

**Missisquoi Bay Basin Project:  
Identifying Critical Source Areas of Pollution  
Short-term Tributary Monitoring Program  
Interim Report  
December 22, 2009**

**Project Status**

The first full season of short-term tributary water quality monitoring conducted by the Lake Champlain Basin Program (LCBP) will begin in early spring 2010. LCBP staff will begin sampling five tributaries in the Missisquoi Bay Basin at the onset of spring runoff and continue until early winter of 2010, when the tributaries freeze. During this season, 20 high-flow (storm event) and 4 low-flow (base flow) samples will be collected at each site and analyzed for: temperature, pH, conductivity, alkalinity, total and dissolved phosphorus, total nitrogen, total suspended solids, chloride, and earth metals. Additionally, 40 samples will be collected from an automated sampler installed at Hungerford Brook and analyzed for total phosphorus and suspended solids.

To date, LCBP staff have toured the short-term sampling sites, reviewed field sampling and laboratory protocols, and acquired equipment necessary for sample collection. A Memorandum of Understanding was established between the State of Vermont DEC LaRosa Environmental Laboratory (“DEC Laboratory”) in Waterbury, VT and the LCBP for analysis of the chemistry samples. On December 18<sup>th</sup>, the LCBP field-sampling team gathered the first set of samples at all five tributaries. These samples have been submitted for analysis to the DEC Laboratory for each of the tributary sites identified in the table below for total and dissolved phosphorus, total nitrogen, chloride, alkalinity, total suspended solids and earth metals (calcium, magnesium, sodium, potassium). The results of these analyses will be reported from the DEC Laboratory after the time of writing of this report and will be provided in the next subsequent Interim Report. All sampling protocols were conducted in accordance with the approved Missisquoi Bay Basin Project: Short-Term Monitoring Program 2009 Quality Assurance Project Plan Version 4, EPA RFA Number:09152.

**Monitoring Data**

Data provided below were collected on December 18<sup>th</sup>, 2009. Chemical analyses conducted by the DEC Laboratory are not currently available.

Collection Date	Time	Site Name	Collection Method	Gage Height (ft)	Gage Height Notes	Temperature (°C)	Specific Conductance (µS/cm)	pH
12/18/2009	9:10 AM	Hungerford Brook	Manual	1.03	ice influence	0.0	4,010	7.3
12/18/2009	10:00 AM	Black Creek	Manual	4.62	ice influence	-0.4	1,055	6.9
12/18/2009	10:40 AM	Tyler Branch	Manual	2.00	minor backwater	1.2	1,074	6.3
12/18/2009	11:20 AM	Trout River	Manual	6.06	ice influence	0.0	575	6.5
12/18/2009	12:12 PM	Mud Creek	Manual	3.80	ice influence	-0.2	1,149	7.1
12/18/2009	12:12 PM	Mud Creek	Manual Duplicate*	3.80	ice influence	-0.2	1,060	6.7
12/18/2009	12:12 PM	Mud Creek	Field Blank*	n/a	n/a	n/a	7.4	6.3

\* Samples collected for Quality Assurance purposes; n/a = not applicable.

**Challenges encountered**

LCBP staff have not encountered any serious obstacles while conducting tributary monitoring thus far. Icy conditions were challenging but not prohibitive during the December 18<sup>th</sup> sampling event.