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

1987 RESEARCH VESSEL PROGRAMME

REPORT : RV CLIONE : CRUISE 3

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

STAFF:

M J Waldock (SIC)
R J Law (from 23 February)
D J Harper
T W Fileman
P M Hudson
Catherine Fileman

DURATION:

Left Lowestoft 0930h 17 February 1987
Arrived Lowestoft 2230h 1 March 1987

LOCALITY:

East coast of England, central and southern North Sea

AIMS:

1. To collect samples of seawater for trace metal analysis from offshore and coastal areas. Analysis of copper, cadmium, mercury and lead to be carried out on board ship; further analysis to be carried out at Burnham.
2. To collect samples of surface sediment from the vicinity of the Leman and Thames gas fields, and off NE Norfolk, for hydrocarbon analysis.
3. To carry out studies of the dispersion of oily water discharges at the Auk oil field, using a towed fluorimeter. This continues studies begun during CLIONE 14/85.
4. To collect samples of sediment from a number of stations off the River Humber for analysis of polychlorinated biphenyls (PCB's). This is in support of work on fish disease incidence.

NARRATIVE:

CLIONE made good time steaming to the outer Thames, and sampling began by 1530h, 17 February. Surface water samples were taken over the next 3 days in an extensive sampling grid pattern following deep water channels in the area. The Thames survey was completed by 1930h on 20 February. CLIONE then proceeded towards the Humber estuary, with stops at sampling stations for surface water every 10nm, 10nm off the coast. The sampling track was completed by 2000h on 22 February and CLIONE anchored in the Humber off Spurn Point. Water samples were then taken each hour during a tidal cycle on 23 February, Mr Law joined CLIONE at 1130h and CLIONE then steamed to the Leman bank overnight. On 24 February grab samples were taken across transects close to gas production platforms in the Leman and Thames fields in order to obtain sediment for hydrocarbon analysis and for sampling benthic organisms. Grab sampling for sediments for PCB analysis were carried out in the outer Silver Pit area on 25 February, and CLIONE steamed north to the Dogger Bank for collection of surface water samples and grab samples

of sediment for metals analysis. Sampling on the Dogger was completed by 00.15h on 26 February. Weather conditions became poor as CLIONE steamed to the Auk oil production platforms later the same day. The towed fluorimeter for in situ hydrocarbon determination was deployed at 1250h, but heavy swell and high winds made it impossible to track hydrocarbon emissions from the platforms. At 1800h, attempts were made to take surface water for hydrocarbons analysis, close to a platform but the swell prevented sampling. Surface water sampling for metals analysis continued on 27 February; in much improved weather CLIONE followed a transect from the Auk oil field to 10nm off Berwick, samples being taken at 30nm intervals. The regime of coastal sampling at 10nm intervals, 10nm offshore was continued during 28 February and 1 March as CLIONE returned to Lowestoft.

RESULTS:

Aim 1. Samples of seawater were collected from over 90 stations covering most of the English east coast with intensive sampling in the Thames and Humber regions. The regime of sample collection and filtration was successfully completed, and analysis of lead and cadmium in all samples was carried out on board. Seawater samples were stored for analysis of mercury, which could not be completed on board due to equipment failure, and for copper after removal of interfering organic materials in the samples. Nitrate, phosphate, and silicate concentrations are to be determined in sub samples by the Lowestoft laboratory.

Aim 2. 24 samples of sediment were collected for hydrocarbon analysis at Burnham, benthic organisms were isolated by sieving from and samples preserved in formalin for identification.

Aim 3. This was unsuccessful due to poor weather conditions.

Aim 4. The six sediment samples requested were collected for analysis of PCB's at Burnham.

M J Waldock
2 March 1987

INITIALLED: P C W
H W H

SEEN IN DRAFT: B A C
Peter MacKay
S F M

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CLIONE 3/87 CRUISE TRACK

SHOWING :
CRUISE TRACK

COASTLINE

