Sterigenics meteorological and modeling files for risk assessment

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| **File** | **Description** |
| aermap | AER,MAP folder |
| aermod | AERMOD runs folder |
| aersurface | AERSURFACE runs folder |
| argonne\_met | Argonne meteorological data folder |
| epa\_met | EPA and Midway meteorological data folder |
| README.docx | This file, a description of files and folders |
| Comp\_arg\_mdw\_epa.sas | SAS program to compare Argonne, EPA, and Midway meteorological data |
| make\_aermod\_daily\_usage\_0423\_amb\_release.sas | Make AERMOD files for monitoring days using EPA meteorological data |
| make\_aermod\_daily\_usage\_argonne\_amb\_release.sas | Make AERMOD files for monitoring days using Argonne meteorological data |
| make\_aermod\_daily\_usage\_midway\_amb\_release.sas | Make AERMOD files for monitoring days using Midway meteorological data |
| Read\_met\_new.sas | Read EPA meteorological data and convert to format for AERMET |
| Rhc\_argonne.sas | Calculate Robust Highest Concentration (RHC) for AERMOD runs using Argonne meteorological data |
| Rhc\_base.sas | Calculate Robust Highest Concentration (RHC) for AERMOD runs using EPA meteorological data |
| Rhc\_midway.sas | Calculate Robust Highest Concentration (RHC) for AERMOD runs using Midway meteorological data |
| Rhc.xlsx | Spreadsheet of observed concentrations around Sterigenics facility; used in RHC calculations |
| Sterigenics Willowbrook Emissions and Model Inputs-April 29 2019 (FINAL).xlsx | Spreadsheet used to create AERMOD input files |

Folder aermap

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| **File** | **Description** |
| aermap\_monitors.inp | AERMAP input file for monitor receptors |
| aermap\_monitors.out | AERMAP output file |
| monitors.dat | AERMAP output file of monitor receptor locations, elevations, and hill heights. |
| NED\_32313390.zip | NED file used in AERMAP for monitors |

