



WATER RESOURCES RESEARCH GRANT PROPOSAL

Title: Comparative Toxicity of Formulated Glycol Deicers and Pure Ethylene and Propylene Glycol

Focus Categories: NPP, TS, TRT

Keywords: stormwater, nonpoint source pollution, deicing fluids

Duration: 04/99 - 03/01

Federal Funds Requested: \$24,908

Non-Federal (matching) funds pledged: \$112,716

Principal Investigator:

Michael S. Switzenbaum, Professor Graduate Program Director and Coordinator
Environmental Engineering Program Dept. Of Civil and Environmental Engineering
University of Massachusetts Amherst, MA 01003-5205

Congressional District: First, Massachusetts

Statement of critical regional water problem

With the advent of new regulations concerning aircraft deicing and management of spent aircraft deicing fluids, many airports now face the challenge of maintaining public safety along with environmental protection. The management of deicing wastes is a significant problem at airport facilities and better solutions need to be developed. Recent studies conducted by the UMass Environmental Engineering Laboratory have demonstrated that the collection of airport runoff followed by on-site anaerobic treatment has excellent potential as a management alternative. There are still several questions relating to the management of glycol based aircraft deicing fluids (ADFs). Further work is needed to examine the influence of compounds, such as the corrosion inhibitors, which are added to ADF formulations. This proposed study will conduct such research.

Statement of results or benefits

The management of deicing wastes is a significant problem at airport facilities and better solutions need to be developed. On-site anaerobic pretreatment is emerging as a viable option, however, there are several pertinent research questions which should be answered to further promote this management solution. The data resulting from this study should help address one of these concerns (i.e. the potential toxicity of the triazole corrosion inhibitors) and therefore be useful to regulators, airport operators, and environmental engineers, scientists and managers concerned with deicing fluids management.