

## Real Time Water Quality Monthly Report Lower Humber River at Humber Village Bridge January – March 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 January 16<sup>th</sup>, 2007 for cleaning and calibration and then reinstalled on January 19<sup>th</sup>. The results from comparing the Minisonde values to the Datasonde values during removal and reinstallation on January 16<sup>th</sup>/19<sup>th</sup>, 2007 can be seen in **Table 1**.

**Table 1: QA/QC Data Comparison Rankings upon removal/reinstallation on Jan. 16<sup>th</sup>/19<sup>th</sup>, 2007**

Station	Date	Action	Minisonde vs. Datasonde Comparison Ranking			
			Temperature	pH	Conductivity	Dissolved Oxygen
Humber River at Humber Village Bridge	January 16 <sup>th</sup> , 2007	Removal	Fair	Fair	Excellent	NA*
	January 19 <sup>th</sup> , 2007	Installation	Good	Good	Poor	NA*

\* Surveyor was reading Minisonde DO probe inaccurately.

- The instrument was deployed until March 15<sup>th</sup> (56-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 March 15<sup>th</sup>, 2007 can be seen in **Table 2**.

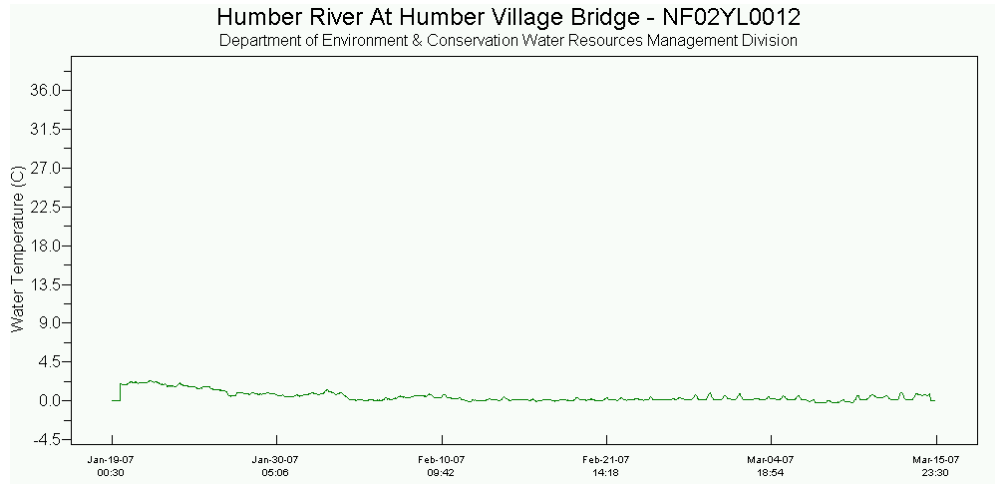
**Table 2: QA/QC Data Comparison Rankings upon removal on March 15<sup>th</sup>, 2006**

Station	Date	Action	Minisonde vs. Datasonde Comparison Ranking			
			Temperature	pH	Conductivity	Dissolved Oxygen
Humber River at Humber Village Bridge	March 15 <sup>th</sup> , 2007	Removal	Excellent	Fair	Excellent	Poor

- A water sample was taken for laboratory analysis as part of QA/QC procedures upon reinstallation.

