

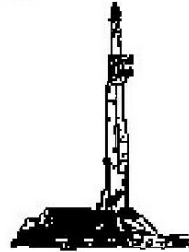
GOOLSBY BROTHERS
and associates, inc.

575 Union Blvd, Suite 208
Lakewood, CO 80228
303-945-2860 Office



Geological Wellsite
Supervision

www.goolsbybrothers.com



Scale 1:240 (5"=100') Imperial
Measured Depth Log

Well Name: Wardell 2G-19HZ
Well Id:
Location: Sec.19 T3N R65W Weld County, CO.
License Number: API: 051234009000 AFE: 2102967
Spud Date: October 28, 2014
Surface Coordinates: 515' FNL, 1502' FEL
Bottom Hole: 460' FNL, 2347' FEL
Coordinates: Lat. 40.216770, Long. 104.702211, Sec.19, T3N R65W
Ground Elevation (ft): 5091' K.B. Elevation (ft): 5116'
Logged Interval (ft): 6800' To: 12082 Total Depth (ft): 12082
Formation: Hartland SH MBR of Greenhorn LS
Type of Drilling Fluid: Water based mud in vertical and curve, oil based in lateral

Region: Wattenberg

Drilling Completed: November 4, 2014

Printed by HORIZONTAL.LOG from WellSight Systems 1-800-447-1534 www.WellSight.com

OPERATOR

Company: Anadarko Petroleum Corporation
Address: Granite Tower - 1099 18th St, Ste 1800
Denver, CO 80202
CO Geologist, Tom Birmingham.

GEOLOGIST

Name: George Bejan & Andrew Krueger
Company: Goolsby Brothers & Assoc. (GBA), Inc. (www.goolsbybrothers.com)
Address: 575 Union Blvd.
Suite 208,
Lakewood CO. 80228

E-logs

MWD Gamma

Casing

Intermediate casing: 7", set at 7984'

Liner: 4 1/2" set at 12067' and cemented by Baker Hughes Co

Comments

Drilling Contractor: H&P 311

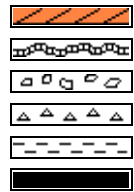
Pumps 1 & 2: Gardner Denver PZ 11 6" x 11" (.0914 bbl/stk)

Co-man: Steve Wilson, Travis Krukenberg

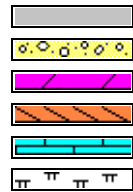
Rig Manager: Jack Truett, James Baggett.

Drillers: Dallas Mayer, Christopher Beckstead

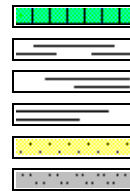
ROCK TYPES



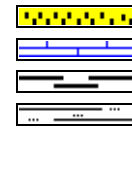
Anhy
Bent
Brec
Cht
Clyst
Coal



Oil sat.
Congl
Dol
Gyp
Lmst
Mrlst



Salt
Shale
Shcol
Shgy
Ss
Sltst



Ss
Chalk
Carb sh
Sltly sh

ACCESSORIES

MINERAL

	Anhy
	Arggrn
	Arg
	Bent
	Bit
	Brecfrag
	Calc
	Carb
	Chtdk
	Chtlit
	Dol
	Feldspar
	Ferrpel
	Ferr
	Glau
	Gyp
	Hvymin
	Kaol
	Marl

	Minxl
	Nodule
	Phos
	Pyr
	Salt
	Sandy
	Silt
	Sil
	Sulphur
	Tuff

FOSSIL

	Algae
	Amph
	Belm
	Bioclst
	Brach
	Bryozoa
	Cephal
	Coral

	Crin
	Echin
	Fish
	Foram
	Fossil
	Gastro
	Oolite
	Ostra
	Pelec
	Pellet
	Pisolite
	Plant
	Strom

STRINGER

	Chlkstg
	Anhy
	Arg
	Bent
	Coal

	Dol
	Gyp
	Ls
	Mrst
	Sltstrg
	Ssstrg

TEXTURE

	Boundst
	Chalky
	Cryxln
	Earthy
	Finexln
	Grainst
	Lithogr
	Microxln
	Mudst
	Packst
	Wackest

OTHER SYMBOLS

OIL SHOWS

	Even
	Spotted
	Ques
	Dead
	Vspotty
	near even

POROSITY TYPE

	Earthy
	Fenest
	Fracture
	Inter
	Moldic
	Organic

	Pinpoint
	Vuggy

ROUNDING

	Rounded
	Subrnd
	Subang

	Angular
--	---------

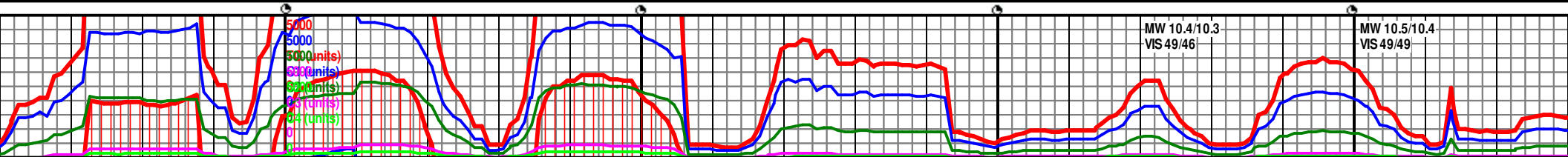
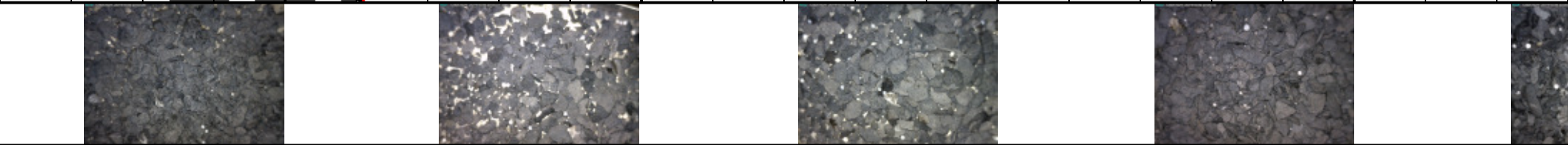
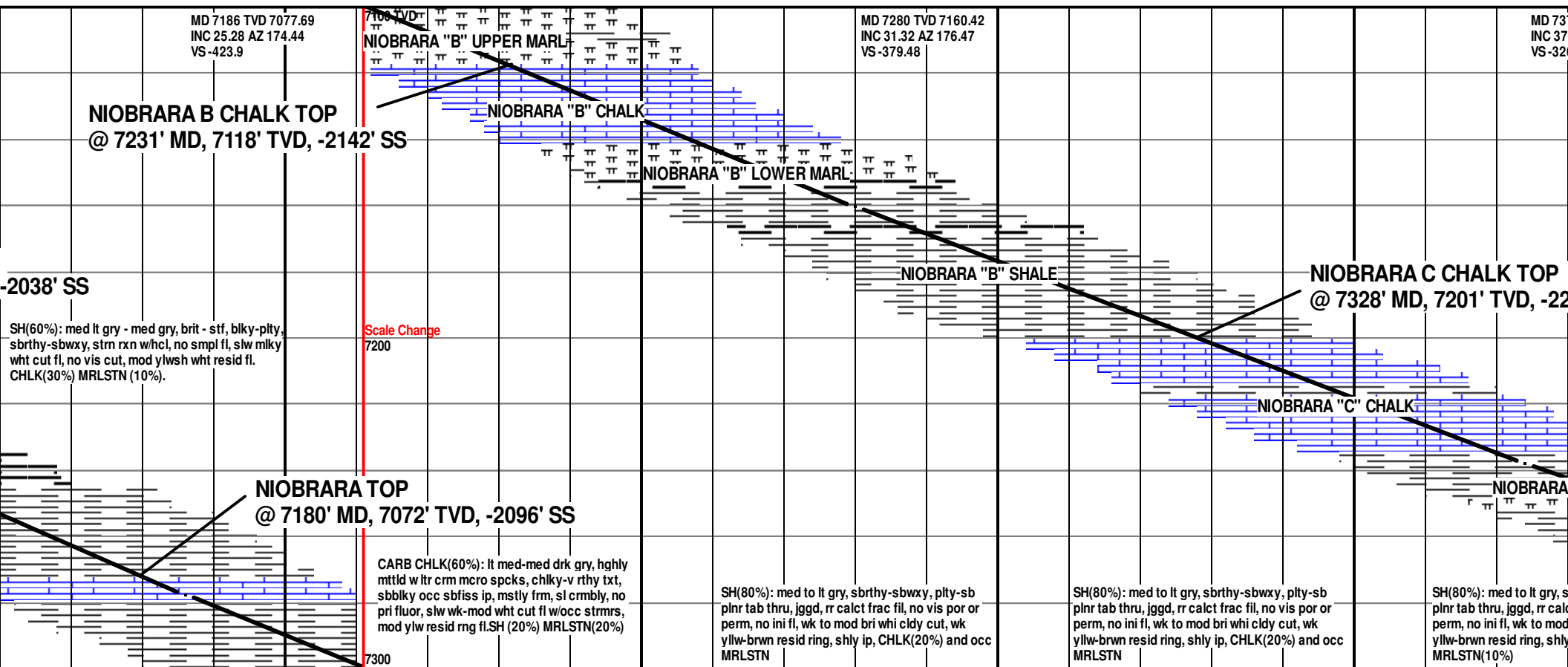
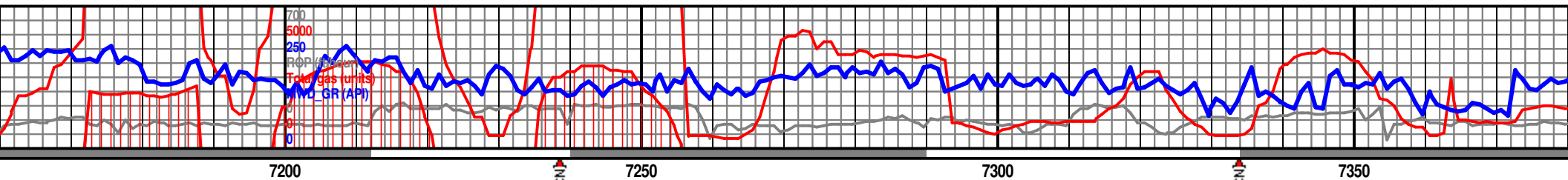
SORTING

