

**Real Time Water Quality Monthly Report  
Leary's Brook - St. John's NL  
July 2006**

**General**

- Data from the Leary's Brook 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

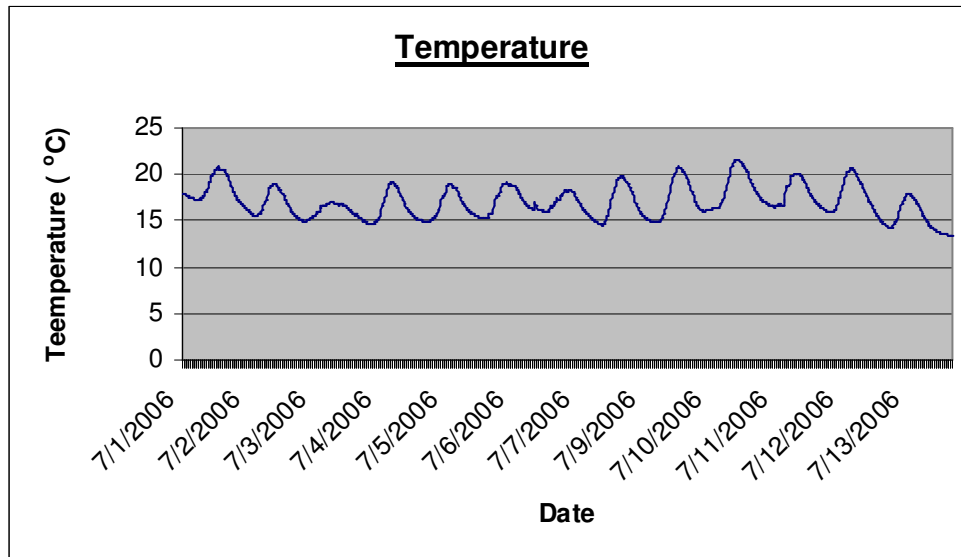
Date Installed	Date Removed
June 30, 2006	August 8, 2006

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

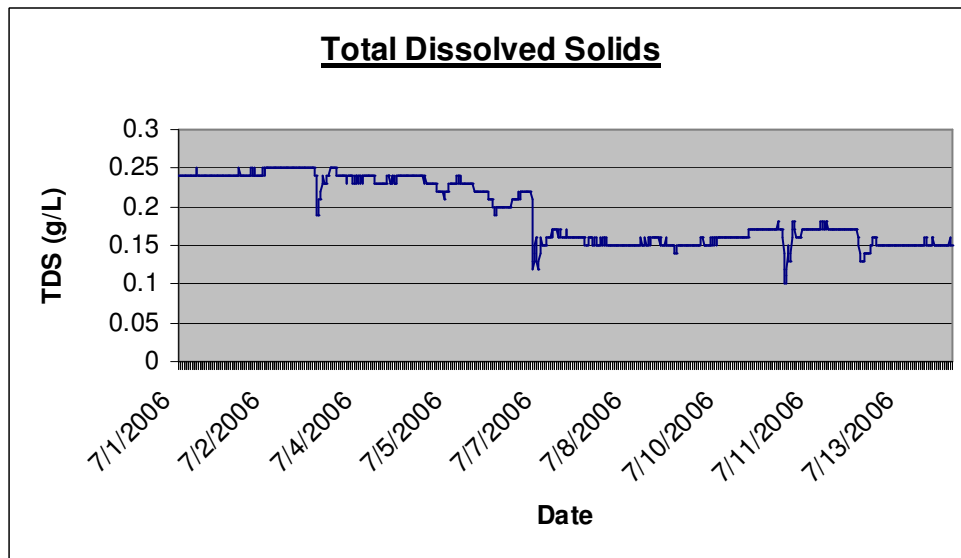
**Data Interpretation**

- 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.
- Due to a problem experienced with the datalogger at Leary's Brook in July, data was only available for the period July 1 to July 14, 2007.
- In general, water quality parameters were stable during the period of measurement 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**

