

# Halifax Harbour Water Quality Monitoring Project

## Weekly Summary #41

**Survey Date:** 31 March 2005  
**Nature of Survey:** Complete Survey  
**Report File (this document):** HHWQMP\_report041\_050331.doc  
**Data File:** HHWQMP\_data041\_050331.xls

**Data Return:**  
 Profile: 52%  
 Bacteria: 54%  
 Chemical: 43%  
**Overall: 48%**

### Sample Notes:

Storm winds resulted in a truncated sampling program. Only protected inner Harbour sites were sampled. Therefore B2, HC, C1-4, F1-3, DYC, G2, H1-3 and BYC were not sampled.

### QA/QC samples:

Chemical Analysis		EE2 – 1m	
		reference sample	QA/QC
Detectable Parameter	units		
Ammonia (as N)	mg/L	<0.05	0.05
Total Suspended Solids	mg/L	11	5.7
Boron	ug/L	3800	4000
Lithium	ug/L	170	170
Strontium	ug/L	6900	7100
Titanium	ug/L	57	65
Uranium	ug/L	3.3	3.2

### Fecal Coliform (CFU/100ml)

Site	PC-1m	BRB-10m	D2-10m	E1-10m
Reference	110	300	380	580
QA/QC	120	270	250	430

### Regulated parameters with all samples below detection (<EQL)

Parameter	EQL(µg/L)	Parameter	EQL(µg/L)	Parameter	EQL(mg/L)
Cadmium	3	Nickel	20	Oil and Grease	5
Chromium	20	Copper	20	CBOD <sub>5</sub>	5
Lead	5				

### Detectable non regulated metals

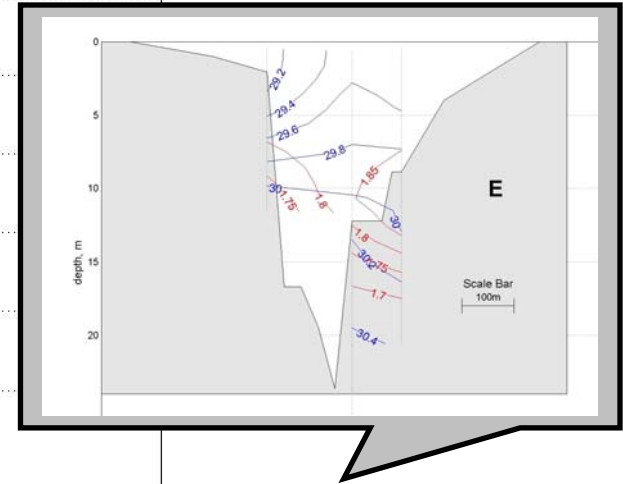
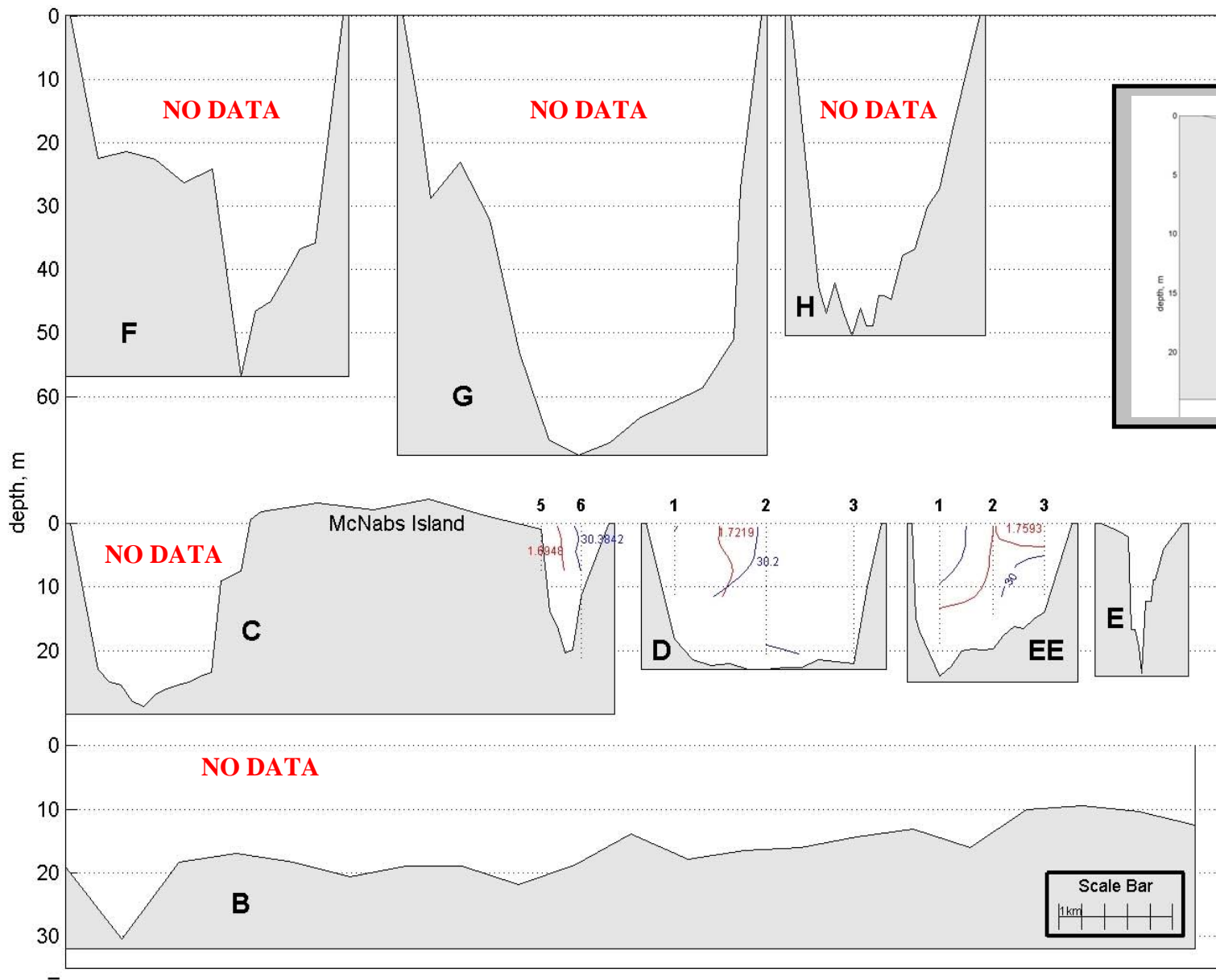
Boron, lithium, strontium, titanium and uranium exhibit very stable background concentrations in the Harbour. These levels have been documented in previous reports. Thallium was also detected in one sample in this survey (1.1 µg/L).