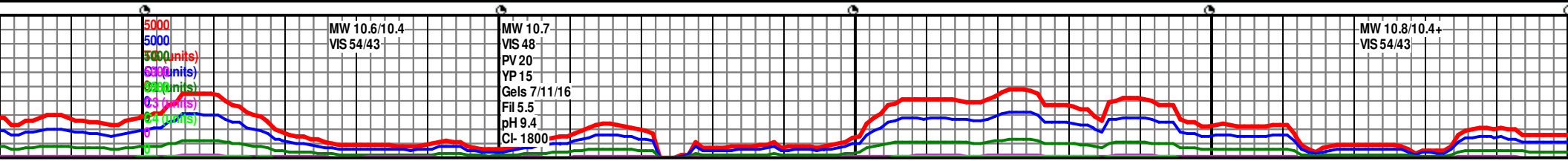
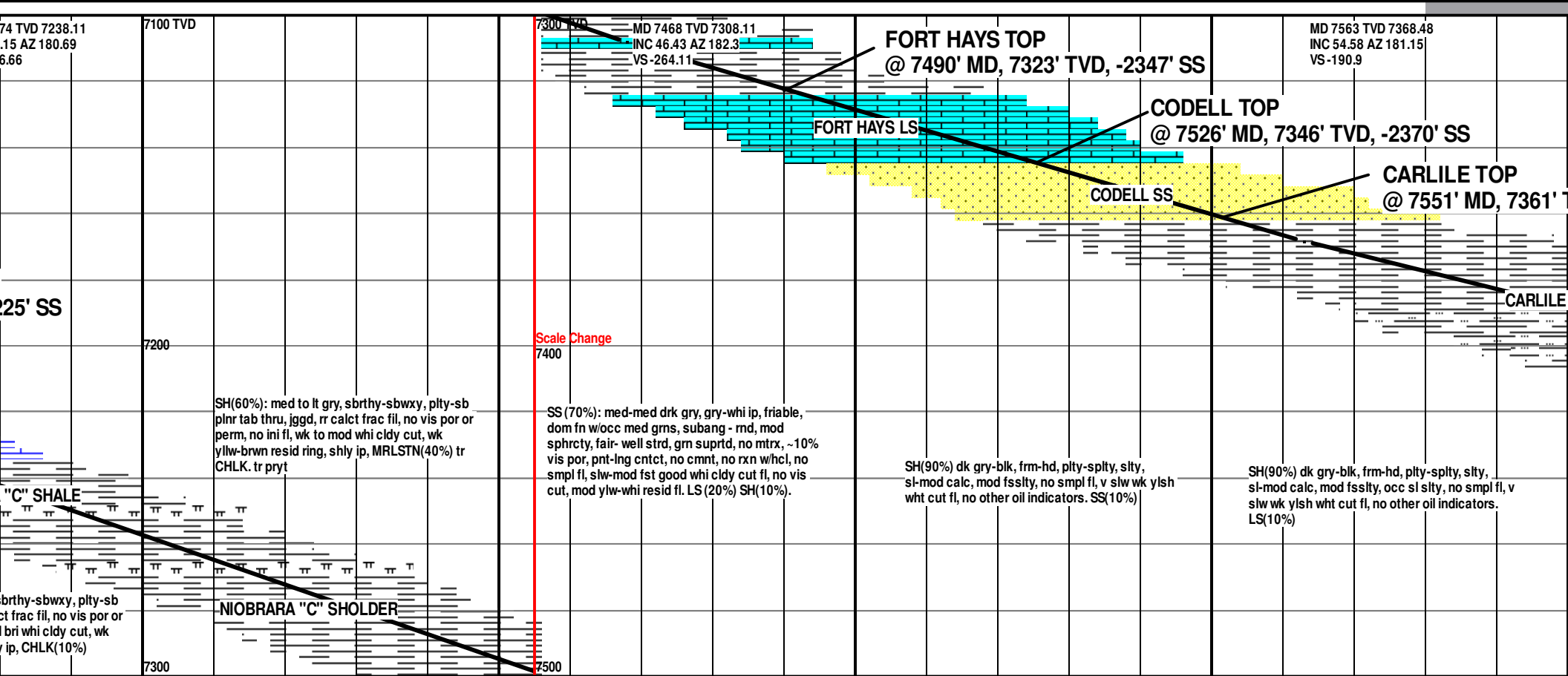
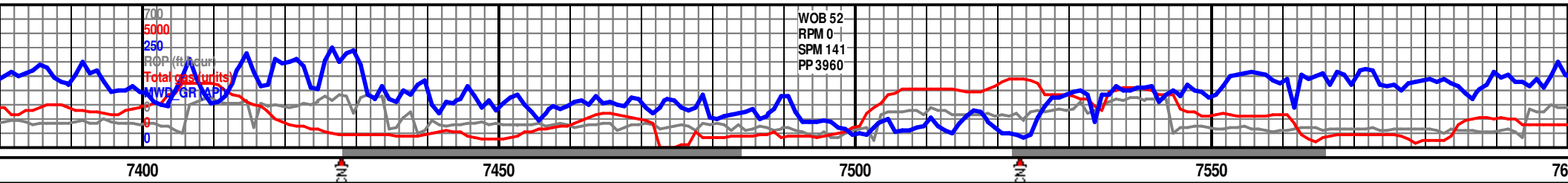
	Well
	Moderate
	Poor

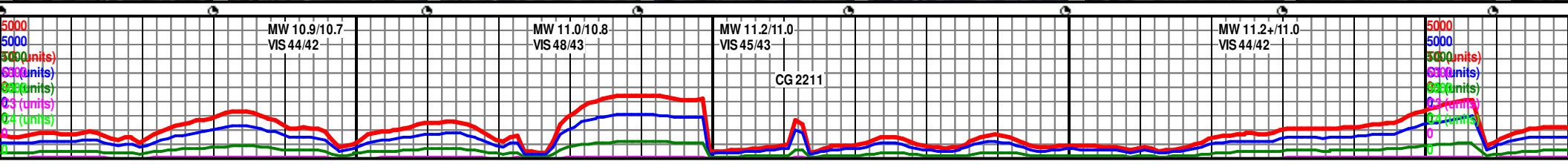
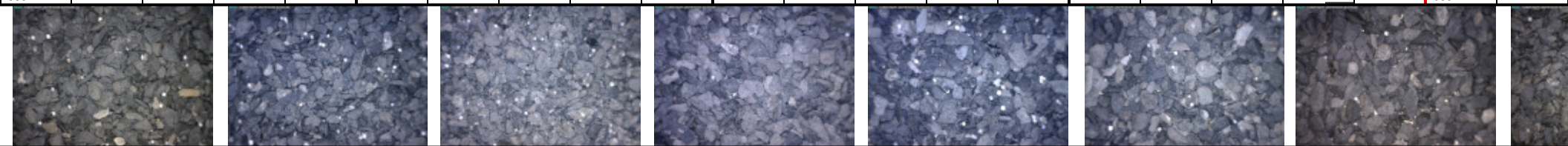
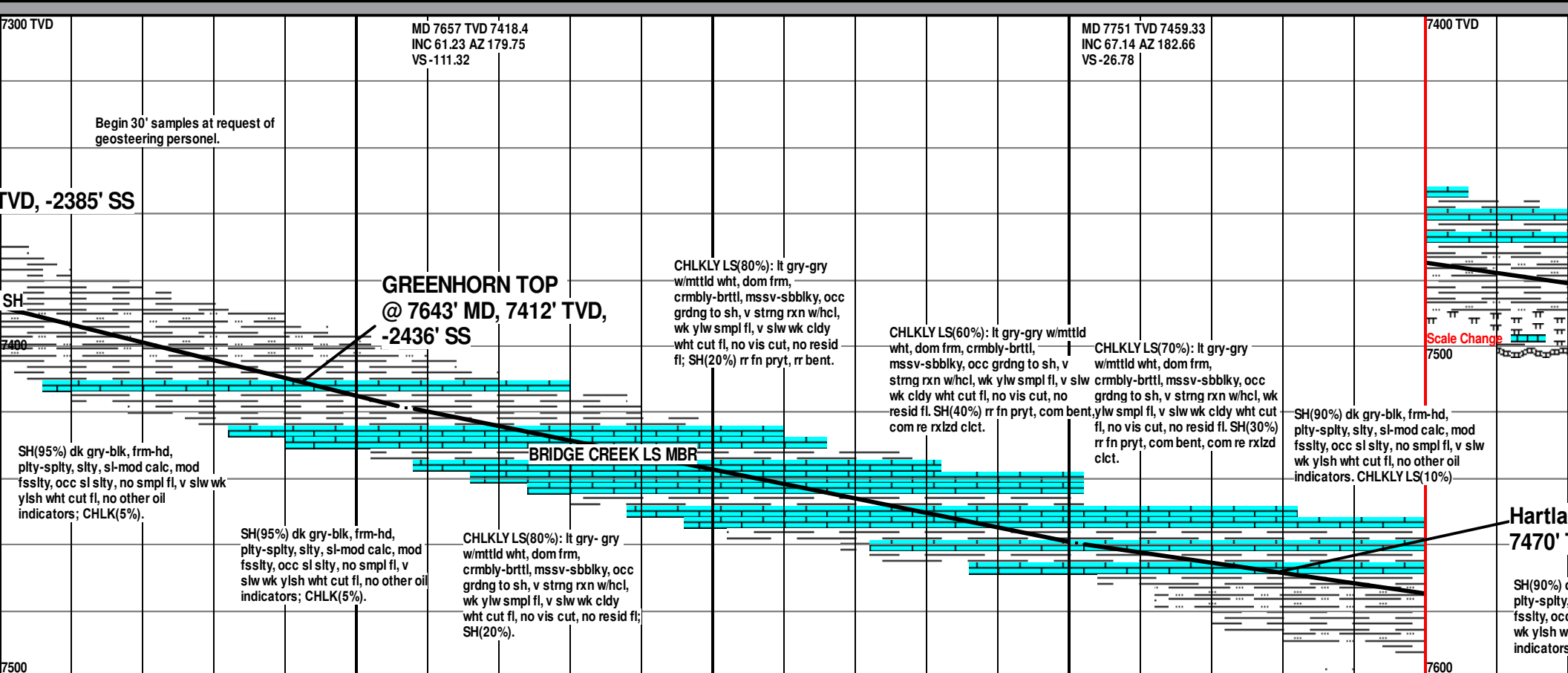
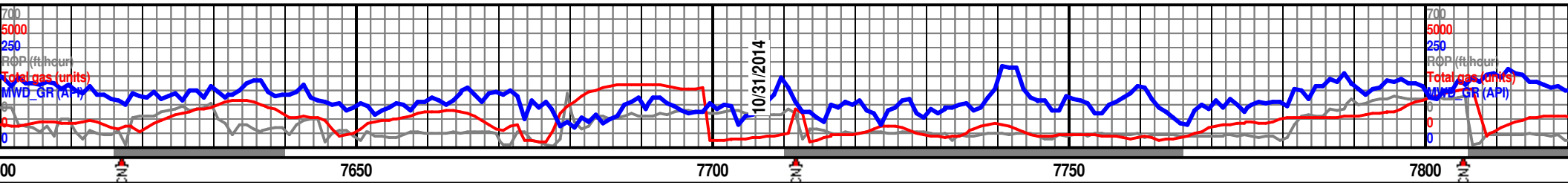
The figure consists of two side-by-side line graphs. The left graph is titled 'MW 10.5/10.2+IN/OUT' and the right graph is titled 'VIS 59/46 IN/OUT'. Both graphs share the same y-axis scale, ranging from 0 to 5000 units. The x-axis represents time, with a vertical line indicating a specific point in the run. The legend for both graphs is as follows:

