



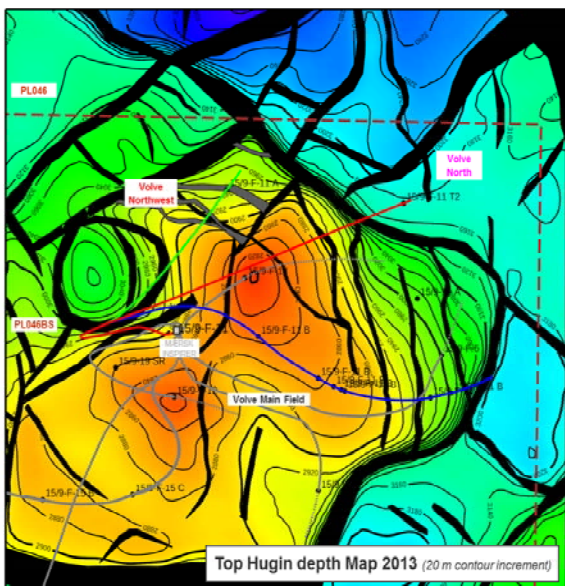
# COMPLETION LOG

## VOLVE

Scale: 1 / 500

## Well: NO 15/9-F-11 B

Location Map



KB Elevation	54.9 m	Country	Norway
Water Depth	91 m	Licence	PL046 BS
Depth Reference	RKB	Owners	Statoil (59.6%; Op.), ExxonMobil Norway (30.4%), Bayergas Norge (10%)
Total Depth (Driller)	4770.0 m MD RKB 3257.3 m TVD RKB	Field Rigg	Volve Mærsk Inspirer
Formation at Total Depth	Sleipner	Drilling Contractor	Mærsk
Date Sidetracked	28.05.2013	Mudlogging Company	Baker Hughes
Date Reached TD	11.06.2013	Logging Company	Schlumberger
Date Completed	15.06.2013	MWD Company	Baker Hughes
Well Status	completed, perforated	Geologists	E. Mondesert, P. J. Caine, L. C. Szanto
Well Classification	oil producer	Latitude	58° 26' 29,957 N
Prepared by	Wellsite geologists, P. Kaiser	Longitude	1° 53' 14,867 E
Controlled by	P. Kaiser, A. Ambrosi	Northing	6 478 568,17 m
Date	13.11.2013	Easting	435 049,09 m
Revision	1		
Well Coordinates	Geographic ED50		
	UTM 31		

## Casing Records

Diameter	Shoe depth m MD RKB	Shoe depth m TVD RKB
14" Casing shoe	2570.7	2440.9
9 5/8" Casing shoe	3192.4	2780.3
7" Liner shoe	4768.7	3255.7

## LOT / FIT

Type	Result g/cc	Depth m MD RKB	Depth m TVD RKB
FIT	1.650	3200	2784.1

## Comments

Objectives:

- oil production from infill location between existing producers F-12 and F-14 in the main field
- geosteer in the upper part of the Hugin reservoir, which is expected to be only partially drained

Summary/results:

- encountered oil-filled Upper Hugin reservoir in heel and toe with good reservoir qualities
- total geosteered section in Hugin Formation was ~1220 m MD long of which ~780 m MD in oil-bearing productive Upper Hugin
- exit field through main fault, as expected, was not observed; TD was set in Sleipner Formation due to dropping towards toe

Comments:

- 12 1/4" section: trip due to bit change
- 8 1/2" section: exit several times into Heather Fm. above and water-filled Hugin below; dir-MWD failure at 4682 m changed TD criterion

## Logs

Run no.	Log type	Logged interval
1	GR, RES	2585-2917
2	GR, RES	2917-3197
3	GR, GR image, azimuthal RES, DEN, DEN image, NEU	3197-4770
3		

## Perforated Intervals

Interval no.	Perforation top m MD RKB	Perforation bottom m MD RKB
1	4527	4539
2	4488	4500
3	4355	4367
4	4304	4316
5	4286	4295
6	4268	4280
7	4063	4075
8	4031	4043

