Halifax Harbour Water Quality Monitoring Project Weekly Summary #67

Survey Date: 28 September 2005 Nature of Survey: Complete Survey

Report File (this document): HHWQMP_report067_050928.doc **Data File:** HHWQMP_data067_050928.xls

Data Return:

 Profile:
 100%

 Bacteria:
 100%

 Chemical:
 100%

 Overall:
 100%

Sample Notes:

The Dartmouth Cove station (DC-1m) was sampled this week.

Chemical Analysis QA/QC		F2 - 1m		DC-1m	
Detectable		reference		reference	
Parameter	units	sample	QA/QC	sample	Dup
Ammonia (as N)	mg/L	0	0	< 0.05	
Total Suspended Solids	mg/L	6	4	9	
Boron	μg/L	3900	3200	3300	3300
Lithium	μg/L	160	140	140	150
Strontium	μg/L	6800	6700	7000	7000
Thallium	μg/L	<1	<1	1	<1
Titanium	μg/L	41	49	36	46
Uranium	μg/L	3	3	3	4
Zinc	μg/L	58	57	53	53

Fecal Coliform QA/QC (CFU/100ml)

Site	F1-10m	DYC-1m	D3-1m	F2-1m
Reference	8	0	72	0
QA/QC	7	0	180	2

Regulated parameters with all samples below detection (<EQL)

Parameter	EQL(µg/L)	Parameter	EQL(µg/L)	Parameter	EQL(mg/L)
Cadmium	3	Manganese	20	Oil and Grease	5
Chromium	20	Nickel	20		
Copper	20	Lead	5		

Detectable non regulated metals

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Metal	EQL (µg/L)	Number >EQL	Mean (µg/L)	Range (µg/L)	
Boron	50	15	3680	3300-3900	
Lithium	20	15	160	140-180	
Strontium	50	15	6826	6500-7200	
Thallium	1	1	1	1	
Titanium	20	15	44	36-50	
Uranium	1	15	3.2	3-4	
Vanadium	20	1	22	22	

Comments:

