

LIR-GT-01

Formation Log



Weatherford
Surface Logging Systems

Legend

Drilling Data:
 BC bit condition
 BS bit size
 CB core bit
 CBR core bit re-run
 CR core
 CSG casing
 DC depth correction
 DIR directional survey
 DS deviation survey
 DST drill stem test
 LC lost circulation
 LCM lost circ material
 MM mud motor
 NB new bit
 PO pump output
 PP pump pressure
 RPM rotary speed
 RR re-run bit
 SPM pump strokes
 SPP stand pipe pressure
 TRQ torque
 TVD true vertical depth
 WLL wireline log
 WOB weight on bit

Mud Data:

CL chlorides
 FC filter cake
 FV funnel viscosity
 LAT lagged after trip
 MW mud weight
 NR no reading
 pH mud pH
 PV plastic viscosity
 WL water loss
 YP yield point

Operator: WEP
Well: LIR-GT-01
Location: De Lier GT1
Country: Netherlands
UWID: W0090FB1DDC6DN5TLMY
Elevation GL: -1.90
KB: 6.70
Drilling Rig: KCA T-49
Spud Date: 20/05/2014
Print Date: 22/08/2014

Notes:

Surface coordinates
 E= 79087.72 m; N= 443732.33 m

Target coordinates
 E= 78922.60 m; N= 444532.40 m

Engineering



Bit Trip



Wireline Log



Side Wall Core



Dummy Trip



Casing



Plug Back



Mud Loss



Directional Drill



Perforated Interval

HoleData:

17 1/2" hole, 135.0 m, 1080.3 m MDRT
 12 1/4" hole , 1080.3 m, 2565.1 m MDRT
 8 1/2" hole, 2565.1 m, 2897.0 m MDRT

MudData:

17 1/2" hole drilled with
 1.05 - 1.15 sg KCl Glycol Polymer WBM

12 1/4" hole drilled with
 1.14 - 1.20 sg KCl Glycol Polymer WBM

8 1/2" hole drilled with
 1.09 sg Drilcarb WBM

CasingData:

23" conductor, surface, 135.0 m MDRT,
 13 3/8" casing, surface, 1028.7 m MDRT,
 9 5/8" liner, 924.9 m, 2552.9 m MDRT,
 6 5/8" liner, 2499.4 m, 2881.0 m MDRT,

Personnel:

DE: Christopher Smale, Polly Miles
 Miles Stephenson, Sergio Boccola, Karol Rudnicki

 ML: Ralph Krauze, Abdul Rabim, Lucy Peaker
 Luke Edwards, Kyle Walker-Verkuil, Keith Mearns

Lithology		Fossil		Mineral		Geological	
Anhydrite	Conglomerate	Foram	Gastropod	Chert Dark	Ferrug Strings		Overturned Strata
Gypsum	Chert	Amphipora	Ostracod	Chert Light	Anhydrite Stringers		Tectonic
Coal	Tuff	Fish	Mollusc	Marly	Bituminous		Reverse Fault
Shale	Dolomite	Fossils	Pelecypod	Nodules	Dolomitic Stringers		Normal Fault
Siltstone	Not Available	Echinoid	Plant Remains	Ferruginous	Calcareous		Fractures
Limestone	No Sample	Crinoid	Spines	Kaolinite	Coal Thin Beds		Oil Show
Metamorphic		Corals	Trilobites	Glaucite	Bentonite		Dead Oil
		Bryozoa	Oolitic	Anhydrite	Marl Stringers		Good
		Belemnite	Bioturbation	Gypsiferous	Sandstone Stringer		
		Bioclastic	Coated Grains	Feldspar	Argillaceous		
		Brachiopod	Algae	Siliceous	Limestone Stringer		
				Sandy	Siltstone Stringers		
				Particles	Shale Laminae		
				Silty	Mica		
				Phosphate Pellets	Dolomitic		
				Pyrite	Gypsum Stringers		
				Sulphur	Salt		

Drilling Comments	WOB tons ROP Average	TVD	Percentage Lithology	Remaining Sieved Sample %	100	Total Hydrocarbons MLS	C1 Out			Interpreted Lithology	Fluorescence	Lithology Comments		
						0.01	%	10	1	ppm	100000			
	50 m/hr Gamma					Total Gas Out	0.01	10	1	ppm	100000			
	0						0.01	%	10	1	ppm	100000		
									1	ppm	100000			
									iC4 Out					
									1	ppm	100000			
									nC4 Out					
									1	ppm	100000			
									iC5 Out					
									1	ppm	100000			
									nC5 Out					
									1	ppm	100000			

Spud in well LIR-GT-01
on 19/05/2014 at 11:30am
from 140.0 m MDRT

Bit Run #1
17 1/2" HCC Mill Tooth Roller Cone
SN: 5188806
In @ 140.0m , Out @ 845.0 m

Start recording from 187.0 m MDRT

Troubleshooting drawworks problems.
Fixed at 227.0 m MDRT

150
<150>

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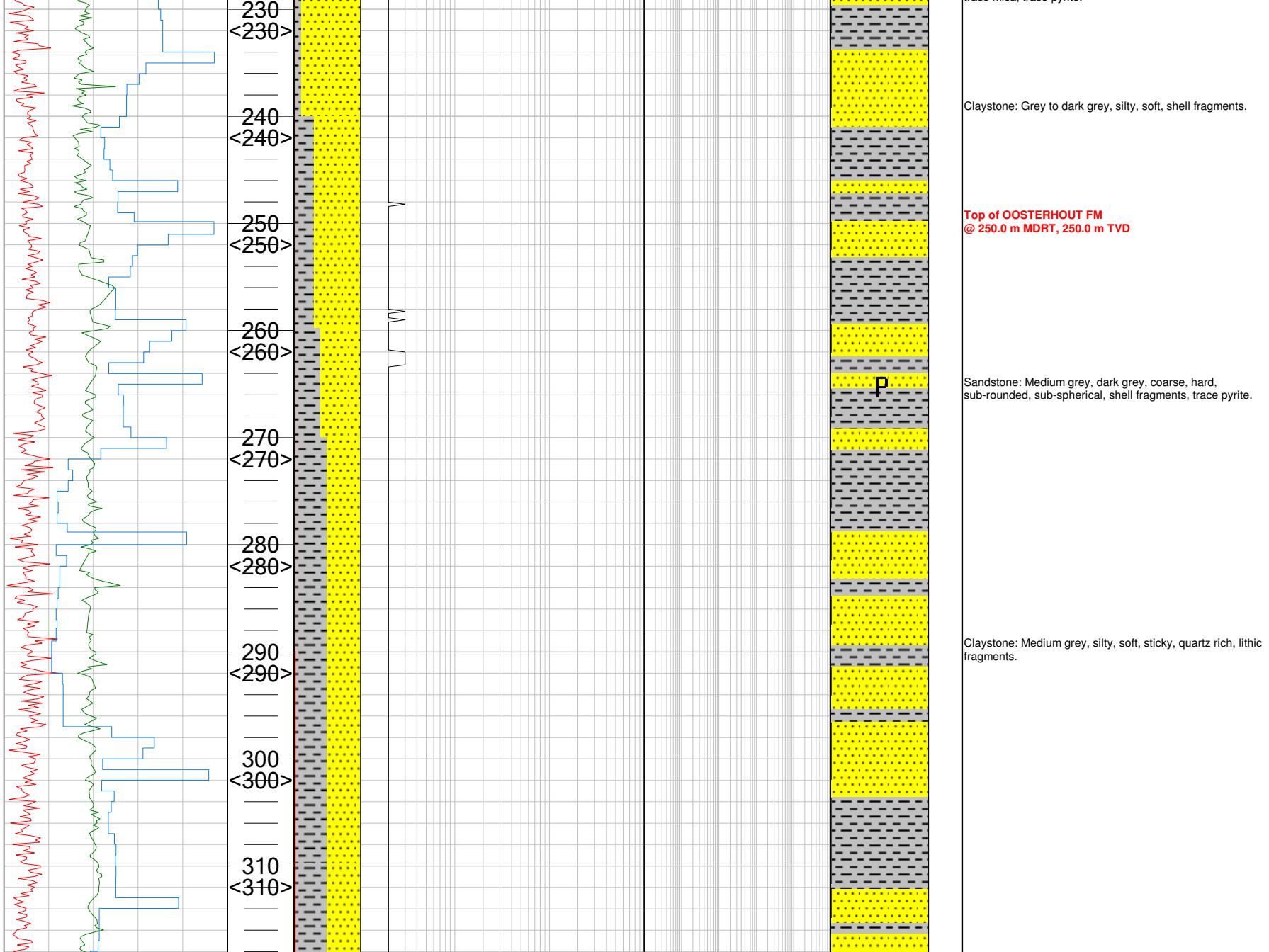
P

Sandstone: Translucent, very pale pink, very light grey, very fine to medium coarse, hard, calcareous, shell fragments, trace mica, trace pyrite.

Midnight depth on 20.05.2014:
232.0 m MDRT

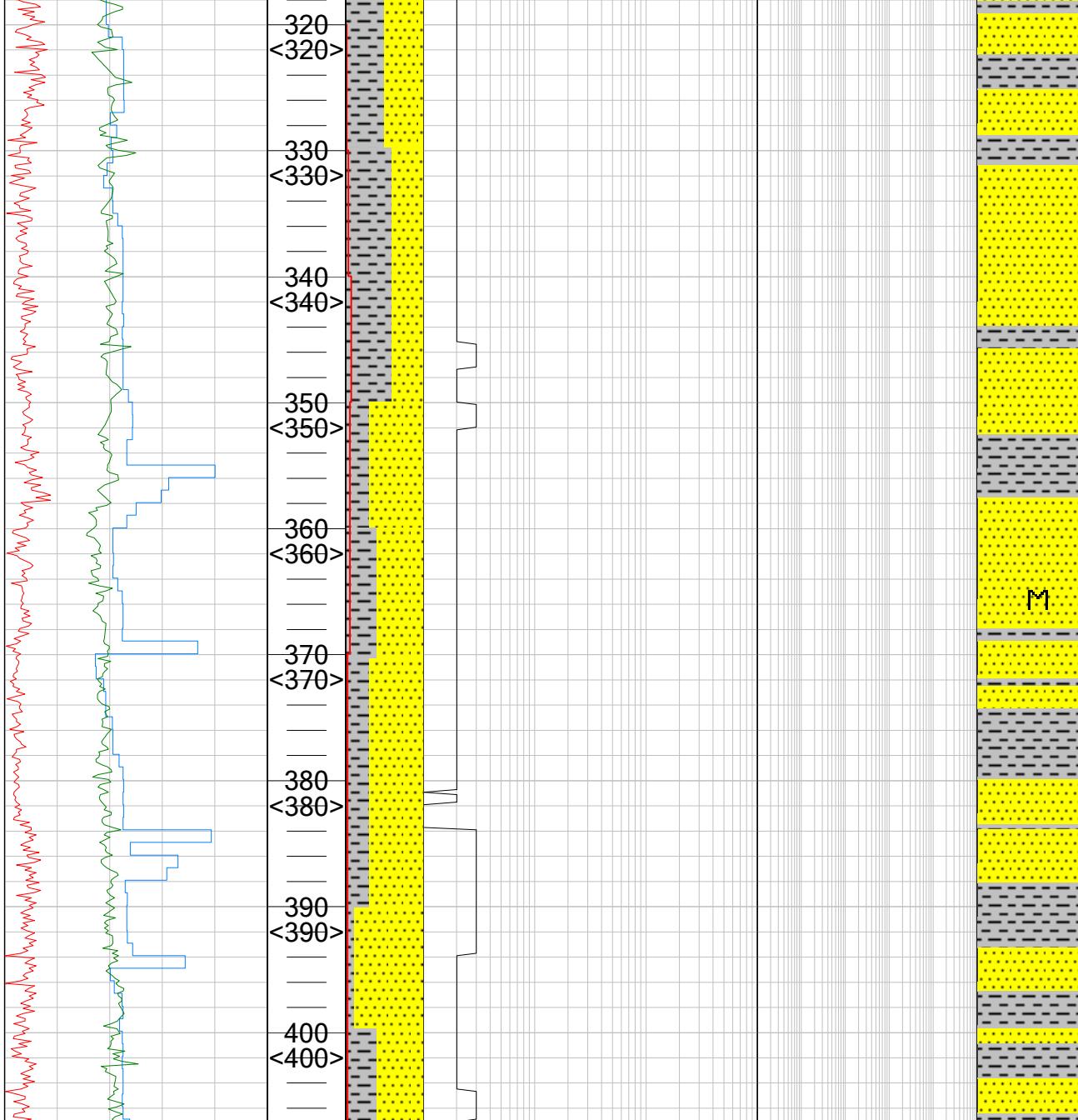
MW: 1.12 sg
PV: 35 cP
YP: 50 lbf/100ft²
pH: 11

MWD Survey @ 307.0 m MDRT
Azi: 353.88°, inc: 2.59°
TVD: 307.0 m



SPP: 79 bar
WOB: 4 tons
F/in: 2590 l/min

MWD Survey @ 364.0 m MDRT
Azi: 350.05, inc 2.70°
TVD: 363.9 m

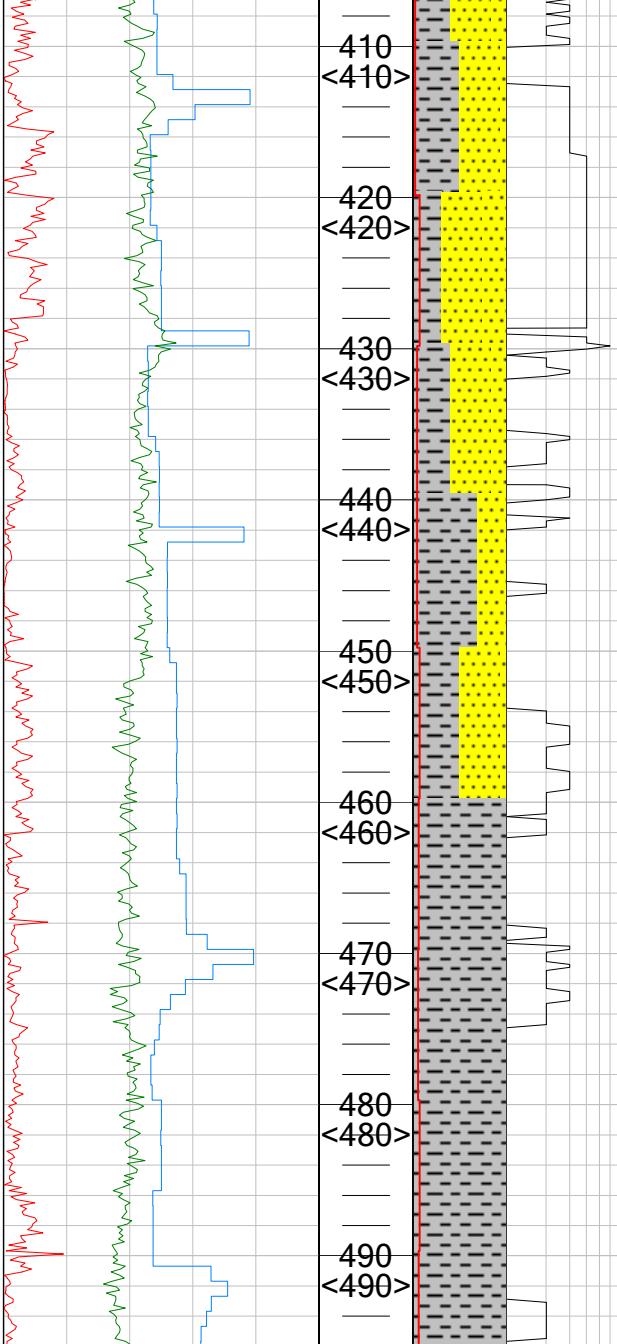


Sandstone: Light olive grey, unconsolidated, quartz rich, sub-angular to sub-rounded, coarse to very fine, moderately sorted, grain supported matrix, lithic fragments, trace mica.