## Pressure Points (TesTrac)

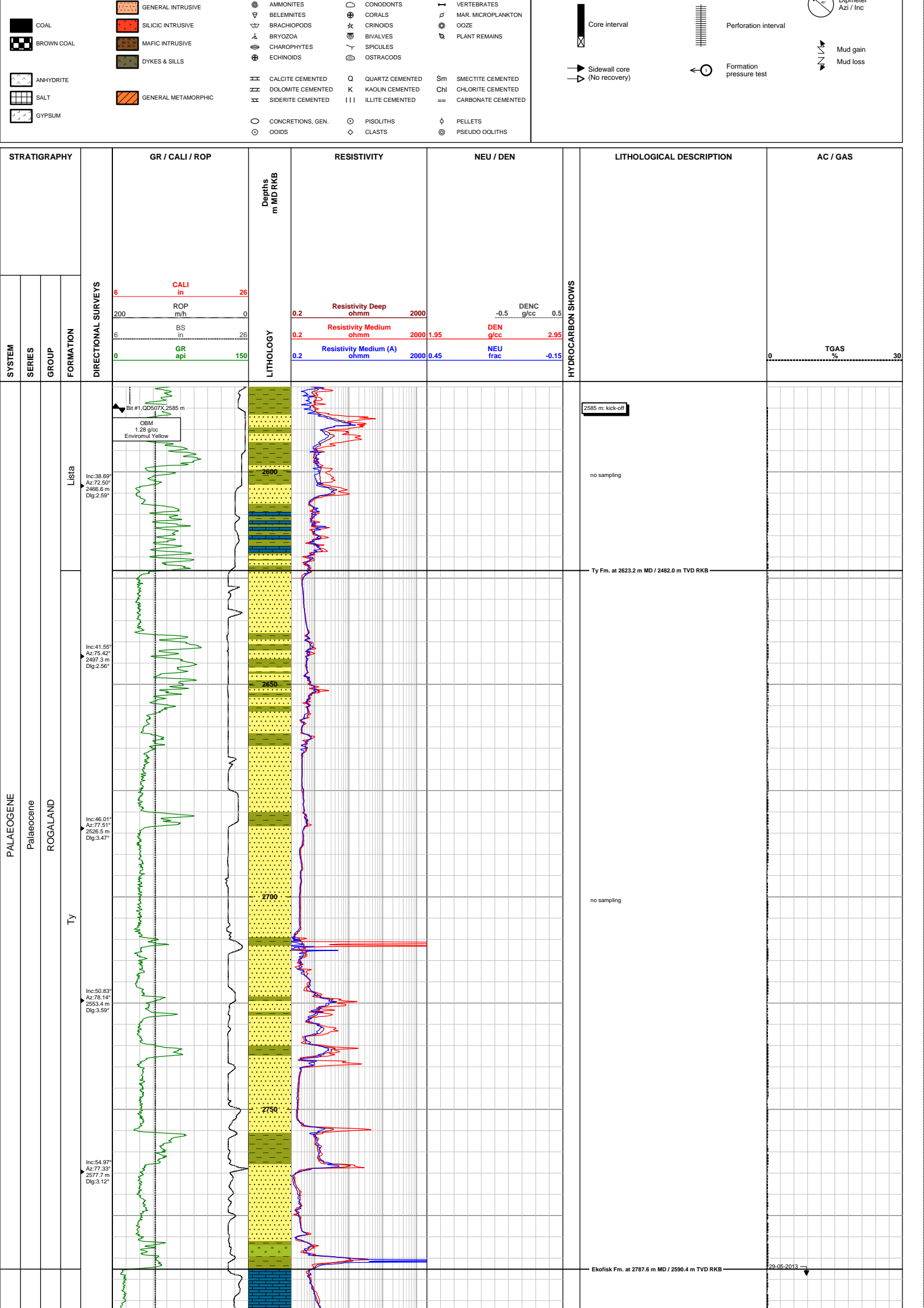
Test no.	Depth m MD RKB	Depth m TVD RKB	Pressure bar	Test no.	Depth m MD RKB	Depth m TVD RKB	Pressure bar
No formation pressure tests							

## Lithology Legend

CONGLOMERATE	MARL	SANDY, VERY	GLAUCONITE	BITUMINOUS
SEDIMENTARY BRECCIA	CHALK	SANDY	HALITE	TUFFACEOUS
SAND / SANDSTONE	LIMESTONE	SANDY, SLIGHTLY	PYRITE	CHALKY
SILT / SILTSTONE	DOLOMITIC LIMESTONE	SILTY, VERY	SIDERITE	COAL FRAGMENTS
FISSILE SILTSTONE	CALCAREOUS DOLOMITE	SILTY	MICA	CHERT
MUDSTONE	DOLOMITE	SILTY, SLIGHTLY	K KAOLINITE	CHLORITE
FISSILE MUDSTONE		ARGILLACEOUS	C CARBONACEOUS	MARLY
CLAY / CLAYSTONE	GENERAL VOLCANICS	CALCITE	CHAMOSITE	ANHYDRITIC
SHALE	TUFF	DOLOMITE	PHOSPHORITE	
		MACROFOSSILS, GEN.	FISH REMAINS	SPOROMORPHS
		MACROFOSSIL FRAGS	FISH SCALES	STROMAPORIDS
		MICROFOSSILS, GEN.	FORAMINIFERA	STEMS / TWIGS
		SHELL BED	GASTROPODS	LEAF BLADES
		ALGAE	GRAPTOLITES	TRILOBITES

