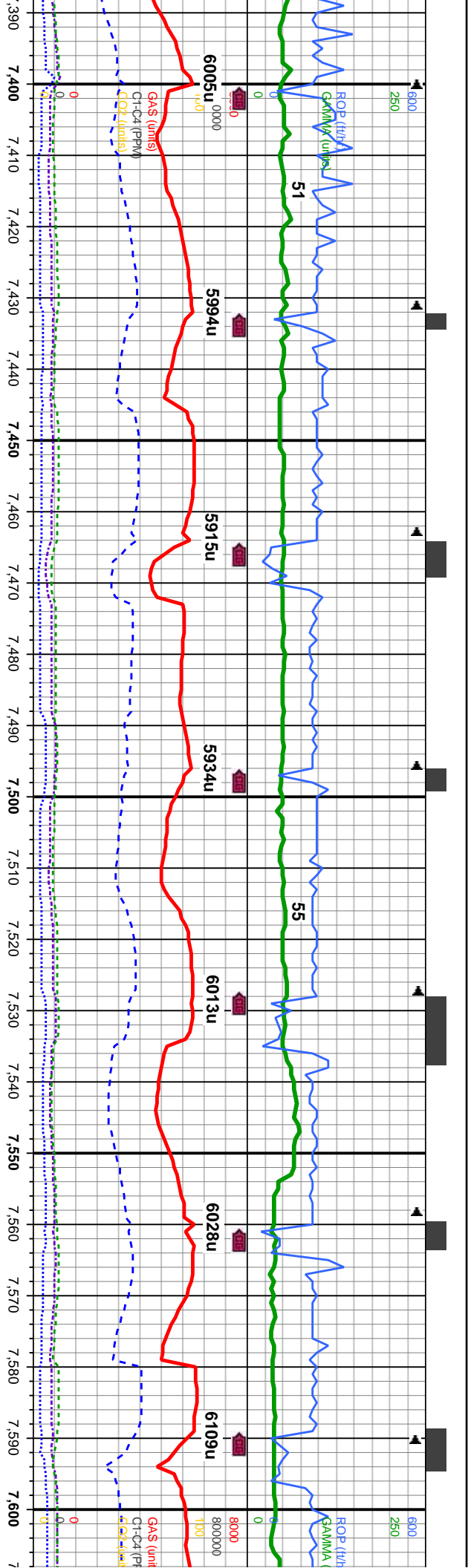
MD: 7,153 '
TVD: 6,179.17 '
Inclination: 90.4 °
Azimuth: 0.2 °
VS: 806.3 '

90% CHK: lt gy - dk gy, occ wht-crm, mod mot, blkly - sb blkly, occ sb ply, mod sft-mod firm, chky - sbwxy, mtx, v calc: 10% MRLST: blk - dk gy, blkly - sb blkly, sme sb ply, sft - firm, rthy, mtx; aren - slty, mod calc, tr lse & imbd cal, sme imd fos frag, occ bent, mod blshwh stmg, mod even yel resdl ring, mod bl flr

90% CHK: lt gy - dk gy, occ wht-crm, mod mot, blkly - sb blkly, occ sb ply, mod sft-mod firm, chky - sbwxy, mtx, v calc: 10% MRLST: blk - dk gy, blkly - sb blkly, sme sb ply, sft - firm, rthy, mtx; aren - slty, mod calc, tr lse & imbd cal, sme imd fos frag, occ bent, fast blshwh stmg, thk even yel resdl ring, mod bl flr







MD: 7,407 '
TVD: 6,177.49 '
Inclination: 90.1 °
Azimuth: 0.4 °
VS: 1,060.13 '

MD: 7,439 '
TVD: 6,177.35 '
Inclination: 90.4 °
Azimuth: 0 °
VS: 1,092.11 '

MD: 7,471 '
TVD: 6,177.01 '
Inclination: 90.8 °
Azimuth: 0.2 °
VS: 1,124.09 '

MD: 7,502 '
TVD: 6,176.42 '
Inclination: 91.4 °
Azimuth: 0.6 °
VS: 1,155.07 '

MD: 7,534 '
TVD: 6,175.69 '
Inclination: 91.2 °
Azimuth: 0.6 °
VS: 1,187.03 '

MD: 7,566 '
TVD: 6,175.16 '
Inclination: 90.7 °
Azimuth: 0 °
VS: 1,219.01 '

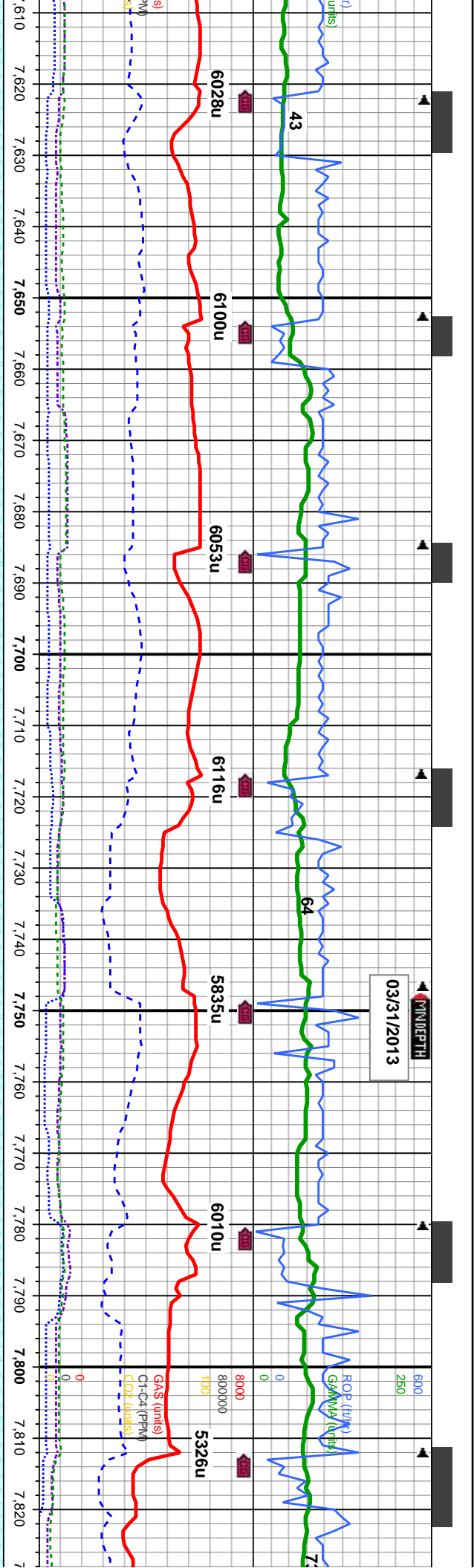
MD: 7,597 '
TVD: 6,174.92 '
Inclination: 90.2 °
Azimuth: 359.5 °
VS: 1,250 '

