



Scale: 5" / 100'
Measured Depth Log

Well Name State Pronghorn F-J-16HNB

Location NWNW SEC16 T5N R61W

State COLORADO

Country USA

API Number 05-123-36469-00

County WELD

Rig Number 128

Spud Date 2/15/2013

Drilling Completed 2/24/2013

Surface Coordinates 370 FNL X 1259 FWL (LAT:40.40739,-104.21915)

Bottom Hole Coordinates 531 FNL X 1353 FWL (LAT:40.40712, -104.21881)

Ground Elevation 4,638

Logged Interval 5,700 To 10,734

K.B. Elevation 4,653

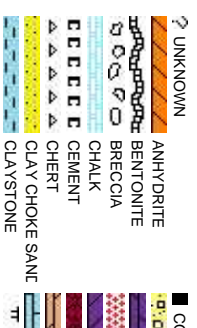
Total Depth 10,734

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



































Trent Nelson
Kevin Geraghty


Rock Types












[illegible]

Accessories

Fossils

Fossils		F FOSSIL	-	ARGILLACEOUS		GLAUCONITE		TUFFACEOUS
		GASTROPOD	/	ARGILLITE GRAIN		GYPSEIFEROUS		
		OOLITE	B	BENTONITE		HEAVY MINERAL		
		OSTRACOD		BITUMENOUS SUBSTANCE		INOCERAMUS		
		PELECYPOD		BRECCIA FRAGMENTS	K	KAOLIN		
		BIOLASTIC		1 CALCAREOUS	T	MARLSTONE		
		BRACHIOPOD		CARBONACEOUS FLAKES		MINERAL CRYSTALS		
		BRYOZOA		CHERT		NODULES		
		CEPHALOPOD		CHERT		PHOSPHATE PELLETS		
		CORAL	-	COAL - THIN BEDS	P	PYRITE		
		CRINOID		DOLOMITIC		SALT CAST		
		ECHINOID	+	FELDSPAR		SANDY		
		FISH	●	FERRUGINOUS PELLET		SILICEOUS		
		FORAMINIFERA		FERRUGINOUS		SILTY		

		ANHYDRITIC					
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Stringer		ANHYDRITE STRINGER
		BENTONITE STRINGER
		COAL STRINGER
		DOLOMITE STRINGER
		GYPSUM STRINGER
		LIMESTONE STRINGER
		MARLSTONE (CALC.) STRG
	MARLSTONE (DOL.) STRG	
	SANDSTONE STRINGER	
		SHALE STRINGER
		SILTSTONE STRINGER

Other Symbols

Oil Show

Oil Show

☒ MOLDIC
☐ ORGANIC
☐ P PINPOINT
☐ DEAD
☐ EVEN

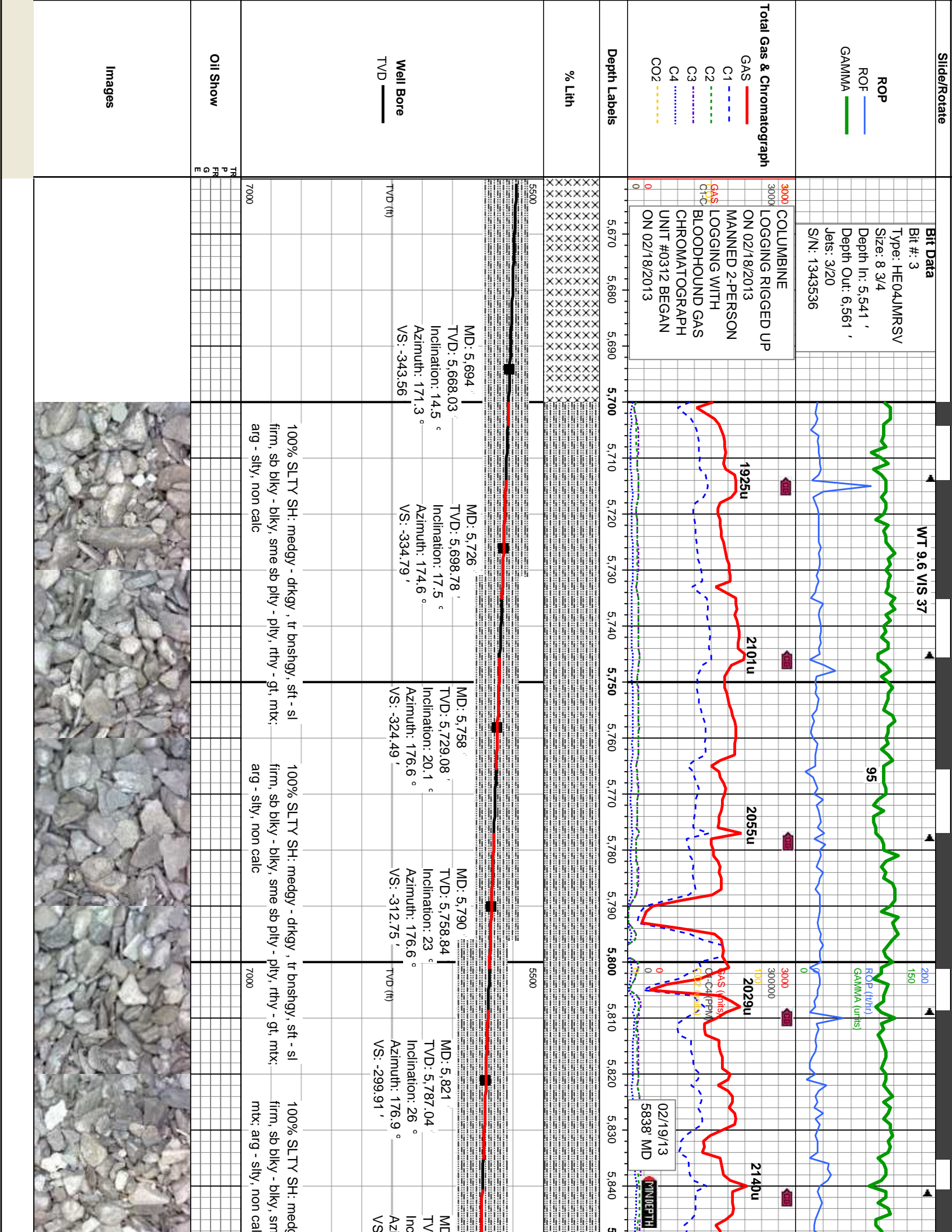
☒ FAULT
☐ FORMATION TOP
☒ GAS SHOW
☐ MN DEPTH
☒ MN DEPTH

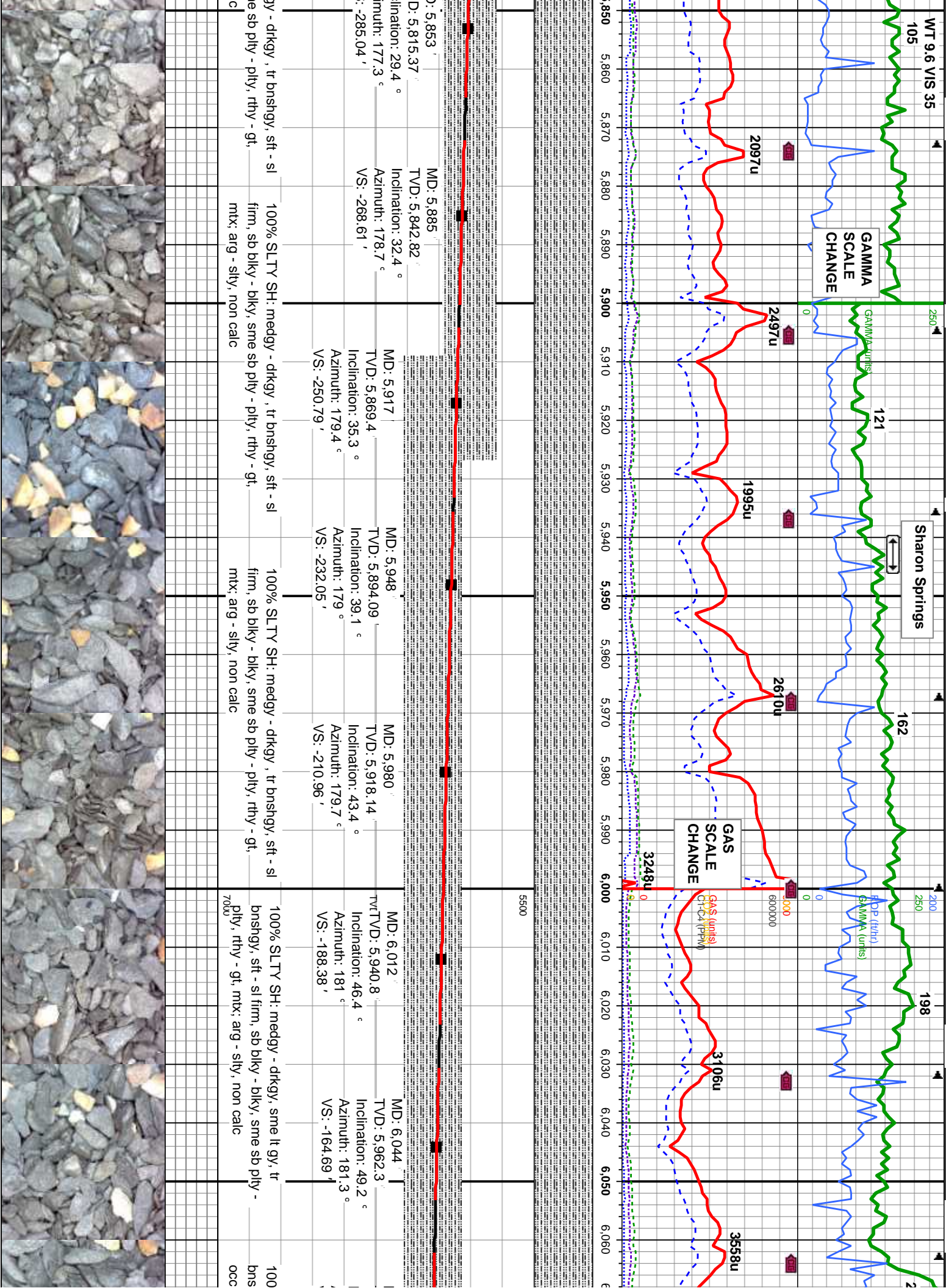
☒ WIRELINE TESTED - LEFT
☒ WIRELINE TESTED - RT
☐ E EARTHY
☒ Fx FINELYXN
☒ GS GRAINSTONE
☐ L LITHOGRAPHIC

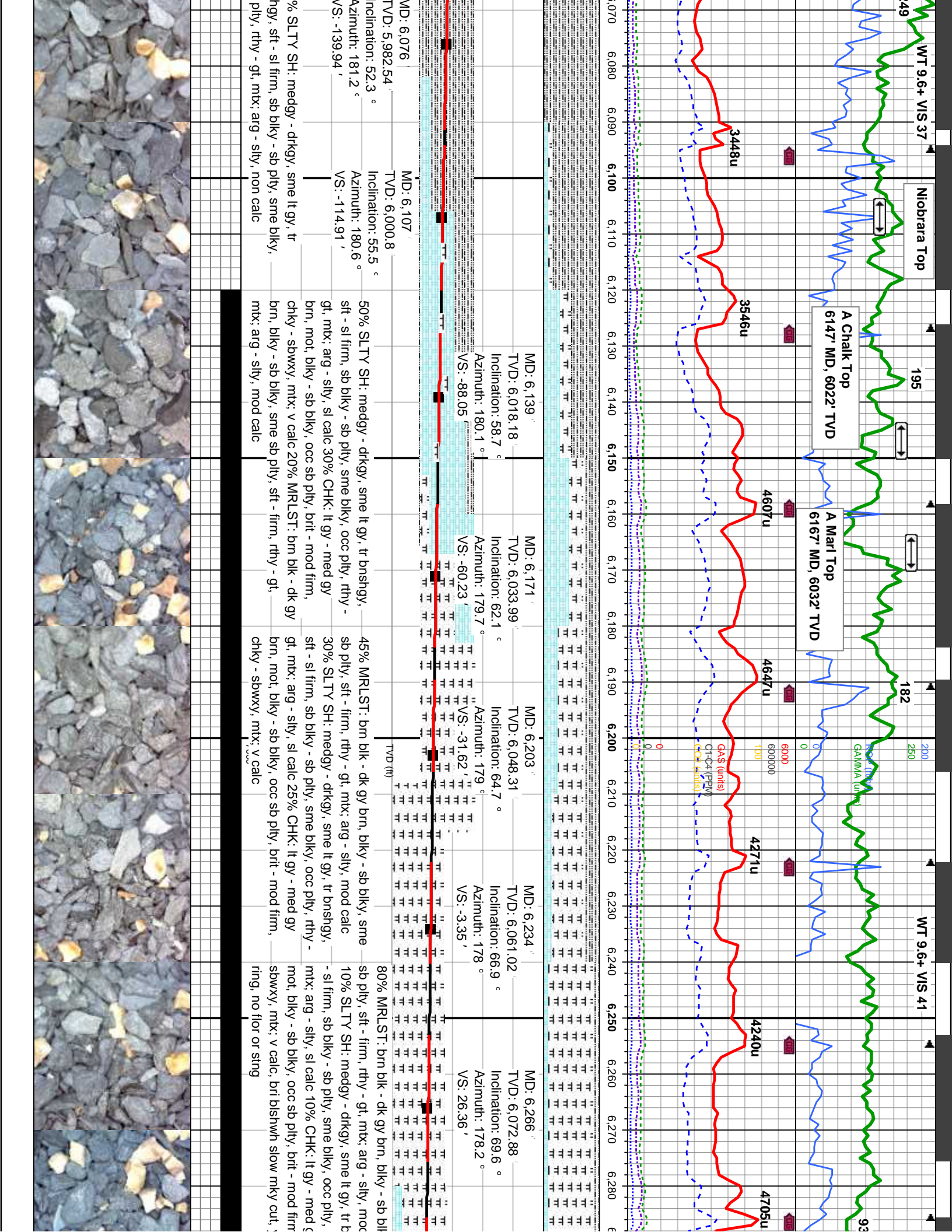
Rounding

Engineering

	QUESTIONABLE		
	SPOTTED STAINING		
Engineering			
	NORMAL FAULT		M _X MICROLYN
	OIL SHOW		M _S MUDSTONE
	OVERTURNED STRATA		P _S PACKSTONE
	REVERSE FAULT		M _S WACKSTONE
	SIDEWALL CORE (LEFT)		
	SIDEWALL CORE (RIGHT)		
Textures			
	B _S BOUNDSTONE		
	C CHALKY		
	C CRYPTOXYN		
Sorting			
	M MODERATE		
	P POOR		
	W WELL		







