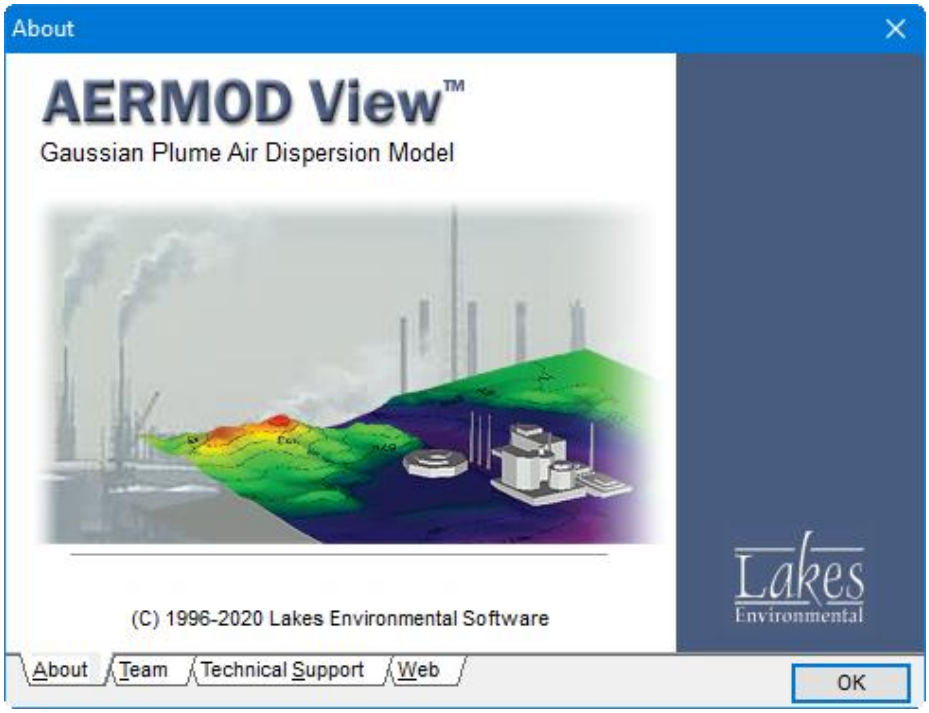
# AERMOD View™

Gaussian Plume Air Dispersion Model - AERMOD

## Release Notes

Versions 9.9 and 9.8.x

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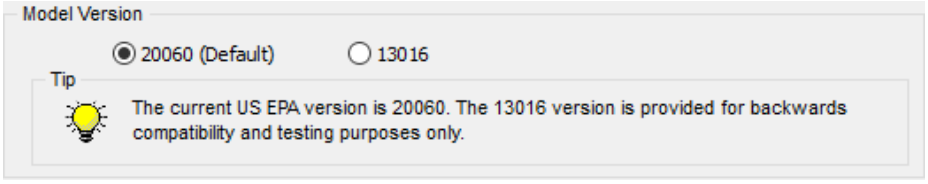
# AERMOD View™ Version 9.9.0

# Release Notes

April 28, 2020

## New Features

| Topic | Feature Description |
|---|---|
| **Models** | **New US EPA AERSURFACE 20060 Model**<br><br>On April 7, 2020, the US EPA released the new **AERSURFACE Version 20060** model replacing all previous versions (13016 & 19039_DRFT). Updates include:<br><br>• Support for National Land Cover Database (NLCD) **2016**, **2011**, **2006**, and **2001** GeoTIFF-format land cover data files which cover CONUS, Hawaii, Alaska, and Puerto Rico<br>• Support for NLCD 1992 files is now limited to GeoTIFF files only<br>• Addition of percent **Canopy** and percent **Impervious** data files for years corresponding to the selected land cover data<br>• Experimental surface roughness calculation methodology (ZOEFF)<br>• Separation of airport selection by sector for surface roughness calculations<br>• Debug output files for data analysis |
| **AERMET View** | **AERSURFACE Utility – Model Selection**<br><br>Support for the new AERSURFACE model version 20060 in addition to the previous version (13016). A note was added to clarify that use of 13016 is intended for backwards compatibility, testing, and evaluation purposes only.<br><br>  |



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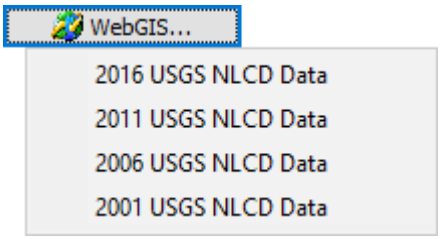
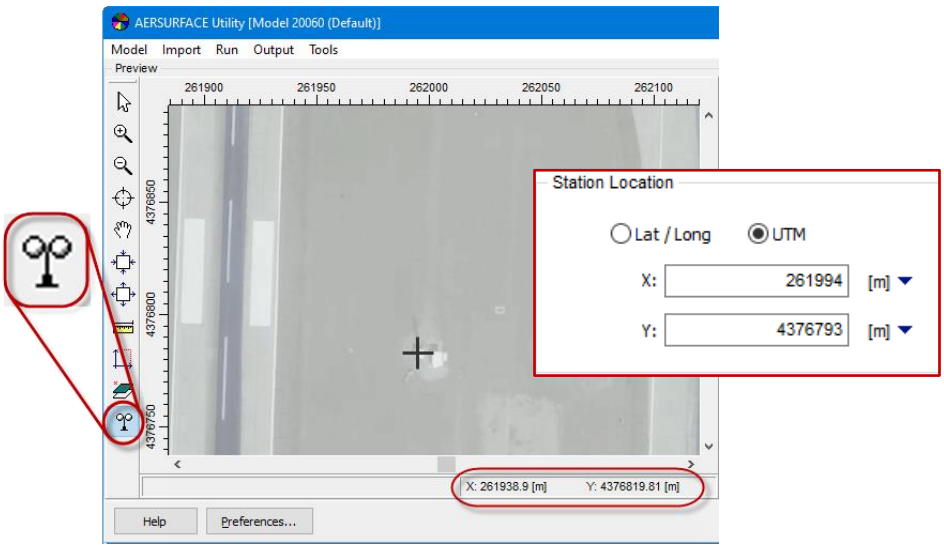
| Topic | Feature Description |
|---|---|
| **AERMET View** | **Enhanced WebGIS Data Availability**<br><br>Land cover products available in the **AERSURFACE Utility** and **Land Use Creator** have been expanded and updated. New products include:<br><br>• 2016 land cover, percent impervious, and percent tree canopy for the continental United States (CONUS) and Alaska<br>• Updated 2011, 2006, and 2001 data for CONUS, Alaska, Hawaii, and Puerto Rico<br><br>See the AERMET View **Help** file for product details on years and spatial extents.<br><br>  <br><br>**Note:** NLCD 2001-2016 data downloads via WebGIS are only available for users with a **current maintenance agreement**. |
| **AERMET View** | **AERSURFACE Utility – Set Location in Preview**<br><br>A new **Station Location tool** is available for selecting the precise coordinates of the meteorological station. Using the tool and clicking within the **Preview** area will automatically set the coordinates in the **Station Location** field.<br><br>  |