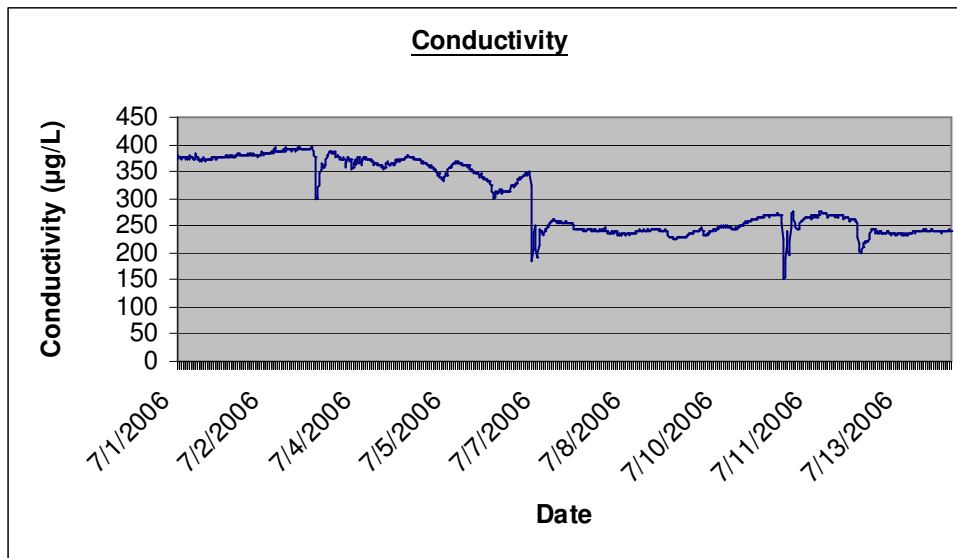


**Figure 2**



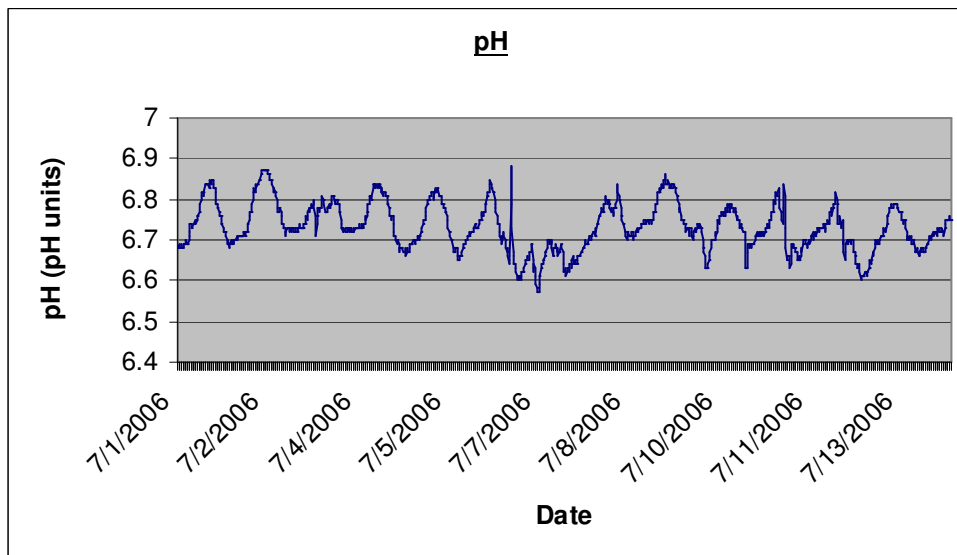
- Total dissolved solids levels reflected the changes in conductivity as observed in Figure 2. Conductivity measurements are a good indication of total dissolved solids and total dissolved ion concentrations, although this is not an exact linear relationship.

**Figure 3**



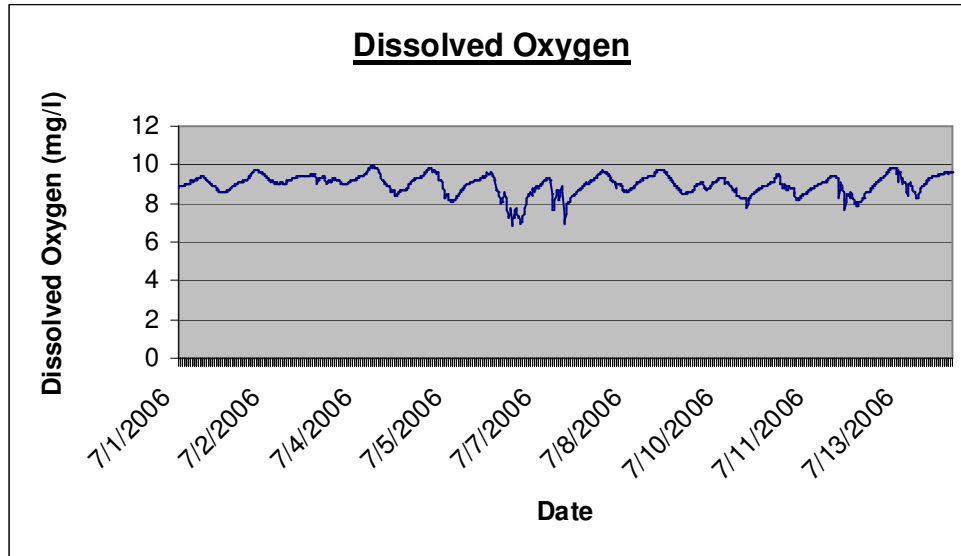
- Conductivity levels fluctuated throughout the period of measurement as observed in Figure 3.