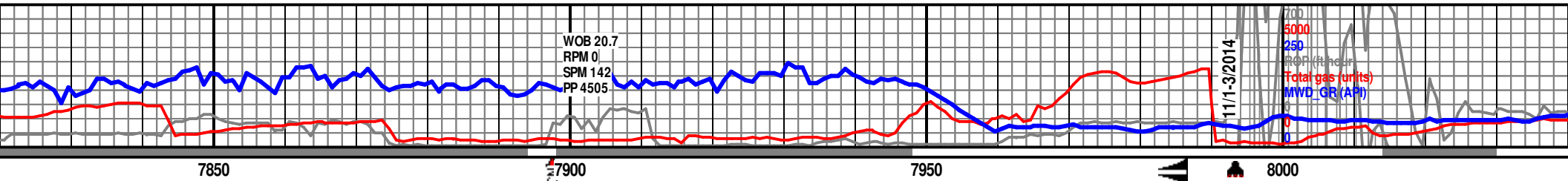
- Total Gas, C1-C5 (Red line)
- TG (units) (Red line)
- C1 (units) (Blue line)
- C2 (units) (Green line)
- C3 (units) (Magenta line)
- C4 (units) (Cyan line)

In both graphs, the Total Gas flow (red line) shows a sharp initial peak, followed by a gradual decline and then a slight increase towards the end of the run. The C1 flow (blue line) also shows a sharp initial peak, followed by a gradual decline and then a slight increase towards the end of the run. The C2 flow (green line) shows a sharp initial peak, followed by a gradual decline and then a slight increase towards the end of the run. The C3 flow (magenta line) shows a sharp initial peak, followed by a gradual decline and then a slight increase towards the end of the run. The C4 flow (cyan line) shows a sharp initial peak, followed by a gradual decline and then a slight increase towards the end of the run.

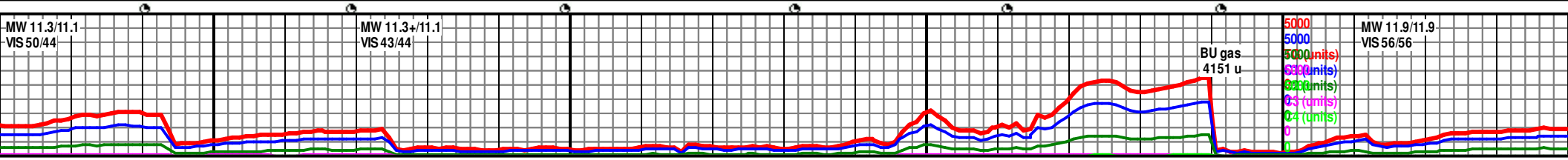
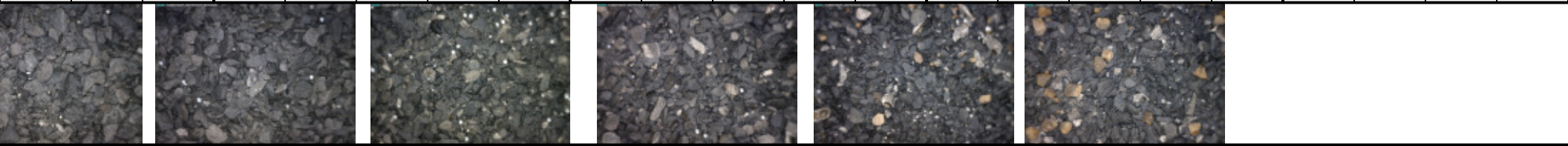


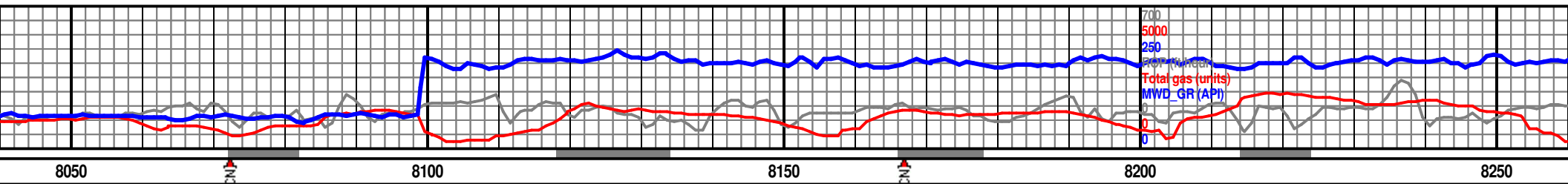






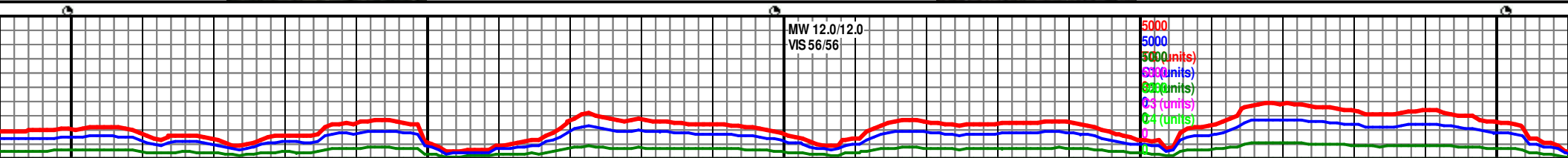
<p>MD 7845 TVD 7488.68 INC 76.45 AZ 184.54 VS 62.21</p>	<p>MD 7939 TVD 7502.56 INC 86.54 AZ 183.6 VS 154.8</p>	<p>MD 8010 TVD 7504.97 INC 89.56 AZ 184.18 VS 225.58</p>	<p>ICP @ 7992' MD REACHED ON 10/31/14 AT 12:39 AM MDT CONDITION HOLE, TOH, 7" CASING, SET @ 7984', WT: 26 ppf, Grade: HCP110, SET @ MD 7984'.</p>	<p>Bit # 2 - 6.125" Ulterra U516S SN: 278197; Jets 5x16; w/MWD GR/Survey BHA & Dir MM (1.05") 1.25 RPG, In @ 7993'; Out @ 12082'; Drilled 4089' in 32 hrs: Average ROP 127.78 ft/hr.</p>	<p>SH (60%) dk gry, sbblykly occ sbply, sbwaxy, rthy, m-wk consol, carb ip, calc, spity, in part slty, rr lse disem pyr, BENT (<5%) lt brn, frm, sbblykly-blky, non calc, occ conc pyr, rr prismatic clcit, tr min fluor, pale fast strmg & resid rng; MRLST (20%) lt gry-gry, frm-hd, sbblykly-blky, rthy-sbwxy, occ mic lams, slty occ grdg in lvf gr ss w/ dism fn par pyr; LS (20%) wh, frm, cryxln-micxln, chk.</p>	<p>SH (40%) dk gry, sbblykly occ sbply, sbwaxy, rthy, m-wk consol, carb ip, calc, spity, in part slty, rr lse disem pyr; BENT (<5%) lt brn, frm, sbblykly-blky, non calc, occ conc pyr, rr prismatic clcit, tr min fluor, pale fast strmg & resid rng; MRLST (40%) lt gry-gy, frm-hd, sbblykly-blky, rthy-sbwxy, occ mic lams, slty occ grdg in lvf gr ss; LS (20%) wh, frm, cryxln-micxln, chk.</p>	<p>SH (60%) dk gry, sbblykly occ sbply, sbwaxy, rthy, m-wk consol, carb ip, calc, spity, in part slty, rr lse disem pyr; BENT (<5%) lt brn, frm, sbblykly-blky, non calc, occ conc pyr, rr prismatic clcit, tr min fluor, pale fast strmg & resid rng; MRLST (20%) lt gry-gry, frm-hd, sbblykly-blky, rthy-sbwxy, occ mic lams, slty occ grdg in lvf gr ss w/ dism fn par pyr; LS (20%) wh, frm, cryxln-micxln, chk.</p>	<p>SH (60%) dk gry, sbblykly occ sbply, sbwaxy, rthy, m-wk consol, carb ip, calc, spity, in part slty, rr lse disem pyr; BENT (<5%) lt brn, frm, sbblykly-blky, non calc, occ conc pyr, rr prismatic clcit, tr min fluor, pale fast strmg & resid rng; MRLST (20%) lt gry-gry, frm-hd, sbblykly-blky, rthy-sbwxy, occ mic lams, slty occ grdg in lvf gr ss w/ dism fn par pyr; LS (20%) wh, frm, cryxln-micxln, chk.</p>
---	--	--	---	--	---	---	---	---

