AERMOD View™

Gaussian Plume Air Dispersion Model - AERMOD

Release Notes

Version 11.2 & 11.0



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AERMOD View™ Version 11.2.0

Release Notes

December 1, 2022

New Features

Торіс	Feature Description
AERMOD MPI	Parallelized Model Execution Watcher
	AERMOD View and Batcher have been updated to ensure AERMOD MPI runs complete all model execution steps and close the model Run Status accordingly.
	Run Status - AERMOD [Case_Terrain.isc - AERMOD_MPI_LAKES_2211 — 🛛 🗙
	Watchdog timer started Execution time= 20.190 seconds, MPI Index 4 of 8 Execution time= 20.221 seconds, MPI Index 3 of 8 Execution time= 20.229 seconds, MPI Index 6 of 8 Execution time= 20.234 seconds, MPI Index 7 of 8 Execution time= 20.238 seconds, MPI Index 1 of 8 Execution time= 20.239 seconds, MPI Index 2 of 8 Execution time= 20.243 seconds, MPI Index 5 of 8 Image: Close after Run Output File Cancel Run Close
AERMET View	Updated Substitution Options The cloud cover (CCVR) and temperature (TEMP) substitution methods have been updated to allow users to bypass these selections. The options are disabled by default to match the default settings in the AERMET code. Processing Option Sectors (Surface) Output Files Additional Surface Parameters Instrument Height Anemometer Height: 10 [m] + + + + + + + + + + + + + + + + + + +

Торіс	Feature Description	
AERMET View	Multi-Year Surface Characteristics Updates	
	AERMET View now includes additional support for the Multi-Year functionality introduced in AERMET 22112 and AERMET View Version 11.0. This includes:	
	 Separate AERSURFACE runs can now be executed for each Multi-Year selection. Associated project files are divided into sub-folders appended with the name _MYn where n is the number defining the Multi-Year setup (e.g., AERSURF1_MY1). Auto-import of surface characteristics to the available data value tables after a successful AERSURFACE run. 	
	File Data Run Tools Help	
	Image: New Open Save Image: Run Run Surface Image: Construction of the state of the sta	
	Processing Options Sectors (Onsite) Sectors (Surrace) Output Files	
	Interview Interview <t< th=""></t<>	
AERMET View	Surface Characteristic Updates for Prognostic Pathway	
	datasets has been added to AERMET View including:	
	 A new Prognostic Station entry on the Tools Land Use Creator menu In the AERSURFACE utility, station coordinates now default to those found on the Prognostic Pathway 	
	Tools	
	Hourly Surface Data	
	Multi-Year Files Utility Surface Station NLCD 2001-2016	
	ADMS UK To SAMSON Converter Onsite Station NLCD92 Onsite Station NLCD 2001-2016	
	Browse Prognostic Station NLCD92	
	Editor Prognostic Station NLCD 2001-2016	
	Note: Consult local guidance to ensure surface characteristics associated with prognostic data are handled in an approved manner.	
Installation	Updated DLL	
	An internal component file (Dtmdrv32.dll) was updated to address false positive malware detections from some security suites.	



Fixed Issues

Торіс	Feature Description	
AERMET View	Bulk Richardson Scheme Input	
	When importing existing AERMET input files that contained the Bulk Richardson scheme (METHOD STABLEBL BULKRN), the option was not enabled in the interface. This has been corrected.	
AERMET View	Restored AERSURFACE Output Files Import	
	The ability to import AERSURFACE output files to the Specify Surface Parameters for Each Sector table has been restored.	
Terrain	Equator-Spanning Domains	
FIOLESSOI	A correction was applied for projects which span the Equator and use the Universal Transverse Mercator (UTM) map projection. The update allows AERMAP to successfully execute.	