Top of BREDA FM
@ 387.0 m MDRT, 387.0 m TVD

Sandstone: Quartz rich, unconsolidated, very fine to coarse

MWD Survey @ 421.0 m MDRT
Azi: 349.97°, inc 3.83°
TVD: 420.83 m



grained, sub-angular to sub-rounded, sub-spherical, moderately to poorly sorted grain supported lithic fragments.

Claystone: Light olive grey to olive grey, soft, sticky, occasionally silty.

Top of RUPEL FM
@ 432.0 m MDRT, 432.0 m TVD

Claystone: Light olive grey to olive grey, soft, sticky.

Top of DONGEN FM / ASSE MBR
@ 452.0 m MDRT, 452.0 m TVD

Sandstone: Loose quartz, very fine to fine grained, trace pyrite, trace glauconite.

MWD Survey @ 479.0 m MDRT
Azi: 347.90°, inc 3.76°
TVD: 478.70 m

Claystone: Light brown to greenish/blue grey, soft, sticky, sub-blocky to blocky, silty.

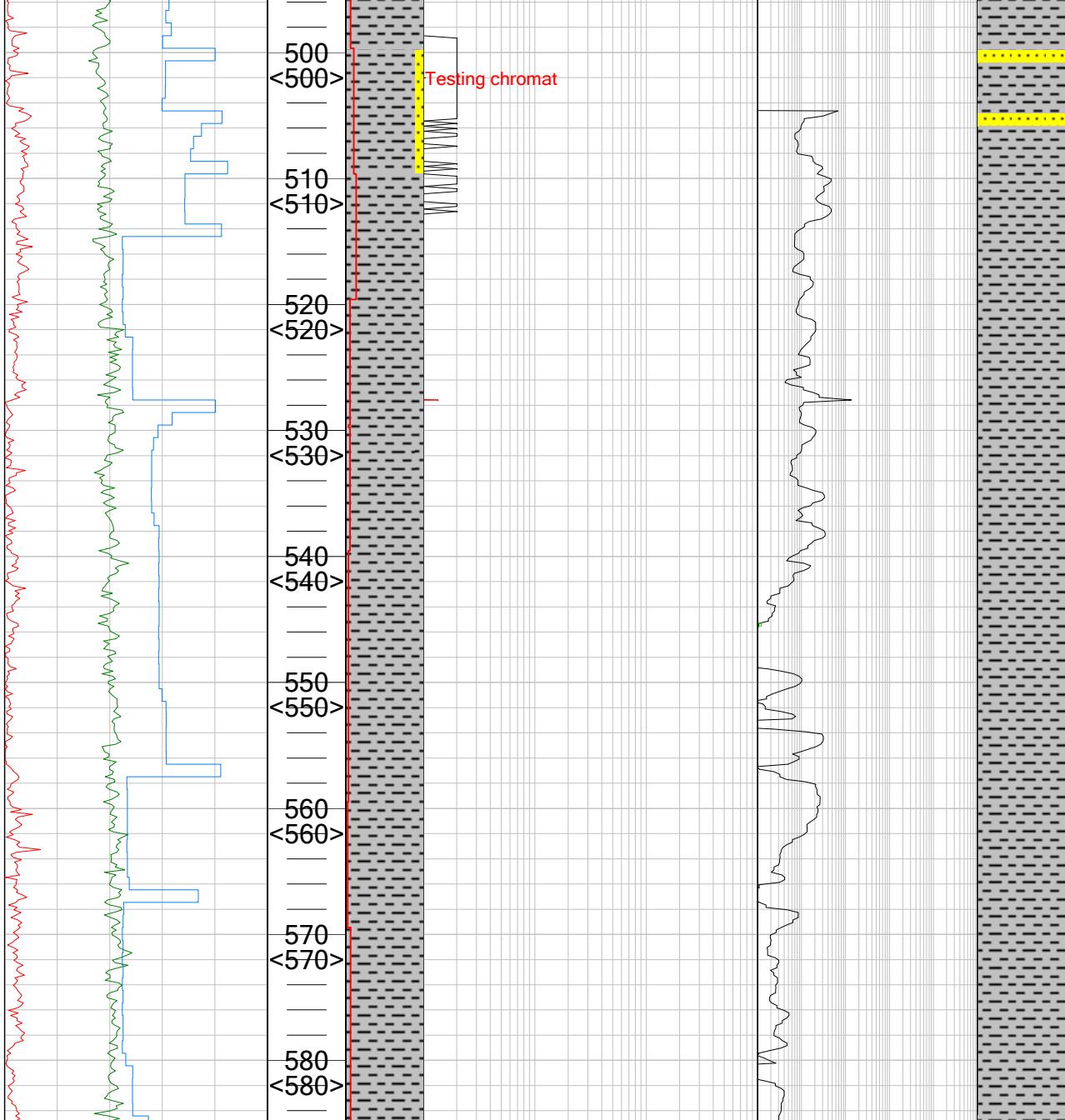
Top of BRUSSEL SANDS MBR
@ 486.0 m MDRT, 486.0 m TVD

MW: 1.12 sg
PV: 35 cP
YP: 45 lb/100ft²
pH: 10.6

Midnight depth on 21.05.2014:
527.0 m MDRT

SPP: 107 bar
RPM MM: 118
WOB: 2.6 tons
F/in: 2949 l/min

MWD Survey @ 566.0 m MDRT
Azi: 347.04°, inc 4.22°
TVD: 565.46 m



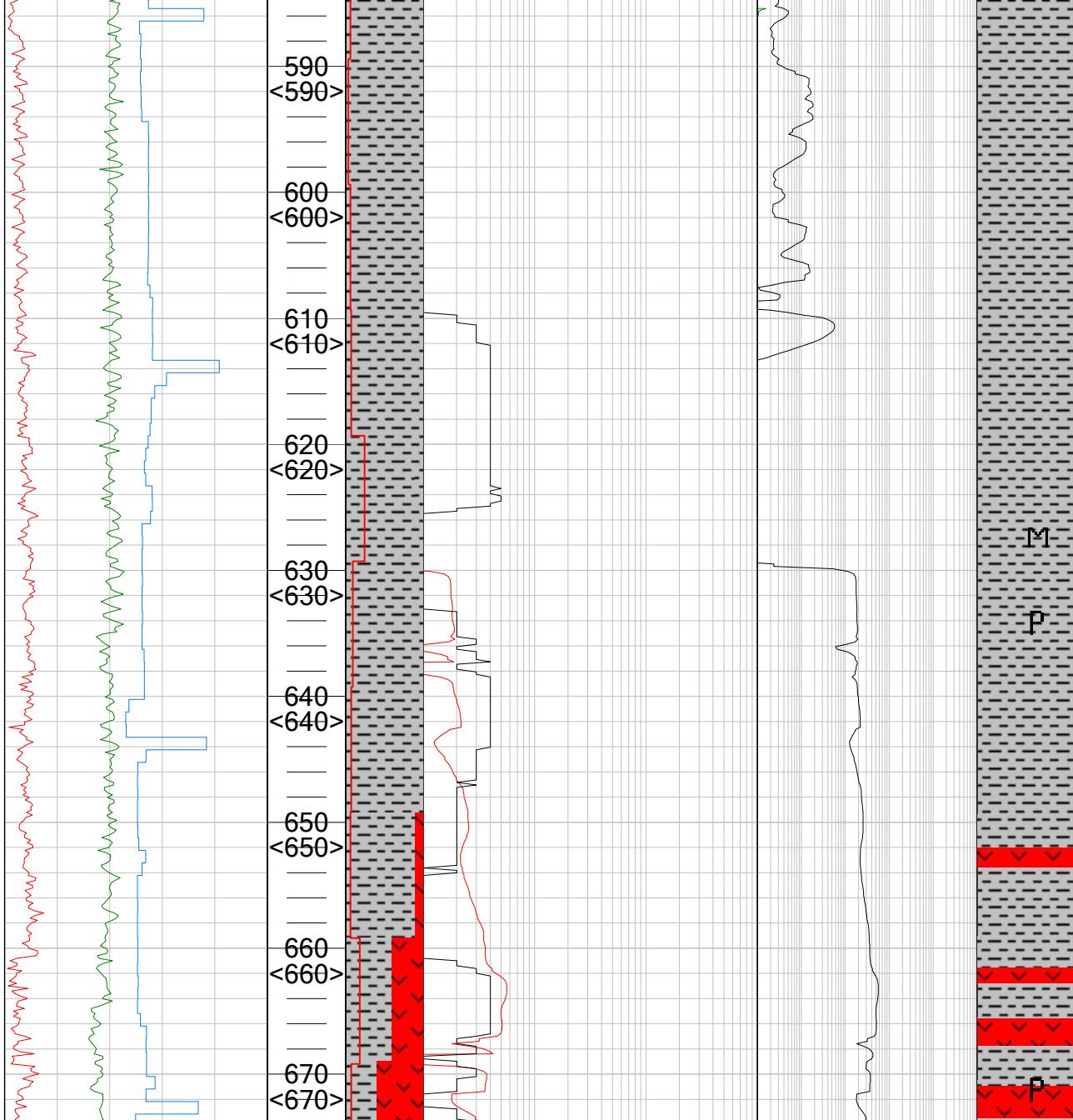
Claystone: Light grey to grey, occasionally light brown, light green, soft, amorphous.

Claystone: Light bluish grey to grey, occasionally light brown, light green, soft, amorphous to sub-blocky, sticky.

MW: 1.10 sg
PV: 24 cP
YP: 40 lbf/100ft²
ph: 9.8

MWD Survey @ 624.0 m MDRT
Azi: 348.27, inc 4.47°
TVD: 623.3 m

SPP: 165
WOB: 3.6 tons
F/ln: 3512 l/min



Claystone: Light bluish grey to light grey, occasionally greenish grey, soft, amorphous,

Claystone: Olive grey to brownish grey, amorphous to sub-blocky, soft, trace mica, trace pyrite

Claystone: Olive grey, occasionally reddish brown, soft to firm, sub-blocky, argillaceous, earthy, olive grey silty.

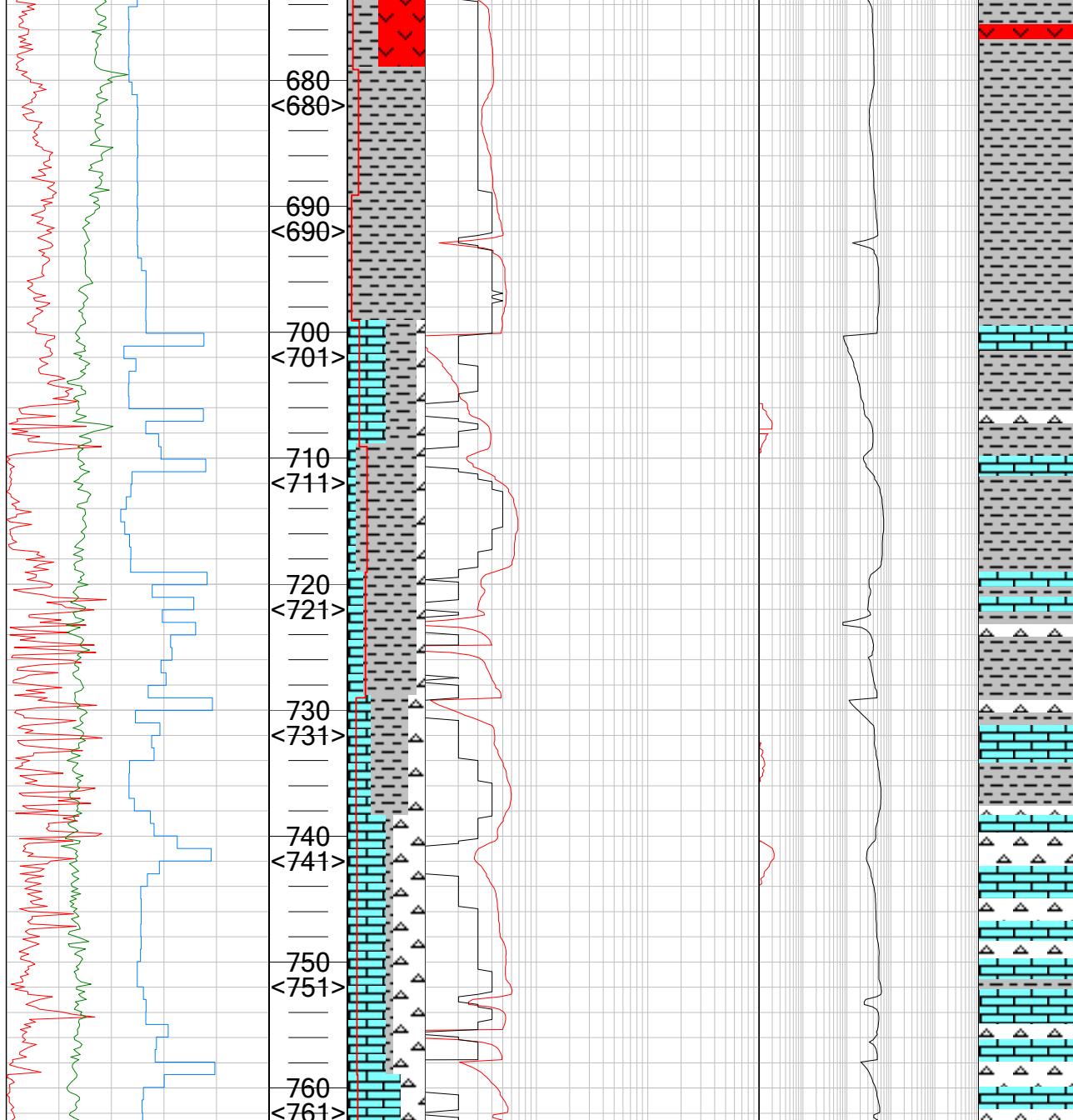
Tuff: Medium bluish grey, soft to firm, argillaceous, sub-blocky, very fine black crystals, sub-euhedral, trace pyrite, trace greyish orange very fine grained sandstone.

Top of BASEL DONGEN TUFFITE MBR
@ 667.0 m MDRT, 666.0 m TVD

Top of LANDEN FM

MWD Survey @ 682.0 m MDRT
Azi: 346.11, inc: 4.07°
TVD: 681.1 m

SPP 160 bar
RPM MM: 139
WOB: 3.9 tons
F/in: 3470 l/min



@ 682.0 m MDRT, 681.0 m TVD

Claystone: Olive grey, occasionally reddish brown, soft to firm, sub-blocky, argillaceous, occasionally silty.

Top of EKOFISK FM
@ 692.0 m MDRT, 691.0 m TVD

Limestone: off white to white, wackestone to packstone, soft to firm, hard in parts, chalky.
Chert: White to light grey, very hard, sub-elongate, angular.

Top of OMMELANDEN FM
@ 709.0 MDRT, 708.0 TVD

Chert: Black to dark grey, occasionally light brown, very hard, elongate, angular, vitreous

Chert: White to light grey, very hard, sub-elongate, angular.

Limestone: Light yellow to white, chalky, unconsolidated, amorphous.

