

Ambient air concentrations and wet deposition of mercury at two urban locations in New York: temporal patterns, comparison with rural sites, and episodes

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Since 2008, the New York State Department of Environmental Conservation (NYSDEC) has been monitoring mercury in air and wet deposition at two urban sites – Rochester and New York City – under the auspices of the MDN and AMNet programs, with the support of the Great Lakes Commission (GLC), US EPA, and the New York State Energy Research and Development Authority (NYSERDA). Here we present average diurnal patterns in ambient concentrations of particle-bound mercury (PBM), reactive gaseous mercury (RGM), and gaseous elemental mercury (GEM), as well as seasonal patterns and year-to-year variations in both ambient concentrations and wet deposition. We also compare the magnitudes of these parameters to air concentrations and wet deposition at rural MDN and AMNet monitors in the state, and examine correlations with other gas-phase and particulate pollutants measured at these sites. Finally, we present examples of highly elevated mercury, especially PBM, during the colder months due to meteorological conditions and sources such as wood smoke and coal combustion.

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