

# COLUMBINE LOGGING

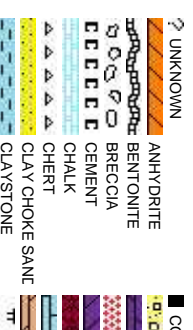
Scale: 5" / 100'  
Measured Depth Log

Well Name	CVR 5-63-32-3225CH		
Location	SEC 32 T5N R63W		
State	COLORADO	County	WELD
Country	UNITED STATES OF AMERICA	Rig Number	NABORS M-37
API Number	05-123-36898	AFE #	18203D
Region	DENVER - JULESBURG BASIN	Field	NE WATTENBERG
Spud Date	5/29/2013	Drilling Completed	6/7/2013
Surface Coordinates	SEC 32 T5N R63W 2,349' FSL 230' FWL		
Bottom Hole Coordinates	SENE SEC 32 T5N R63W 2,176' FNL 500' FEL		
Ground Elevation	4578'	K.B. Elevation	4608'
Logged Interval	5916'	To	11040'
Formation	PIERRE TO NIOBRARA C	Total Depth	11040'
Type of Drilling Fluid	WATER BASED POLY MUD		

Company BILL BARRETT  
Address 1099 18TH ST.,  
DENVER, CO 8

Name JASON BRAND  
Company BILL BARRETT  
Address 1099 18TH ST.,  
DENVER, CO 8

PASQUALE DEL VECCHIO  
WEDGE HOWLAND



## Operator

CORP.

STE. 2300  
0202

## Geologist

CORP.

STE. 2300  
0202

## Other

WELLSITE GEOLOGIST

WELLSITE GEOLOGIST

## Rock Types

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

## Accessories

	F FOSSIL		ANHYDRITIC		FERRUGINOUS		TUFFACEOUS
	GASTROPOD		ARGILLACEOUS		GLAUCONITE		
	ALGAE		ARGILLITE GRAIN		GYPSIFEROUS		
	AMPHIPORA		BENTONITE		HEAVY MINERAL		
	BELEMNITE		BITUMINOUS SUBSTANCE		KAOLIN		
	BIOLASTIC		BRECCIA FRAGMENTS		MARLSTONE		
	BRACHIOPOD		CALCAREOUS		MINERAL CRYSTALS		
	BRACHYOZA		CARBONACEOUS FLAKES		NODULES		
	CEPHALOPOD		CHERT		PHOSPHATE PELLET		
	CORAL		CHERT		PYRITE		
	CRINOID		COAL - THIN BEDS		SALT CAST		
	ECHINOID		DOLOMITIC		SANDY		
	FISH		FELDSPAR		SILTY		
	FORAMINIFERA		FERRUGINOUS PELLET				
							SILTSTONE STRINGER

## Other Symbols

	MOLDIC		FAULT		WIRELINE TESTED - LEFT		E EARTHY
	DEAD		ORGANIC		FORMATION TOP		FX FINELYXLN
	EVEN		PINPOINT		GAS SHOW		GS GRAINSTONE
			VUGGY		MIN DEPTH		L LITHOGRAPHIC
	QUESTIONABLE				NORMAL FAULT		A ANGULAR
	SPOTTED STAINING				OIL SHOW		R ROUNDED
					OVERTURNED STRATA		B SUBANG
	POROSITY		BIT		REVERSE FAULT		R SUBRAND
	E EARTHY		CONNECTION (LEFT)		SIDEWALL CORE (LEFT)		
	FENESTRAL		CONNECTION (RIGHT)		SIDEWALL CORE (RIGHT)		
	F FRACTURE		CONNECTION GAS				Textures
	INTERCRYSTALLINE		CORE - LOST		SLIDE		B3 BOUNDSTONE
	INTERCRYSTALLINE		CORE - RECOVERED		SURVEY		C CHALKY
	INTERCRYSTALLINE		DST INTERVAL		TRIP GAS		CX CRYPTOXLN
							Sorting
							M MODERATE
							P POOR
							W WELL