- dk gy, occ wht-crm, mod mot, blkly - sb
mod sft-mod firm, chky - sbwxy, mtx; v calc,
- thk even yel resdl ring, mod bl flr

100% CHK: lt gy - dk gy, occ wht-crm, mod mot, blkly - sb
blkly, occ sb pily, mod sft-mod firm, chky - sbwxy, mtx; v calc,
mod bishwh stmg, mod even yel resdl ring, mod bl flr

100% CHK: lt gy - dk gy, occ wht-crm
occ sb pily, mod sft-mod firm, chky -
bishwh stmg, mod even yel resdl ring





MD: 7.629 '
TVD: 6,175.06 '
Inclination: 89.3 °
Azimuth: 359.9 °
VS: 1,281.99 '

MD: 7.661 '
TVD: 6,175.64 '
Inclination: 88.6 °
Azimuth: 0.4 °
VS: 1,313.97 '

MD: 7.692 '
TVD: 6,176.4 '
Inclination: 88.6 °
Azimuth: 359.9 °
VS: 1,344.94 '

MD: 7.724 '
TVD: 6,177.21 '
Inclination: 88.5 °
Azimuth: 0.4 °
VS: 1,376.91 '

MD: 7.756 '
TVD: 6,178.02 '
Inclination: 88.6 °
Azimuth: 0.2 °
VS: 1,408.88 '

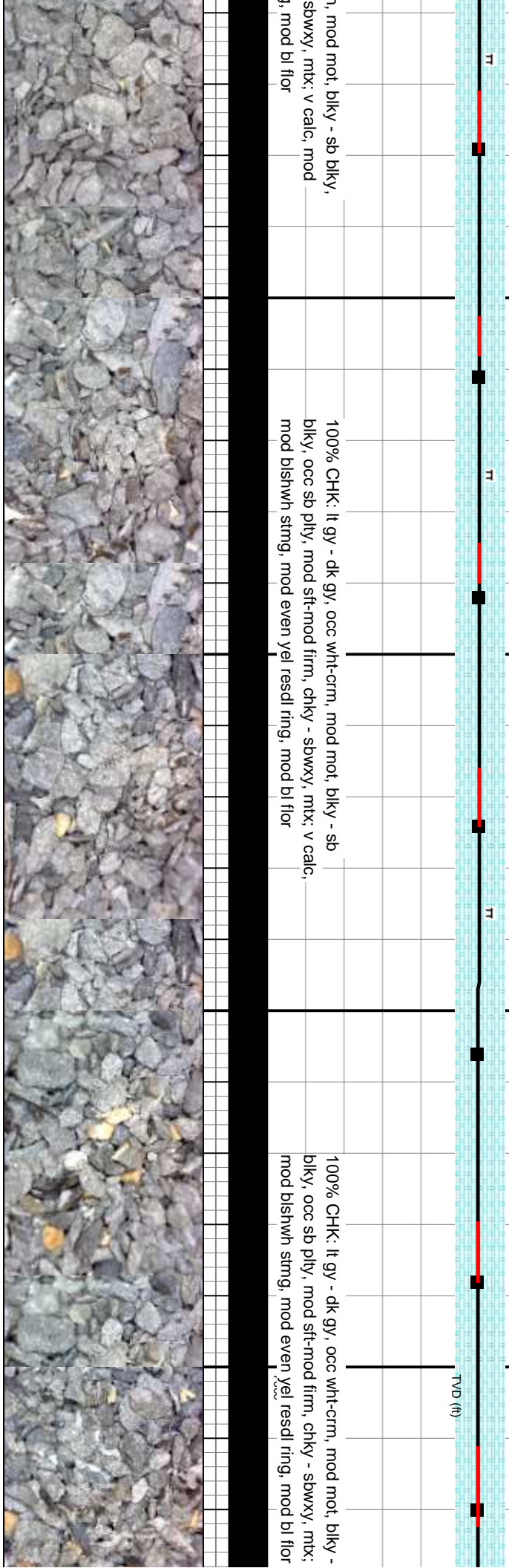
MD: 7.788 '
TVD: 6,178.77 '
Inclination: 88.7 °
Azimuth: 0.9 °
VS: 1,440.85 '

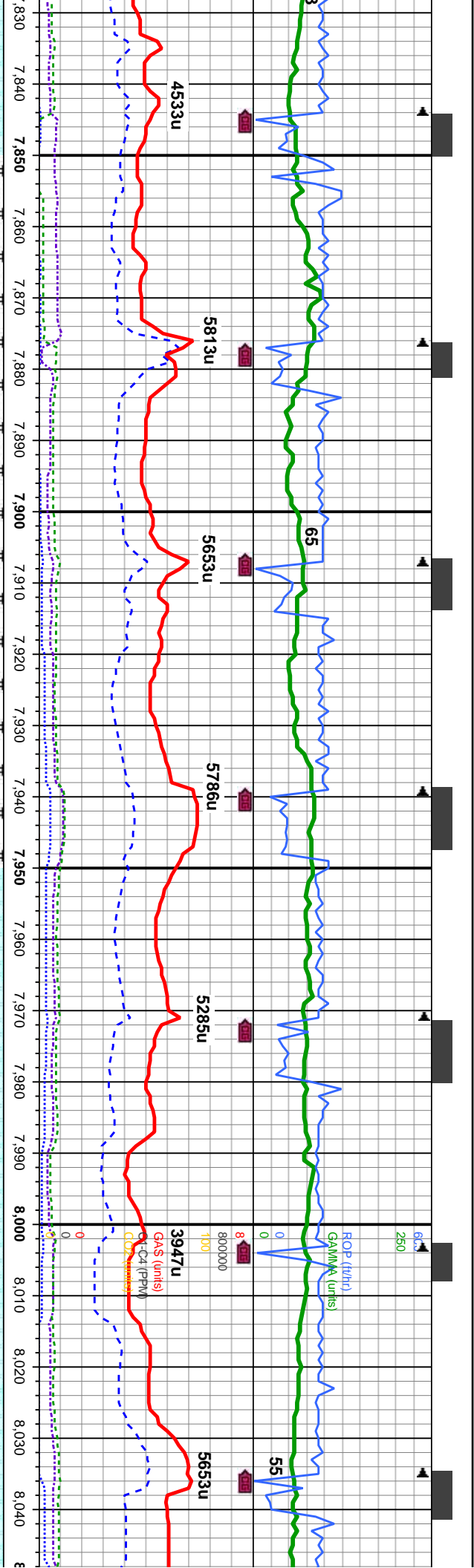
MD: 7.820 '
TVD: 6,179.55 '
Inclination: 88.5 °
Azimuth: 1.5 °
VS: 1,472.8 '

100% CHK: lt gy - dk gy, occ wht-crm, mod mot, blkly - sb blkly, occ sb ply, mod sft-mod firm, chky - sbwxy, mtx; v calc, mod bl flr