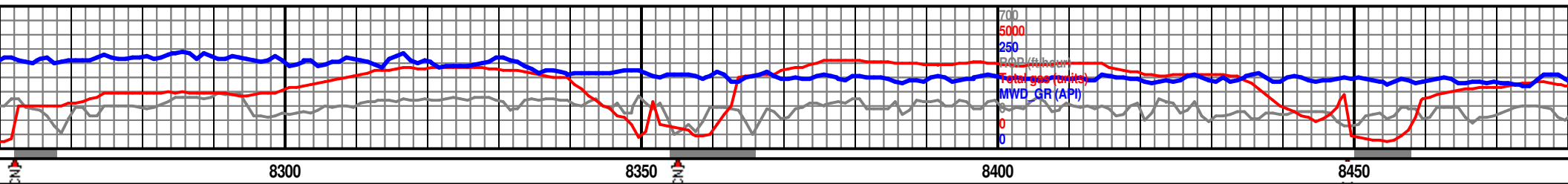




MD 8057 TVD 7505.17 INC 89.97 AZ 184.56 VS 272.43				MD 8105 TVD 7504.8 INC 90.91 AZ 185.16 VS 320.24				MD 8152 TVD 7503.8 INC 91.54 AZ 183.9 VS 367.07				MD 8199 TVD 7502.75 INC 91.01 AZ 182.08 VS 413.99			
0% dk gry, sbblky occ sbpity, sbwaxy, rthy, consol, carb ip, calc, spity, in part slty, tr, occ conc pyr, rr prismatic clcit, tr min fluor, rhy, m-wk consol, carb ip, calc, spity, in part slty, rhy, m-wk consol, carb ip, calc, spity, in part slty, tr BENT, occ conc pyr, occ prismatic clcit, tr min fluor, pale fast strmg & resid rng; LS (10%) wh, frm, cryxln-micxln, chk.								MRLST (50%) lt gry-gry, cmb frm, sbblky-blky, rthy- sbwxy, occ mic lams, slty occ grdg in lvf gr ss; SH (40%) dk gy, sbblky occ sbpity, sbwaxy, rthy, m-wk consol, carb ip, calc, spity, in part slty, rr lse disem pyr, tr BENT, occ conc pyr, occ prismatic clcit, tr min fluor, pale fast strmg & resid rng; LS (10%) wh, frm, cryxln-micxln, chk.							
0% dk gry, sbblky occ sbpity, sbwaxy, rthy, consol, carb ip, calc, spity, in part slty, tr, occ conc pyr, rr prismatic clcit, tr min fluor, rhy, m-wk consol, carb ip, calc, spity, in part slty, rhy, m-wk consol, carb ip, calc, spity, in part slty, tr BENT, occ conc pyr, occ prismatic clcit, tr min fluor, pale fast strmg & resid rng; LS (10%) wh, frm, cryxln-micxln, chk.								MRLST (80%) lt gry-gry, cmb frm, sbblky-blky, rthy- sbwxy, occ mic lams, slty occ grdg in lvf gr ss; SH (10%) dk gy, sbblky occ sbpity, sbwaxy, rthy, m-wk consol, carb ip, calc, spity, in part slty, rr lse disem pyr, tr BENT, occ conc pyr, occ prismatic clcit, tr min fluor, pale fast strmg & resid rng; LS (10%) wh, frm, cryxln-micxln, chk.							

7600





MD 8293 TVD 7500.58
INC 91.64 AZ 181.91
VS 507.89

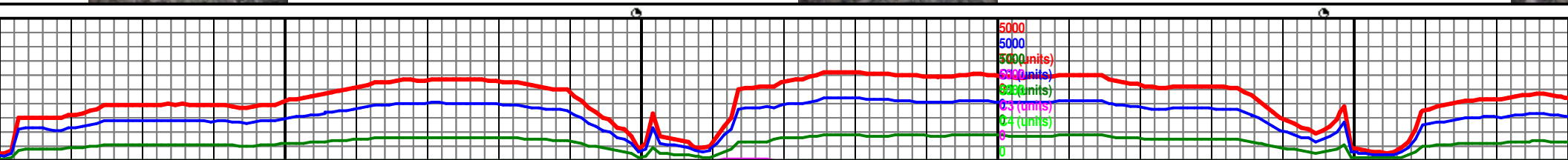
MD 8388 TVD 7499.13^D
INC 90.1 AZ 180.28
VS 602.85

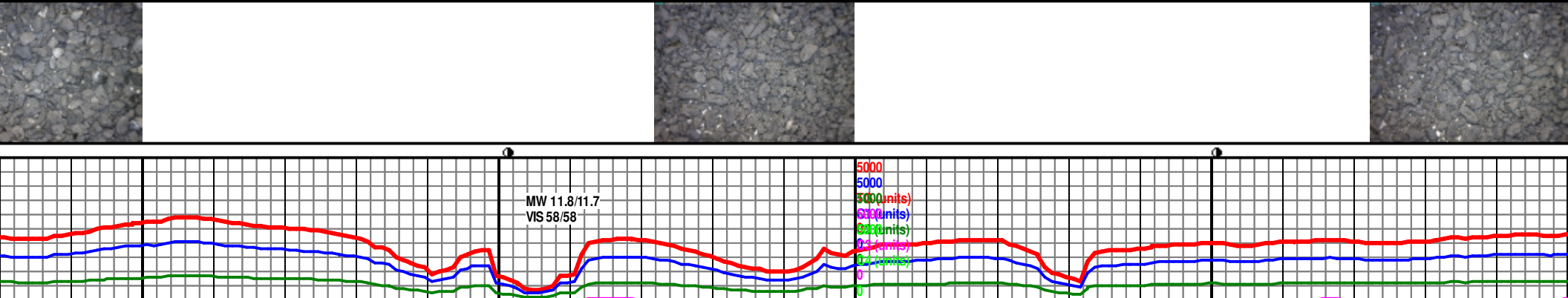
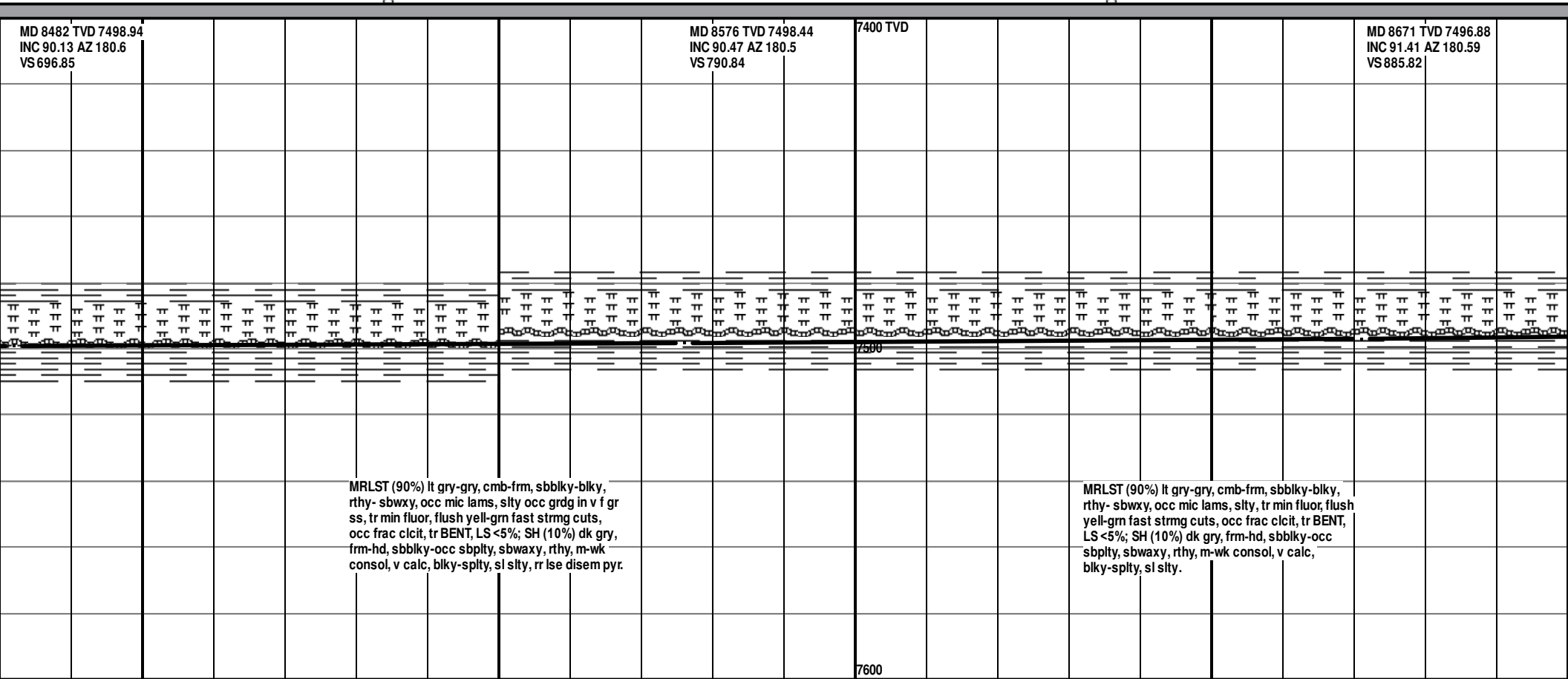
ky-biky,
rdg in lvf gr
y, sbwaxy,
in part slty,
r, rr
strmg &
cxln, chk.

