

Scale: 5" / 100'
Measured Depth Log

Well Name		State Antelope T34-2-14XRLLNB	
Location		NENE Sec. 11 T5N R62W	
State		Colorado	County Weld
Country		United States	Rig Number Xtreme 19
API Number		05-123-46745-00	AFE # 18059
Geographic Region		D.J. Basin	Field Wattenberg
Spud Date		7/30/2018	Drilling Completed 8/18/2018
Surface Coordinates		NENE Sec.11 T5N R62W 310 FNL 778 FEL	
Bottom Hole Coordinates		NENE Sec.11 T5N R62W 470 FSL 1571 FEL	
Ground Elevation		4,636	K.B. Elevation 4,653
Logged Interval		6,000 To 17375	Total Depth 17375
Formation		Niobrara B Chalk	
Type of Drilling Fluid		Oil Based Mud	

Operator

Company Bonanza Creek
Address Bonanza Creek Energy
410 17th Street
Suite 1400
Denver, CO 80202

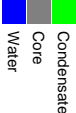
Geologist

Name Paul McKay
Company Bonanza Creek Energy
Address Bonanza Creek Energy
410 17th Street
Suite 1400
Denver, CO 80202







































Other

Robert Davis Wellsite Geologist
Dan Kabala Wellsite Geologist

Zone Color Coding







Rock Types

 UNKNOWN	   MARLSTONE	 SILTSTONE	 BENTONITE
 GYPSUM	   CLAYSTONE	 SANDSTONE	 TUFF
 LIMESTONE	   SHALE	 CONGLOMERATE	 CEMENT
     CHERT	   SHALE GRAY	   BRECCIA	 CHALK
 COAL	   SHALE COLORED	   TILL	 SILTY SHALE

Other S

Oil Show

 MOLDIC	
 ORGANIC	

 DEAD


 PINPOINT

 SIDEVIEW

 EVEN

 VUGGY


 SIDEVIEW

 QUESTIONABLE

 SLIDE

 SLIDE

Engineering

 SPOTTED STAINING

 SURFACE


Porosity

 BIT

 TRIANGULAR

 CASING

 WIREFRAME

 EARTHY

 CONNECTION (RIGHT)

 WIREFRAME

 FENESTRAL


 CONNECTION GAS

Round

 FRACTURE

 CORE - LOST

 INTERCRYSTALLINE

 CORE - RECOVERED










































 ANGULAR

 INTEROOLITIC

 FAULT

 ROUND

Accessories

 FORAMINIFERA	 GLAUCONITE	 COAL STRINGER
 FOSSIL	 ANHYDRITIC	 GYPSIFEROUS
 ALGAE	 GASTROPOD	 DOLOMITE STRINGER
 AMPHIPORA	 OOLITE	 MARLSTONE
 BELLEROPHITE	 OSTRACOD	 LIMESTONE STRINGER
 BIOCLASTIC	 PELECYPOD	 MARLSTONE (CALC) STRG
 BRACHIOPOD	 PELLET	 MARLSTONE (DOL) STRG
 BRYOZOA	 PISULITE	 SANDSTONE STRINGER
 CEPHALOPOD	 PLANT REMAINS	 SHALE STRINGER
 CORAL	 PLANT SPORES	 SILTY STRINGER
 CRINOID	 SCAPHOPOD	 CHALK STRINGER
 ECHINOID	 STROMATOPOROID	 SILTY SHALE STRINGER
 FISH	 FERRUGINOUS PELLET	
	 FERRUGINOUS	
		 ANHYDRITE STRINGER
		 BENTONITE STRINGER

Stringer

Minerals

Symbols

FORMATION TOP **BS** SUBANG **PS** PACKSTONE

HOW **PS** SUBRND **WS** WACKSTONE

VALL CORE (LEFT)

Textures Sorting

VALL CORE (RIGHT)

