

**Real Time Water Quality Monthly Report
Waterford River - St. John's NL
September 2006**

General

- Data from the Waterford River monitoring station is monitored by the Water Resources Management Division staff on a monthly basis.

Maintenance and Calibration of Instrumentation

- The following table displays the dates when the Datasonde was removed for routine cleaning, maintenance and calibration and when it was redeployed.

Table 1: Table of Datasonde removal and installation dates

Date Installed	Date Removed
	September 8, 2006
September 11, 2006	

- Water quality readings were taken with a Minisonde at the time of removal for comparison purposes. The Minisonde was calibrated prior to use.

Data Interpretation

- Areas in the graphs where the data lines go abruptly down to the x axis and show no readings occur when the datasonde is removed for routine cleaning, maintenance and calibration. The dates where this occurs correspond to Table 1 above.
- In general, water quality parameters were stable during the month of September with expected daily/nightly (diurnal) and seasonal changes occurring.
- Water temperatures fluctuated in response to daily maximum and minimum air temperatures. This is demonstrated by comparing the graph in **Figure 1** to the air temperature data in **Appendix 1**.

Figure 1

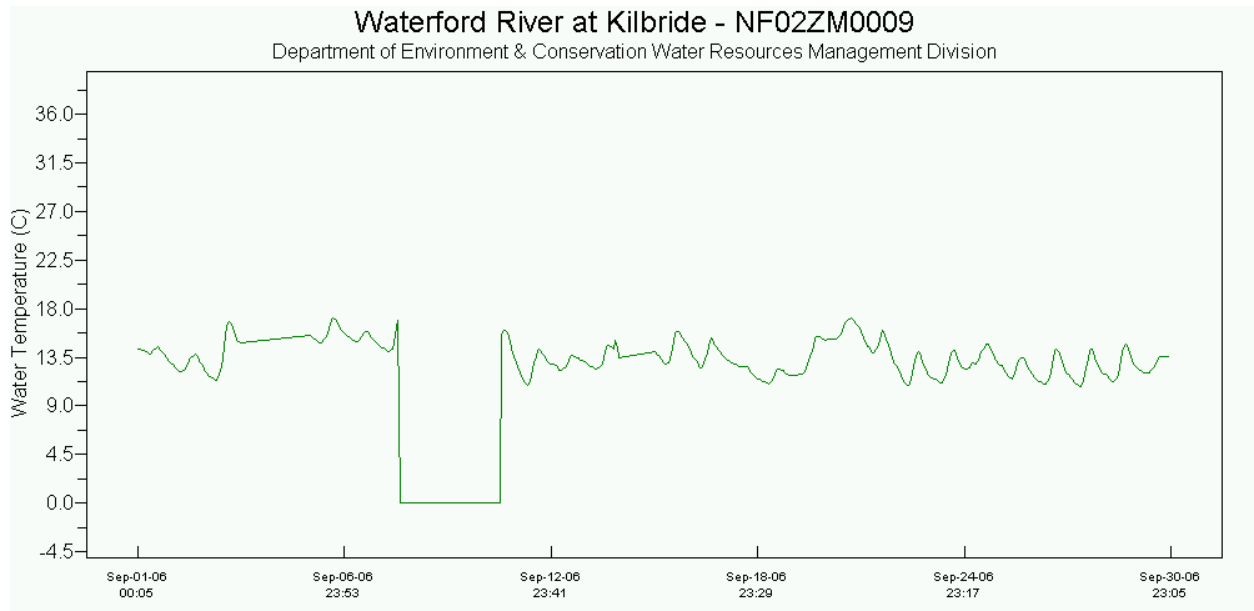
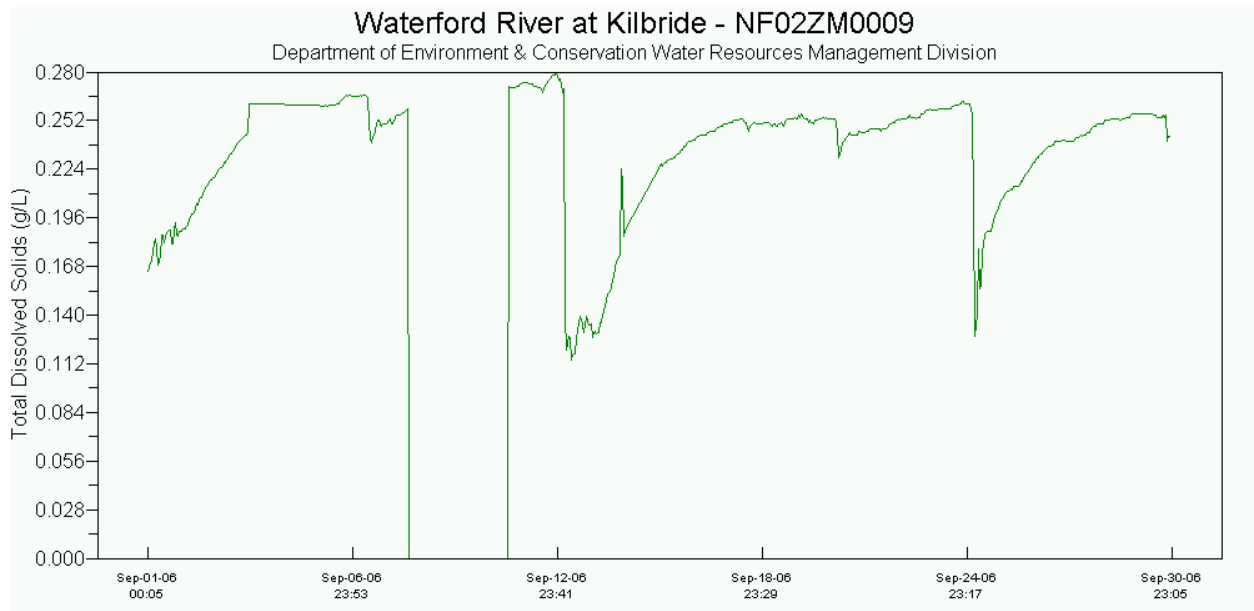
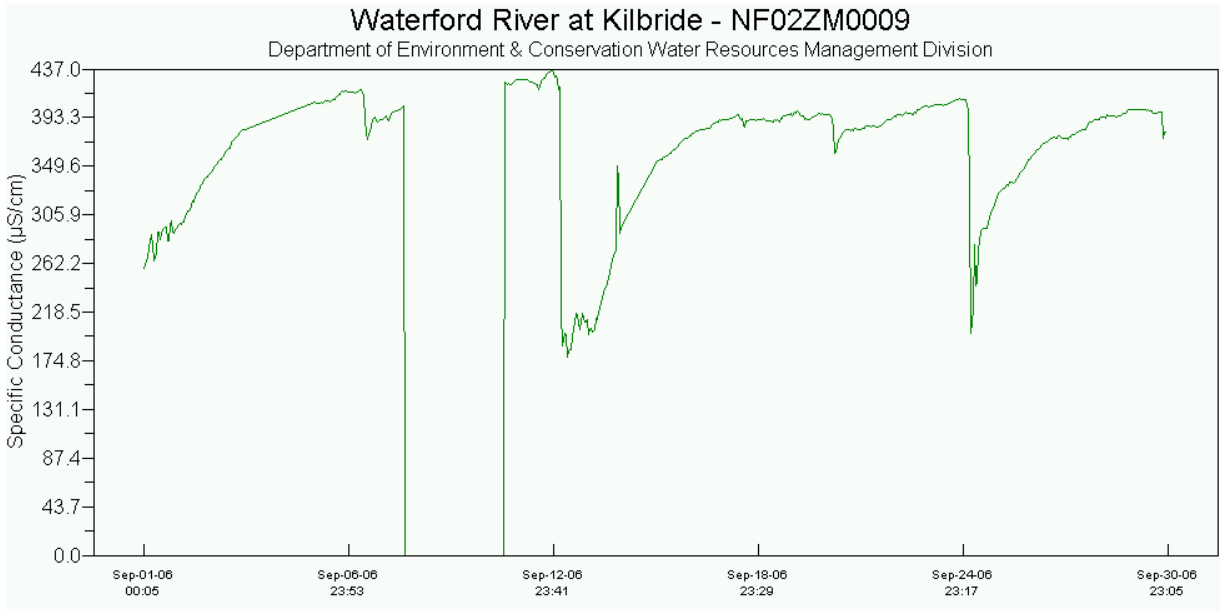