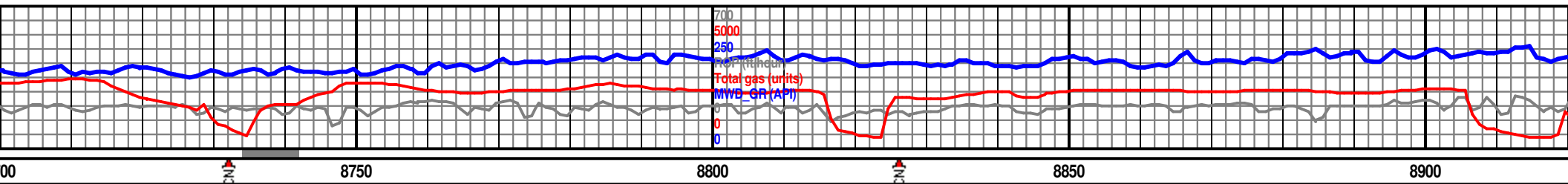
MRLST (80%) lt gry-gry, cmb frm, sbblky-biky,
rthy- sbwxy, occ mic lams, slty occ grdg in lvf gr
ss; SH (10%) dk gry, sbblky occ sbply, sbwaxy,
rthy, m-wk consol, carb ip, calc, splty, in part slty,
rr lse disem pyr, tr BENT, occ conc pyr, occ
prismatic clcit, tr min fluor, pale fast strmg &
resid mg; LS (10%) wh, frm, cryxln-micxln, chk.

MRLST (65%) lt gry-gry, cmb frm, sbblky-biky,
rthy- sbwxy, occ mic lams, slty occ grdg in v f gr
ss, abdn min fluor, dull yell-grn fast strmg &
resid mg; BENT (15%) lt grybrn, frm, sbblky-biky,
non calc; SH (10%) dk gry, frm-hd, sbblky occ
sbply, sbwaxy, rthy, m-wk consol, v calc,
blky-sply, sl slty, rr lse disem pyr; LS (10%) wh,
frm, cryxln-micxln, chk.

7600







MD 8765 TVD 7495.01
INC 90.87 AZ 179.67
VS 979.8

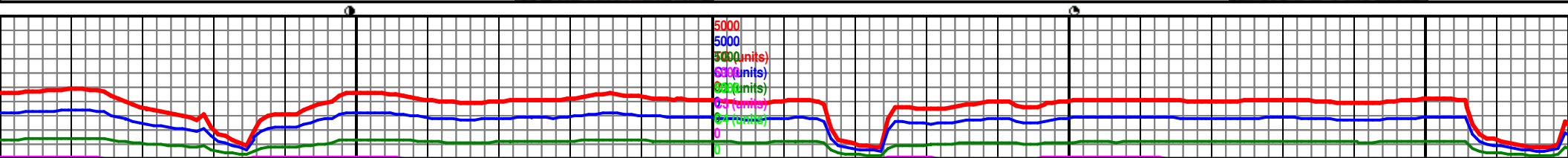
7400 TVD

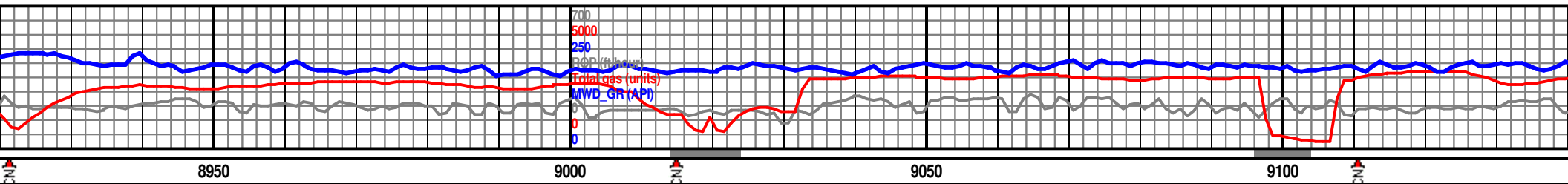
MD 8859 TVD 7493.61
INC 90.84 AZ 179.78
VS 1073.78



MRLST (80%) lt gry-gry, cmb-frn, sbbiky-blky,
rthy- sbwxy, occ mic lams, slty, tr min fluor, flush
yell-grn fast strmg cuts, occ frac clcit, tr BENT,
LS <5%; SH (20%) dk gry, frm-hd, sbbiky-occ
sbply, sbwaxy, rthy, m-wk consol, v calc,
blky-sply, sl slty.

MRLST (80%) lt gry-gry, cmb-frn, sbbiky-blky,
rthy- sbwxy, occ mic lams, slty, tr min fluor, dull
yell-grn fast strmg cuts, tr BENT, tr LS; SH (20%)
dk gy, frm-hd, sbbiky-occ sbply, sbwaxy, rthy,
m-wk consol, v calc, blky-sply, sl slty.

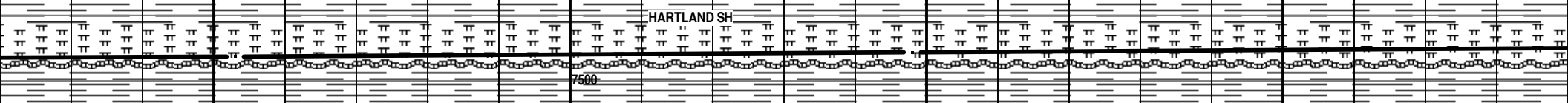




MD 8953 TVD 7492.48
INC 90.54 AZ 179.45
VS 1167.78

7400 TVD

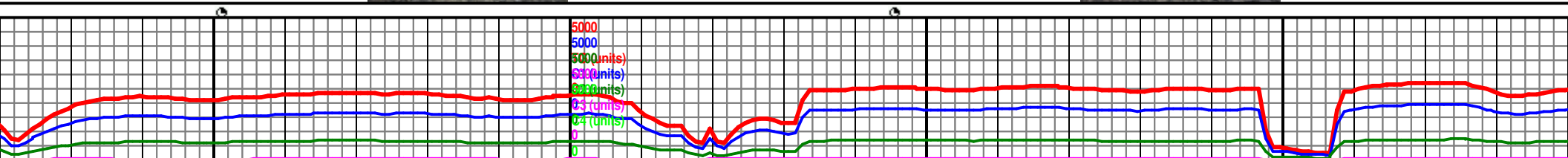
MD 9048 TVD 7491.48
INC 90.67 AZ 178.23
VS 1262.76