Slide/Rotate

ROP  
ROF  
GAMMA

COLUMBINE LOGGING 2-MAN  
GEOSTEERING OPERATIONAL  
05/19/2013 BLOODHOUND # 0149

Total Gas & Chromatograph

GAS  
C1  
C2  
C3  
C4  
CO2

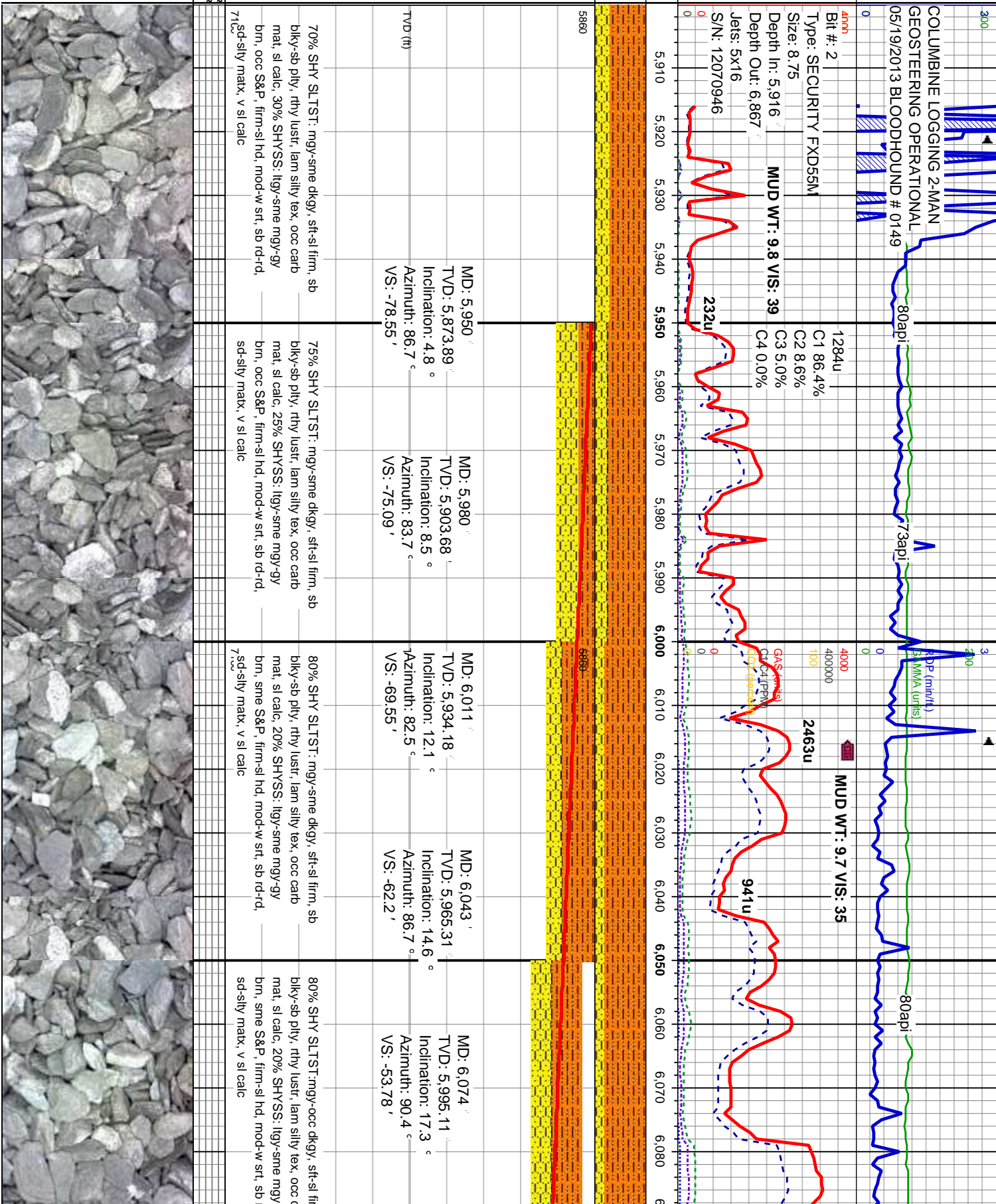
Depth Labels

% Lith

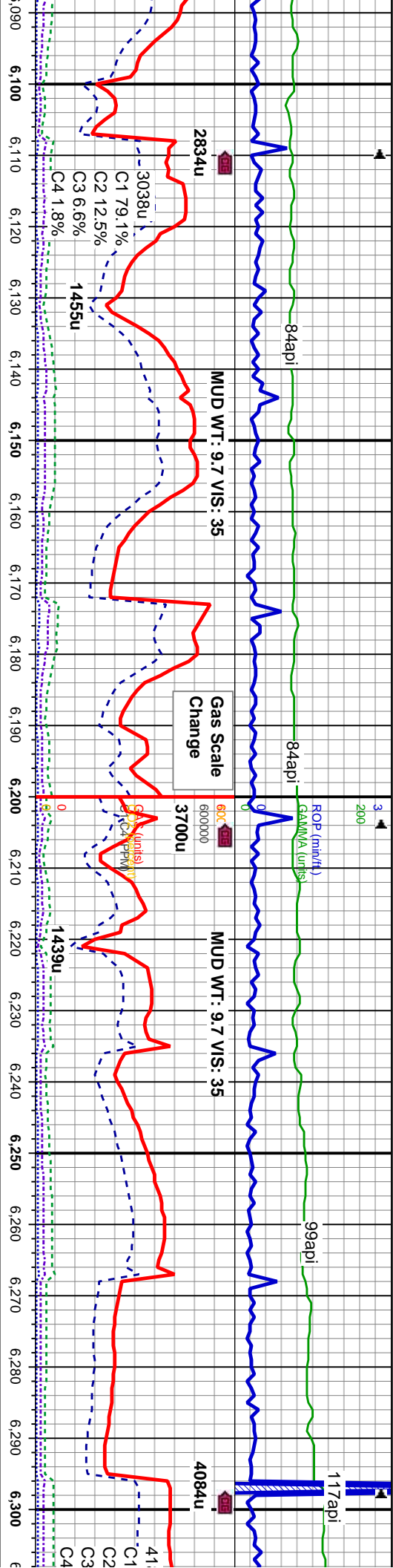
Well Bore  
TVD

Oil Show

Images



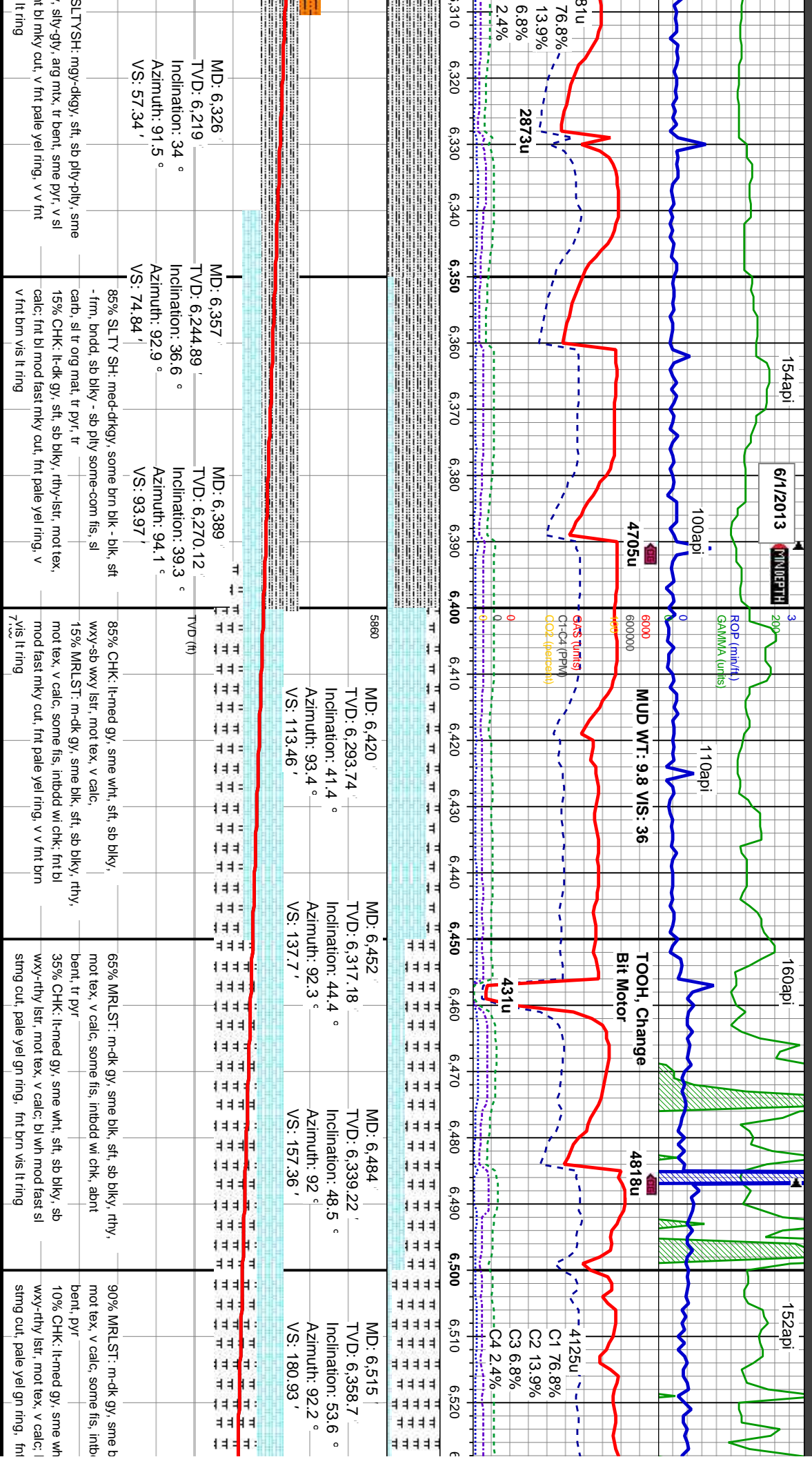




MD: 6,106' TVD: 6,025.43' Inclination: 20 ° Azimuth: 90.4 ° VS: -43.72'		MD: 6,137' TVD: 6,054.3' Inclination: 22.7 ° Azimuth: 89.3 ° VS: -32.6'		MD: 6,168' TVD: 6,082.59' Inclination: 25.6 ° Azimuth: 88.5 ° VS: -20.07'		MD: 6,200' TVD: 6,111.08' Inclination: 28.5 ° Azimuth: 87.4 ° VS: -5.66'		MD: 6,232' TVD: 6,139.07' Inclination: 29.5 ° Azimuth: 88.1 ° VS: 9.71'		MD: 6,263' TVD: 6,166.04' Inclination: 29.6 ° Azimuth: 90.7 ° VS: 24.79'		MD: 6,294' TVD: 6,192.71' Inclination: 31.7 ° Azimuth: 90.9 ° VS: 40.31'	
85% SHY SLTST: mgy-occ dkgy, sft-si firm, sb blkly-sb ply, occ ply, rthy lust, lam silty tex, occ carb mat, sl calc, 15% SHYSS: llyg-sme mgy-gy brn, sme S&P, firm-si hd, mod-w srt, sb rd-rd, sd-sily matx, v si calc		60% SHY SLTST: mgy-occ dkgy, sft-si firm, sb blkly-sb ply, occ ply, silty-gly, arg mtx, sl calc, 25% SHYSS: llyg-sme mgy-gy brn, occ S&P, firm-si hd, mod-w srt, sb rd-rd, sd-sily matx, v si calc, 15% SLTY SH: med-dkgy, some brn blk - blk, sft - frm, bndd, sb blkly - sb ply some-com fis, sl carb, sl tr org mat, fnt bl mky cut, v fnt pale yel ring, v v fnt brn vis it ring		55% SHY SLTST: mgy-occ dkgy, sft, sb ply-ply, occ sb blkly, silty-gly, arg mtx, v si calc, 40% SLTY SH: med-dkgy, some brn blk - blk, sft - frm, bndd, sb blkly - sb ply, some-com fis, sl carb, sl tr org mat, 5% SHYSS: llyg-sme mgy-gy brn, firm-si hd, mod-w srt, sb rd-rd, sd-sily matx, v si calc, fnt bl mky cut, v fnt pale yel ring, v v fnt brn vis it ring		70% SLTVSH: mgy-dkgy, sft, sb ply-ply, sme sb blkly, silty-gly, arg mtx, tr bent, v si calc, 30% SHY SLTST: mgy-occ dkgy, sft, sb ply-ply, occ sb blkly, silty-gly, some-com fis, sl carb, sl tr org mat, v si calc, fnt bl mky cut, v fnt pale yel ring, v v fnt brn vis it ring		100% sb blkly calc: fr					