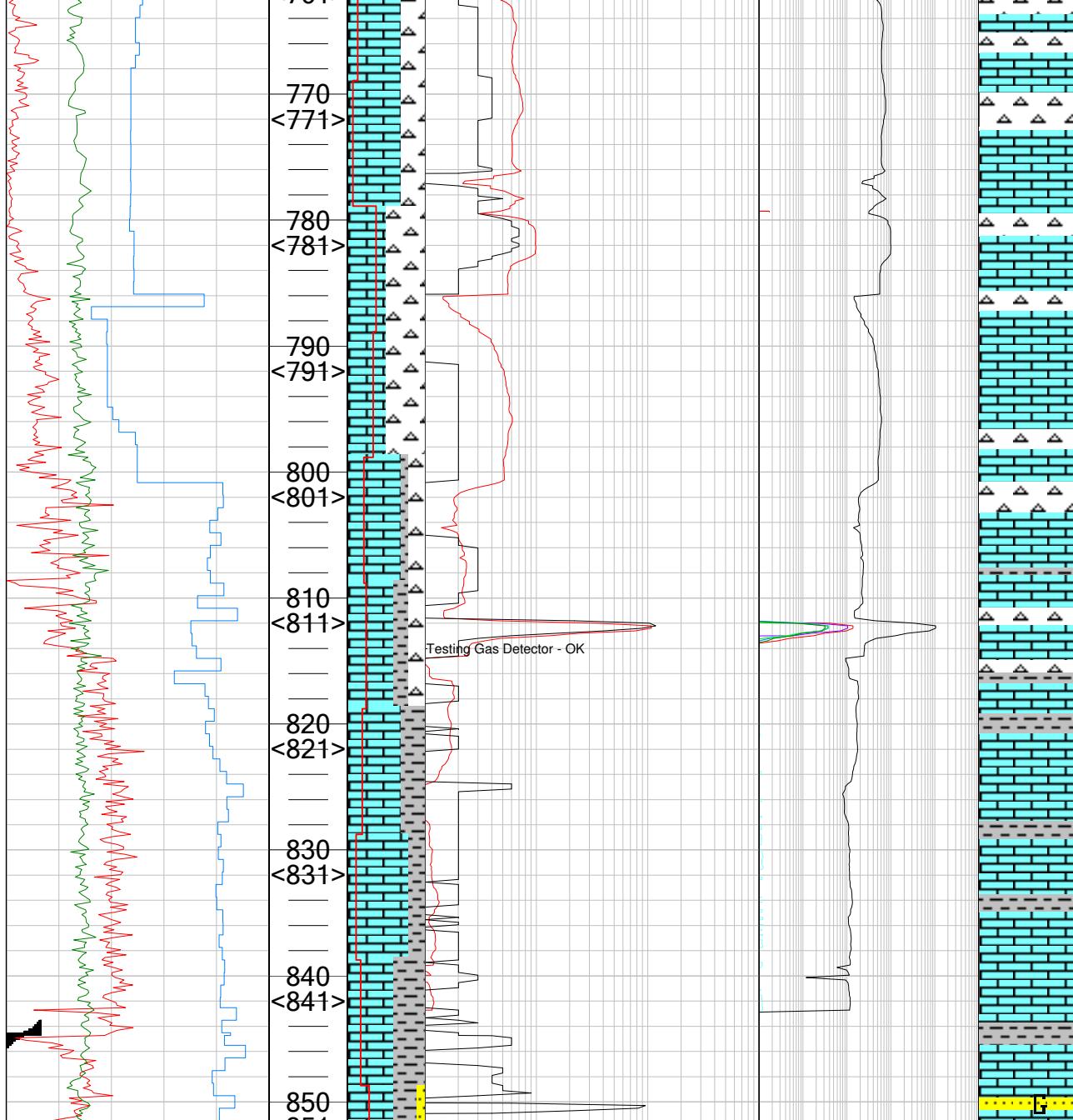
MWD Survey @ 767.0 m MDRT
Azi: 353.53, inc: 4.07°
TVD: 765.9 m

MW: 1.11 sg
PV: 16 cP
YP: 29 lbf/100ft²
pH: 9.4

MWD Survey @ 824.0 m MDRT
Azi: 351.05°, inc 4.15°
TVD: 822.77 m

Midnight depth on 22.05.2014:
843.0 m MDRT

Bit Run #2
17 ½" HCC Insert/Rollercone
SN: 5190800/EP620202
In @ 845.9 m, Out @ 1080.0 m



Chert: Black to dark grey, occasionally light brown, very hard, elongate, angular, vitreous

Limestone: Off white, milky, mudstone, soft, firm in places, glauconitic.

Claystone: Brownish grey to greenish grey, soft, sub-blocky to blocky, slightly calcareous.

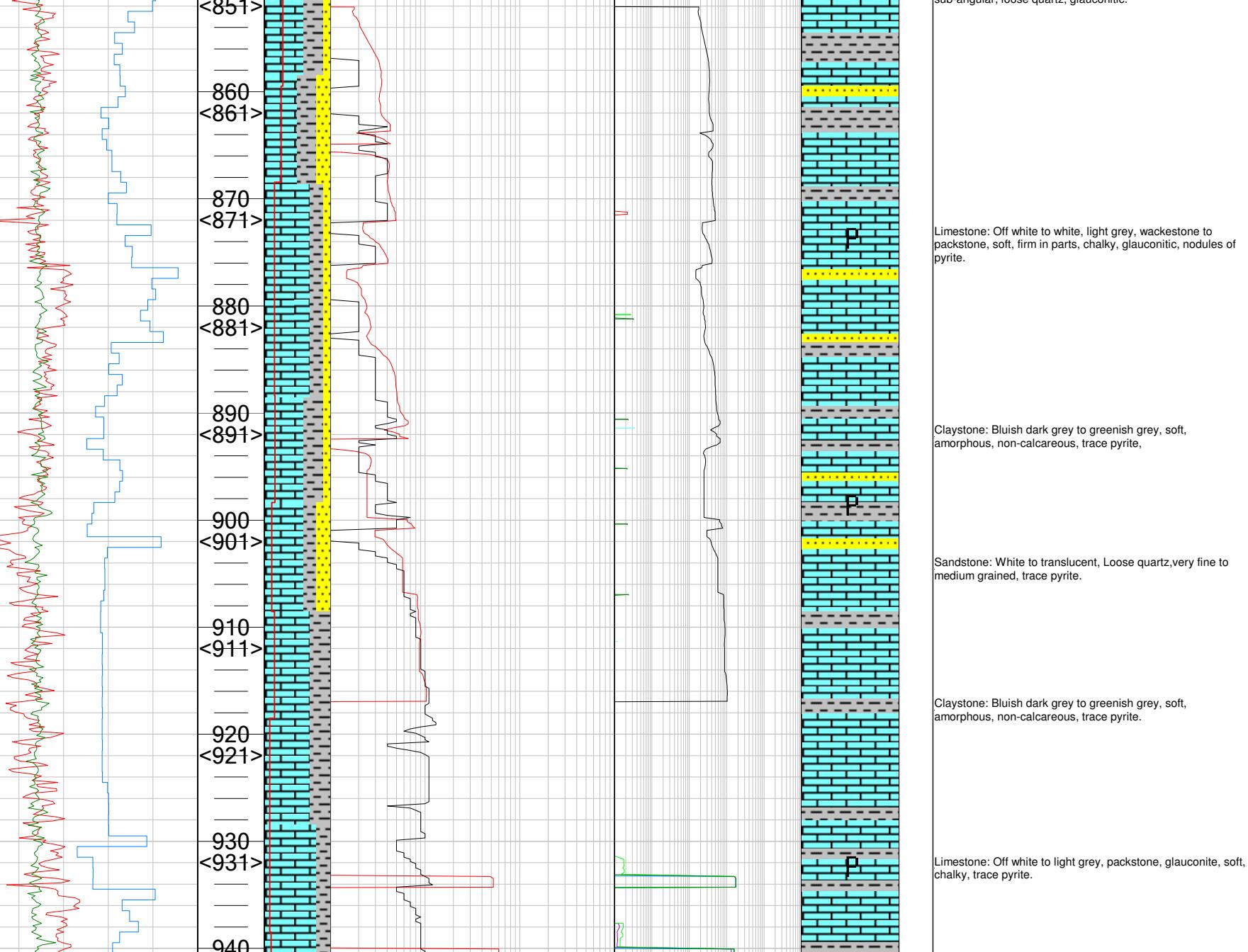
Sandstone: White to yellow, translucent to transparent, very fine to fine, moderately to well sorted, rounded to sub-angular, loose quartz, glauconitic

MWD Survey @ 883.0 m MDRT
Azi: 348.31, Inc: 4.09°
TVD: 881.6 m

MWD Survey @ 912.0 m MDRT
Azi: 345.98, Inc: 4.22°
TVD: 910.5 m

Midnight depth on 23.05.2014:
930.0 m MDRT

SPP: 186 bar
RPM MM: 140
WOB: 11.8 tons
F/in: 3510 J/min

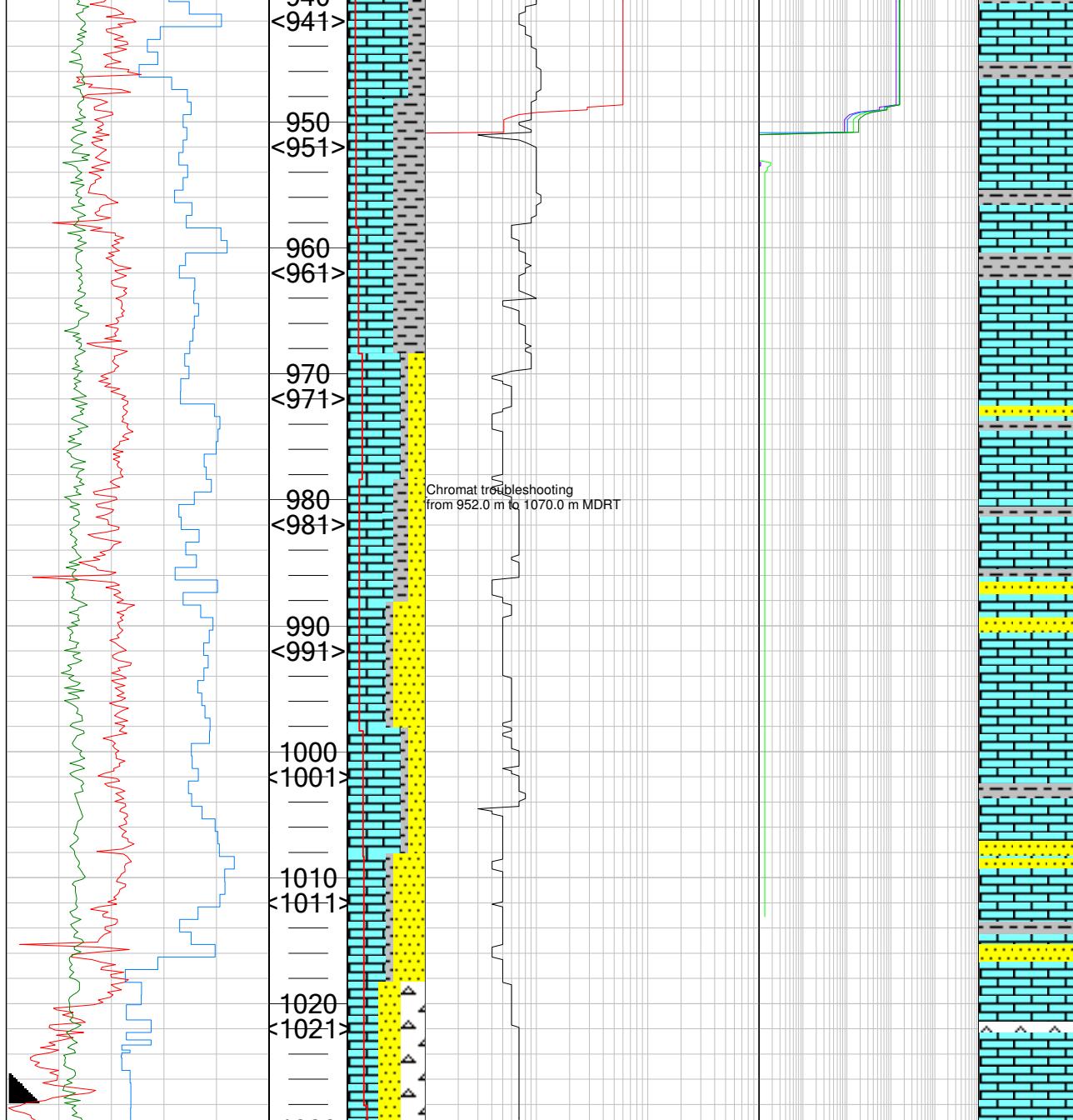


1 m. 3510 f/min

MWD Survey @ 969.0 m MDRT
Azi: 340.05°, inc 3.69°
TVD: 967.4 m

MWD Survey @ 1027.0 m MDRT
Azi: 339.92°, inc 3.58°
TVD: 1025.3 m

13 3/8" Casing set @ 1028.7 m MDRT



Claystone: Bluish dark grey to greenish grey, soft amorphous, non-calcareous, trace pyrite.

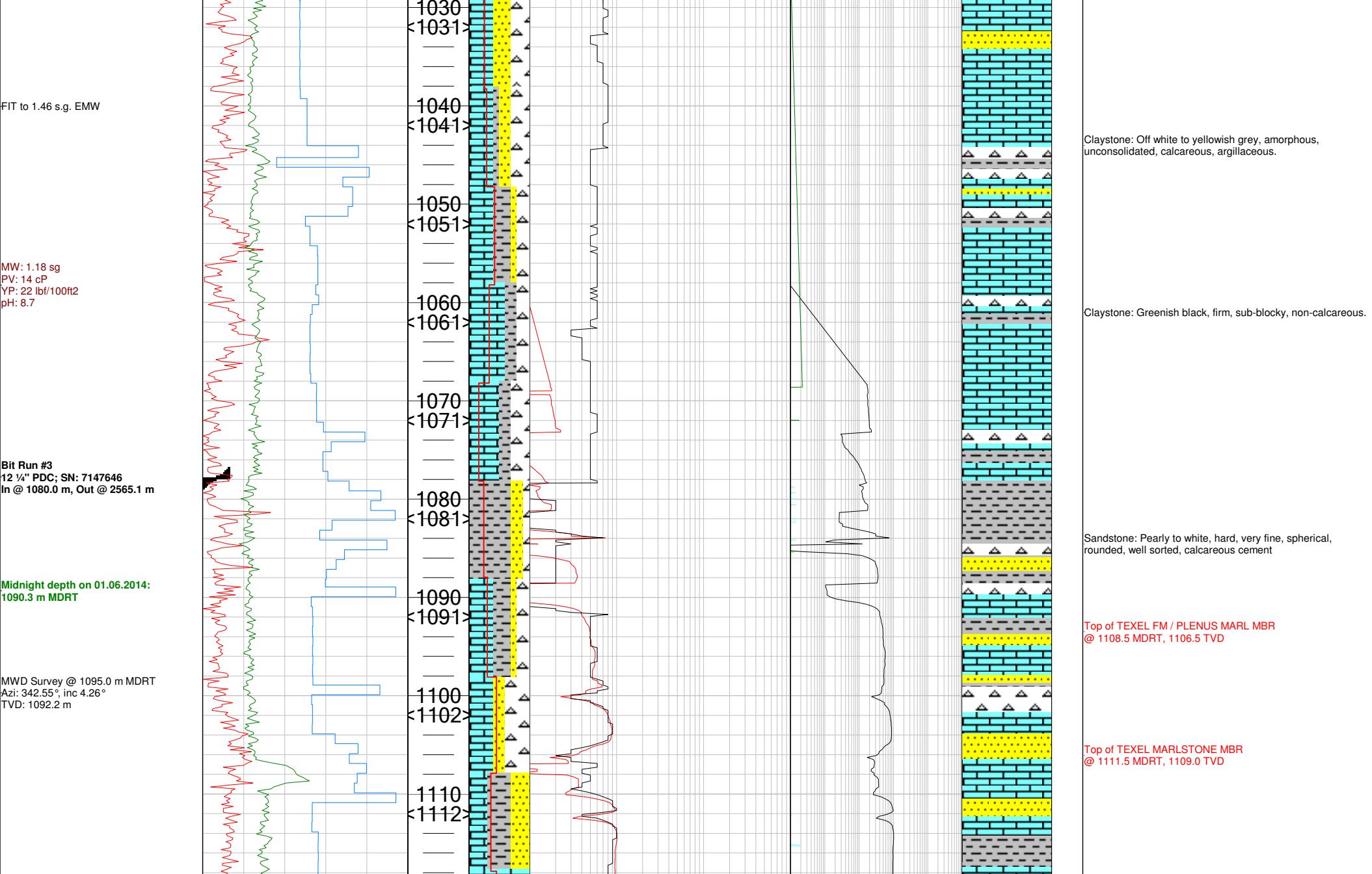
Sandstone: White to yellow, loose quartz, very fine to fine grained, well sorted.

Limestone: Off white to light grey, packstone, glauconite, soft, chalky, trace chert, trace pyrite.