Figure 2



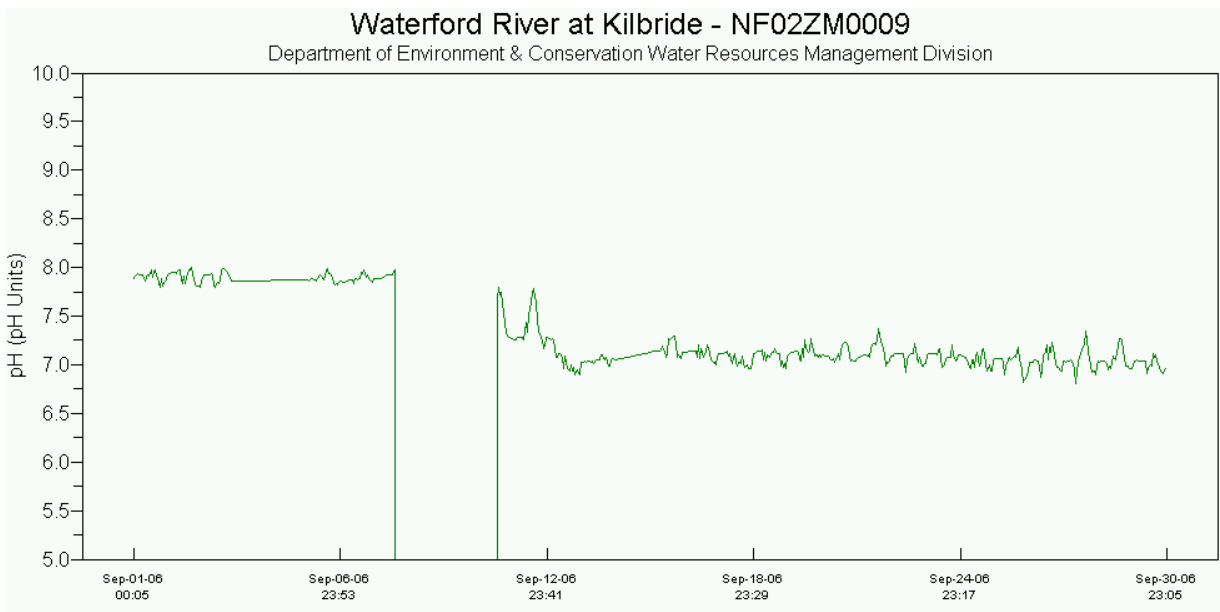
- Total dissolved solids levels reflected the changes in conductivity as observed in Figure 2. Conductivity measurements are a good indication of total dissolved solids and total dissolved ion concentrations, although this is not an exact linear relationship.