Bit Data
Bit #: 4
Type: VM513S
Size: 6.12
Depth In: 6,561 '
Depth Out: 10,734 '
Jets: 5/11
S/N: 4005142

ROP SCALE CHANGE
103 (MA (ft/s))
106

ROP (ft/hr) 81

TD for Intermediate Casing
2/20/2013 @ 06:53 MST

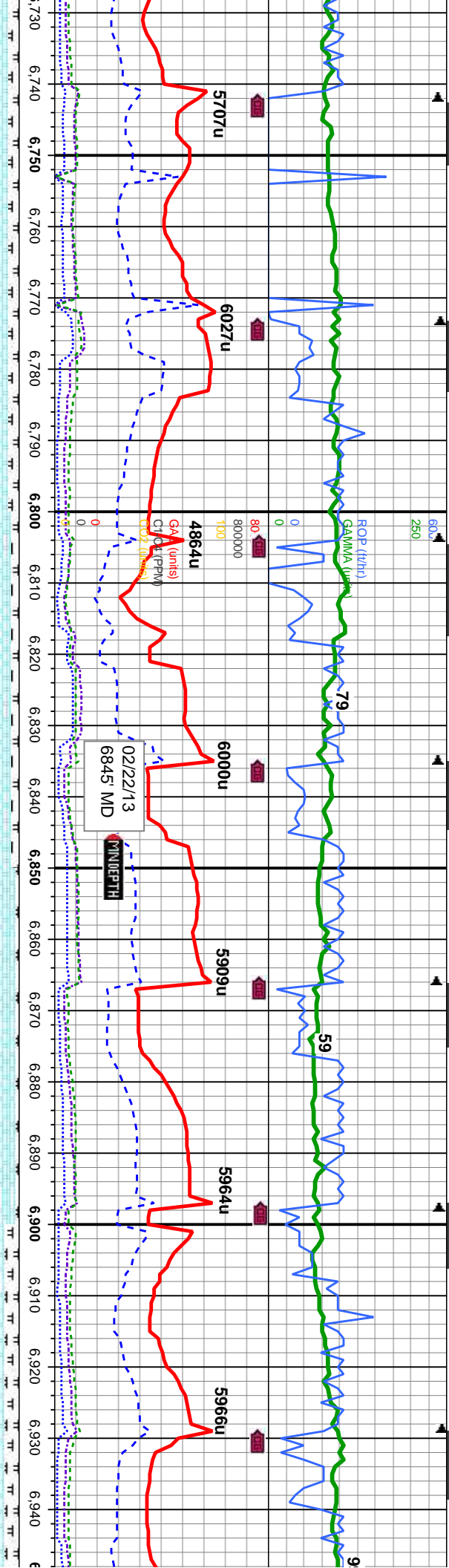
Drilling Resumed on
02/21/2013 @ 19:34MST

GAS SCALE CHANGE
8000
8000000
GAS (units) 0
0.21 (ppm)

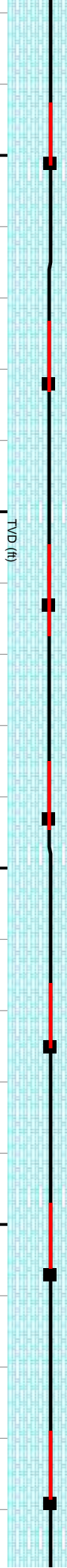
6,511'	MD: 6,596'	MD: 6,627'	MD: 6,658'	MD: 6,689'	MD: 6,720'
6,109.32'	TVD: 6,111.17'	TVD: 6,112.01'	TVD: 6,113.01'	TVD: 6,114.28'	TVD: 6,115.53'
Inclination: 89.1 °	Inclination: 88.4 °	Inclination: 88.5 °	Inclination: 87.8 °	Inclination: 87.5 °	Inclination: 87.7 °
North: 176.2 °	Azimuth: 176.2 °	Azimuth: 175.2 °	Azimuth: 175 °	Azimuth: 175 °	Azimuth: 176.2 °
267.11'	VS: 351.99'	VS: 382.93'	VS: 413.84'	VS: 444.74'	VS: 475.66'

brn, occ wht-crm, b pty, brit - mod firm, 10% MRLST: blk - dk sb pty, sft - firm, rthy mod calc, g od, abnt mky cut, yel resd	80% CHK: lt gy - med gy brn, occ wht-crm, mot, blk - sb blk - sb pty, brit - mod firm, chky - sbwxy, mtx: v calc, 20% MRLST: blk - dk gy brn, blk - sb blk, sme sb pty, sft - firm, rthy - gritty, mtx: arg - slty, mod calc, g od, abnt bishwh string, bri bishwh mky cut, yel resd ring, no flor, tr yel-brn string	90% CHK: lt gy - med gy brn, occ wht-crm, mot, blk - sb blk, occ sb pty, brit - mod firm, chky - sbwxy, mtx: v cal 10% MRLST: blk - dk gy brn, blk - sb blk, sme sb pty, - firm, rthy - gritty, mtx: arg - slty, mod calc, g od, abnt bishwh string, bri bishwh mky cut, yel resd ring, no flor, tr yel-brn string
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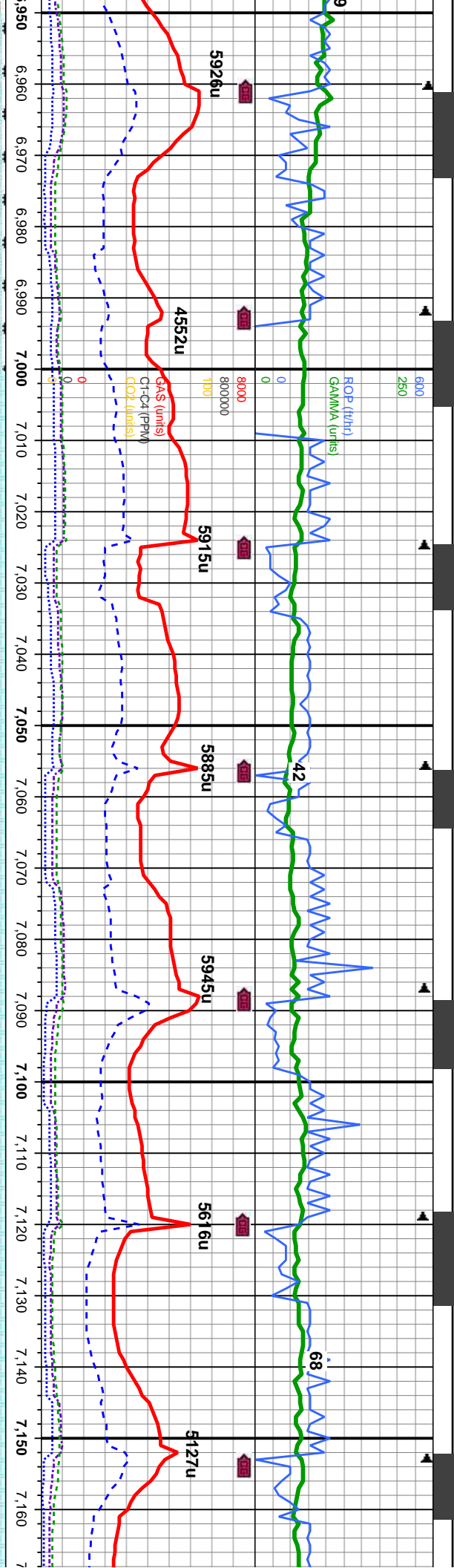


MD: 6,751 TVD: 6,116.42 Inclination: 88.8 ° Azimuth: 176.1 ° VS: 506.61 '	MD: 6,782 TVD: 6,116.96 Inclination: 89.2 ° Azimuth: 176.6 ° VS: 537.57 '	5500MD: 6,813 TVD: 6,117.09 Inclination: 90.3 ° Azimuth: 176.6 ° VS: 568.55 '	MD: 6,843 TVD: 6,116.75 Inclination: 91 ° Azimuth: 178.5 ° VS: 598.53 '	MD: 6,875 TVD: 6,116.17 Inclination: 91.1 ° Azimuth: 178.9 ° VS: 630.53 '	MD: 6,907 TVD: 6,115.58 Inclination: 91 ° Azimuth: 178.9 ° VS: 662.52 '	MD: 6,939 TVD: 6,114.94 Inclination: 91.1 ° Azimuth: 179.9 ° VS: 694.51 '
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85% CHK: lt gy - med gy brn, occ wht-crm, mot, blkly - sb blkly, occ sb plty, brit - mod firm, chky - sbwxy, mt; v calc, 15% MRLST: blk - dk gy brn, blkly - sb blkly, sme sb plty, sft - firm, rthy - gritty, mt; arg - slty, mod calc, occ lse & imbd cal, tr inoc fos, fr od, abnt bishwh fast sting, yel thk resdl ring, no flor, mod yel-brn sting	95% CHK: lt gy - med gy brn, occ wht-crm, mot, blkly - sb blkly, occ sb plty, brit - mod firm, chky - sbwxy, mt; v calc, 5% MRLST: blk - dk gy brn, blkly - sb blkly, sme sb plty, sft - firm, rthy - gritty, mt; arg - slty, mod calc, occ lse & imbd cal, tr inoc fos, fr od, abnt bishwh fast sting, yel thk resdl ring, no flor, mod yel-brn sting
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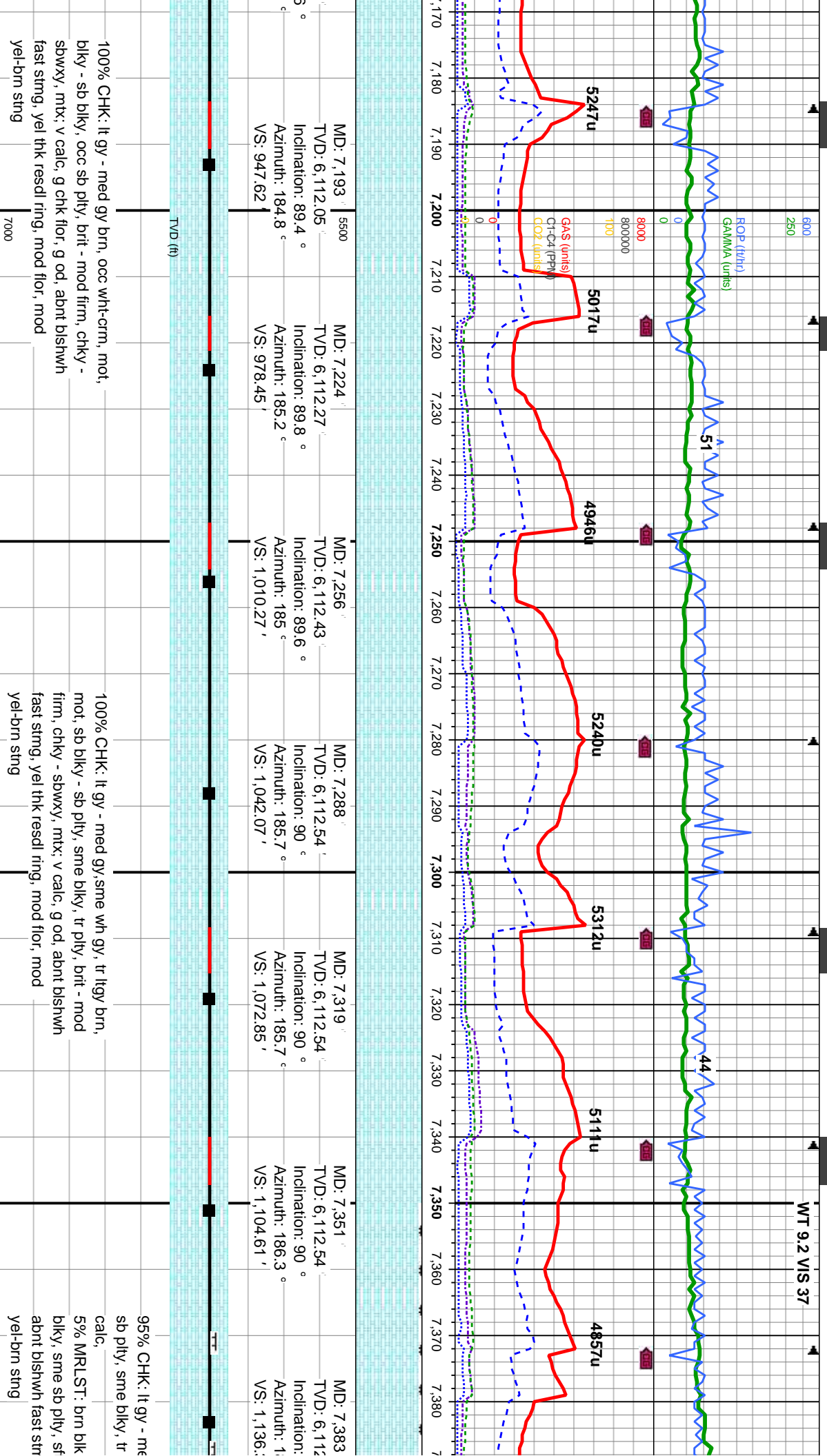