Claystone: Bluish dark grey to greenish grey, soft amorphous, non-calcareous,

Sandstone: White to light grey, soft, very fine to medium grained, sub-spherical to spherical, moderately to well rounded, moderately sorted, calcareous matrix, matrix supported, poorly consolidated, translucent to off white quartz, trace pyrite

Chert: Black, white, brown to brownish grey, very hard, sub-elongate to elongate, angular.



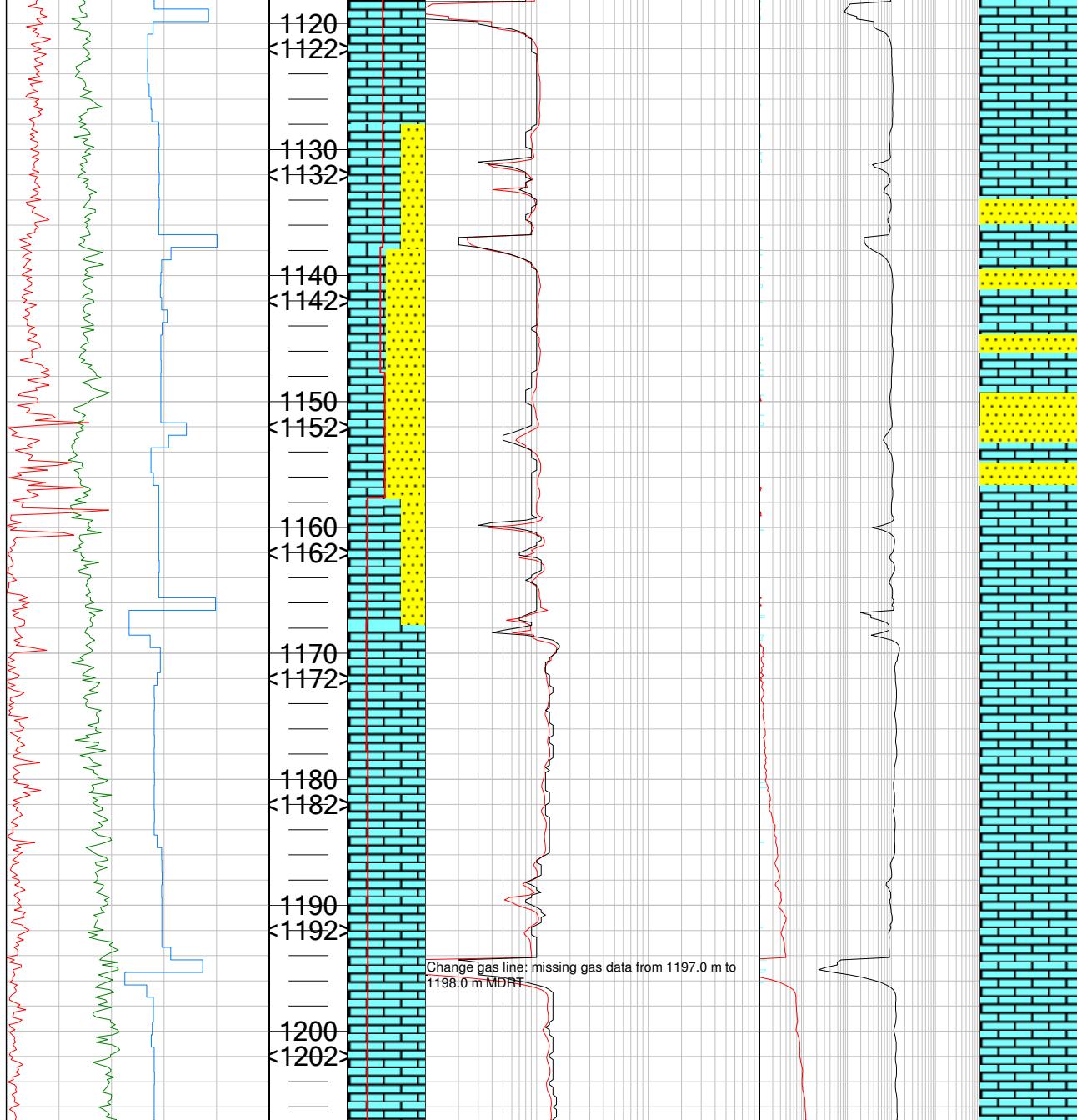
MWD Survey @ 1124.0 m MDRT
Azi:343.5°, inc 5.06°
TVD: 1121.1 m

SPP: 200 bar
RPM MM: 92
WOB: 11.4 tons
F/in: 3346 l/min

MWD Survey @ 1153.0 m MDRT
Azi: 345.52°, inc 6.30°
TVD: 1150.0 m

MWD Survey @ 1181.0 m MDRT
Azi: 346.25°, inc 7.69°
TVD: 1177.79 m

MWD Survey @ 1210.0 m MDRT



Marl: Light to medium grey, soft, occasionally firm, sub-blocky to blocky, calcareous.

Sandstone: Pearly to off white, black, hard, very fine, sub-elongate, sub-rounded, well sorted, calcareous cement.

Top of TEXEL GREENSAND
@ 1152.0 MDRT, 1150.0 TVD

Top of HOLLAND FM / UPPER HOLLAND MARL
@ 1165.0 MDRT, 1162.0 TVD

Marl: Light to medium grey, soft, sub-blocky, occasionally amorphous, calcareous.

Azi: 347.1°, inc 8.22°
TVD: 1206.5 m

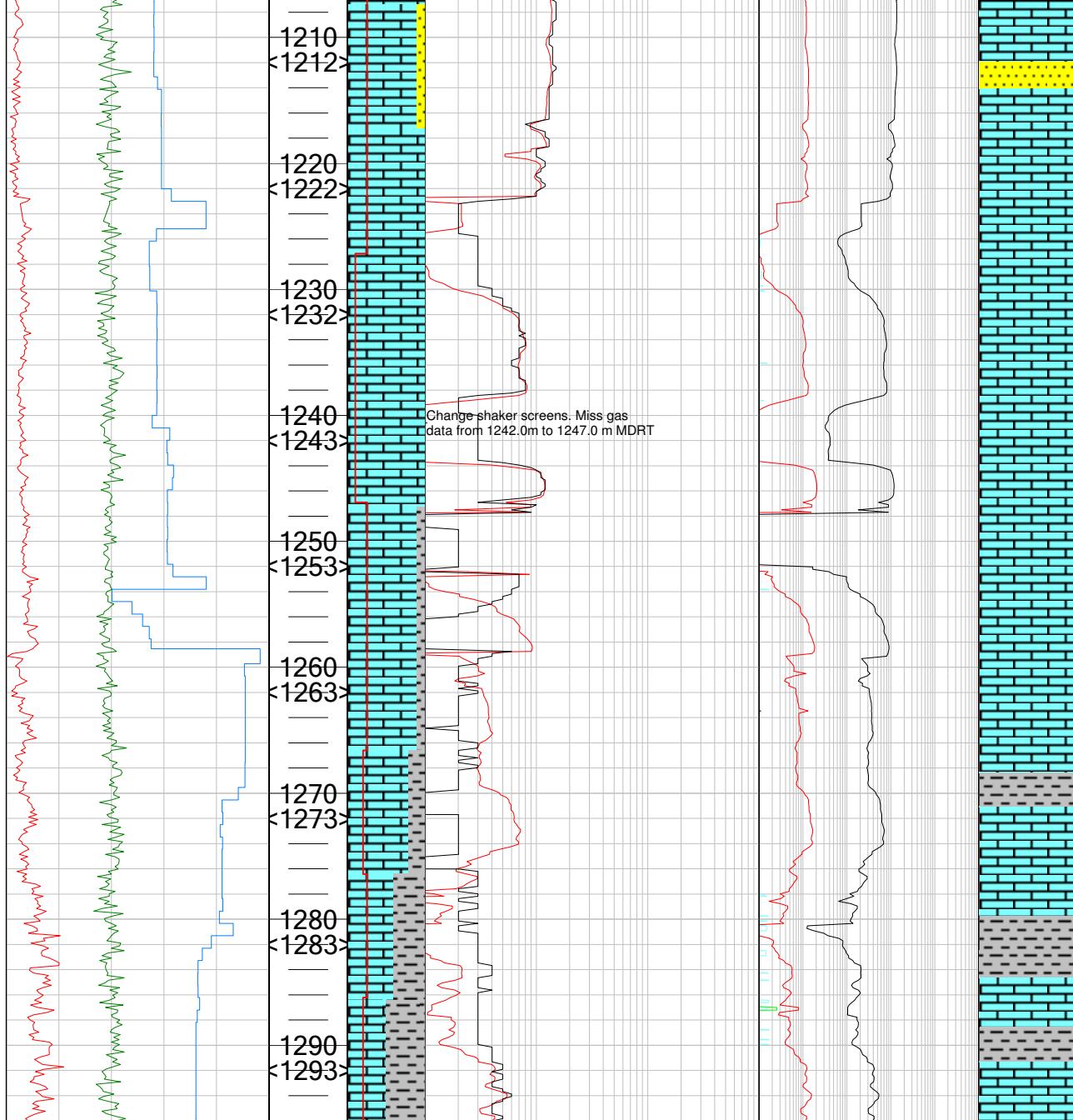
MWD Survey @ 1245.0 m MDRT
Azi: 348.38°, inc 9.57°
TVD: 1241.1 m

MW: 1.16 sg
PV: 26 cP
YP: 33 lbf/100ft²
pH: 9.4

MWD Survey @ 1268.0 m MDRT
Azi: 347.9°, inc 10.39°
TVD: 1264.6 m

MWD Survey @ 1297.0 m MDRT
Azi: 348.78°, inc 14.09°
TVD: 1320.5 m

Midnight depth on 02.06.2014:
1299.0 m MDRT



Marl: Light to medium grey, very soft, sub-blocky, calcareous.

Claystone: Grey to medium grey, soft to firm, blocky to sub-blocky, in parts grading to shale, occasionally argillaceous, calcareous.

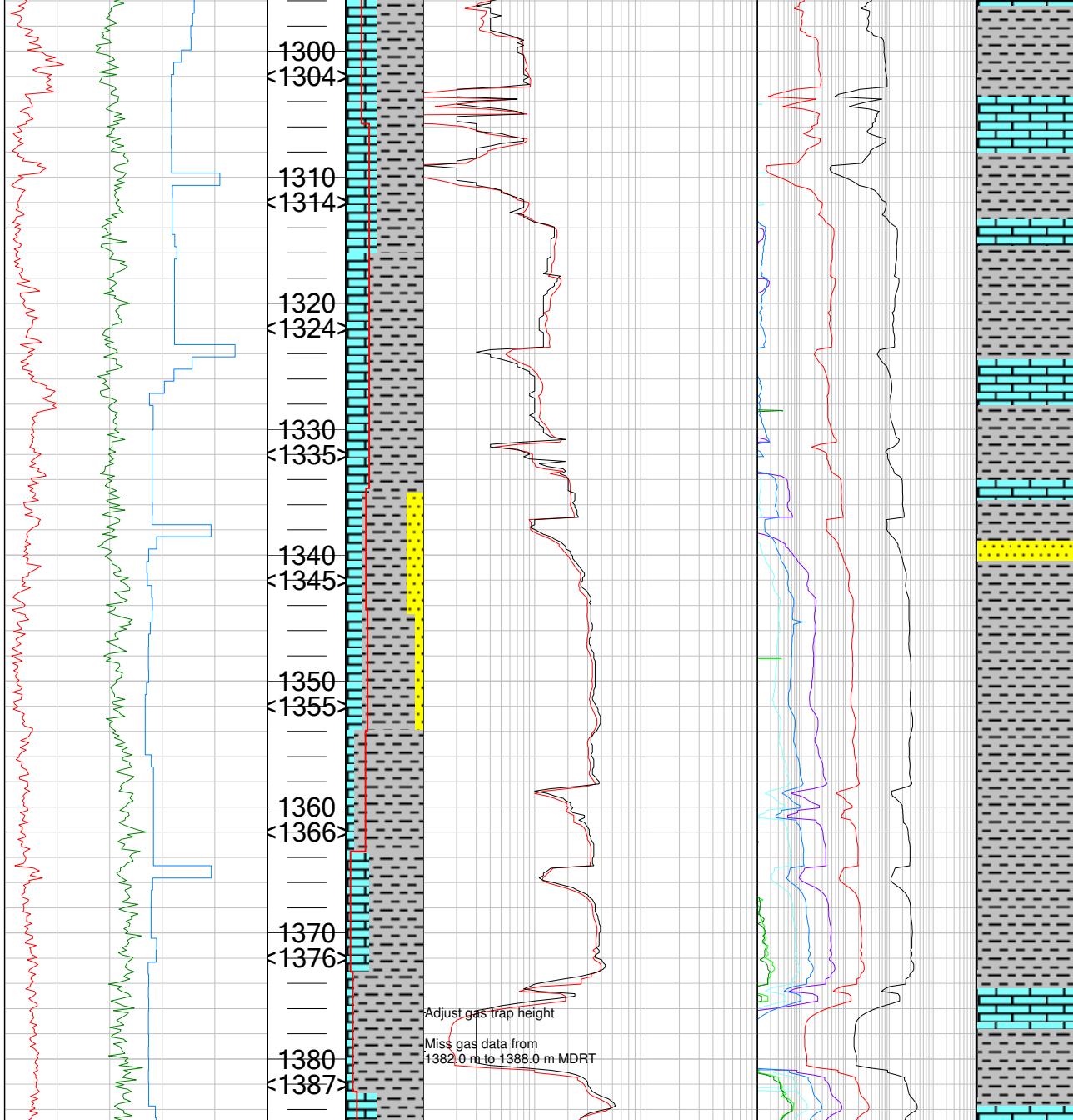
1299.0 m MDRT

MWD Survey @ 1326.0 m MDRT
Azi: 348.7°, inc 14.09°
TVD: 1320.6 m

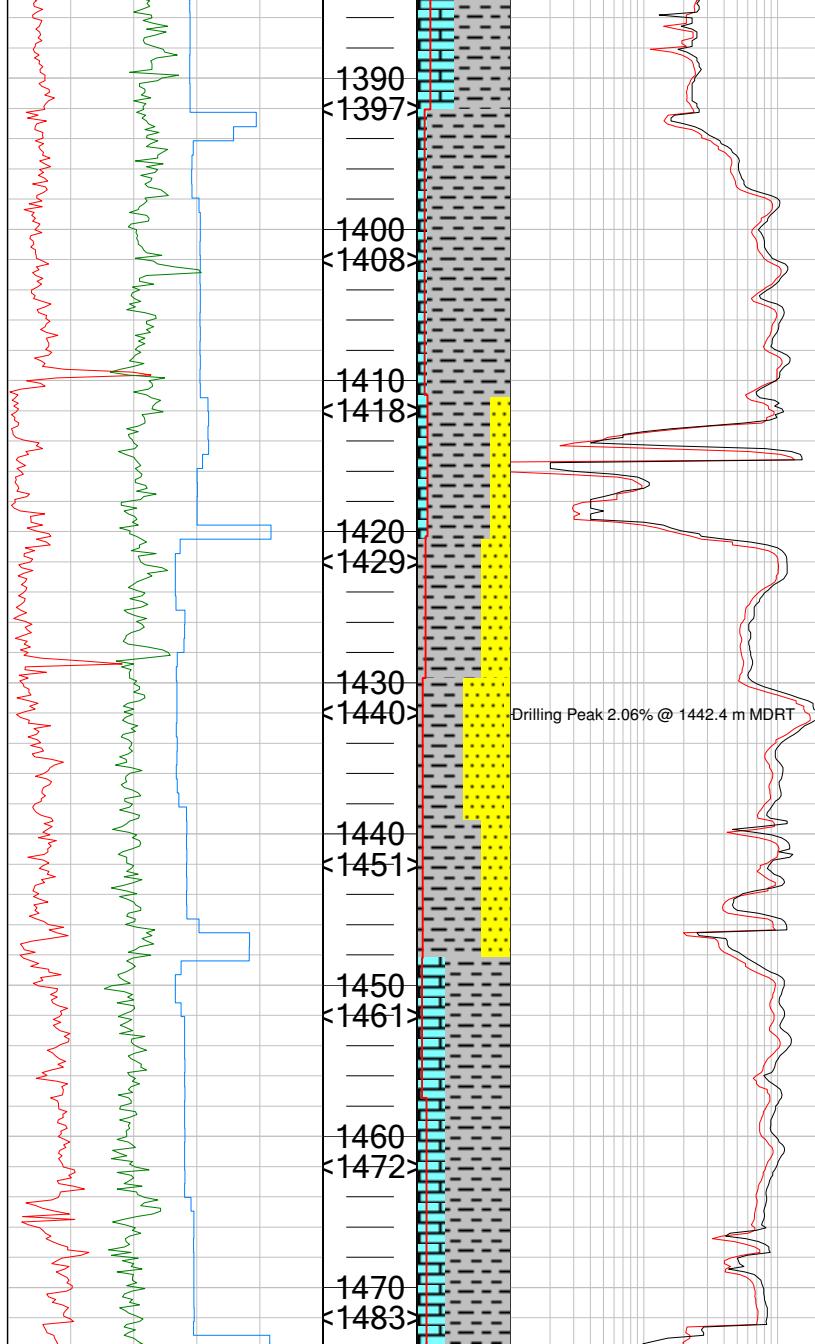
SPP: 234 bar
WOB: 3.7 tons
F/in: 3182 l/min

