

Real Time Water Quality Monthly Report Lower Humber River at Humber Village Bridge March – April 2007

General

- The Water Resources Management Division staff monitors the real-time web page on a daily basis.

Maintenance and Calibration of Instrumentation

- The instrument at Humber River was removed on March 15th, 2007 for cleaning and calibration and then reinstalled on March 16th. The results from comparing the Minisonde values to the Datasonde values during removal and reinstallation on March 15th/16th, 2007 can be seen in **Table 1**.

Table 1: QA/QC Data Comparison Rankings upon removal/reinstallation on Mar. 15th/16th, 2007

Station	Date	Action	Minisonde vs. Datasonde Comparison Ranking			
			Temperature	pH	Conductivity	Dissolved Oxygen
Humber River at Humber Village Bridge	April 17 th , 2007	Removal	Excellent	Fair	Excellent	Poor
	April 18 th , 2007	Installation	Excellent	Good	Marginal	Poor

- The instrument was deployed until April 17th (33-day deployment period) at which point it was removed for maintenance and calibration. The results from comparing the Minisonde values to the Datasonde values during removal April 17th, 2007 can be seen in **Table 2**.

Table 2: QA/QC Data Comparison Rankings upon removal on April 17th, 2006

Station	Date	Action	Minisonde vs. Datasonde Comparison Ranking			
			Temperature	pH	Conductivity	Dissolved Oxygen
Humber River at Humber Village Bridge	April 17 th , 2007	Removal	Excellent	Excellent	Marginal	Poor

- Dissolved oxygen values for QA/QC data comparisons show poor ranking for all removals/installation. This will be examined to determine the reason.

Data Interpretation

- During the deployment period of March 16th – April 17th, 2007 the water quality remained relatively stable for most parameters.
- The water temperature (**Figure 1**) showed a slight increase over the deployment period which is consistent with this time of the year. The range of temperature values was 0.3°C to 2.0°C.

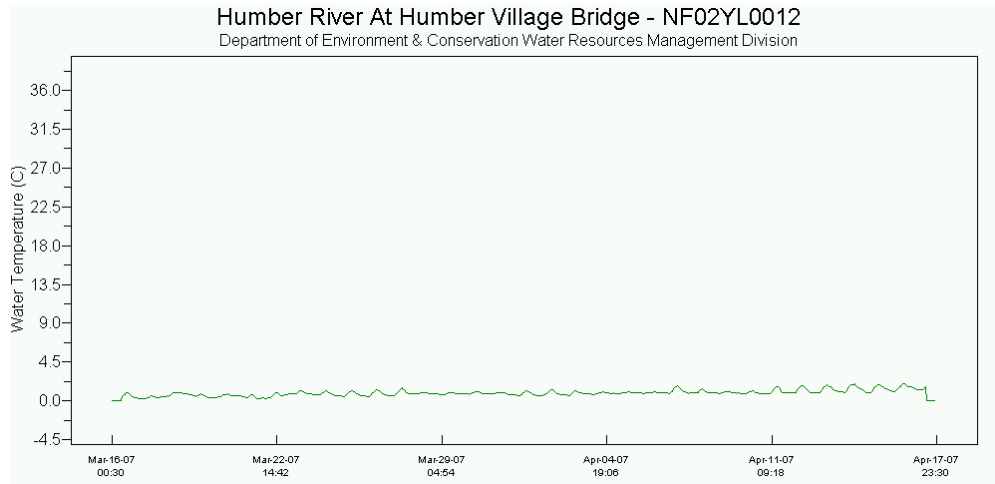


Figure 1

- The dissolved oxygen (**Figure 2**) showed a slight decrease in values which corresponds to the slight increase seen in temperatures in Figure 1. DO values ranged from 12.46mg/L to 11.88mg/L.

