ATTACHMENT

4.5.A. RESEARCH PROJECT R-18-0 INTERIM REPORT (USGS-MDPW-003) "EFFECT OF DEICING CHEMICALS ON SURFACE AND GROUNDWATER" (PRELIMINARY GUIDELINES FOR ESTIMATING CHLORIDES), ie. THE "TOLER ANALYSIS"

The "Toler Analysis" is a predictive methodology that can be used to determine potential chloride concentrations in surface and groundwater from existing and anticipated salt applications on adjacent highways. The methodology was originally developed in 1974 by Larry Toler of the United States Geological Survey. The New York State Department of Health standard for chloride in drinking water is 250 mg/kg as found in the State Sanitary Code, Subpart 5-1 (see VI. - Attachment C). Past and present use of the "Toler Analysis" demonstrates quantitatively that NYSDOT highway construction projects, and subsequent maintenance operations, rarely approach this standard.

There are no general requirements by NYSDEC, FHWA or USEPA to use the "Toler Analysis". However, NYSDOT Regions should consider using the methodology whenever:

* the project is located within a Federal Sole Source Aquifer Project Review Area, within the recharge area of a NYSDEC designated Primary Water Supply or Principal Aquifer Area, or there are public or private drinking water supply wells within 200 meters, of the project and one or more of the following conditions apply:

* a Section 1424(e) review is required;

* there is high public interest/opposition to the project;

* an EIS is required for the project;

* the Aquifer overburden material is moderately to highly permeable;

* the water table is close to the surface (a shallow aquifer);
* the recharge of the aquifer is moderately to highly dependant upon direct precipitation on the recharge area; and/or

* the project involves constructing a new road or adding additional travel lanes to an existing road.