BS BOUNDSTONE **M** MODERATE

VIEW **C** CHALKY **P** POOR

OGAS **CX** CRYPTOXLN **W** WELL

LINE TESTED - LEFT **E** EARTHY

Cut

LINE TESTED - RT **FX** FINELYXLN


ES GRAINSTONE  No Cut

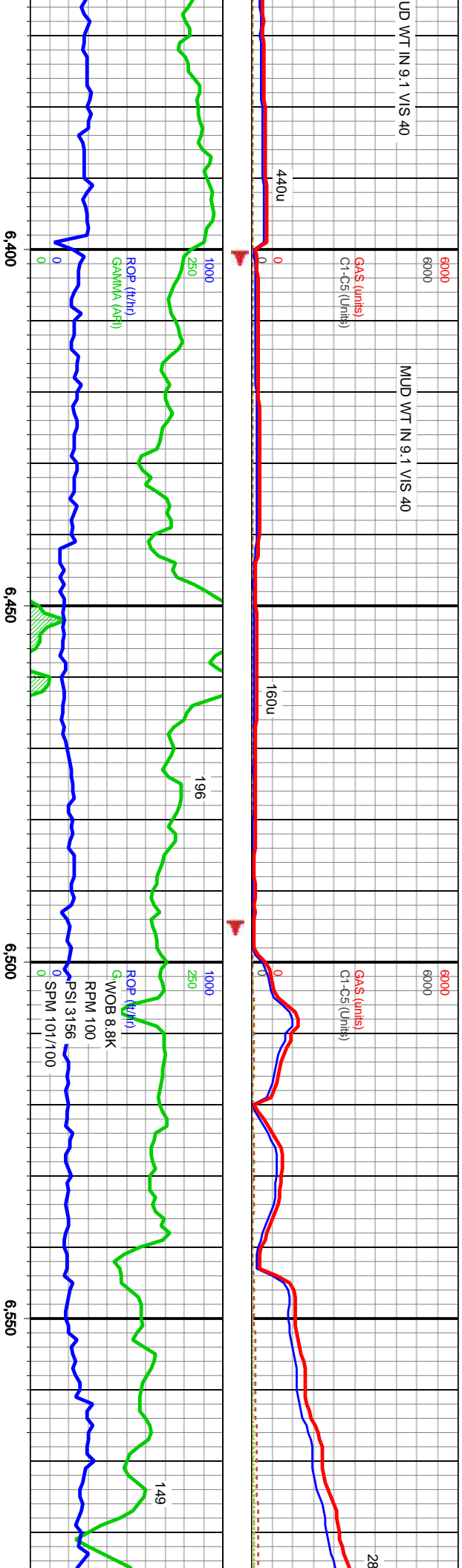
L LITHOGRAPHIC  Fair Cut

LAR **MX** MICROXLN  Good Cut

DED **MS** MUDSTONE Blank

ding

Logger on Shift		ROBERT ON TOUR												Dan Kabala on Tour											
Curve/Survey Data	GAS SCALE -60 TO 540 (60 UNITS/DIVISION)																								
	GAS (units)																								
	C1-C5 (Units)																								
	C1																								
	C2																								
C3																									
C4																									
C5																									
Connections	CONNECTIONS MARKED WITH RED TRIANGLES																								
Curve/Survey Data	ROP SCALE 0-1000																								
	GAMMA SCALE 0-250																								
	(GAMMA & SURVEYS RECEIVED FROM BAKER HUGHES)																								
Depth Labels	6,000 6,050 6,100																								
Sample Photographs																									
% Lith																									
Well Bore	BONANZA CREEK ENERGY STATE ANTELOPE T34-2-14XRLNB SEC 11. T5N R62W WELD CO., CO																								
	LOGGERS:ROBERT DAVIS DANIEL KABALA																								
TVD	CALLED OUT on 8/14/2018 Started logging @ 22:22. Bit #2: SERCURITY, TYPE: GT56K, SERIAL #: 12993759 IN @ 1634' MD out on 8/18/2018 @ 17.375' MD																								
Survey Data	MD: 5,998' Inclination: 17° Azimuth: 221° TVD: 5,783' VS: -1.095'																								
	MD: 6,093' Inclination: 24° Azimuth: 206° TVD: 5,873' VS: -1.066'																								

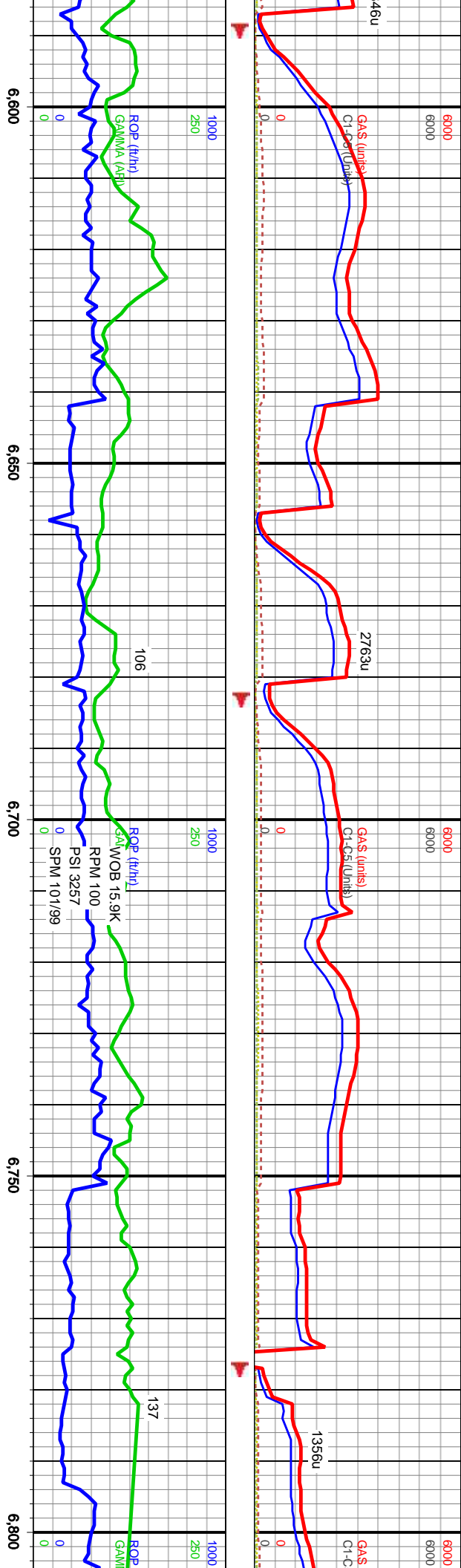


Sharon Springs, Sharon Springs "A", Sharon Spring "B", Niobrara "A" Chalk Niobrara "A" Marl		Faulted Out		New Target 6212' TVD		NIOBRARA "B" CHALK	
shnp/iggd ctinggs, hly carb, v ip, sl calc, sl sft-vfrm, TR silty	6600	5600	5600	5600	5600	5600	5600
CARB SH: (95%): med dk gry-gryish whi ip, ply-sb ply, shnp/iggd ctinggs, hly carb, v clvey, HCL sensi, thnly lam sils, sbthly-sbwnxy, grtty-grisy ip, sl calc, sl sft-vfrm, TR silty snds, abn blk carb mat to (SH), SLTY SH: (5%).						CHILKY MRLST: (50%) lt gry brwn, sb ply-sb biky, vry carb, v calc, mic xln-sug txt, frm, hly mntld, est 30-40% micrite, cmn mcrite spks to, blk carb mat to (SH), ARG CARB CHALK: (30%), CARB SH: (20%).	CHALK: (80%) lt-med gry brwn whi mcrite spks ip, chiky txt, dll biky-rthy frac, elong-wdgik, dn- chn, tr ammn blk carb mat (SH) chlk por, MARL: (20%)

MD: 6,375'
Inclination: 54°
Azimuth: 192°
TVD: 6,087'
VS: -891'

MD: 6,469'
Inclination: 63°
Azimuth: 188°
TVD: 6,137'
VS: -811'

