



**LOIS RACS(C) Core Programme
Sea Vigil SV 34
Cruise Report
30th September - 4th October 1996**

Personnel:

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Mike Griffiths (PML)	
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Brendan Murphy (U of Hull)	
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Monday 30th: The scientific party traveled from Plymouth, Southampton and Newcastle to Hull. In the late afternoon and early evening equipment was loaded and commissioned (1600-2345). All the equipment was set up and calibrated for work on Tuesday and Wednesday.

Tuesday 1st: Upstream Ouse survey & Downstream survey

The party mustered from 0500 and the *Sea Vigil* locked out of Hull Marina at 0645. The upstream survey started at 0655 and continued upstream into the Ouse passing the Apex at 0815 and reached Selby station 40 at 1025. The survey returned downstream passing Hull (station 16 at 1324) and proceeded to station 30 (1737) close to Spurn Head. The survey then continued upstream and ended at station 17 (1929). The *Sea Vigil* locked into Hull Marina at 1945 and the scientific party disembarked at 2030 after analysis of standards and blanks on the underway analysers.

The survey measured nutrients (TON, phosphate, silicate and ammonium), conductivity, temperature, turbidity, pH and DO. CO was measured in a semi-continuous way over the whole survey. Discrete samples were collected at all stations for gravimetric, C/N, chlorophyll and DOC* analysis (* downstream survey). CO was measured in a semi-continuous way over the whole survey. In addition samples were collected during the downstream run starting from Selby (station 40) for later determination of nitrous oxide and methane, stations 40, 39, 38, 1, 2, 4, 6, 8, 10, 11, 16, 20, 24, 26 & 29. Samples were collected for later determination of trace metals at stations 17, 19, 21, 22, 23, 24, 25, 27, 28, 29 & 30.

(stations 16-1, 38-40, 40-38, 1-37, 19-17)

MG, TS, AM, JB, DP (five scientists)

Wednesday 2nd: Upstream Trent survey

The party mustered on board from 0615 and *Sea Vigil* departed Hull Marina at 0730. The upstream Trent survey commenced at station 16 (0747) and continued into the Trent at 0855 and was at Gainsborough (station 50) at 1107. The survey then continued and returned downstream and ended at station 16 (1532). The *Sea Vigil* locked into Hull Marina at 1935. The scientific party unloaded their equipment and samples and departed the vessel at 1945.

The nutrient and standard parameter survey was as on Wednesday. Discrete samples were taken at all stations for gravimetric, C/N chlorophyll and DOC* analysis (* downstream survey). CO was measured in a semi-continuous way over the whole survey. Samples were collected for later determination of trace metals at stations 50, 49, 48, 47, 46, 45, 44, 43, 42 & 41 (Trent stations)

(stations 16-8, 41-50, 50-41, 8-16)

MG, DP, AM, TS, AT (five scientists)

Wednesday 2nd: Continued Humber Flux Curtain

The party mustered on board at 2045 and the *Sea Vigil* locked out of Hull Marina at 2130. The vessel made passage for Spurn Head to start the work at the Flux Curtain.

Thursday 3rd: Humber Flux Curtain Continued

The instruments were deployed outboard at 0006 and the survey proceeded at 0018. Fourteen Axial transects of the Humber Flux Curtain were carried out for the approximate duration of a tidal cycle. At 1146 the final transect was completed and the vessel headed for Grimsby. The *Sea Vigil* entered Grimsby Fish Dock at 1245. The scientific party unloaded their equipment and departed the vessel at 1315.

Measurements were made of conductivity, temperature, turbidity and depth. The surface waters were monitored using the *Sea Vigil* instrumentation. Carbon monoxide concentrations were monitored as part of the survey.

Friday 21st: Contingency day.

Notes:

This was the twentieth LOIS RACS(C) Core Programme survey of the Humber and Ouse. The fifth of the regular series of surveys into the Trent was completed. Carbon monoxide, nitrous oxide and methane concentrations were monitored for the sixth in a series of two monthly investigations. DOC concentrations continued to be monitored. All aspects of the study were carried out over the full length of the survey. A number samples were collected in the low salinity region of the Ouse and Trent for later trace metal work. Samples were also collected in the lower Humber as part of the trace metals project.

We thank Peter Sarjeant, Ulric Wilson and Keith Warner of the Environment Agency for their help throughout the week. Their flexibility was appreciated particularly as the programme was altered throughout the week.