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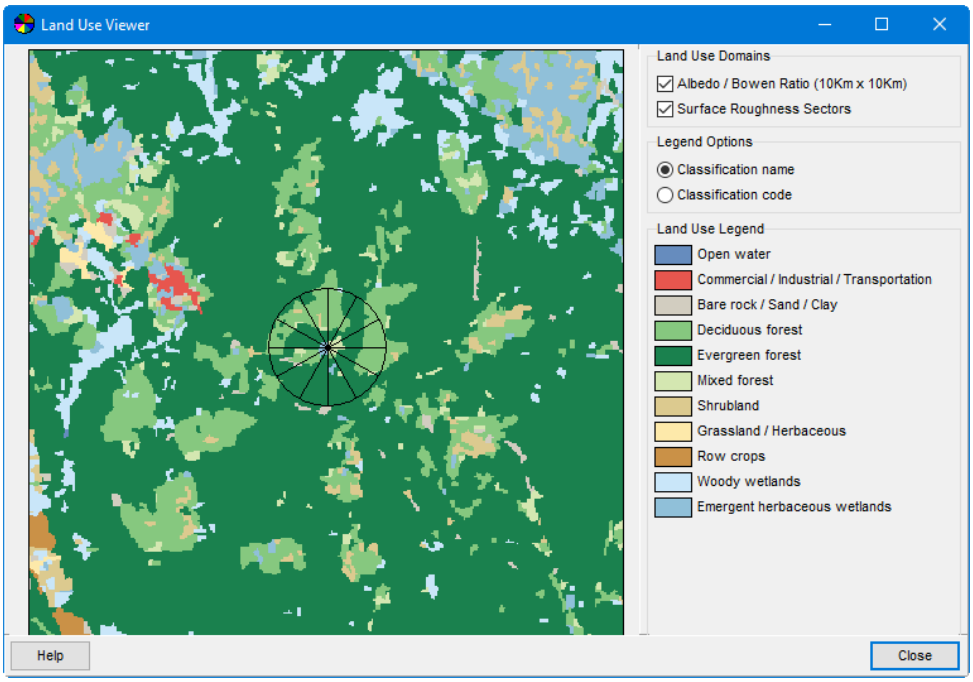
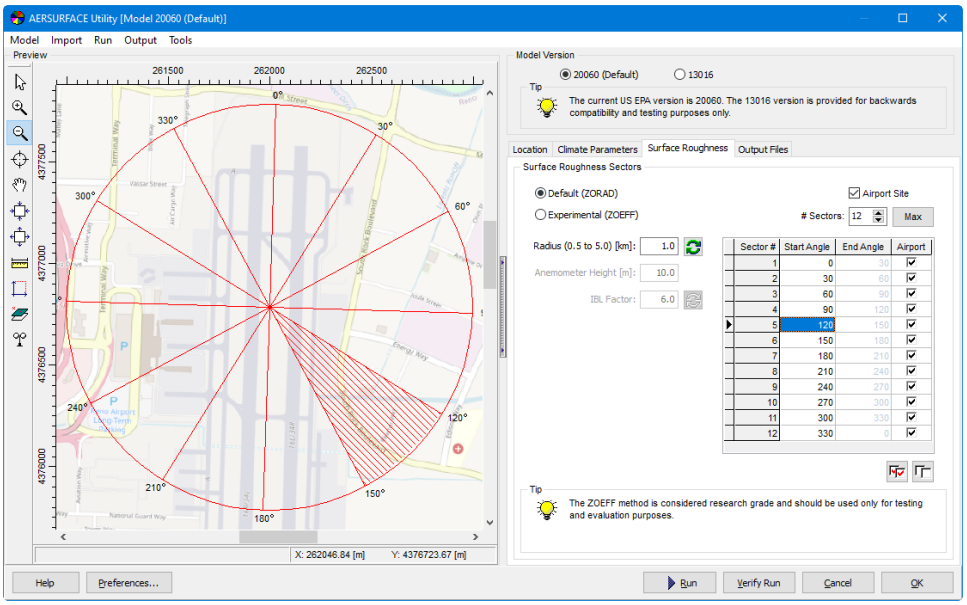
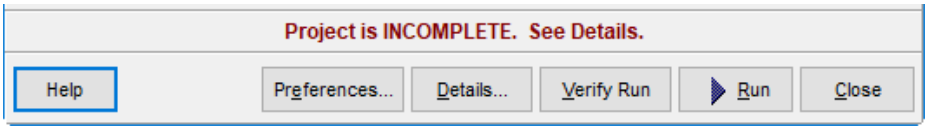
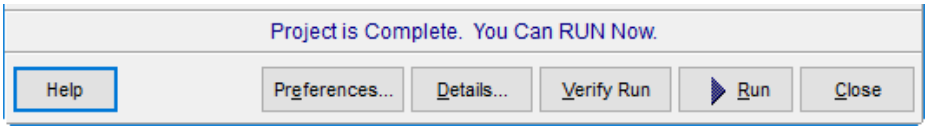
| Topic | Feature Description |
|---|---|
| **AERMET View** | **AERSURFACE Utility – Land Use Viewer Displayed After Run**<br><br>After successful execution of AERSURFACE, AERMET View now automatically displays the **Land Use Viewer** window so users can visually verify the land use properties within their domain. Users can also access the Land Use Viewer from the **Output** menu in the AERSURFACE Utility.<br><br>  |