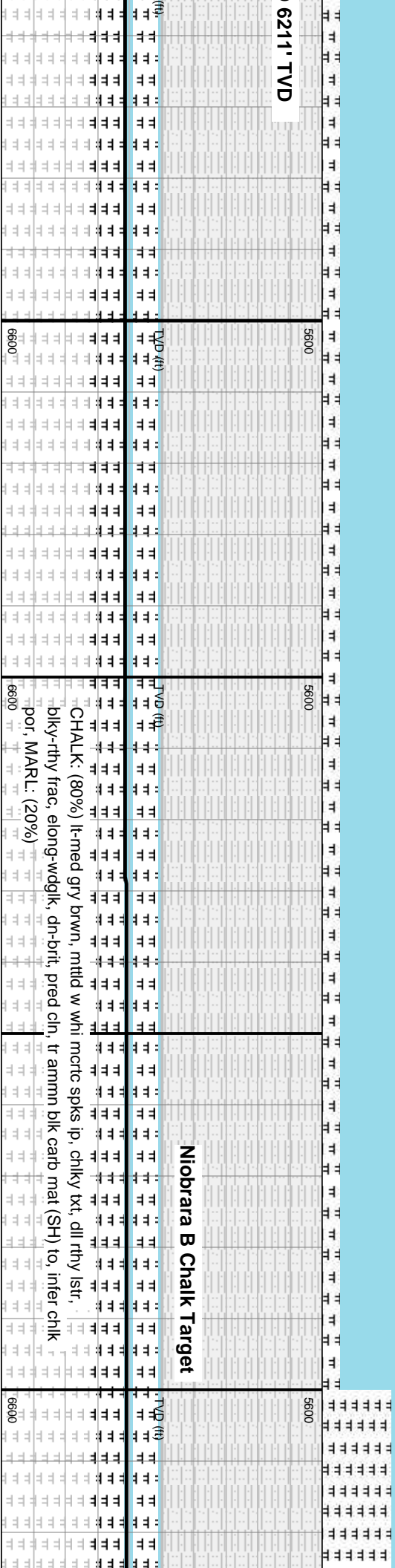
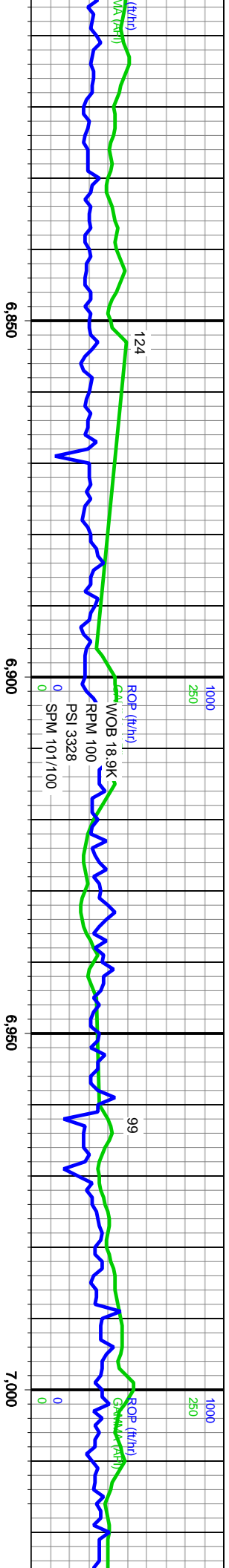
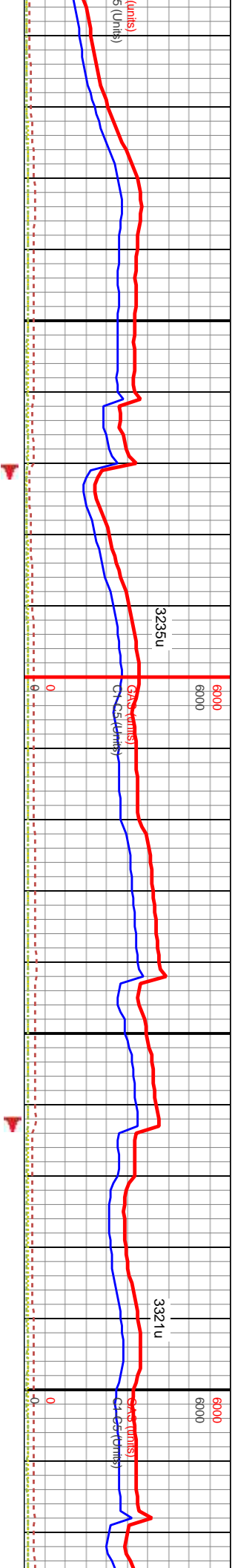
MD: 6,563'
Inclination: 73°
Azimuth: 181°
TVD: 6,173'
VS: -725'



- 8'		New Target 6202' TVD		Landed Curve on 8/15/2018 @ 15:12 6783' MD	
@ 6177' TVD 6580' MD		200' Sample		B Marl	
, mttld w rthy lstr, brt, pred to, infer		MRLST:(90%) med- dk gy brwn, mot w mrtc spks, slt gr, sl frm, sb plty- plty, gt tex, calc, vry abn fos frags, calc incl, abn ls calc frag, CHK:(10%) lt- med gy, sb blk, wxy-rthy tex, sl sft, occ mod frm, v calc, cal incl, abn alt BENT & BENT w pyr nods,			
CHALK: (90%) lt-med gry brwn, mttld w whi mrtc spks ip, chiky xt, dll rthy lstr, blk-rthy frac, elong-wdglk, dn-brt, pred ch-arg, tr ammn blk calb mat (SH) to, infer chik por, MARL: (10%)					

MD: 6,657'
Inclination: 78°
Azimuth: 179°
TVD: 6,197'
VS: -634'

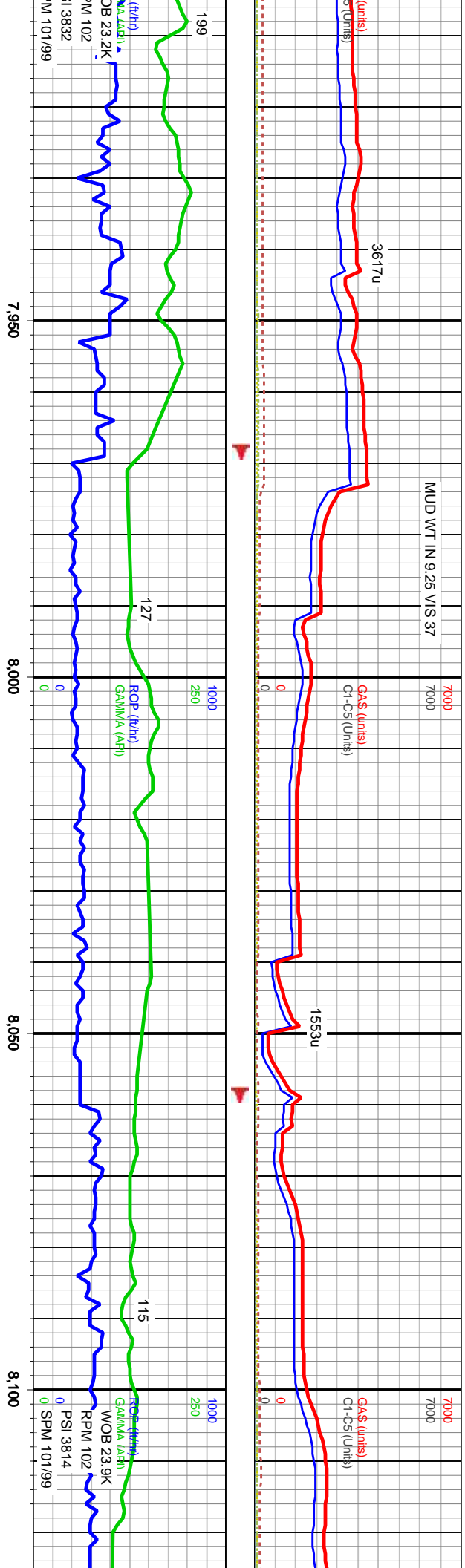
MD: 6,751'
Inclination: 86°
Azimuth: 182°
TVD: 6,210'
VS: -542'



