LOIS LOIS

LOIS RACS(C) Core Programme
Sea Vigil SV 27
Cruise Report
20th-24th November 1995

Personnel:

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Monday 20th: Humber Flux Curtain

After passage downstream from Hull the *Sea Vigil* collected the scientific party at Grimsby Steps at 0800. The vessel departed at 0815 and proceeded to the Humber flux curtain. The 'tidal circuit' commenced at station J (0948); out to the Spurn Lightfloat back inwards to station M and across the flux curtain finishing at station J. Each circuit took approximately 2 hours. The fifth circuit was completed at 2010. The sixth (shortened) circuit terminated at station M (not J) at 2135. Measurements were made of temperature, conductivity, suspended particle load and depth. The surface waters were monitored using the NRAs system. The *Sea Vigil* was off the steps at Grimsby at 2230 were the party disembarked. The vessel locked into Grimsby Fish Dock at 0045 and was fast at 0130.

Tuesday 21st: (continued) Between 1445 and 1700 *Sea Vigil* made passage from Grimsby Fish Dock to Hull Marina. The scientific party traveled from Plymouth and Newcastle. In the late afternoon and early evening equipment was loaded and commissioned (1830-1900, 2000-2300). All equipment was set up and calibrated ready for work on Wednesday.

Wednesday 22nd: Downstream survey

The party mustered at 0600 and the *Sea Vigil* locked out of Hull Marina at 0740. The downstream survey started at station 17 (0806) and continued seawards to station 30 (1128). The survey continued from station 30 upstream and ended at station 17 (1425). The survey measured nutrients (TON, phosphate, silicate and ammonium), conductivity, temperature, turbidity, pH and DO. Discrete samples were collected for gravimetric, C/N and chlorophyll analysis. Stations sampled 17-37, 19-17. In addition samples were collected for later determination of nitrous oxide and methane at stations 18, 22, 24, 27, 29, 30, 31, 33, 34, and 37. The *Sea Vigil* locked into the marina at 1455 and was along side at 1510.

In the late afternoon and early evening equipment was loaded and commissioned. All equipment was set up and calibrated ready for work on Thursday.

Thursday 23rd: Tidal cycle work, Whitton

The scientific party was onboard at 0330 and passage was made from Hull Marina at 0400. At 0545 *Sea Vigil* anchored at Whitton. Instruments were deployed at 0600 profiling was undertaken at 30 minute intervals until 1857.

Measurements were made of conductivity, temperature, turbidity and depth with concomitant recordings of current velocities. Particle size was determined *in situ*. Discrete samples were collected for particle characterisation, gravimetric analysis and later determination of trace metal concentrations. The surface waters were monitored using the NRAs system.

At 1910 the anchor was recovered and passage made to Hull. *Sea Vigil* entered Hull Marina at 2020. The vessel was along side at 2040 and operations ceased at 2100.

Friday 24th: Upstream survey

The party mustered on board at 0200 and *Sea Vigil* departed Hull Marina at 0420. The upstream survey commenced at station 16 (0432) and continued to station 40 (0812) and returned downstream and ended at station 16 (1200). Stations sampled 16-1, 38-40, 40-38, 1-16. The nutrient and standard parameter survey was as on Wednesday. Discrete samples were taken at all stations for gravimmetric, C/N and chlorophyll. Large volume samples were collected at stations 16, 11, 10, 9, 6, 4, 3, 2, 1, 38 and 40 for later determination of nitrous oxide and methane. The *Sea Vigil* tied up along side in Admiral Steps, Hull at 1215. The samples and scientific equipment was unloaded. At 1220 the scientific party had left the vessel.

Sea Vigil made passage to Grimsby Fish Dock from Hull..

Notes: This was the twentythird LOIS RACS(C) Core Programme survey of the Humber and Ouse. The week included the first determination of the distribution of nitrous oxide and methane in the estuary as part of the programme. This work was carried out over the full length of the survey area. Further measurements of the flux of heat, salt and suspended matter were conducted at the mouth of the Humber and in the low salinity area of Whitton. This work is part of two on going programmes. On Thursday their were problems with the NRAs AML CTD. The instrument was replaced prior to the work on Friday minimising the disruption to the work. It did however result in some loss of data on Thursday.

We thank Peter Sarjeant and Alistair Davis of the NRA *Sea Vigil* for their help throughout the programme.

Duncan Plummer 30th November 1995