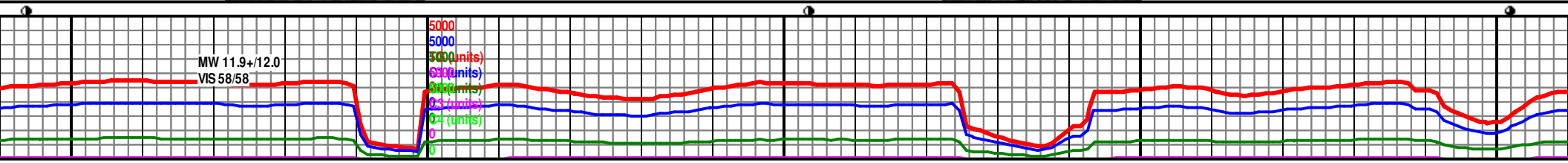
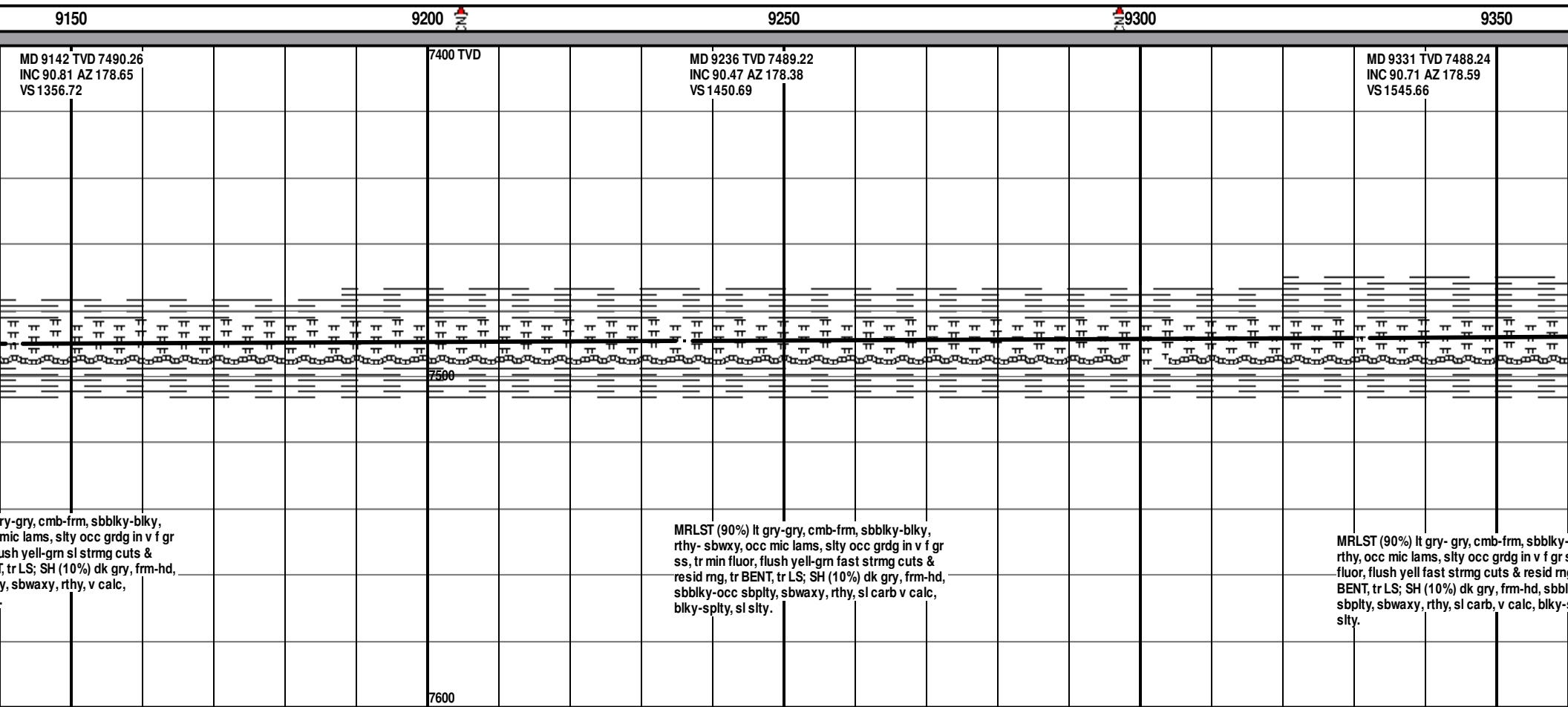
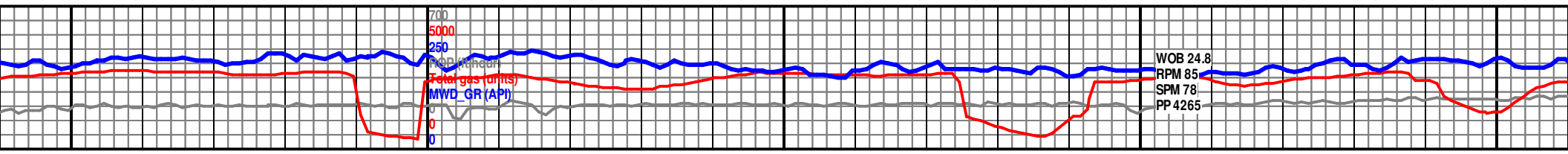


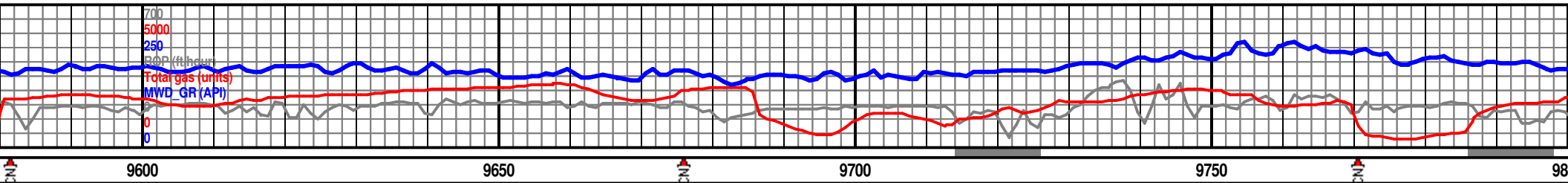
MRLST (70%) lt gry-gry, cmb frm, sbbiky-blky,
rthy- sbwxy, occ mic lams, slty, tr min fluor, flush
yell-grn sl strmg cuts, BENT (<1%), tr LS; SH
(30%) dk gy, frm-hd, sbbiky-occ sbply, sbwaxy,
rthy, m-wk consol, carb ip, v calc, blky-sply, sl
sity.

MRLST (90%) lt gry-gry, cmb frm, sbbiky-blky,
rthy- sbwxy, occ mic lams, slty occ grdg in v f gr
ss, tr min fluor, flush yell-grn fast strmg cuts &
resid mg, tr BENT, tr LS; SH (10%) dk gry, frm-hd,
sbbiky-occ sbply, sbwaxy, rthy, v calc,
blky-sply, sl sity.

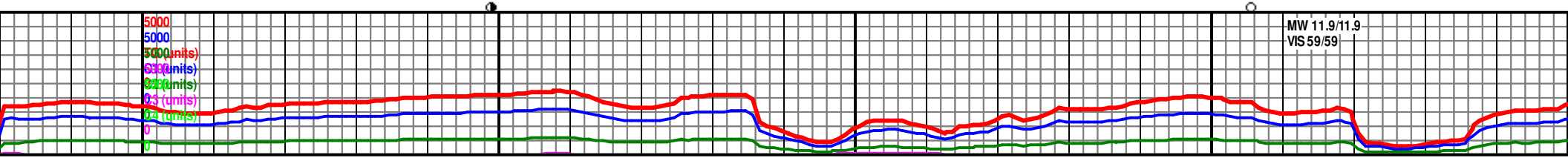
MRLST (90%) lt gry-gry, cmb frm, sbbiky-blky,
rthy- sbwxy, occ mic lams, slty occ grdg in v f gr
ss, tr min fluor, flush yell-grn fast strmg cuts &
resid mg, tr BENT, tr LS; SH (10%) dk gry, frm-hd,
sbbiky-occ sbply, sbwaxy, rthy, v calc,
blky-sply, sl sity.

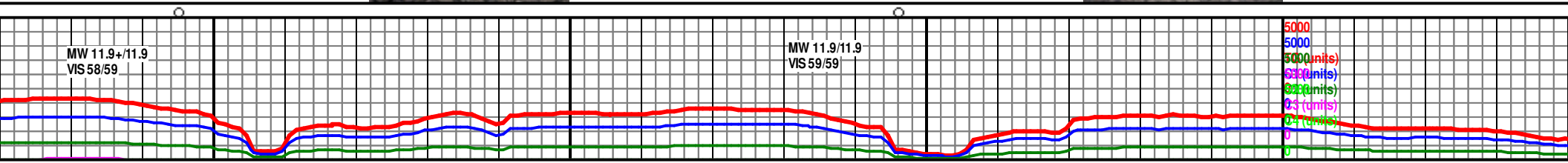
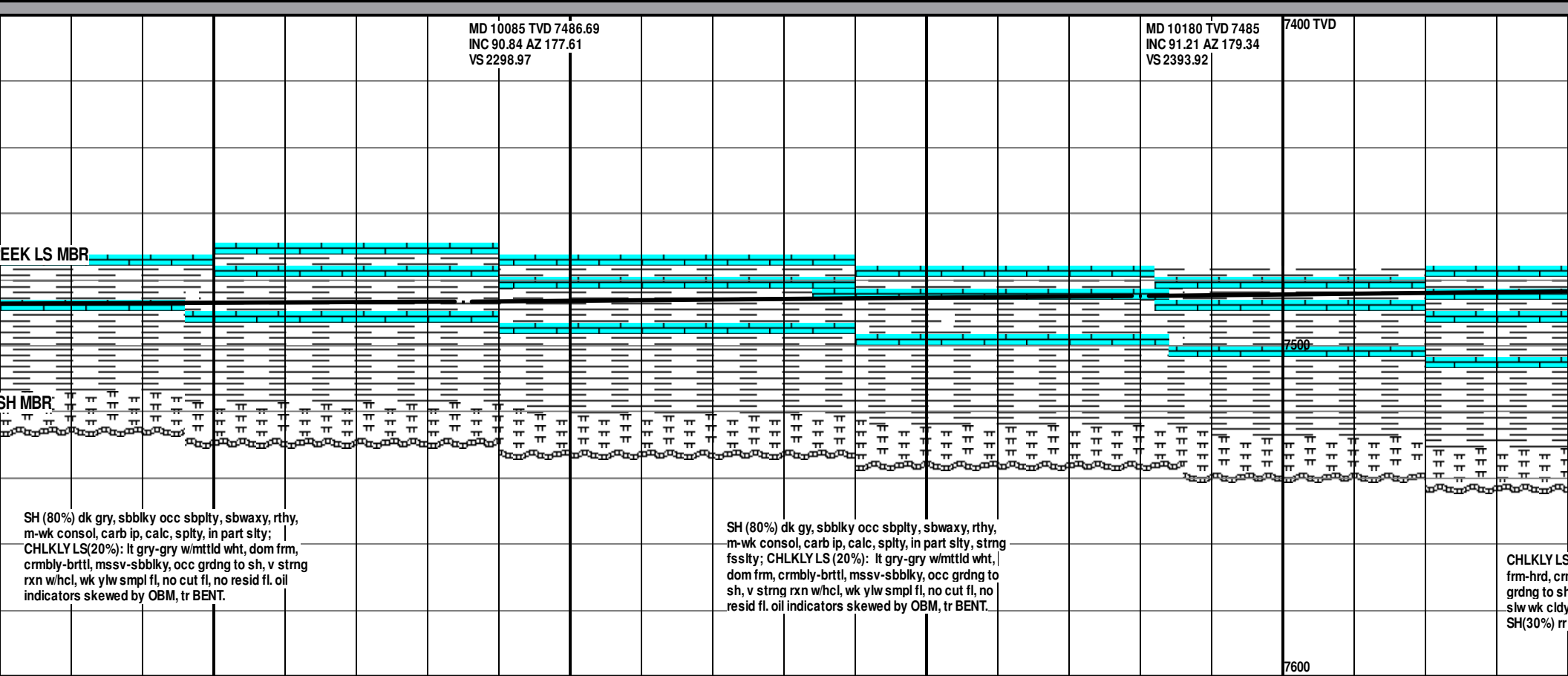
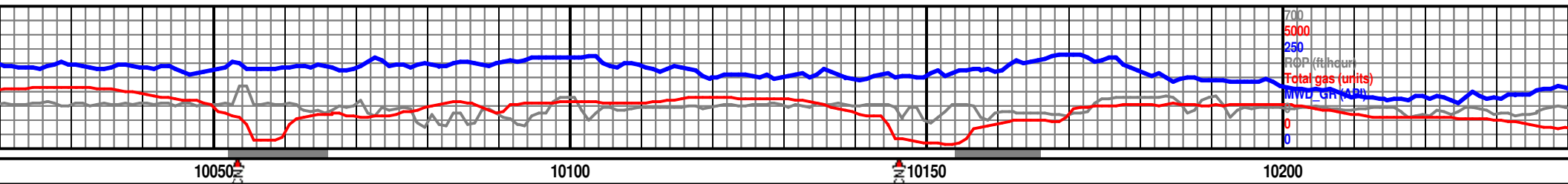