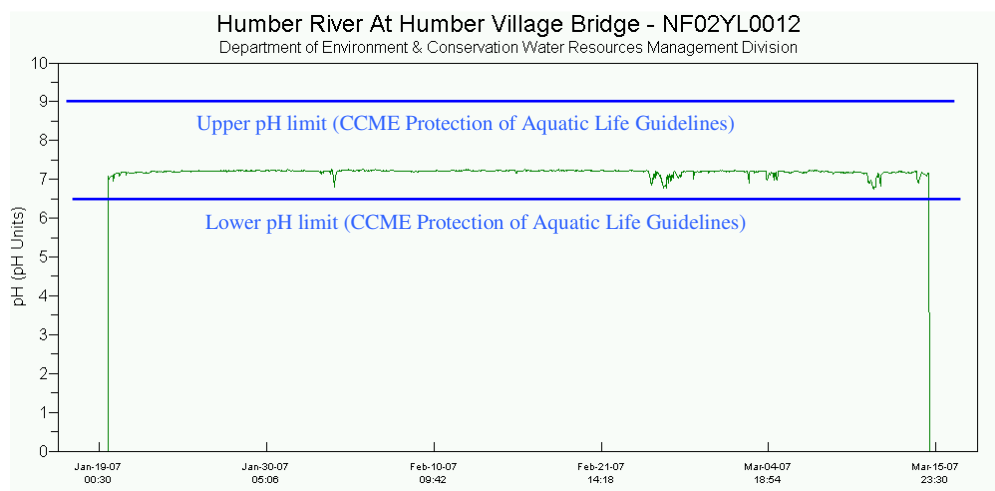
## Data Interpretation

- During the deployment period of January 19<sup>th</sup> – March 15<sup>th</sup>, 2007 the water quality remained relatively stable for most parameters.
- The water temperature (**Figure 1**) remained consistent over the deployment period with a range of -0.2°C to 2.3°C.



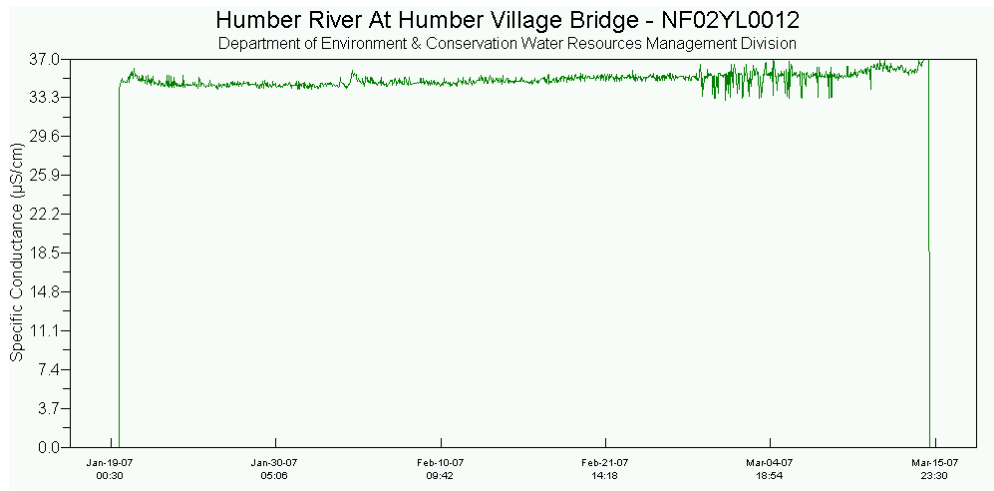
**Figure 1**

- The dissolved oxygen probe was not reading properly over the deployment period. This was due to a calibration problem that could not be rectified due to ice conditions on the deployment structure. These ice conditions would not permit the removal of the instrument. No other probes were affected by these unusual circumstances.
- pH values (**Figure 2**) remained relatively stable at approximately 7.0 units. The range for pH was 6.76 – 7.25 with only one reading with all values falling within the recommended range (6.5 – 9.0) for the CCME Protection of Aquatic Life guidelines.