100% CHK: lt gy - dk gy, occ wht-crm, mod mot, blkly - sb blkly, occ sb ply, mod sft-mod firm, chky - sbwxy, mtx; v calc, mod blshwh string, mod even yel resd ring, mod bl flr

100% CHK: lt gy - dk gy, occ wht-crm, mod mot, blkly - sb blkly, occ sb ply, mod sft-mod firm, chky - sbwxy, mtx; mod blshwh string, mod even yel resd ring, mod bl flr

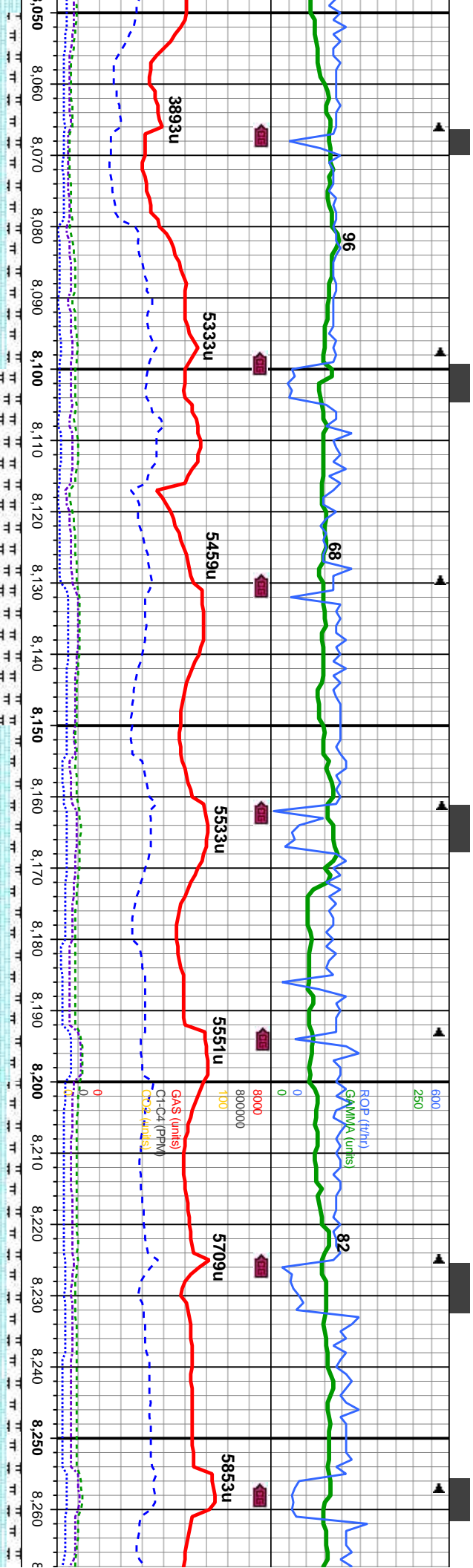




MD: 7,851 ' TVD: 6,180.5 ' Inclination: 88 ° Azimuth: 1.8 ° VS: 1,503.73 '	MD: 7,883 ' TVD: 6,181.53 ' Inclination: 88.3 ° Azimuth: 2 ° VS: 1,535.65 '	MD: 7,915 ' TVD: 6,182.43 ' Inclination: 88.5 ° Azimuth: 2.2 ° VS: 1,567.57 '	MD: 7,947 ' TVD: 6,183.01 ' Inclination: 89.4 ° Azimuth: 1.5 ° VS: 1,599.5 '	MD: 7,978 ' TVD: 6,183.15 ' Inclination: 90.1 ° Azimuth: 1.5 ° VS: 1,630.45 '	MD: 8,010 ' TVD: 6,183.07 ' Inclination: 90.2 ° Azimuth: 1.1 ° VS: 1,662.41 '	MD: 8,042 ' TVD: 6,183.0 ' Inclination: 89 ° Azimuth: 0.8 ° VS: 1,694.37 '
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90% CHK: lt gy - dk gy, occ wht-crm, mod mot, blk - sb blk, occ sb ply, mod sft-mod firm, chky - sbwxy, mt; v calc; 10% MRLST: blk - dk gy, blk - sb blk, sme sb ply, sft - firm, rthy, mt; aren - slty, mod calc, tr use & imbd cal, sme imd fos frag, mod bishwh string, mod even yel resdl ring, mod bl flr	100% CHK: lt gy - dk gy, occ wht-crm, mod mot, blk - sb blk, occ sb ply, mod sft-mod firm, chky - sbwxy, mt; v calc, sme imd fos frag, mod bishwh string, mod even yel resdl ring, mod bl flr
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MD: 8,073 '
TVD: 6,183.2 '
Inclination: 89.5 °
Azimuth: 0.2 °
VS: 1,725.35 '

MD: 8,105 '
TVD: 6,183.28 '
Inclination: 90.2 °
Azimuth: 0.4 °
VS: 1,757.33 '

MD: 8,137 '
TVD: 6,182.95 '
Inclination: 91 °
Azimuth: 0.8 °
VS: 1,789.3 '

MD: 8,169 '
TVD: 6,182.14 '
Inclination: 91.9 °
Azimuth: 0.9 °
VS: 1,821.26 '

MD: 8,200 '
TVD: 6,181.06 '
Inclination: 92.1 °
Azimuth: 0.8 °
VS: 1,852.21 '

