INSTITUTE FOR MARINE ENVIRONMENTAL RESEARCH

CRUISE REPORT

IMER 5/79
RVS 12/79

VESSEL RRS JOHN MURRAY

CRUISE PERIOD 7-16 August 1979

PERSONNEL

I R Joint	PSO Senior Scientist
R F C Mantoura	SSO
P G Watson	SSO
P H Burkill	HSO
A J Bale	SO

ITINERARY

A sketch chart and station list are attached to this report.

Tuesday	August 7	Locked out Barry 0900; sampled on monitoring track of chart 1.
Wednesday	" 8	Completed sampling on monitoring track at 2350.
Thursday	" 9	Coring in Penarth Roads until 2300; proceeded to Carmarthen Bay.
Friday	" 10	Sampled on grid of stations in Carmarthen Bay (Chart 2) from 0900 until 2350.
Saturday	" 11	Samples taken for Benthic monitoring programme at station 31; cores taken for experiments on benthic nutrient release.
Sunday	" 12	Zooplankton collected between station 25 and 29 for MULEX experiment; grab samples and cores taken at station 25 for nutrient analysis.
Monday	" 13	Zooplankton collected between stations 1 and 6 for MULEX experiment; grab samples taken at station 30.
Tuesday	" 14	At anchor, Lundy Island because of bad weather.
Wednesday	" 15	Left Lundy, 0600 and steamed for Plymouth.
Thursday	" 16	Locked in Plymouth 1100.

OBJECTIVES

a) To continue a series of cruises to monitor the performance of the Bristol Channel.

b) To measure processes involved in the turnover of nitrogenous nutrients in a mixed water column in Carmarthen Bay.

PROCEDURES AND METHODS

The methods used were those outlined in the cruise programme.

a) Continuous measurements were made on the monitoring track (chart 1); water, sampled with a submersible pump, was analysed for temperature, salinity, turbidity, chlorophyll fluorescence, nitrate, nitrite, silicate, phosphate and DOC. Zooplankton was sampled using the Lowestoft sampler.

b) On the Carmarthen Bay grid (stations 1-29, chart 2) the same continuous measurements were made as on the monitoring track.

On each day, undisturbed cores were taken with the Craib corer and the release of nitrate and ammonia and oxygen consumption by the sediment was measured at ambient temperature.

Interstitial pore water was extracted from the cores under aerobic and anoxic conditions and measurements made of nitrate, phosphate silicate, ammonia and iron.

Zooplankton samples, collected with hand nets of different mesh size to size fractionate the animals, were incubated at ambient temperature for the MULEX programme. The rates of oxygen consumption and excretion of ammonia primary amines, DOC, phosphate, nitrate, nitrite and silicate were measured in duplicate for each size fraction. Primary production was measured using standard ^{14}C techniques on water samples collected from the four corners of the grid.

EQUIPMENT AND OTHER FAILURES

The Craib corer worked well with compacted sands but did not obtain satisfactory coreswith the fine mobile sands found at station 30; sediment samples were taken with a Day grab at this station.

Bad weather reduced the planned work in Carmarthen Bay by two days but sufficient data were obtained on the other days.