Due to an inclement weather forecast for the Thursday afternoon and Friday the work planned for Thursday was rescheduled to overnight Wednesday. We are indebted to Peter Sarjeant, Ulric Wilson and Keith Warner for their agreement to this change.

LOIS RACS(C) Core Programme Trent-Ouse-HUMBER Station Grid				
Station No	E'ing-N'ing	Station Name	River	
50	E 480 753, N 390 281	Gainsbrough-Beckingham Warf	Trent	TC
49	E 478 637, N 392 962	Walkerith	Trent	
48	E 480 717, N 397 898	Wildsworth	Trent	
47	E 483 747, N 403 627	Kelfield	Trent	
46	E 483 683, N 405 811	Butterwick	Trent	TC
45	E 483 903, N 409 820	Althorpe	Trent	TC
44	E 483 779, N 412 353	Keadby	Trent	
43	E 485 687, N 414 522	Flixborough	Trent	
42	E 486 350, N 418 450	Burton Stather	Trent	
41	E 486 472, N 422 008	Flats Light	Trent	
	Lat-Long			
40	53 46 88 N 01 03 01 W	Cochranes Selby	Ouse	
39	53 45 74 N 01 01 69 W	Marrow Bone Reach	Ouse	
38	53 45 06 N 00 59 46 W	Newhay Barn	Ouse	
1	53 44 97 N 00 58 28 W	Barnby Barrage (Derwent Conf.)	Ouse	
2	53 43 98 N 00 56 60 W	Longfield Drain	Ouse	
3	53 43.61 N 00 54.41 W	Aire Confluence	Ouse	
4	53 43.51 N 00 51.39 W	Howden Dyke Island	Ouse	
5	53 42.78 N 00 50.40 W	Goole Rail Bridge	Ouse	
6	53 41.35 N 00 51.42 W	Earnshaw Clough	Ouse	
7	53 42.22 N 00 48.90 W	Hall Staith	Ouse	
8	53 41.73 N 00 46.05 W	Whitgift (Tide Guage)	Ouse	
9	53 42.20 N 00 43.05 W	Blacktoft Jetty	Ouse	
	Lat-Long			
10	53 42.20 N 00 40.23 W	Walker Dyke	Humber	
11	53 43.20 N 00 37.00 W	Whitton Ness	Humber	
12	53 42.22 N 00 39.92 W	Oyster Ness	Humber	
13	53 42.60 N 00 30.67 W	North Ferriby	Humber	
14	53 42.80 N 00 27.44 W	Hessle	Humber	
15	53 42.50 N 00 24.25 W	Barton & Barrow	Humber	
16	53 43.57 N 00 21.60 W	No 26A Light float	Humber	Hull
17	53 44.22 N 00 18.30 W	No 24 Lightfloat	Humber	Hull
18	53 43.55 N 00 15.32 W	Salt End	Humber	
19	53 41.68 N 00 14.10 W	Pauls Sands	Humber	
20	53 40.13 N 00 12.57 W	No 15A N. Killinghome	Humber	
21	53 38.60 N 00 10.80 W	No 11A S. Killingholme	Humber	SB
22	53 37.53 N 00 08.56 W	No 10A Stallingborough Haven	Humber	SB
23	53 36.58 N 00 05.50 W	Diffuser-Burcom	Humber	SB
24	53 35.60 N 00 02.30 W	Grimsby Road	Humber	SB
25	53 34.95 N 00 00.20 E	No 4B South Shoal	Humber	SB
26	53 34.50 N 00 03.47 E	No 4 Bull Channel	Humber	
27	53 33.06 N 00 03.20 E	Haile Channel	Humber	SB
28	53 32.25 N 00 02.52 E	Haile Sand Fort	Humber	HM
29	53 33.36 N 00 04.82 E	Bull Sand	Humber	HM
30	53 33.43 N 00 07.58 E	Binks	Humber	HM
31	53 35.20 N 00 05.55 E	No 51 Trinity	Humber	NB
32	53 36.45 N 00 02.29 E	No 55 Hawke	Humber	NB
33	53 36.94 N 00 00.50 W	No 58 Sunk	Humber	NB
34	53 37.17 N 00 03.47 W	No 62 Hawkins Point	Humber	NB
35	53 37.66 N 00 06.63 W	No 7A	Humber	NB
36	53 38.82 N 00 09.65 W	No 71 Holme Deposit	Humber	NB
37	53 40.28 N 00 11.50 W	No 72 Foul Holme Sands	Humber	NB