

Indexed *JKR*

26

MINISTRY OF AGRICULTURE, FISHERIES AND FOOD
FISHERIES LABORATORY, LOWESTOFT, SUFFOLK, ENGLAND

1985 RESEARCH VESSEL PROGRAMME

REPORT : RV PRINCE MADOG : CRUISE 27

(PROVISIONAL : Not to be quoted without prior reference to the author)

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DURATION: Departed Menai Bridge 1000h 24 June

Arrived Menai Bridge 1345h 28 June

(all times GMT)

LOCATION: Solway Firth and NE Irish Sea

AIMS:

1. To collect samples of water and sediment from the licenced exploration area at the mouth of the Solway Firth for hydrocarbon analysis.
2. To collect samples of water, sediment and suspended particulate matter for hydrocarbon analysis from the vicinity of the Morecambe Bay gas field, currently under development.
3. To collect duplicate samples of sediment collected for aim 1 above for the DAFS Marine Laboratory, Aberdeen.
4. To collect duplicate samples of sediments collected for aim 2 above for the sedimentology group, Burnham.

(Aims 3 and 4 are additional aims not on the original cruise programme.)

NARRATIVE:

Loading of equipment onto PRINCE MADOG began at 0800h and she sailed at 100h in fair weather, bound for the Solway Firth. Sampling and analytical equipment were set up and tested during the day, and PRINCE MADOG anchored overnight off St Bees Head. Sampling began at 0720h on 25 June, 19 stations having been worked by 1711h after which PRINCE MADOG anchored off Kirkcudbright Bay for the night and to enable the water samples to be analysed. Sampling recommenced at 0701h 26 June, and a further 19 stations were sampled during the day, both in the Solway Firth and then south towards the Morecambe Bay gas field. 14 further stations were worked on 27 June, the last at 1607h, in poor weather. Overnight a strong wind began to blow from the south-west and as no further grabbing could be carried out on 28 June PRINCE MADOG returned to Menai Bridge, docking at 1345h.

RESULTS:

Aim 1. This was successfully completed, 32 stations being worked in all.

Aim 2. Samples of water and sediment were taken from 20 of the 24 stations planned north of the current gas field development. No samples of suspended particulate material could be taken as a pressure vessel previously ordered was not delivered prior to the cruise, and it is needed to enable pressure filtration of the water samples.

Aim 3. This was successfully completed.

Aim 4. As far aim 2 20 of the 24 samples planned were collected.

All sediment samples taken were frozen for analysis on-shore, and all water samples were extracted and analysed at sea. For the first time the LS-5 fluorescence spectrometer and its associated micro-computer were used at sea, with no problems. Total hydrocarbon concentrations in surface water varied widely, from 1 to 114 μ g/l Ekofisk crude oil equivalents at one of the inshore stations in the Solway Firth. Synchronous excitation-emission spectra recorded for all samples (and stored on floppy disc) suggested that the hydrocarbons measured were associated with particulate material rather than dissolved, but this could not be verified.

R J Law
28 June 1985

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