



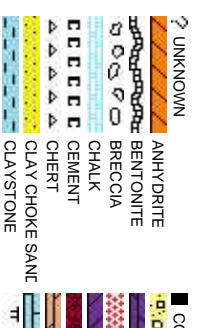
Scale: 5" / 100'
Measured Depth Log

Well Name	Rohn State LD09-65HN		
Location	SE NE SEC. 9, T9N, R58W		
State	COLORADO	County	WELD
Country	USA	Rig Number	H&P 326
API Number	05-123-37530	AFE #	139467
Region	DJ BASIN	Field	WILDCAT
Spud Date	10/5/2013	Drilling Completed	10/28/2013
Surface Coordinates	2,163' FSL, 480' FEL Lat 40.76452 N, Long 103.86165 W		
Bottom Hole Coordinates	2,60' FNL, 660' FWL Lat 40.76590 N, Long 103.87651 W		
Ground Elevation	4716'	K.B. Elevation	4746'
Logged Interval	1300	To	9764
Formation	Niobrara B		
Type of Drilling Fluid	LSND		

Company NOBLE ENERGY

Name EVAN HOWELL
Company NOBLE ENERGY
Address 1625 Broadway
Denver, CO 80202

Ryan Sullivan
Ryan Nicholas



Operator

SY INC.

Geologist

SY INC.

Suite 2200
202

Other

Rock Types

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

Accessories

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

Other Symbols

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

Slide/Rotate

ROP

ROP (ft/hr)

Total Gas & Chromatograph

GAS

C1

C2

C3

C4

COLUMBINE LOGGING INC.
RIGGED UP ON 10/23/2013
MANNED 2-PERSON LOGGING
WITH BLOODHOUND GAS
CHROMATOGRAPH UNIT #0298
COLUMBINE BEGAN LOGGING
ON 10/23/2013

Depth Labels

% Lith

Gamma

GAMMA

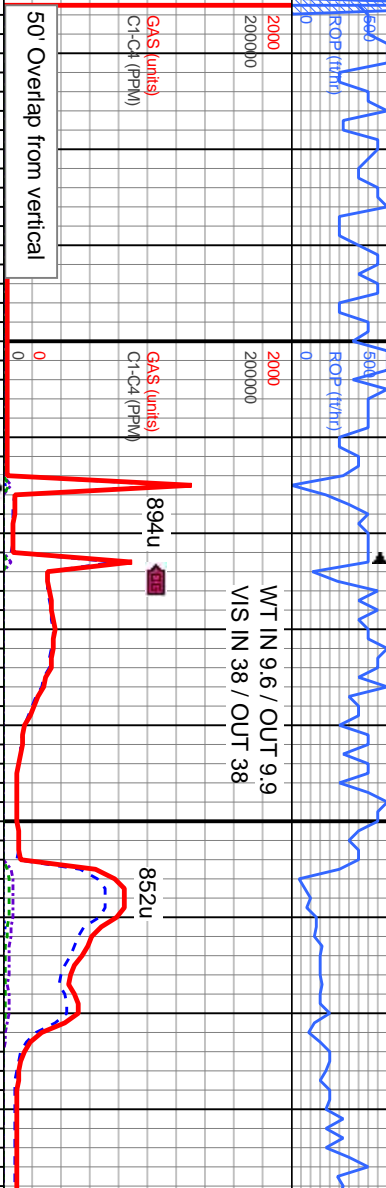
Well Bore
TVD

Acetone was used as the cutting agent with the dimple filled to the rim.

The ratings are based on 7 descriptors: None, Slight trace, Trace, Fair, Moderate, Good, and Excellent. The descriptor used is based on the loggers observations and best judgment of brilliance, color and longevity of the cut.

Oil Show

Images



GAS (units)
C1-C4 (PPM)

GAS (units)
C1-C4 (PPM)

894u

852u

100
GAMMA (API)

69

80

MD: 4,966 '
TVD: 4,892.5 '
Inclination: 1.3 °
Azimuth: 100.4 °
VS: -131.86 '

MD: 5,061 '
TVD: 4,987.49 '
Inclination: 1 °
Azimuth: 184.4 °
VS: -132.96 '

TVD (ft)

TVD (ft)

Resume Drilling @ 5015' MD
10/25/2013 @ 02:57 hrs

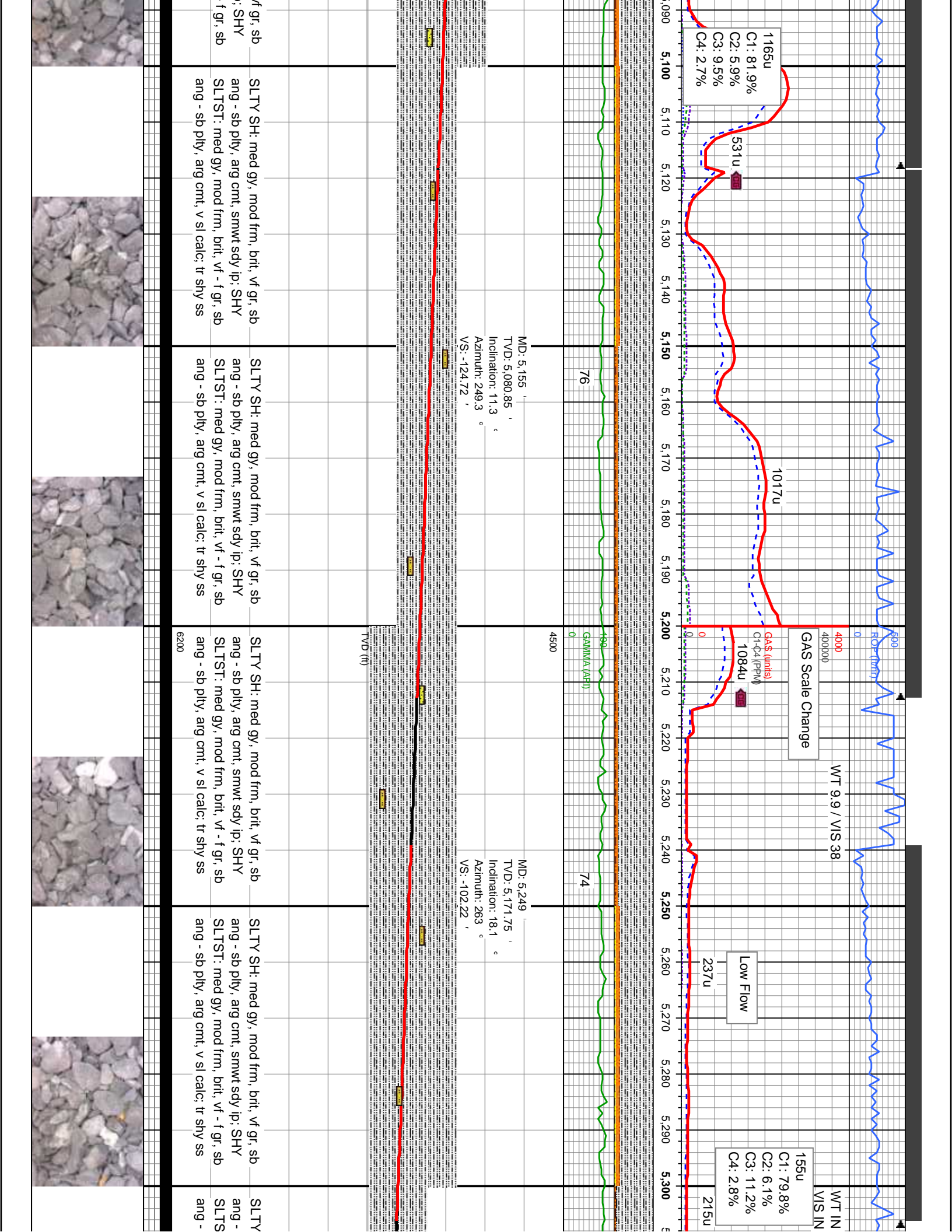
Bit Data
Bit #: 2
Type: PDC
Size: 8.75
Depth In: 5,015 '
Depth Out: 6,152 '
Jets: 5x14
S/N: 12175682

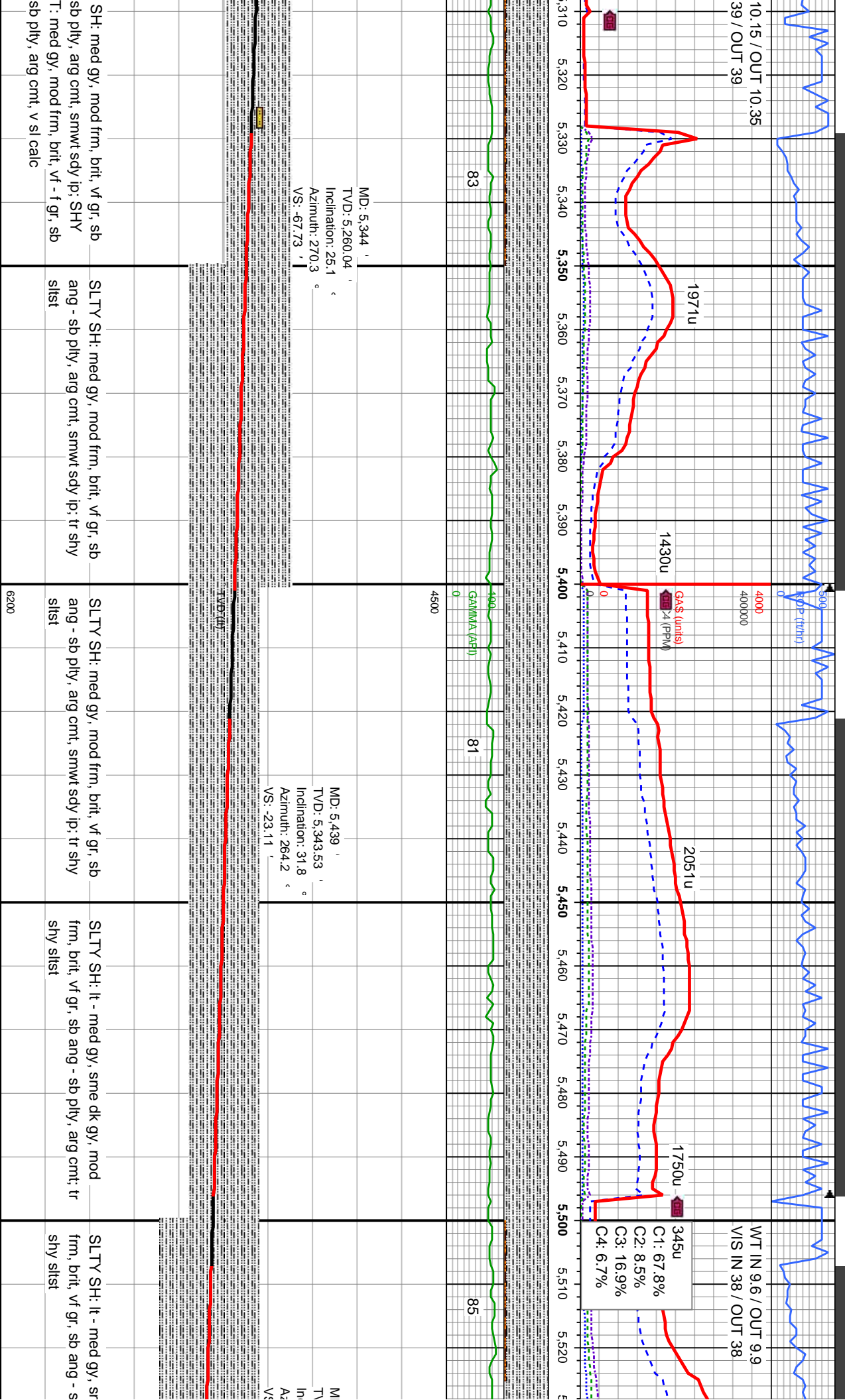
SLTY SH: med gy, mod frm, brt, vf gr, sb ang - sb pty, arg cnt, SHY SLTST: med gy, mod frm, brt, vf - f gr, sb ang - sb pty, arg cnt, sl calc, tr shy ss

