

Real Time Water Quality Monthly Report Leary's Brook- St. John's NL October 2008

General

- Data from Leary's Brook monitoring station is monitored by the Water Resources Management Division staff.

Maintenance and Calibration of Instrumentation

- The following table displays the dates when the water quality probe was installed and later removed at the end of the deployment period for routine cleaning, maintenance and calibration:

Table 1: Table of probe installation and removal dates

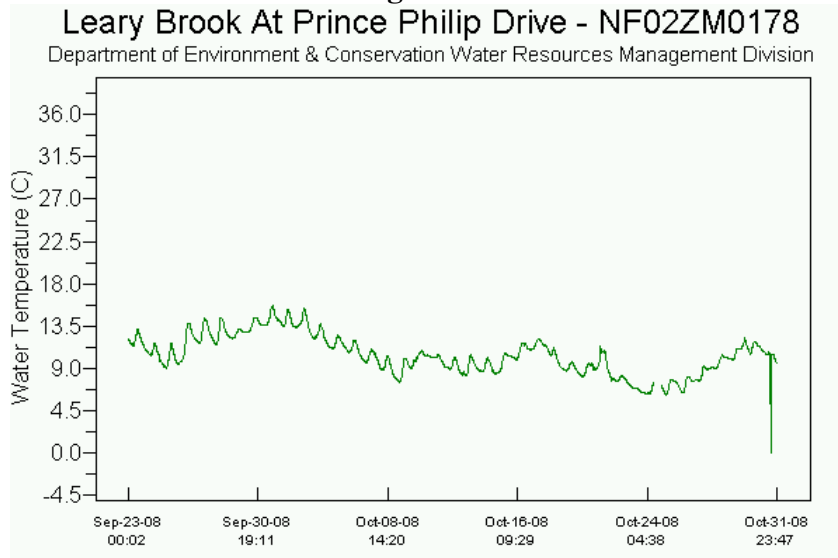
Date Installed	Date Removed
September 23, 2008	October 31, 2008

- Water quality readings were taken with a second, freshly calibrated water quality probe at the time of installation and removal for QAQC comparison.

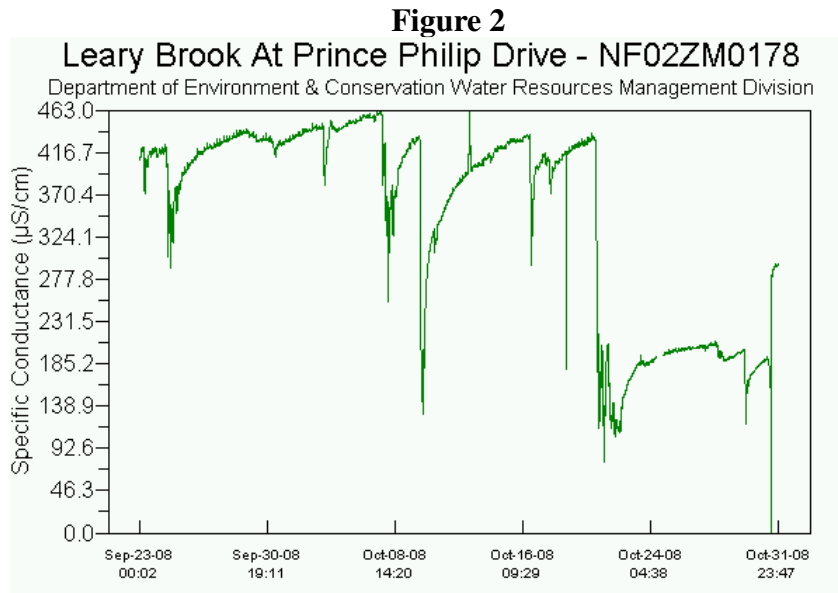
Data Interpretation

- Water quality parameter levels fluctuated within expected ranges during the deployment period with daily/nightly (diurnal) variations and changes.
- Water temperatures** ranged between 6.2 and 15.7 °C in response to daily maximum and minimum air temperatures.

