Q. **Project D-248: Install Hydrometeorological Equipment - Various Sites**
Volume I, Tab D, page D-248 to D-253. On page D-251, it is noted that Hydro's hydrometeorological gauges sometimes render missing or erroneous data points due to harsh weather conditions. Please provide details of the gauges' rate of accuracy in rendering data and the number of occurrences where the gauges rendered missing or erroneous data points.

A. Hydro does not track hydrometric gauges' rates of accuracy in rendering data or the number of occurrences where gauges rendered missing or erroneous data. However, in the interest of being responsive to this request, Hydro offers some additional information on gauge accuracy.

The '*harsh conditions*' referred to in the application include weather, wildlife and remoteness. Strong winds and freeze/ thaw cycles can damage sensitive gauging equipment and there is some evidence that wildlife causes damage to the gauges, perhaps attracted to the glycol in the precipitation gauges. If data look suspect, the remoteness of the gauges can lead to a delay in getting personnel to site to inspect and repair the equipment.

In some instances, data are clearly erroneous, for instance a record of 100 mm of rain in one hour, and these data are normally removed from the data set. Most of the time, however, missing or erroneous precipitation data are harder to detect. An individual reading of 0 mm of precipitation may or may not be valid; it is only after a lengthy period of all 0 readings, especially if adjacent gauges are recording precipitation, that it becomes clear a gauge is not performing correctly.

Temperature data are less prone to error. Temperature gauges are less fragile pieces of equipment and the data are somewhat easier to evaluate in that the temperature rarely changes more than 1 or 2 degrees per hour so sudden large swings in temperature are normally a result of poor data.