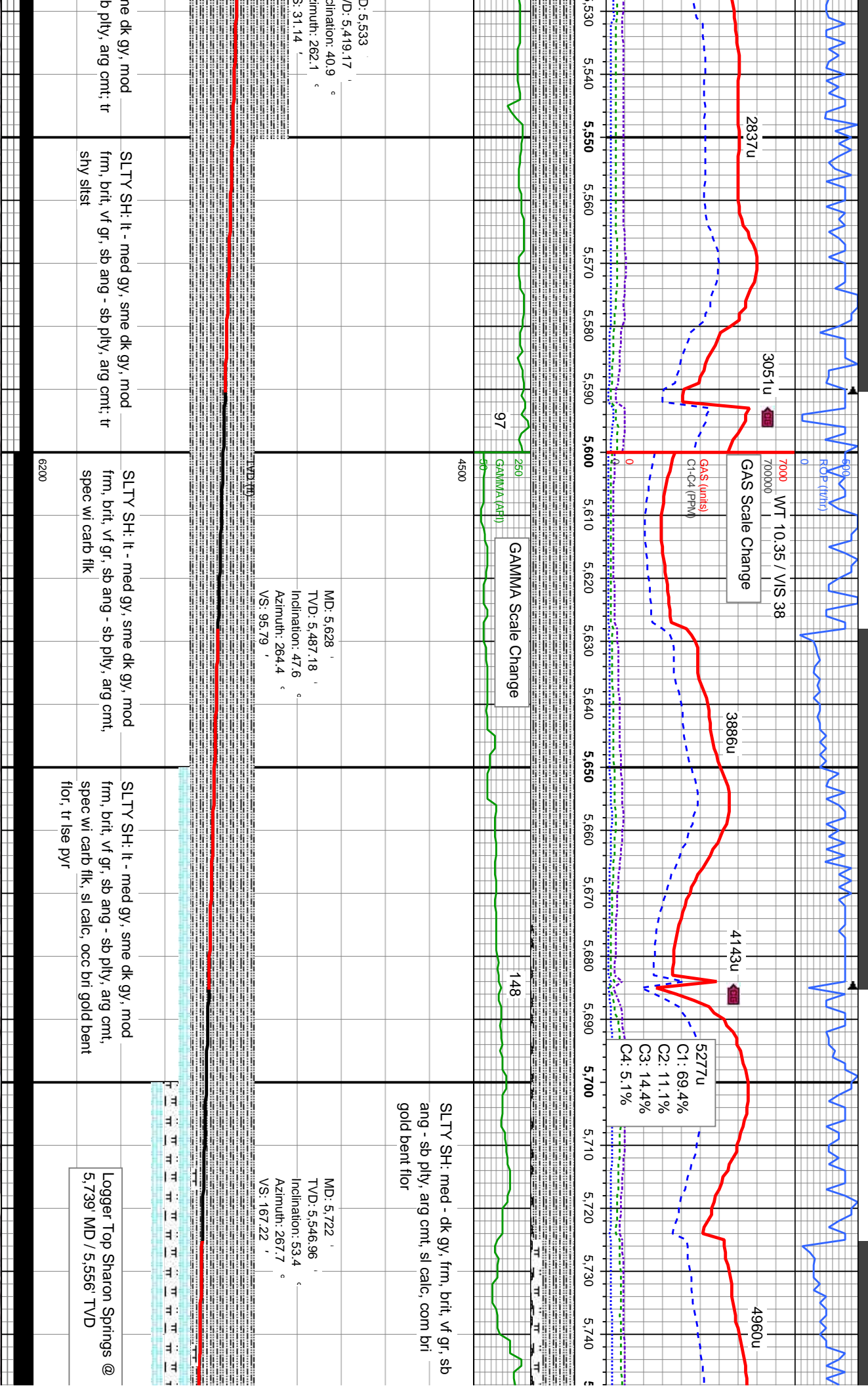
SLTY SH: med gy, mod frm, brt, vf gr, sb ang - sb pty, arg cnt, SHY SLTST: med gy, mod frm, brt, vf - f gr, sb ang - sb pty, arg cnt, v sl calc, tr shy ss

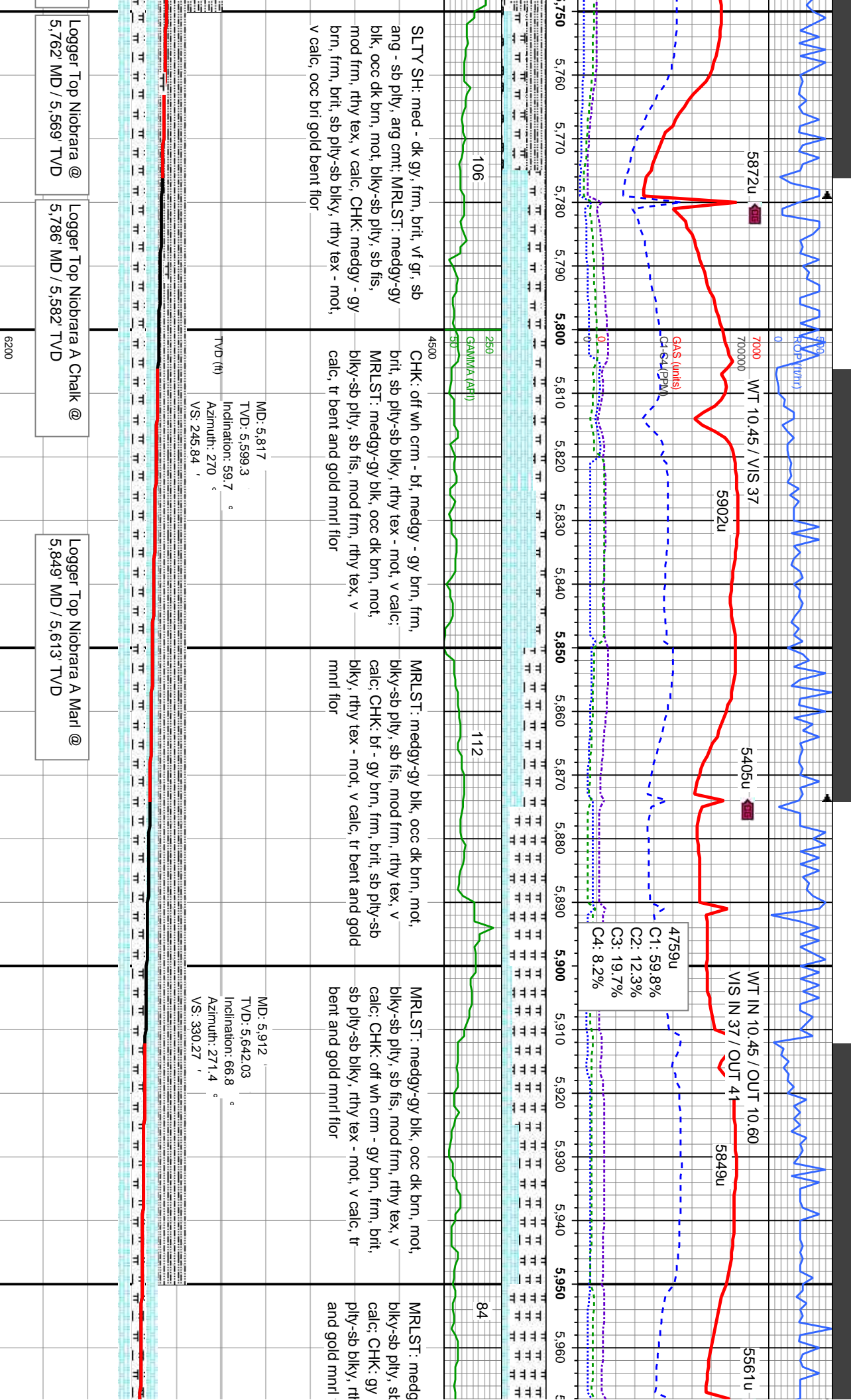
SLTY SH: med gy, mod frm, brt, v ang - sb pty, arg cnt, smwt sdy ip SLTST: med gy, mod frm, brt, vf - ang - sb pty, arg cnt, v sl calc