| Topic | Feature Description |
|---|---|
| **AERMET View** | **AERSURFACE Utility – Highlight Selected Surface Roughness Sector**<br><br>When a Sector is selected in the **Surface Roughness** table, that sector is now marked with a hashed pattern to show sector definitions more clearly. This can also help identify which sectors are airport or non-airport for the 20060 AERSURFACE model.<br><br>  |
| **Project Status** | **Color Coded Status Message**<br><br>In both AERMOD View and AERMET View, the message defining a project's state is now color coded to more easily identify incomplete projects or those containing potential errors.<br><br>  <br><br>  |



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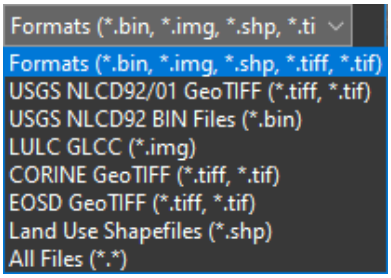
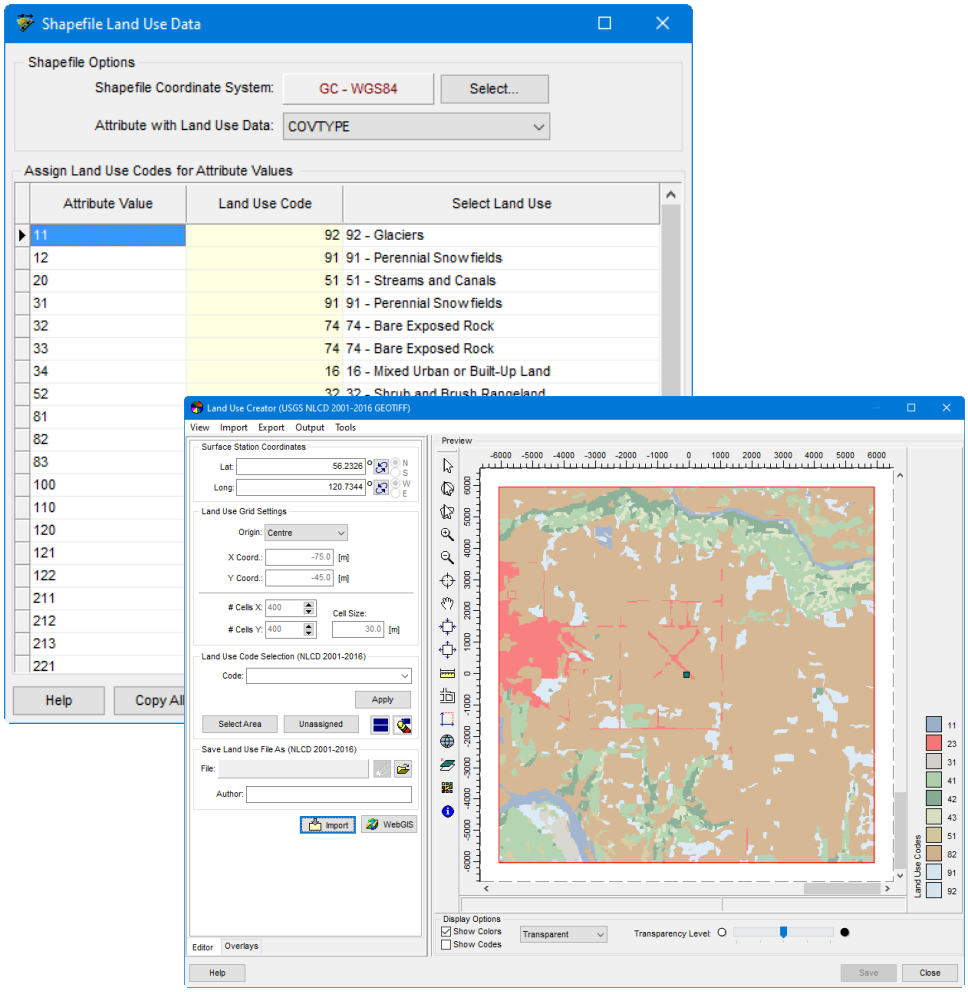
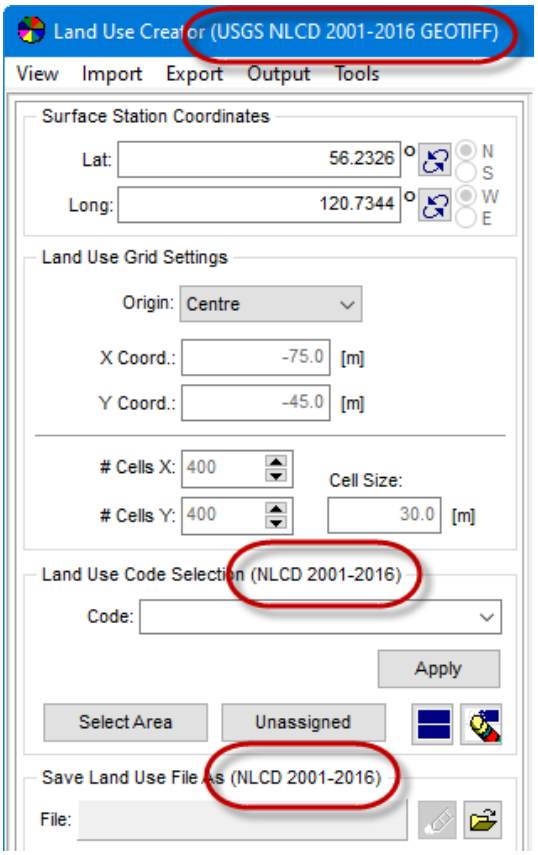
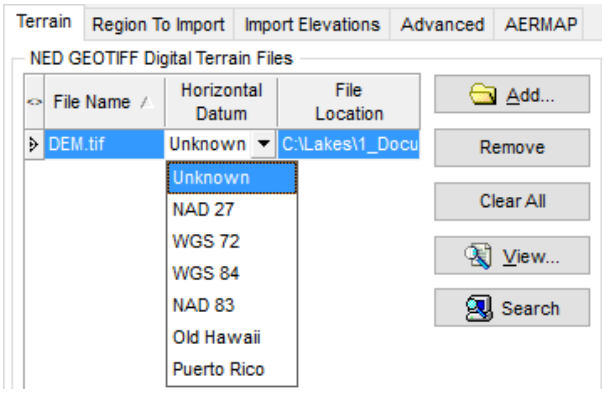
| Topic | Feature Description |
|---|---|
| **Reports** | **Support for Large Output Values**<br><br>The **Results Summary** Report and **Sensitive Receptors Summary** Report have been updated to display full numeric concentration and deposition values for large values. |
| **Land Use Creator** | **Import List Updated with Additional Formats**<br><br>In addition to the existing USGS NLCD, GLCC, CORINE, and EOSD land use data formats, **Shapefile** land use files can now be imported directly to the **Land Use Creator** utility.<br><br>  |

