Ontario Clean Water Agency
Agence Ontarienne Des Eaux
www.ocwa.com

THE CLEAN WATER EXPERTS

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Monday, November 26, 2012

Mr. Todd Kring
Director of Community Infrastructure
Mohawks of the Bay of Quinte
Tyendinaga Mohawk Territory
RR #1, 13 Old York Road
Deseronto, Ontario
K0K 1X0

Dear Mr. Kring;

RE: Quinte Mohawk School Quarterly Sample Results

On October 9, 2012 the Ontario Clean Water Agency (OCWA) collected treated and distribution water samples at the Quinte Mohawk School Drinking Water System (DWS) as part of the regular quarterly monitoring schedule. The samples were analyzed for pH, alkalinity, conductivity, colour, turbidity, ammonia + ammonium, hydrogen sulphide, sulphide, chloride, fluoride, nitrate + nitrite, sulphate, hardness, aluminum, calcium, iron, sodium, magnesium, manganese, lead and trihalomethanes. The results of the sample analyses show that with the exception of hardness, sodium and colour, all sample concentrations are well below the Maximum Acceptable Concentrations (MAC) and/or Aesthetic Objectives (AO) and/or Operational Guidelines (OG). A copy of the results are attached.

The result for sodium was 25.1 mg/L in the treated water sample and 25.0 in the distribution water sample. Sodium is found naturally in groundwater as most rocks and soils contain sodium compounds from which sodium is easily dissolved. Sodium is not harmful at normal levels of intake; however, increased intake of sodium may cause problems for people on low sodium diets, such as those with hypertension, heart disease, or kidney problems. The Ontario Drinking Water Standards, Objectives and Guidelines specifies an aesthetic objective for sodium of 200 mg/L at which it can be detected by a salty taste. The local Medical Officer of Health should be notified when the sodium concentration exceeds 20 mg/L so that this information may be communicated to local physicians for their use with patients on sodium restricted diets. In Regulation 170/03, sodium concentrations in excess of 20 mg/L must be reported as an adverse water test result once every 57 months. Sodium in itself is not toxic and the average intake of sodium from water is only a small fraction of that consumed on a normal diet, therefore a maximum acceptable concentration for sodium in drinking water has not been specified.

The result obtained for hardness was 536 mg/L as $CaCO_3$ in the treated water sample and 530 mg/L as $CaCO_3$ in the distribution water sample. A maximum acceptable concentration for hardness in drinking water has not been specified. The Ontario Drinking Water Standards, Objectives and Guidelines specifies an operational guideline for hardness between 80 and 100 mg/L as calcium carbonate ($CaCO_3$). Hardness is caused by dissolved calcium and magnesium and is expressed as the equivalent quantity of calcium carbonate. On heating, hard water has a tendency to form scale deposits and can form excessive scum with regular soaps, however, certain detergents are largely unaffected by hardness. Conversely, soft water may result in accelerated corrosion of water pipes. Hardness concentrations between 80 and 100 mg/L as calcium carbonate ($CaCO_3$) are considered to provide an acceptable balance between corrosion and incrustation. Hard water is safe to drink and to use for cooking and cleaning and is not considered to be a health risk.

The result obtained for colour was 3<MDL* TCU (True Colour Units) in the treated water sample and 5 TCU in the distribution water sample. A maximum acceptable concentration for colour in drinking water has not been specified. The Ontario Drinking Water Standards, Objectives and Guidelines specifies an aesthetic objective for colour in drinking water

of 5 TCU. Water can have a faint yellow/brown colour which is often caused by organic materials created by the decay of vegetation. Sometimes colour may be contributed to by iron and manganese compounds produced by processes occurring in natural sediments or in aquifers. The presence of organic materials is the main cause of disinfection by-products when water is treated with chlorine.
*MDL means the accredited laboratory's method detection limit.

Sodium, hardness and colour are monitored on a quarterly basis at the Quinte Mohawk School DWS. As discussed above, maximum acceptable concentrations have not been specified as sodium, hardness and colour are not considered to be health risks.

If you have any questions or concerns please contact me.

Sincerely,

James Taylor
Special Projects Manager
Ontario Clean Water Agency

cc: Jamie Hennigar, Senior Operations Manager, OCWA
John C. Seguire, Operations Manager, OCWA
Joanne Arnold, Process & Compliance Technician, OCWA