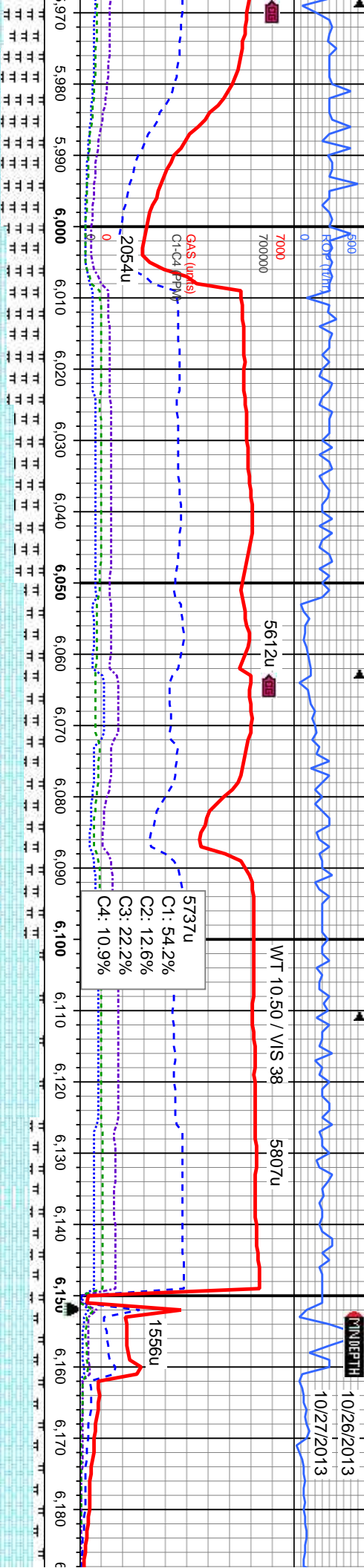








10/26/2013
10/27/2013

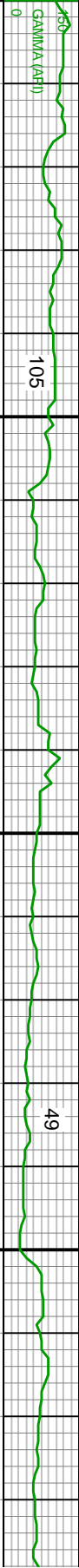


5737u
C1: 54.2%
C2: 12.6%
C3: 22.2%
C4: 10.9%

WT 10.50 / VIS 38
5807u

1556u

GAMMA Scale Change



y-gy blk, occ dk brn, mot, fis, mod frm, rthy tex, v brn, sme bf, frm, brit, sb ply tex - mot, v calc, tr bent floor

MRLST: medgy-gy blk, occ dk brn, mot, blk-y-sb ply, sb fis, mod frm, rthy tex, v calc; CHK: gy brn, sme bf, frm, brit, sb ply-sb blk, rthy tex - mot, v calc, tr bent and gold mnrl floor

CHK: pred off wh crm - bf, occ gy brn, frm, brit, sb ply-sb blk, rthy tex - sl mot, v calc; MRLST: medgy-gy blk, sme mot, blk-y-sb ply, sb fis, mod frm, rthy tex, v calc, abnt dull gn mnrl floor

CHK: pred off wh crm - bf, occ gy brn, frm, brit, sb ply-sb blk, rthy tex - sl mot, v calc; MRLST: medgy-gy blk, sme mot, blk-y-sb ply, sb fis, mod frm, rthy tex, v calc, abnt dull gn mnrl floor

CHK: pred off wh crm - bf, occ gy blk, brit, sb ply-sb blk, rthy tex - sl mot, v calc; MRLST: medgy-gy blk, blk-y-sb ply, sb fis, mod frm, rthy - grty tex, v calc, abnt dull gn mnrl floor

MD: 6,006
TVD: 5,674.79
Inclination: 72.4
Azimuth: 270
VS: 417.97

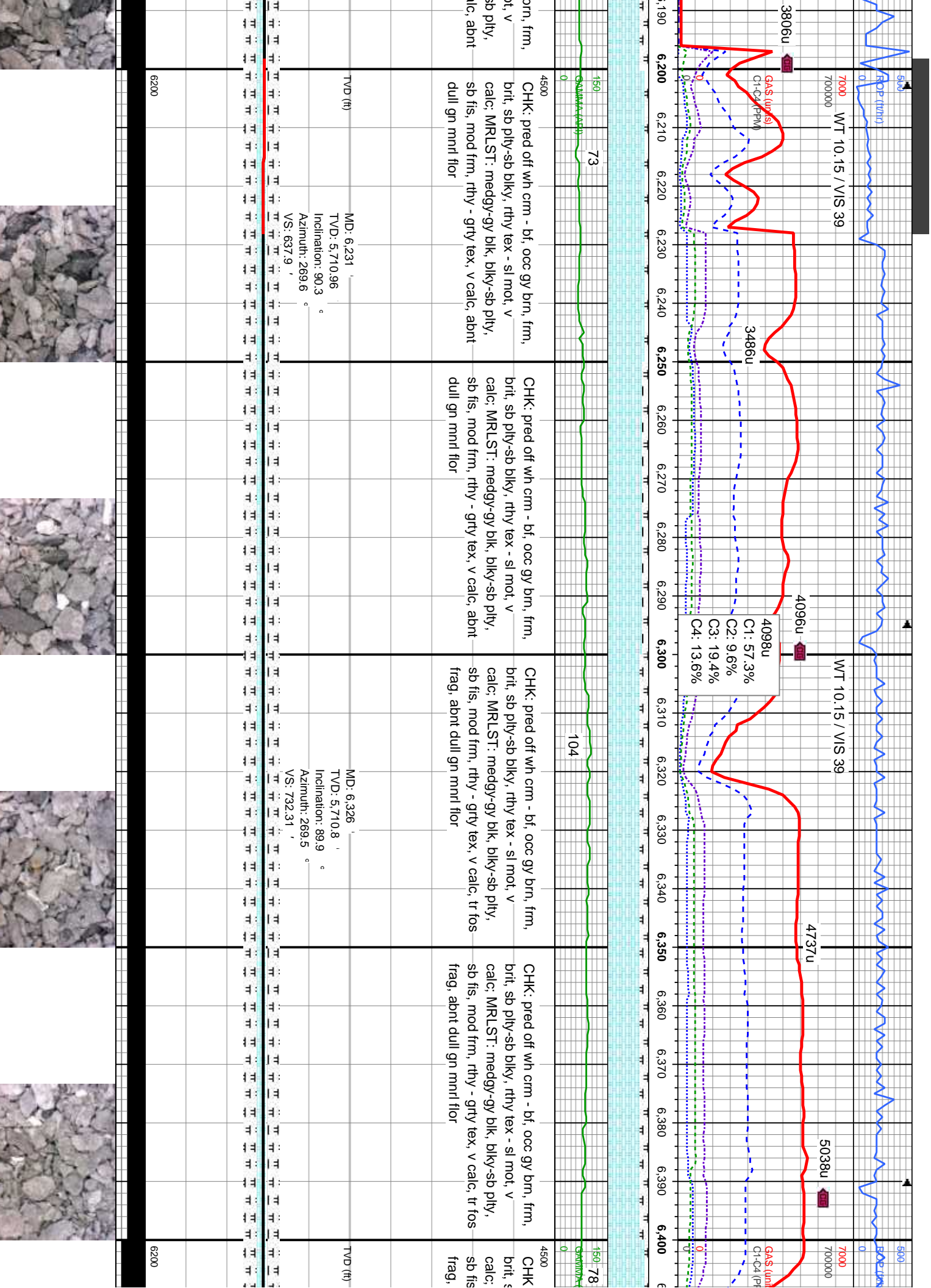
MD: 6,095
TVD: 5,697.36
Inclination: 78.2
Azimuth: 270.2
VS: 503.58

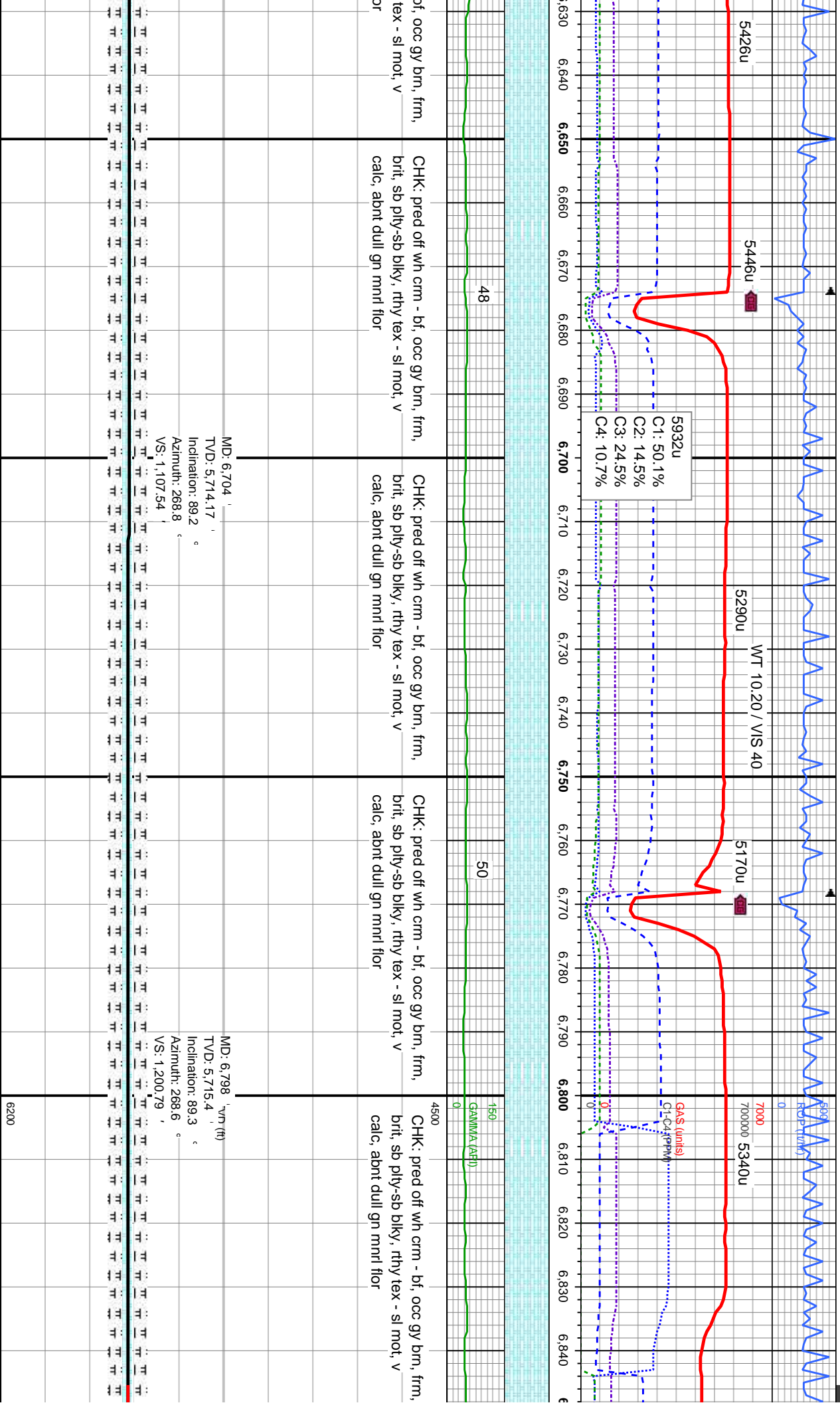
TD Curve - 6,152' MD
Intermediate Casing
@ 12:11 hrs 10/25/2013
Drilled out of 7" Casing @
01:23 hrs 10/27/2013

