

From core analysis:

Level 1 (3786 - 3817 m RKB)

Average \emptyset core: 16,5 %

Average K core: 19,4 MD

Level 2 (3819,5 - 3826,5 m RKB)

Average \emptyset core: 13,0 %

Average K core: 4,3 MD

Comparing the porosity from the core analysis with the log porosity the core porosity appears 2-4% higher. This may be due to the ground surface decompression.

12.2.2 Log Interpretation

The interpretation of the logs was performed using the Schlumberger Coriband program. The main results are:

Level 1: Top : 3786 m RKB (Top of Brent)

Bottom : 3817 m RKB

Gross : 31 m

Net : 15,7 m

α : 0,507

Average \emptyset : 13,4%

Average Sw : 17,9%

Level 2: Top : 3819,5 m RKB

Bottom : 3826,5 m RKB

Gross : 7 m

Net : 5 m

α : 0.714

Average \emptyset : 8,7 %

Average Sw : 66,9 %

BOTTOM HOLE FLUID SAMPLING - RFT / FIT

Table 1

LEVEL	OPERATION	DEPTH (H RKB)	FLOW DATA		BUILD UP DATA		SAMPLING	OBSERVATIONS
			TIME (MIN)	FINAL PRESSURE (BARG)	TIME (MIN)	FINAL PRESSURE (BARG)		
1	RFT	3802,5	4	548,9	6,2	568,3	10,4 l Mudfiltrate Surface pressure: 13,8 BARG	2 3/4 gallon chamber
2	RFT	3823,2	2,5	466,1	5,1	364,89	10,4 l Mud + Mudfiltrate and 0,75 l Mudfiltrate Surface Pressure : 0	2 3/4 gallon + 1 gallon CHAMBERS
3	RFT	3850,2	15,5	133,3	15,9	533,3	3 l Mudfiltrate 7,4 l Gas Surface pressure: 134,4 BARG	2 3/4 gallon chamber. Gas heated out before chamber was opened.
2	FIT	3822,5	6	Upper Amerada: 322,9 Lower Amerada: 321,0	2,9	Upper Amerada: 564,7 Lower Amerada: 566,1	10,4 l Mudfiltrate with Gas in solution Surface pressure: 55 BARG	2 3/4 gallon chamber Gas 70 l
3	FIT	3852,5	13	Upper Amerada: 58,7 Lower Amerada: 62,1	76	Upper Amerada: 527,4 Lower Amerada: 528,2	Ca. 5 l Gas " 3 l Oil " 24 l oil/mudfiltrate emulsion Surface pressure: 131 BARG Oil and gas transferred to 20 l bottle at 37 BARG.	2 3/4 gallon chamber Find B.U. pressure not quite stabil- ized
4	FIT	3873,5	5	Upper Amerada: Not working Lower Amerada: 529	62	Upper Amerada: Not working Lower Amerada: 530,8	Ca. 3 l Gas " 4 l Oil " 3,4 l Oil/Mudfiltrate Emulsion Surface pressure: 110,3 BARG All transferred to 20 l bottle at 37 BARG	2 3/4 gallon + 600 CC Segregated chamber Only small quantities of gas and some mud- filtrate in 600 CC chamber. This was not transferred.

Note: The samples from FIT No. 1 and FIT No. 2 BIS are considered as representative samples and a PVT analysis will be performed on them.

Level 3: Top : 3849,9 m RKB
Bottom : 3854,8 m RKB
Gross : 4,9 m
Net : 4,9 m
 α : 1
Average ϕ : 14,3 %
Average Sw : 13,9 %

Level 4: Top : 3872,2 m RKB
Bottom : 3876,4 m RKB
Gross : 4,2 m
Net : 4,2 m
 α : 1
Average ϕ : 14,3 %
Average Sw : 22,4 %

The net pay is obtained by consideration of the following cut off values:

$\phi < 8\%$
Sw > 60%
Vclay > 35%

12.3 Testing

Two runs of RFT, four runs of FIT (including one failure) and 1 DST were performed.

12.3.1 RFT

The two runs include 29 pressure pre-tests and three samplings. The sampling did not give any important result as they all recovered mud filtrate except for the gas in the sample from 3850,2 m RKB (which unfortunately leaked out before being recovered due to chamber failure). Results are summarized on table 1.

Table 2

RESULTS - DST NO. 1 - BRENT LEVEL NO. 1

WELL 15/3-4

PRESSURE DATA (BHP FROM SPERRY SUN NO. 2046 - WHP FROM DWT)										FLOW DATA (SEPARATOR)					
INITIAL FLOW			INITIAL B.U.		FINAL FLOW			FINAL B.U.		INITIAL FLOW			FINAL FLOW		
PERIOD (MIN)	FINAL BHP (BARG)	FINAL WHP (BARG)	PERIOD (MIN)	FINAL BHP (BARG)	PERIOD (MIN)	FINAL BHP (BARG)	FINAL WHP (BARG)	PERIOD (MIN)	FINAL BHP (BARG)	CHOICE	FLOW M ³ /D	CHOICE	OIL (STM ³ /D)	GAS (STM ³ /D)	GTC (M ³ /M)
7	490,5	79,3	65	569,3	716	435,5	133,8	1821	565 (T=121,7°C)	24/64	596 (Water)	40/84	615	245224	399
FLUID CHARACTERISTICS MEASURED AT THE WELL SITE								TEST INTERPRETATION RESULTS							
OIL = 0,816 g/cc at 60° F (after 24 hrs) GAS = 0,803 (air = 1,0) Co2 = 7,5 % H2S = 0								Pi = 569,7 BARG (extrapolated from horner plot) K = 24 MD S = + 4.15 PRODUCTIVITY RATION = 0,63							
SURFACE FLUID SAMPLING															
5 x 20 l GAS } TAKEN AT THE END OF FINAL FLOW AT THE SEPARATOR 2 x 4 l OIL } SEPARATOR CONDITIONS: 27,8°C , 33,1 BARG 2 x 200 . OIL + 4 l OIL FROM THE STOCK TANK 20 l GAS } TAKEN AT THE BEGINNING OF FINAL FLOW IN CASE OF TEST BREAK DOWN 4 l OIL }															

12.3.2 FIT

A FIT fluid sampling together with an Amerada pressure recorder was run in levels 2,3 and 4 (one failure in level 3). Oil and Gas were recovered in levels 3 and 4. In level 2, only mud filtrate and some dissolved gas were recovered.

Results are summarized on table 1.

12.3.3 DST

A DST was carried out in level 1 with the main purpose of getting information about the nature of the fluid content and the formation productivity. The following zones were perforated:

- | | | |
|--------------------------|---|---------------|
| 1) 3789 - 3791 m RKB | } | Loggers depth |
| 2) 3794,5 - 3799,5 m RKB | | |
| 3) 3800,5 - 3807,5 m RKB | | |

From the results of the DST in level 1, a build up analysis was performed. From this, an extrapolated initial reservoir pressure was found as well as permeability, skin and productivity ratio. The results are shown in table 2.

12.4 Accumulations

The revised estimates are based on isopach maps of the interval between the J2 and J3 markers. The isopach was converted in meters by applying the depth vs time relationship found in the well 15/3-4. Since rock volumes are estimated from time maps, they should be regarded as provisional.

The downdip closure is chosen as 3140 ms (corresponding to a depth of 3987 m MSL).