MD: 6,845'
Inclination: 91°
Azimuth: 182°
TVD: 6,213'
VS: -448'

MD: 6,938'
Inclination: 91°
Azimuth: 180°
TVD: 6,211'
VS: -355'

M
In
A
T
V

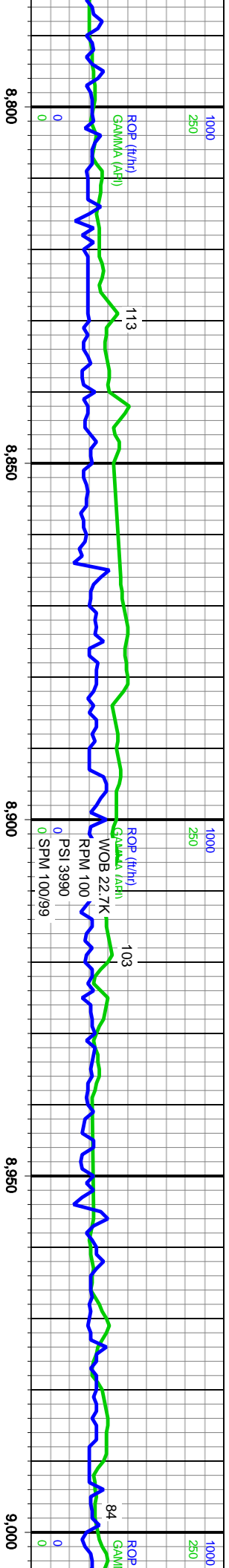
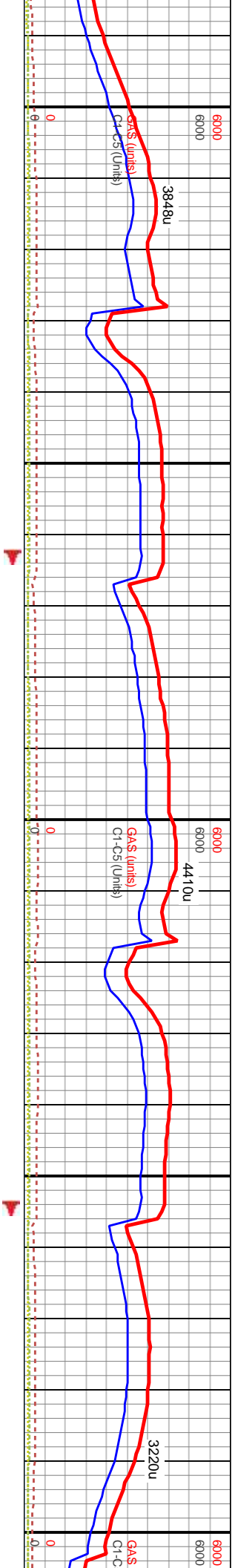


TARGET CHANGE: UP 10' TO 6192TVD									
Niobrara B Chalk Target									
CHALK: (70%) lt-med gy, sb blk, wxy-rthy tex, sl sft, calc mod frm, v calc, cal incl									
RLST: (70%) med-dk gy brwn, mot w mentic spks, sil gr, sl frm, sb pty- pty, gt tex, calc, on tos frags, calc incl, lt's calc frag. CHK: (30%) lt-med gy, sb blk, wxy-rthy tex, sl sft, calc mod frm, v calc, cal incl									

MD: 7,943'
Inclination: 90°
Azimuth: 180°
TVD: 6,202
VS: 645'

MD: 8,035'
Inclination: 91°
Azimuth: 181°
TVD: 6,201
VS: 736'

MD: 8,120'
Inclination: 91°
Azimuth: 181°
TVD: 6,115
VS: 824'

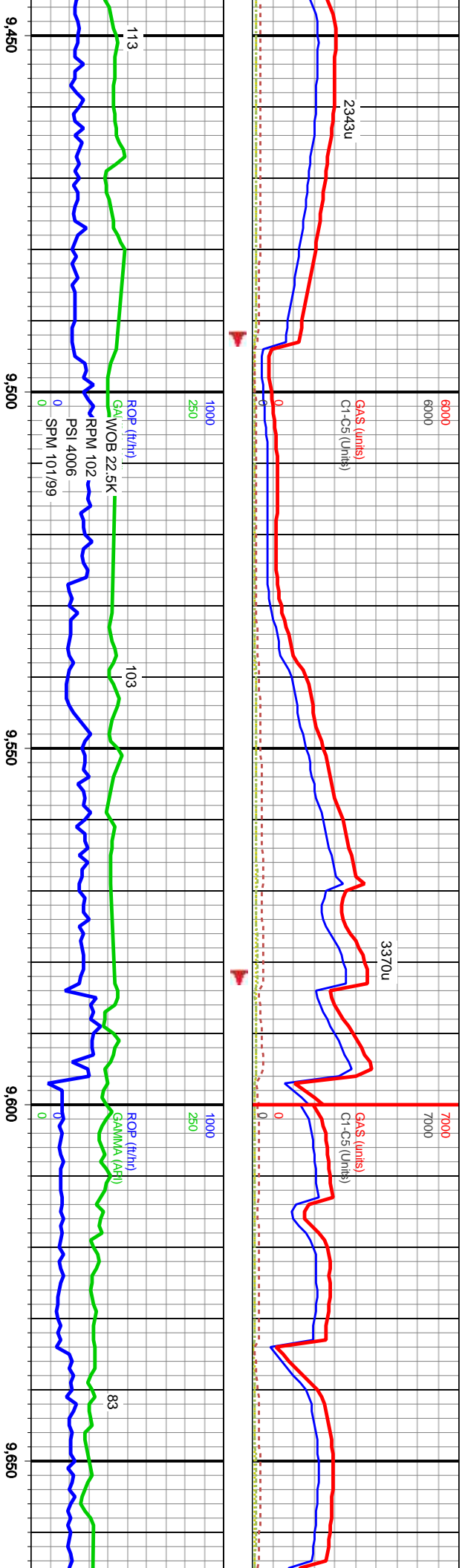
[illegible]