MD: 6,970' TVD: 6,114.43' Inclination: 90.6 ° Azimuth: 181.5 ° VS: 725.49'	MD: 7,002' TVD: 6,114.17' Inclination: 90.3 ° Azimuth: 182.7 ° VS: 757.44'	MD: 7,034' TVD: 6,113.87' Inclination: 90.8 ° Azimuth: 183.3 ° VS: 789.36'	MD: 7,066' TVD: 6,113.2' Inclination: 91.6 ° Azimuth: 183.6 ° VS: 821.26'	MD: 7,097' TVD: 6,112.41' Inclination: 91.3 ° Azimuth: 184.7 ° VS: 852.12'	MD: 7,129' TVD: 6,111.85' Inclination: 90.7 ° Azimuth: 184.8 ° VS: 883.95'	MD: 7,161' TVD: 6,111.77' Inclination: 89.4 ° Azimuth: 184.8 ° VS: 915.79'
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95% CHK: lt gy - med gy brn, occ wht-crm, mot, blkly - sb blkly, occ sb pily, brit - mod firm, chky - sbwxy, mt; v calc, 5% MRLST: blk - dk gy brn, blkly - sb blkly, sme sb pily, sft - firm, rthy - gritty, mt; arg - slty, mod calc, tr inoc fos, g chk flor, g od, abnt bishwh fast sting, yel thk resdl ring, no flor, mod yel-brn sting	7000
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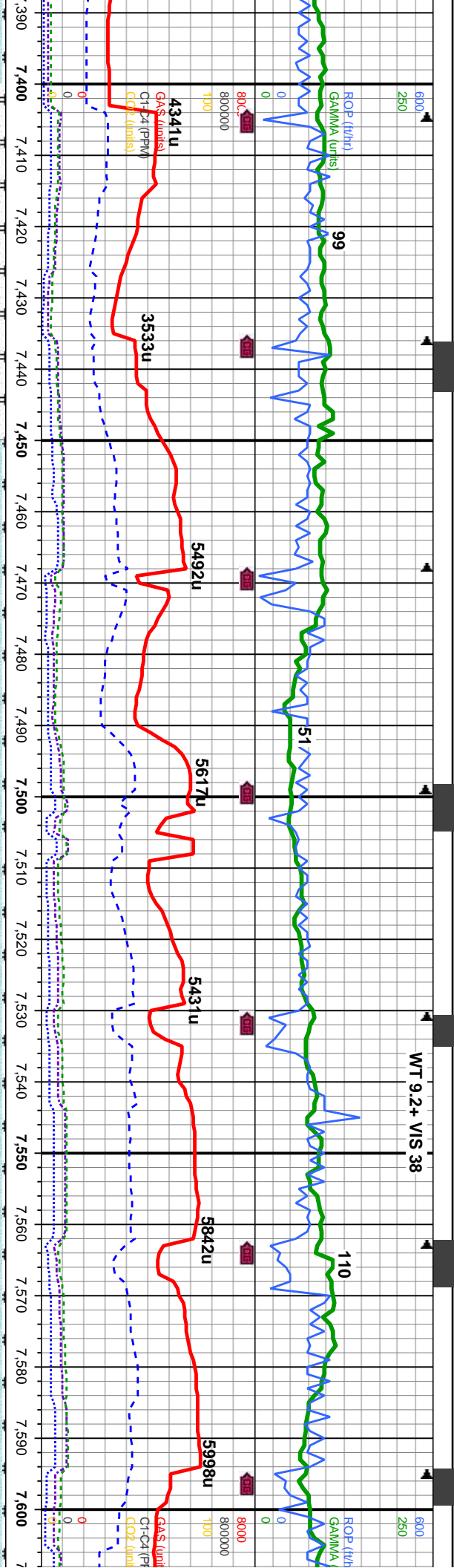


100% CHK: lt gy - med gy brn, occ wht-crm, mot, blk - sb blk, occ sb pily, brit - mod firm, chky - sbwxy, mtx: v calc, g chk flor, g od, abnt bishwh fast sting, yel thk resdl ring, mod flor, mod yel-brn sting

100% CHK: lt gy - med gy, sme wh gy, tr lly brn, mot, sb blk - sb pily, sme blk, tr pily, brit - mod firm, chky - sbwxy, mtx: v calc, g od, abnt bishwh fast sting, yel thk resdl ring, mod flor, mod yel-brn sting

95% CHK: lt gy - me sb pily, sme blk, tr calc, 5% MRLST: brn blk blk, sme sb pily, sf abnt bishwh fast str yel-brn sting

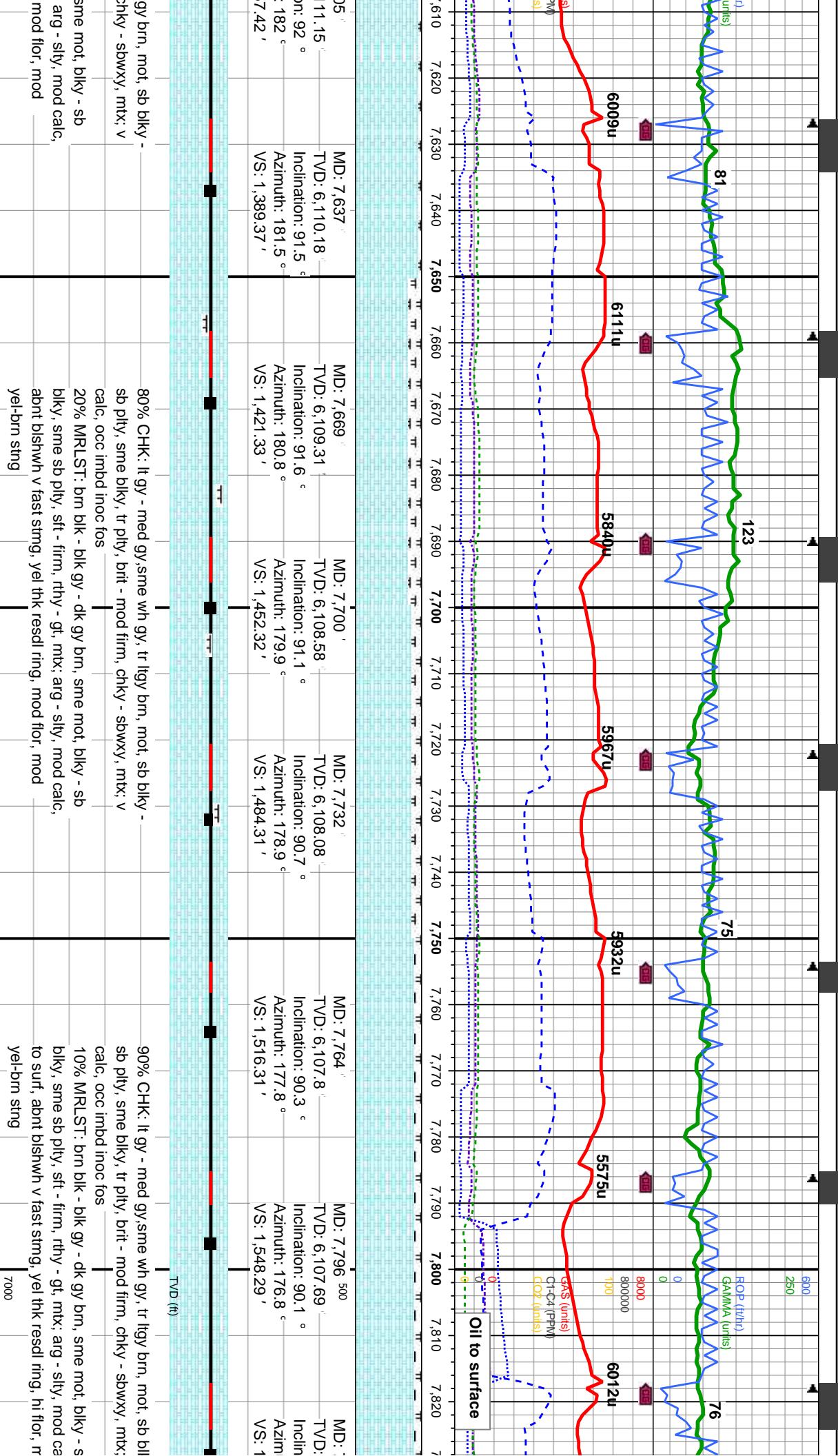


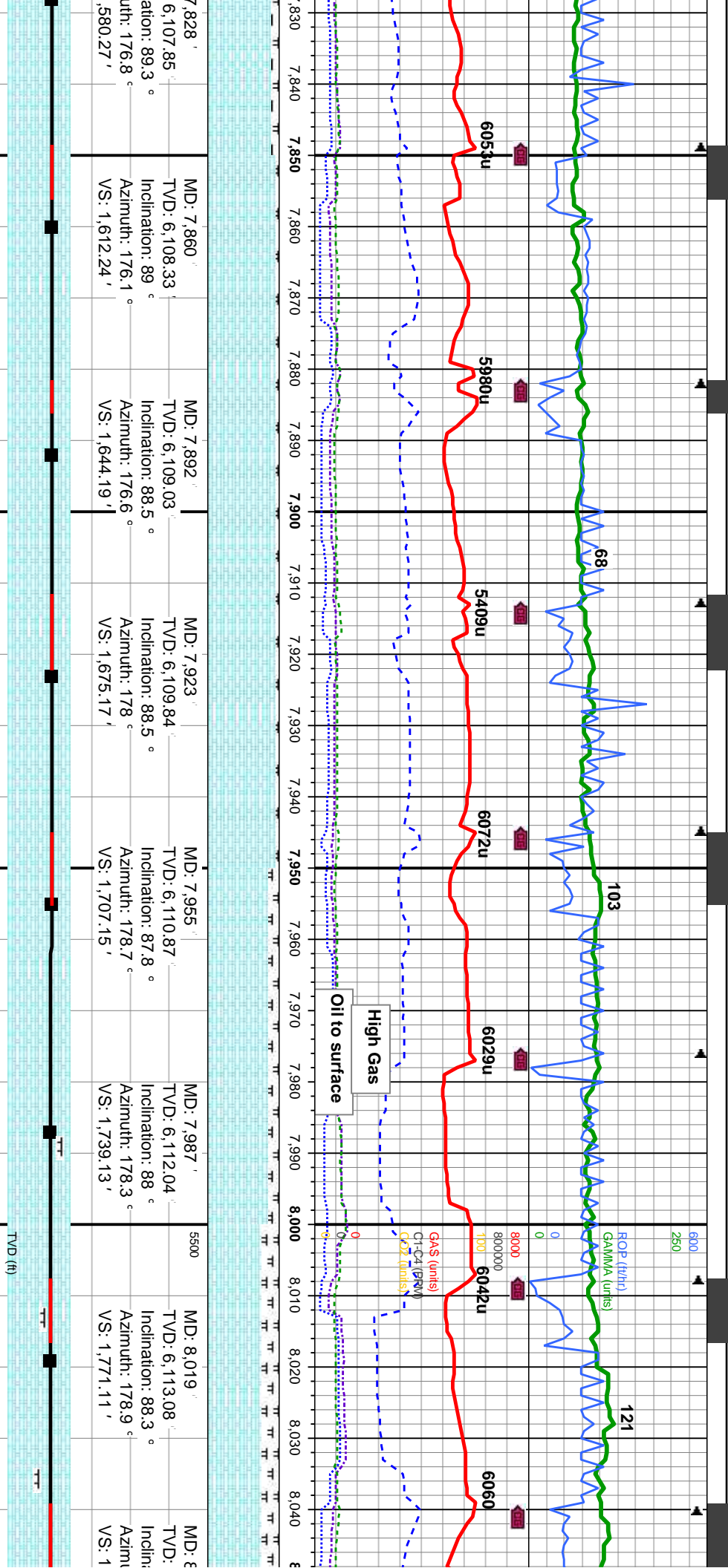


5500	MD: 7,415'	MD: 7,446'	MD: 7,478'	MD: 7,510'	MD: 7,541'	MD: 7,573'	MD: 7,601'
TVD: 6,113.3'	TVD: 6,113.54'	TVD: 6,113.37'	TVD: 6,113.07'	TVD: 6,112.69'	TVD: 6,112.1'	TVD: 6,111.7'	TVD: 6,111.2'
Inclination: 88.9°	Inclination: 90.2°	Inclination: 90.4°	Inclination: 90.7°	Inclination: 90.7°	Inclination: 91.4°	Inclination: 91.4°	Inclination: 91.4°
Azimuth: 185.5°	Azimuth: 185.2°	Azimuth: 183.4°	Azimuth: 183.8°	Azimuth: 183.6°	Azimuth: 182.9°	Azimuth: 182.9°	Azimuth: 182.9°
VS: 1,168.14'	VS: 1,198.95'	VS: 1,230.8'	VS: 1,262.7'	VS: 1,293.59'	VS: 1,325.5'	VS: 1,356.1'	VS: 1,387.0'