Folder aermod

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| **File** | **Description** |
| monitors.dat | AERMAP output file of monitor receptor locations, elevations, and hill heights. |
| Buildings.dat | Building dimensions file |
| Source\_groups.dat | Source groups file |
| Sources.dat | Base source parameters file used to generate day specific source inputs |
| sources\_XXX\_YY.dat | Day specific source inputs where XXX is 3-character month (NOV, DEC, JAN, or FEB) and YY is day of month. |
| Base\_monitors.inp | Base AERMOD file used to generate day specific AERMOD input files |
| XXX\_YY\_monitors.inp | Day specifc AERMOD input files where XXX is 3-character month (NOV, DEC, JAN, or FEB) and YY is day of month. These files use the EPA meteorological tower for meteorological data |
| XXX\_YY\_monitors\_arg.inp | Day specifc AERMOD input files where XXX is 3-character month (NOV, DEC, JAN, or FEB) and YY is day of month. These files use the Argonne National Laboratory meteorological tower for meteorological data |
| XXX\_YY\_monitors\_mdw.inp | Day specifc AERMOD input files where XXX is 3-character month (NOV, DEC, JAN, or FEB) and YY is day of month. These files use the Midway airport meteorological tower for meteorological data |
| XXX\_YY\_monitors.out | AERMOD output files corresponding to XXX\_YY\_monitors.inp |
| XXX\_YY\_monitors\_arg.out | AERMOD output files corresponding to XXX\_YY\_monitors\_arg.inp |
| XXX\_YY\_monitors\_mdw.out | AERMOD output files corresponding to XXX\_YY\_monitors\_mdw.inp |
| AAA \_XXX\_YY\_MON.PLT | 24-hour average concentrations for source group AAA (see source\_groups.dat) for month XXX and day YY for model runs using EPA meteorological tower data. |
| AAA\_HOURLY\_XXX\_YY\_MON.PST | Hourly concentrations for source group AAA (see source\_groups.dat) for month XXX and day YY for model runs using EPA meteorological tower data. |
| ALL\_MAX\_1\_XXX\_YY\_MON.PLT | Maximum 1-hour total concentrations for month XXX and day YY for model runs using EPA meteorological tower data. |
| AAA \_XXX\_YY\_MON\_ARG.PLT | 24-hour average concentrations for source group AAA (see source\_groups.dat) for month XXX and day YY for model runs using Argonne meteorological tower data. |
| AAA\_HOURLY\_XXX\_YY\_MON\_ARG.PST | Hourly concentrations for source group AAA (see source\_groups.dat) for month XXX and day YY for model runs using Argonne meteorological tower data. |
| ALL\_MAX\_1\_XXX\_YY\_MON\_ARG.PLT | Maximum 1-hour total concentrations for month XXX and day YY for model runs using Argonne meteorological tower data. |
| AAA \_XXX\_YY\_MON\_MDW.PLT | 24-hour average concentrations for source group AAA (see source\_groups.dat) for month XXX and day YY for model runs using Midway meteorological tower data. |
| AAA\_HOURLY\_XXX\_YY\_MON\_MDW.PST | Hourly concentrations for source group AAA (see source\_groups.dat) for month XXX and day YY for model runs using Midway meteorological tower data. |
| ALL\_MAX\_1\_XXX\_YY\_MON\_MDW.PLT | Maximum 1-hour total concentrations for month XXX and day YY for model runs using Midway meteorological tower data. |
| epa.sfc, epa.pfl | November 2018-February 2019 AERMOD surface and profile files. |
| ARG\_14\_18.sfc, ARG\_14\_18.pfl | 2014-2018 Argonne AERMOD surface and profile files |
| ARG\_14\_19.sfc, ARG\_14\_19.pfl | 2014- February 2019 Argonne AERMOD surface and profile files |
| Mdw.sfc,mdw.pfl | November 2018-February 2019 AERMOD surface and profile files using 2011 NLCD data. |
| Mdw\_92\_lc.sfc,mdw\_92\_lc.pfl | November 2018-February 2019 AERMOD surface and profile files using 1992 NLCD data. |
| Run\_aermod.bat, run\_aermod\_arg.bat, run\_aermod\_mdw.bat | DOS batch files to run AERMOD for EPA, Argonne, or Midway data. |

Aersurface folder

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| **File** | **Description** |
| LC9264684503 | Folder containing 1992 landuse file, LC9264684503.tif |
| AERSURFACE.DAT | AERSURFACE control file for 1992 land cover |
| XXXX\_aersurf\_2019.inp | Year specific AERSURFACE control file for Midway airport where XXXX is 2014-2019. These control files are for the draft 2019 version of AERSURFACE using 2011 NLCD, canopy, and impervious data |
| XXXX\_aersurf\_2019\_epa.inp | Year specific AERSURFACE control file for the EPA meteorological tower where XXXX is 2018 or 2019. These control files are for the draft 2019 version of AERSURFACE using 2011 NLCD, canopy, and impervious data |
| XXXX\_aersurf\_2019.out | Year specific AERSURFACE summary file for Midway airport where XXXX is 2014-2019. These summary files are for the draft 2019 version of AERSURFACE using 2011 NLCD, canopy, and impervious data |
| XXXX\_aersurf\_2019\_epa.out | Year specific AERSURFACE summary file for the EPA meteorological tower where XXXX is 2018 or 2019. These summary files are for the draft 2019 version of AERSURFACE using 2011 NLCD, canopy, and impervious data |
| XXXX\_aersurf\_2019.log | Year specific AERSURFACE log file for Midway airport where XXXX is 2014-2019. These log files are for the draft 2019 version of AERSURFACE using 2011 NLCD, canopy, and impervious data |
| XXXX\_aersurf\_2019\_epa.log | Year specific AERSURFACE log file for the EPA meteorological tower where XXXX is 2018 or 2019. These log files are for the draft 2019 version of AERSURFACE using 2011 NLCD, canopy, and impervious data |
| Albedo\_bowen\_domain.txt, roughness\_domain.txt, can\_tiff\_dbg.txt, canopy.txt, imp\_tif\_dbg.txt, impervious.txt, landcover.txt, lc\_tif\_dbg.txt | Various debug files from AERSURFACE (not used) |
| epa\_XXXX.txt | 2019 draft AERSURFACE surface characteristics for EPA meteorological tower, where XXXX is 2018 or 2019 |
| midway\_XXXX.txt | 2019 draft AERSURFACE surface characteristics for Midway, where XXXX is 2014-2019. These outputs are treating Midway as the secondary site for AERMET. |
| midway\_XXXX\_prim.txt | 2019 draft AERSURFACE surface characteristics for Midway, where XXXX is 2018 or 2019. These outputs are treating Midway as the primary site for AERMET. |
| Average\_no\_snow.log | Log of AERSURFACE run for average moisture and no snow for 1992 land cover |
| Average\_no\_snow.out | AERSURFACE output for average moisture and no snow for 1992 land cover |
| wet\_snow.log | Log of AERSURFACE run for wet moisture and snow for 1992 land cover |
| wet\_snow.out | AERSURFACE output for wet moisture and snow for 1992 land cover |