MD: 8,839'
Inclination: 90°
Azimuth: 181°
TVD: 6,193'
VS: 1,539'

MD: 8,928'
Inclination: 90°
Azimuth: 181°
TVD: 6,193'
VS: 1,628'

[illegible]

VS: 2,077'

[illegible]

MD: 9,470'
Inclination: 90°
Azimuth: 179°
TVD: 6,194'
VS: 2,168'

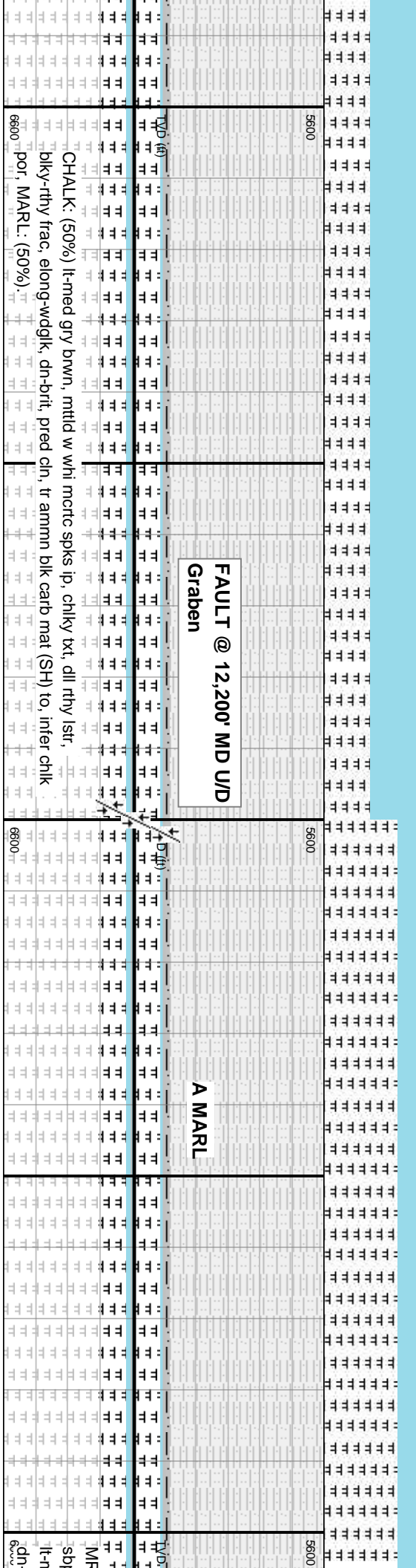
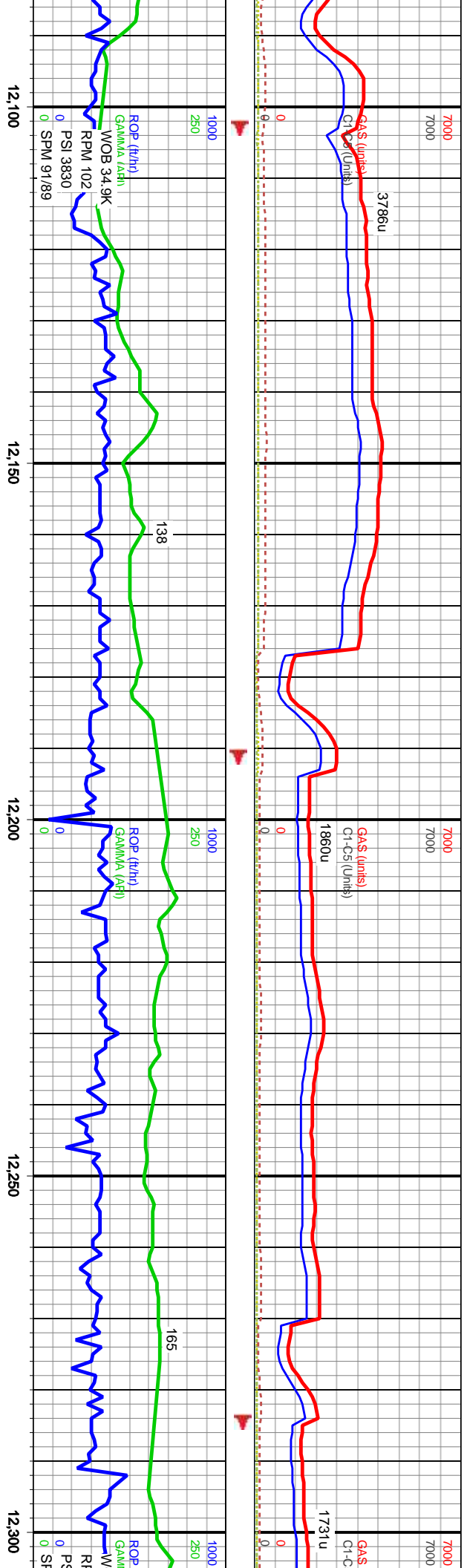
MD: 9,559'
Inclination: 90°
Azimuth: 172°
TVD: 6,194'
VS: 2,256'

MD: 9,648'
Inclination: 90°
Azimuth: 173°
TVD: 6,194'
VS: 2,343'



MD: 11,269'
Inclination: 90°
Azimuth: 174°
TVD: 6,191'
VS: 3,955'

MD: 11,358'
Inclination: 90°
Azimuth: 175°
TV D: 6,191'
VS: 4,043'