Known Issues

Торіс	Issue Description
AERMET Model	Local Sunrise Check
	A bug in AERMET 22112 prevents the model from locating the correct morning sounding resulting in large percentages of missing data without additional input from the user. For projects handling data outside North America, modelers should select the Upper Air Sounding Options from the Processing Options tab and adjust the sounding window to -12 hours to +12 hours .
	Processing Options Sectors (Onsite) Output Files
	Additional Surface Parameters
	Anemometer Height: 10 [m]
	Onsite Option Substitute Missing Onsite Data by NWS Data
	Low Wind Option Adjust Surface Friction Velocity (ADJ_U*)
	Debug File ? Yes No
	Upper Air Sounding Options Specify Adjustment Sounding Window Begin: -12 hour: V Default = -1 End: 12 hours V Default = 1 Search for AM Sounding based on Local Time Sunrise
AERMOD Model	AERMOD System Bugs, Errata, and Related Guidance
	The U.S. EPA now maintains a list on their website of known issues with the current modeling system. Users will find the list at:
	https://gaftp.epa.gov/Air/aqmg/SCRAM/models/preferred/aermod/AERMOD



Торіс	Issue Description	
AERMOD Model	RLINEXT Not Correctly Linked to ALPHA Keyword	
	Despite regulatory guidance indicating that the RLINEXT source is a non-default ALPHA option, the AERMOD model halts if the input file does not contain the BETA keyword. AERMOD View addresses this by writing both BETA and ALPHA to the MODELOPT card of the input file.	
AERMOD Model	RLINEXT Results Sensitive to Receptor Order	
	When modeling with the RLINEXT source in AERMOD 19191 or later, results are dependent upon receptor order for receptors that fall within the source dimensions.	
New Project	No Spaces in Project Name with ISC	
vvizaru	The ISCST3 and ISC-PRIME models are included in AERMOD for backwards compatibility purposes. Due to limitations in their code, these models will issue a fatal error if the project name contains spaces or special characters.	



AERMOD View™ Version 11.0.0

Release Notes

September 15, 2022

New Features

Торіс	Feature Description
AERMOD	Latest Release of U.S. EPA AERMOD Model Available – Dated 22112
	The following U.S. EPA Models were released on June 27, 2022 and are incorporated into AERMOD View Version 11.0 :
	 AERMOD.EXE is the latest version 22112 (32-Bit Version) AERMOD_22112_X32.EXE – The same as above (32-Bit Version) AERMOD_22112_X64.EXE – 64-Bit Version
	See the Model Change Bulletin for a list of changes and bug fixes:
	https://gaftp.epa.gov/Air/aqmg/SCRAM/models/preferred/aermod/aermod_ mcb16_v22112.pdf
AERMOD MPI	New Version of Lakes AERMOD MPI 22112 (Parallel Version)
	A new version of the Lakes AERMOD MPI for the US EPA Model Version 22112 is now available (AERMOD_MPI_LAKES_22112.exe). Install includes 64-bit and 32-bit versions. You can specify to use this model under the Preferences dialog. Note: AERMOD_MPI_LAKES_22112.EXE or AERMOD_MPI_LAKES.EXE will run the latest version of the AERMOD model (22112) in parallel mode using <u>up to a</u>
	maximum of 8 cores.
	Preferences — — X
	Settings General Appearance Download Settings World Map Settings System Editor EPA Models/Limits AERMOD AERMOD AERMOD AERMOD AERMOD Name Description Storage Limit NREC No. of Receptors