## Symbol Legend

Casing shoe	DST	SHOWS
Liner hanger	Open hole	Oil stain
Liner shoe	Open hole (rerun)	Fluorescence
Milled window	Through casing	Visible cut
Deviation survey - MWD	Through casing (rerun)	Fluorescence cut
Deviation survey - Other		Gas shows



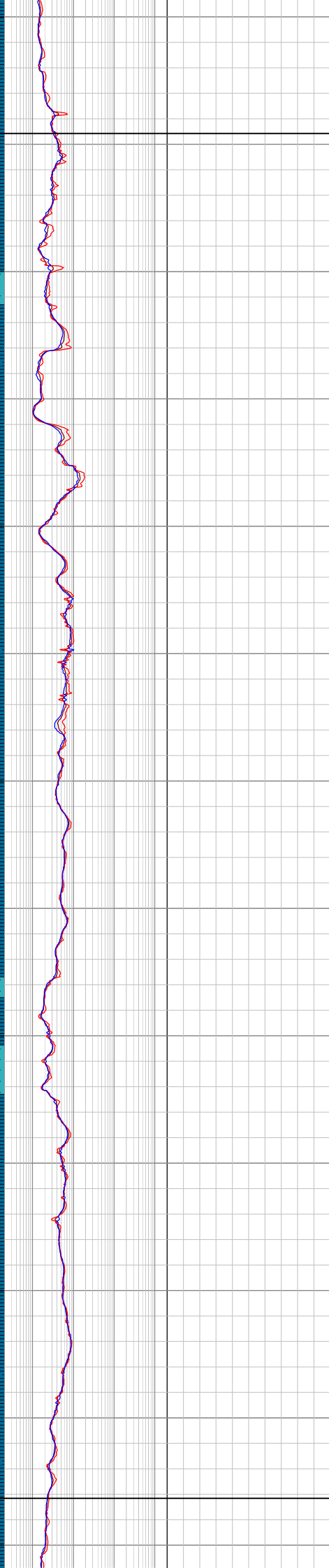
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Upper Cretaceous

SHETLAND

Tor

Ekofisk



— Tor Fm. at 2822.9 m MD / 2608.2 m TVD RKB

**Limestone:** wh-lt gry, frm, crpxln, w/ arg lam, com micro pyr  
**Marl:** dk gry-v dk gnsh gry, frm, amor, blk strk, com micro pyr