Figure 1

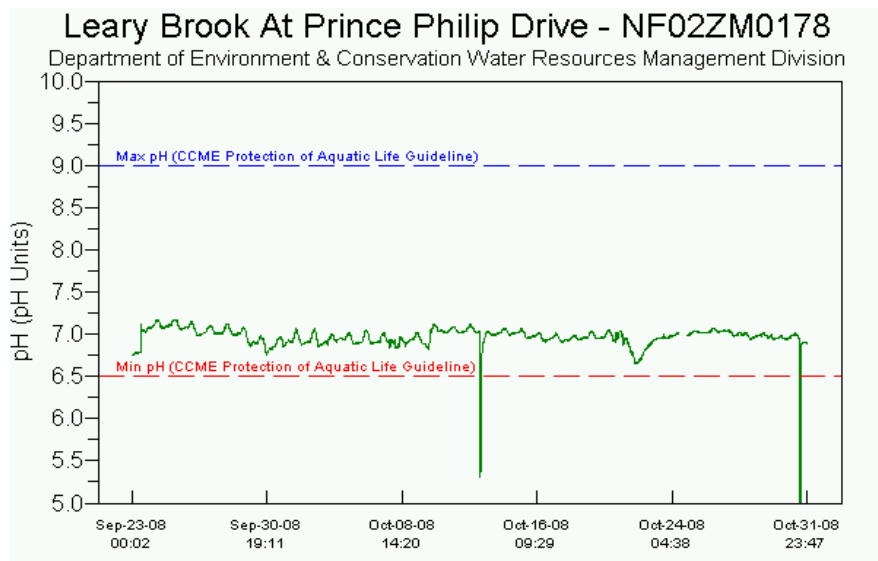


- Conductivity** levels fluctuated during the deployment period as observed in **Figure 2**, ranging from 77 to 463 $\mu\text{S}/\text{cm}$. Significant declines in conductivity levels were recorded on October 7th-9th, 16th-21st, and 28th-29th which correspond with rainfall events recorded in Environment Canada's Daily Data report in **Appendix 1**.

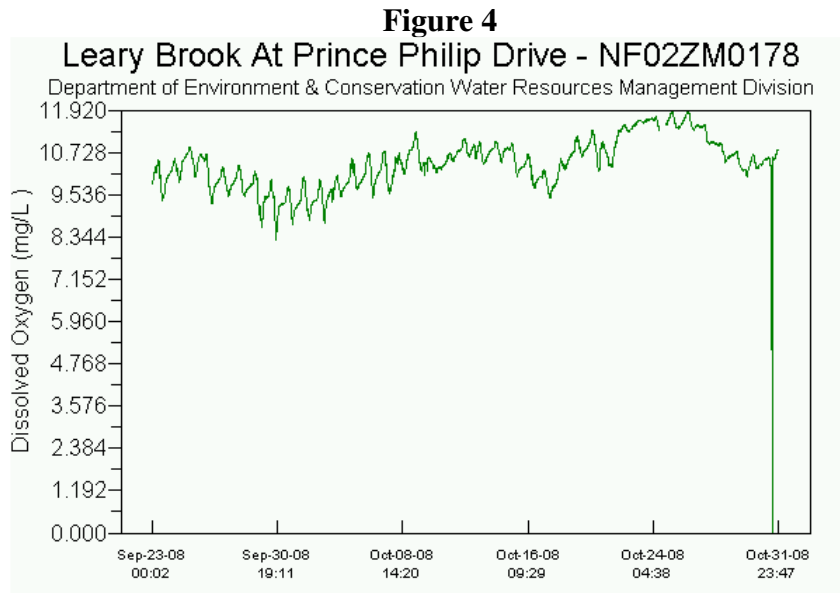


- pH** values ranged from 5.32 to 7.17 pH units during the deployment period, as shown in **Figure 3** below. Most values fell within the range recommended by the Canadian Water Quality Guidelines for the Protection of Aquatic Life of 6.5 to 9 pH units. A decline is seen in the pH graph below on October 13th; however this appears to be an equipment communication error, since the pH level immediately returned to background.