### Comments:

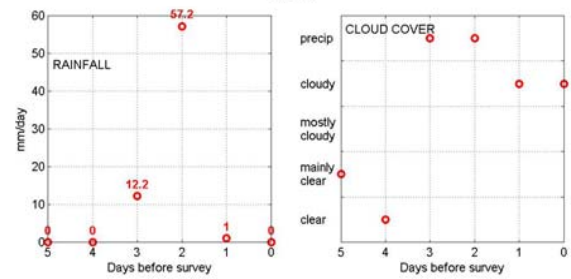
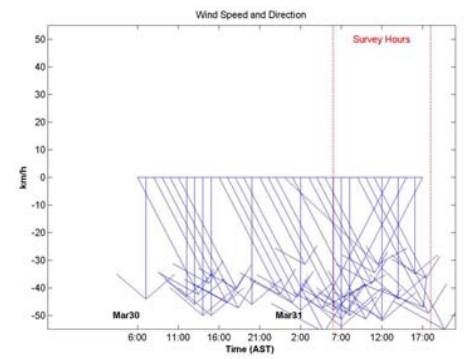
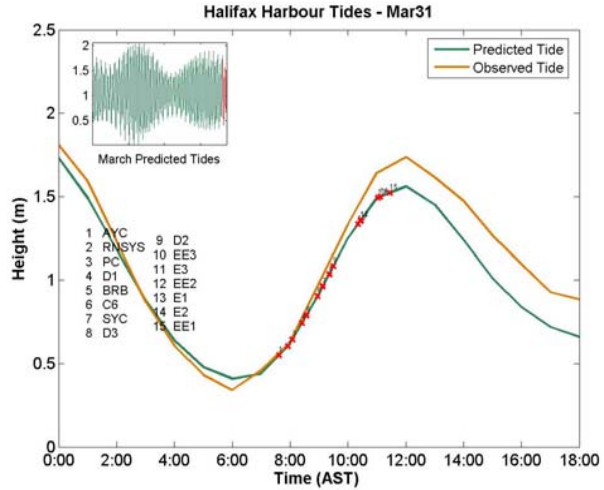
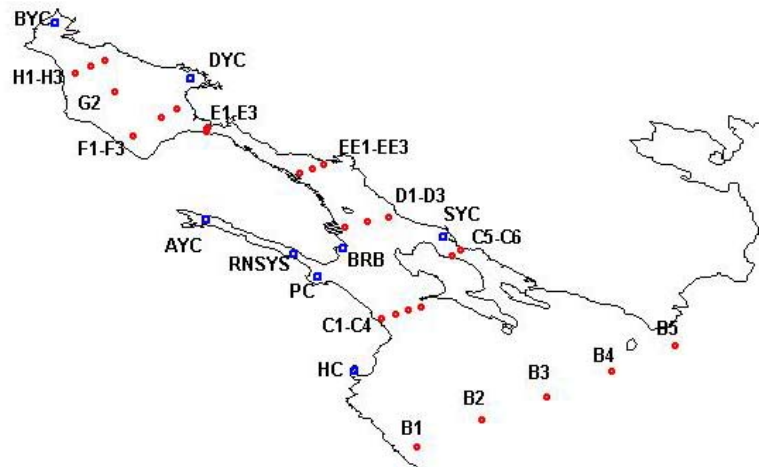
Zinc: One sample (D2-10m) had detectable levels of zinc at 78 ug/L. This value does not exceed the guideline of 86 ug/L.

Dissolved Oxygen: The dissolved oxygen in the inner Harbour is nearly completely uniform, both vertically and horizontally, with a measured value of about 8.5- 8.7 mg/L. Given the extended storm conditions this distribution is expected, however the absolute value is lower than expected. There is no indication of instrument error.