Торіс	Feature Description	
AERMET	Latest Release of U.S. EPA AERMET Model Available – Dated 22112	
	The following U.S. EPA Models were released on June 27, 2022 and are incorporated into AERMET View Version 11.0 :	
	 AERMET.EXE is the latest version 22112 (32-Bit Version) AERMET_22112_X32.EXE – The same as above (32-Bit Version) AERMET_22112_X64.EXE – 64-Bit Version 	
	See the Model Change Bulleting for a list of changes and bug fixes:	
	https://gaftp.epa.gov/Air/aqmg/SCRAM/models/met/aermet/aermet_mcb12.pdf	
AERMET View	New Input File Format	
	The U.S. EPA completely recoded the AERMET model with the model release 22112. Part of the recode process transitioned the model from a three-stage process to a two-stage process and included support for a single combined-stage input file rather than producing separate input and output files for each stage.	
	(*.INP) for projects running AERMET 22112. In addition, all Message (*.MG) and Report (*.RP) output will be written to single, non-staged files.	
WebGIS	Updated NLCD Data Downloads	
	WebGIS has been updated with the most current versions of the USGS National Land Cover Database GEOTIFF data products (2001, 2006, 2011, and 2016) as published by the Multi-Resolution Land Characteristics (MRLC) Consortium.	
	WebGIS	
	2016 USGS NLCD Data	
	2011 USGS NLCD Data	
	2006 USGS NLCD Data	
	2001 0303 NECD Data	



Торіс	Feature Descript	ion		
Display	Shapefile Attribu The main display found in importe	tes was updated to d Shapefile base	o support the display of addition maps.	al attributes
Control Pathway	New Debug File (Three new debug RLINE/RL Buoyant Urban bo The Debug Files accommodate th applied to debug	Options files have been INEXT source cat Line source calco oundary layer cal settings on the ne additional se files to aid users	added to AERMOD 22112: lculations ulations culations Control Pathway have been red lections. New default file name in their project file management	organized to s were also
	Model: AERMOD Control Options Options (Filat & Eleval Nor-Default Options Background Ozone Nor-Default Options Background NOX (GRSM) Optional Files Cost Optional Files Cost Optional Files Optional Files Optional Files Optional Files Debug Files Help	Model Model Meteorological Profile PRIME NOX/NO2 Method: GRSM TTRM2 AREA/LINE/OPEN PIT RLINE/RLINEXT Buoyant Line Urban Deposition Tip CAUTIONI Debug	Debug_MODEL.dbg Debug_METEOR.dbg Debug_PRIME.dbg Debug_PRIME.dbg Debug_AREA.dbg Debug_RLINE.dbg Debug_RLINE.dbg Debug_URBAN.dbg Debug_URBAN1.dbg Debug.pdp file options can produce very large files and significantly longer model runs	Close
	Note: A bug ir activating more t presented in the project.	n the U.S. EPA han 6 debug file Run Status displ	AERMOD model code prevents s in a single project. An error me ay if more than 6 files are enable	users from ssage will be ed in a single



Торіс	Feature Description
Control Pathway	Minimum Ozone Concentration Removal (NOMINO3) AERMOD 22112 includes an option which removes the restriction that limited background stable-hour ozone concentrations to a minimum of 40 ppb regardless of user-defined values. The option is listed as NOMINO3 on the MODELOPT keyword of the AERMOD input file.
	Control Pathway X Modet AERNOD Control Options Conversion Methods Control Options Conversion Methods Dispersion Options None (Full Conversion) Terrain Options (Elevated) ARM ARM ARM2 Terrain Options 0.500 Gas Deposition Optional Files Optional Files OUM PVMRML2 (BETA) PVMRM PVMRM2 (BETA) PVMRM Ortronal Files ORSM Optiony Files ORSM Optimum Dackground ozone limit [40 ppb] (NOMINO3)
Control Pathway	 Updates to Non-Default BETA & ALPHA Options The U.S. EPA has modified the classifications of the following Non-Default options in AERMOD 22112: Use of the Urban dispersion coefficient with Buoyant Line (BUOYLINE) or RLINE sources is no longer an ALPHA option. The Generic Reaction Set Method (GRSM), for NO2 conversion, has been updated to a BETA option (previously ALPHA). Several new ALPHA options have been added as described in additional new features below.