MWD Survey @ 1354.0 m MDRT
Azi: 349.51°, inc 15.93°
TVD: 1347.5 m

MWD Survey @ 1383.0 m MDRT
Azi: 350.4°, inc 17.73°
TVD: 1375.3 m



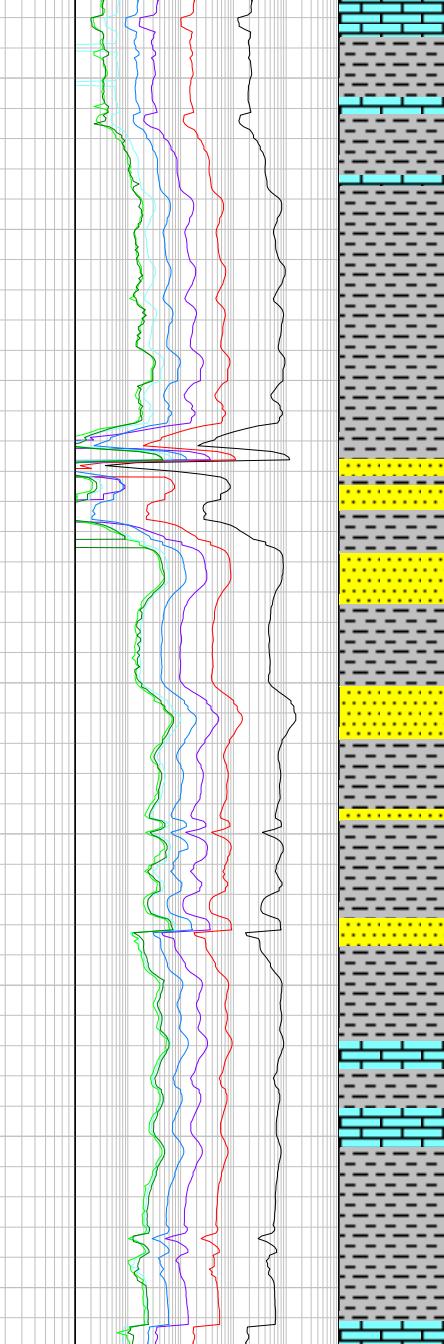
MWD Survey @ 1413.0 m MDRT
Azi: 350.6°, inc 19.60°
TVD: 1403.7 m



MWD Survey @ 1441.0 m MDRT
Azi: 351.06°, inc 21.30°
TVD: 1429.9 m

MW: 1.16 sg
PV: 29 cP
YP: 36 lbf/100ft²
pH: 8.8

MWD Survey @ 1470.0 m MDRT
Azi: 350.38°, inc 23.30°
TVD: 1456.8 m

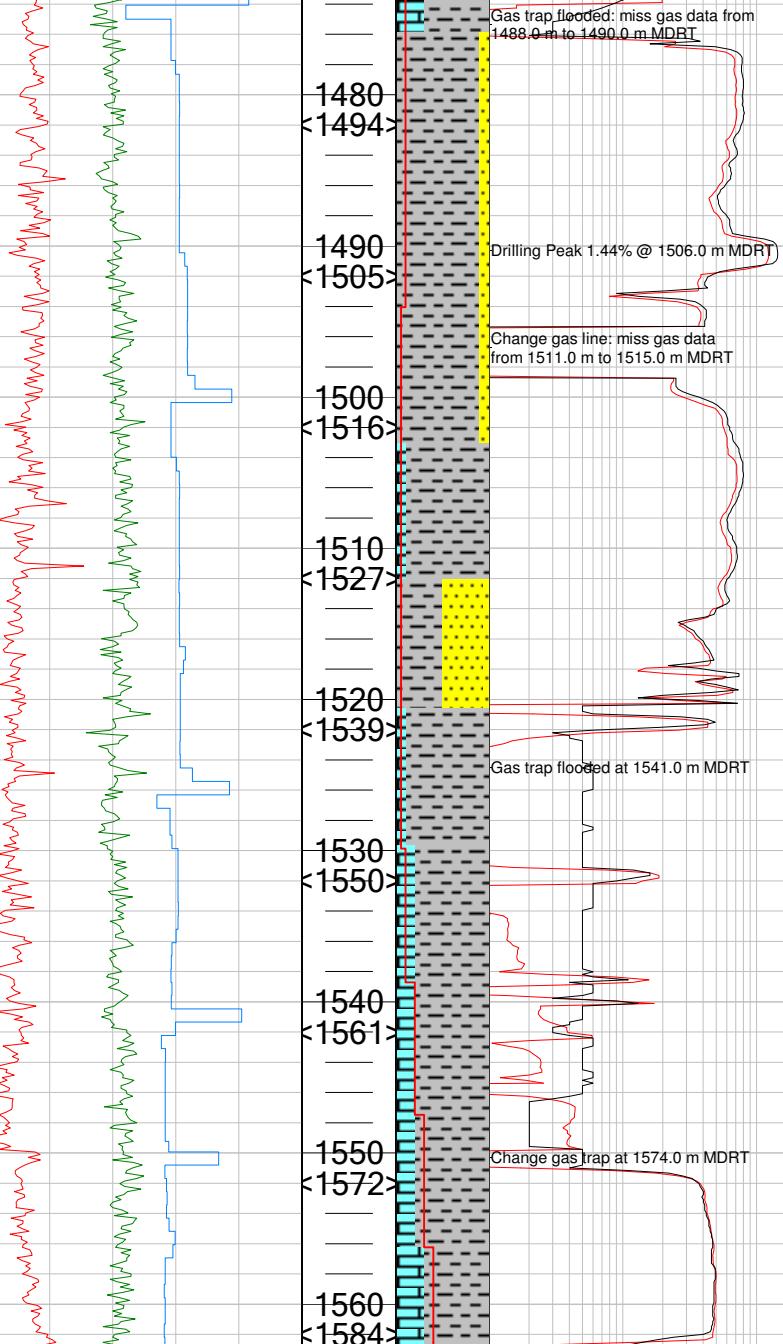


Top of HOLLAND GREENSAND MBR
@ 1406.0 m MDRT, 1398.0 m TVD

Sandstone: Unconsolidated sands, pearly, translucent, very fine, well sorted.

Claystone: Medium to dark grey, soft to firm, sub-blocky, slightly calcareous.

MWD Survey @ 1499.0 m MDRT
Azi: 349.73°, inc 24.73°
TVD: 1483.2 m

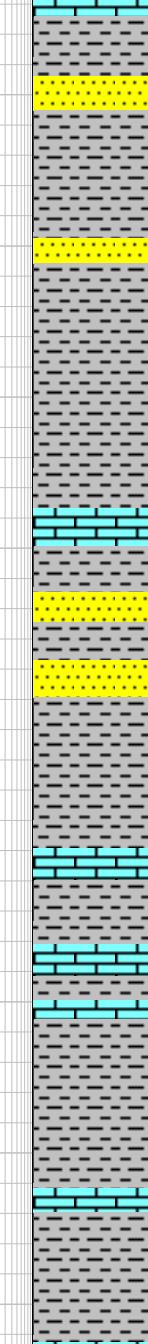
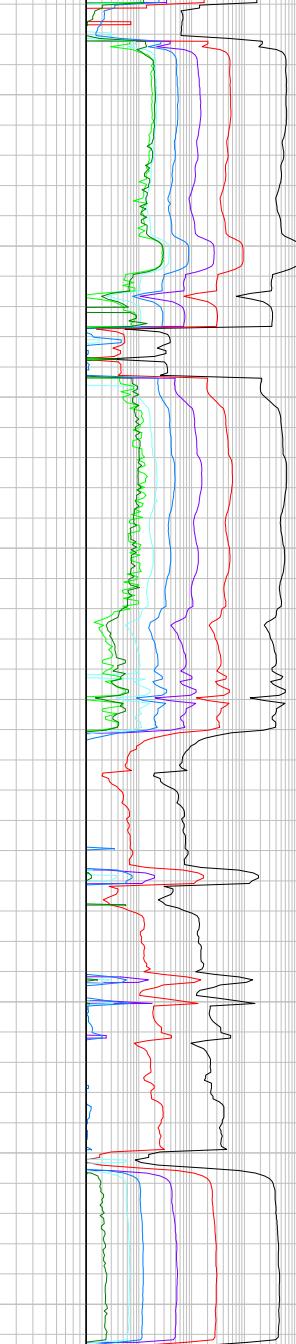


MWD Survey @ 1527.0 m MDRT
Azi: 349.12°, inc 26.35°
TVD: 1508.5 m

SPP: 299 bar
WOB: 5.5 tons
F/in: 3513 l/min

MWD Survey @ 1556.0 m MDRT
Azi: 348.7°, inc 27.88°
TVD: 1535.2 m

MWD Survey @ 1585.0 m MDRT
Azi: 347.69°, inc 29.63°
TVD: 1559.7 m



Sandstone: Pearly to off white, translucent, very fine, very well sorted, loose, unconsolidated sands.

Claystone: Medium to dark grey, soft to firm, sub-blocky, slightly calcareous.

Claystone: Light grey to medium dark grey, soft to firm, in parts amorphous, sub-blocky, slightly calcareous.

Top of LOWER HOLLAND MARL MBR
@ 1563.0 m MDRT, 1542.0 m TVD

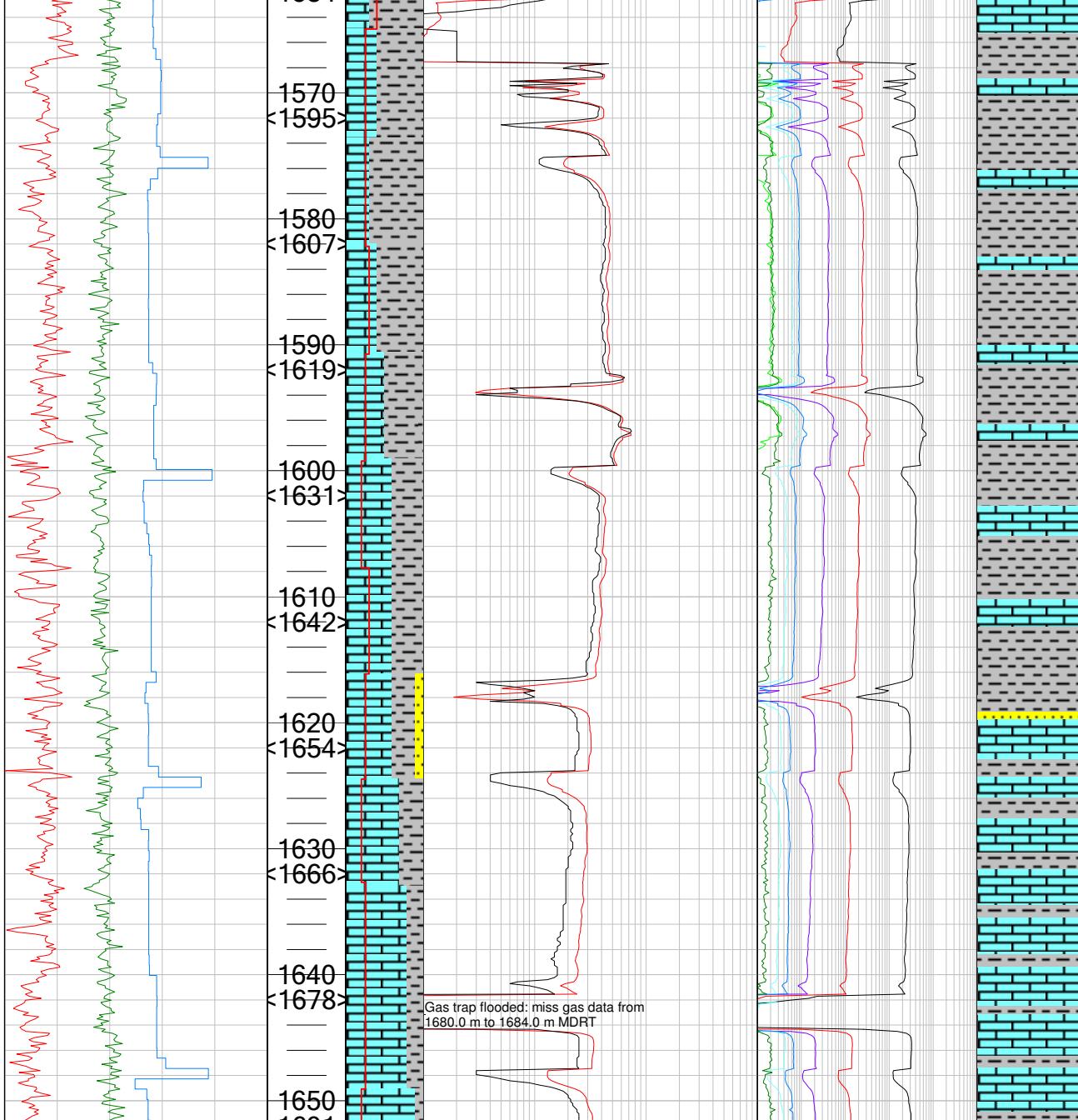
Claystone: Medium grey to dark grey, firm, in parts moderately hard, in parts fissile, sub-blocky, bituminous.

MW: 1.17 sg
PV: 34 cP
YP: 38 lbf/100ft²
pH: 8.4

MWD Survey @ 1643.0 m MDRT
Azi: 348.44°, inc 32.56°
TVD: 1610.26 m

Midnight depth on 03.06.2014:
1648.0 m MDRT

MWD Survey @ 1671.0 m MDRT
Azi: 349.33° Inc 34.09°
TVD: 1633.7 m



Marl: Light to medium grey, soft to firm, sub-blocky, calcareous.

Claystone: Medium grey to dark grey, firm, in parts moderately hard, in parts fissile, sub-blocky, calcareous.

Sandstone: Greenish grey to dark grey, black, hard, very fine, argillaceous, sub-rounded, well sorted, glauconitic.

Marl: Light to medium grey, soft to firm, sub-blocky, calcareous.

Claystone: Medium grey to dark grey, firm, in parts moderately hard, in parts fissile, sub-blocky, calcareous.