95% CHK: It gy - med gy, sme wh gy, tr lly brn, mot, sb blk - sb ply, sme blk, tr ply, brit - mod firm, chky - sbwxy, mt; v calc	95% CHK: It gy - med gy, sme wh gy, tr lly brn, mot, sb blk - sb ply, sme blk, tr ply, brit - mod firm, chky - sbwxy, mt; v calc	95% CHK: It gy - med gy, sme wh gy, tr lly brn, mot, sb blk - sb ply, sme blk, tr ply, brit - mod firm, chky - sbwxy, mt; v calc	95% CHK: It gy - med gy, sme wh gy, tr lly brn, mot, sb blk - sb ply, sme blk, tr ply, brit - mod firm, chky - sbwxy, mt; v calc	95% CHK: It gy - med gy, sme wh gy, tr lly brn, mot, sb blk - sb ply, sme blk, tr ply, brit - mod firm, chky - sbwxy, mt; v calc	95% CHK: It gy - med gy, sme wh gy, tr lly brn, mot, sb blk - sb ply, sme blk, tr ply, brit - mod firm, chky - sbwxy, mt; v calc	95% CHK: It gy - med gy, sme wh gy, tr lly brn, mot, sb blk - sb ply, sme blk, tr ply, brit - mod firm, chky - sbwxy, mt; v calc
5% MRLST: brn blk - blk gy - dk gy brn, sme mot, blk - sb blk, sme sb ply, sft - firm, rthy - gt, mt; arg - silty, mod calc, abnt bishwh fast string, yel thk resd ring, mod flr, mod yel-brn string	5% MRLST: brn blk - blk gy - dk gy brn, sme mot, blk - sb blk, sme sb ply, sft - firm, rthy - gt, mt; arg - silty, mod calc, abnt bishwh fast string, yel thk resd ring, mod flr, mod yel-brn string	5% MRLST: brn blk - blk gy - dk gy brn, sme mot, blk - sb blk, sme sb ply, sft - firm, rthy - gt, mt; arg - silty, mod calc, abnt bishwh fast string, yel thk resd ring, mod flr, mod yel-brn string	5% MRLST: brn blk - blk gy - dk gy brn, sme mot, blk - sb blk, sme sb ply, sft - firm, rthy - gt, mt; arg - silty, mod calc, abnt bishwh fast string, yel thk resd ring, mod flr, mod yel-brn string	5% MRLST: brn blk - blk gy - dk gy brn, sme mot, blk - sb blk, sme sb ply, sft - firm, rthy - gt, mt; arg - silty, mod calc, abnt bishwh fast string, yel thk resd ring, mod flr, mod yel-brn string	5% MRLST: brn blk - blk gy - dk gy brn, sme mot, blk - sb blk, sme sb ply, sft - firm, rthy - gt, mt; arg - silty, mod calc, abnt bishwh fast string, yel thk resd ring, mod flr, mod yel-brn string	5% MRLST: brn blk - blk gy - dk gy brn, sme mot, blk - sb blk, sme sb ply, sft - firm, rthy - gt, mt; arg - silty, mod calc, abnt bishwh fast string, yel thk resd ring, mod flr, mod yel-brn string



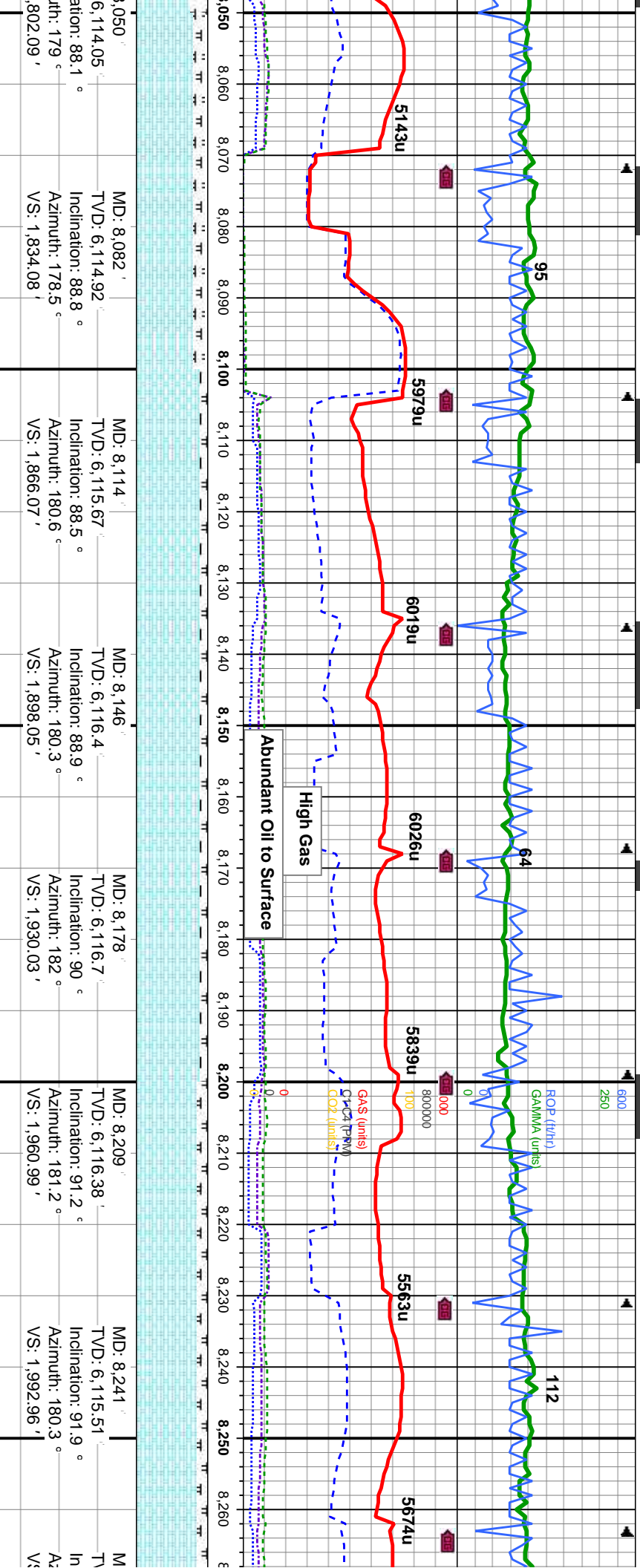




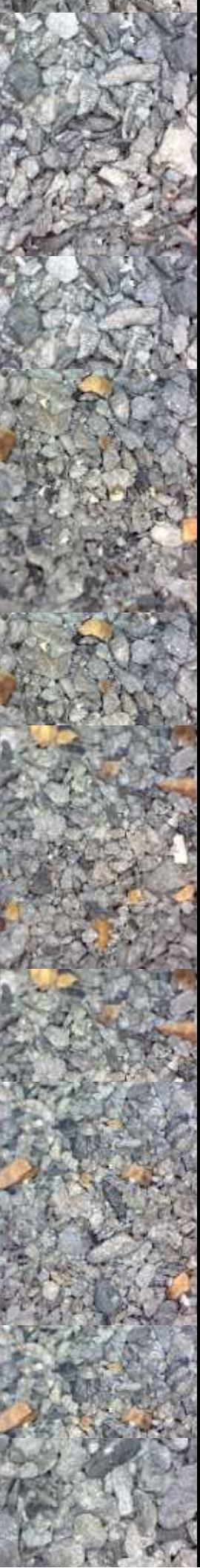
7,828'	MD: 7,860'	MD: 7,892'	MD: 7,923'	MD: 7,955'	MD: 7,987'	MD: 8,019'
6,107.85'	TVD: 6,108.33'	TVD: 6,109.03'	TVD: 6,109.84'	TVD: 6,110.87'	TVD: 6,112.04'	TVD: 6,113.08'
Inclination: 89.3°	Inclination: 88.5°	Inclination: 88.5°	Inclination: 87.8°	Inclination: 88°	Inclination: 88.3°	Inclination: 88.3°
Azimuth: 176.8°	Azimuth: 176.6°	Azimuth: 178°	Azimuth: 178.7°	Azimuth: 178.3°	Azimuth: 178.9°	Azimuth: 178.9°
VS: 1,580.27'	VS: 1,642.24'	VS: 1,644.19'	VS: 1,675.17'	VS: 1,707.15'	VS: 1,739.13'	VS: 1,771.11'

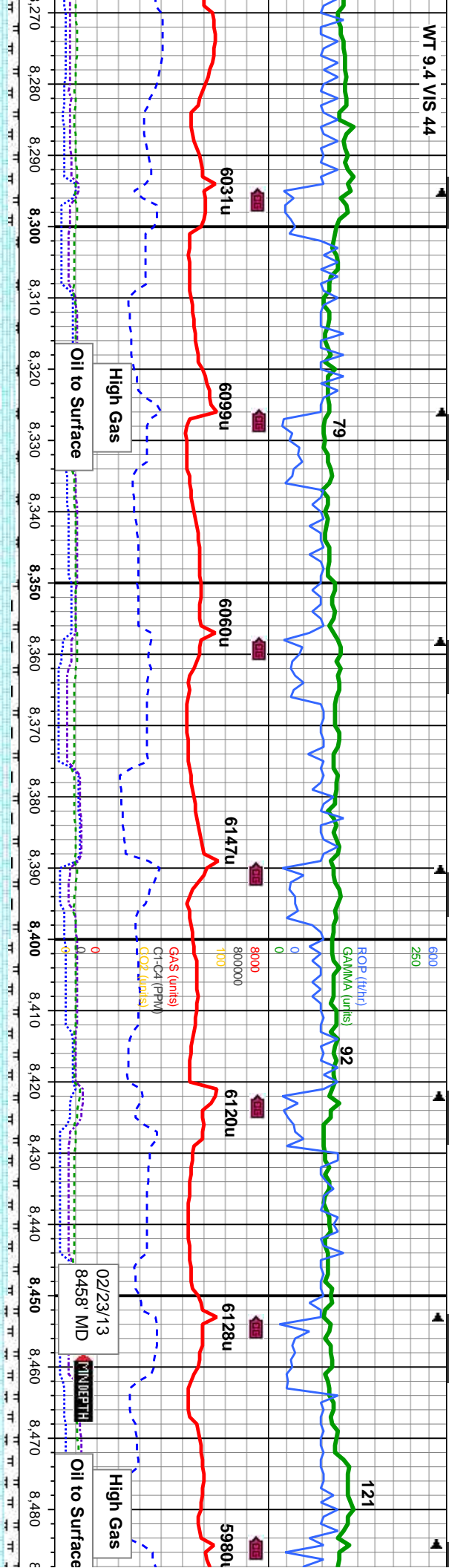
95% CHK: lt gy - med gy, sme wh gy, tr lly brn, mot, sb blk - sb pty, sme blk, tr pty, brit - mod firm, chky - sbwxy, mtx; v calc, occ imbd inoc fos	85% CHK: lt gy - med gy, sme wh gy, tr lly brn, mot, sb blk - sb pty, sme blk, tr pty, brit - mod firm, chky - sbwxy, mtx; v calc, tr imbd inoc fos
5% MRLST: brn blk - blk gy - dk gy brn, sme mot, blk - sb blk, sme sb pty, sft - firm, rthy - gt, mtx, arg - silty, mod calc, o to surf, abnt blshwh v fast string, yel thk resd ring, hi flr, mod yel-brn string	15% MRLST: brn blk - blk gy - dk gy brn, sme mot, blk - sb blk, sme sb pty, sft - firm, rthy - gt, mtx, arg - silty, mod calc, scat lse & Sec cal, g od, o to surf, abnt blshwh v fast string, yel thk resd ring, hi flr, mod yel-brn string





MD: 8,082' TVD: 6,114.92' Inclination: 88.8° Azimuth: 178.5° VS: 1,834.08'	MD: 8,114' TVD: 6,115.67' Inclination: 88.5° Azimuth: 180.6° VS: 1,866.07'	MD: 8,146' TVD: 6,116.4' Inclination: 88.9° Azimuth: 180.3° VS: 1,898.05'	MD: 8,178' TVD: 6,116.7' Inclination: 90° Azimuth: 182° VS: 1,930.03'	MD: 8,209' TVD: 6,116.38' Inclination: 91.2° Azimuth: 181.2° VS: 1,960.99'	MD: 8,241' TVD: 6,115.51' Inclination: 91.9° Azimuth: 180.3° VS: 1,992.96'	M TV In Az VS
85% CHK: lt gy - med gy, sme wh gy, tr lty brn, mot, sb blk - sb pty, sme blk, tr pty, brit - mod firm, chky - sbwxy, mtx; v calc, tr imbd inoc fos 15% MRLST: brn blk - blk gy - dk gy brn, sme mot, blk - sb blk, sme sb pty, sft - firm, rthy - gt, mtx; arg - silty, mod calc, scat lse & Sec cal, g od, heavy o to surf, abnt bishwn v fast stmg, yel thk resdl ring, hi flr, mod yel-brn sing						
90% CHK: lt gy - med gy, sme wh gy, tr lty brn, mot, sb blk - sb pty, sme blk, tr pty, brit - mod firm, chky - sbwxy, mtx; v calc, tr imbd inoc fos 10% MRLST: brn blk - blk gy - dk gy brn, sme mot, blk - sb blk, sme sb pty, sft - firm, rthy - gt, mtx; arg - silty, mod calc, scat lse & Sec cal, g od, heavy o to surf, abnt bishwn v fast stmg, yel thk resdl ring, hi flr, mod yel-brn sing						
7000						