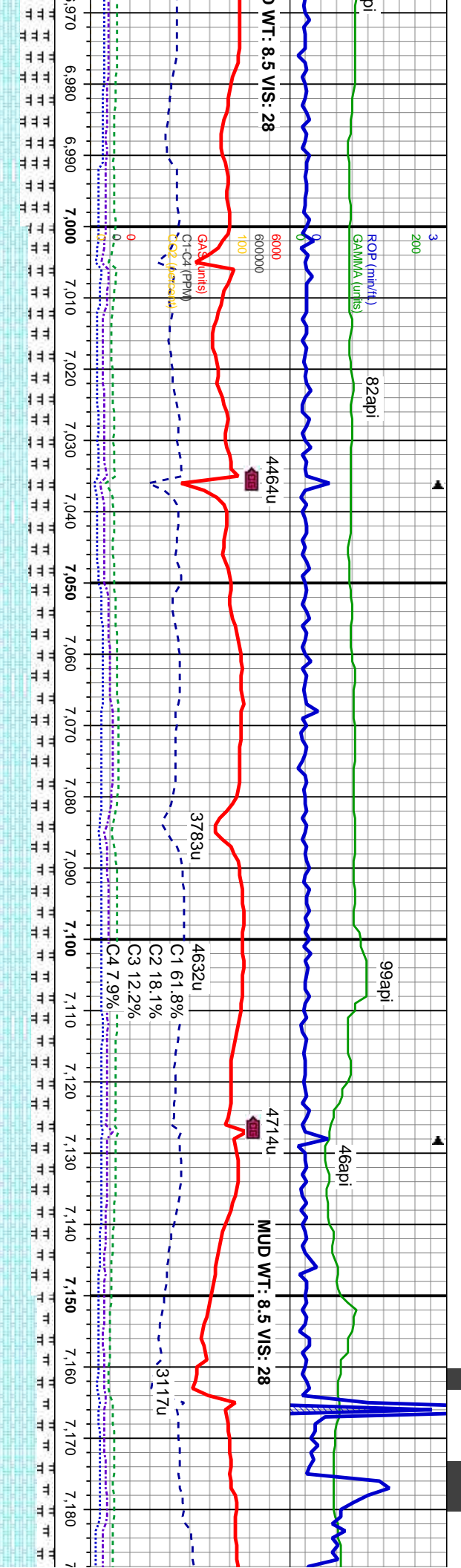




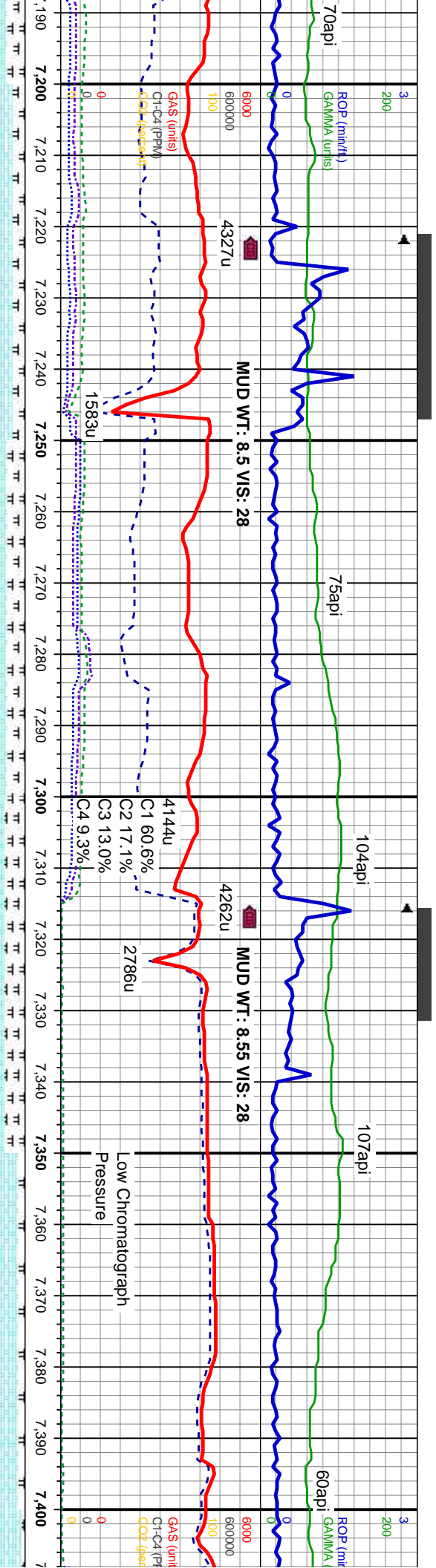












5860	MD: 7,259' TVD: 6,447.91' Inclination: 91.2 ° Azimuth: 89 ° VS: 897.82'	5860	MD: 7,356' TVD: 6,447.66' Inclination: 89.1 ° Azimuth: 88.8 ° VS: 993.64'
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80% CHK: lt-med gy, some wht, some tan sft, sb blkly, sb wxy-rthy lstf, sme wxy, mot tex, v calc, tr inoc fos frag, tr foram fos	70% CHK: lt-med gy, some wht, some tan sft, sb blkly, sb wxy-rthy lstf, sme wxy, mot tex, v calc, tr inoc fos frag, tr foram fos	65% CHK: lt-med gy, some wht, some tan sft, sb blkly, sb wxy-rthy lstf, sme wxy, mot tex, v calc, tr inoc fos frag, tr foram fos	90% CHK: lt-med gy, some wht, some tan, sft, sb blkly, sb wxy-rthy lstf, sme wxy, mot tex, v calc, vstr inoc fos frag, vstr foram fos	95% C
20% MRLST: m-dk gy, sme blk, sft, sb blkly, rthy, mot tex, v calc, some fls, intbdd wi chk: bl med string cut, v pale yel gn ring, pale tan-brn vis lt ring	30% MRLST: m-dk gy, sme blk, sft, sb blkly, rthy, mot tex, v calc, some fls, intbdd wi chk: bl med string cut, v pale yel gn ring, pale tan-brn vis lt ring	35% MRLST: m-dk gy, sme blk, sft, sb blkly, rthy, mot tex, v calc, some fls, intbdd wi chk: bl med string cut, v pale yel gn ring, pale tan-brn vis lt ring	10% MRLST: m-dk gy, sme blk, sft, sb blkly, rthy, mot tex, v calc, some fls, intbdd wi chk: bl med string cut, v pale yel gn ring, pale tan-brn vis lt ring	5% MF
ring	ring	ring	ring	ring



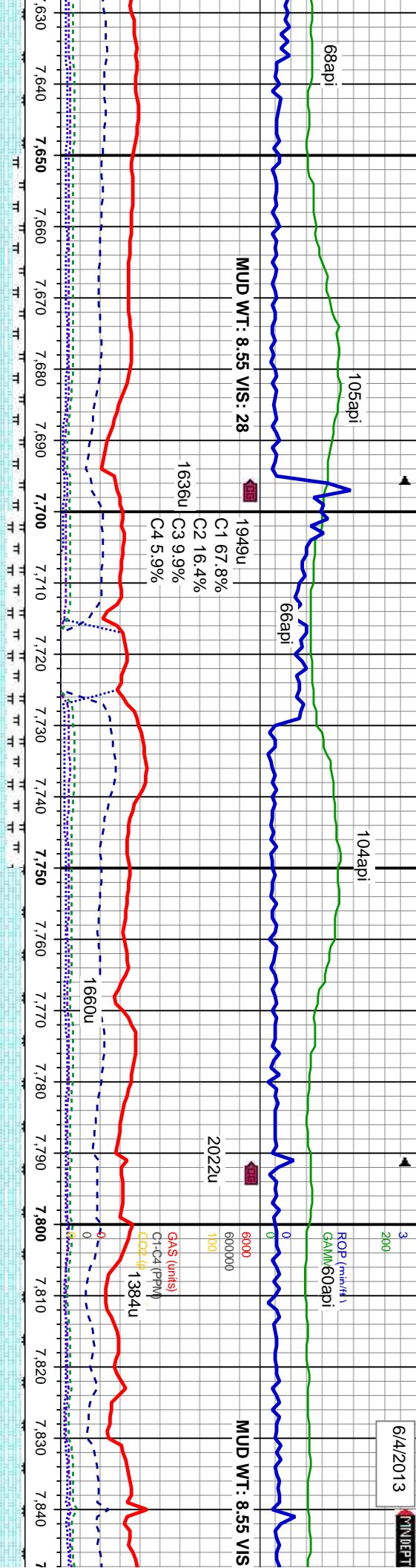






6/4/2013

CONCEPT

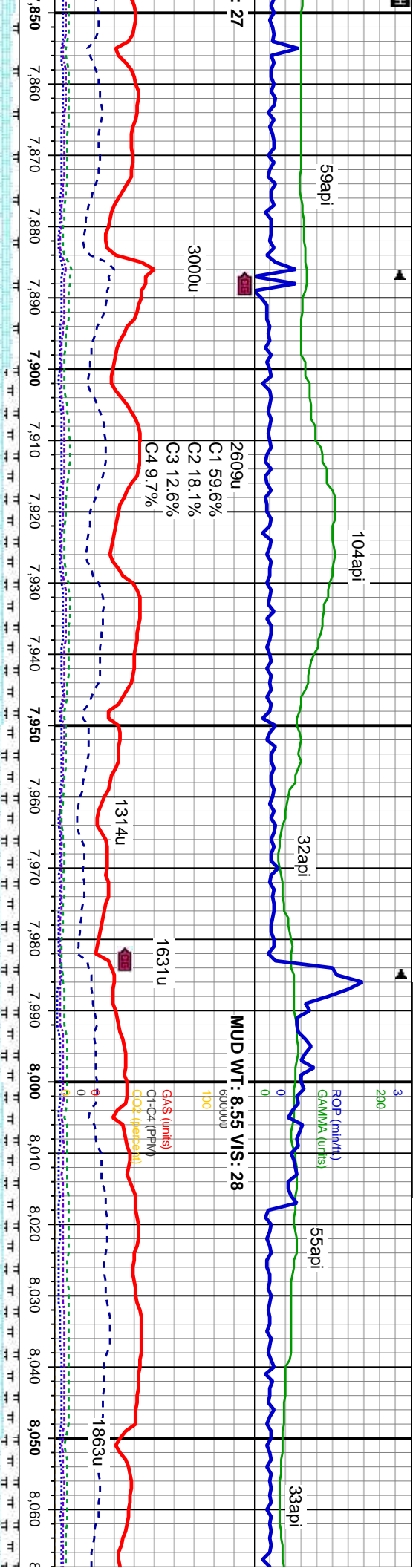


MD: 7,643'	MD: 7,738'	MD: 7,834'
TVD: 6,446.4'	TVD: 6,446.73'	TVD: 6,448.15'
Inclination: 91.2°	Inclination: 88.4°	Inclination: 89.9°
Azimuth: 87.6°	Azimuth: 87.6°	Azimuth: 88.1°
VS: 1,277.77'	VS: 1,371.92'	VS: 1,467'