| Topic | Feature Description |
|---|---|
| **Land Use Creator** | **Support for Shapefile Land Use Data**<br><br>Shapefile land use data, including GeoBase Land Use data available from Natural Resources Canada's Geogratis FTP archive, can now be imported to the **Land Use Creator** utility to generate land use data files compatible with **AERSURFACE 20060**. This includes a utility for modelers to define land use codes for each shapefile attribute.<br><br>  |

| Topic | Feature Description |
|---|---|
| **Land Use Creator** | **Added Data Product Version**<br><br>The NLCD data product version description – **1992** or **2001-2016** – was added throughout the Land Use Creator utility to make clear which data product is being generated.<br><br>  |

# Fixed Issues

| Topic | Feature Description |
|---|---|
| **Terrain Processor** | **Restored Datum Selection for GeoTIFF Terrain Data Files**<br><br>User-defined selection of the **Horizontal Datum** field in the **Terrain Processor** has been restored for all GEOTIFF files. This was removed inadvertently in the previous release.<br><br>Modelers running GEOTIFF files other than USGS NED / 3DEP should set the **Horizontal Datum** to **Unknown** to avoid errors in AERMAP.<br><br>  |
| **MAXTABLE Viewer** | **Update to Fix Source Group Reporting**<br><br>The MAXTABLE Viewer utility was updated to correct an issue where results from multiple source groups were displayed in a single table. |
| **Source Pathway** | **Reduced Input Parameter Limits of Open Pit Source**<br><br>Previously, AERMOD View required OPENPIT sources to use values of at least 1 for the X Length, Y Length, and Volume parameters. This has been updated to match AERMOD's internal code which allows any value greater than 0. |
| **Source Pathway** | **Data Tree Modification to Variable Emissions**<br><br>The data trees used to assign sources to a Variable Emissions Scenario have been updated to avoid errors caused when modifications are made to existing source ranges within a scenario. |
| **Project Status** | **Large Modeling Area Warning Corrected**<br><br>A false warning message reporting a large modeling area for some projects has been corrected to properly account for RLINE sources. |



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# Fixed Issues (Continued)

| Topic | Feature Description |
|---|---|
| **Labels** | **Plant Boundary Receptor Labels Reset**<br><br>When labeling individual receptors along a Plant Boundary, the labels were not reset to a starting value of 1 when all initial boundaries were removed. This has been corrected. |
| **AERMET View** | **AERSURFACE Utility – Data File Folder Path References**<br><br>A correction was made for reading input data files from folders other than the project directory. |
| **AERMET View** | **Import Surface Data from Excel Conversion Adjustment**<br><br>A bug in the Import Surface Data from Excel utility caused the utility to read Missing Indicators for default units only. This has been corrected to read numeric values as missing regardless of units. |
| **Percent View** | **Reading Binary POSTFILE**<br><br>A correction was applied to Percent View to properly read AERMOD's binary POSTFILEs. |

# Known Issues

| Topic | Issue Description |
|---|---|
| **AERMOD 19191** | **RLINE with EMISFACT**<br><br>A bug in the US EPA's code prevents RLINE sources from being used with the Variable Emissions option (EMISFACT). |
| **New Project Wizard** | **No Spaces in Project Name with ISC**<br><br>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. |