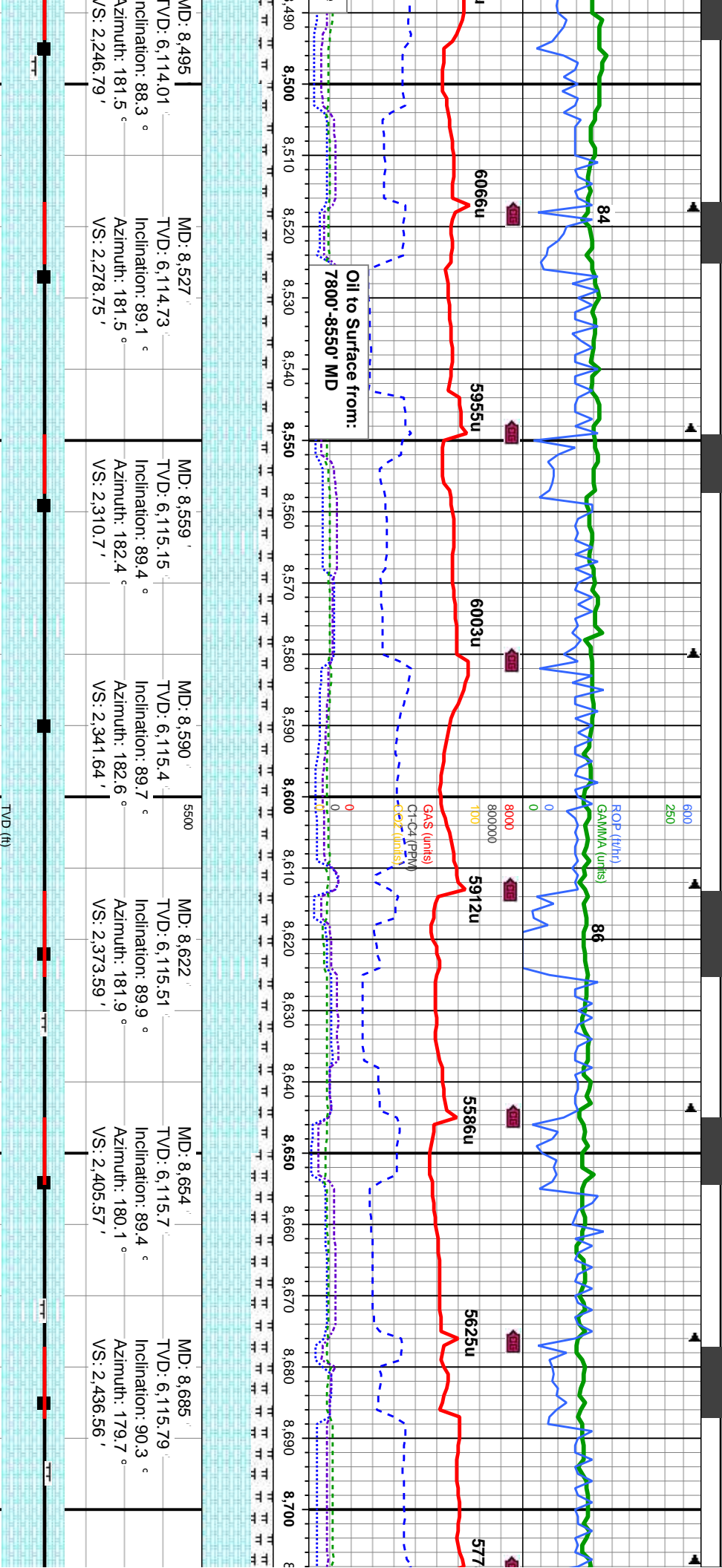




D: 8,273 MD: 8,305 TVD: 6,114.37 Inclination: 92.2 ° Azimuth: 179.9 ° VS: 2,024.94'	D: 8,305 MD: 8,336 TVD: 6,113.36 Inclination: 91.4 ° Azimuth: 181.5 ° VS: 2,056.92'	D: 8,368 MD: 8,400 TVD: 6,112.16 Inclination: 90.4 ° Azimuth: 180.6 ° VS: 2,119.87'	D: 8,432 MD: 8,463 TVD: 6,112.49 Inclination: 89.2 ° Azimuth: 180.4 ° VS: 2,183.85'	D: 8,463 MD: 8,494 TVD: 6,113.12 Inclination: 88.5 ° Azimuth: 181 ° VS: 2,214.83'
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90% CHK: lt gy - med gy, sme wh gy, tr lly brn, mot, sb blk - sb pty, sme blk, tr pty, brit - mod firm, chky - sbwxy, mt; v calc, occ inoc fos, 10% MRLST: brn blk - blk gy - dk gy brn, sme mot, blk - sb blk, sme sb pty, sft - firm, rthy - gt, mt; arg - sily, mod calc, scat lse & imbd cal, g od, o to surf, abt bishwn v fast stmg, yel thk resd ring, hi flr, mod yel-brn stmg	80% CHK: lt gy - med gy, sme wh gy, tr lly brn, mot, sb blk - sb pty, sme blk, tr pty, brit - mod firm, chky - sbwxy, mt; v calc, occ inoc fos, 20% MRLST: brn blk - blk gy - dk gy brn, sme mot, blk - sb blk, sme sb pty, sft - firm, rthy - gt, mt; arg - sily, mod calc, scat lse & imbd cal, g od, o to surf, abt bishwn v fast stmg, yel thk resd ring, hi flr, mod yel-brn stmg
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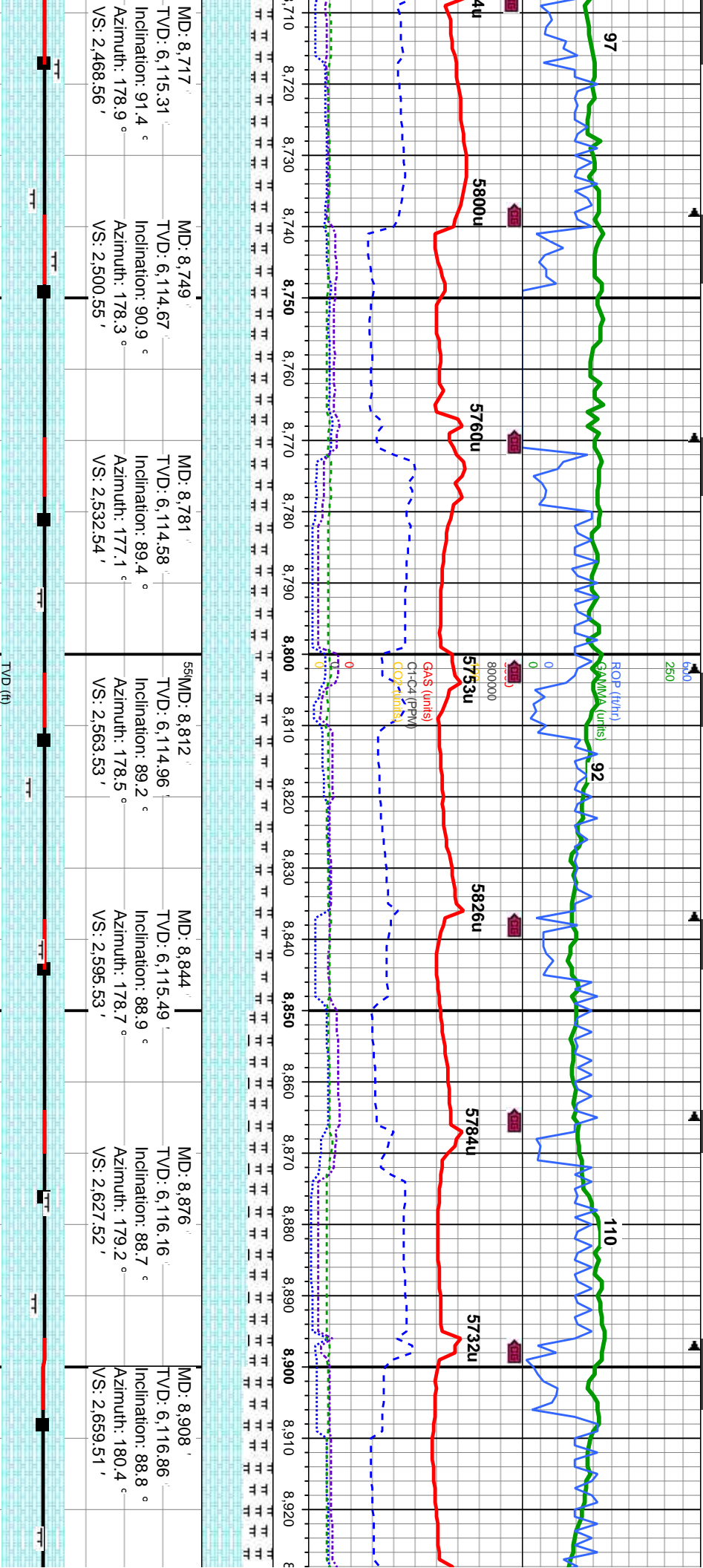




MD: 8,495 TVD: 6,114.01 Inclination: 88.3 ° Azimuth: 181.5 ° VS: 2,246.79	MD: 8,527 TVD: 6,114.73 Inclination: 89.1 ° Azimuth: 181.5 ° VS: 2,278.75	MD: 8,559 TVD: 6,115.15 Inclination: 89.4 ° Azimuth: 182.4 ° VS: 2,310.7	MD: 8,590 TVD: 6,115.4 Inclination: 89.7 ° Azimuth: 182.6 ° VS: 2,341.64	MD: 8,622 TVD: 6,115.51 Inclination: 89.9 ° Azimuth: 181.9 ° VS: 2,373.59	MD: 8,654 TVD: 6,115.7 Inclination: 89.4 ° Azimuth: 180.1 ° VS: 2,405.57	MD: 8,685 TVD: 6,115.79 Inclination: 90.3 ° Azimuth: 179.7 ° VS: 2,436.56
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d gy, sme wh gy, tr lty brn, mot, sb blk ply, brit - mod firm, chky - sbwxy, mtx;	80% CHK: lt gy - med gy, occ lty brn, mot, sb blk ply, sme blk, tr ply, brit - mod firm, chky - sbwxy, mtx; v calc,	20% MRLST: brn blk - blk gy - dk gy brn, sme mot, blk sb blk, sme sb ply, sft - firm, rthy - gt, mtx; arg - sly, mod calc, tr bent, g od, abnt bishwh, fast sting, yel thk resd ring, mod flor, mod yel-brn sting
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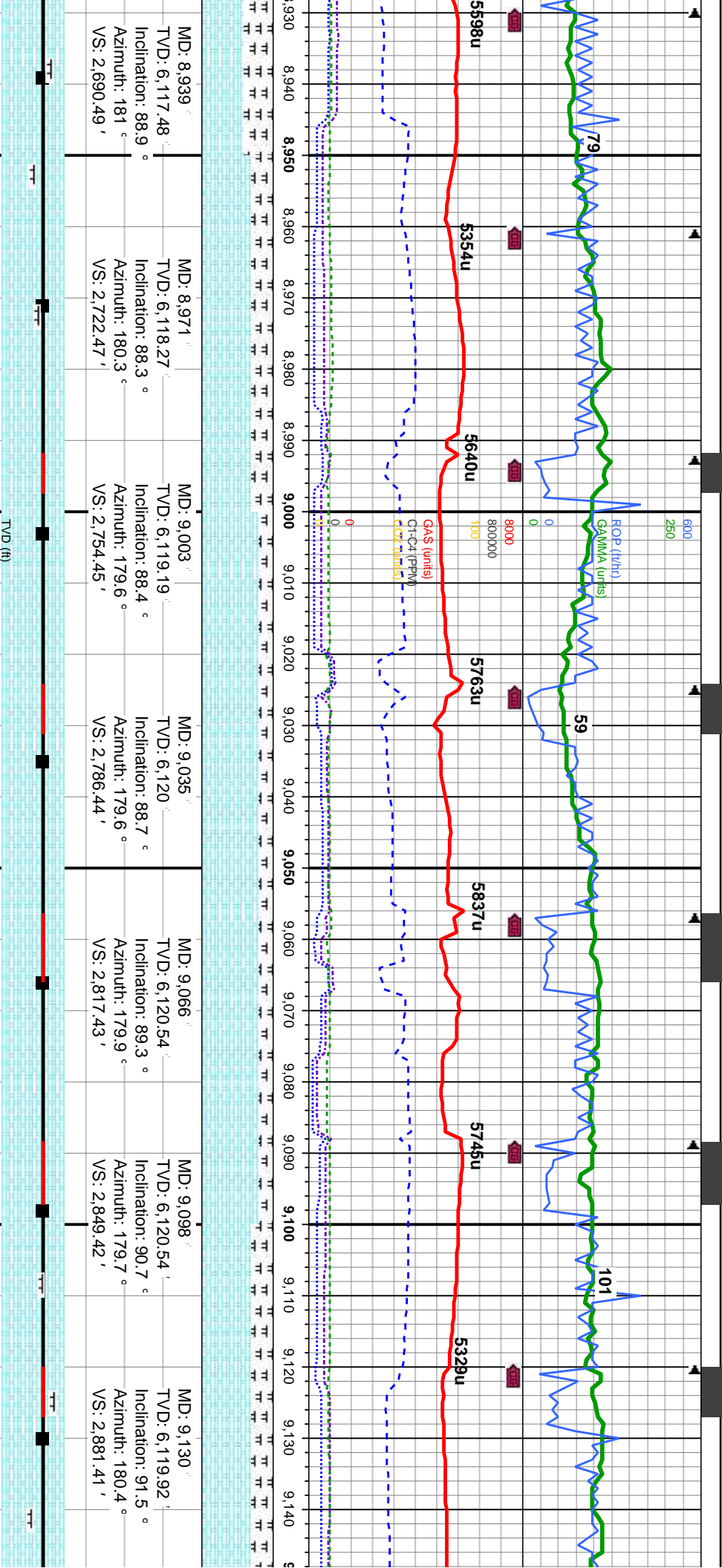