Figure 3



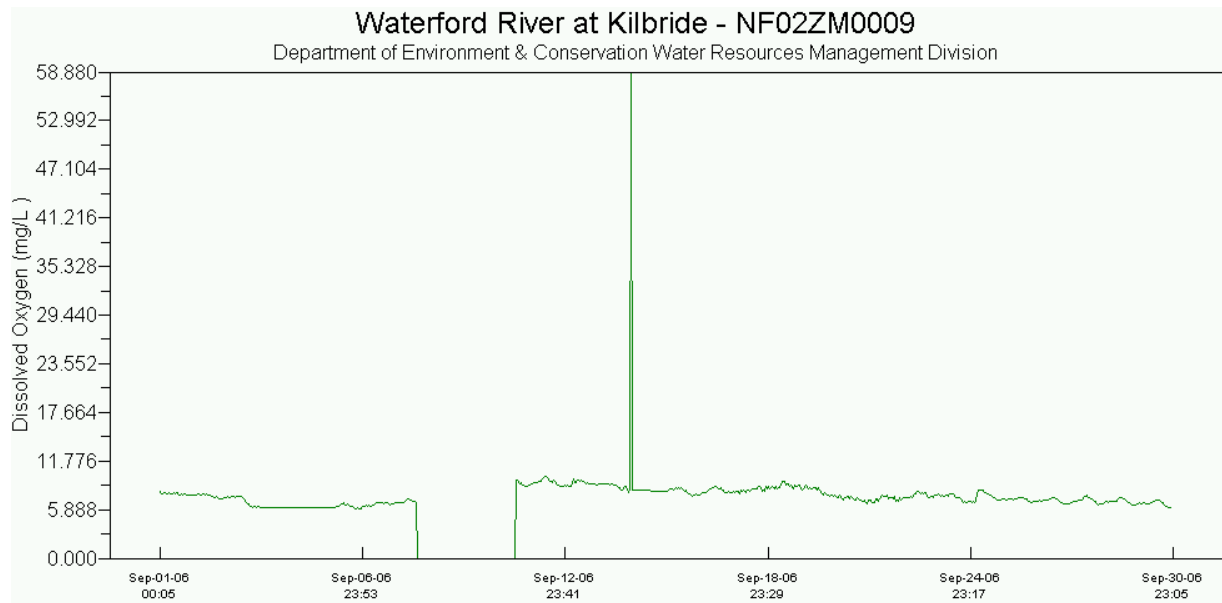
- Conductivity levels fluctuated throughout the month as observed in Figure 3.

Figure 4



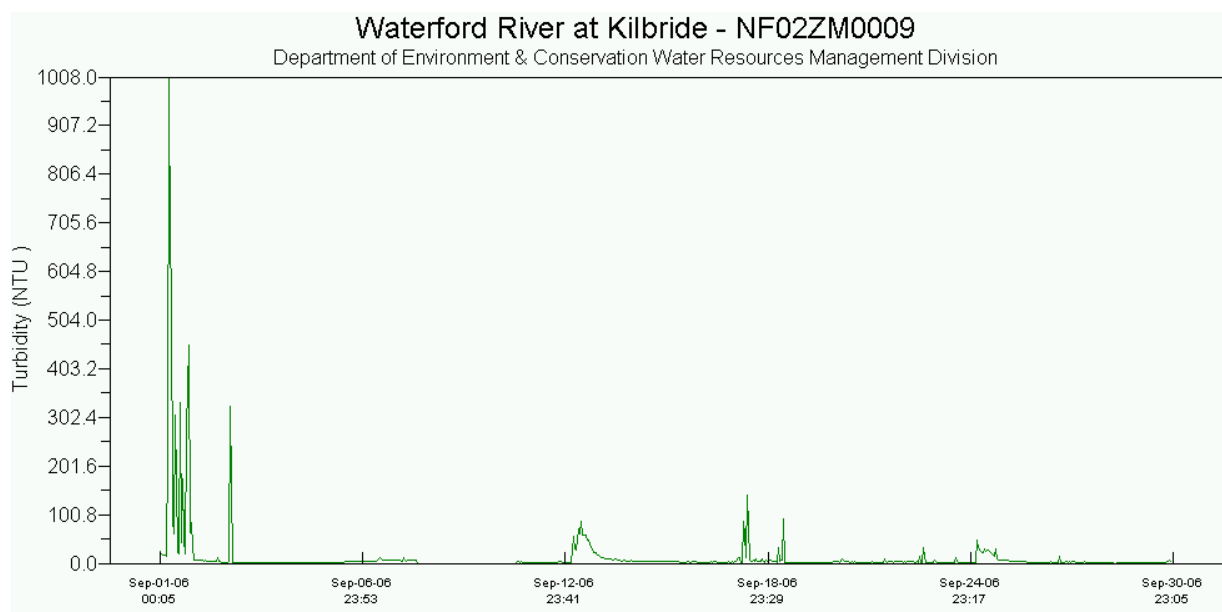
- The pH measurements were within the CCME recommended Canadian Water Quality Guidelines for the Protection of Aquatic Life of 6.5 to 9 (Figure 4). The pH readings prior to September 8 were slightly high, most likely due to a problem with calibration. After the datasonde was removed, calibrated and reinstalled, the pH readings returned to normal values for this station.