Argonne\_met folder; subfolder aermet

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| **File** | **Description** |
| AERMET\_ST1\_hourly\_2014\_2019.inp | AERMET stage 1 control file |
| AERMET\_ST2\_hourly\_2014\_2019.inp | AERMET stage 2 control file for Midway + Argonne data |
| AERMET\_ST2\_NWS.inp | AERMET stage 2 control file for Midway data only |
| AERMET\_ST3\_XXXX.inp | AERMET stage 3 control for Midway + Argonne data, where XXXX is 2014-2019; uses draft 2019 AERSURFACE output (2011 landcover) |
| AERMET\_ST3\_NWS.inp | AERMET stage 3 control for Midway data only, 2014-2018 using 2013 AERSURFACE output (1992 landcover) |
| Argonne\_hourly.dat | Input Argonne data 2014-2019 for AERMET stage 1 |
| ARGONNE\_ST1.MSG; ARGONNE\_ST1.RPT | AERMET stage 1 MESSAGE and REPORT file |
| ARGONNE\_HOURLY.IQA; ARGONNE\_HOURLY.OQA | AERMET Stage 1 EXTRACT and QAOUT files for Argonne surface data |
| MDW.IQA; MDW.OQA | AERMET Stage 1 EXTRACT and QAOUT files for Midway surface data |
| UPPER.IQA; UPPER.OQA | AERMET Stage 1 EXTRACT and QAOUT files for Davenport upper air data |
| ARGONNE\_ST2.MSG; ARGONNE\_ST2.RPT | AERMET stage 2 MESSAGE and REPORT file for combined Midway and Argonne data |
| MDW\_ST2.MSG; MDW\_ST2.RPT | AERMET stage 2 MESSAGE and REPORT file for Midway data only |
| ARGONNE\_MDW.MRG | AERMET stage 2 merged output for Mdway + Argonne data |
| MDW.MRG | AERMET stage 2 merged output for Midway data only |
| ARGONNE\_XXXX\_ST3.MSG; ARGONNE\_XXXX-ST3.RPT | AERMET Stage 3 MESSAGE and REPORT files for Midway+Argonne data for year XXXX where XXXX is 2014-2019 |
| ARG\_XXXX.PFL; ARG\_XXXX.SFC | AERMOD profile and surface files for Argonne AERMET output, where XXXX refers to 2014-2019 using 2011 NLCD |
| MDW\_2014\_ST3.MSG; MDW\_2014\_ST3.RPT | AERMET Stage 3 MESSAGE and REPORT files for Midway data only for 2014-2018 |
| MDW\_2014\_18.PFL; MDW\_2014\_18.SFC | AERMOD profile and surface files for Midway only AERMET output, for 2014-2018 using 1992 NLCD |
| Combine.for; combine.exe; combine.obj | FORTRAN file and executable to combine 2014-2018 Argonne profile and surface files into one combined profile and surface file. |
| Run\_aermet.bat | DOS batch file to run AERMET |
| Discarded\_ISHD\_Records.dat | AERMET stage 1 file of discarded ISHD records (not used) |