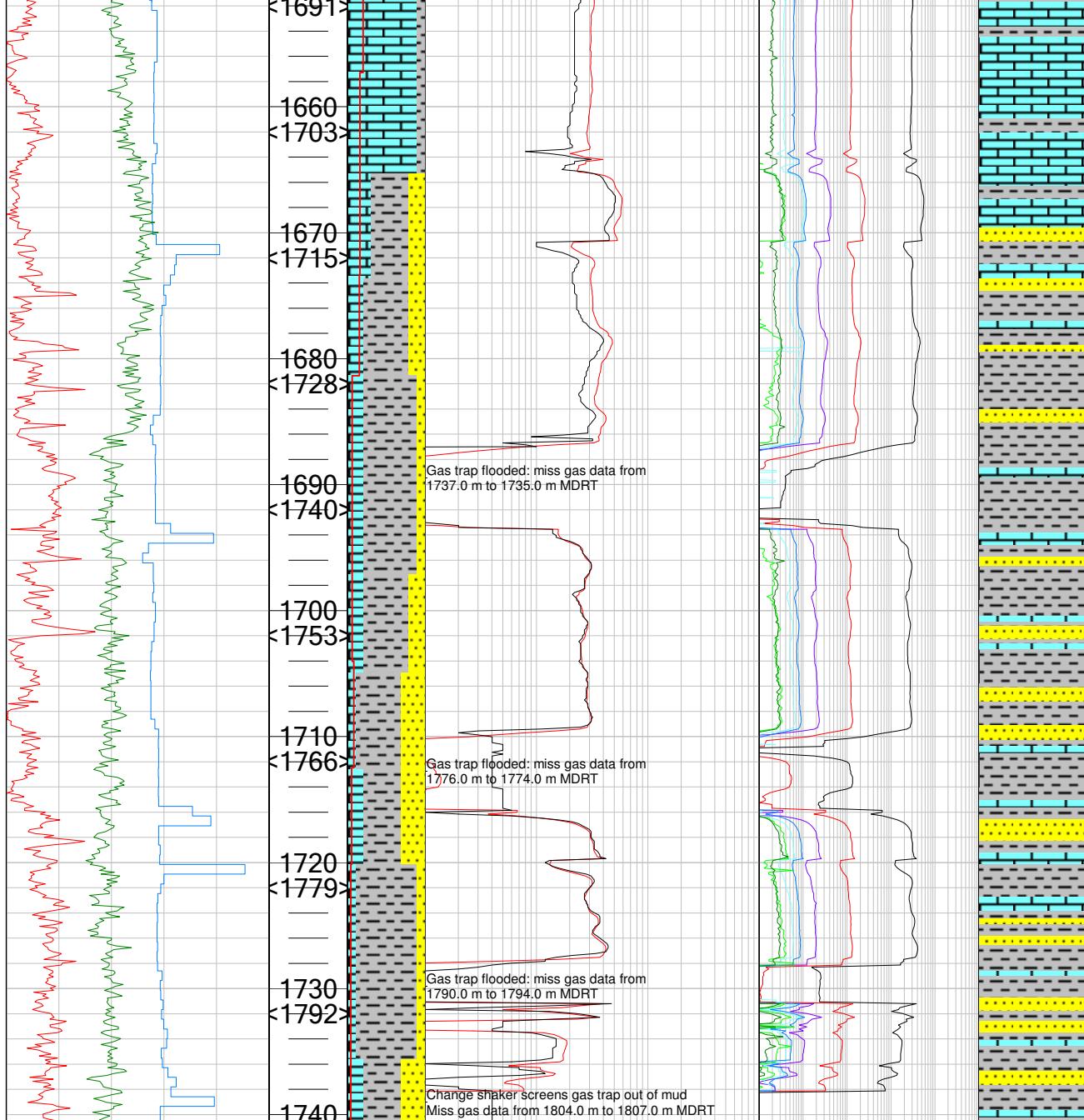
MWD Survey @ 1700 m MDRT
Azi: 349.32 inc 35.71
TVD: 1657.4 m

MWD Survey @ 1729.0 m MDRT
Azi: 349.36°, inc 37.44°
TVD: 1680.7 m

SPP: 315 bar, F/lm: 3505 l/min
Trd: 13 KNm, WOB: 5.8 tons

MWD Survey @ 1758.0 m MDRT
Azi: 347.08°, inc 39.76°
TVD: 1703.4 m

MWD Survey @ 1786.0 m MDRT
Azi: 345.01°, inc 39.76°
TVD: 1724.9 m



Sandstone: Greenish grey to dark grey, black, hard, very fine, argillaceous, sub-rounded, well sorted, glauconitic, lignitic.

Top of VLIELAND SANDSTONE FM / DE LIER SANDSTONE MBR @ 1736.0 m MDRT, 1686.0 m TVD

Claystone: Light to medium grey, soft, amorphous, very sticky, sandy, calcareous.

Sandstone: Light brown, light grey, hard, very fine to silty, sub-elongate, sub-rounded, moderately sorted, good siliceous cement.

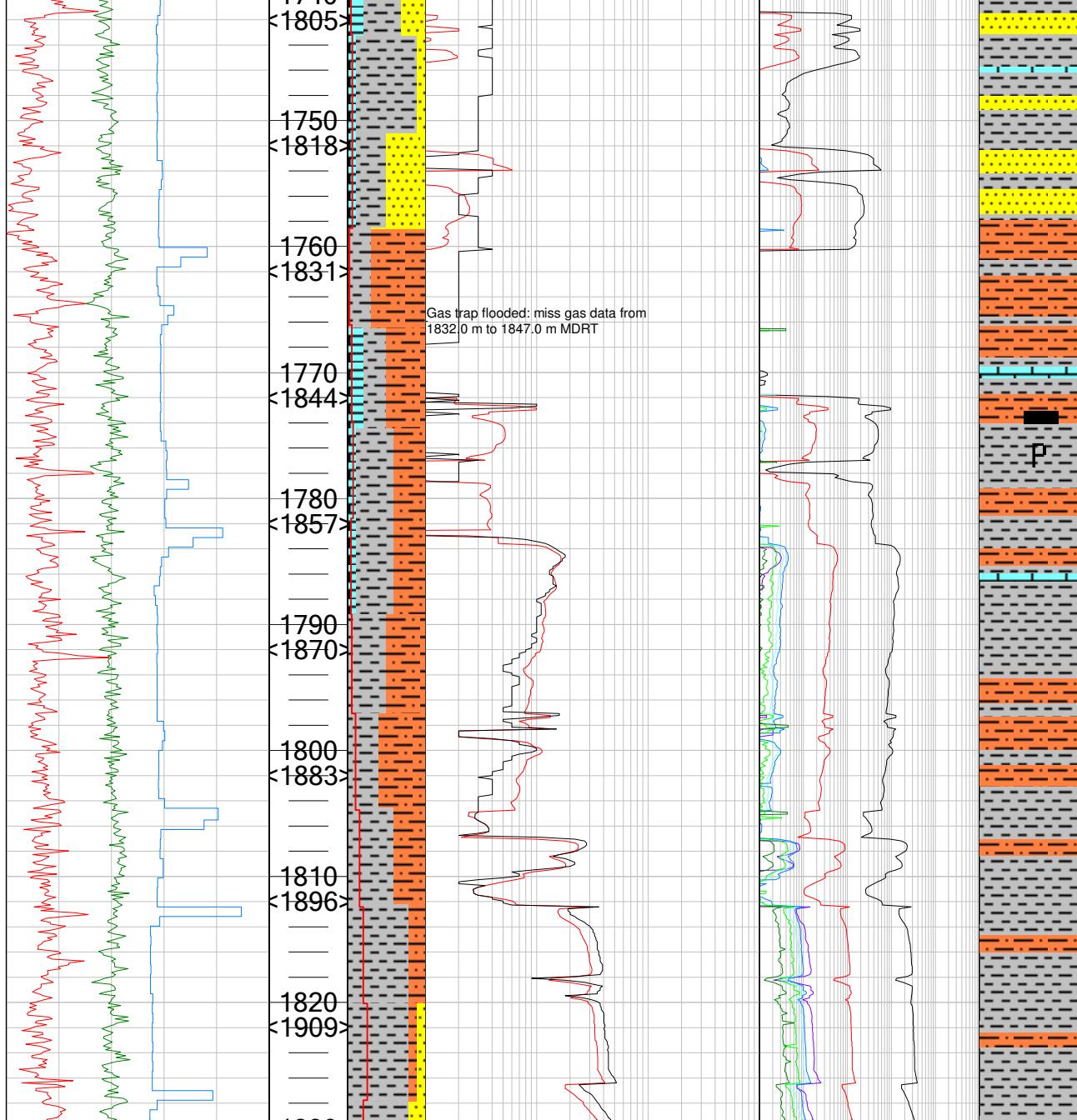
MWD Survey @ 1815.0 m MDRT
Azi: 345.59°, inc 39.84°
TVD: 1746..3 m

MWD Survey @ 1844.0 m MDRT
Azi: 345.76°, inc 39.87°
TVD: 1768.6 m

MW: 1.18sg
PV: 34 cP
YP: 39 lbf/100ft²
pH: 8.4

MWD Survey @ 1873.0 m MDRT
Azi: 345.73°, inc 39.85°
TVD: 1790.8 m

MWD Survey @ 1902.0 m MDRT
Azi: 346.81°, inc 39.95°
TVD: 1813.1 m



Sandstone: Light to medium brown, firm to hard, occasionally very hard, very fine to silty, sub-elongate, sub-rounded, well sorted, good siliceous cement.

Top of VLIELAND CLAY MBR
@ 1838.0 m MDRT, 1765.0 m TVD

Siltstone: Light brown, firm, silty to very fine, sub-elongate, sub-rounded, well sorted, trace lignite, trace pyrite.

Claystone: Light grey to medium grey, soft, amorphous, silty, occasionally sandy, sticky, slightly calcareous.

MWD Survey @ 1931.0 m MDRT
Azi: 347.15°, inc 39.83°
TVD: 1835.3 m

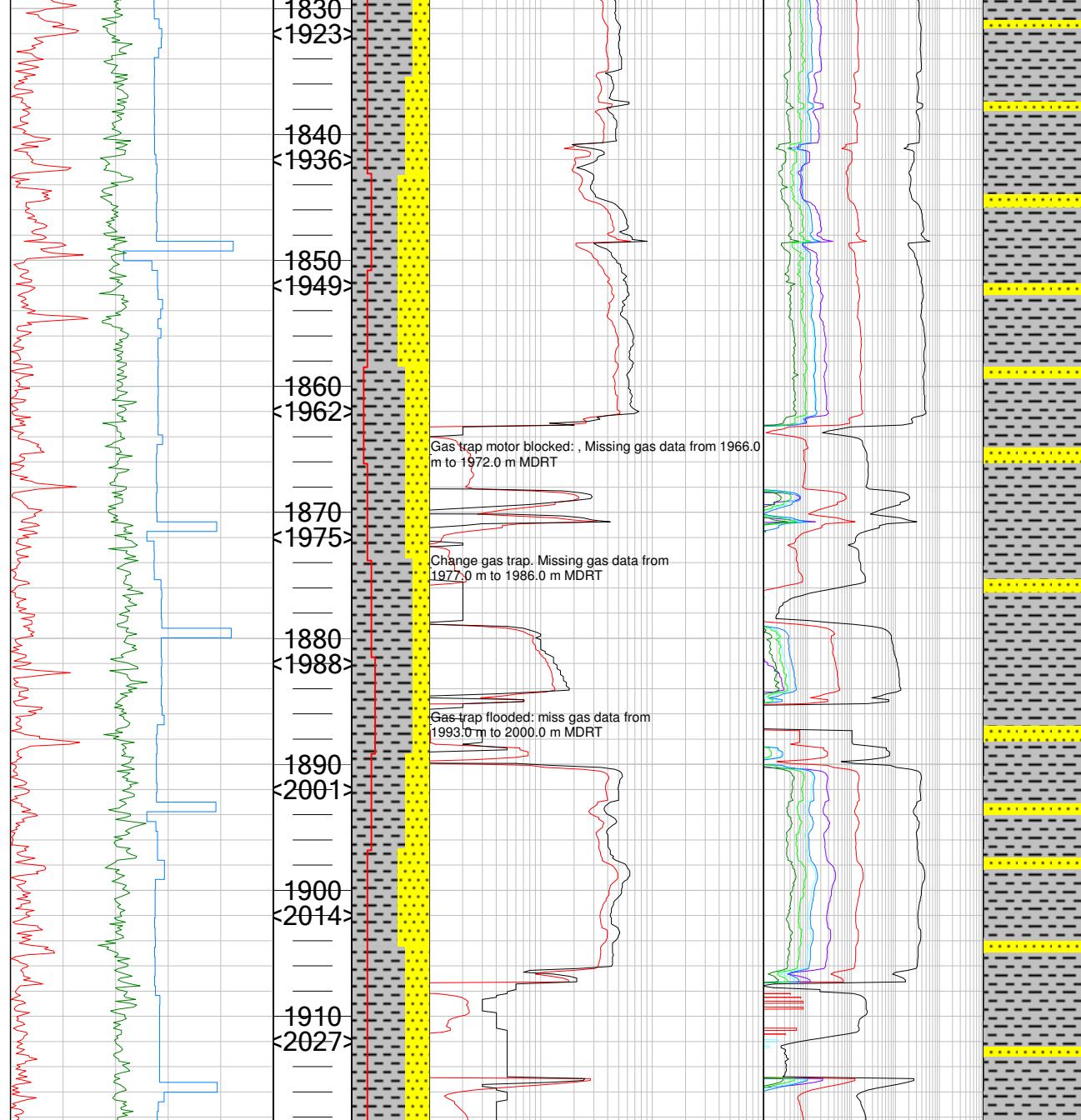
SPP: 329 bar, F/In: 3422 l/min
Trq: 17 KNm, WOB: 6.4 tons

MWD Survey @ 1960.0 m MDRT
Azi: 347.2 °, inc 39.85°
TVD: 1858.5 m

MWD Survey @ 1988.0 m MDRT
Azi: 348.84°, inc 39.87°
TVD: 1879.1 m

Midnight depth on 04.06.2014:
2002.0 m MDRT

MWD Survey @ 2017.0 m MDRT
Azi: 349.09°, inc 39.94°
TVD: 1901.3 m



Sandstone: Greenish grey to dark grey, in parts brownish grey, friable, occasionally hard, very fine to medium grain, sub-angular to sub-rounded, moderately sorted, hi glauconitic and lignitic.

Claystone: Light grey to medium grey, soft, amorphous, silty, occasionally sandy, sticky, slightly calcareous.

Sandstone: Greenish grey to dark grey, soft, occasionally hard, very fine to medium grain, sub-rounded, moderately sorted, glauconitic and lignitic.