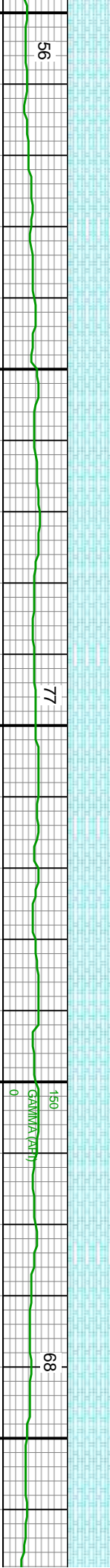
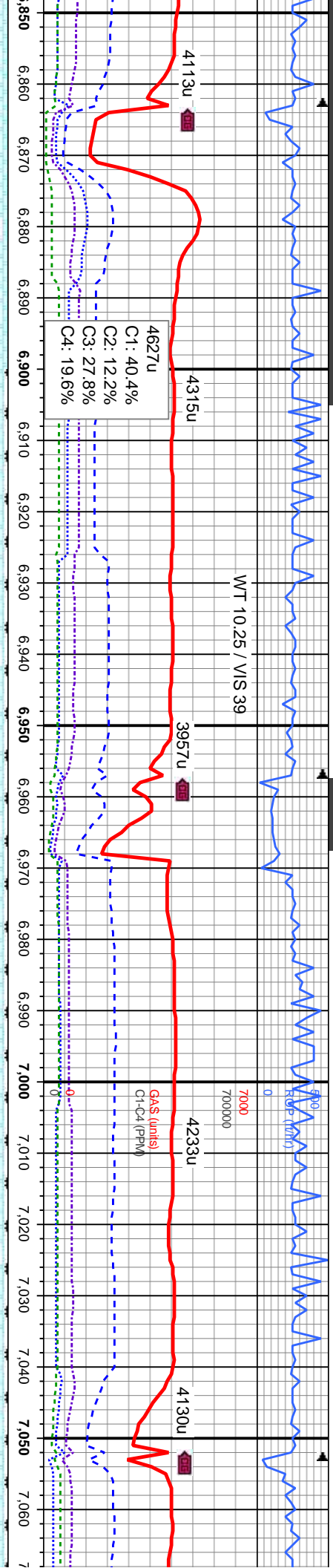
Bit Data
Bit #: 3
Type: PDC
Size: 6.12
Depth In: 6.152
Jets: 5x11
S/N: 508608

Logger Top Niobrara B Chalk @
6,020' MD / 5,678' TVD









CHK: off wh crm - gy brn, frm, brit, sb
ply-sb blkly, rthy tex - sl mot, v calc, abnt
dull gn mnrl flr

CHK: off wh crm - gy brn, frm, brit, sb
ply-sb blkly, rthy tex - sl mot, v calc, tr
mrst, abnt dull gn mnrl flr

CHK: off wh crm - gy brn, frm, brit, sb
ply-sb blkly, rthy tex - sl mot, v calc, tr
mrst, abnt dull gn mnrl flr

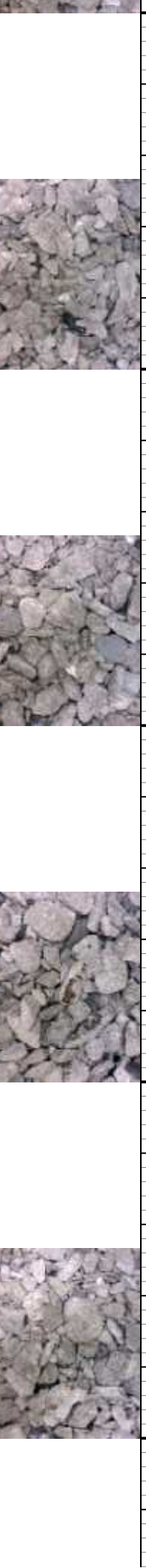
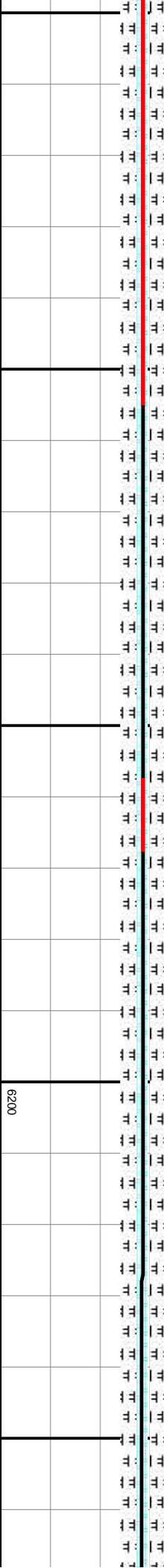
CHK: off wh crm - gy brn, frm, brit, sb
ply-sb blkly, rthy tex - sl mot, v calc, tr
mrst, abnt dull gn mnrl flr

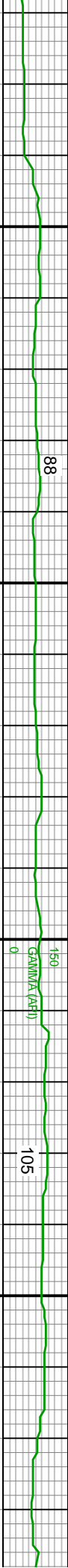
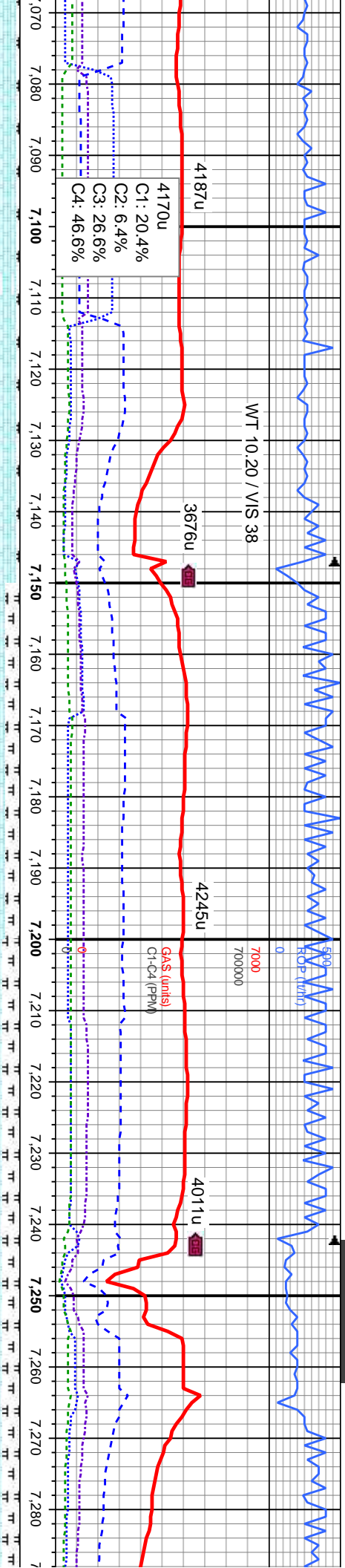
CHK: off wh crm - gy brn, frm, brit, sb
ply-sb blkly, rthy tex - sl mot, v calc, tr
mrst, abnt dull gn mnrl flr

MD: 6.893
TVD: 5,716.23
Inclination: 89.7
Azimuth: 268.8
VS: 1,295.04

MD: 6.988
TVD: 5,717.97
Inclination: 88.2
Azimuth: 268.4
VS: 1,389.25

TVD (ft)





m - gy brn, frm, brit, sb
y tex - sl mot, v calc, tr
gn mnrl flor

CHK: off wh crm - gy brn, frm, brit, sb
ply-sb blk, rthy tex - sl mot, v calc, tr
mrlst, abnt dull gn mnrl flor

CHK: off wh crm - gy brn, frm, brit, sb
ply-sb blk, rthy tex - sl mot, v calc:
MRLST: gy brn -gy blk, blk-sb ply, sb fis,
mod frm, rthy - grty tex, v calc, com dull gn
mnrl flor

CHK: off wh crm - gy brn, frm, brit, sb
ply-sb blk, rthy tex - sl mot, v calc:
MRLST: gy brn -gy blk, blk-sb ply, sb fis,
mod frm, rthy - grty tex, v calc, com dull gn
mnrl flor