Argonne\_met folder; subfolder aersurface

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| **File** | **Description** |
| XXXX\_aersurf\_2019.inp | Year specific AERSURFACE control file for Argonne where XXXX is 2014-2019. These control files are for the draft 2019 version of AERSURFACE using 2011 NLCD, canopy, and impervious data |
| XXXX\_aersurf\_2019.out | Year specific AERSURFACE summary file for Argonne where XXXX is 2014-2019. These summary files are for the draft 2019 version of AERSURFACE using 2011 NLCD, canopy, and impervious data |
| XXXX\_aersurf\_2019.log | Year specific AERSURFACE log file for Argonne airport where XXXX is 2014-2019. These log files are for the draft 2019 version of AERSURFACE using 2011 NLCD, canopy, and impervious data |
| XXXX\_aersurf\_2019\_epa.log | Year specific AERSURFACE log file for the EPA meteorological tower where XXXX is 2018 or 2019. These log files are for the draft 2019 version of AERSURFACE using 2011 NLCD, canopy, and impervious data |
| Argonne\_XXXX.txt | 2019 draft AERSURFACE surface characteristics for Argonne, where XXXX is 2014-2019 |
| can\_tiff\_dbg.txt, canopy.txt, imp\_tif\_dbg.txt, impervious.txt, landcover.txt, lc\_tif\_dbg.txt | Various debug files from AERSURFACE (not used) |

Argonne\_met folder; subfolder hourly

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| **File** | **Description** |
| YYYXXmet.data | Month,year specific hourly data from Argonne. YYY refers to month 3-letter abbreviation (jan,feb,etc.) and XX is 2-digit year from 2014-19 (2019 only up to March) |
| Readme.data | README file describing data |

Argonne\_met folder

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| **File** | **Description** |
| Read\_hourly.sas | SAS program to read monthly hourly files from Argonne and convert to correct format and units for AERMET. Output is Argonne\_hourly.dat in aermet subfolder |

epa\_met folder; subfolder aermet

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| **File** | **Description** |
| AERMET\_ST1.inp | AERMET stage 1 control file for November 2018-April 2019 |
| AERMET\_ST2.inp | AERMET stage 2 control file for Midway + EPA data November 2018-April 2019 |
| AERMET\_ST2\_NWS.inp | AERMET stage 2 control file for Midway data only November 2018-April 2019 |
| AERMET\_ST3.inp | AERMET stage 3 control file for Midway + EPA data November 2018-April 2019; uses 1992 NLCD |
| AERMET\_ST3\_NWS.inp | AERMET stage 3 control file for Midway data only November 2018-April 2019; uses 1992 NLCD |
| AERMET\_ST3\_XXXX.inp | AERMET stage 3 control for Midway + EPA data, where XXXX is 2018-2019; uses draft 2019 AERSURFACE output (2011 landcover); data covers November 2018-April 2019 |
| AERMET\_ST3\_NWS\_XXXX.inp | AERMET stage 3 control for Midway data only, where XXXX is 2018-2019; uses draft 2019 AERSURFACE output (2011 landcover); data covers November 2018-April 2019 |
| WILLOWBROOK\_ST1.MSG; WILLOWBROOK\_ST1.RPT | AERMET stage 1 MESSAGE and REPORT file |
| EPA.IQA; EPA.OQA | AERMET Stage 1 EXTRACT and QAOUT files for EPA surface data; November 2018-April 2019 |
| MDW.IQA; MDW.OQA | AERMET Stage 1 EXTRACT and QAOUT files for Midway surface data; November 2018-April 2019 |
| UPPER.IQA; UPPER.OQA | AERMET Stage 1 EXTRACT and QAOUT files for Davenport upper air data; November 2018-April 2019 |
| WILLOWBROOK\_ST2.MSG; WILLOWBROOK\_ST2.RPT | AERMET stage 2 MESSAGE and REPORT file for combined Midway and EPA data |
| WILLOWBROOK\_NWS\_ST2.MSG; WILLOWBROOK\_NWS \_ST2.RPT | AERMET stage 2 MESSAGE and REPORT file for Midway data only |
| EPA\_MDW.MRG | AERMET stage 2 merged output for Mdway + Argonne data |
| MDW.MRG | AERMET stage 2 merged output for Midway data only |
| WILLOWBROOK\_ST3\_XX.MSG; WILLOWBROOK\_ST3\_XX.RPT | AERMET Stage 3 MESSAGE and REPORT files for Midway+EPA data for year XX where XX is 2018-2019; data covers November 2018-April 2019; uses 2011 NLCD |
| WILLOWBROOK\_NWS\_ST3\_XX.MSG; WILLOWBROOK\_NWS\_ST3\_XX.RPT | AERMET Stage 3 MESSAGE and REPORT files for Midway only data for year XX where XX is 2018-2019; data covers November 2018-April 2019; uses 2011 NLCD |
| WILLOWBROOK\_ST3.MSG; WILLOWBROOK\_ST3.RPT | AERMET Stage 3 MESSAGE and REPORT files for Midway+EPA data for November 2018-April 2019; uses 1992 NLCD |
| WILLOWBROOK\_NWS\_ST3.MSG; WILLOWBROOK\_NWS\_ST3.RPT | AERMET Stage 3 MESSAGE and REPORT files for Midway data for November 2018-April 2019; uses 1992 NLCD |
| Discarded\_ISHD\_Records.dat | AERMET stage 1 file of discarded ISHD records (not used) |