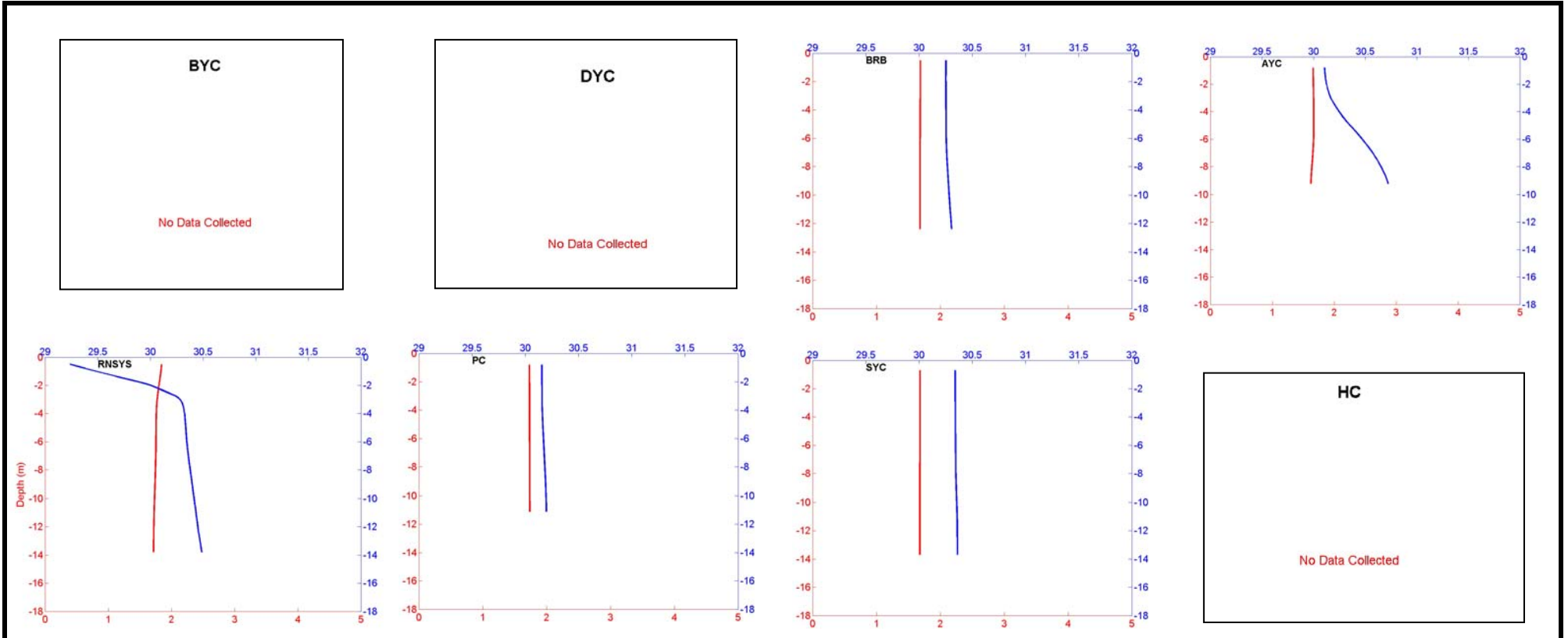
General: The inner Harbour, outside of the narrows, is almost completely vertically uniform in all parameters, except chlorophyll a. There is evidence of stratification in the Narrows, perhaps as a function of ongoing local freshwater input, but it could be from further up the Basin, as this was not sampled. The profile maximum Chlorophyll-a values are similar to those measured in the inner Harbour last week (8-10 mg/m<sup>3</sup>) but the stratification has been destroyed by the persistent strong winds and the maximums are near the bottom rather than at 5-10 m.