MWD Survey @ 2046.0 m MDRT
Azi: 349.6°, inc 39.81°
TVD: 1923.6 m

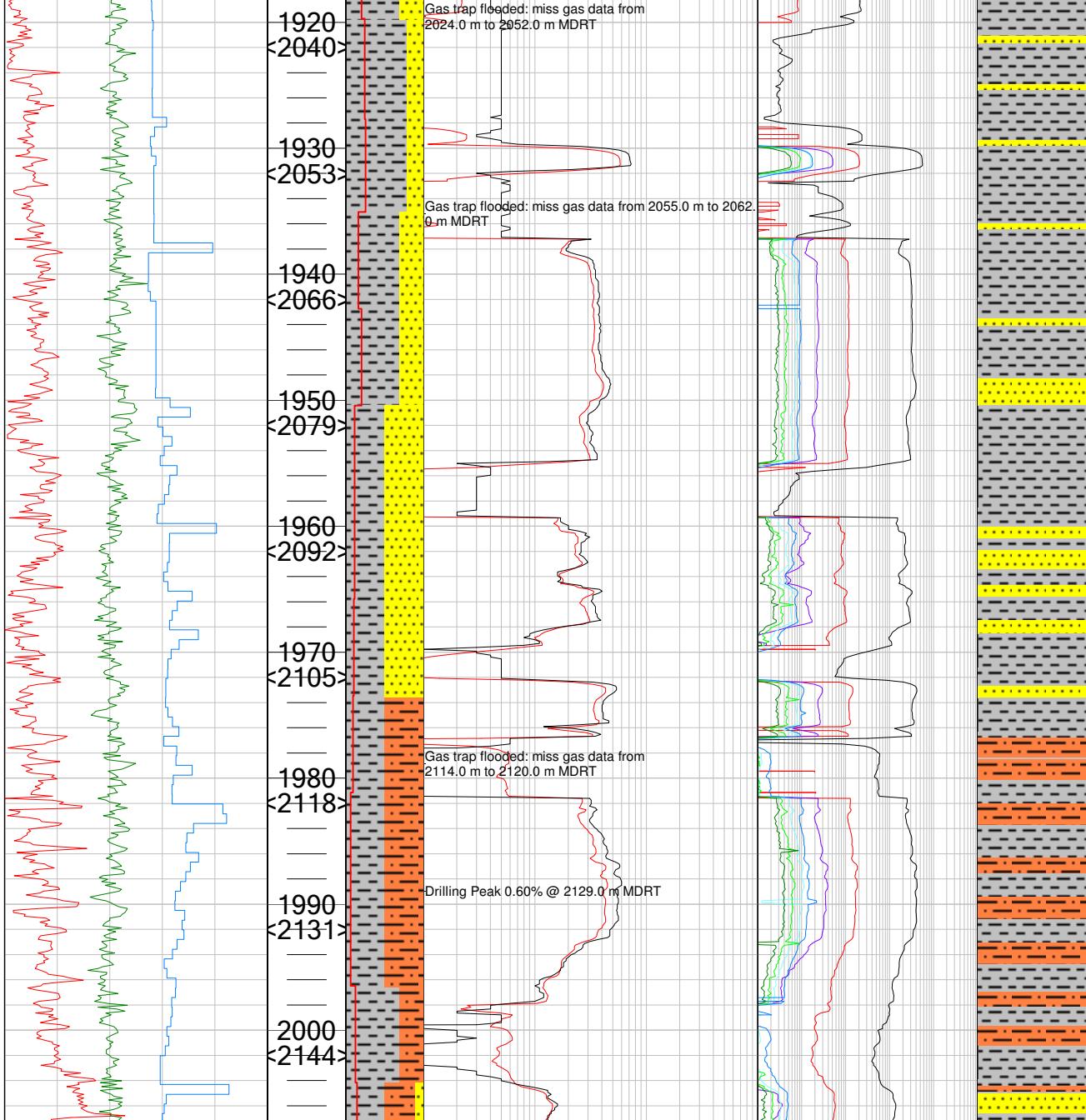
MW: 1.20 sg
PV: 31 cP
YP: 32 lbf/100ft²
pH: 8.1

MWD Survey @ 2075.0 m MDRT
Azi: 349.5°, inc 39.85°
TVD: 1945.6 m

MWD Survey @ 2104.0 m MDRT
Azi: 349.91°, inc 39.83°
TVD: 1968.1 m

MWD Survey
@ 2132.0 m MDRT
Azi: 349.7°, inc 39.85°
TVD: 1989.61 m

SPP: 333 bar, F/ln: 3343 l/min
Trq: 19 KNm, WOB: 4.1 tons



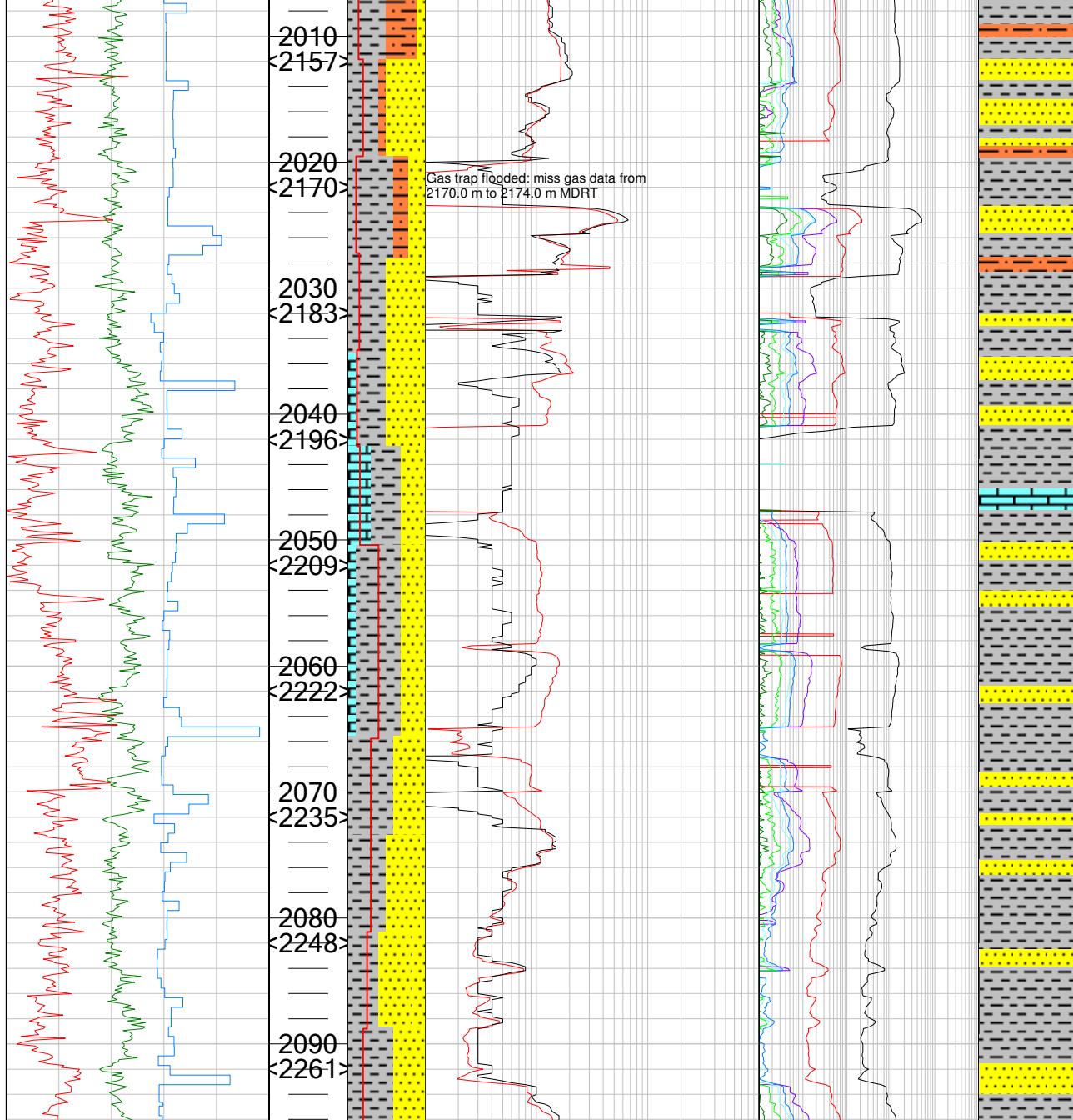
Claystone: Light grey to medium grey, soft, amorphous, silty, occasionally sandy, sticky, slightly calcareous.

Top of BERKEL SANDSTONE MBR @ 2084.0 m MDRT, 1954.0 m TVD

Sandstone: Light grey, very fine to silty, sub-spherical, sub-rounded, good siliceous cement.

Siltstone: Light grey to off white, firm to very hard, very fine to silty, sub-spherical, sub-rounded, good siliceous cement.

MWD Survey @ 2161.0 m MDRT
Azi: 350.33°, inc 39.82°
TVD: 2011.9 m



MWD Survey @ 2190.0 m MDRT
Azi: 348.73°, inc 39.81°
TVD: 2034.2 m

MWD Survey @ 2219.0 m MDRT
Azi: *348.23°, inc 39.87°
TVD: 2057.3 m

MWD Survey @ 2248. m MDRT
Azi: 248.25°, inc 39.86°
TVD: 2080.9 m

YP: 21 lbf/100ft²
pH: 8.7

MWD Survey @ 2277.0 m MDRT
Azi: 348.90°, inc 39.79°
TVD: 2101.8 m

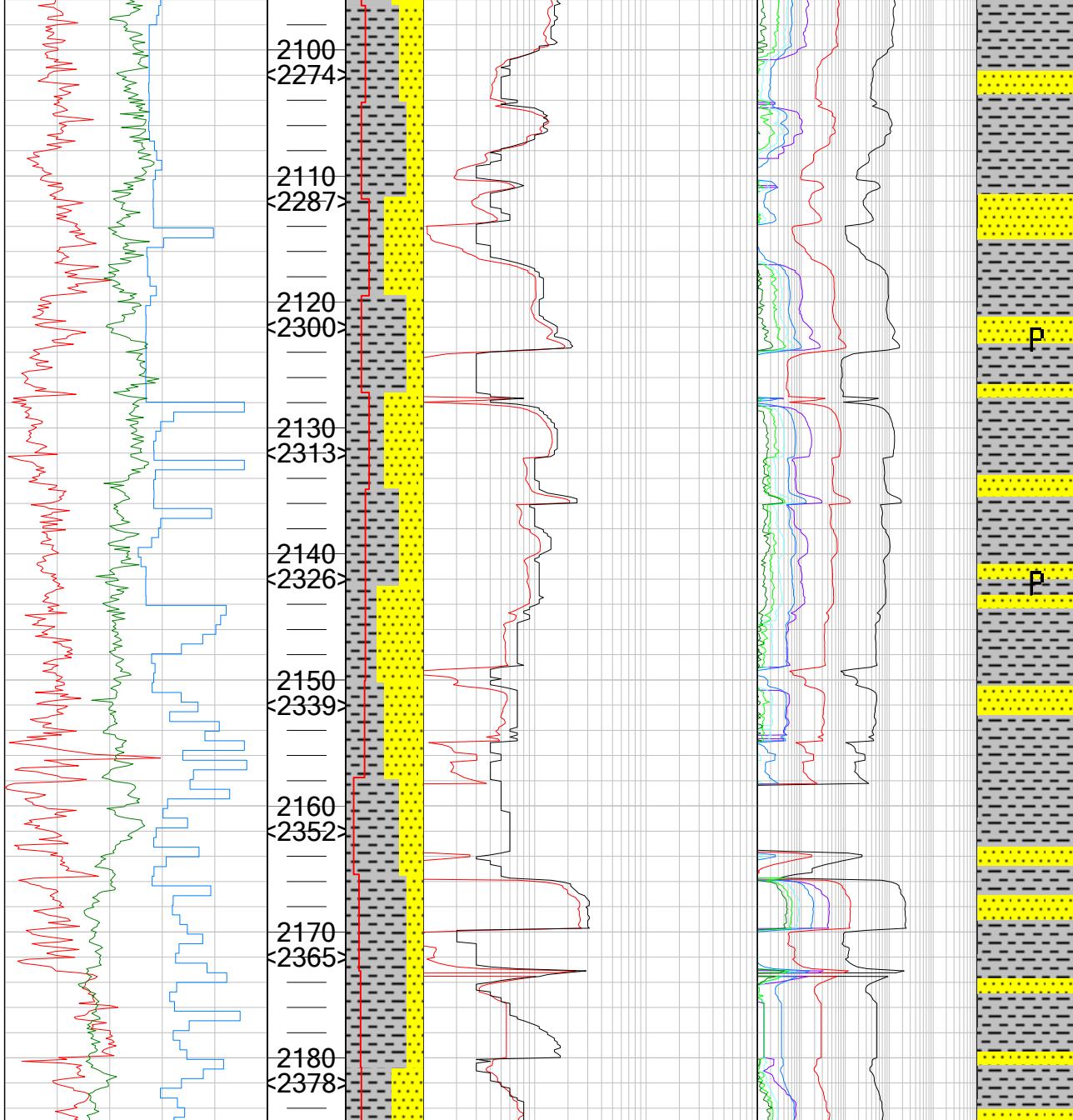
MWD Survey @ 2305.0 m MDRT
Azi: 349.47°, inc 39.85°
TVD: 2126.9 m

Midnight depth on 05.06.2014:
2307.0 m MDRT

MWD Survey @ 2334.0 m MDRT
Azi: 348.23°, inc. 93.83°
TVD: 2149.1 m

SPP: 333 bar, F/ln: 3323 l/min
Trq: 20 KNm, WOB: 8.9 tons

MWD Survey @ 2362.0 m MDRT
Azi: 348.22°, inc 39.48°
TVD: 2170.6 m



Sandstone: Light grey to beige, greenish grey to dark grey, firm to hard, fine to coarse grain, sub-angular to sub-rounded, elongate to spherical, poorly sorted, siliceous cement, glauconitic and lignitic.

Claystone: Dark grey to greyish black, firm, silty, occasionally fissile, sub-blocky, sideritic.

Sandstone: Light grey to beige, firm to hard, very fine to coarse, sub-elongate to sub-spherical, sub-angular to sub-rounded, poorly sorted, good siliceous cement.

MWD Survey @ 2391.0 m MDRT
Azi: 348.79°, inc 40.34°
TVD: 2189.3 m

MWD Survey @ 2420.0 m MDRT
Azi: 348.08°, inc 40.34°
TVD: 2211.4 m

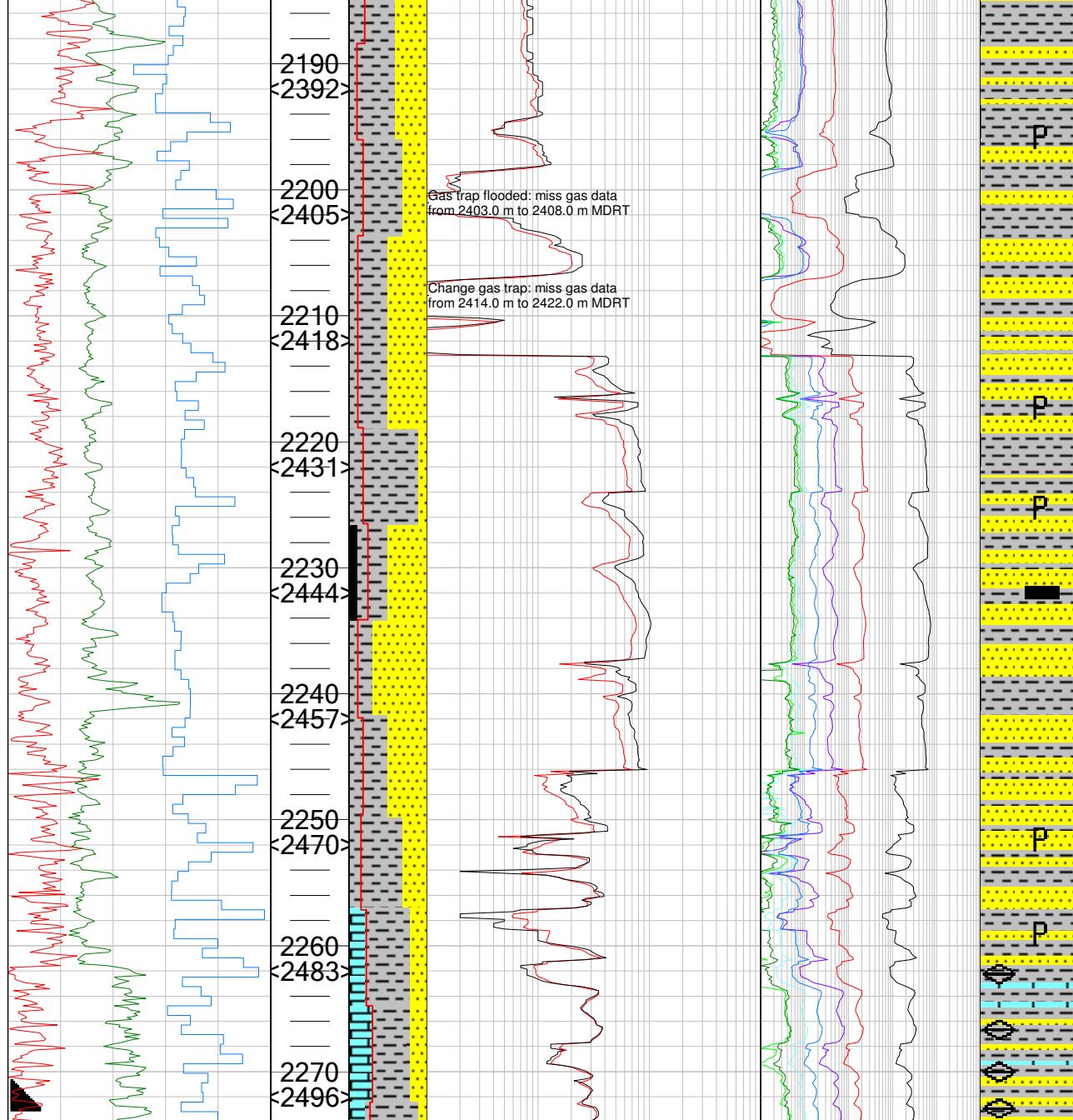
MWD Survey @ 2449.0 m MDRT
Azi: 346.89°, inc 40.34°
TVD: 2233.5 m

MW: 1.19sg
PV: 23 cP
YP: 27 lbf/100ft²
pH: 8.7

MWD Survey @ 2478.0 m MDRT
Azi: 348.52°, inc 40.29°
TVD: 225.6 m

Midnight depth on 06.06.2014:
2493.0 m MDRT

6 ½" Liner set @ 2499.4 m MDRT, shoe
depth 2801.0 m MDRT



Sandstone: Light grey to beige, firm to hard, very fine to coarse, poorly sorted, sub-elongate to sub-spherical, sub-rounded to sub-angular, some pyritized.