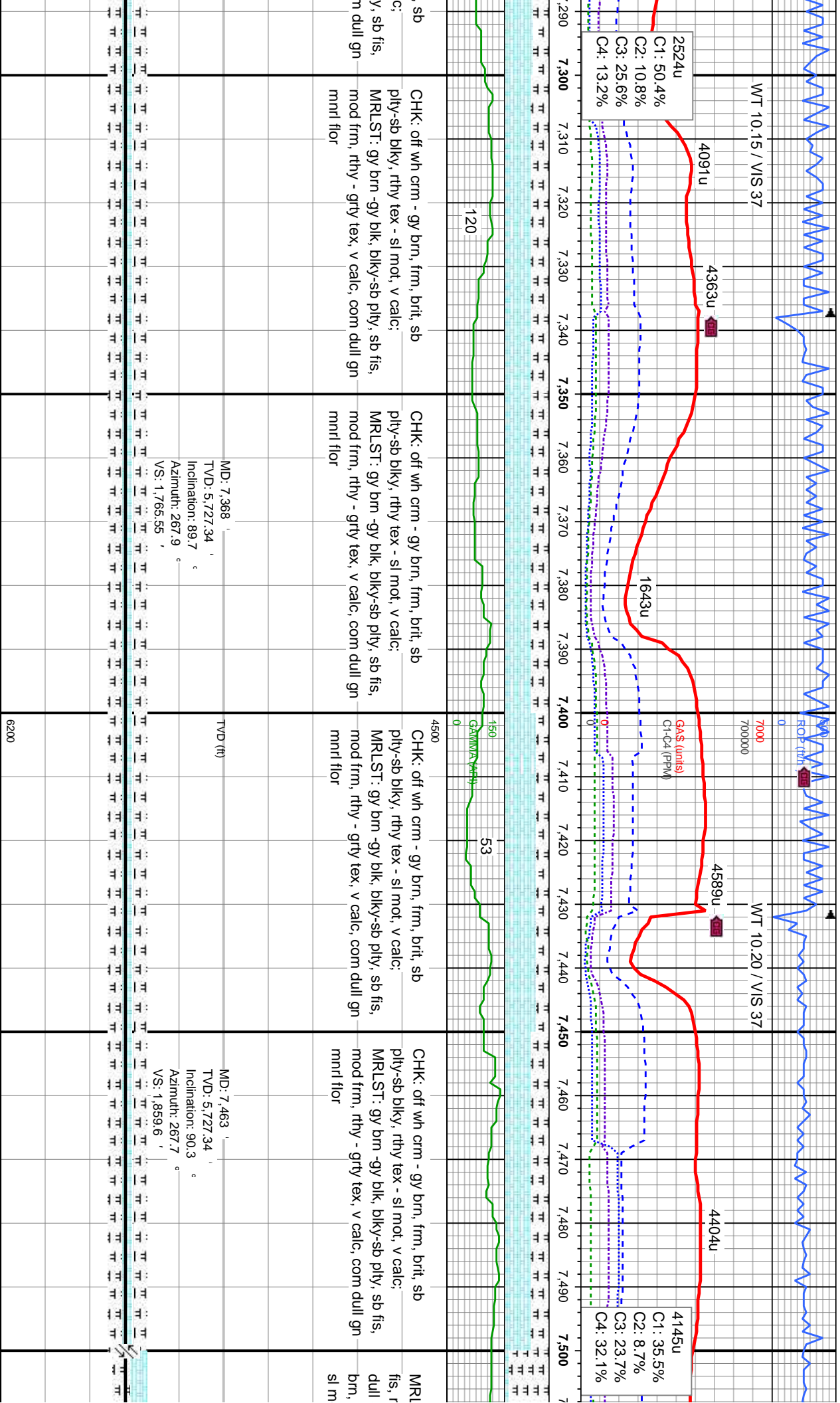
CHK: off wh crm - gy brn, frm, brit, sb
ply-sb blk, rthy tex - sl mot, v cal
MRLST: gy brn -gy blk, blk-sb pti
mod frm, rthy - grty tex, v calc, coi
mnrl flor

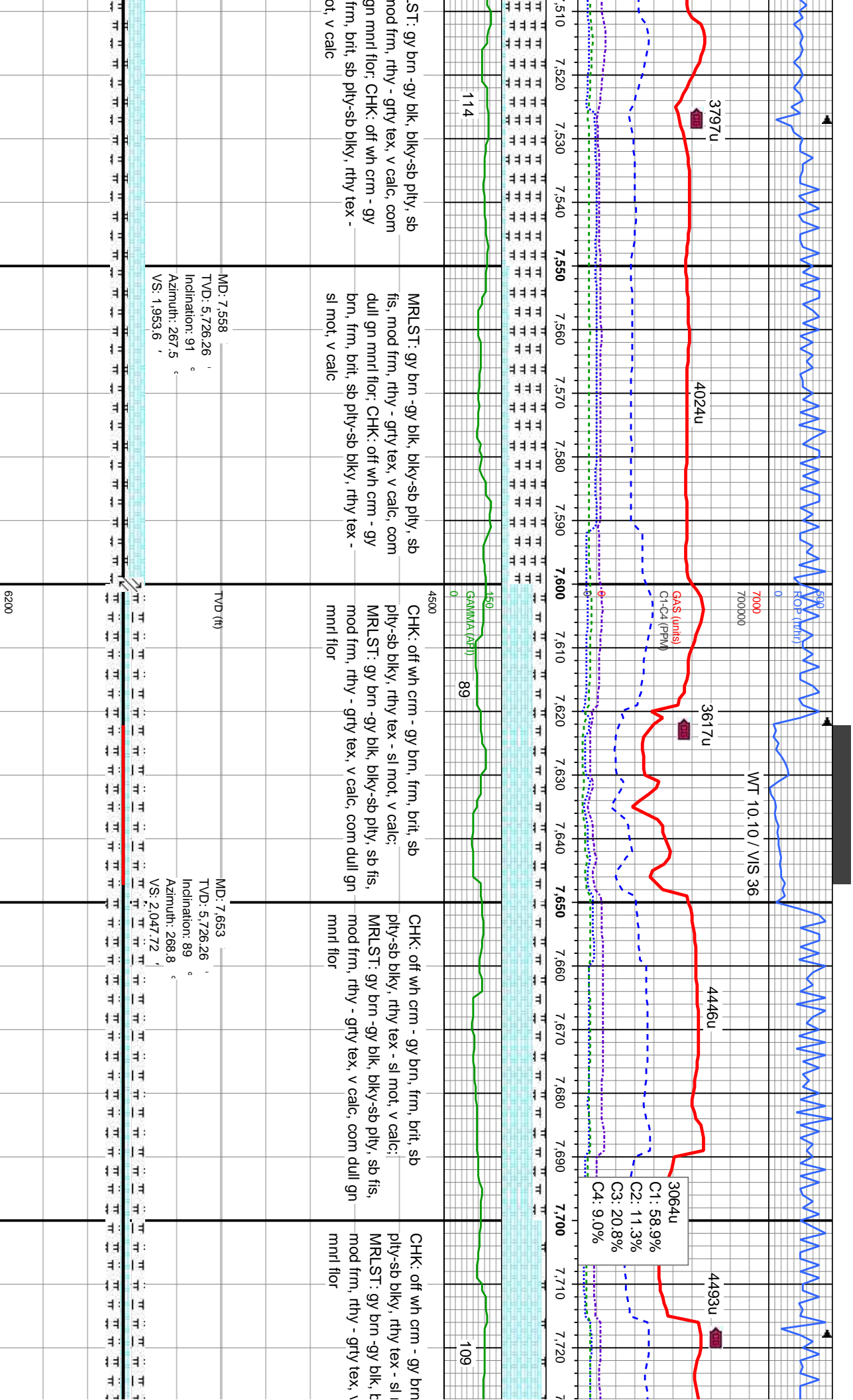
MD: 7.083 '
TVD: 5,720.79 '
Inclination: 88.4 °
Azimuth: 268.4 °
VS: 1,483.39 '

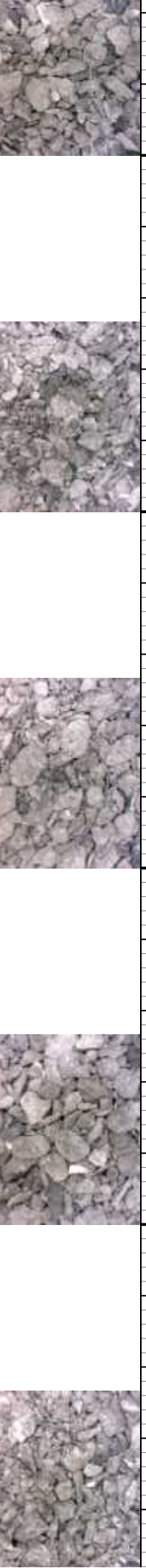
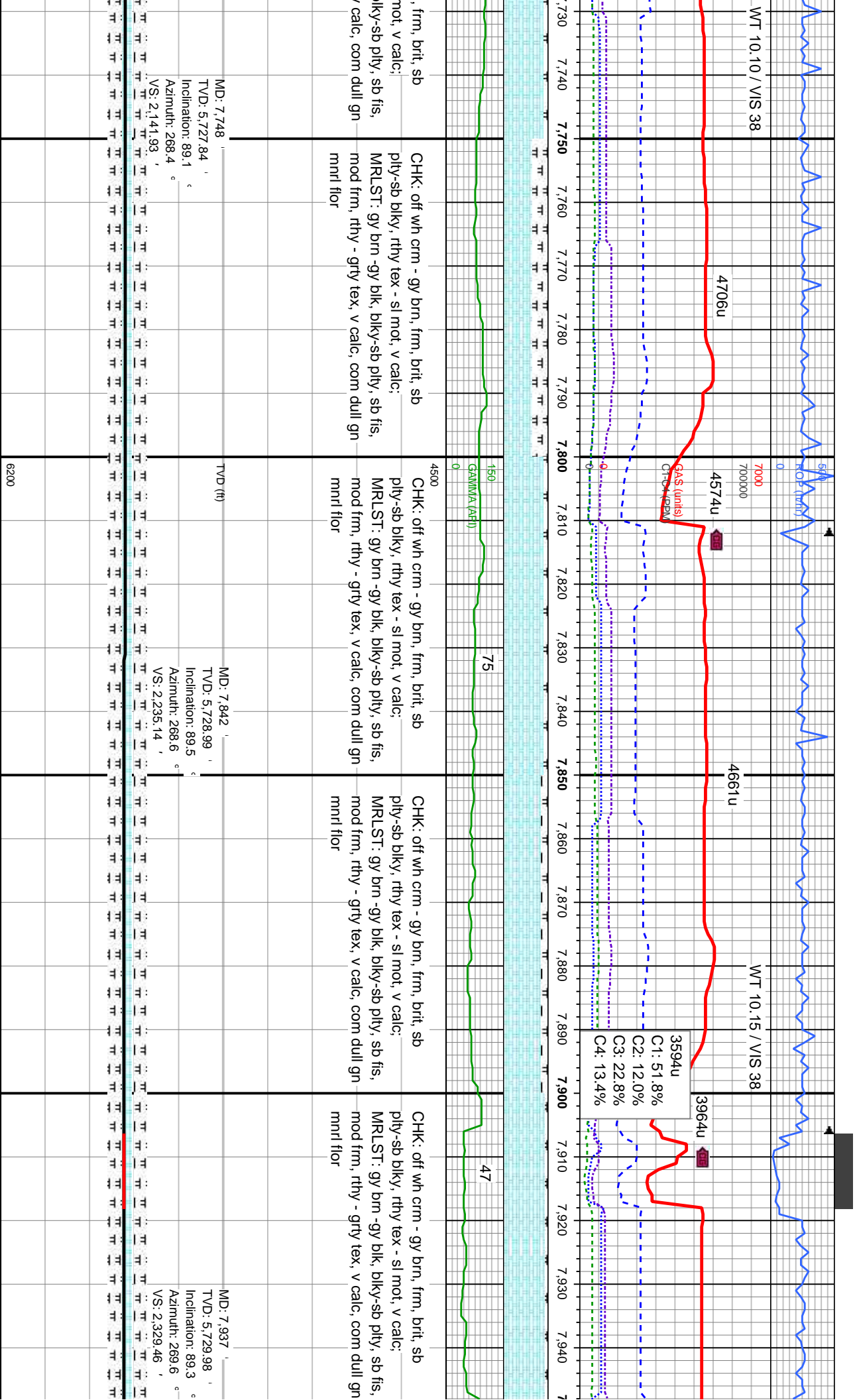
MD: 7.178 '
TVD: 5,723.94 '
Inclination: 87.8 °
Azimuth: 267.5 °
VS: 1,577.42 '