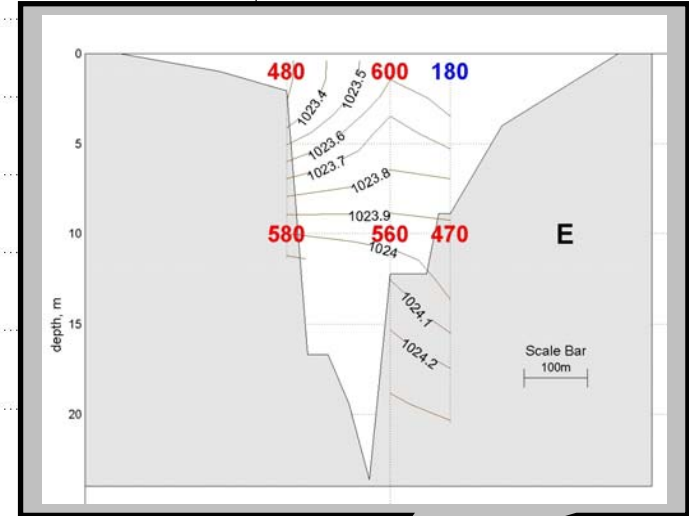
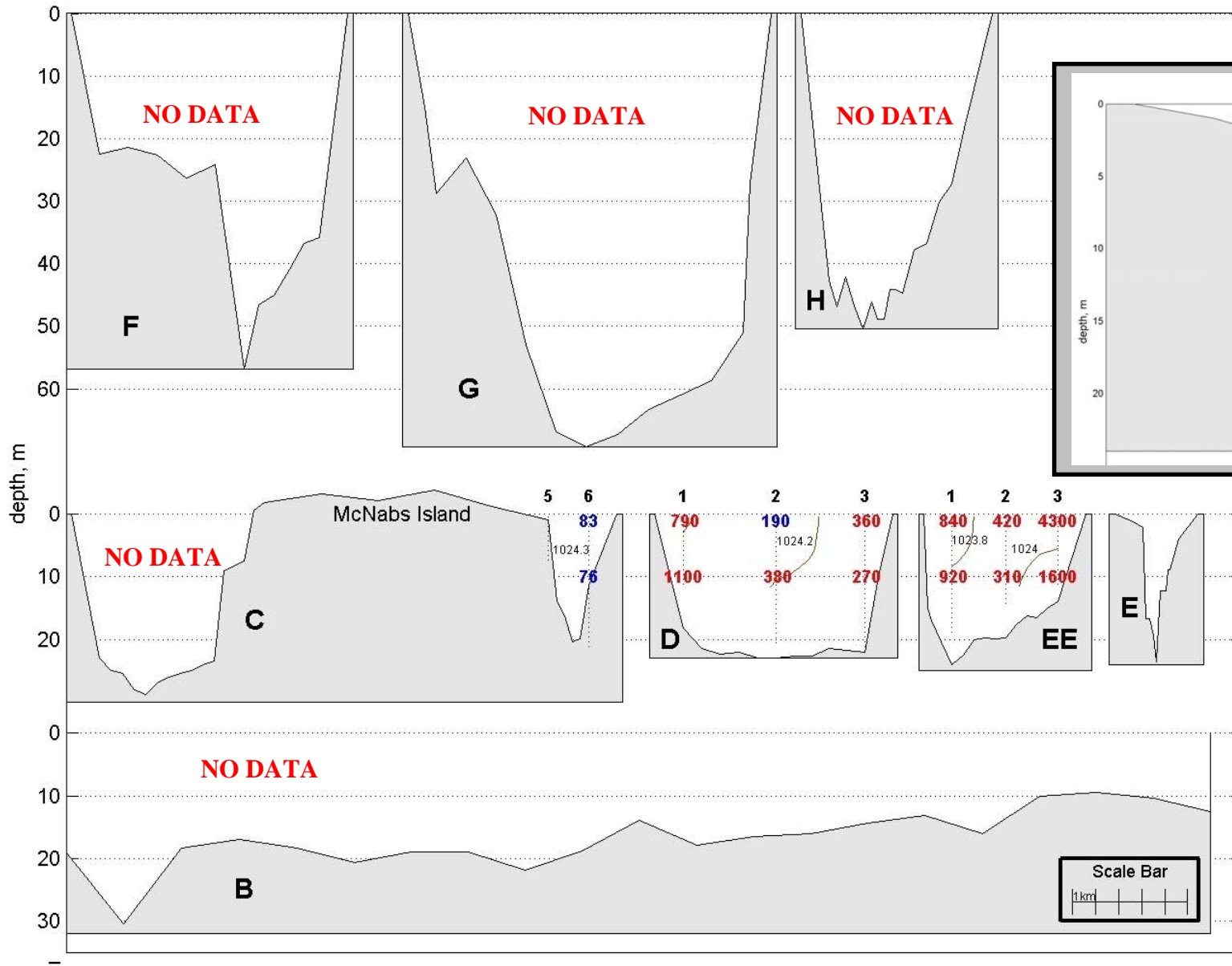
Unless otherwise labeled:  
- salinity contour interval is 0.2 PSU  
- temperature contour interval is 1°C.



## Yacht Clubs



Salinity in PSU      Temperature in °C



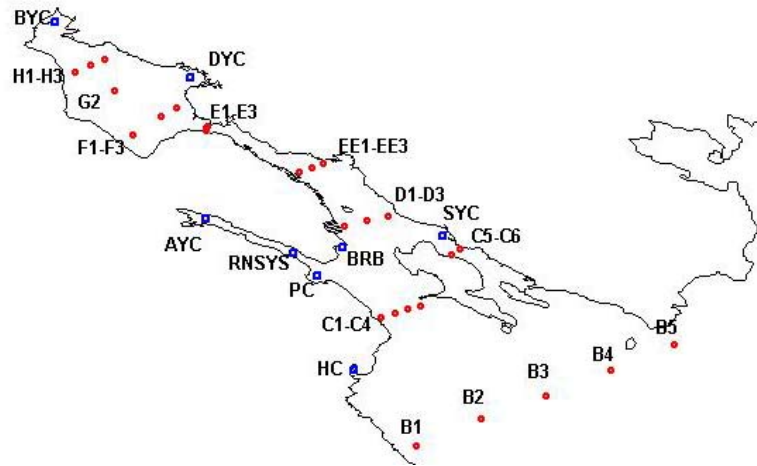
Unless otherwise labeled:  
 - density contour interval is 0.2 kg/m<sup>3</sup>