MD: 8,717 ' TVD: 6,115.31 ' Inclination: 91.4 ° Azimuth: 178.9 ° VS: 2,468.56 '	MD: 8,749 ' TVD: 6,114.67 ' Inclination: 90.9 ° Azimuth: 178.3 ° VS: 2,500.55 '	MD: 8,781 ' TVD: 6,114.58 ' Inclination: 89.4 ° Azimuth: 177.1 ° VS: 2,532.54 '	55MD: 8,812 ' TVD: 6,114.96 ' Inclination: 89.2 ° Azimuth: 178.5 ° VS: 2,563.53 '	MD: 8,844 ' TVD: 6,115.49 ' Inclination: 88.9 ° Azimuth: 178.7 ° VS: 2,595.53 '	MD: 8,876 ' TVD: 6,116.16 ' Inclination: 88.7 ° Azimuth: 179.2 ° VS: 2,627.52 '	MD: 8,908 ' TVD: 6,116.86 ' Inclination: 88.8 ° Azimuth: 180.4 ° VS: 2,659.51 '
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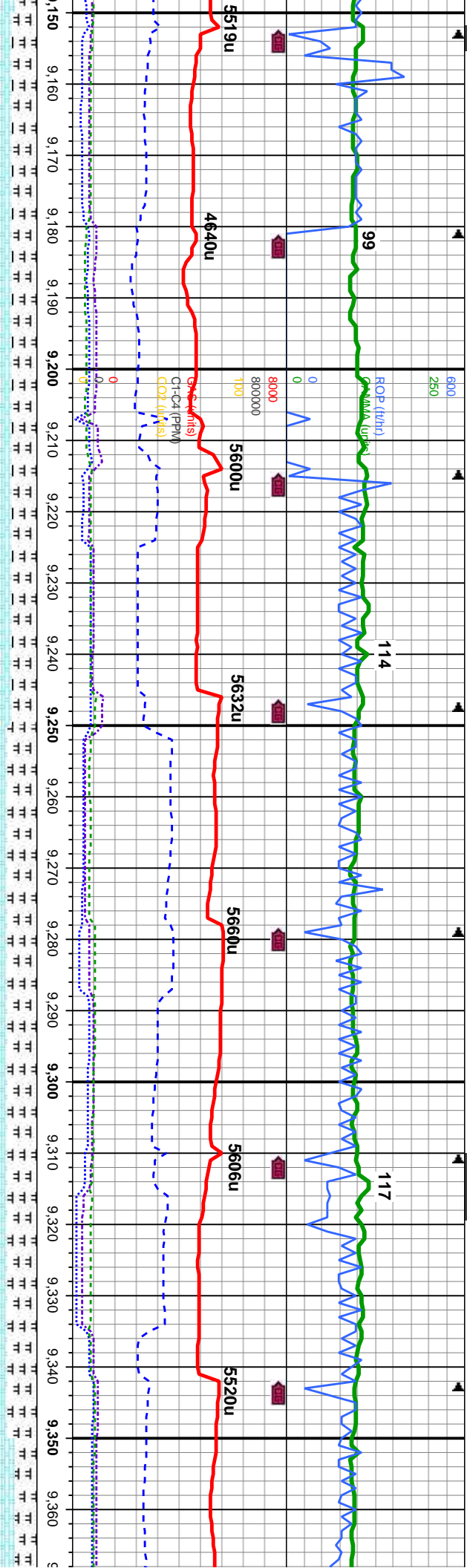
ot, sb blkly - sb y - sbwxy, mtx; v						
sme mot, blkly - mtx; arg - slty, mod j, yel thk resdl						
80% CHK: lt gy - med gy, occ ltgy brn, mot, sb blkly - sb ply, sme blkly, tr ply, brit - mod firm, chky - sbwxy, mtx; v calc, tr inoc foss frag, tr imbd inoc foss 20% MRLST: brn blk - blk gy - dk gy brn, sme mot, blkly - sb blkly, sme sb ply, sft - firm, rthy - gt, mtx; arg - slty, mod calc, tr bent, g od, abnt blshwh mod stmg, yel thk resdl ring, mod yel-brn stng						
						7000





MD: 8.939 TVD: 6,117.48 Inclination: 88.9 ° Azimuth: 181 ° VS: 2,690.49 '	MD: 8.971 TVD: 6,118.27 Inclination: 88.3 ° Azimuth: 180.3 ° VS: 2,722.47 '	MD: 9.003 TVD: 6,119.19 Inclination: 88.4 ° Azimuth: 179.6 ° VS: 2,754.45 '	MD: 9.035 TVD: 6,120 Inclination: 88.7 ° Azimuth: 179.6 ° VS: 2,786.44 '	MD: 9.066 TVD: 6,120.54 Inclination: 89.3 ° Azimuth: 179.9 ° VS: 2,817.43 '	MD: 9.098 TVD: 6,120.54 Inclination: 90.7 ° Azimuth: 179.7 ° VS: 2,849.42 '	MD: 9.130 TVD: 6,119.92 Inclination: 91.5 ° Azimuth: 180.4 ° VS: 2,881.41 '
sb pily, v calc,	70% CHK: ltgy - med gy brn, occ gy, mot, sb blkly - sb pily, sme blkly, tr pily, brit - mod firm, chky - sbwxy, mt; v calc, sme imbd inoc foss, occ lse inoc foss	80% CHK: ltgy - med gy brn, occ gy, mot, sb blkly - sb pily, sme blkly, tr pily, brit - mod firm, chky - sbwxy, mt; v calc, sme imbd inoc foss, occ lse inoc foss	20% MRLST: blk - blk gy - dk gy brn, tr mot, blkly - sb blkly, occ sb pily, sft - firm, rthy - gt, mt; arg - slty, mod calc, occ imbd inoc foss, abnt bishwn mod sting, yel thk resd ring, mod yel-brn sting	7000		

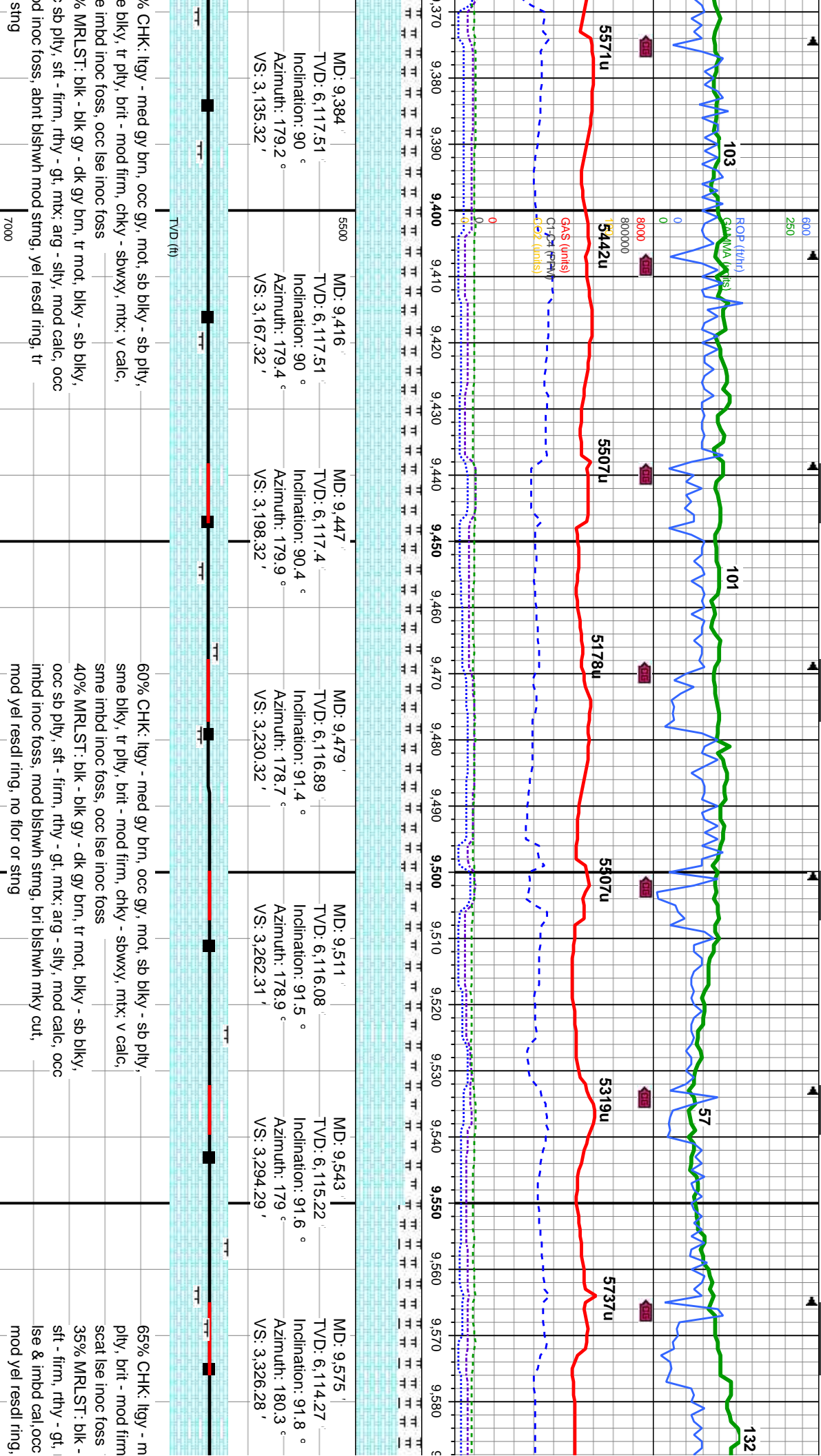




MD: 9,162 TVD: 6,119.34 Inclination: 90.6 ° Azimuth: 180.1 ° VS: 2,913.4 '	MD: 9,193 TVD: 6,119.2 Inclination: 89.9 ° Azimuth: 180.1 ° VS: 2,944.39 '	MD: 9,225 TVD: 6,119.23 Inclination: 90 ° Azimuth: 180.1 ° VS: 2,976.38 '	MD: 9,257 TVD: 6,119.23 Inclination: 90 ° Azimuth: 179.6 ° VS: 3,008.38 '	MD: 9,288 TVD: 6,119.04 Inclination: 90.7 ° Azimuth: 180.4 ° VS: 3,039.38 '	MD: 9,320 TVD: 6,118.48 Inclination: 91.3 ° Azimuth: 181 ° VS: 3,071.36 '	MD: 9,352 TVD: 6,117.81 Inclination: 91.1 ° Azimuth: 180.6 ° VS: 3,103.33 '
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65% CHK: Itgy - med gy brn, occ gy, mot, sb blkly - sb plty, sme blkly, tr plty, brit - mod firm, chky - sbwxy, mtv; v calc, sme imbd inoc foss, occ lse inoc foss	60% CHK: Itgy - med gy brn, occ gy, mot, sb blkly - sb plty, sme blkly, tr plty, brit - mod firm, chky - sbwxy, mtv; v calc, sme imbd inoc foss, occ lse inoc foss	60% CHK: Itgy - med gy brn, occ gy, mot, sb blkly - sb plty, sme blkly, tr plty, brit - mod firm, chky - sbwxy, mtv; v calc, sme imbd inoc foss, occ lse inoc foss
35% MRLST: blk - blk gy - dk gy brn, tr mot, blkly - sb blkly, occ sb plty, sft - firm, rthy - gt, mtv; arg - silty, mod calc, occ imbd inoc foss, abnt bishwh mod sting, yel thk resd ring, mod yel sing	40% MRLST: blk - blk gy - dk gy brn, tr mot, blkly - sb blkly, occ sb plty, sft - firm, rthy - gt, mtv; arg - silty, mod calc, occ imbd inoc foss, abnt bishwh mod sting, yel resd ring, yel sing	60% CHK: Itgy - med gy brn, occ gy, mot, sb blkly - sb plty, sme blkly, tr plty, brit - mod firm, chky - sbwxy, mtv; v calc, sme imbd inoc foss, occ lse inoc foss