Dartmouth Cove detectable values: Fecal coliform: 20 cfu/100 mL,

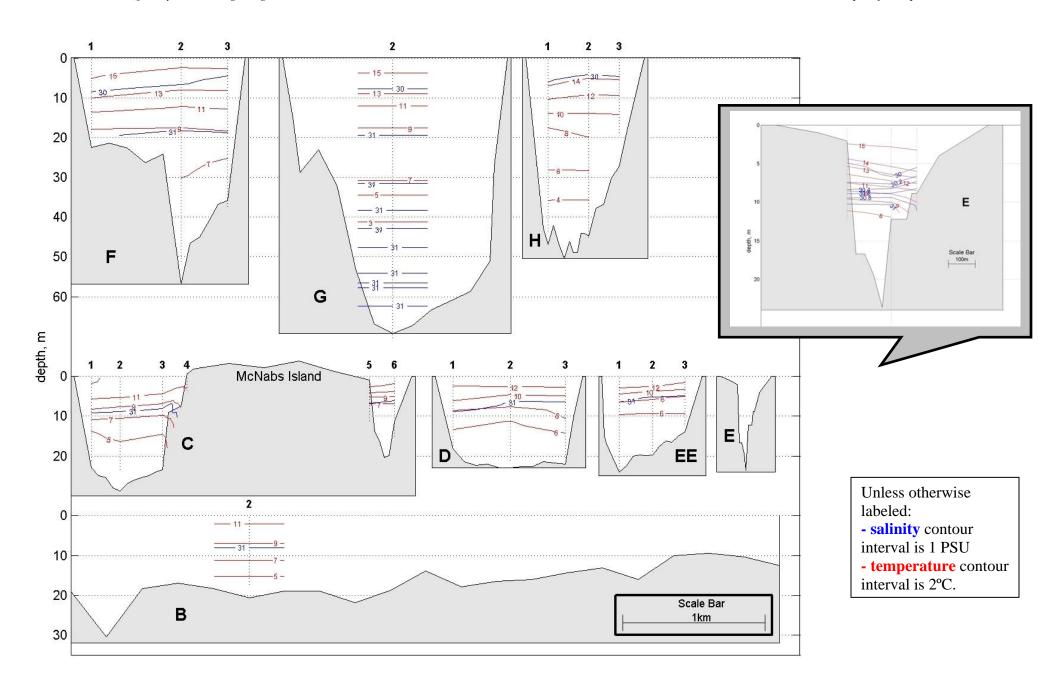
TSS: 9.0 mg/L Zinc 53 µg/L

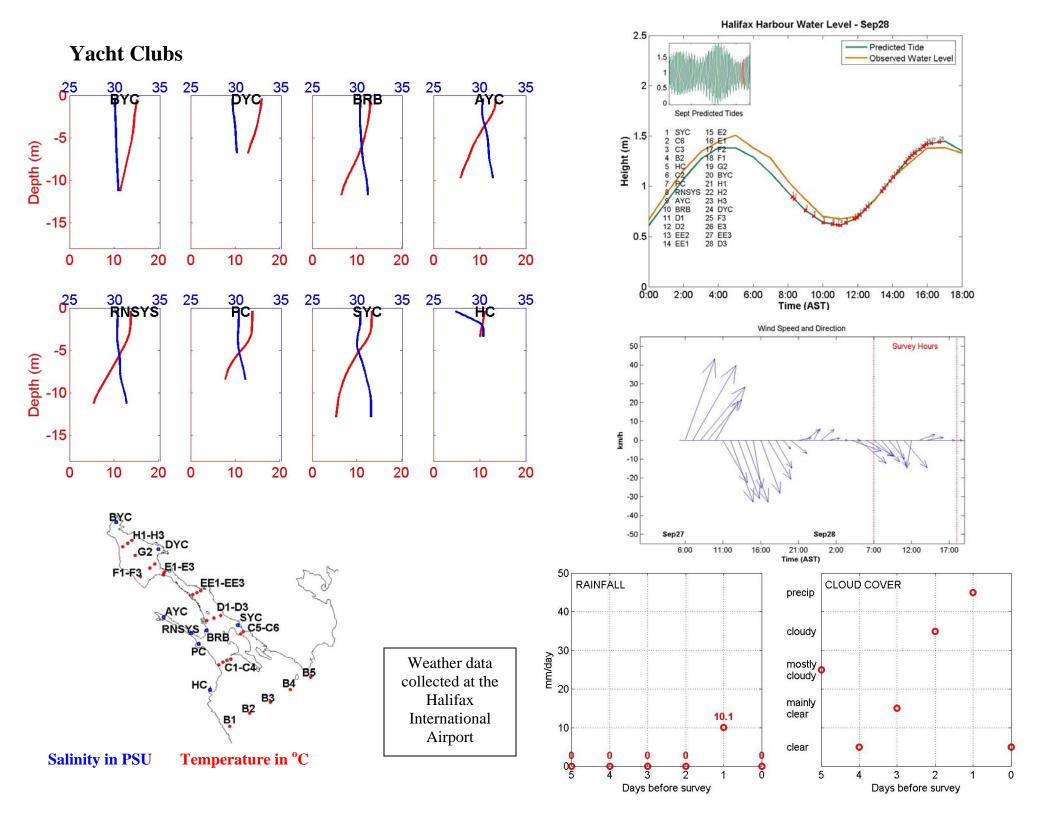
Zinc: All samples (15 total) had detectable levels of zinc. The values ranged from 50 to 70 μ g/L, below the guideline level of 86 μ g/L. This is an unusual occurrence with no obvious cause.

General: There is an intrusion of colder saltier shelf bottom water into the Harbour. There is water denser than the Basin bottom water at the bottom in the Narrows, implying that the intrusion is ongoing. Overall, the Harbour is saltier and cooler than last week, in spite of moderate rainfall the day before the survey. Consistent with the intrusion, surface water temperature and salinity have changed less than that of bottom water, resulting in an overall increase in stratification. The displacement of surface water out of the harbour has resulted in displacement of the coliform distribution far down the Harbour, with uncharacteristically high values evident in the surface samples in the C section and at B2.

Dissolved Oxygen: Measured DO levels are generally higher than last week. The exception is in the Basin where maximum values have dropped slightly from last week's relatively high values. In the Basin, the maximum values are in the near surface water, while south of the Narrows (E section), the maximum values are near bottom. The data indicate that in the Outer Harbour (B2) the values are up from last week but still below the 8.0 mg/L SA guideline. Other than this, the surface water in the NW Arm, Eastern Passage and the C section of the main harbour tends to be just below the 7.0 mg/L SB guideline. The water below 10 m in the Basin is also below this guideline. The DO data is not ground truthed and absolute values are questionable (see DO discussion in OR#1).

Chlorophyll: Last week's phytoplankton bloom has continued, with similar profile maximum fluorescence values (30 to 50 mg/m³) in the Basin. Outside the Basin, the values are generally quite high, though there is a minimum (profile maximums in teens, similar to last week) at the EE and D sections. Further out the Harbour and in the NW Arm the profile maximums increase again to values of 20-40 mg/m³, much higher than last week. The maximum values occur at depths of 5-10 m throughout the Harbour.





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