Торіс	Feature Description
Source Pathway	Offshore Platform Downwash for Point Sources (ALPHA) AERMOD 22112 includes new non-default routines for calculating downwash impacts on point sources (vertical, capped, or horizontal) located on offshore platforms. Modelers include dimensions for the platform height above the water surface (Zelp), height of the dominant building tier above the water surface (Hb), and the shorter width of the structure (Wb).
	Surce Input: Virte Type: Surce ID: STCK1 Release Type: Platform Properties Vertical Ver



Торіс	Feature Description
Control Pathway	New NO _x to NO ₂ Conversion Option – TTRM2 (ALPHA) AERMOD 22112 includes a new non-default NO2 conversion option called the Travel Time Reaction Method 2 (TTRM2). This method combines the existing TTRM method with one of the existing regulatory options (ARM2, OLM, or PVMRM) and calculates which method would produce lower concentrations. Conversion Options Conversion Options Conversion Options Conversion Methods Terrain Options (Elevated) Non-Default Options Conversion Methods Conversion Methods Conversion Methods Terrain Options (Elevated) Non-Default Options Conversion Methods Conversion Methods Conversion Methods Conversion Methods Conversion Methods Conversion Methods Conversion Methods Conversion Options Conversion Methods Conversion Methods Conversion Methods Conversion Options Conversion Methods Conversion Methods Conversion Conv
Control Pathway	RLINE Displacement Height Removal (ALPHA) A new non-default ALPHA option in AERMOD 22112 removes the displacement height used in the model's internal wind profile calculations associated with RLINE & RLINEXT source types.



Торіс	Feature Description	
Control Pathway	 Additional Low Wind Options Added (ALPHA) Two new options have been added to the existing set of non-default LOW_WIND selections in AERMOD 22112. 1. FRANmin is a Minimum Meander Factor to coincide with the existing Maximum Meander Factor. 	
	plume meander	
	Default Obtions (ALPHA)	
	Minimum Sigma-V [m/s]: 0.3 [0.011.0] Minimum Wind Speed [m/s]: 0.5 [0.011.0]	
	Maximum Meander Factor: 0.75 [0.01.0] Minimum Sigma-W [m/s]: 0.04 [0.03.0]	
	TRAN Time Period [hrs]: 12.0 [0.548] Minimum Meander Factor: 0.25 [0.01.0]	
	Alternate Momentum Balance: 🗹	
AERMET View	Import from AERMET Input Files Updates To accommodate the new input file formatting in AERMET 22112, the Import from AERMET Input Files dialog has been updated. Users can import existing AERMET input files in both Staged and Combined formats with the Staged files being either two- or three-stages.	
	Import from AERMET Input Files ×	
	Stage Input Files Version 22112 and later O Combined Input File Combined File:	
	Stage 1: C:\\aermet_ustar_testcases_22112\aermet-aerminute_testcase_PIT\PIT_S1.INP Stage 2: C:\\aermet-aerminute_testcase_PIT\PIT_S2_1MIN_ADJ.INP Stage 3: Image: Comparison of the stage	
	Help Cancel OK	



Торіс	Feature Description
AERMET View	New Prognostic Data Input Pathway
	AERMET 22112 includes a new pathway for handling prognostic meteorological data from the Weather Research & Forecasting (WRF) or Mesoscale Model Version 5 (MM5) meteorological models.
	This pathway is analogous to the existing Onsite Pathway with the same features and keywords. It is formatted to work directly with output from the Mesoscale Model Interface (MMIF) Version 4.0 application.
	AERMET View
	File Data Run Tools Help New Open Save Run Surface Onsite Prognostic Upper Air Sectors Output WRPLOT Export Prognostic Data Data Records Additional Parameters QA Variables Variables Variables Variables
	Include Prognostic Data? Ise Surface Data from Prognostic Data Only
	No Read Mixing Heights from Prognostic Data Site Time Zone:
AERMET View	Overwater/Overland Processing Flags for Prognostic & Onsite Pathways
	A new data flag allows users to identify whether their Prognostic Pathway input data originates from a location that is Overwater (OW) or Overland (OL) . Selection of the overwater option will allow AERMET to read and process convective parameters directly from the prognostic data (as formatted by MMIF V4.0).
	A similar flag has been applied to the Onsite Pathway, but AERMET 22112 only supports use of the overland option with Onsite data.
	Land or Water Flag
	Overland
	☑ Overwater