**Limestone:** wh-lt gry, frm-hd, plty, crpxln, w/ arg lam, com micro pyr

2917 m: POOH for bit change due to low ROP

30-05-2013

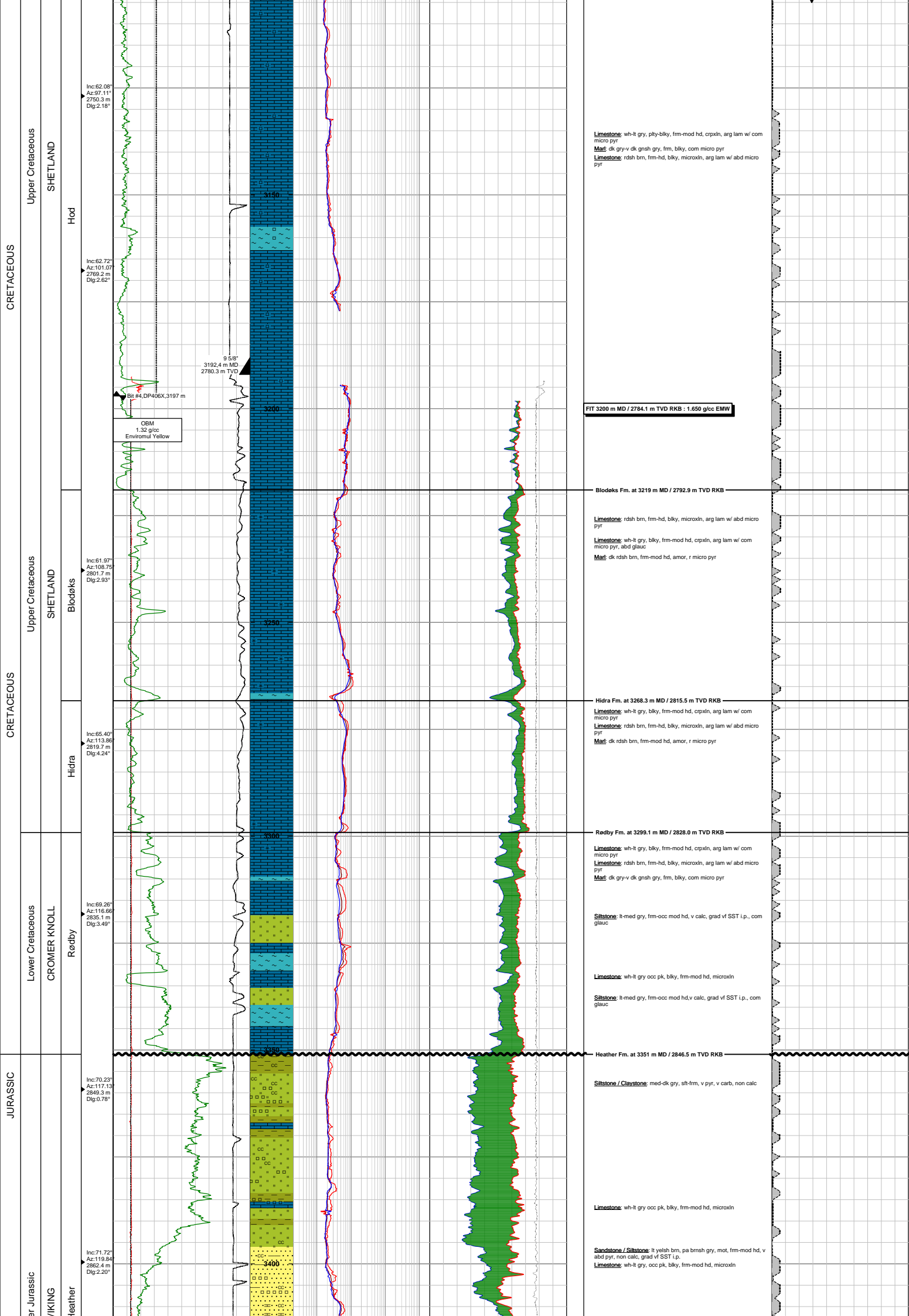
**Limestone:** wh-lt gry, lt brn i.p., frm-mod hd, plty-blky, crpxln, arg lam w/ com micro pyr

