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FRV EXPLORER  
CRUISE 5/78  
REPORT  
18-27 April 1978  
(PART I)

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Introduction

This cruise was designed to obtain samples of water and sediment samples in grid patterns around two of the largest N. Sea production sites, Brent and Forties, and to complete our line of stations on the Forth - Forties line. The objectives of the cruise were met due to good weather and excellent co-operation from the crews of the oil production platforms and FRV EXPLORER.

Procedure

EXPLORER left Aberdeen as planned on the 18<sup>th</sup> and occupied the first station at 23.00 on the 18<sup>th</sup>. During the course of the next nine days about 60 stations were sampled in grid patterns around both the Forties and Brent production complexes with stations ranging from 300 yards to 20 miles from the platforms. Scientific fishing hauls for demersal fish were carried out around the Forties production platforms, on the Bergen Bank and on the Aberdeen bank to collect fish for the TRS taste panel.

Operations

The ship's track and station list with comments is in Appendix 1. Stations are described as having had Full or Half sampling carried out. This entailed.

Full sampling

Hydrographic sampling

Chlorophyll

Water samples for hydrocarbon analysis at 1 m and 40 m

Grab samples for benthos and hydrocarbon analysis

Neuston net haul (where possible)

Agassiz trawl

Half sampling

Water sample (1 m) for hydrocarbon

Grab sample for hydrocarbon

In addition at as many stations as possible heterotrophic mineralisation of hydrocarbons and bacterial number counting for oil degraders were carried out on sediment and water. Three sets of sediment traps were deployed in close proximity to the Forties complex to try and quantify the amount of hydrocarbons settling to the bottom along with the usual rain of organic material. They were left in position for about five days before recovery. All three rigs were successfully recovered.

Scientific fishing hauls, using a bottom gear, were carried out at three stations. The first of these was on the Bergen Bank and it was accompanied by three grab stations to sample the sediment in this area. The fish caught and the sediment samples will be analysed for arsenic since fish taken from the market, said to have been caught in this area, have shown very high levels of arsenic in their flesh.

The second haul was around the Forties complex and fish caught in this haul will be compared by the TRS taste panel with fish caught later on the Aberdeen bank.

When the chemical analyses have been completed and the experimental data evaluated a full report of the cruise will be prepared. Thanks are due to the officers of EXPLORER whose co-operativeness allowed us to take samples of water and sediment in very close proximity to the production platforms.

Part II of this cruise was cancelled.