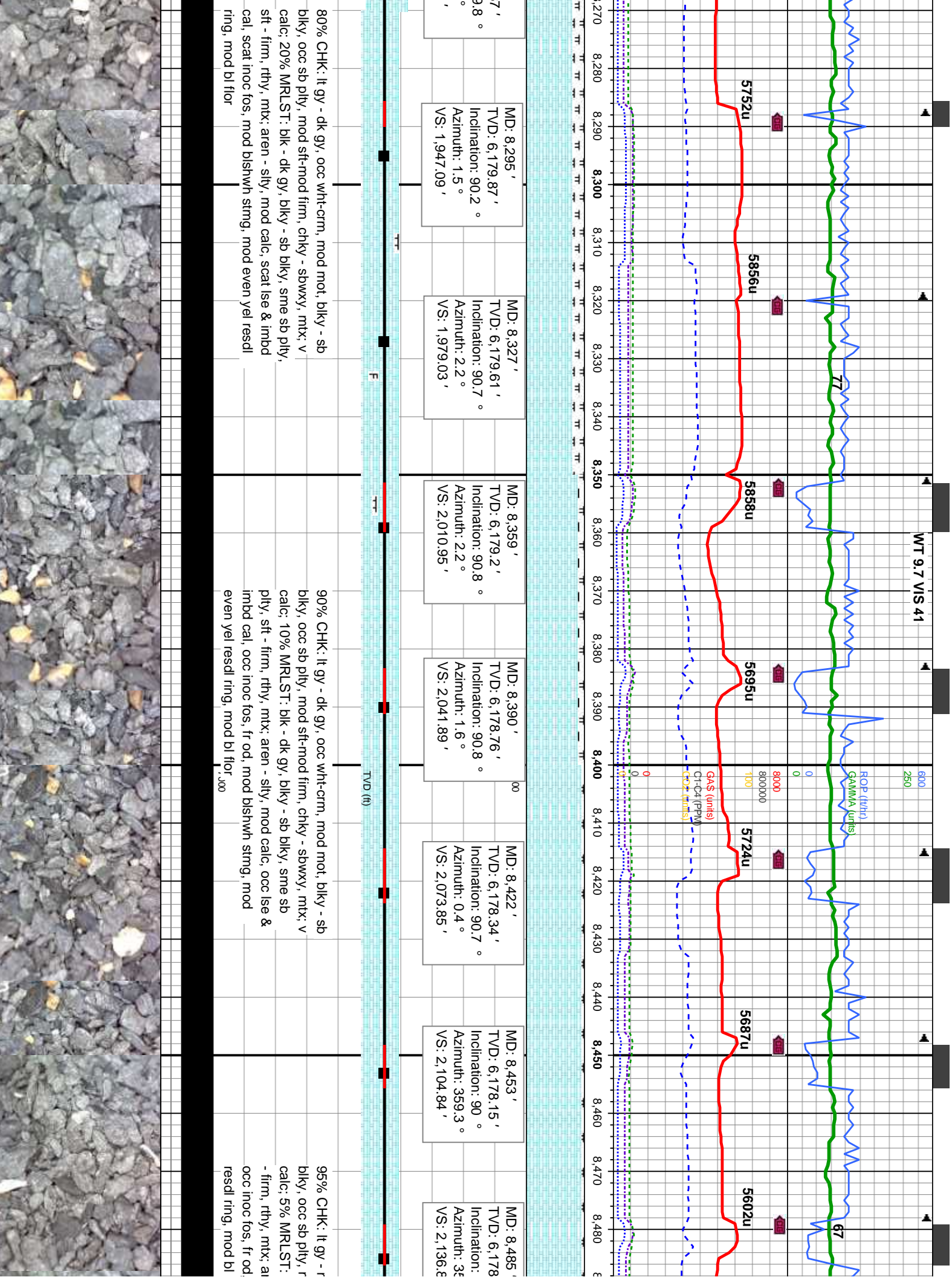
MD: 8,232 '
TVD: 6,180.14 '
Inclination: 91.2 °
Azimuth: 0.9 °
VS: 1,884.17 '

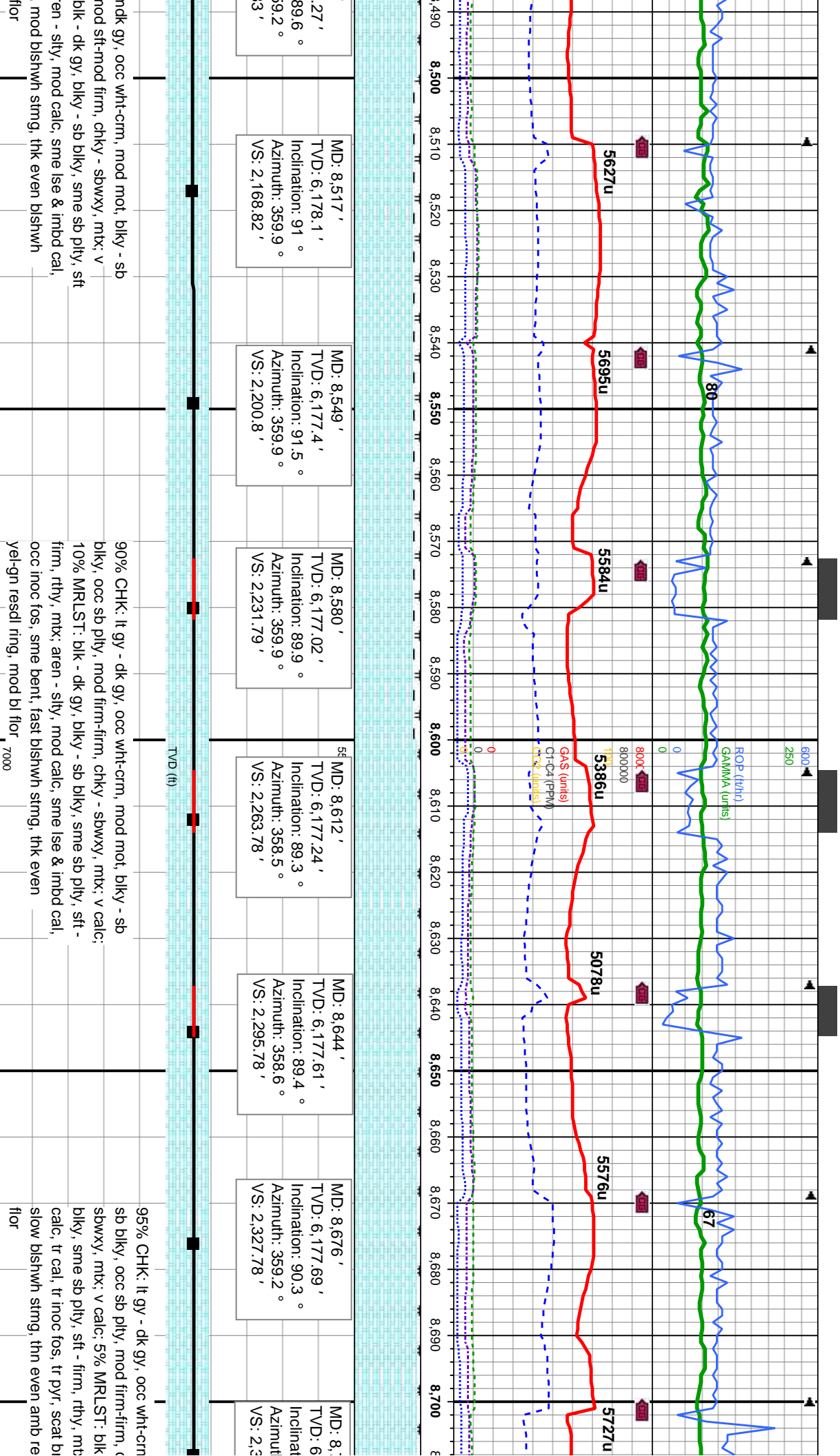
MD: 8,263 '
TVD: 6,179.8 '
Inclination: 89.9 °
Azimuth: 0.9 °
VS: 1,915.13 '

