

LOIS RACS(C) Core Programme
Sea Vigil 7
Cruise Report
26th-29th April 1994

Personnel:

Duncan Plummer (PML/Hull)	
Robin Howland (PML)	
Elena Zakharova (PML)	
Elena Povalishnikova (PML)	
Jack Hardisty (U. Hull)	26/4/94
Helen Rouse (U.Hull)	26/4/94
Jeremy Hoad (U.Hull)	26/4/94
Tony Bale (PML)	27/4/94
Rhu Nash (U. Southampton)	27/4/94
Reg Uncles (PML)	29/4/94
John Stephens (PML)	29/4/94

Itinerary:

Monday 25th: PML scientists traveled up to Hull. 1700-1930 Loaded *Sea Vigil* and set up equipment.

Tuesday 26th: The scientific party mustered on board *Sea Vigil* at 0645 and departed Hull Marina at 0715 and headed for Hale Sand Fort. At the Humber mouth 6 transects of the Flux Curtain were undertaken. A towed instrument, measuring conductivity, temperature, suspended particulate load and depth, was deployed. Concomitant readings from a EM current meter, located in the moonpool, were recorded. In addition instrument mountings were secured to the Hawk Light Float. Throughout the day measurements of conductivity, temperature, pH, dissolved oxygen, suspended particle load were recorded. Samples were collected for gravimetrics, C/N, Al and chlorophyll determinations. The nutrient (nitrate, nitrite, phosphate, silicate and ammonia) profile completed stations 31-37 and 19,18 & 17. *Sea Vigil* locked into the marina at 1840. The U. of Hull equipment was unloaded and U. of Southampton equipment was loaded. The later was set up on board.

Wednesday 27th: At 0830 the party assembled on board and *Sea Vigil* left the marina at 0920. The ADCP was set up and the nutrients profile, and the standard suite of measurements, was started at 0950. In addition samples were collected for phytoplankton identification and particle size analysis. The profile was down estuary and at Immingham the UOR was deployed (1045). During the transect a series of 10 vertical profiles were undertaken using a CTD, with transmissometer, with samples collected for chlorophyll and suspended solids. At these stations measurements of optical properties were made using a PR-650 Spectroscan Spectrocolorimeter. The 7th vertical profile at 1425 was coincident with the aircraft being overhead. At

nutrient station 30 the UOR was recovered. The underway measurements were continued back to the marina. *Sea Vigil* locked into the marina at 1815. The equipment related to the remote sensing programme was unloaded and the group departed at 1900.

Thursday 28th: On board at 0530 and departed at 0600 to continue with the nutrient survey. Measurements of conductivity, temperature, pH, dissolved oxygen, suspended particle load and nutrients (nitrate, nitrite, phosphate, silicate and ammonia) were recorded. Samples were collected for gravimetrics, C/N, Al and chlorophyll determinations. The profile completed the upstream stations as far as Boothferry bridge. *Sea Vigil* then returned to Admiral Steps and tied off. While waiting to lock into the Marina (1800) analysis of the Al samples was initiated. At 1800 the equipment for the nutrient survey was unloaded and replaced with that required for the following day. This was completed at 2000.

Friday 29th: On board *Sea Vigil* at 0745 and departed for the anchor station. The station was at 53 42.86 N and 00 37.28 W. Depth profiling of current speed and direction, conductivity, temperature, suspended solids was undertaken. Included in the exercise was a comparison of EMP2000 with other instrumentation. Surface measurements of the standard parameters (as above) were recorded. The last observation at the station were made at 1903. The *Sea Vigil* returned to the marina and locked in at 2140. Unloading of PML equipment was completed at around 2230.

Comments: The forth LOIS Core Programme field trip went well with the cruise objectives being achieved.

However due to low cloud remote sensing from the aircraft was not possible. Methods of communication were established between the aircraft and *Sea Vigil*. This will assist in future work.

Due to a generator failure on *Sea Vigil* the work was delayed by an hour on Thursday. The use of a second generator ensured that the scientific programme continued as planned.

With only four days available, on Tuesday the flux curtain and nutrient survey work was combined. This meant that due to the amount of equipment employed the survey laboratory was cramped. Although this worked on the day it is thought that this should only be repeated if absolutely necessary.

The inclusion of the anchor station was possible as the preceding programme had been completed on schedule.

Once again the help and experience of Peter Sarjeant and Tim Rhodes of the NRA (*Sea Vigil*) is acknowledged.

Duncan H Plummer

3rd May 1994