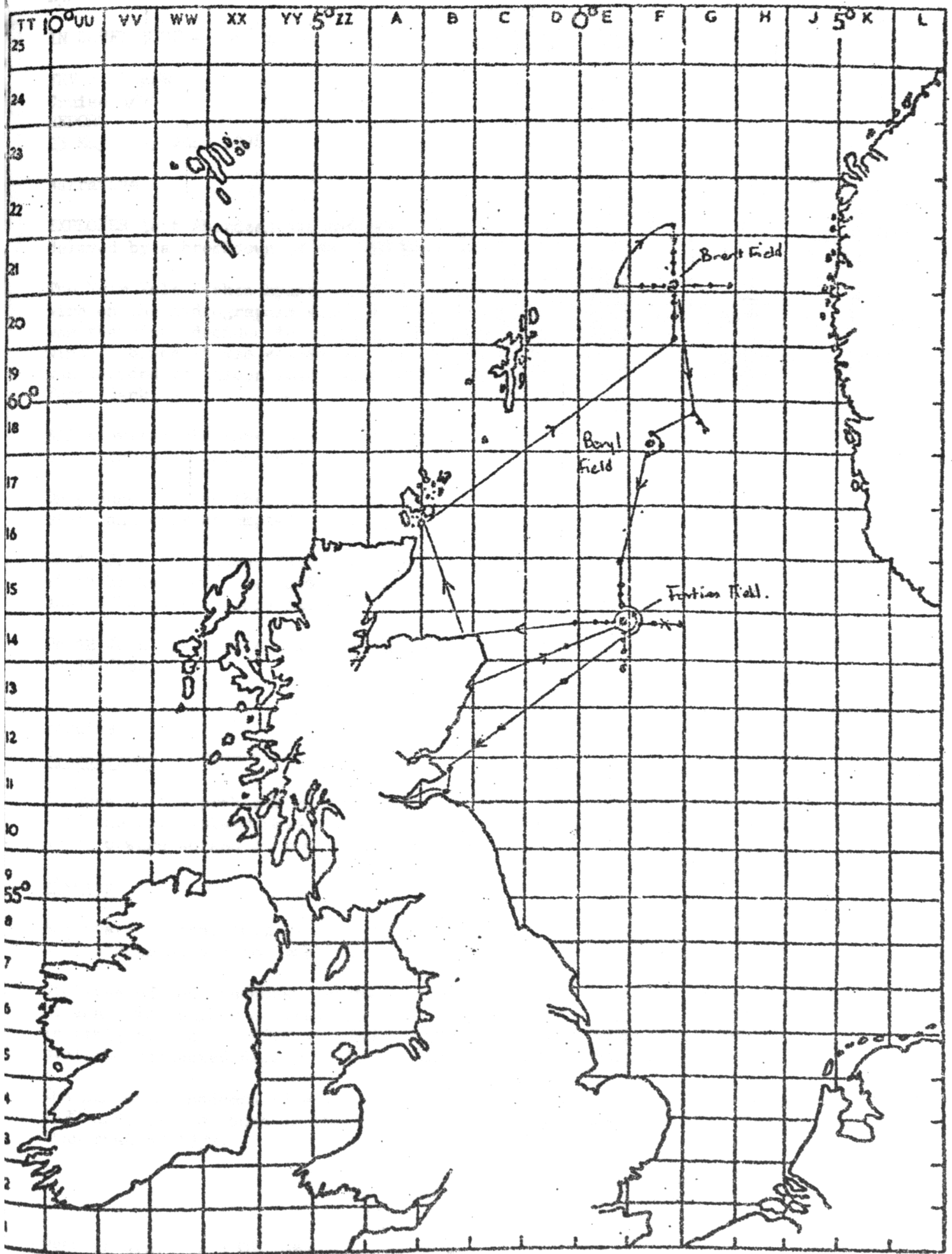
J M DAVIES  
22 November 1978

Seen in draft: J W Gillon

Station No	Title	Sampling	Lat.	Long.	Depth	Time	Date
1	Clean	Full	57 27	00 37 30	79	2300	18/4
2	Sett 1)	Settle				0915	19/4
3	Sett 2)	ment			115	1030	19/4
4	Sett 3)	Traps			85	1135	19/4
5	$\frac{1}{2}$ WF	Half	57 43 40	00 50		1340	19/4
6	1 WF	Half	57 43 40	00 49	115	1440	19/4
7	2 WF	Full	57 43 40	00 48		1530	19/4
8	3 WF	Half	57 43 40	00 47 15	113	1630	19/4
9	5 WF	Full	57 43 40	00 41 30	115	1730	19/4
10	10WF	Half	57 43 40	00 32 20		1915	19/4
11	20WF	Full	57 43 40	00 13 50	100	2055	19/4
12	20SB	Full	60 42 50	01 41 50	132	0300	22/4
13	10SB	Half	60 52	01 42		0500	22/4
14	5SB	Full	60 57	01 42	130	0600	22/4
15	3SB	Half	60 59	01 42		0700	22/4
16	2SB	Half	61 00 10	01 42		0800	22/4
17	1SB )	Half )	61 01 10	01 42	135	0920	22/4
18	$\frac{1}{2}$ SB )	Half )					
19	$\frac{1}{2}$ -1 EB	Half	61 02 50	01 47 30		1000	22/4
20	2 EB	Half	61 02 50	01 49 30		1125	22/4
21	3 EB	Half	61 02 50	01 51 30		1200	22/4
22	5 EB	Full	61 02 50	01 55 50	134	1300	22/4
23	10 EB	Half	61 02 50			1400	22/4
24	20 EB	Full	61 02 50	02 26 45	160	1500	22/4
25	$\frac{1}{2}$ -1 WB	Full	61 03	01 38	140	2000	22/4
26	2 WB	Half	61 03	01 36		2050	22/4
27	3 WB	Half	61 03	01 34		2115	22/4
28	5 WB	Full	61 03	01 29 50	145	2210	22/4
29	10 WB	Half	61 03	01 19 30		2345	22/4
30	20 WB	Full	61 03	00 59 30	153	0130	23/4
31	20 NB	Full	61 23 20	01 42 20		0445	23/4
32	10 NB	Half	61 13 15	01 42 20		0620	23/4
33	5 NB	Full	61 08 15	01 42 20		0800	23/4
34	3 NB	Half	61 06 15	01 42 20	140	0900	23/4
35	2 NB	Half	61 05	01 42 20		0930	23/4
36	1- $\frac{1}{2}$ NB	Full	61 04 15	01 42 20	135	1020	23/4

Station No	Title	Sampling	Lat.	Long.	Depth	Time	Date
37	1 NBY	Half	59 33 44	01 32 16		2345	23/4
38	1 EBY	Half				0000	
39	1 SBY	Half			119	0045	24/4
40	20 NF	Full	58 05	00 55	145	1000	24/4
41	10 NF	Half		00 55	146	1215	24/4
42	5 NF	Full	57 51 50	00 55	134	1330	24/4
43	3 NF	Half		00 55		1415	24/4
44	2 NF	Half		00 55	137	1425	24/4
45	1 NF	Full		00 55		1500	24/4
46	1/2 NF	Half		00 55			24/4
47	1/2-1 SF	Full	57 43 30	00 54	117	2030	24/4
48	2 SF	Half	57 41 20	00 54		2130	24/4
49	3 SF	Half	57 40 20	00 54		2245	24/4
50	5 SF	Full	57 38 20	00 54	110	2400	24/4
51	10 SF	Half		00 54	108	0130	25/4
52	20 SF	Full	57 23	00 54	90	0345	25/4
53	20 EF	Full	57 43 40	01 35 30	85	0735	25/4
54	10 EF	Half	57 43 40	01 17		1000	25/4
55	5 EF	Full	57 43 40	01 07 40	85	1135	25/4
56	3 EF	Half	57 43 40		90	1245	25/4
57	2 EF	Half	57 43 40			1315	25/4
58	1-1/2 EF	Full	57 43 40	00 59	91	1355	25/4
60	Forties	Full	57 17	00 40 W	88	0005	26/4
61	Forties	Full	57 01	00 50 W	64	1500	26/4
62	Line	Full	56 43	01 43 W	55	0130	27/4
63		Full	56 25	02 20 W	40	0500	27/4
64		Too rough to sample	56 05	02 39 W		0830	27/4
65						1500	25/4
66						1435	25/4

Station No	Title	Shot	Hauled	Time	Notes
81	60 04	01 56	60 04 30	01 49	(Bergen Bank) NB water & Grab samples
82	57 46	00 46	57 52	00 40	taken 3 stns (6002 0146) circular Forties
83	57 15	01 21 W	57 11	01 15 W	Aberdeen Bank



Explorer 18.4 - 27.4.78. 5EP78