ROCK MINERAL ANALYSIS

WELL: 31/2-5

DATE: October 1981

GECO
GEOPHYSICAL COMPANY
OF NORWAY A·S

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Determination of clayfraction, mica and carbonates in 30 rock samples from well 31/2-5.
The clay fraction (< 5 μ) was determined by sedimentation in water, the mica fraction was determined using separation in heavy liquids and carbonates with treatment by hydrochloric acid.

Preparation of samples

Most of the samples were loose sandstone and these were treated as they original were. Some samples of solid rock were chrushed to grain size of approx. 0.5 mm.
All samples were dried at 105°C during 16 hours.

The Clay-fraction (< 5 μ)

The samples (approx. 25 g) were wetted with acetone, washed into water, treated in an ultrasonic bath and sedimented.
The sedimentation was repeated 10 times.
The differance by weight before and after the treatment is the clay fraction.

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Mica

The washed samples were shaken in tetrabromoethane, sp.gr. 2.90, 5-10 times into a funnel at a time of 0,5 - 20 hours.

The fraction with higher sp.gr. was recorded as heavy fraction. Thereafter the samples were shaken in tetrabromoethane, sp.gr. 2.675. This technique separates mica by sedimentation. Biotite (sp.gr. 3.16-2.69) and Muscovite (sp.gr. 3.00-2.76) could exist in the heavy fraction, but tests showed that it was just traces.

2

2. The amount of mica in the heavy fraction is qualitatively estimated and added to the mica fraction.
The highest correction is about 0.5 percent.

From this fraction we get Calcite.
The fraction is treated with hydro chloric acid and the weight after acid treatment is recorded as mica.

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Carbonates

Untreated samples were placed into tubes, washed by water and added 20% hydrochloric acid. If foaming - carbonates are present.

If the test showed very little reaction with acid, the result is recorded as trace only. On the other hand, if the test showed great foaming, the amount of carbonates are determinated by treating the samples with sulfuric acid, absorbing CO_2 - gas in bariumhydroxide and titration with potassiumpftalate.

The amount of carbonates are then calculated as Calsium carbonate and recorded as percent of total sample (see tab.)

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Sample no.	Clayfraction o/o	Heavy fraction o/o	Mica o/o	Carbonates o/o
1543.4	5.2	3.9	3.3	-
1544.2	4.2	4.3	2.6	trace
1544.6	4.2	2.0	7.2	2.9
1545.0	3.9	3.8	2.8	-
1563.85	5.7	3.3	8.7	trace
1564.2	5.5	3.9	8.1	1.1
1565.6	4.4	4.1	6.0	1.9
1598.7	2.5	1.2	2.1	trace
1601.0	4.4	0.8	3.6	"
1601.8	1.0	0.9	4.0	16
1604.8	2.2	1.5	2.1	-
1605.1	4.5	1.2	3.0	trace
1605.35	3.0	1.1	2.7	"
1607.2	6.3	1.6	5.0	"
1608.3	1.0	1.2	2.4	"
1608.6	1.9	1.1	0.9	-
1610.4	2.8	1.2	1.1	-
1613.1	2.6	1.2	1.0	-
1616.2	8.5	2.0	11.3	trace
1618.9	7.1	2.3	8.8	"
1620.1	8.4	3.0	6.9	"
1621.1	8.0	2.7	10.1	"
1623.3	8.6	3.5	10.2	"
1626.3	9.1	2.6	7.6	"
1629.6	8.8	2.4	11.5	1.6
1634.1	8.6	2.4	10.4	-
1638.8	9.8	3.2	1.8	trace
1642.3	9.8	2.5	0.9	-
1645.4	8.8	2.0	3.1	trace
1648.6	10.6	2.7	3.3	"