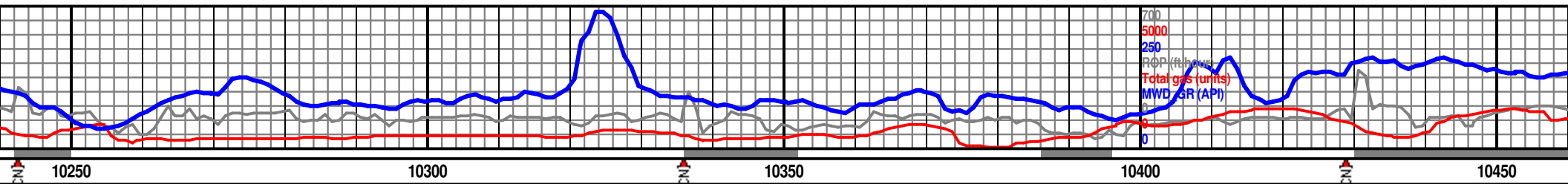




	7400 TVD	MD 9614 TVD 7486.36 INC 90.23 AZ 178.6 VS 1828.56	MD 9708 TVD 7486.56 INC 89.53 AZ 177.13 VS 1922.5
	7500	MRLST (80%) lt gry-gry, cmb frm, sbbiky-blky, rthy, occ mic lams, slty occ grdg in v f gr ss, tr fluor, flush yell fast strmg cuts & resid mg, tr BENT, tr LS; SH (20%) dk gry, frm-hd, sbbiky-occ sbply, sbwaxy, rthy, v calc, blky-sply, sl sity.	MRLST (80%) lt gry-gry, cmb frm, sbbiky-blky, rthy, occ mic lams, slty occ grdg in v f gr ss, tr fluor, flush yell fast strmg cuts & resid mg, tr LS; SH (20%) dk gry, frm-hd, sbbiky-occ sbply, sbwaxy, rthy, v calc, blky-sply, sl sity.
	7600		







MD 10274 TVD 7482.55
INC 91.78 AZ 179.57
VS 2487.89

MD 10368 TVD 7479.3
INC 92.18 AZ 181.37
VS 2581.82

7400 TVD
INTERPRETED REVERSE FAULT #1
62 FT UP THROW

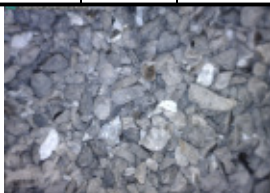
BRIDGE CREEK LS MBR

HARTLAND SH MBR

(70%): lt gry-gry w/mtld wht, dom
cmblly-brttl, oc stf, mssv-sbbkly, occ
n, v strng rxn w/hcl, wk ylw smpl fl, v
wht cut fl, no vis cut, no resid fl;
fn pryt, com bent, com re rxlzd clcit.

CHLKLY LS(60%): lt gry-gry w/mtld wht, dom frm,
cmblly-brttl, mssv-sbbkly, occ grndg to sh, v
strng rxn w/hcl, wk ylw smpl fl, v slw wk cldy wht
cut fl, no vis cut, no resid fl; SH(40%) rr fn pryt,
com bent, com re rxlzd clcit.

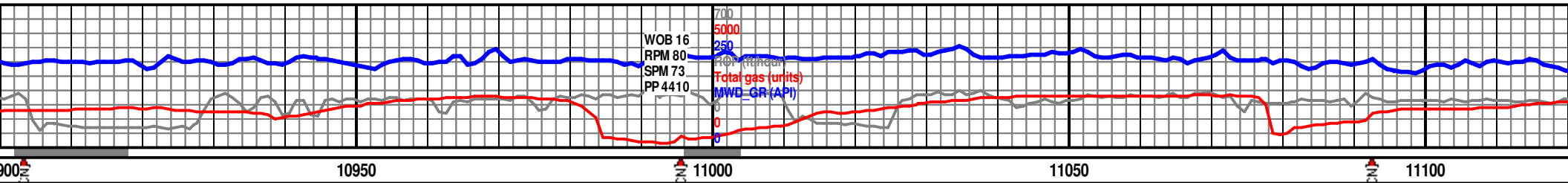
MRLST (70%) med lt gry-gy, cmb
sbbkly-blky, rthy, occ mic lams,
v f gr ss, tr fluor, slw mod mlky g
resid mg; SH (20%) dk gry, frm-h
sbply, sbwaxy, rthy, v calc, blkly
CHLKLY LS(10%), tr BENT.



MW 11.9/11.9+
VS 55/57

MW 11.8/11.8
VS 58/58

5000
5000
5000 (units)
5000 (units)
5000 (units)
5000 (units)
5000 (units)
5000 (units)



MD 10934 TVD 7489.4
INC 89.43 AZ 178.51
VS 3147.44

7400 TVD

MD 11029 TVD 7489.04
INC 91.01 AZ 180.3
VS 3242.43

MRLST (70%) lt gry-gry, cmb-frn, sbblky-blky,
rthy, occ mic lams, sily occ grdg in v f gr ss, tr
fluor, slw mod mlky grnsh wht cut fl & resid mg;
SH (30%) dk gry, frm-hd, sbblky-occ sbplty,
sbwaxy, rthy, v calc, blkly-splty, sl sily, tr CHLKY
LS, tr BENT.

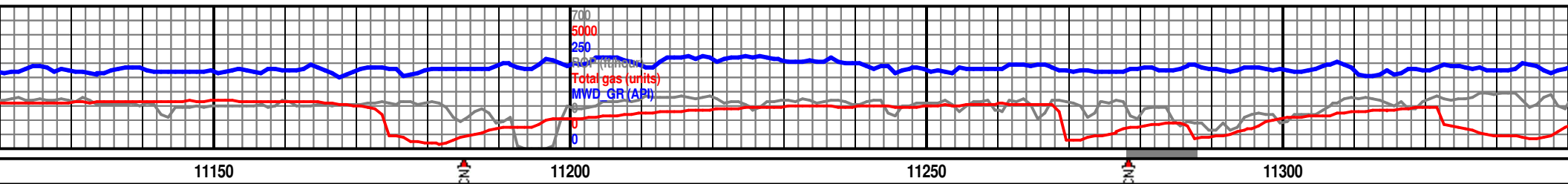
MRLST (70%) lt gry-gry, cmb-frn, sbblky-blky,
rthy, occ mic lams, sily occ grdg in v f gr ss, tr
fluor, slw mod mlky grnsh wht cut fl & resid mg;
SH (30%) dk gry, frm-hd, sbblky-occ sbplty,
sbwaxy, rthy, v calc, blkly-splty, sl sily, tr CHLKY
LS, tr BENT.