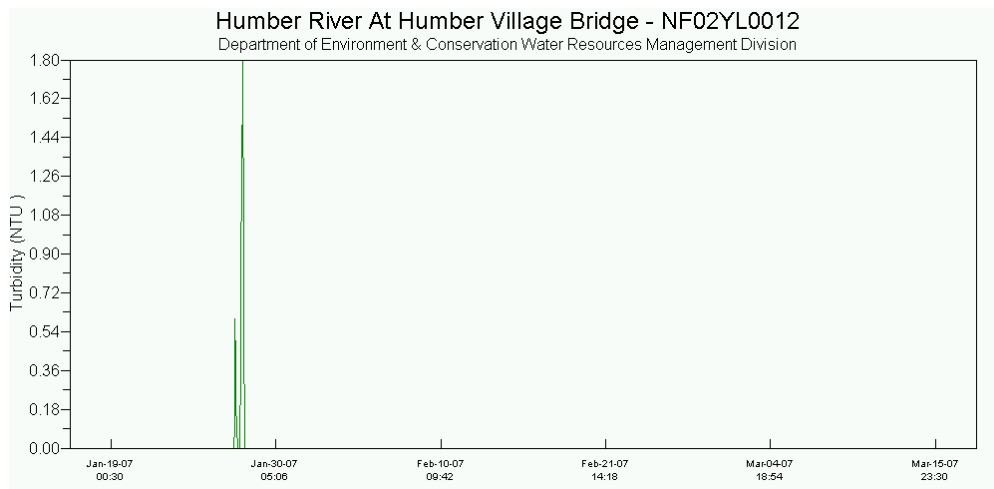
**Figure 2**

- Conductivity (**Figure 3**) remained constant throughout the deployment period. The conductivity values ranged from 33.1 $\mu$ S/cm to 38.9 $\mu$ S/cm.



**Figure 3**

- The turbidity values (**Figure 4**) remained below 2 NTU which is the typical background concentration for this station.



**Figure 4**

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## Appendix A: Climate Data for Deer Lake (January, February & March 2007)

Daily Data Report for January 2007											
D a y	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	-3.8	-21.0	-12.4	30.4	0.0	0.0	0.0	0.0	11		
02	1.1	-5.3	-2.1	20.1	0.0	1.4	5.2	6.6	10		
03	-1.1	-8.3	-4.7	22.7	0.0	0.0	3.2	3.2	14		
04	1.5	-1.5	0.0	18.0	0.0	0.0	T	T	13		
05	3.8	-3.1	0.4	17.6	0.0	0.6	0.0	0.6	12		
06	4.8	1.3	3.1	14.9	0.0	15.8	0.0	15.8	10		
07	4.9	0.3	2.6	15.4	0.0	9.4	0.4	9.8	4		
08	4.5	-1.1	1.7	16.3	0.0	2.0	9.2	11.2	3		
09	7.3	-0.8	3.3	14.7	0.0	0.6	1.2	1.8	6		
10	1.1	-4.5	-1.7	19.7	0.0	0.0	T	T	4		
11	-2.5	-4.0	-3.3	21.3	0.0	0.0	1.0	1.0	4		
12	0.0	-3.9	-2.0	20.0	0.0	0.0	5.4	5.4	4		
13	-2.7	-22.3	-12.5	30.5	0.0	0.0	19.4	19.4	13		
14	-4.3	-27.3	-15.8	33.8	0.0	0.0	3.2	3.2	23		
15	-7.4	-14.3	-10.9	28.9	0.0	0.0	T	T	23		
16	-9.3	-16.8	-13.1	31.1	0.0	0.0	4.0	4.0	24		
17	-13.7	-20.4	-17.1	35.1	0.0	0.0	0.4	0.4	23		
18	-6.1	-16.8	-11.5	29.5	0.0	0.0	1.0	1.0	21		
19	3.3	-6.3	-1.5	19.5	0.0	T	0.4	0.4	19		
20	5.3	-3.2	1.1	16.9	0.0	4.2	T	4.2	15		
21	-2.0	-7.3	-4.7	22.7	0.0	0.0	0.2	0.2	10		
22	-7.2	-10.8	-9.0	27.0	0.0	0.0	T	T	10		
23	-5.3	-20.3	-12.8	30.8	0.0	0.0	T	T	10		
24	-3.0	-20.0	-11.5	29.5	0.0	0.0	15.4	15.4	10		
25	-2.8	-10.0	-6.4	24.4	0.0	0.0	2.8	2.8	18		
26	-2.6	-17.0	-9.8	27.8	0.0	0.0	10.0	10.0	12		
27	1.3	-5.0	-1.9	19.9	0.0	0.0	4.6	4.6	22		
28	-3.3	-6.8	-5.1	23.1	0.0	0.0	0.4	0.4	16		
29	-5.4	-12.2	-8.8	26.8	0.0	0.0	T	T	15		
30	-8.3	-11.0	-9.7	27.7	0.0	0.0	4.4	4.4	12		
31	-7.6	-11.6	-9.6	27.6	0.0	0.0	1.4	1.4	12		
<b>Sum</b>			<b>743.7</b>	<b>0.0</b>	<b>34.0</b>	<b>93.2</b>	<b>127.2</b>				
<b>Avg</b>	<b>-1.9</b>	<b>-10.0</b>	<b>-6.0</b>								
<b>Xtrm</b>	<b>7.3</b>	<b>-27.3</b>									