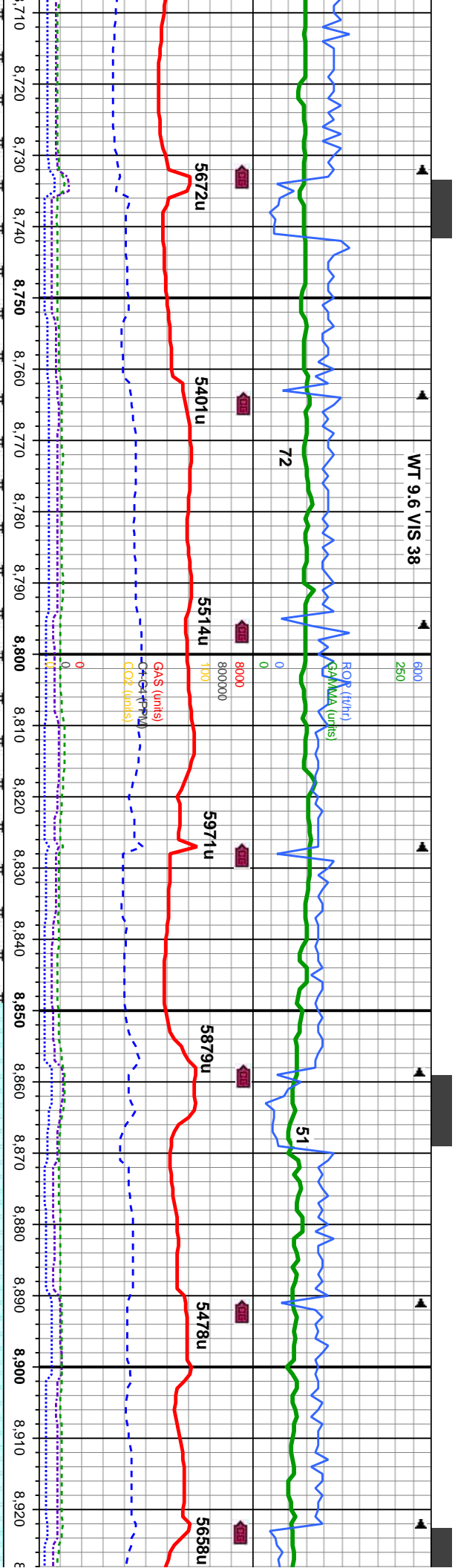
80% CHK: lt gy - dk gy, occ wht-crm, mod mot, blkly - sb blkly, occ sb ply, mod sft-mod firm, chky - sbwxy, mtX; v calc; 20% MRLST: blk - dk gy, blkly - sb blkly, sme sb ply, sft - firm, rthy, mtX; aren - silty, mod calc, scat lse & imbd cal, sme inoc fos, tr bent, mod bishwh milky, mod even yel resdl ring, mod bl flr

85% CHK: lt gy - dk gy, occ wht-crm, mod mot, blkly - sb blkly, mod sft-mod firm, chky - sbwxy, mtX; v calc; 15% MRLST: blk - dk gy, blkly - sb blkly, sme sb ply, sft - firm, rthy, mtX; aren - silty, mod calc, scat lse & imbd cal, scat inoc fos, mod bishwh stmg, mod even yel resdl ring, mod bl flr





