

## Ontario Air and Noise Best Practices

<b>Topic</b>	<b>Electronic File Submission for AERMOD Dispersion Modelling</b>	<b>Date: December 8, 2009 Version 1.1</b>
<b>Purpose</b>	<b>To provide guidance on the folder structure and electronic modelling files that must be submitted with an Emission Summary and Dispersion Modelling Report or a Combined Modelling Monitoring Assessment for the Ministry of the Environment to review</b>	<b>Page 1 of 2</b>

Ministry of the Environment reviewers require electronic input and output files to complete their review of an Emission Summary and Dispersion Modelling (ESDM) Report or combined modelling/monitoring (CMM) assessment. This requirement is stated in the ESDM Procedure Document and is a requirement under s.26 of O. Reg. 419/05. The purpose of supplying this information is to allow the reviewer to verify the model inputs and outputs and improve the efficiency of the review. In order to facilitate the reviewer's assessment Practitioners will, as a best practice, provide the electronic files on a CD using a logical and descriptive folder structure described in this practice so that a review engineer can easily identify the files. Excerpts from a hard copy print out of one dispersion modelling input and output files can also be included.

The AERMOD dispersion model consists of the following programs and pre-processors:

- AERMET
- AERMAP
- BPIP-Prime
- AERMOD

It is recommended that a folder be created for each preprocessor. In the case of AERMOD where multiple runs are likely needed (for each contaminant, averaging period, etc.) subfolders can be created for each unique AERMOD run or if files are placed into one directory, the file names should be unique so that each run can be identified. A readme.txt file can be included with the CD offering additional explanations if necessary, such as the naming convention for different AERMOD runs if it is not otherwise obvious.

### **AERMET and meteorological files**

- Unprocessed raw meteorological data files (upper air, surface and onsite data)
- Raw meteorological files processed into AERMET-ready format (upper air, surface and onsite data)
- AERMET Stage 1 input file
- Stage 1 output files (extracted upper air, surface and onsite data, reports, messages)
- AERMET Stage 2 input file
- Stage 2 output files (merge file, reports, messages)
- AERMET Stage 3 input file
- Stage 3 output files (AERMOD-ready Surface and Profile files, reports, messages)

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### AERMAP Files

- AERMAP input file (aermap.inp)
- DEM files
- AERMAP output files (.SRC from OU SOURCLOC, .REC from OU RECEPTOR and aermap.out)

### BPIP Prime Files

- BPIP input file
- BPIP output files (.out, .sum)
- AERMOD (for each AERMOD run):
  - AERMOD input file
  - AERMOD output file
- Other AERMOD output files (plot files, post files etc. for averaging periods modelled)

Note: Due to the multiple ways that AERMOD can be applied to a facility, runs may consist of unit runs if contaminants are emitted from only one stack or multiple stacks in common ratios, unique runs for a given averaging period and contaminant, multiple runs from a contaminant and averaging period broken for shorter timeframes (e.g. annual, quarterly, monthly). All AERMOD runs required to obtain the information being presented and discussed in the report should be included with the electronic submission.

If using the Lakes ISC-AERMOD View software, a convenient method to gather all files necessary for modelling is to go under the "File" dropdown menu, then to "Backup" and finally "Save to zip". The zipped files should then be included on the submission CD.

For further assistance on this Best Practice please contact the Best Practice Committee.

*Best Practice developed by Darryl Chartrand, CH2M Hill and Mike Jammer, Golder Associates Ltd.*