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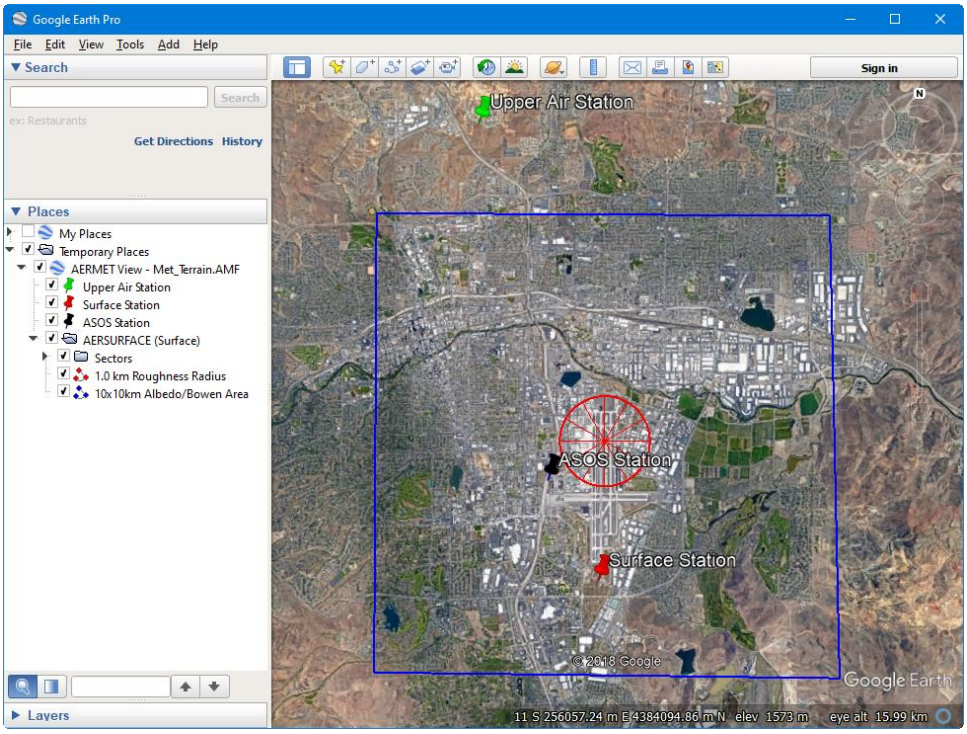
# AERMOD View™ Version 9.8.3

# Release Notes

November 22, 2019

## New Features

| Topic | Feature Description |
|---|---|
| **AERMET View** | **Exporting AERSURFACE Data to Google Earth**<br><br>When exporting project data from AERMET View to Google Earth, the center point for the **Sectors**, **Roughness Radius**, and **Albedo/Bowen Area** layers is now based on the coordinate identified in the AERSURFACE Utility.<br><br>  |



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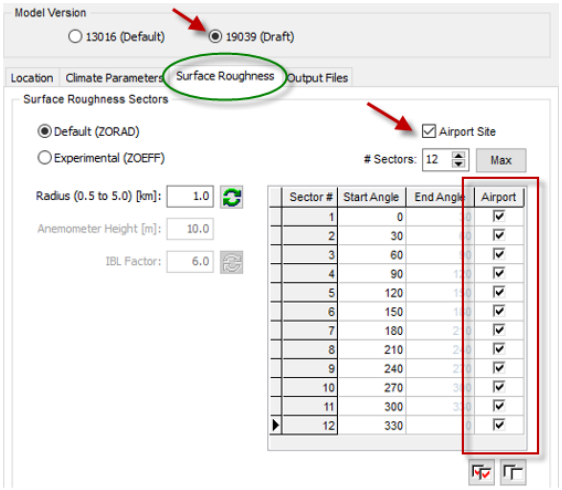
| Topic | Feature Description |
|---|---|
| **AERMET View** | **AERSURFACE - Remember Last Opened Folder for Land Use Files**<br><br>When selecting Land Use, Canopy, and/or Impervious data files for the 19039 (Draft) version of AERSURFACE, the utility now remembers the last opened folder to save time when adding files from the same directory. |
| **AERMET View** | **AERSURFACE - Selection of Airport Sectors**<br><br>AERSURFACE Version **19039_DRFT** allows users to define each individual surface roughness sector as **Airport** or **Non-Airport**. In this update, selecting the **Airport Site** box on the **Surface Roughness** tab will now assume all sectors are Airport. Modelers can then uncheck any sector to identify non-airport roughness characteristics.<br><br>  |
| **Output Pathway** | **Enabling Plume Animation Groups by Default**<br><br>When enabling the **Plume Animation** option, AERMOD View now automatically enables the first source group in the list (e.g., ALL). It also requires that at least one group be enabled. |
| **Multi-Chemical Run Utility** | **Optimization for Polyline Source Objects**<br><br>The Multi-Chemical Run Utility has been optimized to process large polyline source types (Line Area, Line Volume). |
| **Installation** | **Digital Signature Included**<br><br>Lakes Environmental is digitally signing our commercial product installations for additional security. |



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# Fixed Issues

| Topic | Feature Description |
|---|---|
| **Source Pathway** | **Source Group Support for RLINE Sources**<br><br>RLINE sources are now fully supported within Source Groups. The previous release had an issue where incorrect source IDs were assigned to groups for RLINE sources. |
| **Source Pathway** | **Data Tree Updates for Source Groups and Others**<br><br>Settings which include data trees – such as **Source Groups**, **Urban Groups**, and **Variables Emissions** – were updated to automatically log new group / folder names as soon as the objects are created. This addresses an issue where new groups would be lost depending on the method through which they were created by the user. |
| **Risk Mode** | **Import and Export of Gas & Particle Data**<br>Fixes were applied to Risk Emission Phase Data to allow for improved performance in importing or exporting deposition parameters for each phase.<br>• Both import and export operations are now handled separately for each phase (Vapor Mercury, Vapor, Particle, Particle-Bound).<br>• Exported spreadsheets are labeled according to each phase.<br>The Risk Emission Phase Data List button was also fixed to address a range check error. |