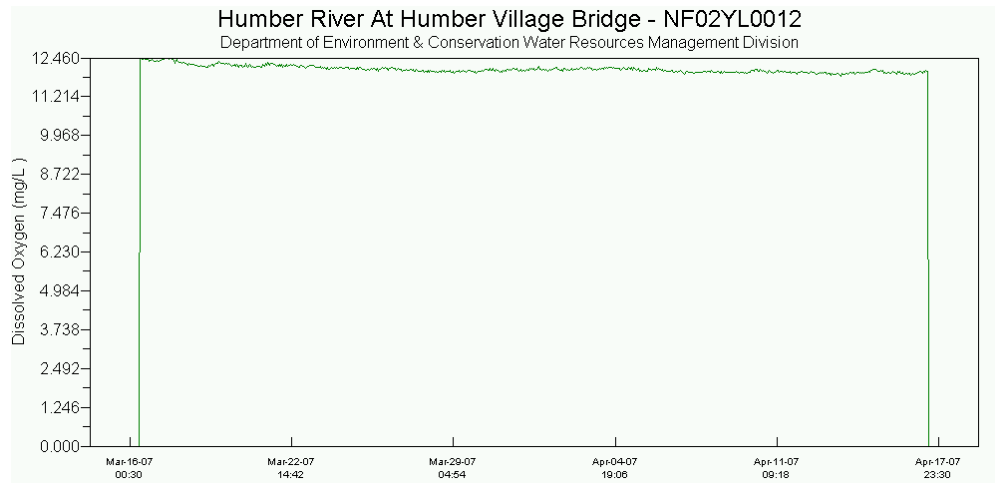


Figure 2

- pH values (**Figure 3**) remained relatively stable at approximately 7.0 units. The range for pH was 6.97 – 7.25 with all values falling within the recommended range (6.5 – 9.0) for the CCME Protection of Aquatic Life guidelines.

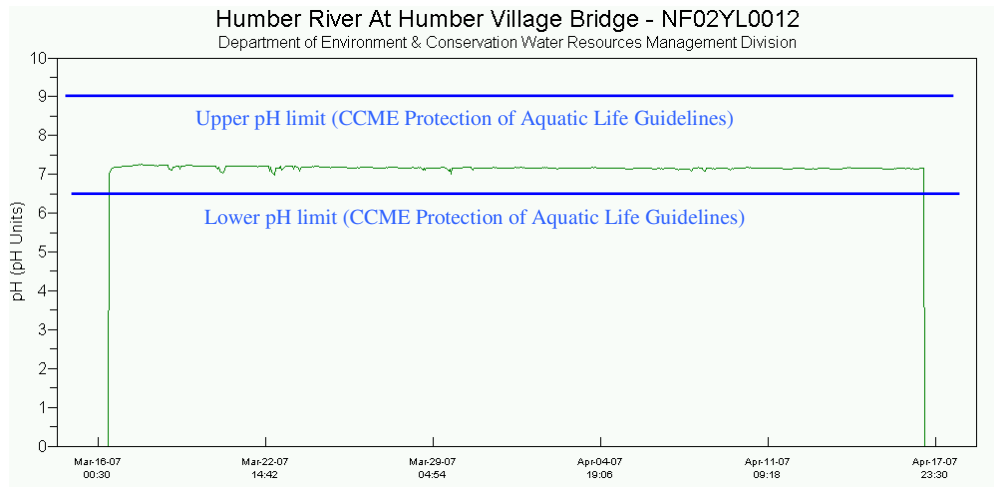


Figure 3

- Conductivity (**Figures 4**) remained consistent throughout the deployment period. The conductivity values ranged from 39.8 μ S/cm to 45.0 μ S/cm.

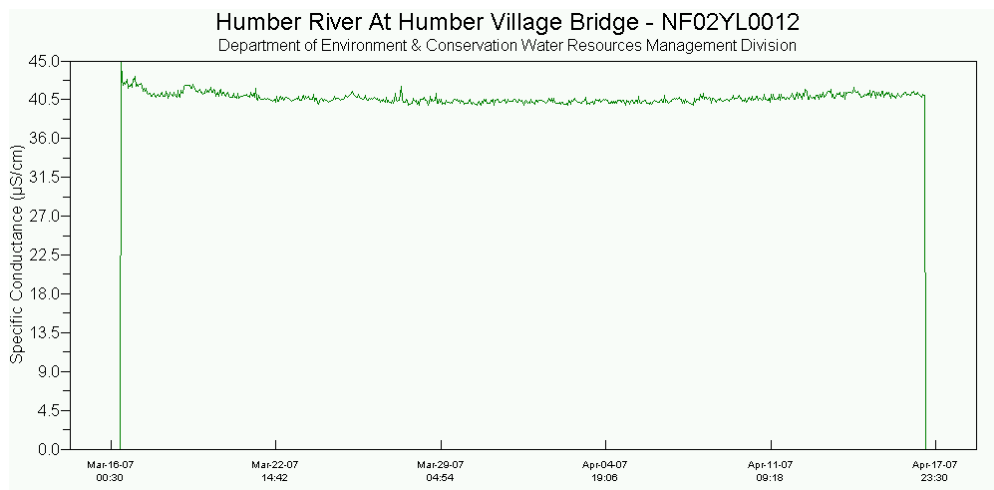


Figure 4

- The turbidity values (**Figure 5**) remained below 1.2 NTU which is the typical background concentration for this station. Figure 5 appears to have significant spikes in turbidity but it is only due to the scale of the graph as the highest turbidity values was only 1.2 NTU.