MW 11.9/11.9
VS 58/58

5000
5000
5000 (units)
5000 (units)
5000 (units)
5000 (units)
5000 (units)
5000 (units)

MW 11.8/11.8
VS 55/57

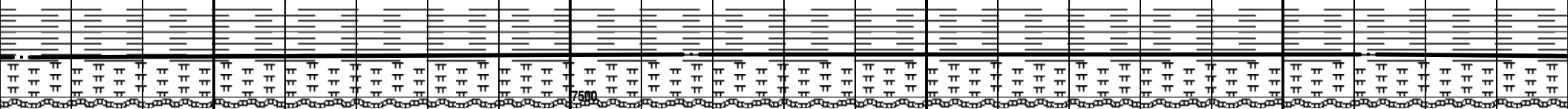


MD 11123 TVD 7487.93
INC 90.34 AZ 179.6
VS 3336.42

7400 TVD

MD 11217 TVD 7487.11
INC 90.67 AZ 180.26
VS 3430.41

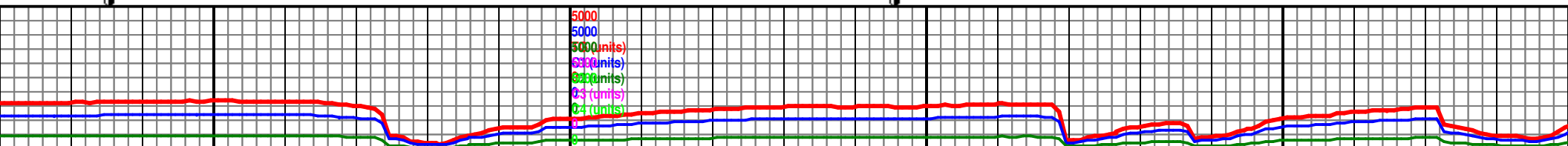
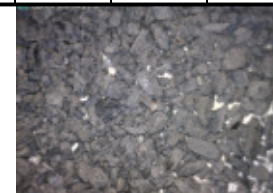
MD 11312 TVD 7487.19
INC 89.23 AZ 179.72
VS 3525.41

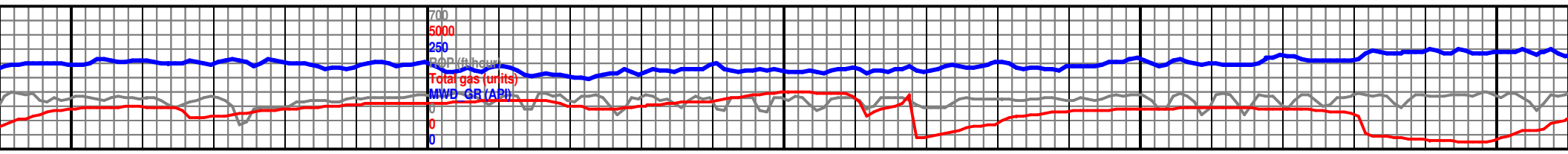


MRLST (60%) lt gry-gry, cmb frm, sbblky-blky, rthy-sbwxy, occ mhc lams, slty occ grgd in v f gr ss, tr BENT, tr CHLKY LS, tr min fluor, flush yell-grn fast strmg with resid ring; SH (40%) dk gry, frm-hd, sbblky-occ sbply, sbwaxy-rthy, m-wk consol, v calc, blky-sply, sl slty, abdn lse disem pyr.

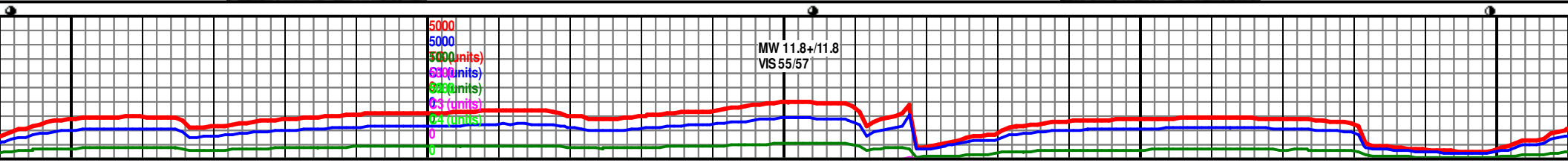
MRLST (60%) lt gry- gry, cmb frm, sbblky-blky, rthy- sbwxy, occ mic lams, slty occ grdg in v f gr ss, tr BENT, tr CHLKY LS, NF, flush yell-grn fast strmg with resid ring; SH (40%) dk gry, frm-hd, sbblky-occ sbply, sbwxy-rthy, v calc, blky-sply, sl slty, occ lse disem pyr.

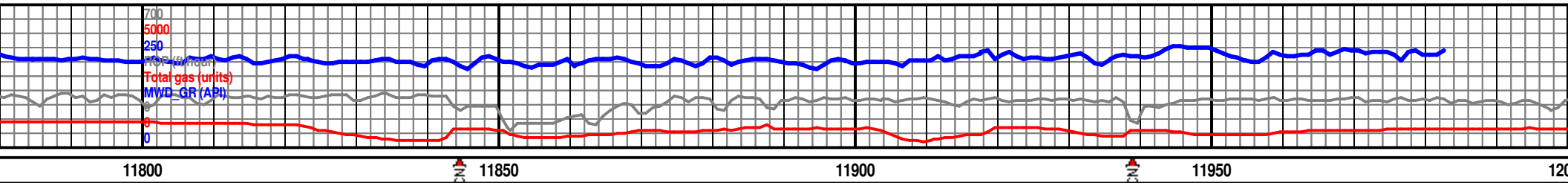
MRLST (60%) lt gr
rthy- sbwxy, occ n
ss, tr BENT, tr CHL
yell-grn fast strmg
gry, frm-hd, sbbly
m-wk consol, v ca
disem pyr.





	<p>7400 TVF MD 11406 TVD 7488.59 INC 89.06 AZ 179.68 VS 3619.4</p>	<p>MD 11500 TVD 7490.13 INC 89.06 AZ 179.88 VS 3713.39</p>
<p>y-gry, cmb frm, sbbiky-blky, mic lams, slty occ grdg in v f gr KY LS, tr min fluor, flush with resid ring; SH (40%) dk -occ sbplty, sbwaxy- rthy, lc, blky-splty, sl slty, abdn lse</p>	<p>MRLST (60%) lt gry-gry, cmb frm, sbbiky-blky, rthy-sbwxy, occ mic lams, slty rr grdg in v f gr ss, tr BENT, tr CHLKY LS, NF, flush yell-grn fast strmg with resid ring; SH (40%) dk gry, frm-hd, sbbiky-occ sbplty, sbwaxy, rthy, v calc, blky-splty, sl slty, abdn lse disem pyr.</p>	<p>MRLST (80%) lt gry-gry, cmb frm, sbbiky-blky, rthy-sbwxy, occ mic lams, slty rr grdg in v f gr ss, tr tr CHLKY LS, NF, dull gm fast strmg with cut; SH (20%) dk gry, frm-hd, sbbiky-occ sbplty, sbwaxy, rthy, v calc, blky-splty, sl slty, abdn lse disem pyr.</p>

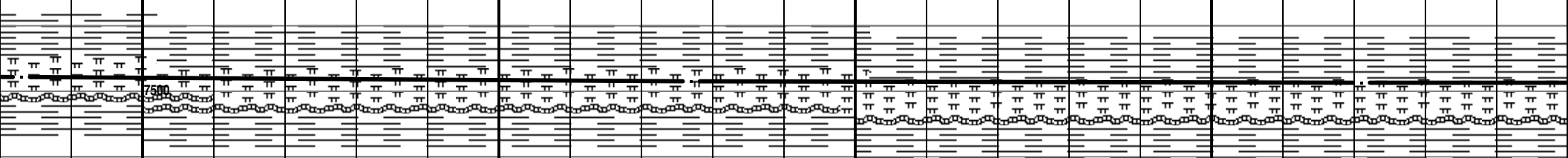




MD 11783 TVD 7495.9
INC 88.76 AZ 180.01
VS 3996.32

MD 11877 TVD 7496.98
INC 89.93 AZ 180.53
VS 4090.31

MD 11971 TVD 7497.39
INC 89.56 AZ 180.35
VS 4184.31

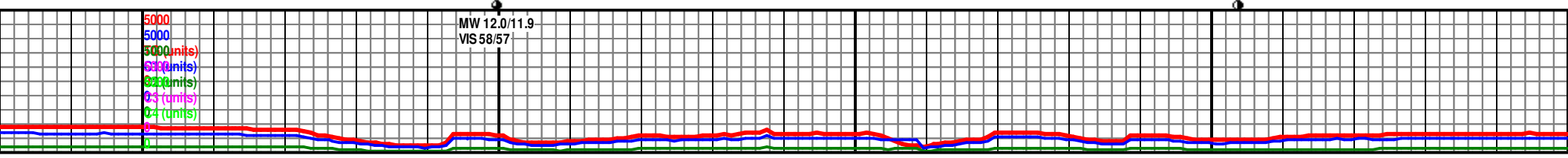


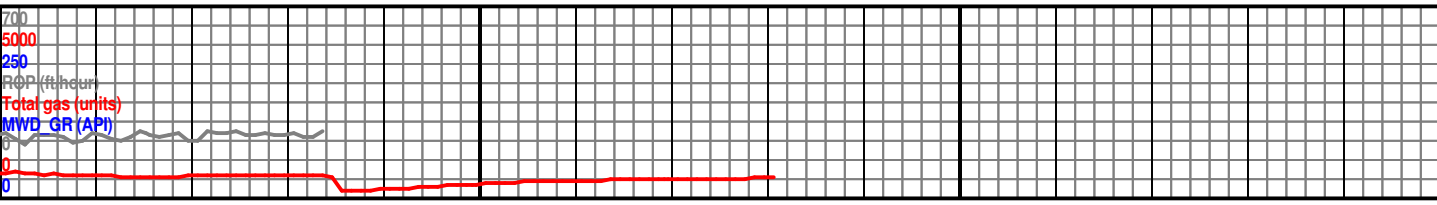
MRLST (80%) lt gry-gry, cmb-frn, sbbiky-blky,
rthy-sbwxy, occ mic lams, slty rr grdg in v f gr ss,
rr BENT, tr CHLKY LS, tr min fluor, dull grn fast
strmg spotty resid cut; SH (20%) dk gry, frm-hd,
sbbiky-occ sbply, sbwaxy, rthy, v calc,
blky-sply, sl slty, abdn lse disem pyr.

MRLST (70%) lt gry-gry, cmb-frn, sbbiky-blky,
rthy-sbwxy, occ mic lams, slty rr grdg in v f gr ss,
rr BENT, tr CHLKY LS, tr min fluor, dull, v spotty
grn fast strmg resid cut; SH (30%) dk gry,
frm-hd, sbbiky-occ sbply, sbwaxy, rthy, v calc,
blky-sply, sl slty, abdn lse disem pyr.



MW 12.0/11.9
VIS 58/57





12000 12050 12100 12150