**Figure 4**



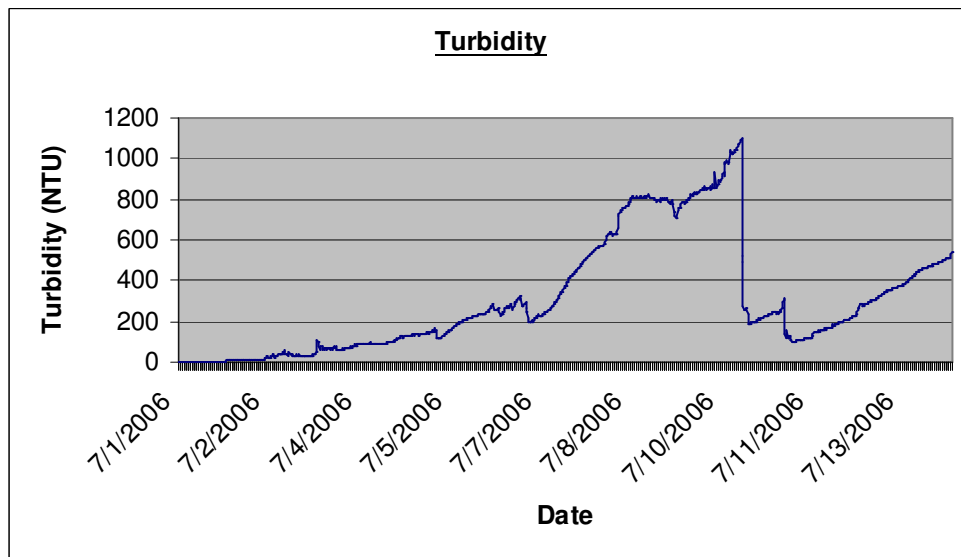
- The pH levels for the period of measurement were stable. The pH measurements were within the CCME recommended Canadian Water Quality Guidelines for the Protection of Aquatic Life of 6.5 to 9.

Figure 5



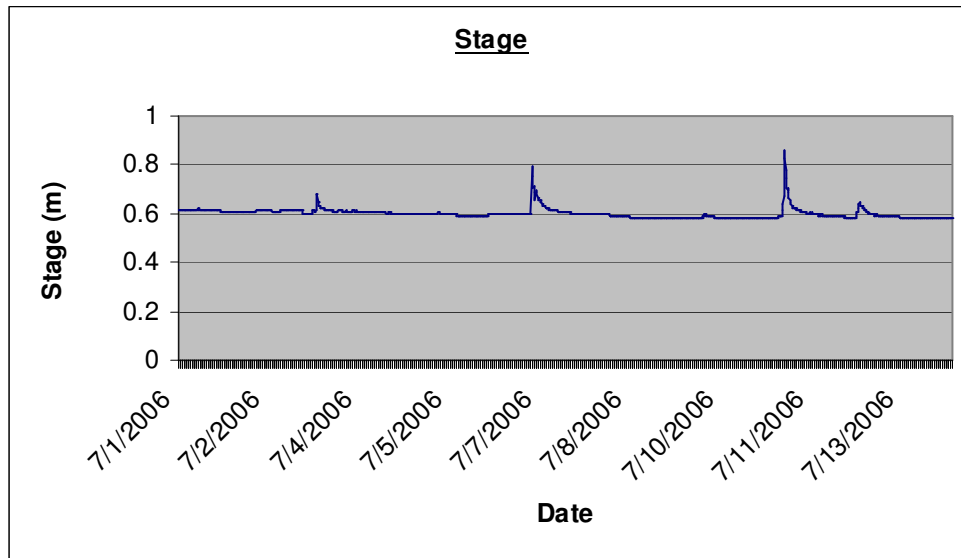
- DO measurements were consistent throughout the period of measurement with some lower than normal readings around July 7<sup>th</sup>. This could be related to the high air temperatures experienced around this time.