Claystone: Medium grey to dark grey, brownish grey, firm, silty, sub blocky, in parts splintery, slightly calcareous.

Top of RODENRIJS CLAYSTONE MBR @ 2486.0 m MDRT,
2261.5 m TVD

Limestone: White, off white, light grey, soft to firm, amorphous, sub blocky, chalky, mollusc shell.

depth 2861.0 m MDRT

SPP: 307 bar, F/I: 3273 l/min
Trq: 23 KNm, WOB: 7.6 tons

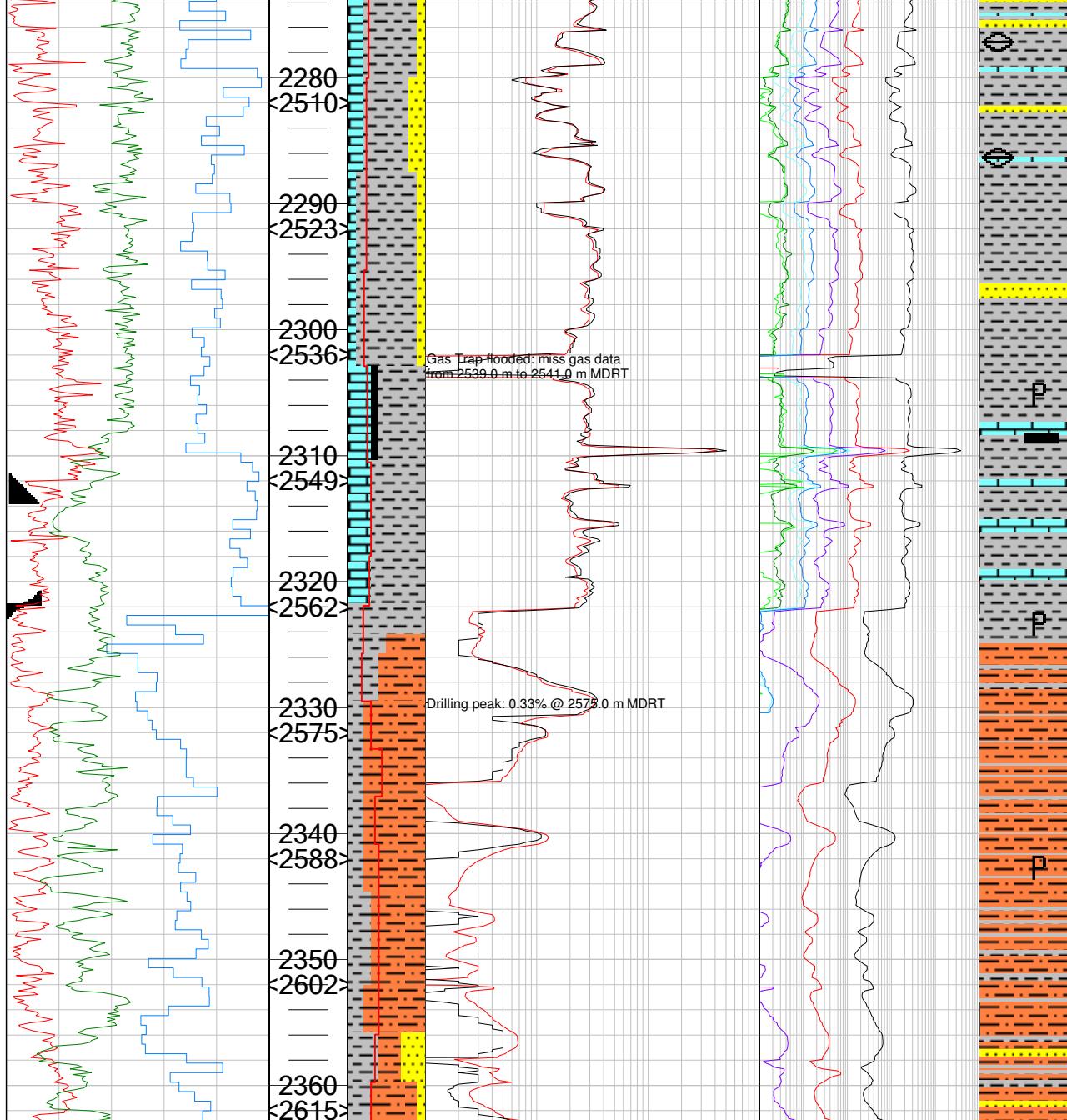
9 %" Casing set @ 2552.9 m MDRT

FIT to 1.37 s.g. EMW

Bit Run #5
8 1/2" PDC; SN: 7500353
In @ 2565.1 m, Out @ 2897.0 m MDRT

Midnight depth on 24.06.2014:
2568.0 m MDRT

MWD Survey @ 2595.0 m MDRT
Azi: 350.68°, inc 40.97°
TVD: 2344.5 m



Claystone: Medium to dark grey, brown, firm, amorphous to sub-blocky, occasionally fissile, trace pyrite, abundant siderite

Siltstone: Off white, beige, light to medium grey, firm to hard, very fine to fine, translucent, good siliceous cement.

Sandstone: Off-white, translucent, firm to hard, v. fine to fine, sub-spherical, well to moderately sorted, poor to moderate calcareous cement

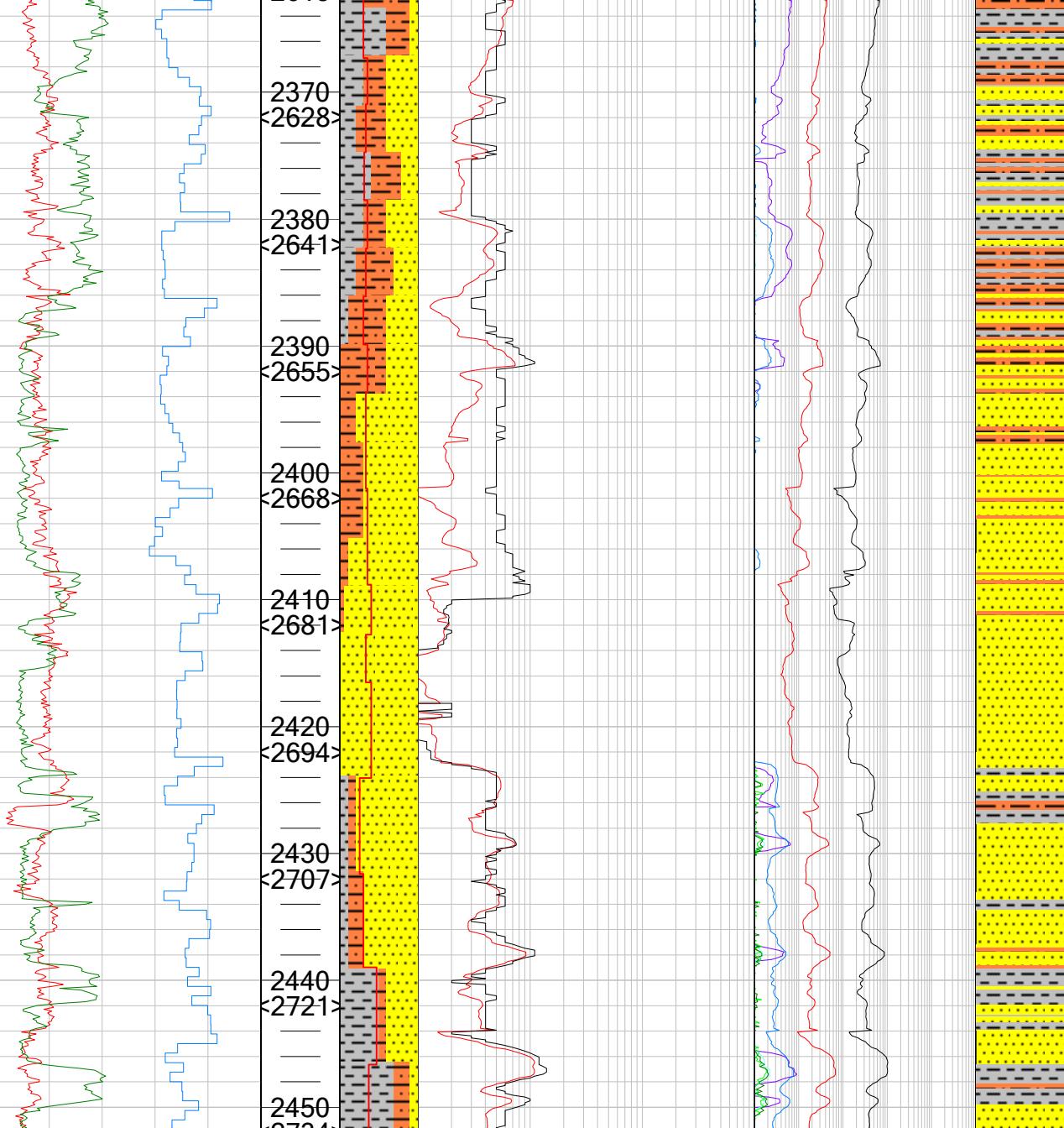
MWD Survey @ 2623.0 m MDRT
Azi: 350.79 °, inc 40.84°
TVD: 2365.2 m

MWD Survey @ 2653.0 m MDRT
Azi: 351.18 °, inc 40.62°
TVD: 2388.5 m

MW: 1.09 sg
PV: 11 cP
YP: 18 lbf/100ft²
pH: 10.5

MWD Survey @ 2682.0 m MDRT
Azi: 351.49 °, inc 40.96°
TVD: 2410.47 m

MWD Survey @ 2710.0 m MDRT
Azi: 351.13 °, inc 41.11°
TVD: 2431.5 m



SPP: 174 bar, F/ln: 2353 l/min
RPM MM/TD: 200/81
Trq: 19 KNm, WOB: 7.5 tons

Slide from 2760.0 m to 2773.0 m MDRT

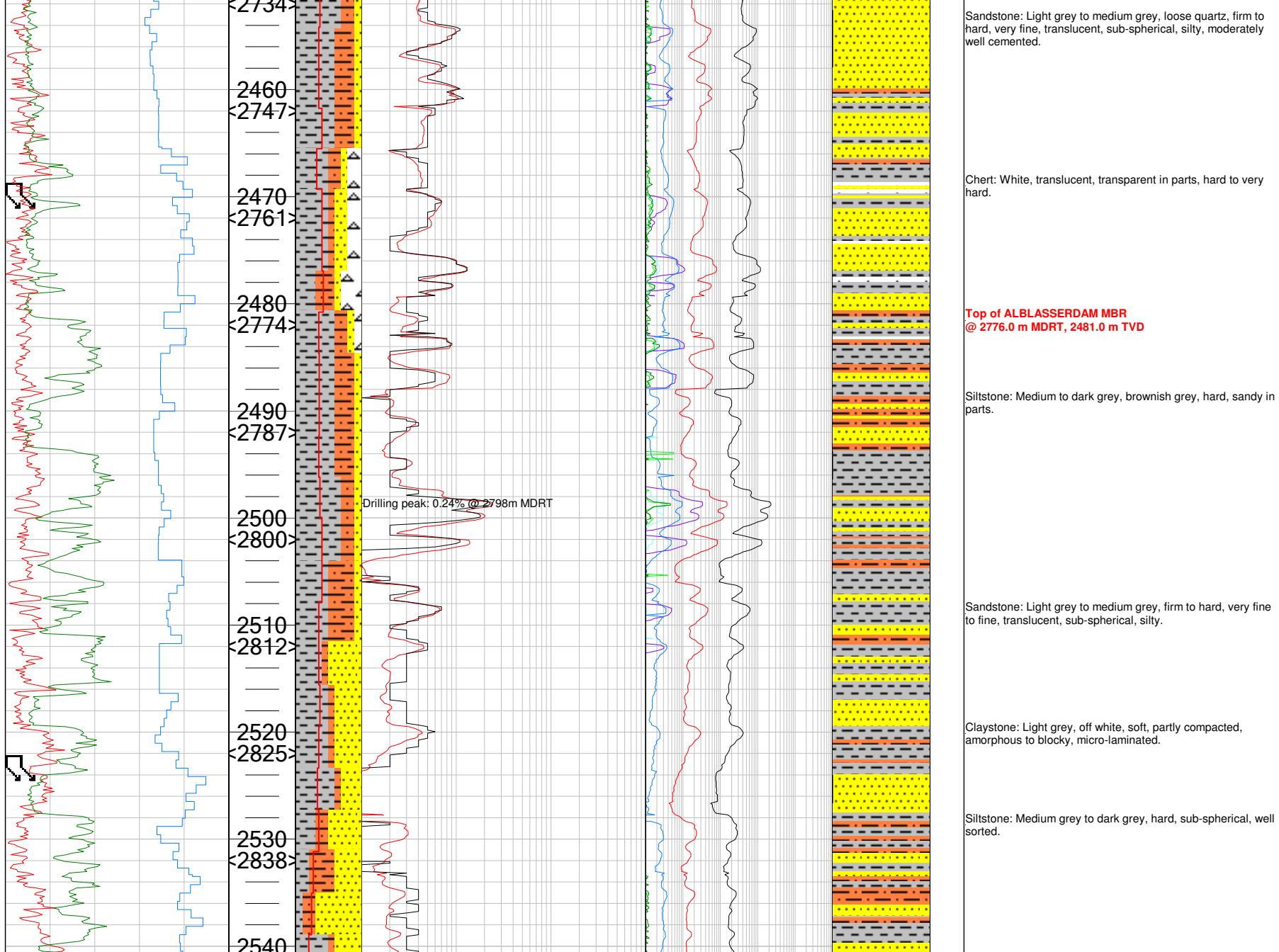
MWD Survey @ 2768.0 m MDRT
Azi: 350.46°, inc 40.12°
TVD: 2475.4 m

Midnight depth on 25.06.2014:
2785.0 m MDRT

MWD Survey @ 2797.0 m MDRT
Azi: 350.29°, inc 39.04°
TVD: 2497.7 m

MW: 1.09*sg
PV: 10 cP
YP: 19 lbf/100ft²
pH: 10.4

Slide from 2830.0 m to 2835.5 m MDRT



Sandstone: Light grey to medium grey, loose quartz, firm to hard, very fine, translucent, sub-spherical, silty, moderately well cemented.

Chert: White, translucent, transparent in parts, hard to very hard.

Top of ALBLASSERDAM MBR
@ 2776.0 m MDRT, 2481.0 m TVD

Siltstone: Medium to dark grey, brownish grey, hard, sandy in parts.

Sandstone: Light grey to medium grey, firm to hard, very fine to fine, translucent, sub-spherical, silty.

Claystone: Light grey, off white, soft, partly compacted, amorphous to blocky, micro-laminated.

Siltstone: Medium grey to dark grey, hard, sub-spherical, well sorted.

MWD Survey @ 2854.0 m MDRT
Azi: 349.6°, inc 39.07°
TVD: 2544.1 m

SPP: 167 bar, F/in: 2242 l/min
RPM MM/TD: 202/86
WOB: 18 tons
F/in: 6.4 l/min

MWD Survey @ 2888.0 m MDRT
Azi: 349.66°, inc 38.81°
TVD: 2562.24 m

TD at 2897.0 m MDRT, 2575.5 m TVD
on 26/06/14 at 13.30