Density in kg/m<sup>3</sup>

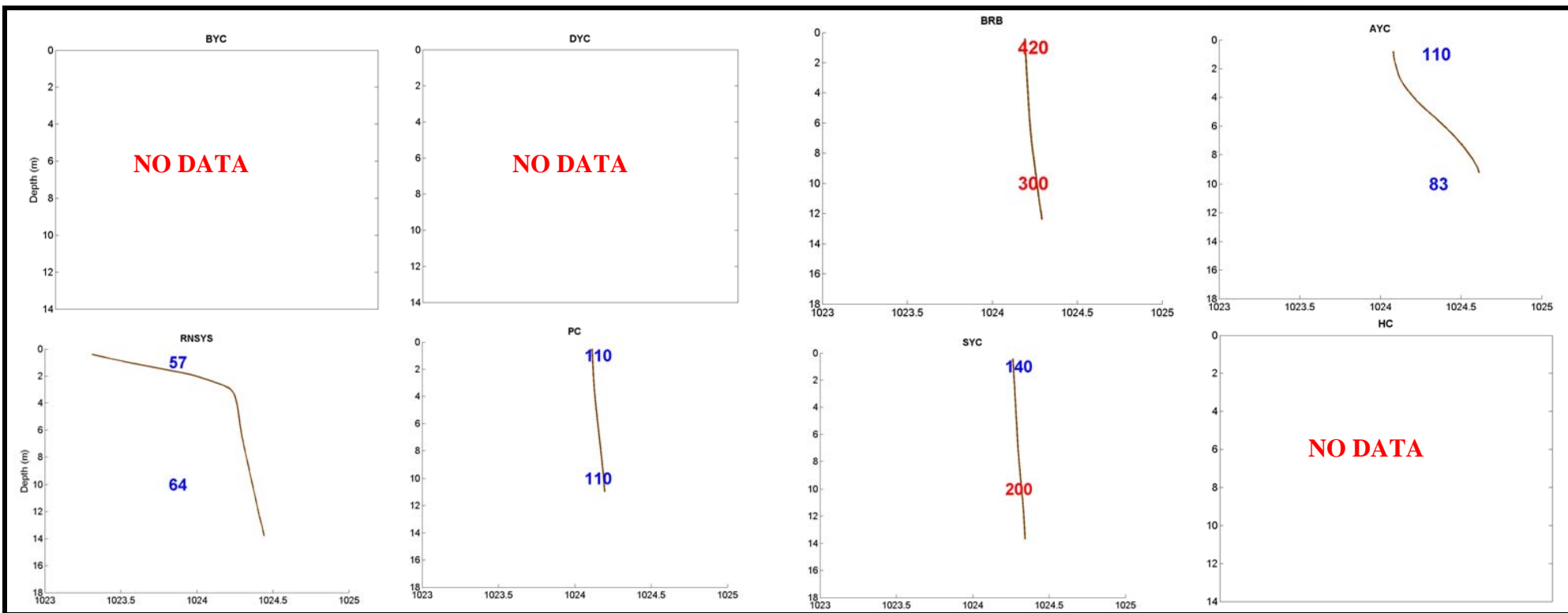
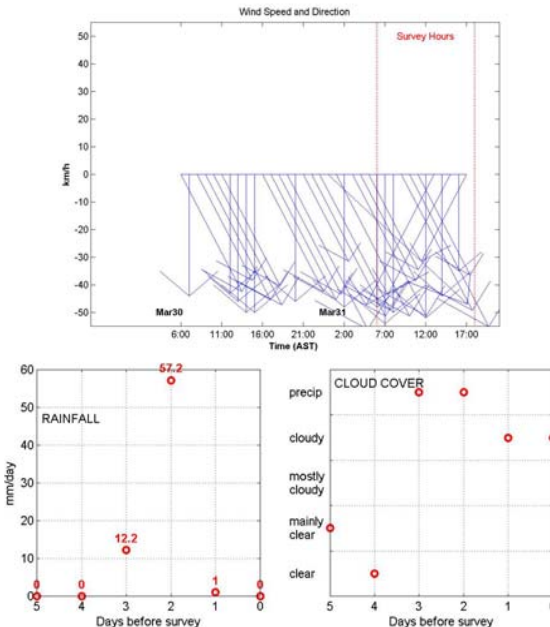
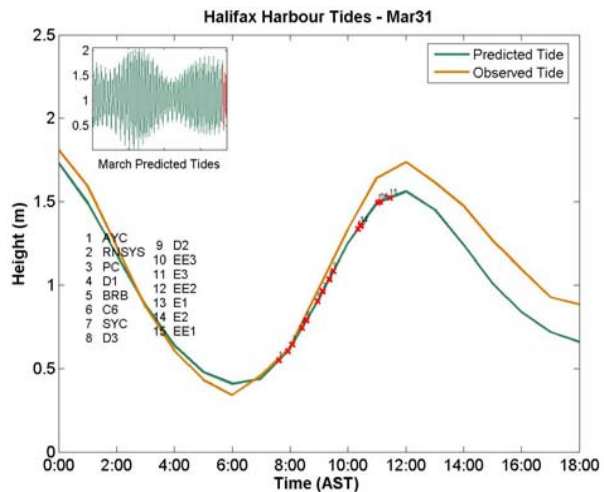
Fecal coliform: below limits

above shellfish limit (14 cfu/100mL)

above swimming limit (200 cfu/100mL)