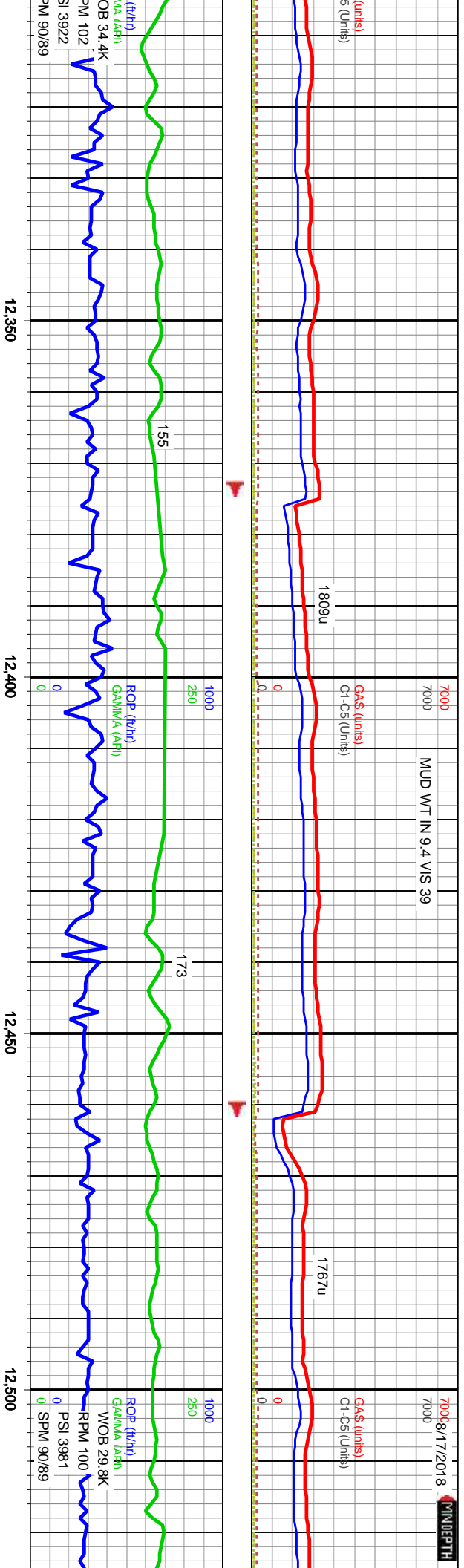
FAULT @ 12,200' MD U/D
Graben

A MARL

CHALK: (50%) lt-med gry brwn, mttld w whi mcrst spks ip, chlkly txt, dll rthy lstr,
blkly-rthy frac, elong-wdglik, dn-brit, pried chn, tr ammn blk carb mat (SH) to, infer chlk
por. MARL: (50%).

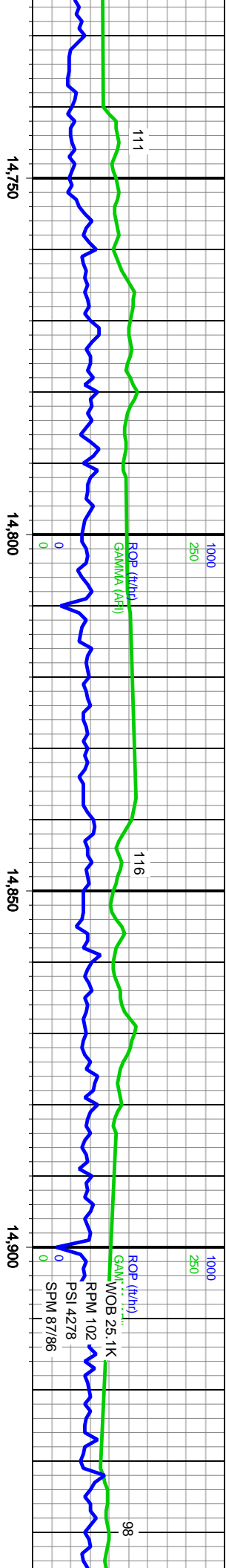
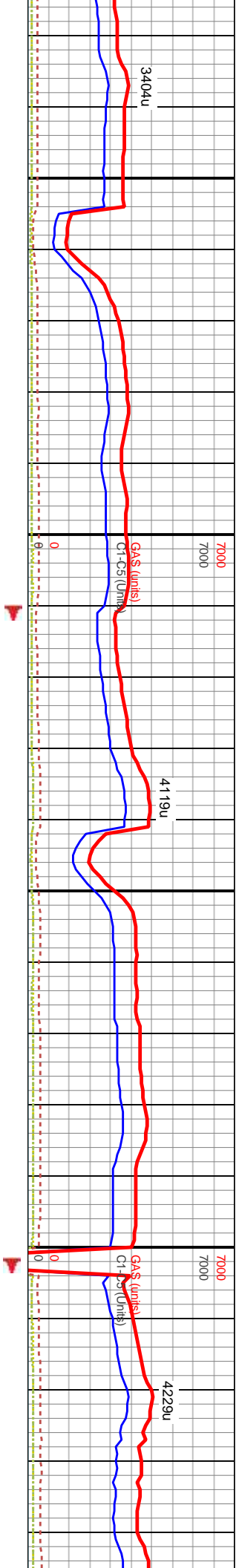
MD: 12,171'
Inclination: 90°
Azimuth: 180°
TVD: 6,191'
VS: 4,862'

MD: 12,259'
Inclination: 90°
Azimuth: 180°
TVD: 6,191'
VS: 4,940'

[illegible]