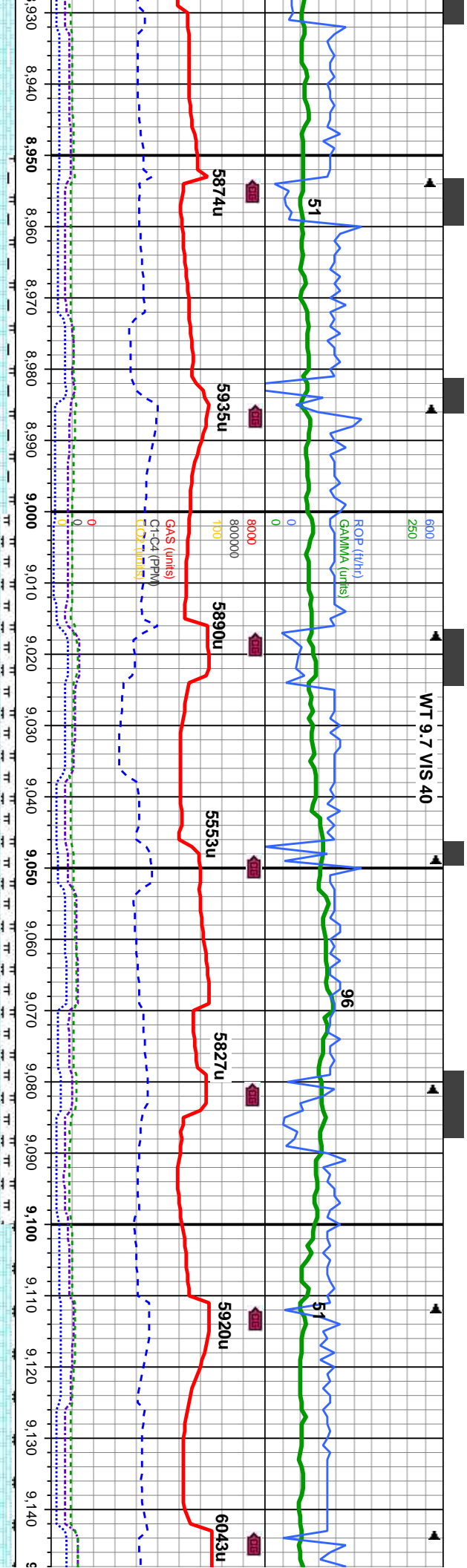




MD: 8.708 ' TVD: 6,177.69 ' Inclination: 89.7 ° Azimuth: 358.8 ° VS: 2,459.77 '	MD: 8.739 ' TVD: 6,177.96 ' Inclination: 89.3 ° Azimuth: 358.8 ° VS: 2,390.77 '	MD: 8.771 ' TVD: 6,178.27 ' Inclination: 89.6 ° Azimuth: 358.6 ° VS: 2,422.77 '	MD: 8.803 ' TVD: 6,178.63 ' Inclination: 89.1 ° Azimuth: 358.1 ° VS: 2,454.77 '	MD: 8.834 ' TVD: 6,179.04 ' Inclination: 89.4 ° Azimuth: 357.9 ° VS: 2,485.76 '	MD: 8.866 ' TVD: 6,179.29 ' Inclination: 89.7 ° Azimuth: 358.5 ° VS: 2,517.76 '	MD: 8.898 ' TVD: 6,179.46 ' Inclination: 89.7 ° Azimuth: 358.3 ° VS: 2,549.76 '	MD: 8.930 ' TVD: 6,179.63 ' Inclination: 89.7 ° Azimuth: 358.3 ° VS: 2,581.76 '
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95% CHK: lt gy - dk gy, occ wht-crm, mod mot, blkly - sb blkly, occ sb plty, mod firm-firm, occ brt, chky - sbwxy, mtx: v calc, 5% MRLST: blk - dk gy, blkly - sb blkly, sme sb plty, sft - firm, rthy, mtx: aren - slty, mod calc, tr cal, tr inoc fos, tr pyr, scat brn-gold bent, fr od, fast blshwh stmg, thin even yel-gn resdl ring, mod bl flr	7000
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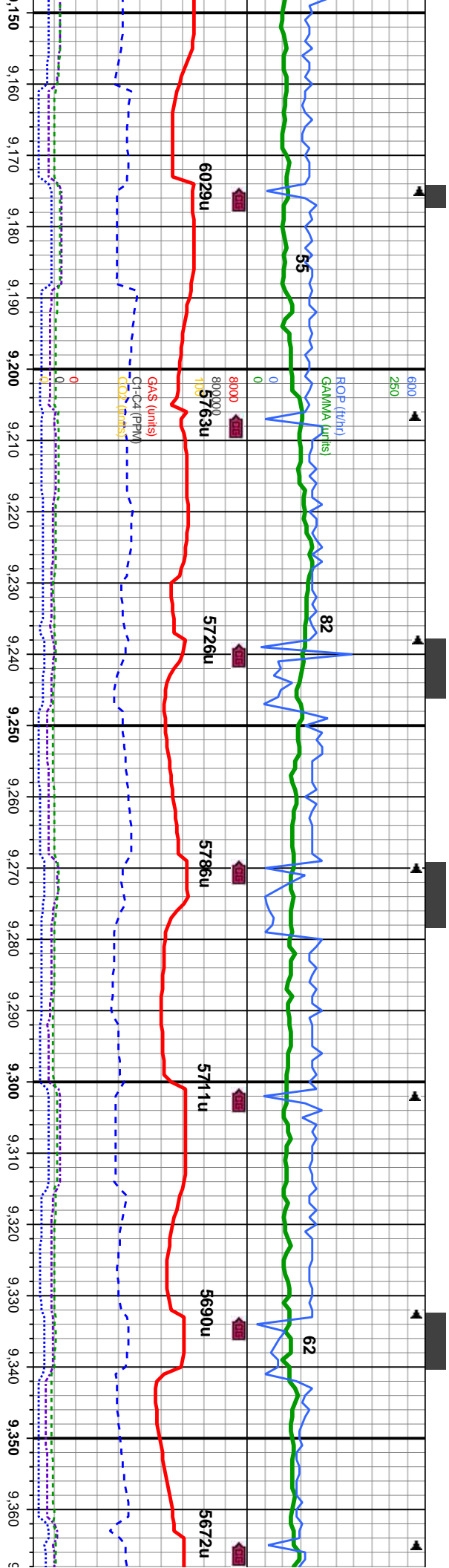


MD: 8,929 ' TVD: 6,179.73 ' Inclination: 89.3 ° Azimuth: 359.5 ° VS: 580.76 '	MD: 8,961 ' TVD: 6,180.29 ' Inclination: 88.7 ° Azimuth: 359.5 ° VS: 2,612.75 '	MD: 8,993 ' TVD: 6,180.87 ' Inclination: 89.2 ° Azimuth: 0 ° VS: 2,644.73 '	MD: 9,024 ' TVD: 6,181.28 ' Inclination: 89.3 ° Azimuth: 0.6 ° VS: 2,675.71 '	MD: 9,056 ' TVD: 6,181.67 ' Inclination: 89.3 ° Azimuth: 0.8 ° VS: 2,707.68 '	MD: 9,087 ' TVD: 6,181.86 ' Inclination: 90 ° Azimuth: 0.6 ° VS: 2,738.65 '	MD: 9,119 ' TVD: 6,181.64 ' Inclination: 90.8 ° Azimuth: 0.8 ° VS: 2,770.62 '	MD: 9,151 ' TVD: 6,181.42 ' Inclination: 91.1 ° Azimuth: 0.8 ° VS: 2,802.64 '
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90% CHK: lt gy - dk gy, occ wht-crm, mod mot, blkly - sb blkly, occ sb plty, mod firm-firm, occ brit, chky - sbwxy, mtz: v calc: 10% MRLST: blk - dk gy, blkly - sb blkly, sme sb plty, sft - firm, rthy, mtz: aren - slty, mod calc, occ lse & imbd sec cal, occ inoc fos, slow bishwth sting, thn even amb resdl ring, mod bl flr

80% CHK: lt gy - dk gy, occ wht-crm, mod mot, blkly - sb blkly, occ sb plty, mod firm-firm, occ brit, chky - sbwxy, mtz: v calc: 20% MRLST: blk - dk gy, blkly - sb blkly, sme sb plty, sft - firm, rthy, mtz: aren - slty, mod calc, occ lse & imbd sec cal, occ inoc fos, mod bishwth sting, thn even amb resdl ring, mod bl flr