**Yacht Clubs**

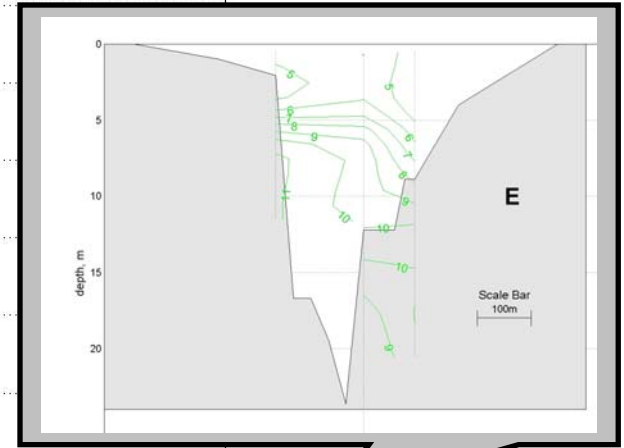
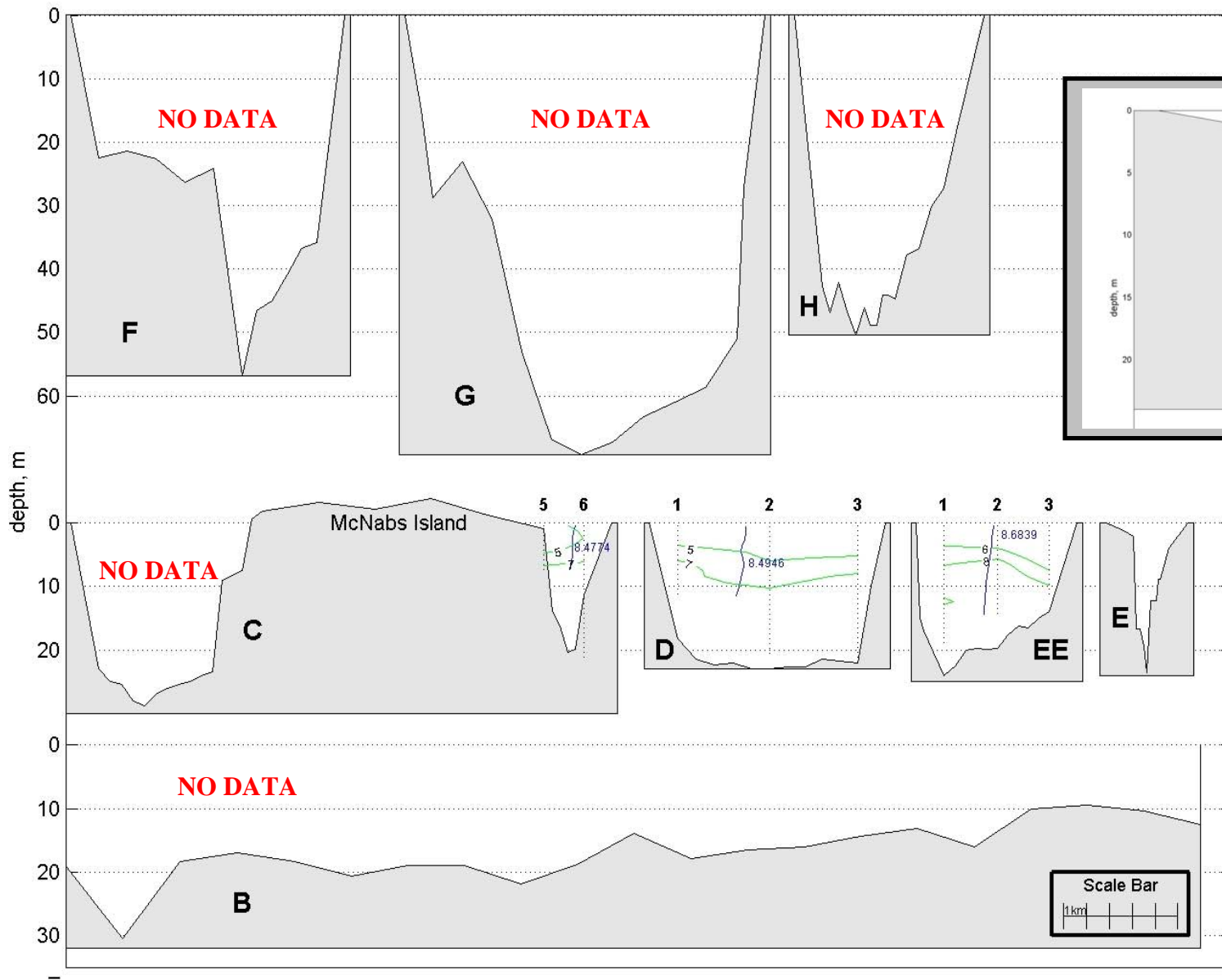