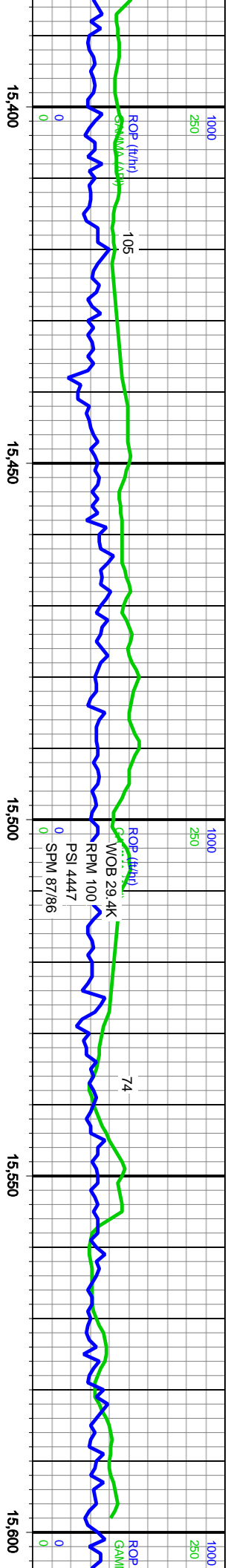
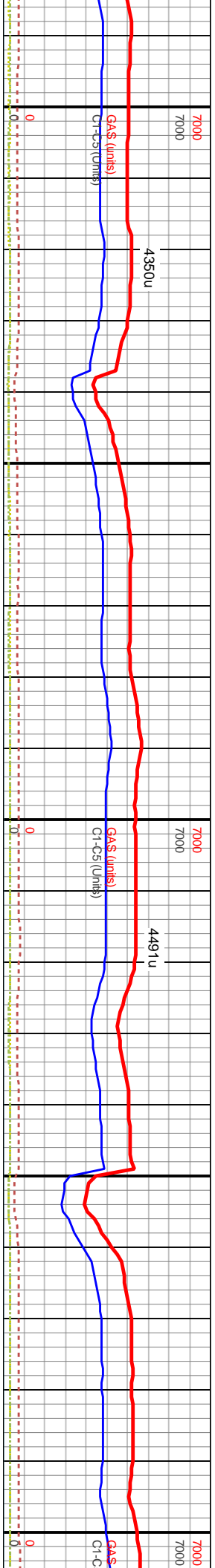
MD: 12,349'
Inclination: 90°
Azimuth: 181°
TVD: 6,191'
VS: 5,030'

MD: 12,438'
Inclination: 90°
Azimuth: 181°
TVD: 6,192'
VS: 5,119'

[illegible]

MD: 14,786'
Inclination: 91°
Azimuth: 177°
TVD: 6,190'
VS: 7,458'

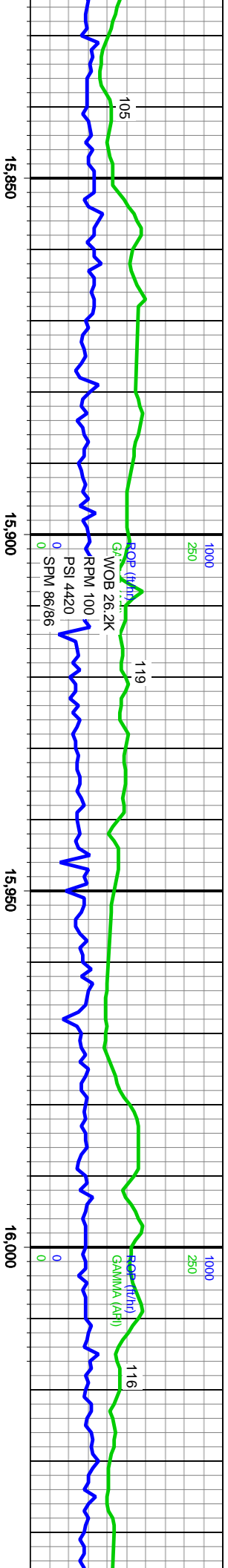
MD: 14,878'
Inclination: 91°
Azimuth: 176°
TVD: 6,188'
VS: 7,549'

[illegible]

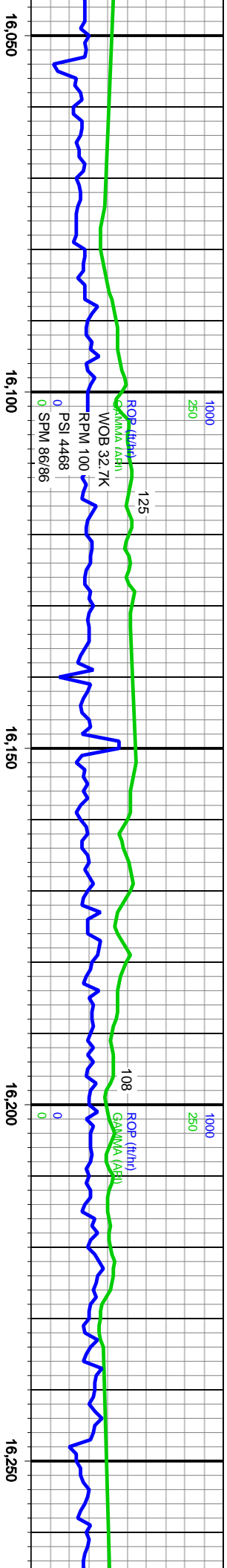
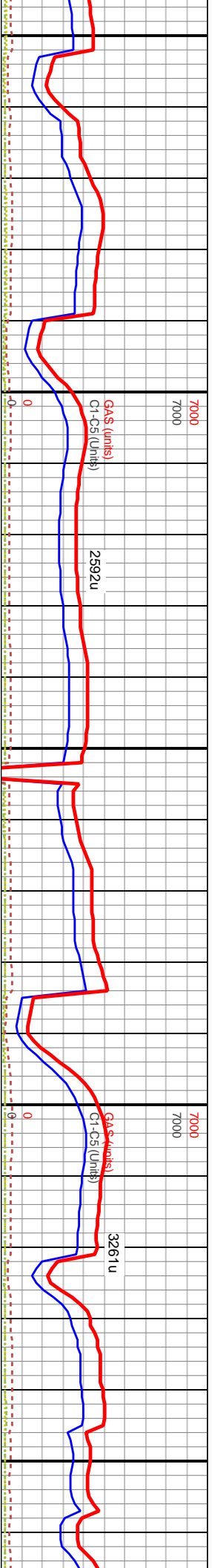
MD: 15,413'
Inclination: 90°
Azimuth: 177°
TVD: 6,187'
VS: 8,078'

MD: 15,503'
Inclination: 90°
Azimuth: 179°
TVD: 6,186'
VS: 8,167'

MD: 15,593'
Inclination: 90
Azimuth: 180°
TVD: 6,186'
VS: 8,257'

[illegible]