Figure 5



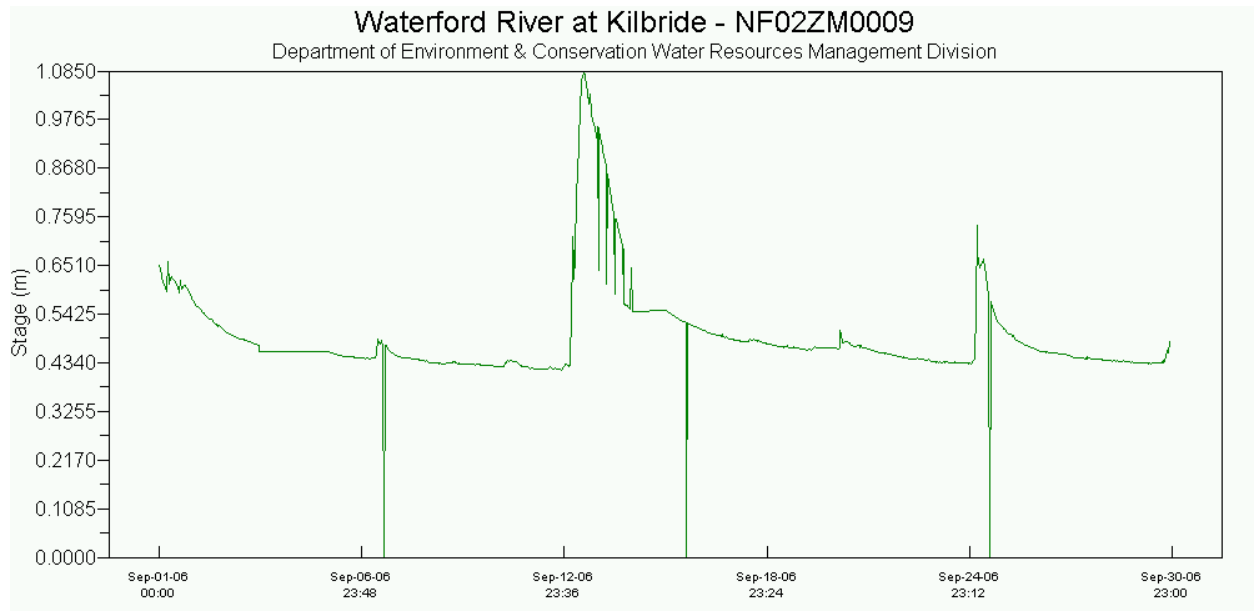
- During the month of September, dissolved oxygen measurements were stable with the exception of one large spike. This extreme spike is most likely due to debris (garbage or plant material) covering and interfering with the DO probe. Once the debris passed, readings returned to normal.

Figure 6



- Turbidity levels fluctuated and had several spikes noted throughout the month. The turbidity spikes (Figure 6) are normally in response to precipitation events. Several turbidity spikes exceeded the CCME recommended maximum of 8 NTU above background levels.