80% CHK: lt-med gy, some wht, some tan, sft, sb blk, sb wxy-rthy lstr, sme wxy, mot tex, v calc, vstr inoc fos frag	70% CHK: lt-med gy, some wht, some tan, sft, sb blk, sb wxy-rthy lstr, sme wxy, mot tex, v calc, vstr inoc fos frag	95% CHK: lt-med gy, some wht, tr tan, sft, sb blk, sb wxy-rthy lstr, sme wxy, mot tex, v calc, vstr inoc fos frag	95% CHK: lt-med gy, some wht, tr tan, sft, sb blk, sb wxy-rthy lstr, sme wxy, mot tex, v calc, vstr inoc fos frag
20% MRLST: m-dk gy, sme blk, sft, sb blk, rthy, mot tex, v calc, some fls, inbdd w/ chk; bl med string cut, v pale yel gn ring, pale tan-brn vis lt ring	30% MRLST: m-dk gy, sme blk, sft, sb blk, rthy, mot tex, v calc, some fls, inbdd w/ chk; bl med string cut, v pale yel gn ring, pale tan-brn vis lt ring	5% MRLST: m-dk gy, sme blk, sft, sb blk, rthy, mot tex, v calc, some fls, inbdd w/ chk; bl med string cut, v pale yel gn ring, pale tan-brn vis lt ring	5% MRLST: m-dk gy, sme blk, sft, sb blk, rthy, mot tex, v calc, some fls, inbdd w/ chk; bl med string cut, v pale yel gn ring, pale tan-brn vis lt ring





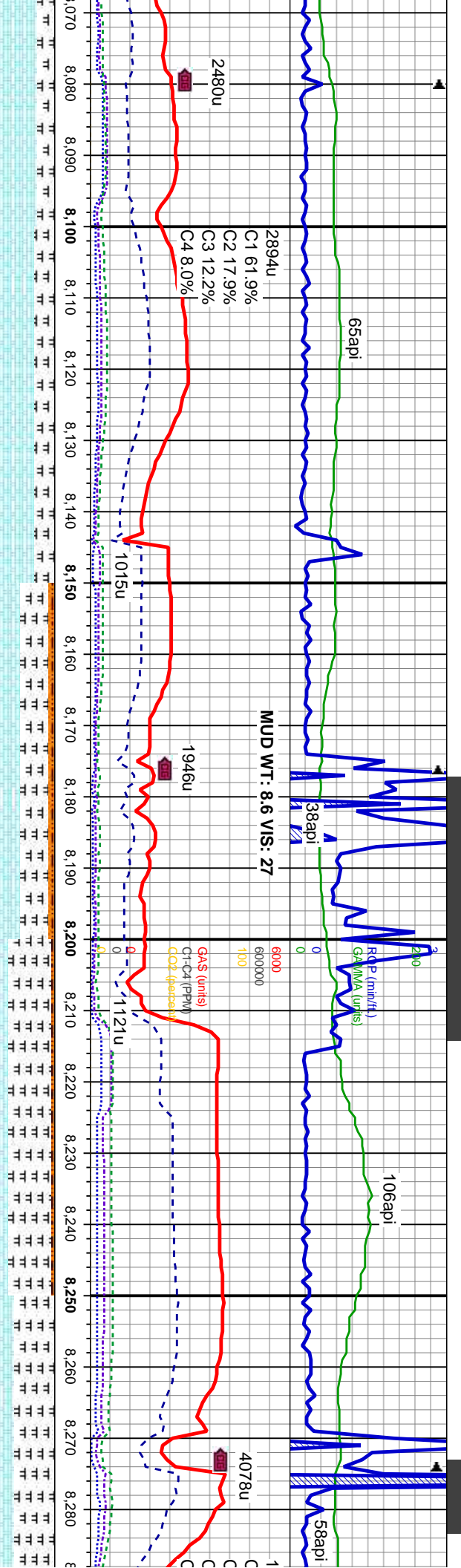


MD: 7,929 TVD: 6,446.25 Inclination: 92.4 ° Azimuth: 87.9 ° VS: 1,561.05		MD: 8,025 TVD: 6,445.49 Inclination: 88.5 ° Azimuth: 88.1 ° VS: 1,656.09	
		5860	

90% CHK: lt-med gy, some wht, sme tan, sft, sb blk'y, sb wxy-rthy lstr, sme wxy, mot tex, v calc, str inoc fos frag	75% CHK: lt-med gy, some wht, sme tan, sft, sb blk'y, sb wxy-rthy lstr, sme wxy, mot tex, v calc, str inoc fos frag	75% CHK: lt-med gy, some wht, sme tan, sft, sb blk'y, sb wxy-rthy lstr, sme wxy, mot tex, v calc, str inoc fos frag	75% CHK: lt-med gy, some wht, sme tan, sme gy brn, v sft-sft, sb blk'y, sb wxy-rthy lstr, sme wxy, mot tex, v calc, str inoc fos frag	70% CHK: lt-med gy brn, v sft-sft, sme mot tex, v calc, str
10% MRLST: m-dk gy, sme blk, sft, sb blk'y, rthy, mot tex, v calc, some fis, intbdd wi chk; bl med string cut, v pale yel gn ring, pale tan-brn vis lt ring	25% MRLST: m-dk gy, sme blk, sft, sb blk'y, rthy, mot tex, v calc, some fis, intbdd wi chk; bl med string cut, v pale yel gn ring, pale tan-brn vis lt ring	25% MRLST: m-dk gy, sme blk, sft, sb blk'y, rthy, mot tex, v calc, some fis, intbdd wi chk; bl med string cut, v pale yel gn ring, pale tan-brn vis lt ring	25% MRLST: m-dk gy, sme blk, sft, sb blk'y, rthy, mot tex, v calc, some fis, intbdd wi chk; bl med string cut, v pale yel gn ring, pale tan-brn vis lt ring	30% MRLST: m-dk mot tex, v calc, soi string cut, v pale yel ring







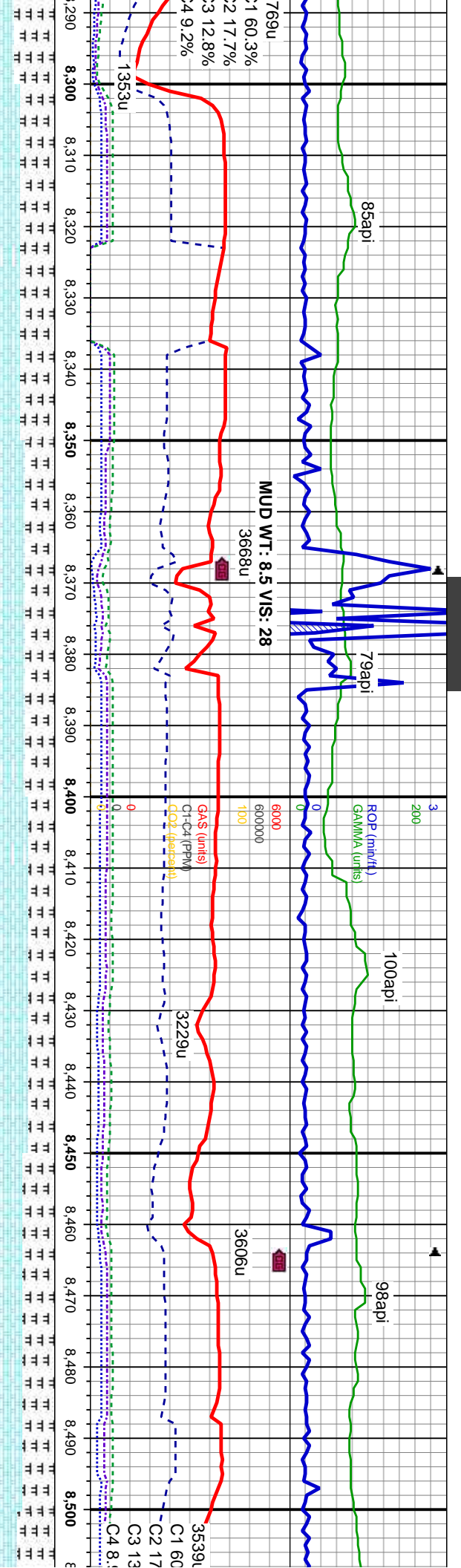
MD: 8,120'  
TVD: 6,446.17'  
Inclination: 90.7 °  
Azimuth: 89.2 °  
VS: 1,749.93'

