

INTERVAL (M)	PEAK/BACKGROUND (CHROM)	LITHOLOGY/SHOW
2002-2007	101/10(85/5/5/2)	Sandstone: very fine, well sorted, subround, good sphericity, weak siliceous cement with clay matrix, friable, poor-nil porosity, 20% dull patchy yellow fluorescence, weak-moderate crush cut, very thin ring residue.
2037-2044	211/40 (89/7/3/1)	Coal
2052-2058	219/13 (87/7/4/5)	Sandstone: fine, well sorted, weak calcareous cement, common clay matrix, friable, trace-fair porosity, 20-70% uniform dull blue white fluorescence, weak-moderate milky crush cut, thin ring residue.
2059-2060	78/13 (86/8/3/3)	Coal
2078-2082	119/20 (80/11/7/2)	Coal
2101-2102	54/20 (84/9/4/3)	Coal
2163-2164	88/16 (89/7/2/2)	Coal
2182-2186	153/20 (92/6/1/1)	Coal
2200-2203	163/20 (93/6/1/Tr)	Coal
2211-2212	75/18 (87/9/2/2)	Coal

Some fluorescence was observed at 2030m and 2088m but neither were associated with a gas peak. The fluorescence was described as trace to 10% patchy dull yellow with a weak milky crush cut and trace residue, and occurred in tight fine grained sandstones and siltstones. These shows and that between 2002m and 2007m were considered poor and did not merit further evaluation. However that between 2052m and 2058m was considered to be a fair to good gas show and possibly indicative of a gas charged sand. Sw values of between 38% and 58% were calculated but a sample obtained from 2053m proved to be a mixture of filtrate and formation water with a small volume of gas. This is interpreted to be produced predominantly as a result of degassing of the formation water. Chromatographic analysis produced a hydrocarbon ratio similar to that measured while drilling of 90/4/1/5. CO<sub>2</sub> in excess of 3% was also detected which was greater than expected from the 0.1% to 0.5% intermittently detected in the ditch gas from this lower 200m of hole.

### 3.14 Discussion

King 1 was drilled with a minimum of problems which enabled the collection of predominantly good quality data. Areas where further improvements could be made in the future are coring, tracers and fluid sample recoveries.

Weakly cohesive sandstones are difficult to core with jamming and poor core recoveries being the major problems. However longer coring runs may have been possible with a core bit having larger more widely spaced cutters giving higher rates of penetration than those obtained with the CD-93. It would have reduced the time the core was subjected to the vibration of coring between the core bit and shoe and thus reducing the likelihood of the core collapsing. The CD-93 has the advantage that it will core through siltstone and thin claystones without any significant reductions in rate of penetration where as a bit intended for rapid rates of penetration in sandstones will slow to less than 1m per hour through silts and claystones.