Density in  $\text{kg/m}^3$

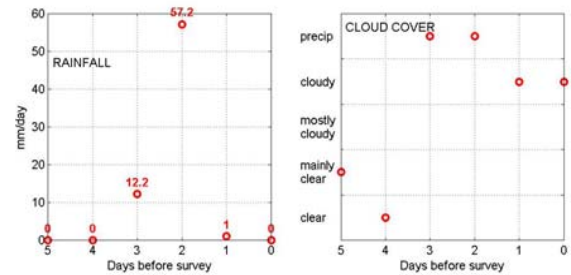
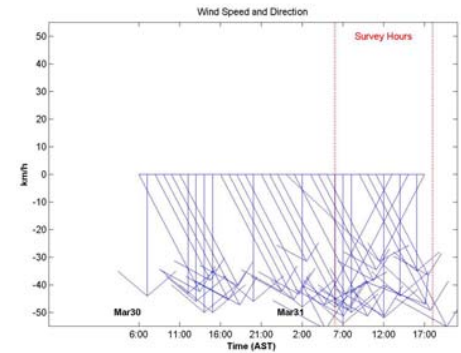
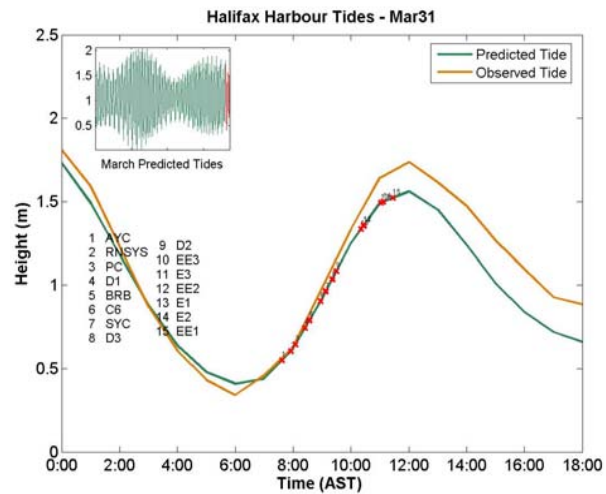
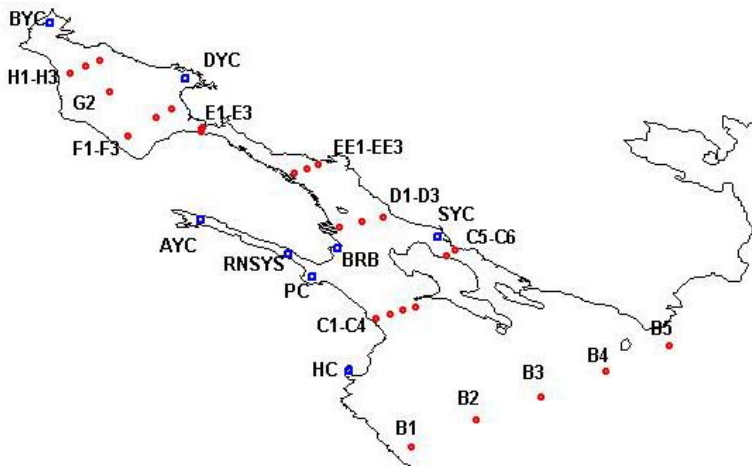
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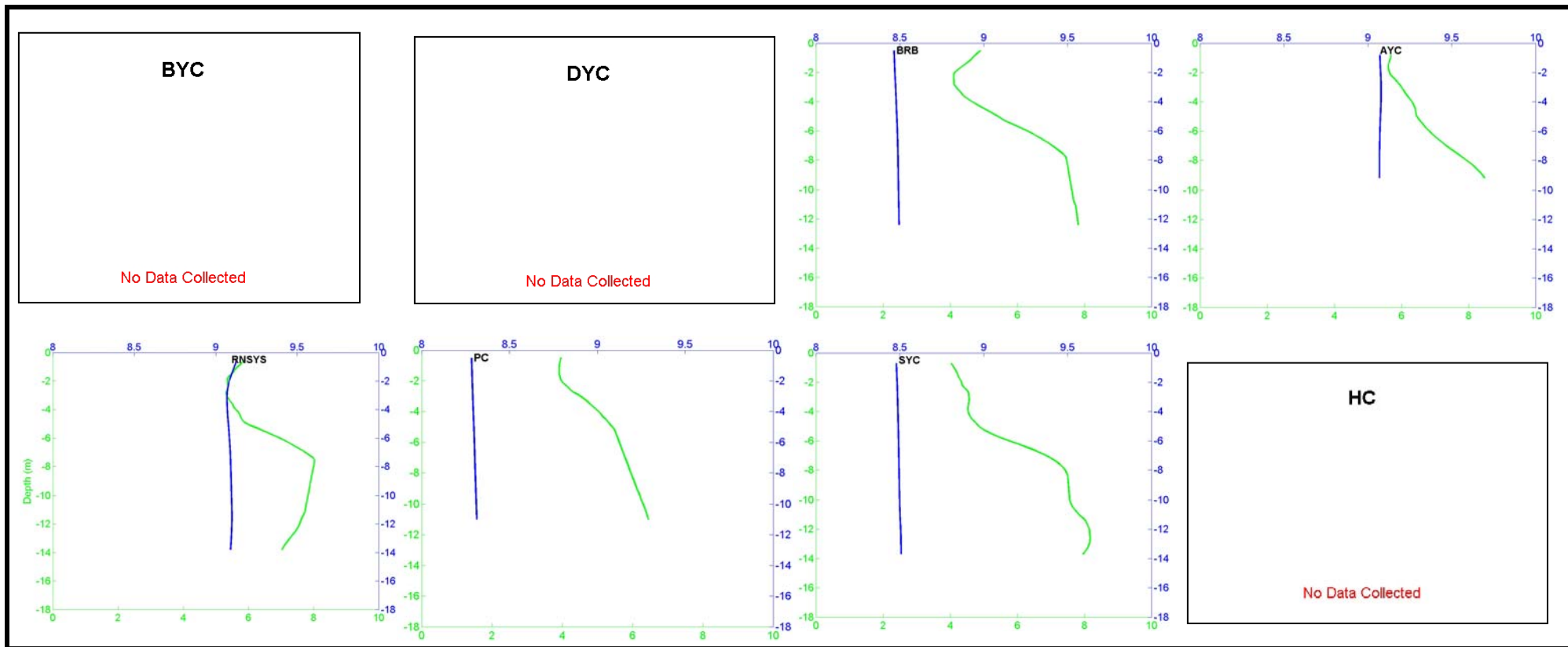
above swimming limit (200 cfu/100mL)



Unless otherwise labeled:  
- **dissolved oxygen** contour interval is 0.5 mg/L  
- **chlorophyll** contour interval is 1mg/m<sup>3</sup>.