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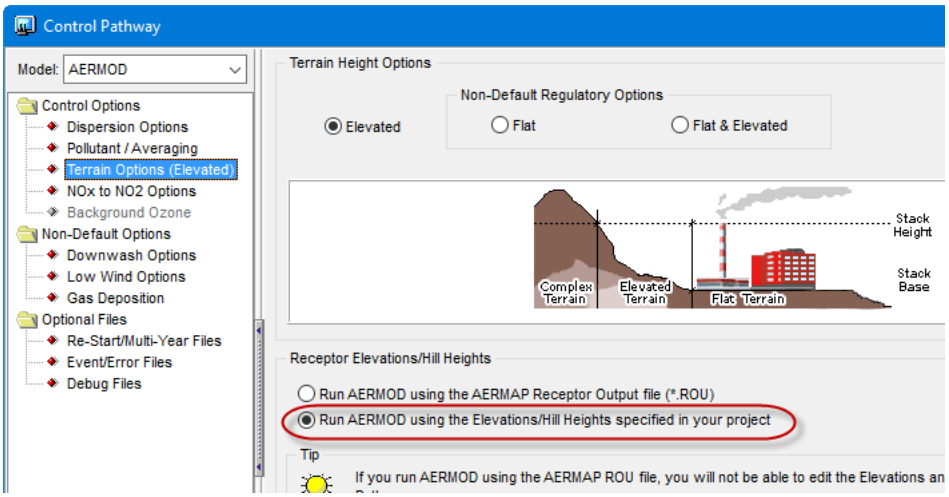
# AERMOD View™ Version 9.8.1

# Release Notes

October 18, 2019

## Fixed Issues

| Topic | Feature Description |
|---|---|
| **Terrain Processor** | **Updated Support for Alternate Projections / Datums**<br>Version 9.8.1 updates the Terrain Processor to improve handling of projections and datums not natively supported within the AERMAP executable.<br><br>Projects using **non-UTM** projections or datums unsupported by AERMAP (those other than **WGS84/72**, **NAD83/27**, **Old Hawaii**, or **Puerto Rico**) will be internally converted to UTM / WGS84 to ensure elevation data are read and imported properly.<br><br>These projects will automatically have the **Terrain Options** switched to read elevations & hill height scales as specified in the project.<br><br>  <br><br>**Note:** The conversion routines are best applied to each model object individually. For this reason, discrete receptors are preferred over gridded receptor networks. Users can still use gridded networks, but a warning will be displayed in this case. |



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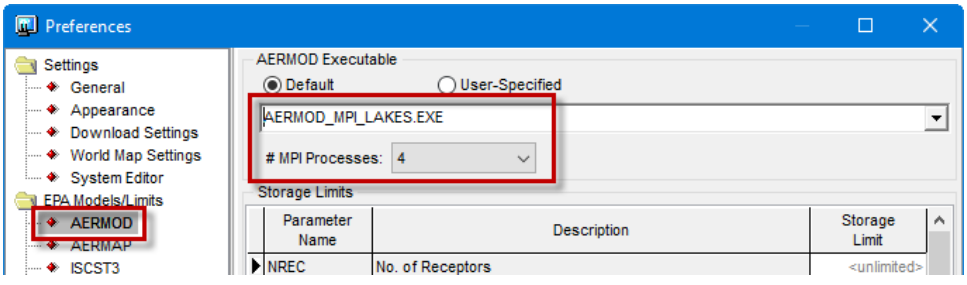
# AERMOD View™ Version 9.8

# Release Notes

October 8, 2019

## New Features

| Topic | Feature Description |
|---|---|
| **AERMOD** | **Latest Release of US EPA AERMOD Model Available – Dated 19191**<br>The following US EPA Models were released in August 21, 2019 and are incorporated into AERMOD View Version 9.8:<br>1. AERMOD.EXE is the latest version 19191 (32-Bit Version)<br>2. AERMOD_19191_X32.EXE – The same as above (32-Bit Version)<br>3. AERMOD_19191_X64.EXE – 64-Bit Version<br>See the Model Change Bulletin for a list of changes and bug fixes:<br>https://www3.epa.gov/ttn/scram/models/aermod/aermod_mcb14_v19191.pdf |
| **AERMOD MPI** | **New Version of Lakes AERMOD MPI 19191 (Parallel Version)**<br>A new version of the Lakes AERMOD MPI for the US EPA Model Version 19191 is now available (AERMOD_MPI_Lakes_19191.exe). Install includes 64-bit and 32-bit versions. You can specify to use this model under the **Preferences** dialog.<br>**Note:** AERMOD_MPI_LAKES_19191.EXE or AERMOD_MPI_LAKES.EXE will run the latest version of the AERMOD model (19191) in parallel mode using up to a maximum of 8 cores.<br>  |