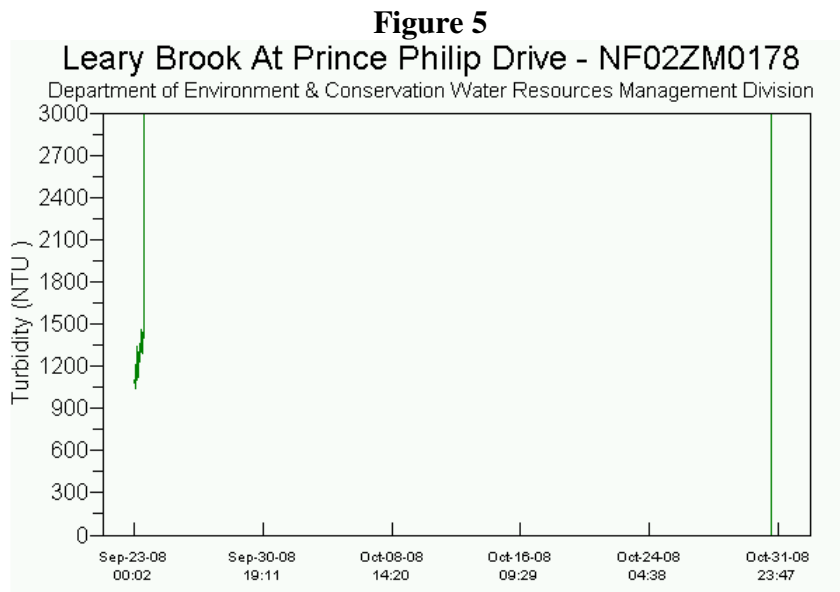
Figure 3



- Dissolved oxygen** measurements displayed typical diurnal variations during the deployment period, ranging from 8.26 to 11.92mg/L, as shown in **Figure 4** below. Dissolved oxygen levels displayed an overall increasing trend in response to seasonally decreasing water temperatures.



- Technical problems were experienced with the **turbidity** sensor for the duration of the deployment, thus the turbidity data is invalid.



Appendix 1: Weather information for St. John’s, NL provided by Environment Canada for October 2008:

Daily Data Report for October 2008									
D a y	Max Temp °C	Min Temp °C	Mean Temp °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>	18.1	13.0	15.6	1.6	0.0	1.6	0	26E	35E

<u>02</u>	16.7	9.9	13.3	T	0.0	T	0	27E	39E
<u>03</u>	17.8	9.5	13.7	0.0	0.0	0.0	0	26E	54E
<u>04</u>	14.6	9.5	12.1	1.8	0.0	1.8	0	26E	67E
<u>05</u>	12.8	4.3	8.6	T	0.0	T	0	30E	54E
<u>06</u>	12.2	4.3	8.3	0.0	0.0	0.0	0	27E	46E
<u>07</u>	8.8	3.4	6.1	4.2	0.0	4.2	0	M	M
<u>08</u>	6.6	2.1	4.4	4.0	T	4.0	0	M	M
<u>09</u>	12.2	2.3	7.3	1.8	0.0	1.8	0	28E	48E
<u>10</u>	13.0	8.3	10.7	14.2	0.0	14.2	0	27E	56E
<u>11</u>	8.7	2.5	5.6	T	0.0	T	0		<31
<u>12</u>	8.4	1.9	5.2	0.0	0.0	0.0	0		<31
<u>13</u>	10.7	4.0	7.4	T	0.0	T	0	4E	37E
<u>14</u>	8.4	3.0	5.7	T	0.0	T	0		<31
<u>15</u>	13.2	5.2	9.2	T	0.0	T	0	22E	52E
<u>16</u>	14.5	6.9	10.7	3.8	0.0	3.8	0		<31
<u>17</u>	14.6	8.6	11.6	2.4	0.0	2.4	0	34E	35E
<u>18</u>	9.4	3.3	6.4	T	0.0	T	0	30E	56E
<u>19</u>	8.5	1.6	5.1	1.6	0.0	1.6	0		<31
<u>20</u>	9.1	2.2	5.7	19.8	0.0	19.8	0	12E	44E
<u>21</u>	15.6	3.7	9.7	65.2	0.0	65.2	0	3E	83E
<u>22</u>	5.3	1.8	3.6	1.0	T	1.0	0	36E	65E
<u>23</u>	3.1	0.5	1.8	T	T	T	0	4E	50E
<u>24</u>	7.5	0.0	3.8	0.0	0.0	0.0	0		<31
<u>25</u>	10.6	0.1	5.4	0.0	0.0	0.0	0		<31
<u>26</u>	12.3	2.7	7.5	0.0	0.0	0.0	0		<31
<u>27</u>	10.8	6.1	8.5	0.4	0.0	0.4	0		<31
<u>28</u>	12.8	7.3	10.1	4.2	0.0	4.2	0		<31
<u>29</u>	17.2	10.5	13.9	6.0	0.0	6.0	0	18E	67E
<u>30</u>	18.8	8.8	13.8	T	0.0	T	0	23E	37E
<u>31</u>	11.5	6.9	9.2	2.2	0.0	2.2	0	26E	65E

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