MD: 8,216'  
TVD: 6,446.84'  
Inclination: 88.5 °  
Azimuth: 92.3 °  
VS: 1,844.22'

gy, some wht, sme tan, sme blk, sb wxy-rthy lstr, sme wxy, inoc fos frag	65% CHK: lt-med gy, some wht, sme gy brn, v sft-sft, sb blk, sb wxy-rthy lstr, sme wxy, mot tex, v calc,	40% CHK: lt-med gy, some wht, sme gy brn, v sft-sft, sb blk, sb wxy-rthy lstr, sme wxy, mot tex, v calc,	20% CHK: lt-med gy, some wht, sme gy brn, v sft-sft, sb blk, sb wxy-rthy lstr, sme wxy, mot tex, v calc,	30% CHK: lt-med gy, some wht, sme gy sme tan, v sft-sft, sb blk, sb wxy-rthy lstr, wxy, mot tex, v calc,
gy, sme blk, sft, sb blk, rthy, me fis, intbdd wi chk; bl med bl gn ring, pale tan-brn vis lt	35% MRLST: m-dk gy, sme blk, sft, sb blk, rthy, mot tex, v calc, some fis, intbdd wi chk; bl med string cut, v pale yel gn ring, pale tan-brn vis lt	50% MRLST: m-dk gy, sme blk, sft, sb blk, rthy, mot tex, v calc, some fis, intbdd wi chk	75% MRLST: m-dk gy, sme blk, sft, sb blk, rthy, mot tex, v calc, some fis, intbdd wi chk	70% MRLST: m-dk gy, sme blk, sft, sb blk, mot tex, v calc, some fis, intbdd wi chk; lt med fast string cut, pale yel gn ring, pale lt ring







MD: 8,312 ' TVD: 6,448.85 ' Inclination: 89.1 ° Azimuth: 92 ° VS: 1,938.04 '		MD: 8,407 ' TVD: 6,450.34 ' Inclination: 89.1 ° Azimuth: 92.2 ° VS: 2,030.91 '		MD: 8,503 ' TVD: 6,450.8 ' Inclination: 9 ' Azimuth: 92 ' VS: 2,124.64 '	
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40% CHK: lt-med gy, some wht, some tan, v sft-sft, sb blk, sb wxy-rthy lstr, sme wxy, mot tex, v calc.	50% CHK: lt-med gy, com tan, v sft-sft, sb blk, sb wxy-rthy lstr, sme wxy, mot tex, v calc, tr lnoc fos frag.	30% CHK: lt-med gy, com tan, v sft-sft, sb blk, sb wxy-rthy lstr, sme wxy, mot tex, v calc, tr lnoc fos frag.	45% CHK: lt-med gy, com tan, v sft-sft, sb blk, sb wxy-rthy lstr, sme wxy, mot tex, v calc, tr lnoc fos frag.	45% C sb wxy
60% MRLST: m-dk gy, sme blk, sft, sb blk, rthy, mot tex, v calc, some fis, intbdd wi chk: bl wh med fast string cut, pale yel gn ring, pale brn vis lt ring	50% MRLST: m-dk gy, sme blk, sft, sb blk, rthy, mot tex, v calc, some fis, tr dissn pyr, intbdd wi chk: bl wh med fast string cut, pale yel gn ring, pale brn vis lt ring	70% MRLST: m-dk gy, sme blk, sft, sb blk, rthy, mot tex, v calc, some fis, tr dissn pyr, intbdd wi chk: bl wh med fast string cut, pale yel gn ring, pale brn vis lt ring	55% MRLST: m-dk gy, sme blk, sft, sb blk, rthy, mot tex, v calc, some fis, tr dissn pyr, intbdd wi chk: bl wh med fast string cut, pale yel gn ring, pale brn vis lt ring	55% MRLST: m-dk gy, sme blk, sft, sb blk, rthy, mot tex, v calc, some fis, tr dissn pyr, intbdd wi chk: bl wh med fast string cut, pale yel gn ring, pale brn vis lt ring





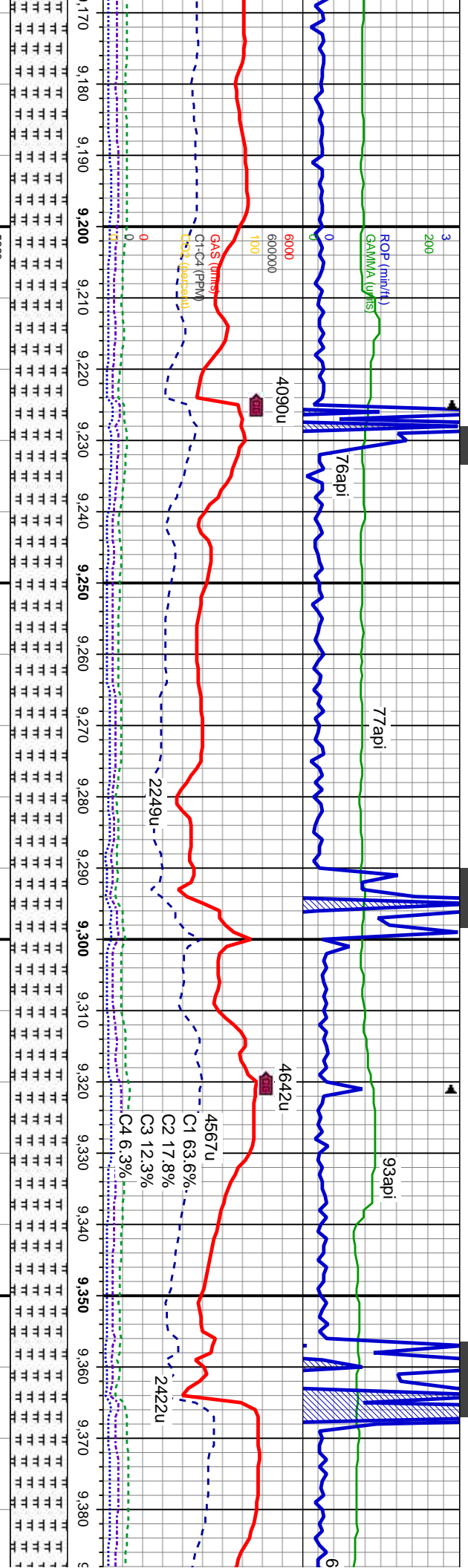










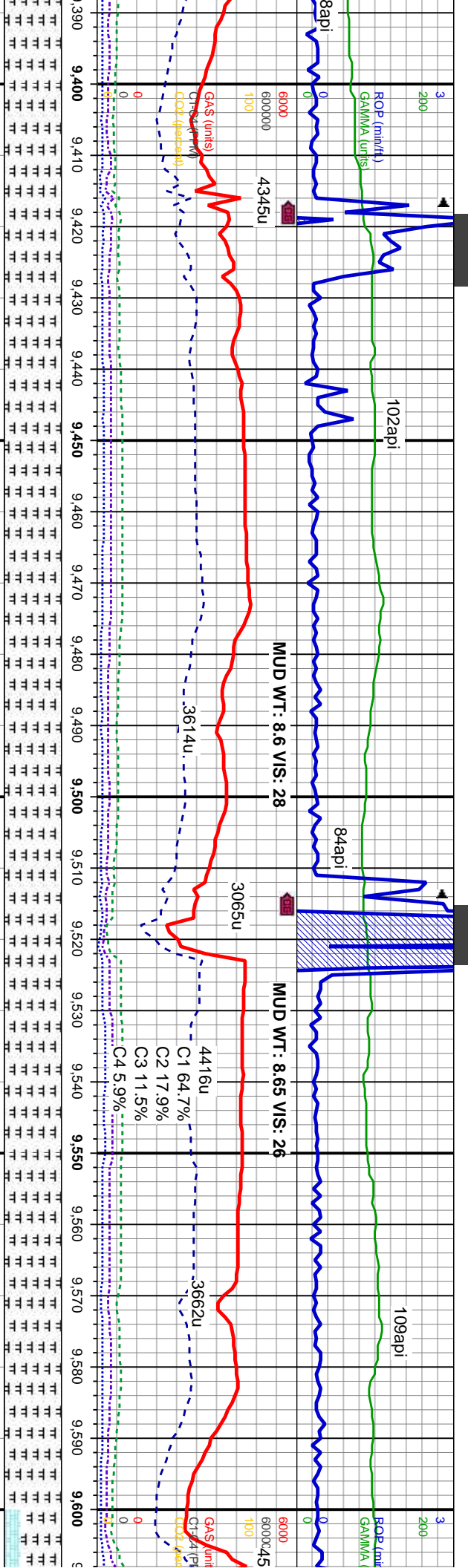


171'	MD: 9.267'
465.71'	TVD: 6,464.21'
Inclination: 91.3 °	Inclination: 90.5 °
h: 87.1 °	Azimuth: 86 °
VS: 2,876.21'	
80.86'	
5880	

blk gy, com blk, sft, sb blk, rthy, mot tex, arg mt, v calc, some fis, sl fos frag, it-mod dissim pyr, intbodd wi chk; bl	100% MRLST: m-dk gy, com blk, sft, sb blk, rthy, mot tex, arg mt, v calc, some fis, sl fos frag, it-mod dissim pyr, intbodd wi chk; bl mky-simg cut, pale yel gn ring, v pale brn vis lt r-ring	100% MRLST: m-dk gy, com blk, sft, sb blk, rthy, mot tex, arg mt, v calc, some fis, sl fos frag, it-mod dissim pyr, intbodd wi chk; bl mky-simg cut, pale yel gn ring, v pale brn vis lt ring	100% MRLST: m-dk gy, com blk, sft, sb blk, rthy, mot tex, arg mt, v calc, some fis, sl fos frag, it-mod dissim pyr, intbodd wi chk; bl mky-simg cut, pale yel gn ring, v pale brn vis lt ring
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5860