**Marl:** dk gry-v dk qnsh gry, sft-frm, blky, com micro pyr

**Limestone:** rdsh brn, frm-hd, blkly, microxln, abd micro pyr  
**Marl:** dk rdsh brn, sft, amor, r micro pyr

— Hod Fm. at 3090.8 m MD / 2733.3 m TVD RKB

31-05-2013





JURASSIC

Middle Jurassic		Upper Jurassic		Middle Jurassic		Upper Jurassic		Middle Jurassic		Upper Jurassic	
VESTLAND		VIKING		VESTLAND		VIKING		VESTLAND		VIKING	
Hugin		Heather		Hugin		Heather		Hugin		Heather	
Az:117.94 2924.4 m Dlg:1.14°		Inc:88.09° Az:117.33 2924.7 m Dlg:0.82°		Inc:88.48° Az:117.88 2926.2 m Dlg:0.83°		Inc:83.95° Az:112.08 2928.9 m Dlg:5.34°		Inc:82.59° Az:108.99 2933.7 m Dlg:2.49°		Inc:80.05° Az:105.02 2939.7 m Dlg:3.51°	
3750		3850		3900		3950		4000			
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Inc:89.10° Az:116.96 2925.3 m Dlg:0.28°		Inc:88.48° Az:117.88 2926.2 m Dlg:0.83°		Inc:83.95° Az:112.08 2928.9 m Dlg:5.34°		Inc:82.59° Az:108.99 2933.7 m Dlg:2.49°		Inc:80.05° Az:105.02 2939.7 m Dlg:3.51°		Inc:77.79° Az:101.56 2947.5 m Dlg:3.03°	
3750		3850		3900		3950		4000			
Sandstone: pa yel, v pa brn, lt yelsh brn, f-occ crs gr, sbmd-sbang, mod srt, calc & occ sil cmt, occ carb & pyr		Limestone: med-dk gry, lt crm grysh, occ lt crm pksh, sft-fm, v pyr, v carb i.p.  Siltstone: pred lt gry, lt gry brnsh, frm, occ sft, bkly		Hugin Fm. at 3809.5 m MD / 2925.5 m TVD RKB		Hugin Fm. at 3894 m MD / 2930.0 m TVD RKB		Hugin Fm. at 3934 m MD / 2934.9 m TVD RKB		Hugin Fm. at 3952 m MD / 2937.6 m TVD RKB	
Geosteering decision 4 3723 m bit depth: TI 89°		Geosteering decision 5 3815 m bit depth: TI 87°		Geosteering decision 6 3850 m bit depth: TI 85°		Geosteering decision 7 3882 m bit depth: TI 83°		Geosteering decision 8 3896 m bit depth: TI 81°		Geosteering decision 9 3906 m bit depth: hold 81°	
Inc:89.10° Az:116.96 2925.3 m Dlg:0.28°		Inc:88.48° Az:117.88 2926.2 m Dlg:0.83°		Inc:83.95° Az:112.08 2928.9 m Dlg:5.34°		Inc:82.59° Az:108.99 2933.7 m Dlg:2.49°		Inc:80.05° Az:105.02 2939.7 m Dlg:3.51°		Inc:77.79° Az:101.56 2947.5 m Dlg:3.03°	
3750		3850		3900		3950		4000			
Sandstone: pa yel, v pa brn, lt yelsh brn, f-occ crs gr, sbmd-sbang, mod srt, calc & occ sil cmt, occ carb & pyr		Limestone: med-dk gry, lt crm grysh, occ lt crm pksh, sft-fm, v pyr, v carb i.p.  Siltstone: pred lt gry, lt gry brnsh, frm, occ sft, bkly		Hugin Fm. at 3809.5 m MD / 2925.5 m TVD RKB		Hugin Fm. at 3894 m MD / 2930.0 m TVD RKB		Hugin Fm. at 3934 m MD / 2934.9 m TVD RKB		Hugin Fm. at 3952 m MD / 2937.6 m TVD RKB	
Geosteering decision 4 3723 m bit depth: TI 89°		Geosteering decision 5 3815 m bit depth: TI 87°		Geosteering decision 6 3850 m bit depth: TI 85°		Geosteering decision 7 3882 m bit depth: TI 83°		Geosteering decision 8 3896 m bit depth: TI 81°		Geosteering decision 9 3906 m bit depth: hold 81°	
Inc:89.10° Az:116.96 2925.3 m Dlg:0.28°		Inc:88.48° Az:117.88 2926.2 m Dlg:0.83°		Inc:83.95° Az:112.08 2928.9 m Dlg:5.34°		Inc:82.59° Az:108.99 2933.7 m Dlg:2.49°		Inc:80.05° Az:105.02 2939.7 m Dlg:3.51°		Inc:77.79° Az:101.56 2947.5 m Dlg:3.03°	
3750		3850		3900		3950		4000			
Sandstone: pa yel, v pa brn, lt yelsh brn, f-occ crs gr, sbmd-sbang, mod srt, calc & occ sil cmt, occ carb & pyr		Limestone: med-dk gry, lt crm grysh, occ lt crm pksh, sft-fm, v pyr, v carb i.p.  Siltstone: pred lt gry, lt gry brnsh, frm, occ sft, bkly		Hugin Fm. at 3809.5 m MD / 2925.5 m TVD RKB		Hugin Fm. at 3894 m MD / 2930.0 m TVD RKB		Hugin Fm. at 3934 m MD / 2934.9 m TVD RKB		Hugin Fm. at 3952 m MD / 2937.6 m TVD RKB	
Geosteering decision 4 3723 m bit depth: TI 89°		Geosteering decision 5 3815 m bit depth: TI 87°		Geosteering decision 6 3850 m bit depth: TI 85°		Geosteering decision 7 3882 m bit depth: TI 83°		Geosteering decision 8 3896 m bit depth: TI 81°		Geosteering decision 9 3906 m bit depth: hold 81°	
Inc:89.10° Az:116.96 2925.3 m Dlg:0.28°		Inc:88.48° Az:117.88 2926.2 m Dlg:0.83°		Inc:83.95° Az:112.08 2928.9 m Dlg:5.34°		Inc:82.59° Az:108.99 2933.7 m Dlg:2.49°		Inc:80.05° Az:105.02 2939.7 m Dlg:3.51°		Inc:77.7	