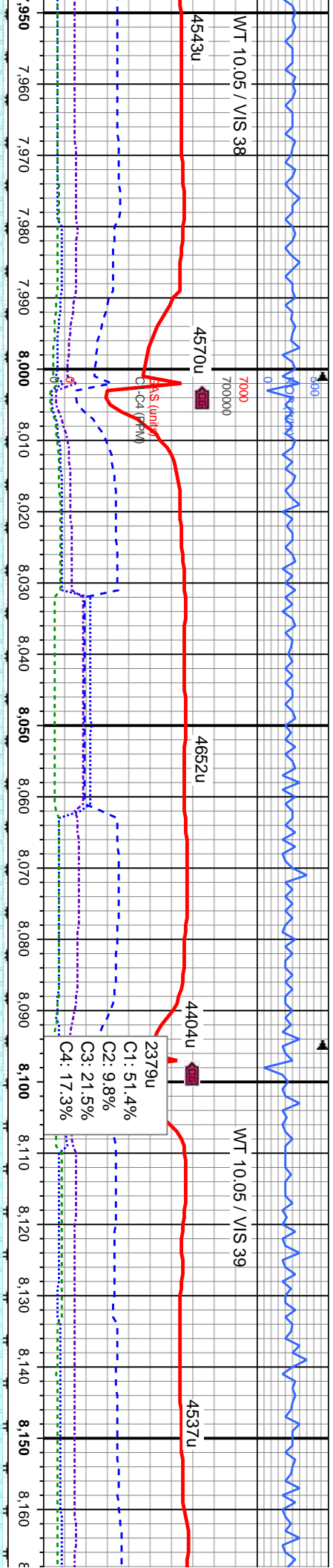
MD: 7.273 '
TVD: 5,726.43 '
Inclination: 89.2 °
Azimuth: 268.2 °
VS: 1,671.45 '





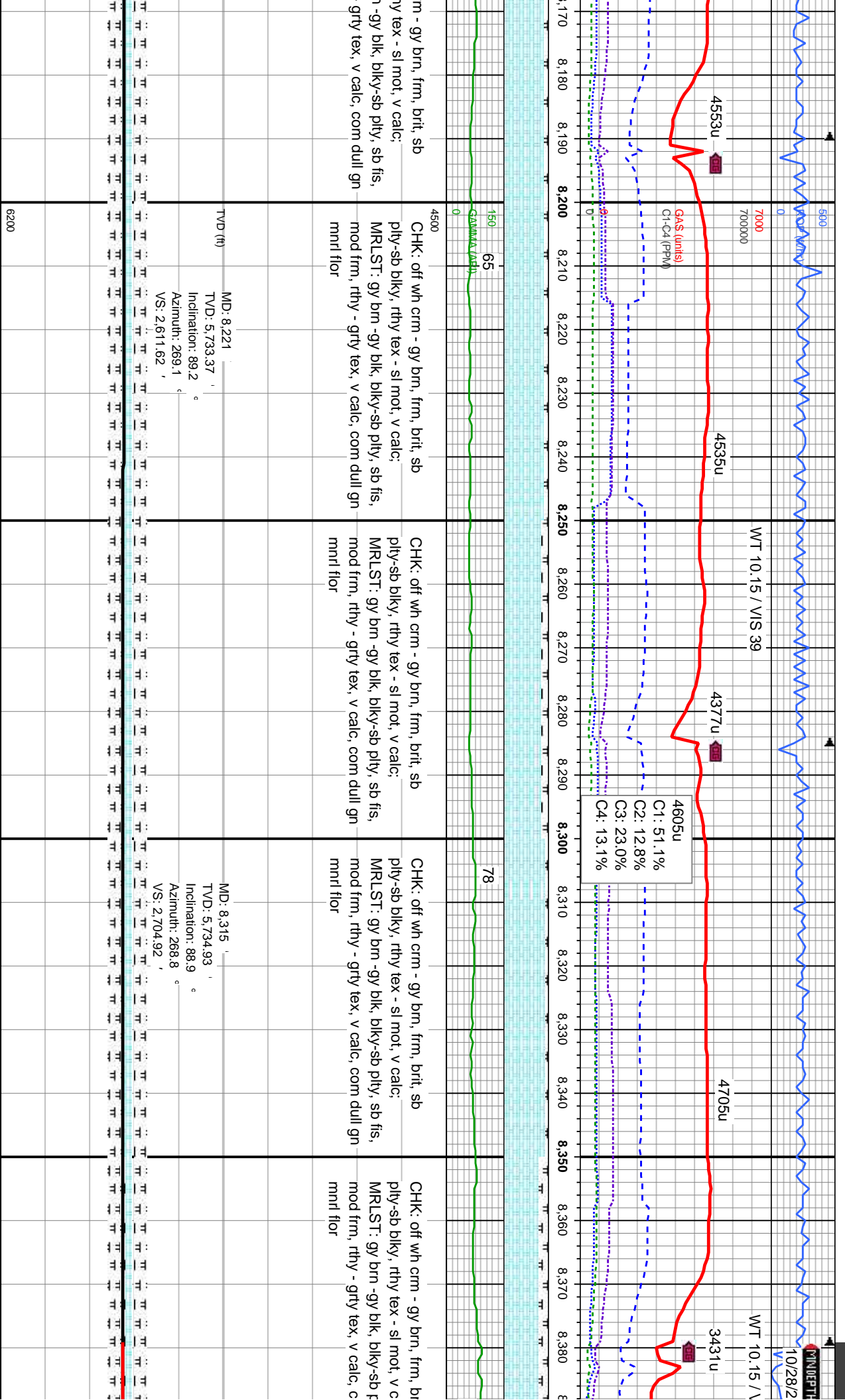






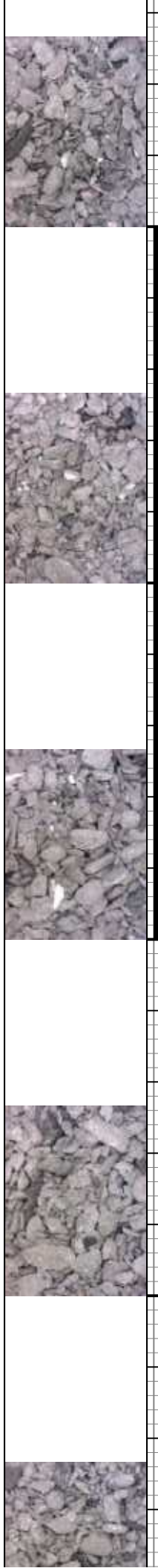
CHK: off wh crm - gy brn, frm, brit, sb ply-sb blk, rthy tex - sl mot, v calc; MRLST: gy brn -gy blk, blk-sb ply, sb fis, mod frm, rthy - grty tex, v calc, com dull gn mnrl flor	4543u	4570u	4652u	4404u	4537u
	WT 10.05 / VIS 38	WT 10.05 / VIS 39	WT 10.05 / VIS 39	WT 10.05 / VIS 39	WT 10.05 / VIS 39
	700000	700000	700000	700000	700000
	7,950	7,960	7,970	7,980	7,990
	8,000	8,010	8,020	8,030	8,040
CHK: off wh crm - gy brn, frm, brit, sb ply-sb blk, rthy tex - sl mot, v calc; MRLST: gy brn -gy blk, blk-sb ply, sb fis, mod frm, rthy - grty tex, v calc, com dull gn mnrl flor	4500	4500	4500	4500	4500
	150	150	150	150	150
	47	47	47	47	47
	63	63	63	63	63
	6200	6200	6200	6200	6200
MD: 8.031 TVD: 5,731.05 Inclination: 89.4 Azimuth: 269.6 VS: 2,422.89	MD: 8.031	MD: 8.031	MD: 8.031	MD: 8.031	MD: 8.031
	TVD: 5,731.05	TVD: 5,731.05	TVD: 5,731.05	TVD: 5,731.05	TVD: 5,731.05
	Inclination: 89.4	Inclination: 89.4	Inclination: 89.4	Inclination: 89.4	Inclination: 89.4
	Azimuth: 269.6	Azimuth: 269.6	Azimuth: 269.6	Azimuth: 269.6	Azimuth: 269.6
	VS: 2,422.89	VS: 2,422.89	VS: 2,422.89	VS: 2,422.89	VS: 2,422.89
MD: 8.126 TVD: 5,732.12 Inclination: 89.3 Azimuth: 269.3 VS: 2,517.28	MD: 8.126	MD: 8.126	MD: 8.126	MD: 8.126	MD: 8.126
	TVD: 5,732.12	TVD: 5,732.12	TVD: 5,732.12	TVD: 5,732.12	TVD: 5,732.12
	Inclination: 89.3	Inclination: 89.3	Inclination: 89.3	Inclination: 89.3	Inclination: 89.3
	Azimuth: 269.3	Azimuth: 269.3	Azimuth: 269.3	Azimuth: 269.3	Azimuth: 269.3
	VS: 2,517.28	VS: 2,517.28	VS: 2,517.28	VS: 2,517.28	VS: 2,517.28