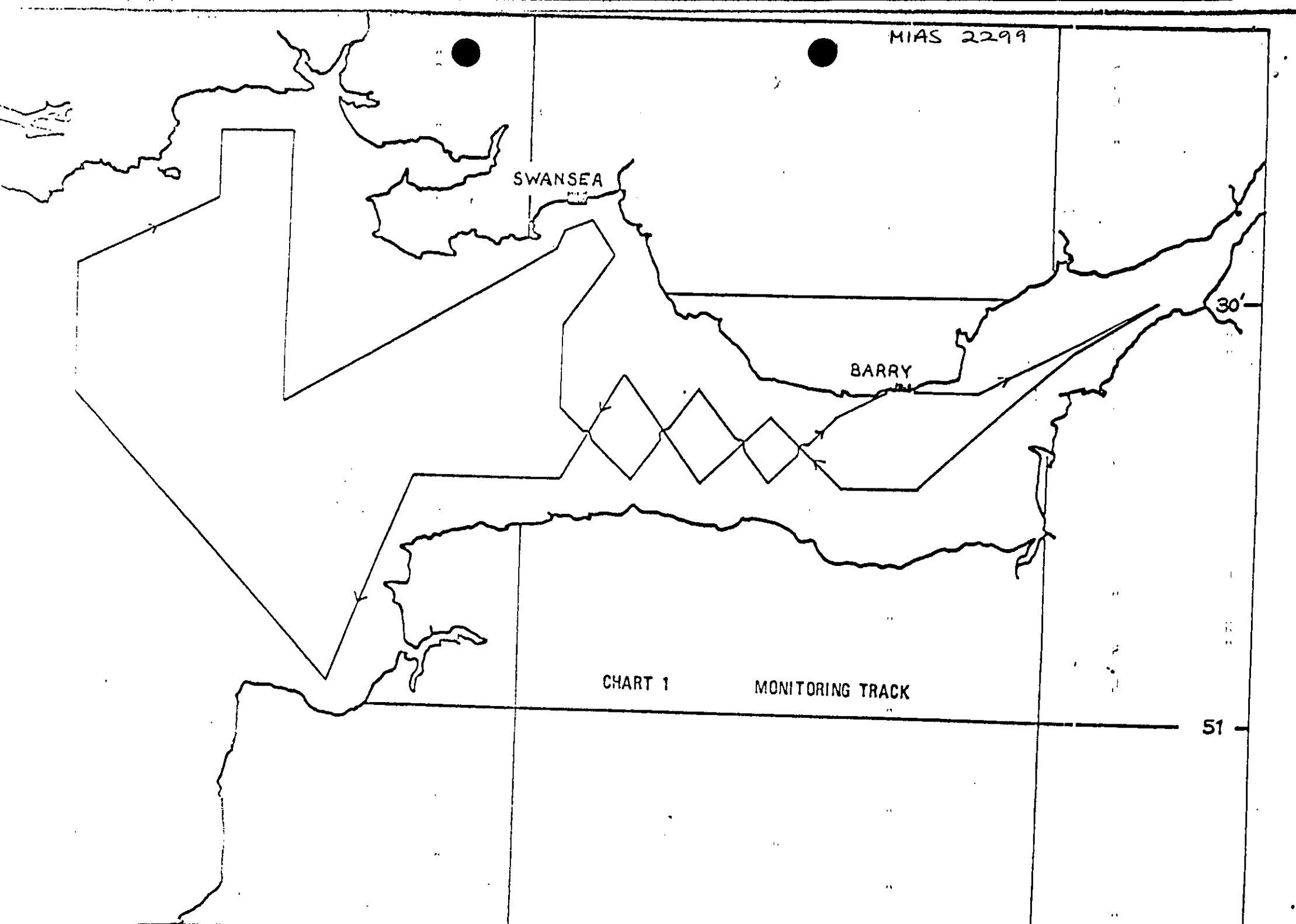
Prepared by: I R Joint
Approved by: B L Bayne
Date: 24 September 1979

STATION POSITIONS

STATION	CARMARTHEN BAY	
	Lat.N	Long.W
1	51°32'	04°38'
2	51°32'	04°35'
3	51°32'	04°32'
4	51°32'	04°28'
5	51°32'	04°25'
6	51°32'	04°22'
7	51°34'	04°22'
8	51°34'	04°25'
9	51°34'	04°28'
10	51°34'	04°32'
11	51°34'	04°35'
12	51°34'	04°38'
13	51°36'	04°38'
14	51°36'	04°35'
15	51°36'	04°32'
16	51°36'	04°28'
17	51°36'	04°25'
18	51°36'	04°22'
19	51°38'	04°22'
20	51°38'	04°25'
21	51°38'	04°28'
22	51°38'	04°32'
23	51°38'	04°35'
24	51°38'	04°38'
25	51°40'	04°38'
26	51°40'	04°35'
27	51°40'	04°32'
28	51°40'	04°28'
29	51°40'	04°25'
30	51°35'	04°30'
31	51°35'	04°30'

APPROXIMATE MID-TOW POSITIONS
OF PLANKTON HAULS

St.No.	Lat. N.	Long.W.	Red	Green	Purple
P 10	51°24.0'	03°06.0'	C 16.0		C 53.0
P 11	51°30.0'	02°47.0'	D 07.9		-
P 12	51°26.7'	02°59.0'	C 22.0		-
P 13	51°20.0'	03°08.0'	C 14.5		B 71.5
P 14	51°16.0'	03°21.0'	C 03.0		B 57.0
P 15	51°21.0'	03°32.0'	B 18.4		B 71.0
P 16	51°16.0'	03°40.0'		C 42.0	A 68.0
P 17	51°24.4'	03°48.0'		D 34.4	B 55.5
P 18	51°16.0'	04°05.6'		D 44.0	J 62.0
P 19	51°01.0'	04°22.0'		E 35.6	H 50.0
P 20	51°07.0'	04°31.0'		F 30.0	H 65.0
P 21	51°14.5'	04°42.5'		F 44.0	I 50.0
P 22	51°24.0'	04°52.0'		G 37.0	I 66.5
P 23	51°34.0'	04°42.0'		F 46.0	J 68.5
P 24	51°41.0'	04°31.0'		F 38.0	A 61.5
P 25	51°31.0'	04°28.0'		F 33.4	J 76.0
P 26	51°21.0'	04°28.0'		F 30.7	J 51.4
P 27	51°28.2'	04°10.0'		E 35.2	A 62.0
P 28	51°35.0'	03°53.0'		D 43.0	B 69.6
P 29	51°28.0'	03°56.0'		D 42.1	B 51.5
P 30	51°21.0'	03°56.0'		D 39.0	A 62.0
P 31	51°16.0'	03°48.0'		C 47.8	A 57.0
P 32	51°23.0'	03°40.0'		C 46.0	B 64.0
P 33	51°16.0'	03°32.0'	B 17.6	C 36.8	A 78.0
P 34	51°21.0'	03°23.5'	C 01.0	C 35.3	C 51.0