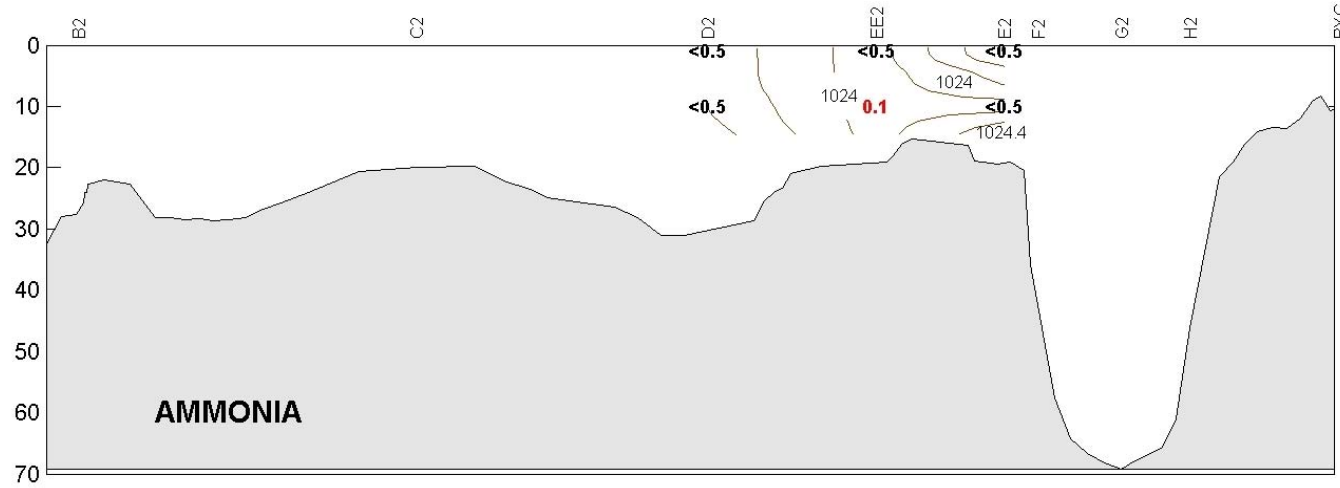
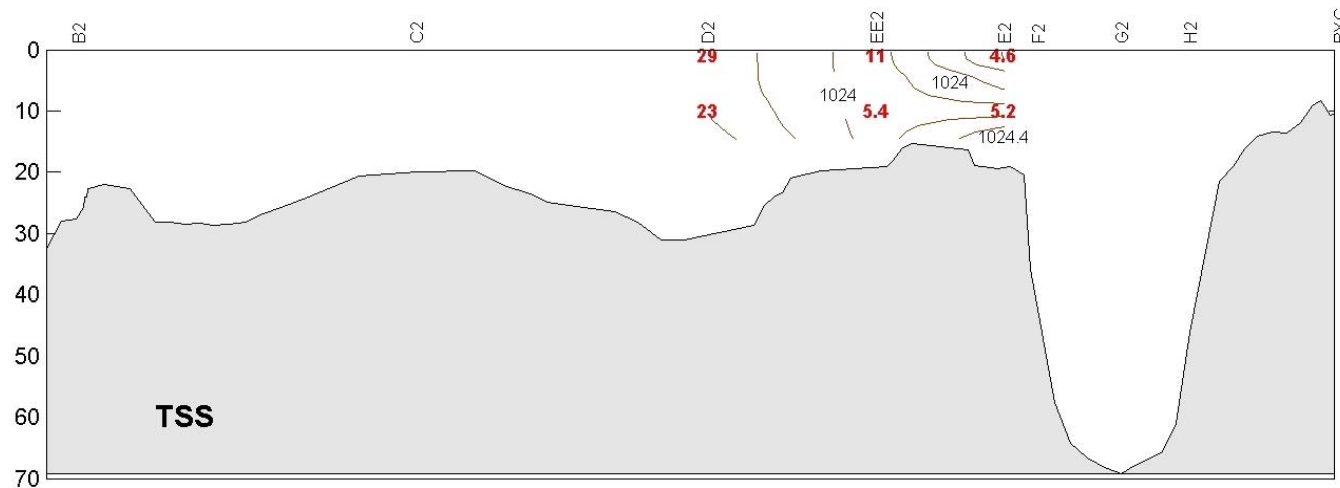


## Yacht Clubs



DO in mg/L      Chlorophyll in mg/m<sup>3</sup>

**CHEMISTRY**



Density in kg/m<sup>3</sup>

Ammonia in mg/L

TSS in mg/L