5860

MD: 9,458'  
TVD: 6,457.47'  
Inclination: 94.6°  
Azimuth: 89.9°  
VS: 3,065.08'

MD: 9,554'  
TVD: 6,451.19'  
Inclination: 92.9°  
Azimuth: 88.1°  
VS: 3,159.68'

100% MRLST: m-dk gy, com blk, sft, sb blk, rthy, mot tex, arg mix, v calc, some fs, sl fos frag, tr-mod dissn pyr, intbdd wi chk; bl mky-sfmg cut, pale yel gn ring, v pale brn vis lt ring

100% MRLST: m-dk gy, com blk, sft, sb blk, rthy, mot tex, arg mix, v calc, some fs, sl fos frag, tr-mod dissn pyr, scat bent, intbdd wi chk; bl mky-sfmg cut, pale yel gn ring, v pale brn vis lt ring

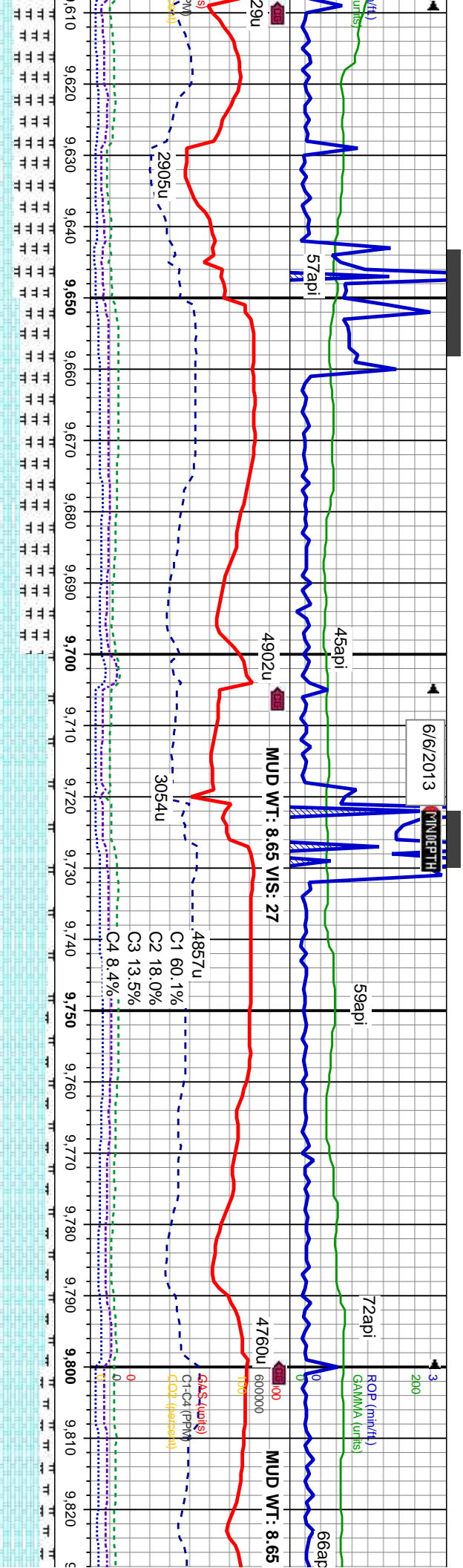
100% MRLST: m-dk gy, com blk, sft, sb blk, rthy, mot tex, arg mix, v calc, some fs, sl fos frag, tr-mod dissn pyr, scat bent, intbdd wi chk; bl mky-sfmg cut, pale yel gn ring, v pale brn vis lt ring

100% MRLST: m-dk gy, com blk, sft, sb blk, rthy, mot tex, arg mix, v calc, some fs, sl fos frag, tr-mod dissn pyr, scat bent, intbdd wi chk; bl mky-sfmg cut, pale yel gn ring, v pale brn vis lt ring

30% C sb wxy 70% N mot tex dissn 7... cut, pa



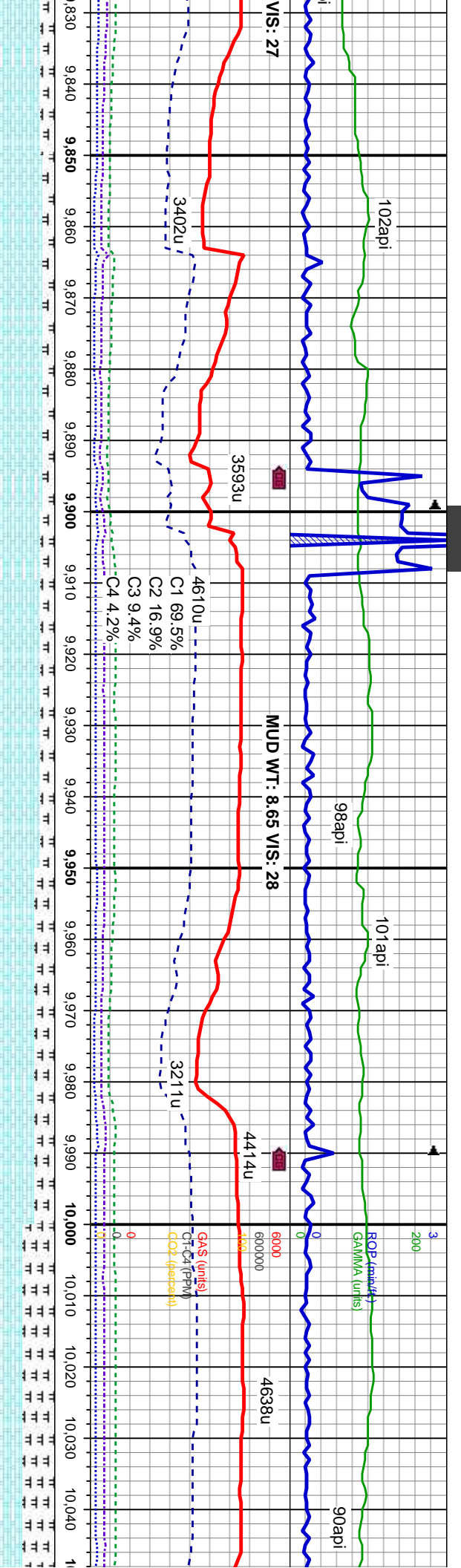




MD: 9,650'	MD: 9,746'	MD: 9,746'	MD: 9,746'
TVD: 6,446.25'	TVD: 6,444.99'	TVD: 6,444.99'	TVD: 6,444.99'
Inclination: 93 °	Inclination: 88.5 °	Inclination: 89 °	Inclination: 88.5 °
Azimuth: 88.3 °	Azimuth: 89 °	Azimuth: 89 °	Azimuth: 88.5 °
VS: 3,254.57'	VS: 3,349.44'	VS: 3,349.44'	VS: 3,349.44'
40% CHK: lt-med gy, sme tan, v stf-stf, sb blk, sb wxy-rthy lstr, sme wxy, mot tex, v calc, 60% MRLST: m-dk gy, com blk, stf, sb blk, rthy, mot tex, arg mix, v calc, some fls, sl los frag, tr dissn pyr, str bent, intbdd wi chk; bl mky-stmg cut, pale yel gn ring, v pale brn vis lt ring	90% CHK: tan, sme lt-med gy, v stf-stf, sb blk, sb wxy-rthy lstr, sme wxy, mot tex, v calc, 10% MRLST: m-dk gy, com blk, stf, sb blk, rthy, mot tex, arg mix, v calc, some fls, sl los frag, tr dissn pyr, tr bent, intbdd wi chk; bl med fast smg cut, yel gn ring, pale brn vis lt ring	85% CHK: tan, sme lt-med gy, v stf-stf, sb blk, sb wxy-rthy lstr, sme wxy, mot tex, v calc, 15% MRLST: m-dk gy, com blk, stf, sb blk, rthy, mot tex, arg mix, v calc, some fls, sl los frag, tr dissn pyr, tr bent, intbdd wi chk; bl med fast smg cut, yel gn ring, pale brn vis lt ring	75% CHK: tan, sme lt-med gy, sb wxy-rthy lstr, sme wxy, mot tex, 25% MRLST: m-dk gy, com blk, stf, sb blk, rthy, mot tex, arg mix, v calc, some fls, sl los frag, tr dissn pyr, str bent, intbdd wi chk; bl mky-stmg cut, yel gn ring, pale brn vis lt ring