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. However, the large spike that occurred in the graph on July 10, 2007 is due to some other factor since no significant precipitation events occurred around that date. Several turbidity spikes exceeded the CCME recommended maximum of 8 NTU above background levels.

**Figure 7**













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

Daily Data Report for July 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>	24.8	14.4	19.6	0.0	1.6	1.0	0.0	1.0	0	26E	37E
<u>02</u>	20.5	13.0	16.8	1.2	0.0	T	0.0	T	0	25E	67E
<u>03</u>	20.3	12.4	16.4	1.6	0.0	4.0	0.0	4.0	0	24E	67E
<u>04</u>	21.9	12.1	17.0	1.0	0.0	0.0	0.0	0.0	0	26E	41E
<u>05</u>	23.4	13.2	18.3	0.0	0.3	T	0.0	T	0	16E	33E
<u>06</u>	24.3	14.1	19.2	0.0	1.2	3.4	0.0	3.4	0	24E	46E
<u>07</u>	23.2	10.9	17.1	0.9	0.0	1.2	0.0	1.2	0	25E	44E
<u>08</u>	23.5	9.5	16.5	1.5	0.0	0.0	0.0	0.0	0	26E	39E
<u>09</u>	26.8	15.0	20.9	0.0	2.9	0.4	0.0	0.4	0	26E	70E
<u>10</u>	26.5	16.0	21.3	0.0	3.3	T	0.0	T	0	26E	44E
<u>11</u>	24.3	14.5	19.4	0.0	1.4	3.2	0.0	3.2	0	23E	43E
<u>12</u>	23.6	7.5	15.6	2.4	0.0	3.8	0.0	3.8	0	23E	52E
<u>13</u>	15.3	7.1	11.2	6.8	0.0	0.0	0.0	0.0	0	13E	33E
<u>14</u>	10.8	10.0	10.4	7.6	0.0	1.8	0.0	1.8	0	12E	39E
<u>15</u>	13.5	10.6	12.1	5.9	0.0	7.2	0.0	7.2	0		<31
<u>16</u>	15.7	10.7	13.2	4.8	0.0	0.2	0.0	0.2	0		<31
<u>17</u>	18.9	12.1	15.5	2.5	0.0	T	0.0	T	0	18E	41E
<u>18</u>	25.5	16.5	21.0	0.0	3.0	T	0.0	T	0	25E	61E
<u>19</u>	25.4	15.5	20.5	0.0	2.5	T	0.0	T	0	25E	50E
<u>20</u>	21.6	13.6	17.6	0.4	0.0	0.0	0.0	0.0	0		<31
<u>21</u>	27.7	13.5	20.6	0.0	2.6	0.0	0.0	0.0	0	27E	33E
<u>22</u>	22.2	13.2	17.7	0.3	0.0	T	0.0	T	0	25E	54E
<u>23</u>	19.8	14.3	17.1	0.9	0.0	7.4	0.0	7.4	0	25	46
<u>24</u>	24.7	18.1	21.4	0.0	3.4	0.4	0.0	0.4	0	24E	57E
<u>25</u>	20.6	12.2	16.4	1.6	0.0	0.6	0.0	0.6	0	27E	61E
<u>26</u>	24.6	13.2	18.9	0.0	0.9	0.0	0.0	0.0	0	22E	41E
<u>27</u>	17.9	12.5	15.2	2.8	0.0	0.6	0.0	0.6	0	27E	37E
<u>28</u>	14.7	12.6	13.7	4.3	0.0	0.4	0.0	0.4	0		<31
<u>29</u>	19.5	12.8	16.2	1.8	0.0	13.8	0.0	13.8	0	17E	44E
<u>30</u>	26.1	15.0	20.6	0.0	2.6	0.2	0.0	0.2	0	25E	41E
<u>31</u>	24.1	12.8	18.5	0.0	0.5	0.0	0.0	0.0	0	25E	41E
<b>Sum</b>				<b>48.3</b>	<b>26.2</b>	<b>49.6</b>	<b>0.0</b>	<b>49.6</b>			