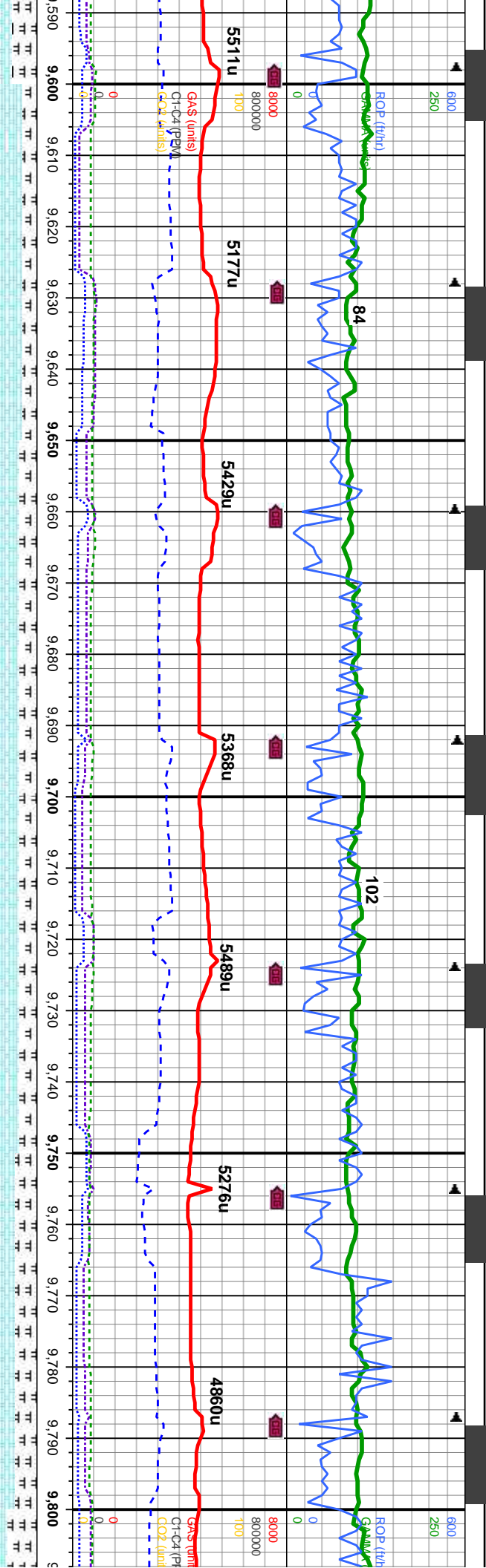


% CHK: ltgy - med gy brn, occ gy, mot, sb blk - sb pty, e blk, tr pty, brit - mod firm, chky - sbwxy, mtx; v calc, e imbd inoc foss, occ lse inoc foss

% MRLST: blk - blk gy - dk gy brn, tr mot, blk - sb blk, sb pty, sft - firm, rthy - gt, mtx; arg - sily, mod calc, occ imbd inoc foss, abnt bishwh mod sting, yel resd ring, tr sting

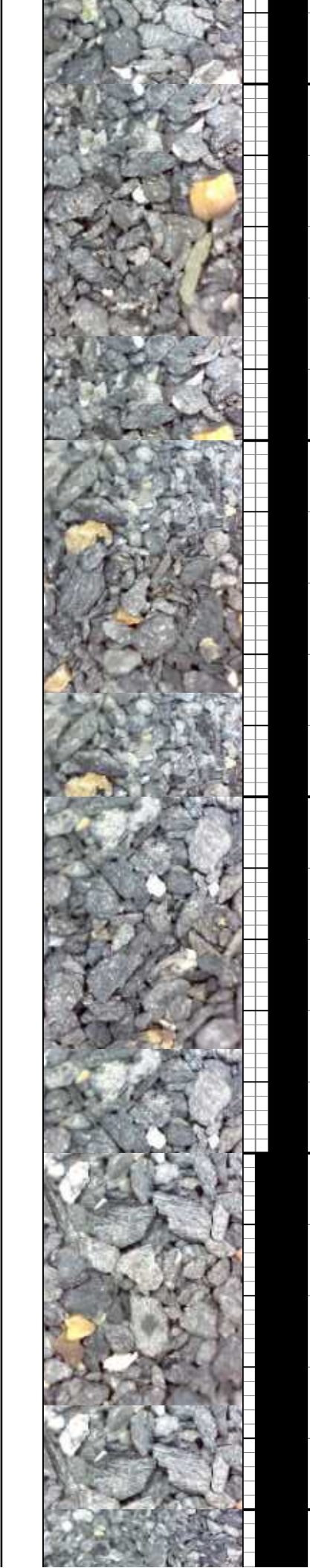
7000

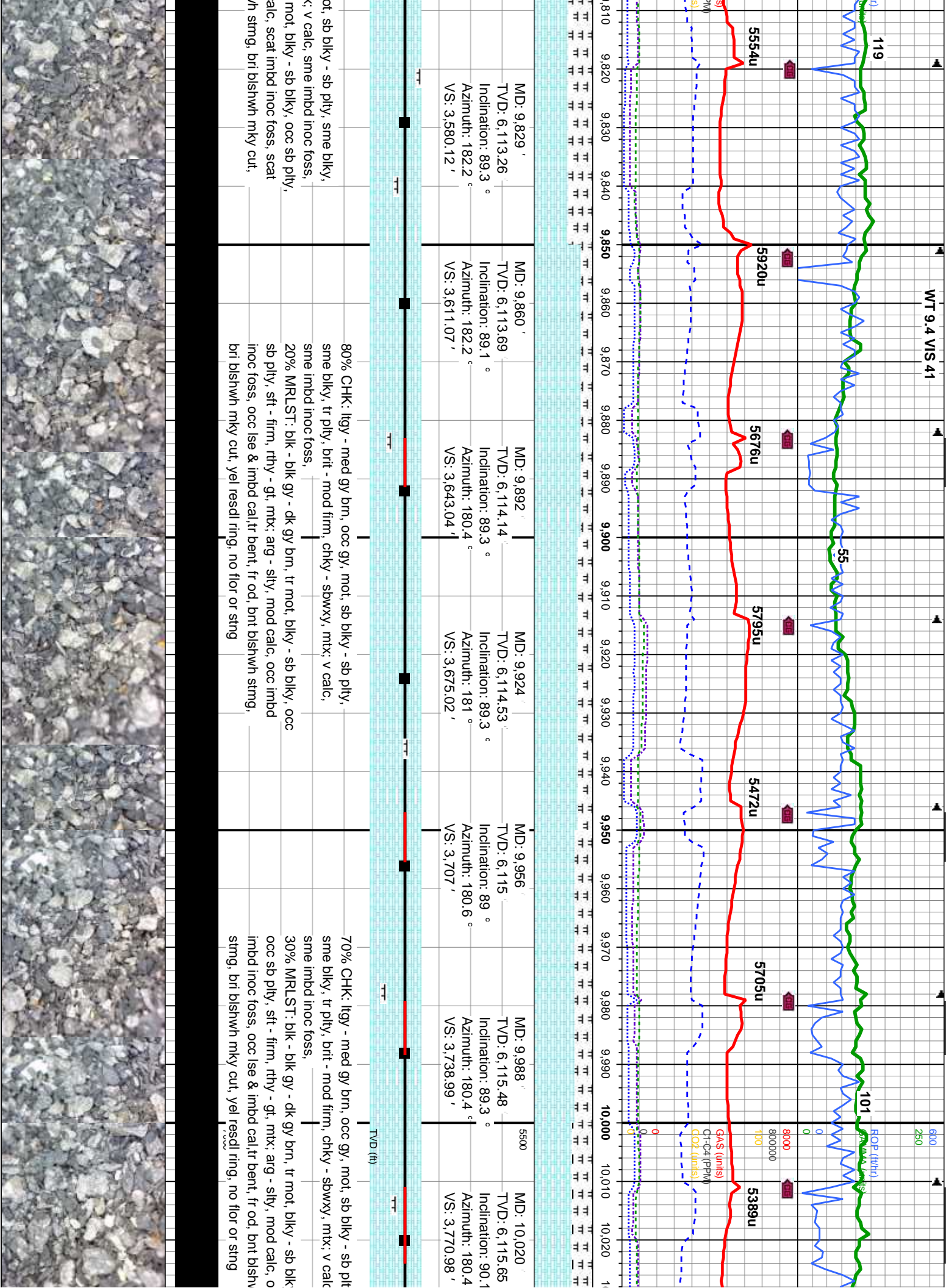


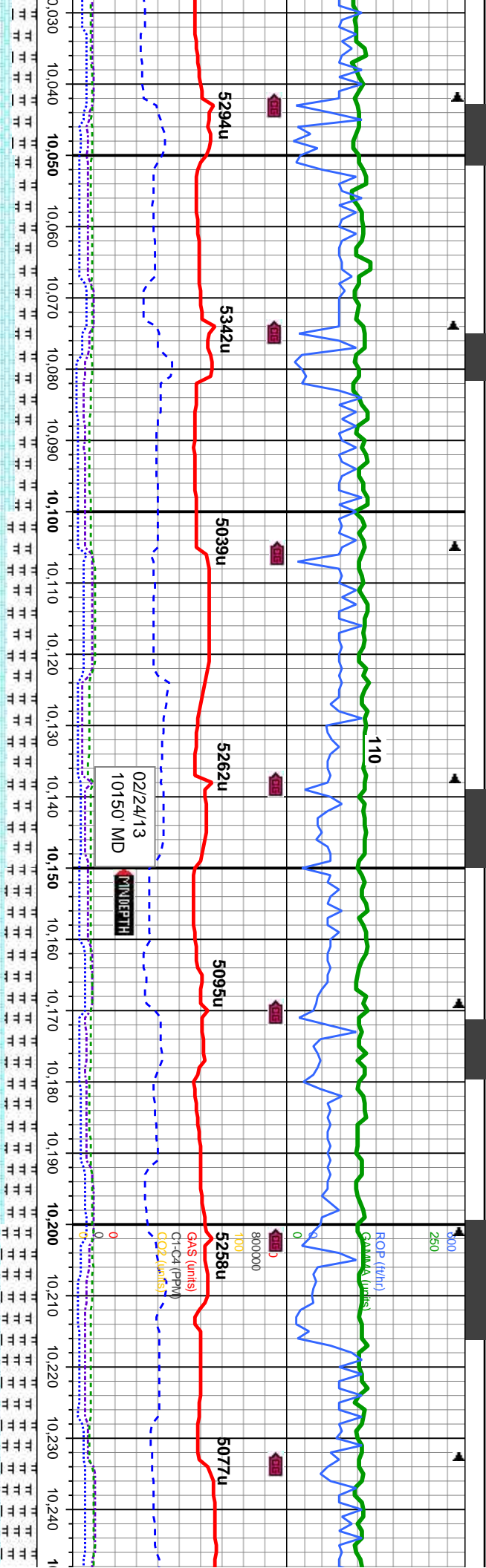


MD: 9,607' TVD: 6,113.32' Inclination: 91.6 ° Azimuth: 180.4 ° VS: 3,358.25'	MD: 9,638' TVD: 6,112.78' Inclination: 90.4 ° Azimuth: 179.2 ° VS: 3,389.24'	MD: 9,670' TVD: 6,112.86' Inclination: 89.3 ° Azimuth: 180.1 ° VS: 3,421.24'	MD: 9,702' TVD: 6,113.06' Inclination: 90 ° Azimuth: 180.3 ° VS: 3,453.23'	MD: 9,734' TVD: 6,112.86' Inclination: 90.7 ° Azimuth: 180.4 ° VS: 3,485.22'	MD: 9,765' TVD: 6,112.73' Inclination: 89.8 ° Azimuth: 181.3 ° VS: 3,516.21'	MD: 9,797' TVD: 6,112.92' Inclination: 89.5 ° Azimuth: 181.9 ° VS: 3,548.17'
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occ gy brn, occ gy, mot, sb blk - sb pily, sme blk, tr chky - sbwxy, mt; v calc, sme imbd inoc foss, blk gy - dk gy brn, tr mot, blk - sb blk, occ sb pily, mtx; arg - silty, mod calc, scat imbd inoc foss, scat bent, g od, mod bishwn string, bri bishwn mky cut, no flr or sling	75% CHK: ltgy - med gy brn, occ gy, mot, sb blk - sb pily, sme blk, tr pily, brit - mod firm, chky - sbwxy, mt; v calc, sme imbd inoc foss, scat lse inoc foss 25% MRLST: blk - blk gy - dk gy brn, tr mot, blk - sb blk, occ sb pily, sft - firm, rthy - gt, mt; arg - silty, mod calc, scat imbd inoc foss, scat lse & imbd cal, occ bent, g od, mod bishwn string, bri bishwn mky cut, mod yel resd ring, no flr or sling	70% CHK: ltgy - med gy brn, occ gy, m tr pily, brit - mod firm, chky - sbwxy, mt 30% MRLST: blk - blk gy - dk gy brn, tr sft - firm, rthy - gt, mt; arg - silty, mod c lse & imbd cal, occ bent, g od, bnt bishwn yel resd ring, no flr or sling
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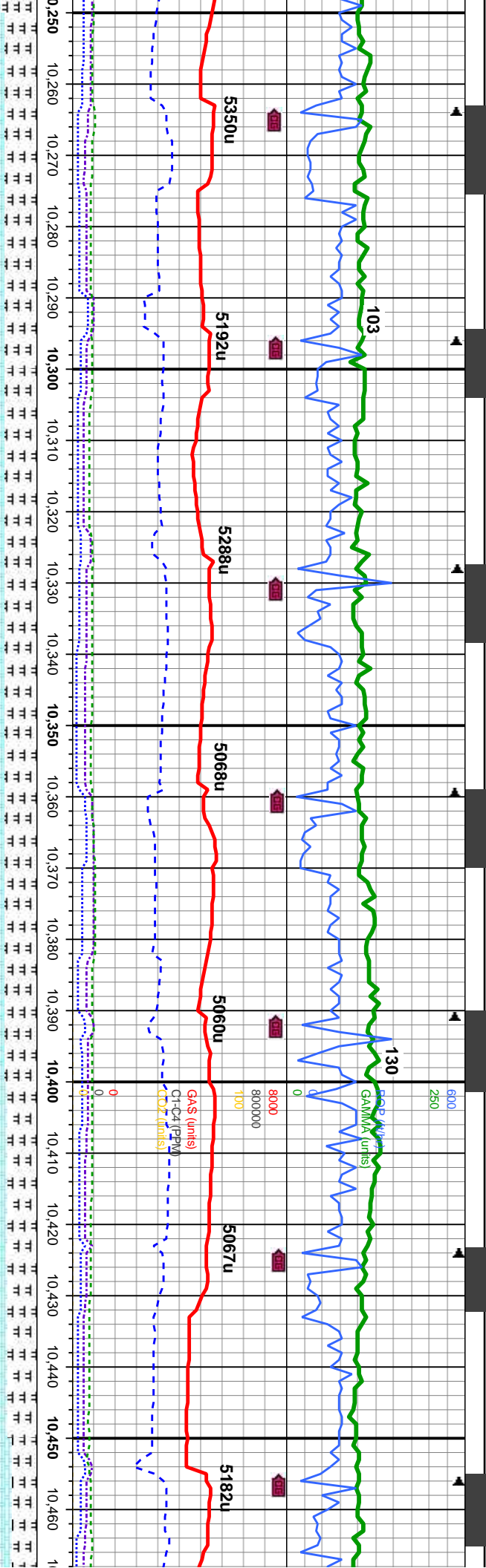