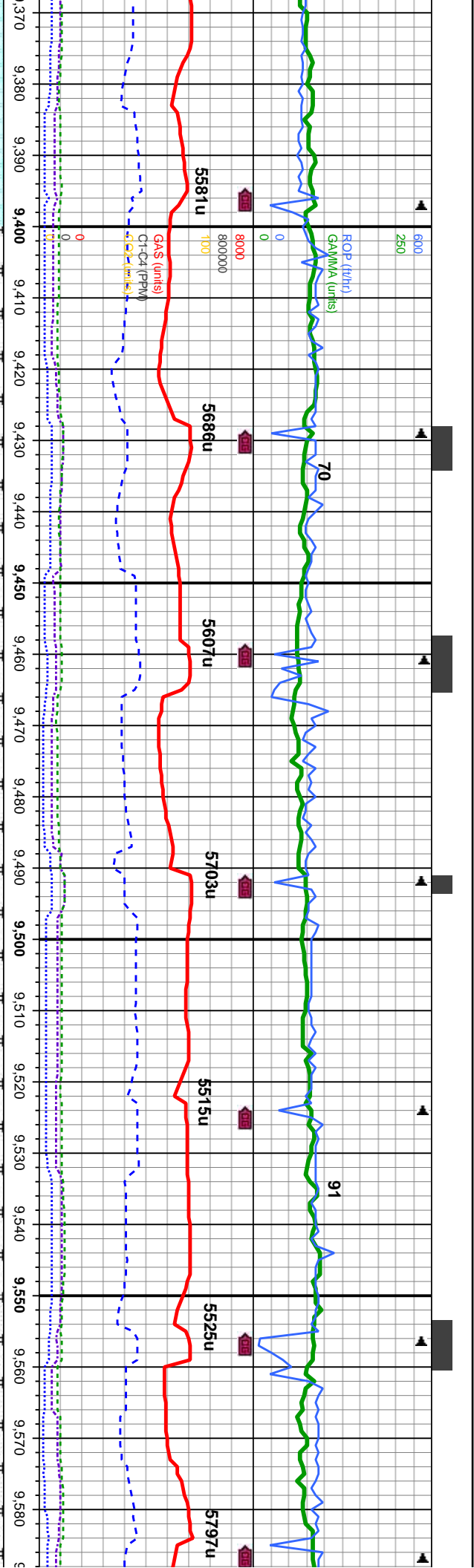


MD: 9,182 ' TVD: 6,180.37 ' Inclination: 91.6 ° Azimuth: 0.6 ° VS: 2,833.56 '	MD: 9,214 ' TVD: 6,179.29 ' Inclination: 92.3 ° Azimuth: 0.4 ° VS: 2,865.52 '	MD: 9,246 ' TVD: 6,178.22 ' Inclination: 91.5 ° Azimuth: 0.8 ° VS: 2,897.47 '	MD: 9,277 ' TVD: 6,177.63 ' Inclination: 90.7 ° Azimuth: 1.1 ° VS: 2,928.43 '	MD: 9,309 ' TVD: 6,177.29 ' Inclination: 90.5 ° Azimuth: 0.6 ° VS: 2,960.4 '	MD: 9,341 ' TVD: 6,177.29 ' Inclination: 89.5 ° Azimuth: 0.6 ° VS: 2,992.37 '	MD: 9,373 ' TVD: 6,177.29 ' Inclination: 89.5 ° Azimuth: 0.6 ° VS: 3,024.34 '
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95% CHK: lt gy - med gy, occ med - dk gy, occ wht-crm, mod mot, blk - sb blk, occ sb ply, mod firm-firm, occ brit, chky - sbwxy, mtz: v calc; 5% MRLST: blk - dk gy, blk - sb blk, sme sb ply, sft - firm, rthy, mtz: aren - silty, mod calc, occ lse & imbd sec cal, tr inoc fos, fast blshwh stmg, thk even yel-gn resdl ring, mod bl flr

95% CHK: lt gy - med gy, occ med - dk gy, occ wht-crm, mod mot, blk - sb blk, occ sb ply, mod firm-firm, occ brit, chky - sbwxy, mtz: v calc; 5% MRLST: blk - dk gy, blk - sb blk, sme sb ply, sft - firm, rthy, mtz: aren - silty, mod calc, occ lse & imbd sec cal, tr inoc fos, tr bent, mod blshwh stmg, thk yel-gn resdl ring, mod bl flr





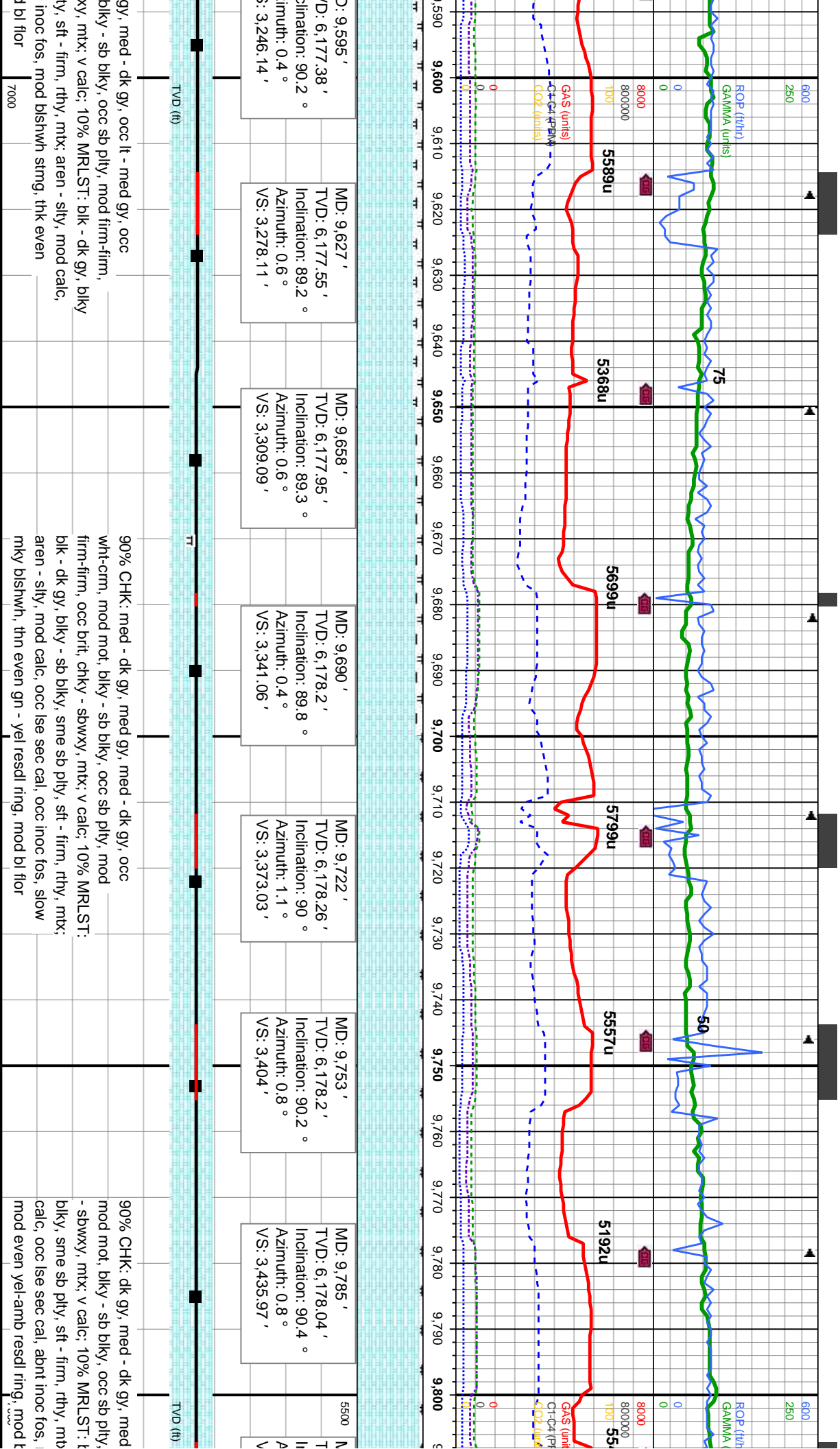
MD: 9,373 ' TVD: 6,177.57 ' Inclination: 89.5 ° Azimuth: 0.9 ° VS: 024.34 '	MD: 9,404 ' TVD: 6,177.9 ' Inclination: 89.3 ° Azimuth: 0.6 ° VS: 3,065.31 '	MD: 9,436 ' TVD: 6,178.29 ' Inclination: 89.3 ° Azimuth: 0.4 ° VS: 3,087.29 '	MD: 9,468 ' TVD: 6,178.48 ' Inclination: 90 ° Azimuth: 0.6 ° VS: 3,119.26 '	MD: 9,500 ' TVD: 6,178.37 ' Inclination: 90.4 ° Azimuth: 0.6 ° VS: 3,151.24 '	MD: 9,531 ' TVD: 6,178.05 ' Inclination: 90.8 ° Azimuth: 0.9 ° VS: 3,182.21 '	MD: 9,563 ' TVD: 6,177.63 ' Inclination: 90.7 ° Azimuth: 1.1 ° VS: 3,214.17 '
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CHK: lt gy - med gy, occ med - dk gy, occ wht-crm, mod mot, - sb blkly, occ sb plty, mod firm-firm, occ brit, chky - sbwxy, mtx; v 5% MRLST: blk - dk gy, blkly - sb blkly, sme sb plty, sft - firm, mtx: aren - slty, mod calc, occ lse & imbd sec cal, tr inoc fos, tr , fast blshwh stmg, thk bl-wh resdl ring, mod bl flr