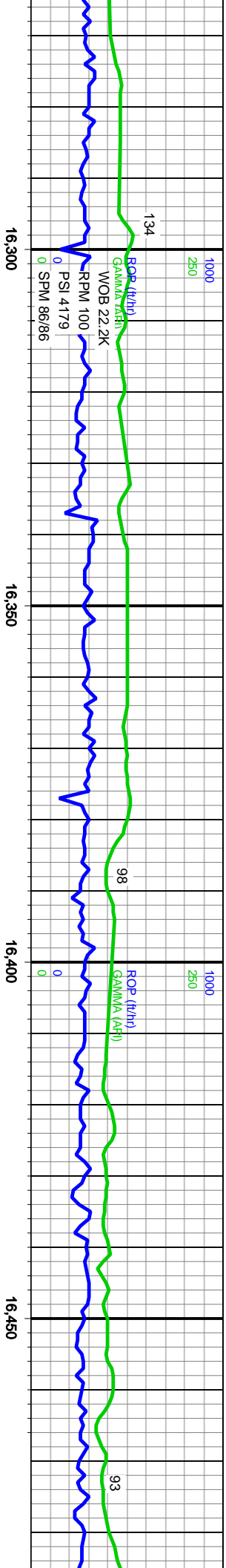
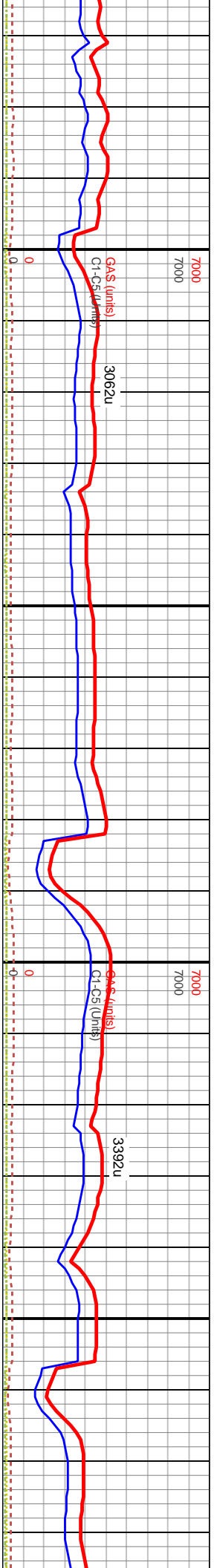
MD: 16,039'
Inclination: 90
Azimuth: 183
TVD: 6,186'
VS: 8,702'



5600	TYD (40)	5600	IND (70)
6600	CHALK: (80%) lt-med gry brwn, mttld w whi mortc spks ip, chiky txt, dll rthy lstr, biky-rthy frac, elong-wdgik, dn-brt, pred cin-arg, tr amnn blk carb mat (SH) to, infer chlk por, MARL: (20%)	6600	

MD: 16,129'
Inclination: 90°
Azimuth: 183°
TVD: 6,186'
VS: 8,791'

MD: 16,218'
Inclination: 90°
Azimuth: 181°
TVD: 6,186'
VS: 8,880'



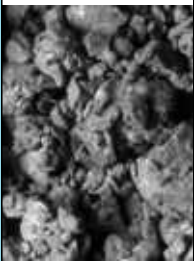
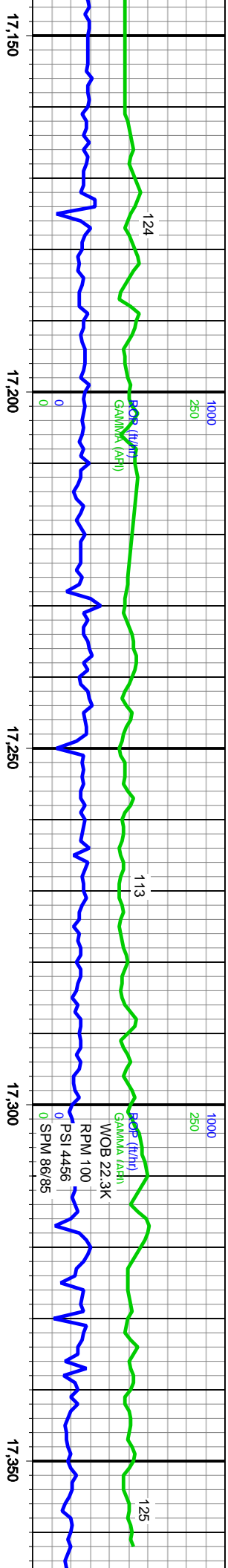
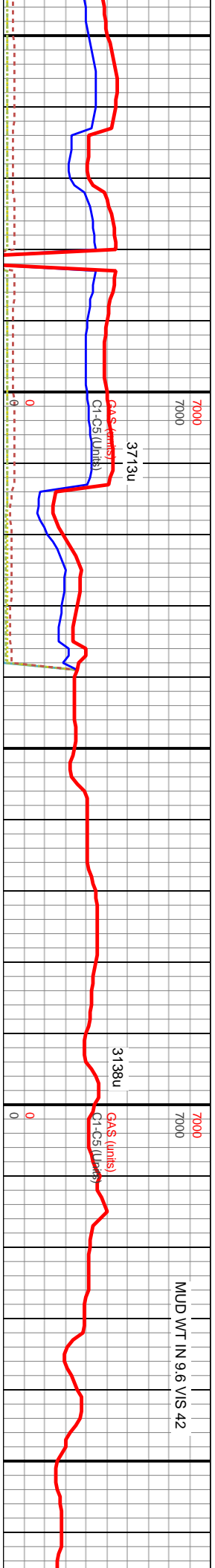
Niobrara B Chalk									
5600									
TVD (ft)									
6600									
CHALK: (85%) lt-med gry brwn, mtltd w whi mcrtc spks ip, chlkly txt, dll rthy lstr, blyk-rthy frac, elong-wdglk, dn-brit, pried cln-arg, tr ammin blk carb mat (SH) to, infer chlk por, MARL: (15%)									
6600									

Niobrara B Chalk

MD: 16,307'
Inclination: 90°
Azimuth: 179°
TVD: 6,187'
VS: 8,969'

MD: 16,398'
Inclination: 90°
Azimuth: 178°
TVD: 6,187'
VS: 9,059'

MD: 1
Inclina
Azimu
TVD:
VS: 9

[illegible]

MD: 17,201'
Inclination: 90°
Azimuth: 181°
TVD: 6,187'
VS: 9,857'

MD: 17,292'
Inclination: 90°
Azimuth: 181°
TVD: 6,187'
VS: 9,948'

MD: 17,349'
Inclination: 90°
Azimuth: 181°
TVD: 6,187'
VS: 10,005'