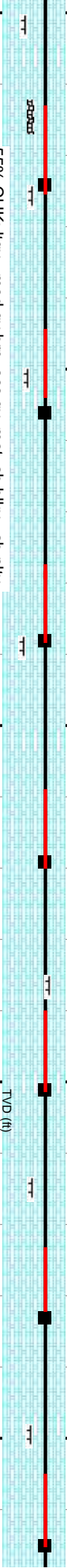
MD: 10,052' TVD: 6,115.31' Inclination: 91.1 ° Azimuth: 179.7 ° VS: 3,802.97'	MD: 10,084' TVD: 6,114.72' Inclination: 91 ° Azimuth: 179 ° VS: 3,834.96'	MD: 10,115' TVD: 6,114.18' Inclination: 91 ° Azimuth: 179.2 ° VS: 3,865.96'	MD: 10,147' TVD: 6,113.71' Inclination: 90.7 ° Azimuth: 179.7 ° VS: 3,897.95'	MD: 10,179' TVD: 6,113.37' Inclination: 90.5 ° Azimuth: 180.1 ° VS: 3,929.95'	5 ⁵ MD: 10,211' TVD: 6,113.01' Inclination: 90.8 ° Azimuth: 179.7 ° VS: 3,961.94'	MD: 10,242' TVD: 6,112.55' Inclination: 90. Azimuth: 179.7 VS: 3,992.93'
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70% CHK: ltgy - med gy brn, occ gy, mot, sb blkly - sb plty, sme blkly, tr plty, brit - mod firm, chky - sbwxy, mtx; v calc, sme imbd inoc foss,	30% MRLST: blk - blk gy - dk gy brn, tr mot, blkly - sb blkly, occ sb plty, sft - firm, rthy - gt, mtx, arg - slty, mod calc, occ imbd inoc foss, occ lse & imbd cal, scat bent, fr od, brit blshwh stmg, bri blshwh mky cut, yel resd ring, no flor or sing	55% CHK: ltgy - med gy brn, occ gy, mot, sb blkly - sb plty, sme blkly, tr plty, brit - mod firm, chky - sbwxy, mtx; v calc, sme imbd inoc foss,	45% MRLST: blk - blk gy - dk gy brn, tr mot, blkly - sb blkly, occ sb plty, sft - firm, rthy - gt, mtx, arg - slty, mod calc, occ imbd inoc foss, occ lse & imbd cal, scat bent, occ pyr, mod blshwh stmg, bri blshwh mky cut, mod yel resd ring, no flor or sing
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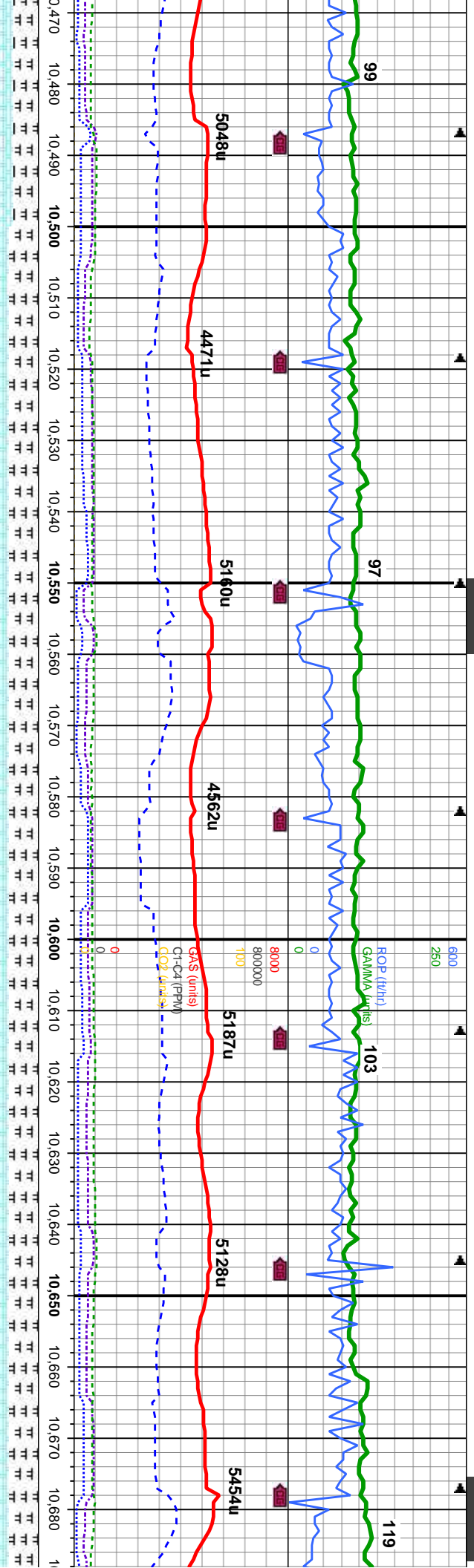


9 °	MD: 10,274 TVD: 6,112.19 Inclination: 90.4 ° Azimuth: 180.3 ° VS: 4,024.93 '	MD: 10,306 TVD: 6,112.08 Inclination: 90 ° Azimuth: 180.8 ° VS: 4,056.91 '	MD: 10,338 TVD: 6,112.08 Inclination: 90 ° Azimuth: 180.8 ° VS: 4,088.9 '	MD: 10,369 TVD: 6,112.18 Inclination: 89.6 ° Azimuth: 181 ° VS: 4,119.88 '	MD: 10,401 TVD: 6,112.52 Inclination: 89.2 ° Azimuth: 181.3 ° VS: 4,151.86 '	MD: 10,433 TVD: 6,113.13 Inclination: 88.6 ° Azimuth: 181.7 ° VS: 4,183.82 '	MD: 10,466 TVD: 6,113.13 Inclination: 88.6 ° Azimuth: 181.7 ° VS: 4,215.15 '
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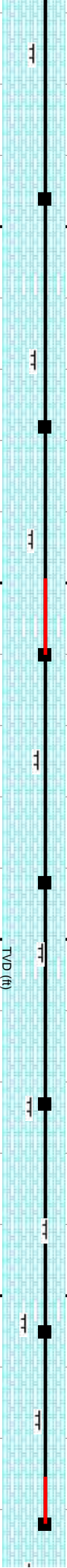


55% CHK: rgy - med gy brn, occ gy, mot, sb blkly - sb ply, sme blkly, tr ply, brit - mod firm, chky - sbwxy, mtx; v calc, sme imbd inoc foss,	55% CHK: lgy - med gy brn, occ gy, mot, sb blkly - sb ply, sme blkly, tr ply, brit - mod firm, chky - sbwxy, mtx; v calc, sme imbd inoc foss,	65% blkly
45% MRLST: blk - blk gy - dk gy brn, tr mot, blkly - sb blkly, occ sb ply, sft - firm, rthy - gt, mtx; arg - slty, mod calc, occ imbd inoc foss, occ lse & imbd cal, scat bent, occ pyr, mod bishwh string, bri bishwh mky cut, mod yel resdl ring, no flor or sting	45% MRLST: blk - blk gy - dk gy brn, tr mot, blkly - sb blkly, occ sb ply, sft - firm, rthy - gt, mtx; arg - slty, mod calc, occ imbd inoc foss, occ lse & imbd cal, scat bent, mod bishwh string, bri bishwh mky cut, mod yel resdl ring, no flor or sting	35% sb p
		inoc bish



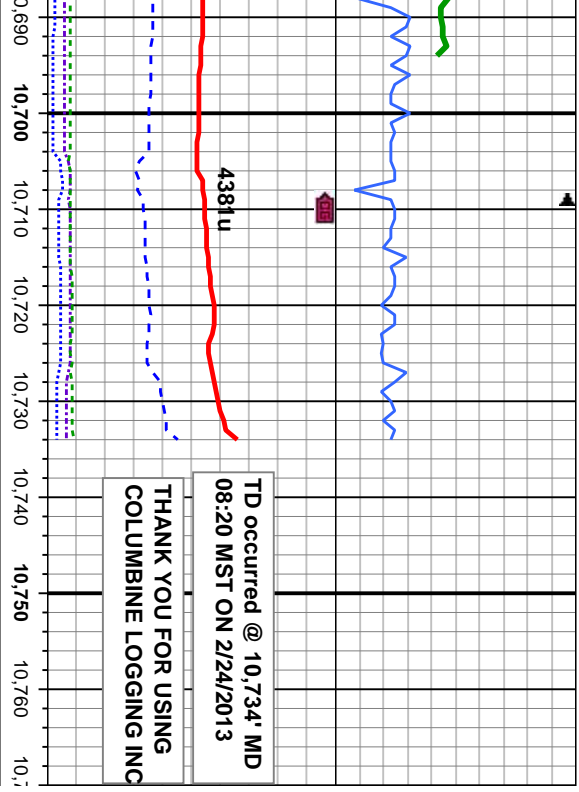


5500	MD: 10,560	TVD: 6,113.91	Inclination: 90 °	Azimuth: 180.8 °	VS: 4,310.74
MD: 10,496	TVD: 6,113.88	Inclination: 89.9 °	Azimuth: 180.4 °	VS: 4,246.77	
MD: 10,528	TVD: 6,113.91	Inclination: 90 °	Azimuth: 180.8 °	VS: 4,278.76	
MD: 10,592	TVD: 6,113.91	Inclination: 90 °	Azimuth: 180.4 °	VS: 4,342.73	
MD: 10,623	TVD: 6,114.04	Inclination: 89.5 °	Azimuth: 180.1 °	VS: 4,373.72	
MD: 10,655	TVD: 6,114.3	Inclination: 89.6 °	Azimuth: 180.8 °	VS: 4,405.71	
MD: 10,682	TVD: 6,114.4	Inclination: 89.7 °	Azimuth: 180.8 °	VS: 4,432.6	



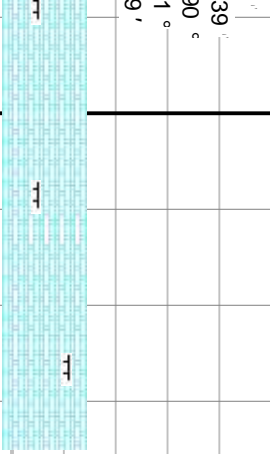
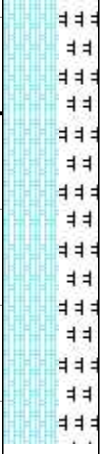
60% CHK: Itgy - med gy brn, occ gy, mot, sb blk - sb pty, sme blk, tr pty, brit - mod firm, chky - sbwxy, mtx; v calc, sme imbd foss,	60% CHK: Itgy - med gy brn, occ gy, mot, sb blk - sb pty, sme blk, tr pty, brit - mod firm, chky - sbwxy, mtx; v calc, sme imbd foss	60% CHK: Itgy - med gy brn, occ gy, mot, sb blk - sb pty, sme blk, tr pty, brit - mod firm, chky - sbwxy, mtx; v calc, sme imbd foss
40% MRLST: blk - blk gy - dk gy brn, tr mot, blk - sb blk, occ sb pty, sft - firm, rthy - gt, mtx; arg - sily, mod calc, occ imbd foss, occ lse & imbd cal, scat bent, mod blshwh stimg, bri cut, mod yel resdl ring, no flor or stng	40% MRLST: blk - blk gy - dk gy brn, tr mot, blk - sb blk, occ sb pty, sft - firm, rthy - gt, mtx; arg - sily, mod calc, occ imbd foss, occ lse & imbd cal, scat bent, mod blshwh stimg, bri cut, mod yel resdl ring, no flor or stng	40% MRLST: blk - blk gy - dk gy brn, tr mot, blk - sb blk, occ sb pty, sft - firm, rthy - gt, mtx; arg - sily, mod calc, occ imbd foss, occ lse & imbd cal, scat bent, mod blshwh stimg, bri cut, mod yel resdl ring, no flor or stng





TD occurred @ 10,734' MD
08:20 MST ON 2/24/2013

THANK YOU FOR USING
COLUMBINE LOGGING INC



39
20
1
9
ed gy brn, occ gy, mot, sb blk - sb pily, sme
od firm, chky - sbwxy, mtk; v calc, sme imbd
blk gy - dk gy brn, tr mot, blk - sb blk, occ
y - gt, mtk; arg - stly, mod calc, occ imbd
os frag, mod bishwh stng, bri bishwh mky
ing, no flr or stng