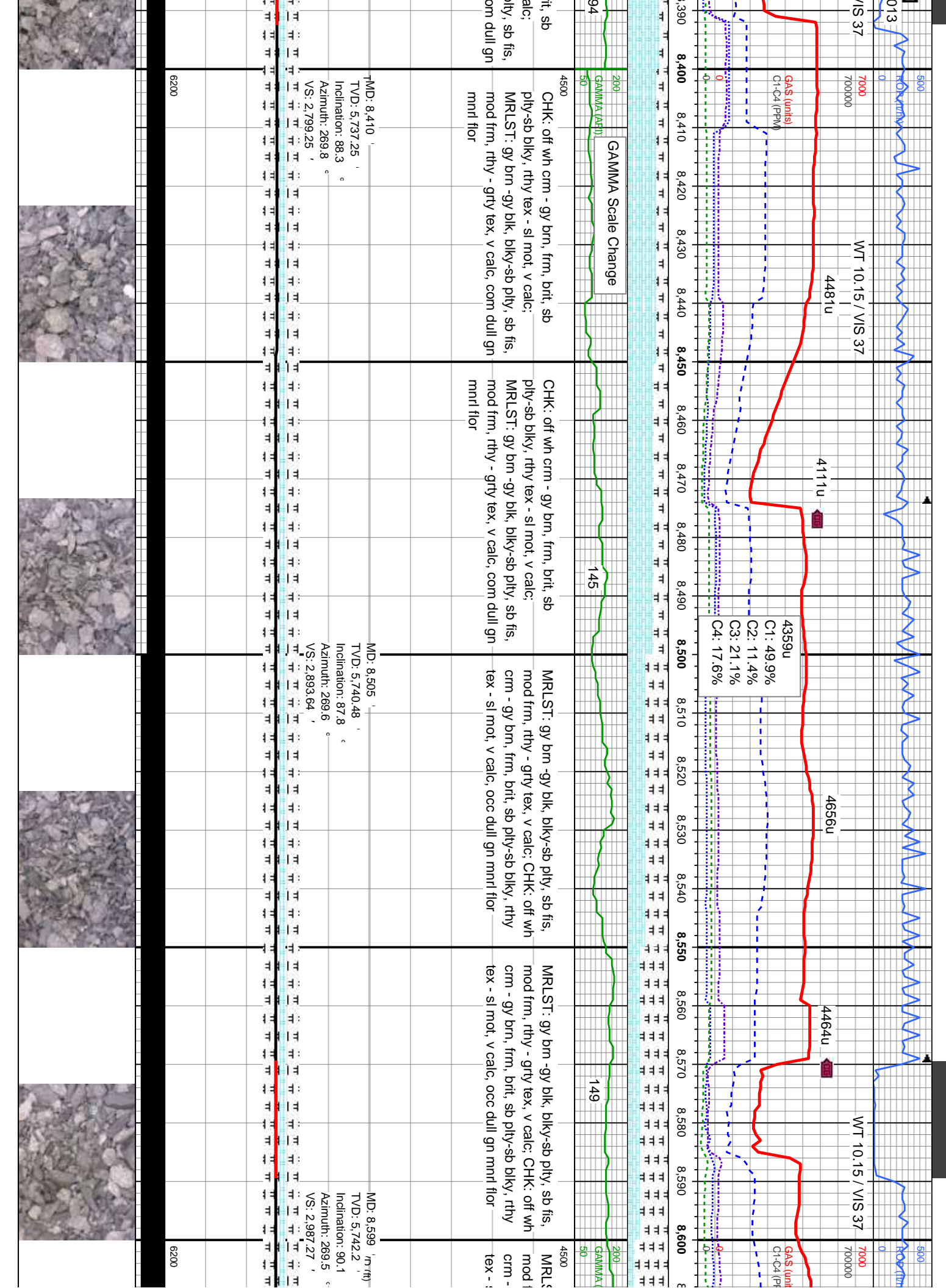


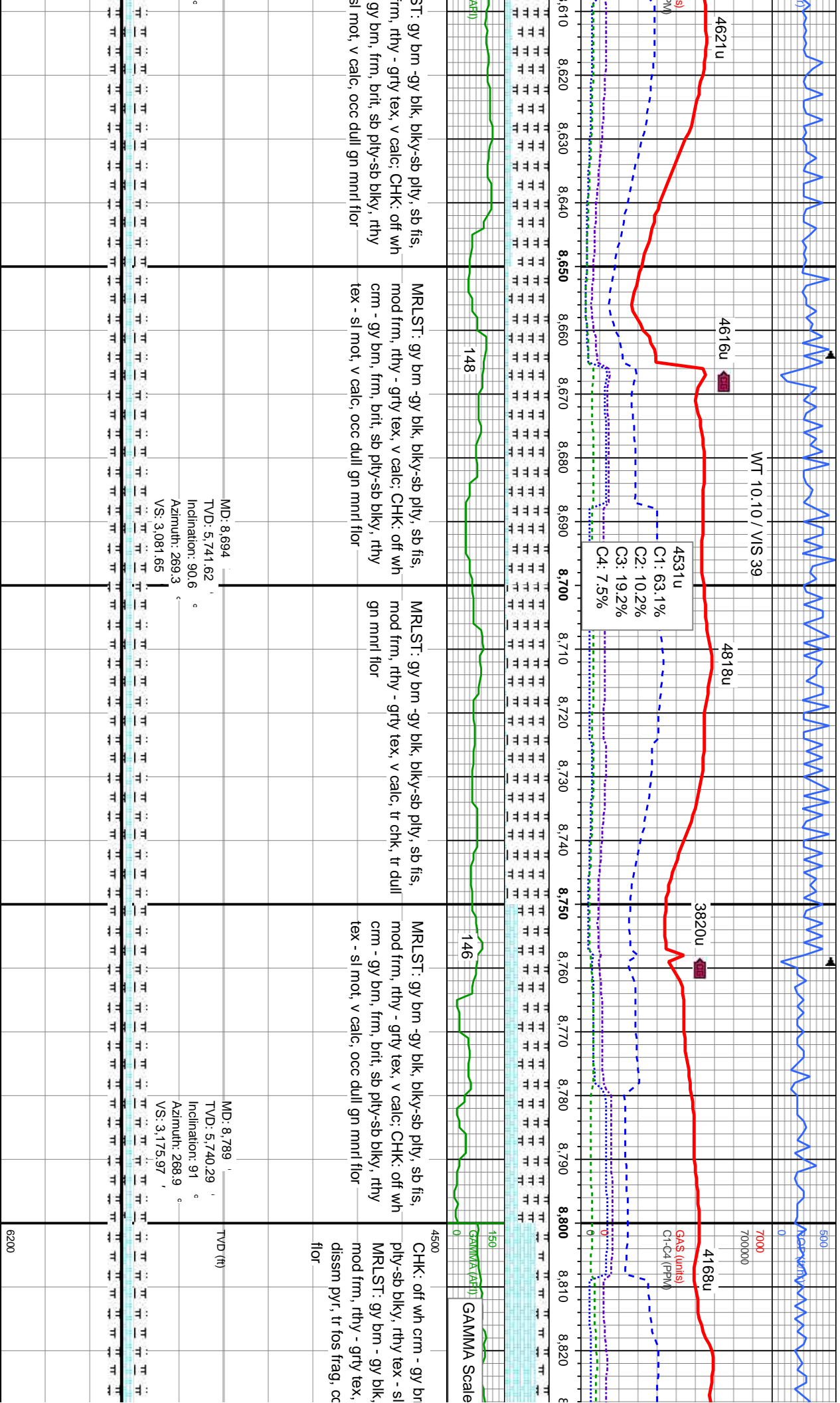


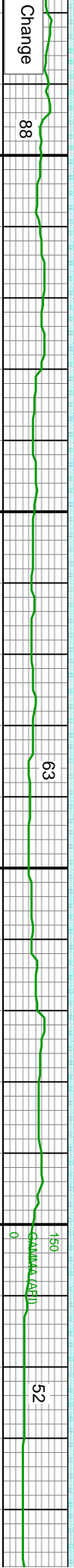
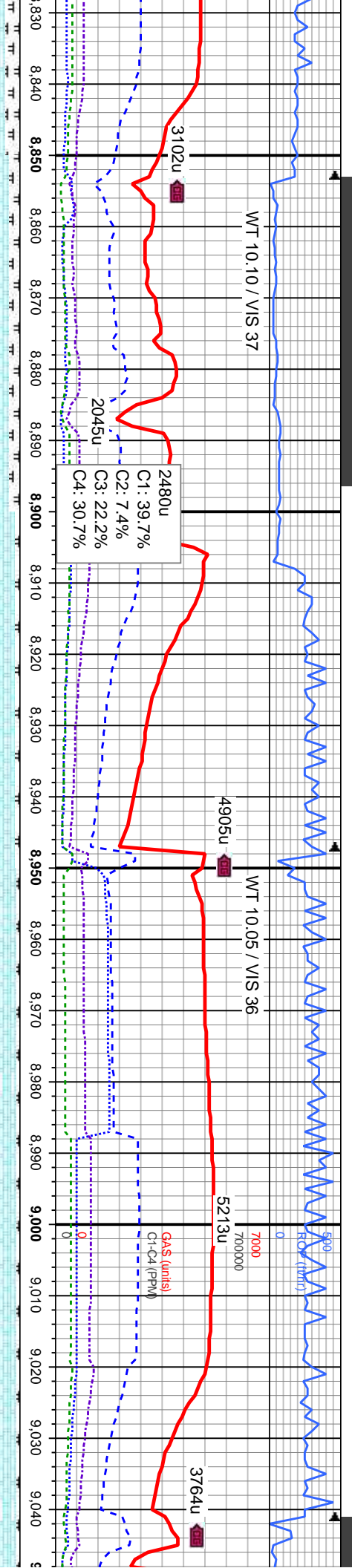
m - gy brn, frm, brit, sb	CHK: off wh crm - gy brn, frm, brit, sb	CHK: off wh crm - gy brn, frm, brit, sb	CHK: off wh crm - gy brn, frm, brit, sb	CHK: off wh crm - gy brn, frm, brit, sb
ny tex - sl mot, v calc;	ply-sb blk, rthy tex - sl mot, v calc;	ply-sb blk, rthy tex - sl mot, v calc;	ply-sb blk, rthy tex - sl mot, v calc;	ply-sb blk, rthy tex - sl mot, v c
n - gy blk, blk-sb ply, sb fis,	MRLST: gy brn -gy blk, blk-sb ply, sb fis,	MRLST: gy brn -gy blk, blk-sb ply, sb fis,	MRLST: gy brn -gy blk, blk-sb ply, sb fis,	MRLST: gy brn -gy blk, blk-sb p
grty tex, v calc, com dull gn	mod frm, rthy - grty tex, v calc, com dull gn	mod frm, rthy - grty tex, v calc, com dull gn	mod frm, rthy - grty tex, v calc, com dull gn	mod frm, rthy - grty tex, v calc, c
	mnrl flr	mnrl flr	mnrl flr	mnrl flr

MD: 8,221'	MD: 8,315'
TVD: 5,733.37'	TVD: 5,734.93'
Inclination: 89.2°	Inclination: 88.9°
Azimuth: 269.1°	Azimuth: 268.8°
VS: 2,611.62'	VS: 2,704.92'