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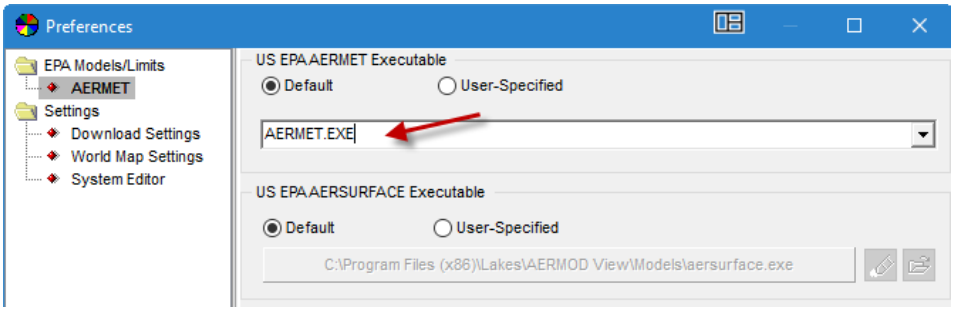
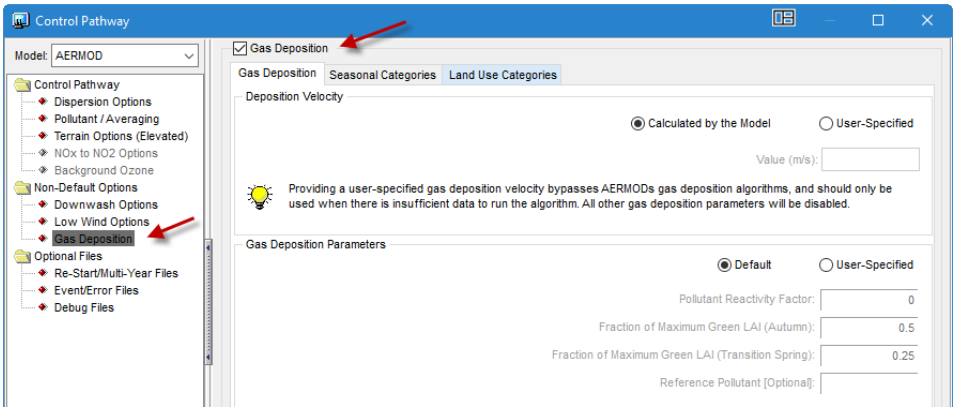
| Topic | Feature Description |
|---|---|
| **AERMET** | **Latest Release of US EPA AERMET Model Available – Dated 19191**<br><br>On August 21, 2019, the US EPA released the new version of **AERMET,** dated **19191.** Updates in the new version include 5 bug fixes which are described on the model change bulletin:<br><br>https://www3.epa.gov/ttn/scram/7thconf/aermod/aermet_mcb9.pdf<br><br>Lakes Environmental updated **AERMET View** to include support for model version 19191.<br><br>• AERMET.EXE is the latest version 19191 (32-Bit Version)<br>• AERMET_19191_X32.EXE – The same as above (32-Bit Version)<br>• AERMET_19191_X64.EXE – 64-Bit Version<br><br>  |
| **Control Pathway** | **Gas Deposition Options – ALPHA**<br><br>The status of the **Gas Deposition** options was changed under the AERMOD Model Version 19191 from **Non-Default** to **ALPHA**. The deposition algorithms will undergo more evaluation before the US EPA can change its status again.<br><br>In AERMOD View, the **Gas Deposition Options** are now available under a new location: **Control Pathway – Gas Deposition** page. The **Non-Default** option must be selected first to enable the access to this page.<br><br>  |



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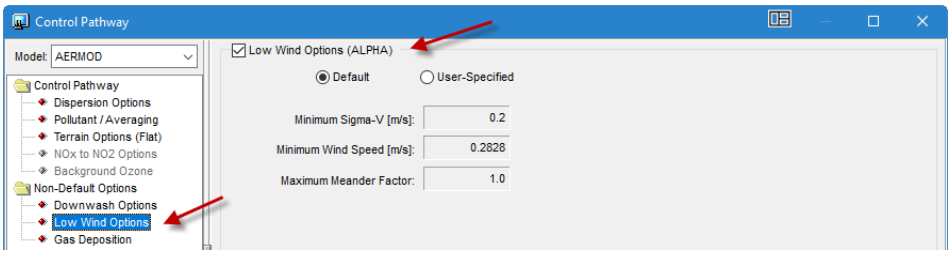
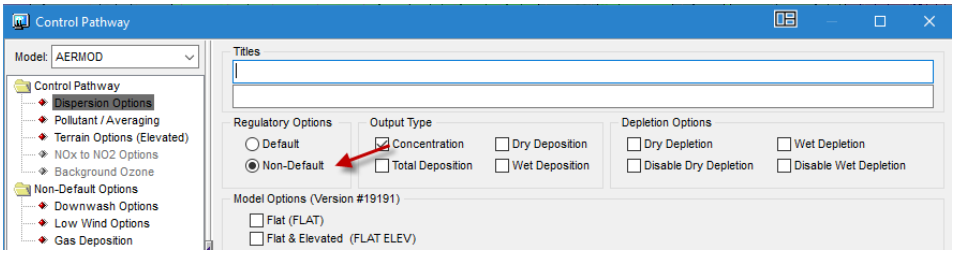
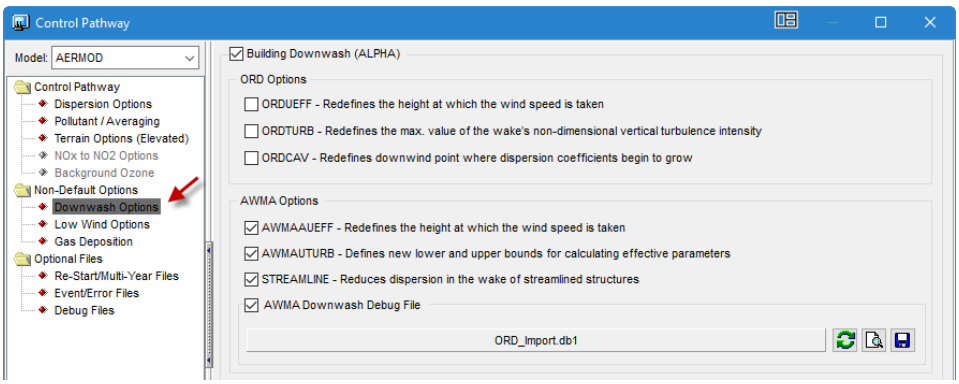
| Topic | Feature Description |
|---|---|
| **Control Pathway** | **Low Wind Options - ALPHA**<br><br>The **Low Wind Options** were moved to a new location (**Control Pathway – Low Wind Options** screen) and its layout was improved by introducing the **Default** and **User-Specified** options.<br><br>  |
| **Control Pathway** | **New Building Downwash Options - ALPHA**<br><br>AERMOD Model Version 19191 introduces, under the Control Pathway, two distinct sets of **ALPHA** building downwash options. These are research grade options made available for testing and evaluation purposes and implemented by EPA's Office of Research and Development (**ORD**) and Air & Waste Management Association (**AWMA**).<br><br>These new options require the user to select the **Non-Default** option first and are available under the **Control Pathway – Downwash Options** page.<br><br>  <br>  |