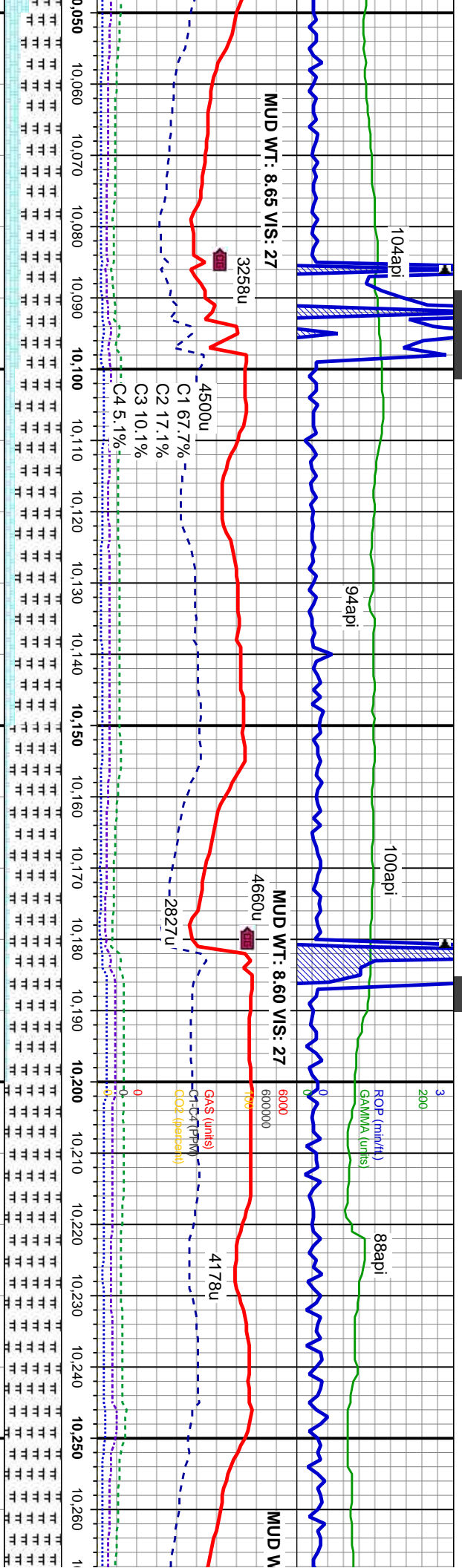




MD: 9.841'	MD: 9.937'	MD: 10.032'
TVD: 6,447.48'	TVD: 6,450.08'	TVD: 6,452.41'
Inclination: 88.5°	Inclination: 88.4°	Inclination: 88.8°
Azimuth: 88.1°	Azimuth: 90.4°	Azimuth: 89°
VS: 3,443.35'	VS: 3,538.05'	VS: 3,631.6'

80% CHK: tan, sme lt-med gy, v sft-sft, sb blk, sb wxy-rthy lstr, sme wxy, mot tex, v calc, 20% MRLST: m-dk gy, com blk, sft, sb blk, rthy, mot tex, arg mix, v calc, some fis, sl fos frag, tr dissm pyr, str bent, intbdd wi chk: bl med fast sting cut, yel gn ring, pale brn vis lt ring	75% CHK: lt-med gy, v sft-sft, sb blk, sb wxy-rthy lstr, sme wxy, mot tex, v calc, 25% MRLST: m-dk gy, com blk, sft, sb blk, rthy, mot tex, arg mix, v calc, some fis, sl fos frag, tr dissm pyr, str bent, intbdd wi chk	65% CHK: lt-med gy, v sft-sft, sb blk, sb wxy-rthy lstr, sme wxy, mot tex, v calc, 35% MRLST: m-dk gy, com blk, sft, sb blk, rthy, mot tex, arg mix, v calc, some fis, sl fos frag, tr dissm pyr, str bent, intbdd wi chk	45% CHK: lt-med gy, v sft-sft, sb blk, sb wxy-rthy lstr, sme wxy, mot tex, v calc, 55% MRLST: m-dk gy, com blk, sft, sb blk, rthy, mot tex, arg mix, v calc, some fis, str bent, intbdd wi chk
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MD: 10,128'  
TVD: 6,455'  
Inclination: 88.1°  
Azimuth: 90°  
VS: 3,726.24'

MD: 10,224'  
TVD: 6,457.35'  
Inclination: 89.1°  
Azimuth: 89.3°  
VS: 3,820.84'

30% CHK: med gy, v sft-sft, sb blk, sb wxy-rthy  
lsr, mot tex, v calc,  
70% MRLST: m-dk gy, com blk, sft, sb blk, rthy,  
mot tex, arg mt, v calc, some fis, str bent,  
inbddd wi chk

20% CHK: med gy, v sft-sft, sb blk, sb wxy-rthy  
lsr, mot tex, v calc,  
80% MRLST: m-dk gy, com blk, sft, sb blk, rthy,  
mot tex, arg mt, v calc, some fis, str bent,  
inbddd wi chk

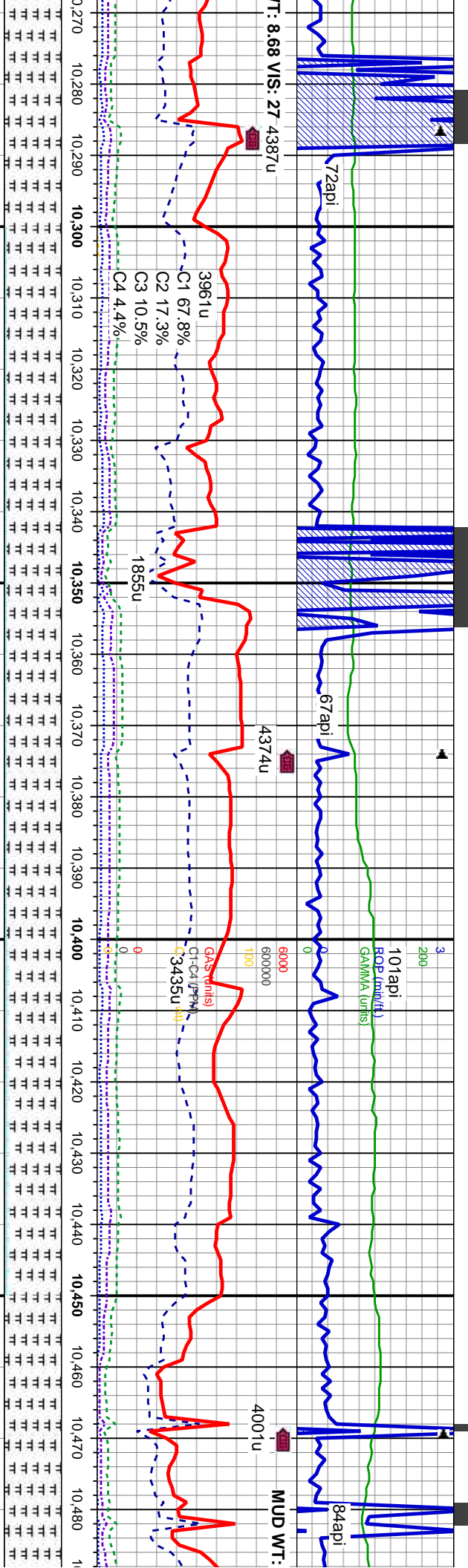
10% CHK: med gy, v sft-sft, sb blk, sb wxy-rthy  
lsr, mot tex, v calc,  
90% MRLST: m-dk gy, com blk, sft, sb blk, rthy,  
mot tex, arg mt, v calc, some fis, str bent,  
inbddd wi chk; bl med fast string cut, yel gn ring,  
pale brn vis lt ring

100% MRLST: m-dk gy, com blk, sft, sb blk,  
rthy, mot tex, arg mt, v calc, some fis, str bent,  
inbddd wi chk; bl med fast string cut, yel gn ring,  
pale brn vis lt ring

100% MRLST: m-dk gy, com blk, sft, sb blk,  
rthy, mot tex, arg mt, v calc, some fis, str bent,  
inbddd wi chk; bl med fast string cut, yel gn ring,  
pale brn vis lt ring







MD: 10,319'  
TVD: 6,457.26'  
Inclination: 91 °  
Azimuth: 90.7 °  
VS: 3,914.45'

MD: 10,383'  
TVD: 6,454.69'  
Inclination: 93.6 °  
Azimuth: 91.8 °  
VS: 3,977.16'

MD: 10,415'  
TVD: 6,452.6'  
Inclination: 93.9 °  
Azimuth: 91.5 °  
VS: 4,008.43'

5% CHK: med gy, some tan v sft-sft, sb blk, sb wxy-rthy lstr, mot tex, v calc, 95% MRLST: m-dk gy, com blk, sft, sb blk, rthy, mot tex, arg mtx, v calc, some fis, str bent, intbdd wi chk: bl med fast stmg cut, yel gn ring, pale brn vis lt ring

5% CHK: med gy, some tan v sft-sft, sb blk, sb wxy-rthy lstr, mot tex, v calc, 95% MRLST: m-dk gy, com blk, sft, sb blk, rthy, mot tex, arg mtx, v calc, some fis, str bent, intbdd wi chk: bl med fast stmg cut, yel gn ring, pale brn vis lt ring