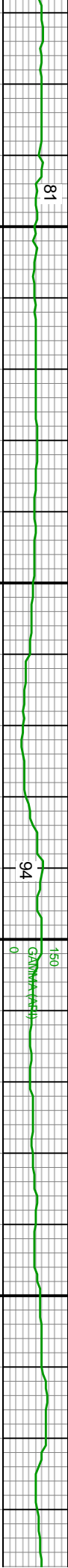
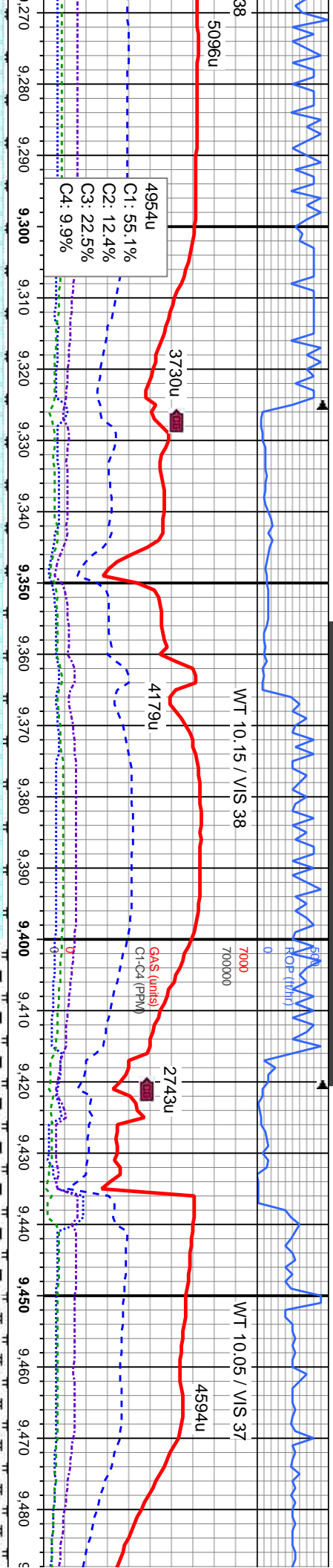
o, frm, brit, sb mot, v calc; biky-sb ply, sb fis, v calc, tr bent wi m dull gn mnrl	CHK: off wh crm - gy brn, frm, brit, sb ply-sb biky, rthy tex - sl mot, v calc; MRLST: gy brn - gy blk, biky-sb ply, sb fis, mod frm, rthy - grty tex, v calc, tr bent wi dissm pyr, tr fos frag, com dull gn mnrl flor	CHK: pred off wh crm - bf, sme gy brn, frm, brit, sb ply-sb biky, rthy tex - sl mot, v calc; MRLST: gy brn - gy blk, biky-sb ply, sb fis, mod frm, rthy - grty tex, v calc, tr fos frag, abnt dull gn mnrl flor	CHK: pred off wh crm - bf, sme gy brn, frm, brit, sb ply-sb biky, rthy tex - sl mot, v calc, tr mlst, tr fos frag, abnt dull gn mnrl flor	CHK: pred off wh crm - bf, sme gy brn, frm, brit, sb ply-sb biky, rthy tex - sl mot, v calc; tr mlst, tr fos frag, abnt dull gn mnrl flor
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MD: 8,883 '
TVD: 5,738.82 '
Inclination: 90.8 °
Azimuth: 271 °
VS: 3,269.45 '

MD: 8,977 '
TVD: 5,738.41 '
Inclination: 89.7 °
Azimuth: 271.8 °
VS: 3,363.15 '

TVD (ft)

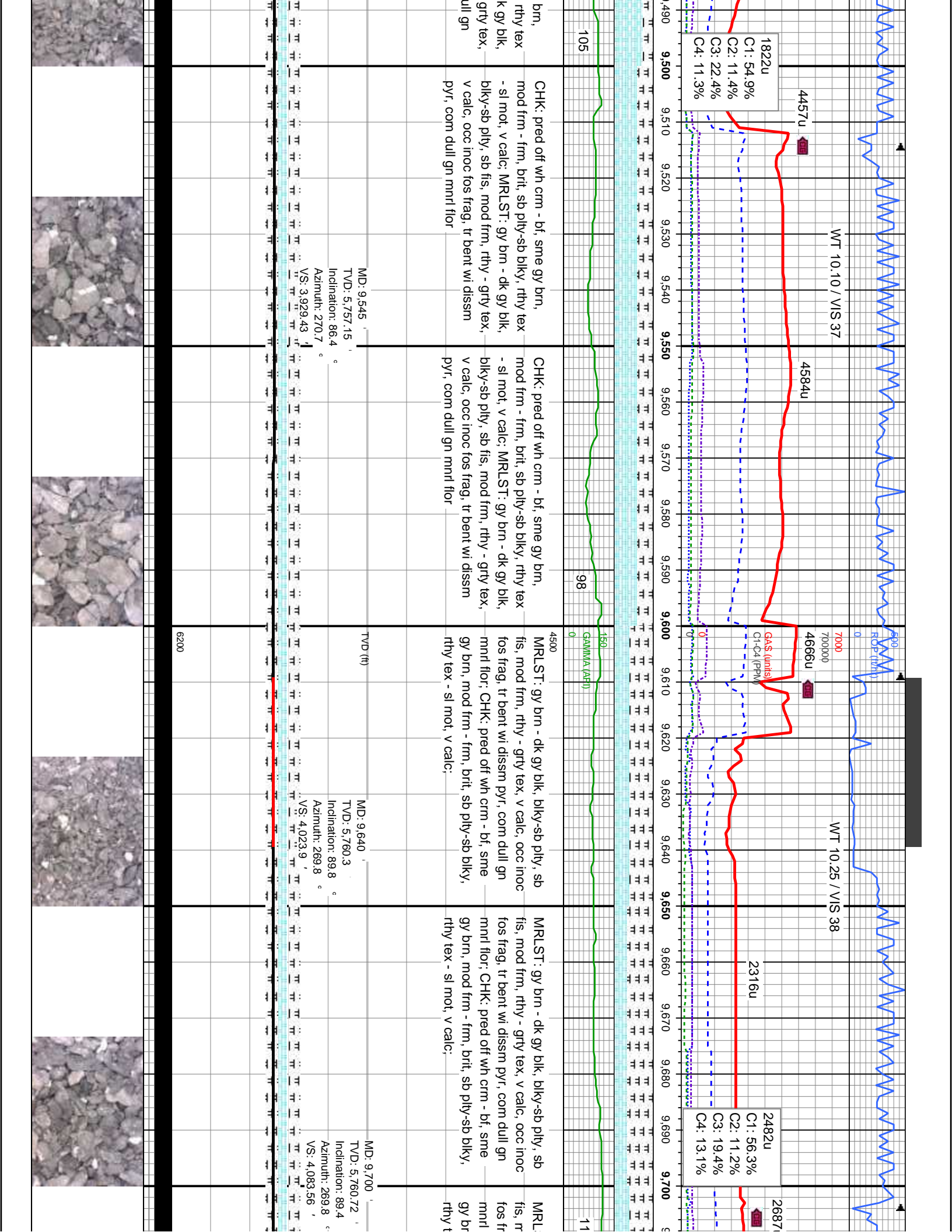


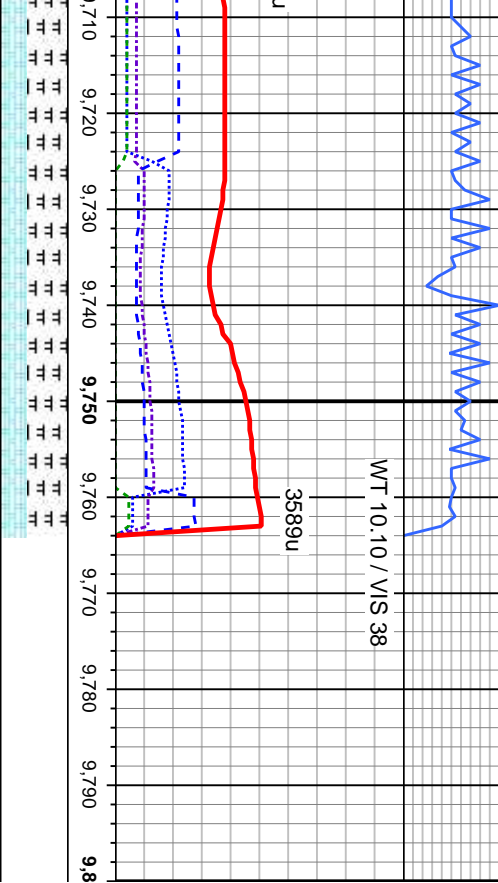


wh crm - bf, sme gy brn, brit, sb pty-sb blkly, rthy tex tr mlst, tr fos frag, occ	CHK: pred off wh crm - bf, sme gy brn, mod frm - frm, brit, sb pty-sb blkly, rthy tex - sl mot, v calc; tr mlst, tr fos frag, occ bent wi dissim pyr, abnt dull gn mnrl flr	CHK: pred off wh crm - bf, sme gy brn, mod frm - frm, brit, sb pty-sb blkly, rthy tex - sl mot, v calc; MRLST: gy brn - dk gy blk, blkly-sb pty, sb fis, mod frm, rthy - grty tex, v calc, sl tr fos frag, tr bent wi dissim pyr, abnt dull gn mnrl flr	CHK: pred off wh crm - bf, sme gy brn, mod frm - frm, brit, sb pty-sb blkly, rthy tex - sl mot, v calc; MRLST: gy brn - dk gy blk, blkly-sb pty, sb fis, mod frm, rthy - grty tex, v calc, sl tr fos frag, tr bent wi dissim pyr, abnt dull gn mnrl flr	CHK: pred off wh crm - bf, sme gy brn, mod frm - frm, brit, sb pty-sb blkly, rthy tex - sl mot, v calc; MRLST: gy brn - dk gy blk, blkly-sb pty, sb fis, mod frm, rthy - grty tex, v calc, tr bent wi dissim pyr, com d mnrl flr
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MD: 9,356 TVD: 5,746.43 Inclination: 86.8 Azimuth: 272.3	MD: 9,450 TVD: 5,751.6 Inclination: 86.9 Azimuth: 270.9
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ST: gy bm - dk gy blk, blkly-sb pty, sb
mod frm, rthy - grty tex, v calc, occ inoc
ag; tr bent wi dissm pyr, com dull gn
flor; CHK: pred off wh crm - bf, sme
n, mod frm - frm, brit, sb pty-sb blkly,
ex - sl mot, v calc;

NOBLE ENERGY INC
ROHN STATE LD09-65HN
TD @ 9,764' MD
10/28/2013 @ 16:40 hrs

Thank you for choosing
Columbine Logging Inc.

PTB

MD: 9,764'
TVD: 5,761.39'
Inclination: 89.4°
Azimuth: 269.8°
VS: 4,147.19'