90% CHK: med gy, med - dk gy, occ lt - med gy, occ wht-crm, mod mot, blkly - sb blkly, occ sb plty, mod firm-firm, occ brit, chky - sbwxy, mtx, v calc: 10% MRLST: blk - dk gy, blkly - sb blkly, sme sb plty, sft - firm, rthy, mtx: aren - slty, mod calc, occ lse & imbd sec cal, tr inoc fos, fast blshwh stmg, thn even yel resdl ring, mod bl flr

90% CHK: med - lt wht-crm, mod mot, occ brit, chky - sbw - sb blkly, sme sb pl occ lse sec cal, occ amb resdl ring, mod



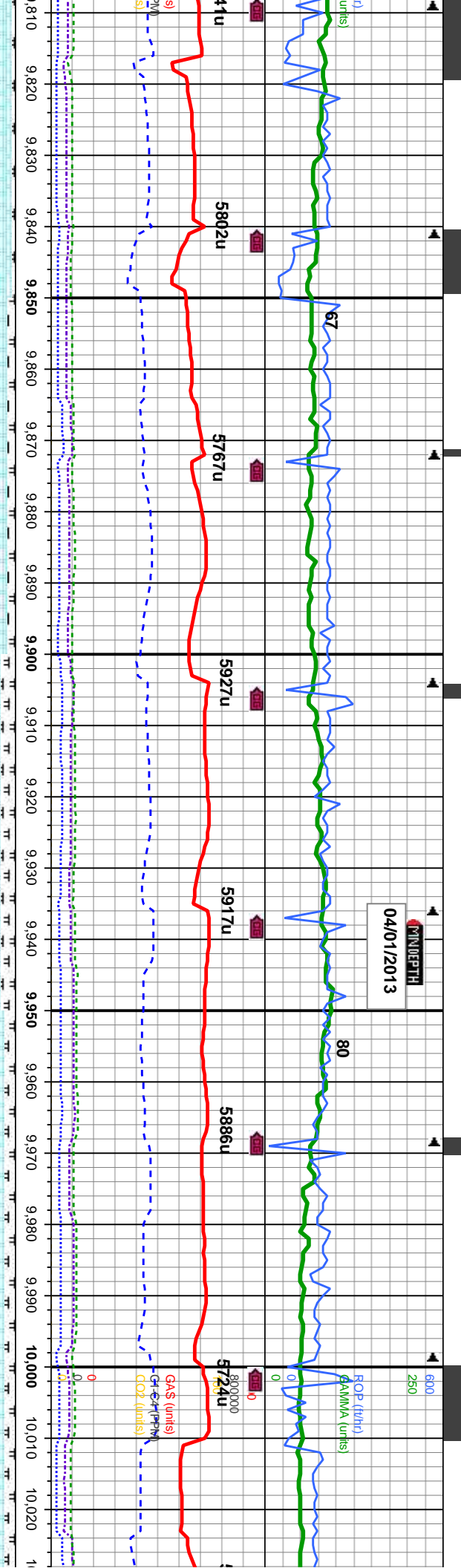


90% CHK: med - dk gy, med gy, med - dk gy, occ
wht-crm, mod mot, blk - sb blk, occ sb ply, mod
firm-firm, occ brit, chky - sbwxy, mt; v calc; 10% MRLST:
blk - dk gy, blk - sb blk, sme sb ply, sft - firm, rthy, mt;
aren - sily, mod calc, occ lse sec cal, occ inoc fos, slow
mky blshwh, thn even gn - yel resd ring, mod bl flor

90% CHK: dk gy, med - dk gy, med
mod mot, blk - sb blk, occ sb ply,
- sbwxy, mt; v calc; 10% MRLST:
blk, sme sb ply, sft - firm, rthy, mt;
calc, occ lse sec cal, abnt inoc fos,
mod even yel-amb resd ring, mod t



DATE: 04/01/2013



MD: 9,816 ' VD: 6,177.93 ' Inclination: 90.0 ° Azimuth: 359.7 ° VS: 3,466.95 '	MD: 9,848 ' TVD: 6,178.12 ' Inclination: 89.3 ° Azimuth: 358.8 ° VS: 3,498.94 '	MD: 9,880 ' TVD: 6,178.63 ' Inclination: 88.9 ° Azimuth: 358.3 ° VS: 3,530.94 '	MD: 9,912 ' TVD: 6,179.13 ' Inclination: 89.3 ° Azimuth: 358.1 ° VS: 3,562.93 '	MD: 9,943 ' TVD: 6,179.62 ' Inclination: 88.9 ° Azimuth: 357.8 ° VS: 3,593.93 '	MD: 9,975 ' TVD: 6,180.12 ' Inclination: 89.3 ° Azimuth: 357.8 ° VS: 3,625.92 '	MD: 10,007 ' TVD: 6,180.51 ' Inclination: 89.3 ° Azimuth: 358.5 ° VS: 3,657.92 '
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gy, occ wht-cm, firm, occ brit, chky blk - dk gy, blkly - sb	90% CHK: dk gy, med - dk gy, med gy, occ wht-cm, mod mot, blkly - sb blkly, occ sb plty, firm, occ brit, chky - sbwxy, mtb; v calc; 10% MRLST: blk - dk gy, blkly - sb blkly, sme sb plty, sft - firm, rthy, mtb; aren - silty, mod calc, occ lse sec cal, abnt inoc fos, mod blshwh stmg, mod even yel-amb resd ring, mod bl flor	90% CHK: med - dk gy, med gy, occ wht-cm, mod mot, blkly, occ sb plty, firm, occ brit, chky - sbwxy, MRLST: blk - dk gy, blkly - sb blkly, sme sb plty, sft - firm, rthy, mtb; aren - silty, mod calc, occ lse sec cal, tr inoc fos, sl tr b mod blshwh stmg, mod even yel-amb resd ring, mod bl flor
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