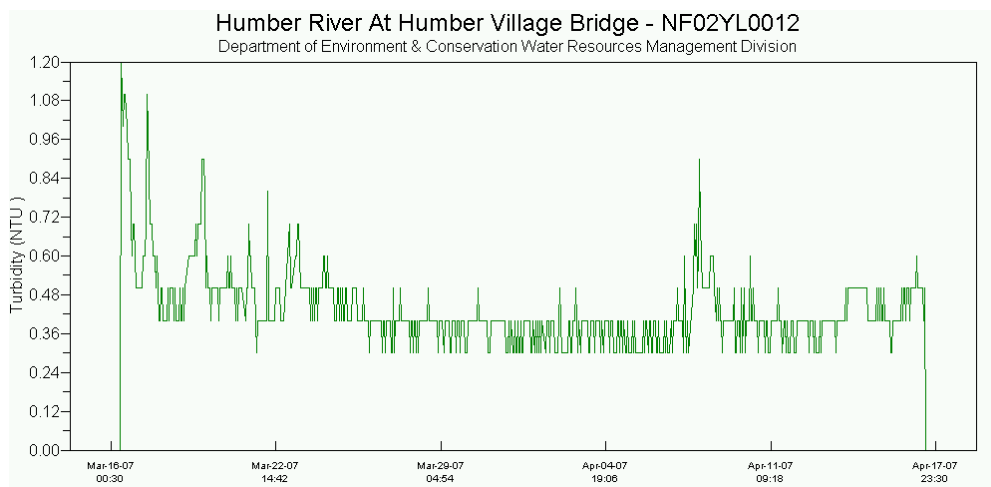


Figure 5

- **Figure 6** shows a slight fluctuation in stage values in the middle of the deployment period. This was due to precipitation at the time (**Appendix A**).

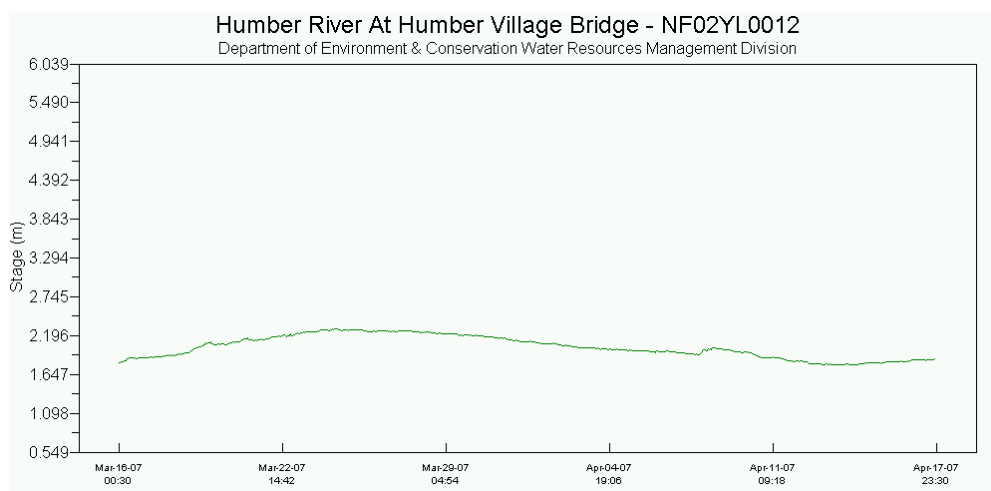


Figure 6

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Appendix A: Climate Data for Deer Lake (March & April 2007)