Daily Data Report for February 2007											
D a y	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	-9.0	-20.6	-14.8	32.8	0.0	0.0	3.8	3.8	13		
02	-0.8	-22.8	-11.8	29.8	0.0	0.0	6.4	6.4	13		
03	2.4	-4.6	-1.1	19.1	0.0	0.2	10.4	10.6	21		
04	-4.5	-10.2	-7.4	25.4	0.0	0.0	16.6	16.6	27		
05	-9.2	-15.0	-12.1	30.1	0.0	0.0	8.0	8.0	32		
06	-9.5	-13.8	-11.7	29.7	0.0	0.0	5.2	5.2	34		
07	-8.7	-12.0	-10.4	28.4	0.0	0.0	5.8	5.8	37		
08	-8.4	-17.8	-13.1	31.1	0.0	0.0	3.6	3.6	36		
09	-9.0	-23.8	-16.4	34.4	0.0	0.0	T	T	36		
10	-7.1	-24.1	-15.6	33.6	0.0	0.0	T	T	30		
11	-7.3	-26.3	-16.8	34.8	0.0	0.0	2.0	2.0	26		
12	-6.2	-10.1	-8.2	26.2	0.0	0.0	2.4	2.4	27		
13	-2.0	-9.7	-5.9	23.9	0.0	0.0	T	T	26		
14	-2.0	-10.9	-6.5	24.5	0.0	0.0	0.0	0.0	26		
15	1.4	-7.5	-3.1	21.1	0.0	0.0	2.2	2.2	26		
16	-1.8	-14.1	-8.0	26.0	0.0	0.0	T	T	26		
17	-5.8	-13.7	-9.8	27.8	0.0	0.0	0.6	0.6	27		
18	-1.8	-11.7	-6.8	24.8	0.0	0.0	1.2	1.2	27		
19	-2.8	-17.1	-10.0	28.0	0.0	0.0	T	T	27		
20	-1.3	-6.7	-4.0	22.0	0.0	0.0	T	T	27		
21	-3.8	-13.6	-8.7	26.7	0.0	0.0	T	T	27		
22	-3.5	-17.8	-10.7	28.7	0.0	0.0	T	T	26		
23	-4.6	-17.4	-11.0	29.0	0.0	0.0	T	T	26		
24	0.4	-11.3	-5.5	23.5	0.0	0.0	1.4	1.4	26		
25	1.9	-2.0	-0.1	18.1	0.0	0.0	0.6	0.6	26		
26	2.7	-4.7	-1.0	19.0	0.0	0.0	1.2	1.2	25		
27	1.5	-5.6	-2.1	20.1	0.0	0.0	1.0	1.0	25		
28	3.2	-12.7	-4.8	22.8	0.0	0.0	T	T	26		
<b>Sum</b>				<b>741.4</b>	<b>0.0</b>	<b>0.2</b>	<b>72.4</b>	<b>72.6</b>			
<b>Avg</b>	<b>-3.4</b>	<b>-13.5</b>	<b>-8.5</b>								
<b>Xtrm</b>	<b>3.2</b>	<b>-26.3</b>									

Daily Data Report for March 2007											
D a y	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