Торіс	Feature Description
AERMET View	New Debug Output File AERMET 22112 includes a new Debug Output File which prints internal storage array information and planetary boundary layer calculations to an external file (aermet_debug.txt). This option is found in the Processing Options tab of the Sectors input pathway. Debug File ?
AERMET View	Individual Upper Air Sounding Modifications AERMET 22112 allows selection of individual sounding modifications. Adjust Sounding Data (MODIFY) ? Delete Some Mandatory Levels (DELMAND) Set Wind Direction to 0 if Wind Speed is Calm (CALMDIR) Interpolate Missing Temperatures (SUB_TTTD)
AERMET View	Mode Menu Removed for 22112 AERMET 22112 no longer produces or reads an external Merge file. To support this change, AERMET View's Mode menu was removed for 22112 projects, and the Merge File section of the Output Files tab disabled.
AERMET View	Order Swap for Sectors Tabs The order of the Sectors (Onsite) and Sectors (Surface) tabs were swapped to reflect AERMET's preferred order for reading these data variables. This aligns with the AERMET input file format which assigns primary surface characteristics (FREQ_SECT/SITE_CHAR) to Onsite data and secondary surface characteristics (FREQ_SECT2/SITE_CHAR2) to Surface data.



Торіс	Feature Description
AERMET View	 Miscellaneous Changes in AERMET 22112 AERMET View has undergone extensive updates to support various minor changes throughout the AERMET 22112 model: TD-3280 files are no longer supported on the Surface Pathway. This option has been removed from the Format drop-down menu. The Format drop-down menu on the Surface Pathway was reordered to list TD-3505 as the default format. Hourly Surface Data File Format: NCDC TD-3505 (ISHD - full archival) File: SAMSON CD-144 Surface Stat HUSWO (Metric Units) SCRAM (MET 144) ASOS stations are now automatically recognized internally by AERMET. The ASOS Site checkbox has been disabled for all recognized ASOS station ID numbers. The no persistence keyword (NOPERS), for the cloud cover and temperature data substitution routines, was made obsolete. The "Only Hours 01-22" substitution options in AERMET View have been disabled for 22112 projects.
	All Hours Only Hours 01-22 None
	Apply Missing Ambient Temperature Subsitution Only Hours 01-22 None



Fixed Issues

Торіс	Feature Description
Display	Incorrect RLINE Source Width
	In the main display, the width of RLINE sources was inadvertently doubled from the assigned numeric value. This issue has been corrected.
Source Pathway	Unpopulated Background Concentration Table
	A correction was made to ensure all time-varying emission values will populate the Background Concentrations tables when imported from existing AERMOD input files.
Source Pathway	Hourly Emission File Editor Excel Import
	The Hourly Emission File Editor was updated to correctly read certain Excel spreadsheets (XLS & XLSX).
Meteorology	Non-Concurrent PFL File Reading in the Multi-Year File Utility
Patnway	The Multi-Year Met Data File Utility was updated to correctly read and process profile meteorological data files (*.PFL) that are not from concurrent years.
Meteorology Pathway	Incorrect Model Keyword
	Use of the Turbulence Treatment options previously resulted in an additional keyword being added to the AERMOD input file. This has been corrected.
Terrain Processor	Property Boundary Intersection with Offsite Grid Receptors
	AERMAP has been updated to process cases where an existing gridded receptor network intersected with one or more receptors along the Plant Boundary and the "Remove Onsite Receptors" option was enabled.
AERMET View	Loss of Category Display in Land Use Creator
	Some codes were not displayed correctly when using the "Save Land Use File As" function in the Land Use Creator. The utility has been updated to use Import functionality when reading the newly copied data file.