Daily Data Report for March 2007											
Day	Max Temp °C	Min Temp °C	Mean Temp °C	Heat Deg Days C	Cool Deg Days C	Total Rain mm	Total Snow cm	Total Precip mm	Snow on Grnd cm	Dir of Max Gust 10's Deg	Spd of Max Gust km/h
01†	-1.4	-9.8	-5.6	23.6	0.0	0.0	2.8	2.8	24		<31
02†	0.9	-15.3	-7.2	25.2	0.0	0.0	T	T	27		<31
03†	-0.7	-12.8	-6.8	24.8	0.0	0.0	3.0	3.0	26	8	37
04†	0.3	-5.1	-2.4	20.4	0.0	0.0	6.4	6.4	26		<31
05†	0.4	-5.4	-2.5	20.5	0.0	0.0	0.4	0.4	32	25	43
06†	-0.8	-12.2	-6.5	24.5	0.0	0.0	T	T	29	23	48
07†	-5.5	-13.9	-9.7	27.7	0.0	0.0	3.2	3.2	28	27	56
08†	-11.1	-16.8	-14.0	32.0	0.0	0.0	2.6	2.6	29	24	41
09†	-10.0	-16.7	-13.4	31.4	0.0	0.0	T	T	28	27	41
10†	-2.8	-14.5	-8.7	26.7	0.0	0.0	0.0	0.0	26	26	37
11†	5.4	-10.9	-2.8	20.8	0.0	6.4	T	6.4	26	24	52
12†	1.5	-7.0	-2.8	20.8	0.0	0.4	T	0.4	18	30	48
13†	-2.4	-16.9	-9.7	27.7	0.0	0.0	T	T	17	25	37
14†	7.3	-17.4	-5.1	23.1	0.0	9.6	0.0	9.6	17	24	50
15†	7.5	1.4	4.5	13.5	0.0	11.6	0.0	11.6	5		<31
16†	1.9	-8.8	-3.5	21.5	0.0	T	0.0	T	3	26	37
17†	1.1	-8.4	-3.7	21.7	0.0	0.0	0.0	0.0	3	6	46
18†	10.5	-0.3	5.1	12.9	0.0	5.8	T	5.8	3	25	33
19†	1.9	-7.9	-3.0	21.0	0.0	0.0	1.2	1.2	2	23	74
20†	2.2	-10.0	-3.9	21.9	0.0	0.4	1.2	1.6	2	20	43
21†	0.4	-11.6	-5.6	23.6	0.0	0.0	0.8	0.8	3	33	46
22†	5.2	-8.5	-1.7	19.7	0.0	5.6	0.4	6.0	3	23	56
23†	6.2	-3.0	1.6	16.4	0.0	1.2	1.0	2.2	2	23	39
24†	-2.8	-14.8	-8.8	26.8	0.0	0.2	0.0	0.2	3		<31
25†	0.6	-16.5	-8.0	26.0	0.0	0.0	0.0	0.0	2		<31
26†	6.3	-15.6	-4.7	22.7	0.0	0.0	0.0	0.0	2		<31
27†	9.5	-11.9	-1.2	19.2	0.0	0.0	0.0	0.0	2		<31
28†	5.4	-1.7	1.9	16.1	0.0	0.0	4.4	4.4	1	24	33
29†	2.5	-0.8	0.9	17.1	0.0	0.0	4.4	4.4	8		<31
30†	2.6	-2.5	0.1	17.9	0.0	0.0	T	T	8	24	35
31†	0.1	-6.7	-3.3	21.3	0.0	0.0	2.0	2.0	4		<31
Sum			688.5	0.0	41.2	33.8	75.0				
Avg	1.4	-9.8	-4.2								
Xtbn	10.5	-17.4							23		74

Daily Data Report for April 2007											
Day	Max Temp °C	Min Temp °C	Mean Temp °C	Heat Deg Days C	Cool Deg Days C	Total Rain mm	Total Snow cm	Total Precip mm	Snow on Grnd cm	Dir of Max Gust 10's Deg	Spd of Max Gust km/h
01†	-4.7	-10.4	-7.6	25.6	0.0	0.0	T	T	4	30	32
02†	-0.8	-15.2	-8.0	26.0	0.0	0.0	0.0	0.0	4		<31
03†	-1.4	-16.2	-8.8	26.8	0.0	0.0	1.0	1.0	3	6	43
04†	1.7	-2.9	-0.6	18.6	0.0	0.0	0.4	0.4	4	6	37
05†	4.1	-1.0	1.6	16.4	0.0	0.0	T	T	4	6	37
06†	3.7	-0.9	1.4	16.6	0.0	0.4	T	0.4	2	6	33
07†	7.5	-1.0	3.3	14.7	0.0	0.0	4.0	4.0	2	23	37
08†	5.4	-0.3	2.6	15.4	0.0	0.0	1.2	1.2	4	15	74
09†	2.1	-2.0	0.1	17.9	0.0	0.0	0.2	0.2	2	22	56
10†	-0.3	-3.5	-1.9	19.9	0.0	0.0	T	T	1	27	37
11†	2.4	-8.0	-2.8	20.8	0.0	0.0	T	T	1	27	37
12†	4.2	-9.9	-2.9	20.9	0.0	0.0	0.0	0.0	1	27	46
13†	7.3	-8.2	-0.5	18.5	0.0	0.0	0.0	0.0	1		<31
14†	4.9	-3.7	0.6	17.4	0.0	0.0	0.0	0.0	1	9	48
15†	5.2	-5.0	0.1	17.9	0.0	0.0	0.0	0.0	1	7	37
16†	7.9	-5.8	1.1	16.9	0.0	0.0	0.0	0.0	1	6E	37E
17†	5.1	-0.2	2.5	15.5	0.0	T	0.0	T	1	5	52
Sum				325.8*	0.0*	0.4*	6.8*	7.2*			
Avg	3.2*	-5.5*	-1.2*								
Xtbn	7.9*	-16.2*							15*		74*