10% CHK: med gy, some tan v sft-sft, sb blk, sb wxy-rthy lstr, mot tex, v calc, 90% MRLST: m-dk gy, com blk, sft, sb blk, rthy, mot tex, arg mtx, v calc, some fis, tr bent, intbdd wi chk: bl med fast stmg cut, yel gn ring, pale brn vis lt ring

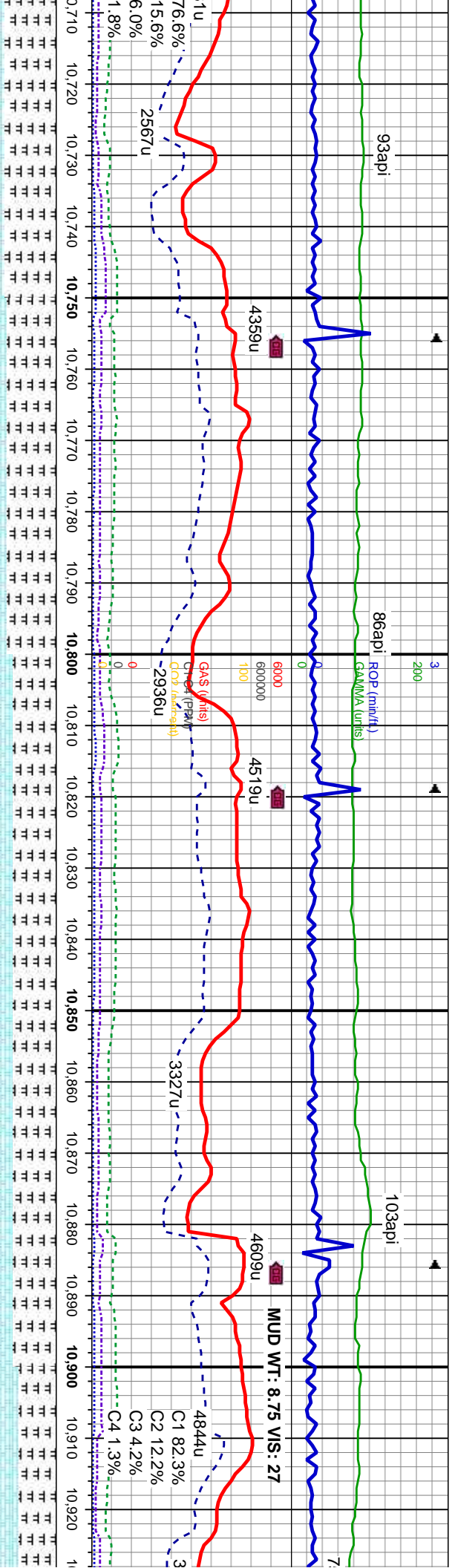
100% MRLST: m-dk gy, com blk, sft, sb blk, rthy, mot tex, arg mtx, v calc, some fis, tr bent, intbdd wi chk: bl med fast stmg cut, yel gn ring, pale brn vis lt ring











MD: 10,830  
TVD: 6,428.71  
Inclination: 91.1 °  
Azimuth: 89.9 °  
VS: 4,415.41'

MD: 10,892  
TVD: 6,427.19  
Inclination: 91.7 °  
Azimuth: 90 °  
VS: 4,476.45 '

HLK: med gy, tr tan, v sft-sft, sb blk, sb  
y/str, mot tex, v calc,  
RLST: m-dk gy, com blk, sft, sb blk, rthy,  
arg mtx, v calc, some fis, str bent,  
wi chk, bl med fast stmg cut, yel gn ring,  
n vis tl ring

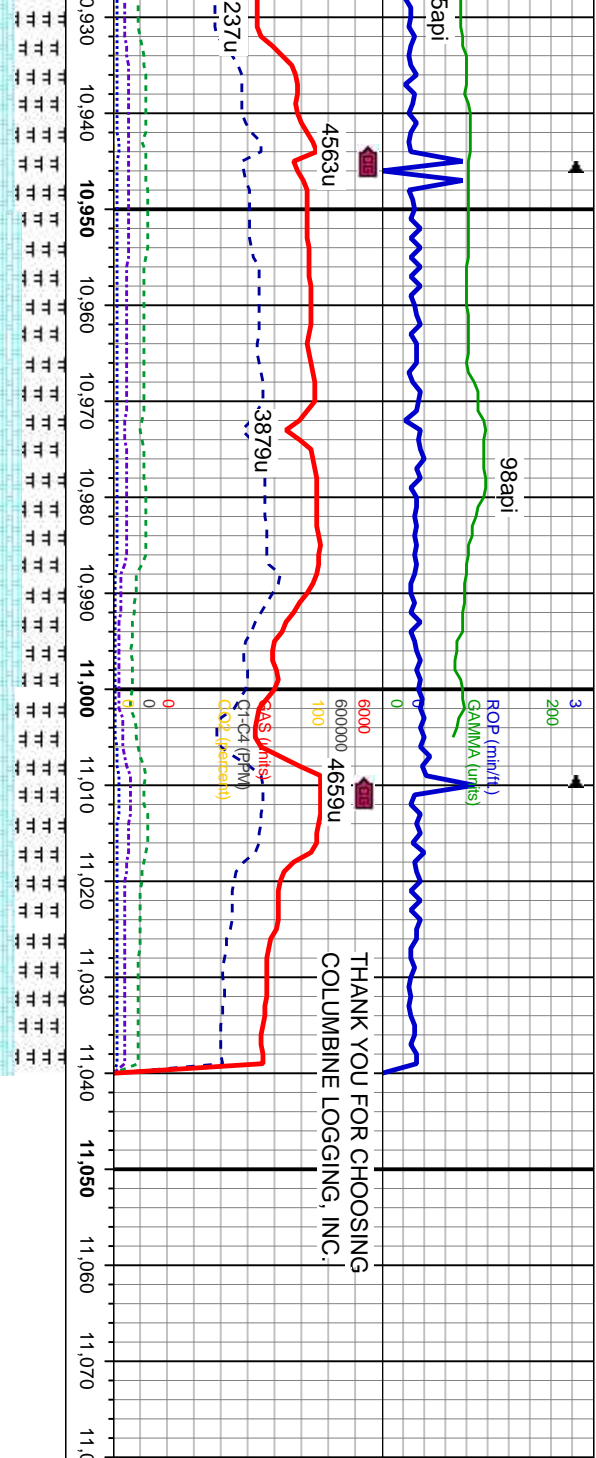
15% CHk; med gy, v sft-sft, sb biky, sb wxy-rthy  
lsir, med tox, v calc.  
85% MFLST: m-dk gy, com blk, sft, sb blkly, rthy,  
med tox, aig mk, v calc, some fls, str bent,  
inbnd wi calk; bl med fast strong cut, yel gn ring,  
cale brn vis it ring

25% CHk: mēd gy, v sīt-sīt, sb bīky, sb wxy-rthy  
 lstr, mōt tēx, v calc,  
 75% MR.ST: m-dk gy, com blk, sīt, sb bīky, rthy  
 mōt tēx, aīg mīd, v calc, some fīs, sīt bēnt,  
 mōd wī calc, bl med fast sīng cūt, yēl gn rīng,  
 pālē brn vīs it rīng

25% CHK: med gy, v stf-sft, sb blky, sb wxy-rthy  
 lstr, mot tex, v calc,  
 75% MRST: m-dk-gy, com blk, sft, sb blky, rthy  
 mot tex, aarg mt, v calc, some fis, stf bent,  
 inbnd w/ calc bl med fast stng cur, yel gn ring,  
 pale brn vis lt ring

35% CHK: med gy, v sft-sft, s  
lst, mot tex, v calc,  
65% MRLST: m-dk gy, com b  
mot tex, arg mtx, v calc, some  
intbnd wi chk, bl med fast slim  
pale brn vis it ring





MD: 10,956'		MD: 10,983'		5860		BBC CVR 5-63-32-3225CH REACHED	
TVD: 6,425.24'		TVD: 6,424.33'				TD OF 11,040' MD / 6,422.24' TVD	
Inclination: 91.8 °		Inclination: 92.1 °				06/07/2013 @ 04:26 MDT	
Azimuth: 90.2 °		Azimuth: 90.4 °				PROJECTION TO BIT	
VS: 4,539.43'		VS: 4,565.92'					
b blkly, sb wxy-rthy		45% CHK: med gy, v sft-sft, sb blkly, sb wxy-rthy		35% CHK: med gy, v sft-sft, sb blkly, sb wxy-rthy			
lk, sft, sb blkly, rthy,		lsfr, mot tex, v calc,		lsfr, mot tex, v calc,			
mot tex, arg mix, v calc, some fis, str bent,		55% MRLST: m-dk gy, com blk, sft, sb blkly, rthy,		65% MRLST: m-dk gy, com blk, sft, sb blkly, rthy,			
g cut, yel gn ring,		inbddd wi chk, bl med fast stmg cut, yel gn ring,		inbddd wi chk, bl med fast stmg cut, yel gn ring,			
		pale brn vis lt ring		pale brn vis lt ring			