Figure 7













Report prepared by:

Kent Slaney
Environmental Scientist
Water Resources Management Division
Department of Environment and Conservation
Confederation Building West Block 4th Floor
PO Box 8700
St. John's NL A1B 4J6

Ph. (709) 729-1157
Fax (709) 729-0320

Appendix 1: Weather information for St. John's, NL provided by Environment Canada for September 2006

Daily Data Report for September 2006											
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 
<u>01</u>	13.5	8.5	11.0	7.0	0.0	10.8	0.0	10.8	0	7E	67E
<u>02</u>	14.2	7.9	11.1	6.9	0.0	0.6	0.0	0.6	0	35E	41E
<u>03</u>	22.8	9.5	16.2	1.8	0.0	0.0	0.0	0.0	0	26E	41E
<u>04</u>	23.5	12.5	18.0	0.0	0.0	0.8	0.0	0.8	0	24E	39E
<u>05</u>	19.2	13.1	16.2	1.8	0.0	4.0	0.0	4.0	0	18E	87E
<u>06</u>	20.9	13.0	17.0	1.0	0.0	1.0	0.0	1.0	0	26E	32E
<u>07</u>	15.8	11.2	13.5	4.5	0.0	2.0	0.0	2.0	0		<31
<u>08</u>	20.7	11.9	16.3	1.7	0.0	0.0	0.0	0.0	0	25E	35E
<u>09</u>	20.2	12.3	16.3	1.7	0.0	T	0.0	T	0		<31
<u>10</u>	21.0	12.1	16.6	1.4	0.0	0.4	0.0	0.4	0	25E	35E
<u>11</u>	14.1	5.8	10.0	8.0	0.0	5.4	0.0	5.4	0	33E	48E
<u>12</u>	16.7	5.5	11.1	6.9	0.0	1.0	0.0	1.0	0	9E	54E
<u>13</u>	15.6	10.0	12.8	5.2	0.0	48.0	0.0	48.0	0	8E	102E
<u>14</u>	20.7	10.2	15.5	2.5	0.0	0.0	0.0	0.0	0	31E	83E
<u>15</u>	20.1	11.9	16.0	2.0	0.0	0.0	0.0	0.0	0	27E	48E
<u>16</u>	20.2	8.7	14.5	3.5	0.0	0.0	0.0	0.0	0	27E	32E
<u>17</u>	15.7	6.5	11.1	6.9	0.0	T	0.0	T	0	25E	37E
<u>18</u>	11.4	6.2	8.8	9.2	0.0	1.4	0.0	1.4	0		<31
<u>19</u>	11.3	6.8	9.1	8.9	0.0	T	0.0	T	0		<31
<u>20</u>	22.4	11.1	16.8	1.2	0.0	1.6	0.0	1.6	0	15E	35E
<u>21</u>	21.9	12.1	17.0	1.0	0.0	T	0.0	T	0	22E	46E
<u>22</u>	16.0	7.3	11.7	6.3	0.0	0.0	0.0	0.0	0		<31
<u>23</u>	14.9	6.5	10.7	7.3	0.0	0.0	0.0	0.0	0	29E	32E
<u>24</u>	17.3	7.1	12.2	5.8	0.0	0.2	0.0	0.2	0	17E	56E
<u>25</u>	17.4	9.5	13.5	4.5	0.0	12.6	0.0	12.6	0	26E	67E
<u>26</u>	16.4	8.2	12.3	5.7	0.0	0.0	0.0	0.0	0	25E	37E
<u>27</u>	16.7	8.2	12.5	5.5	0.0	0.0	0.0	0.0	0	M	M
<u>28</u>	15.3	7.6	11.5	6.5	0.0	0.0	0.0	0.0	0		<31
<u>29</u>	15.9	7.2	11.6	6.4	0.0	0.0	0.0	0.0	0	15E	37E
<u>30</u>	16.9	10.4	13.7	4.3	0.0	5.0	0.0	5.0	0	17E	56E
Sum				135.4	0.0	94.8	0.0	94.8			