epa\_met folder; subfolder davenport

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| **File** | **Description** |
| Davenport.txt | Davenport FSL file for November 2018-May 2019 |
| Davenport\_2014\_mar\_2019.txt | Davenport FSL file for January 2014-March 2019 |

epa\_met folder; subfolder midway

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| **File** | **Description** |
| 64050KMDWXXXXYY.dat | 1-minute data files for year XXXX and month YY, where XXXX is 2018 or 2019 and YY is 01-12. |
| Aerminute.inp | AERMINUTE control file for November 2018 – March 2019 |
| Aerminute.log | AERMINUTE log file |
| Aerminute\_14\_19.inp | AERMINUTE control file for 2014 – March 2019 |
| Aerminute\_15272.exe | AERMINUTE executable |
| Mdw.dat | AERMINUTE output for November 2018 – March 2019 used in AERMET stage 2 |
| Mdw\_14\_19.dat | AERMINUTE output for 2014 – March 2019 used in AERMET stage 2 |
| Bad\_records.dat; check\_records.dat; good\_records.dat | AERMINUTE QA output (not used) |
| 725340-14819-XXXX | ISHD dataset for Midway for year XXXX where year is 2014 -2019 |
| Mdw\_14\_19.txt | Concatenated file of 725340-14819-2014 through 725340-14819-2019 for AERMET stage 1 input |
| Mdw\_ishd.txt | Concatenated file of 725340-14819-2018 and 725340-14819-2019 for AERMET stage 1 input |
| Mdw\_sum.csv | AERMINUTE summary file for November 2018 – March 2019 |
| Mdw\_sum\_14\_19.csv | AERMINUTE summary file for 2014- 2019 |

epa\_met folder; subfolder one\_minute

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| **File** | **Description** |
| 64050KMDWXXXXYY.dat | 1-minute data files for year XXXX and month YY, where XXXX is 2014-2017 and YY is 01-12. |

epa\_met folder

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| **File** | **Description** |
| 20190408\_combined.txt | Raw output file from EPA meteorological instrument |
| Epa\_met.txt | EPA meteorological data file for input to AERMET stage 1 |
| NLCD2011\_CAN\_Illinois | Folder containing 2011 canopy data files for AERSURFACE |
| NLCD2011\_IMP\_Illinois | Folder containing 2011 impervious data files for AERSURFACE |
| NLCD2011\_LC\_Illinois | Folder containing 2011 NLCD files for AERSURFACE |