MIAS 2299
SWANSEA
BARRY
30'
CHART 1
MONITORING TRACK
51

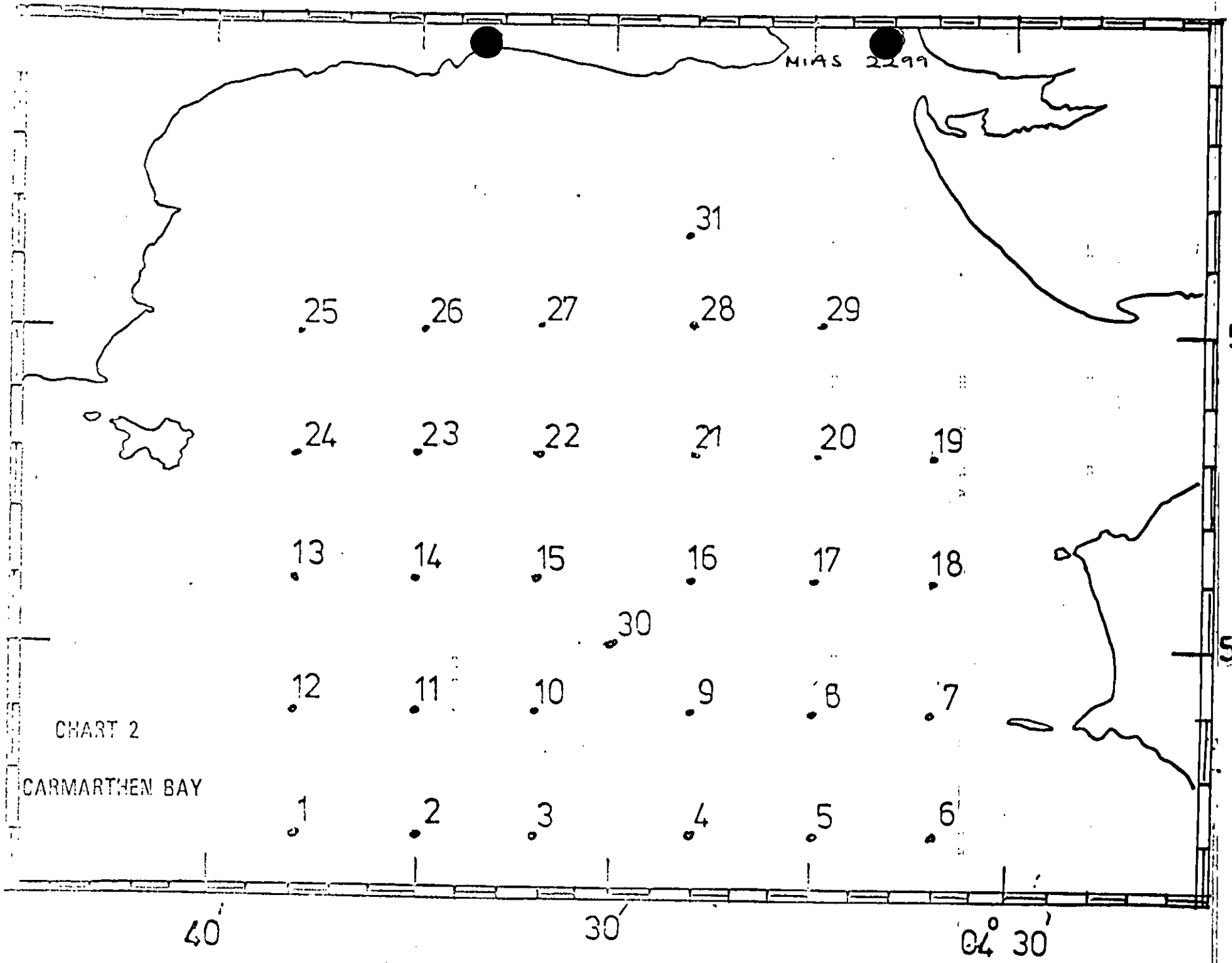


CHART 2

CARMARTHEN BAY