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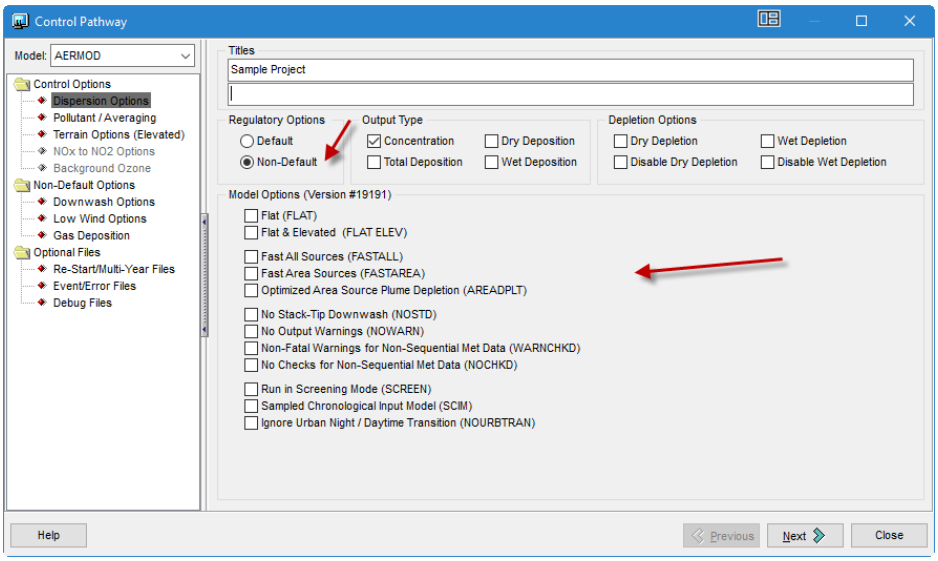
| Topic | Feature Description |
|---|---|
| **Control Pathway** | **New Layout for Control Pathway - Non-Default Options**<br>The **Model Options** section under the **Control Pathway – Dispersion Options** screen have a new layout as seen in image below.<br>  |
| **Source Pathway** | **New Roadway Source Type Introduced – RLINE - BETA**<br>AERMOD Model Version 19191 introduces a new source type "**RLINE**" to model roadways or similar line-type releases. The algorithms used for this new source type are from the R-LINE model version 1.2 (www.cmascenter.org/r-line).<br>In AERMOD View, this source is identified with the following toolbar button:<br>  <br>See below more information on the RLINE Source:<br>1. Non-Default BETA option<br>2. Must be used with FLAT terrain<br>3. Has the same parameters as the LINE Source<br>4. Can be specified in AERMOD View as a line with multiple segments. |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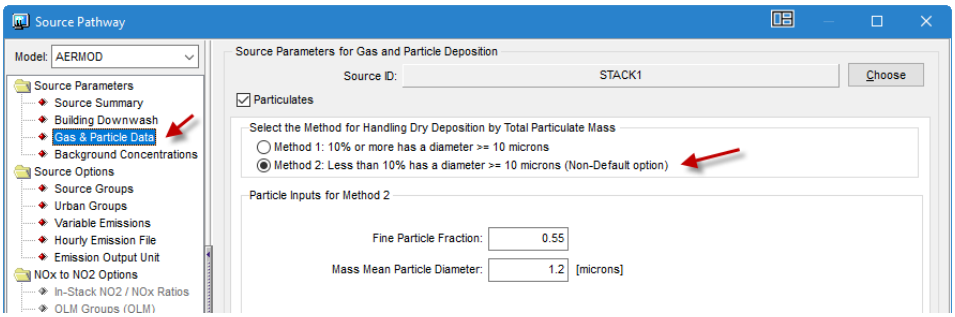
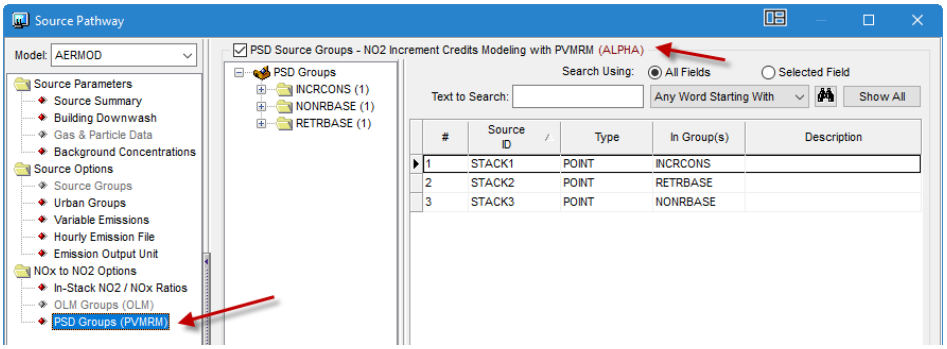
| Topic | Feature Description |
|---|---|
| **Source Pathway** | **METHOD 2 Particle Deposition – ALPHA**<br>The status of the **METHOD 2 Particle Deposition** option was changed under the AERMOD Model Version 19191 from **Non-Default** to **ALPHA**. The deposition algorithms will undergo more evaluation before the US EPA can change its status again.<br>  |
| **Source Pathway** | **BUOYANT LINE Source with Urban Option – ALPHA**<br>The **BUOYANT LINE** Source can be used with the **DEFAULT** option for **Rural** dispersion. However, under AERMOD model version 19191, it is a **Non-Default ALPHA** option if used with the **Urban** dispersion option (URBANOPT). |
| **Source Pathway** | **PSD Groups (PVMRM) Option – ALPHA**<br>The **PSD Groups (PVMRM)** option (PSDCREDIT) is a Non-Default **ALPHA** option under model versions 18081 and 19191. For earlier model versions, this was a **BETA** option.<br>  |



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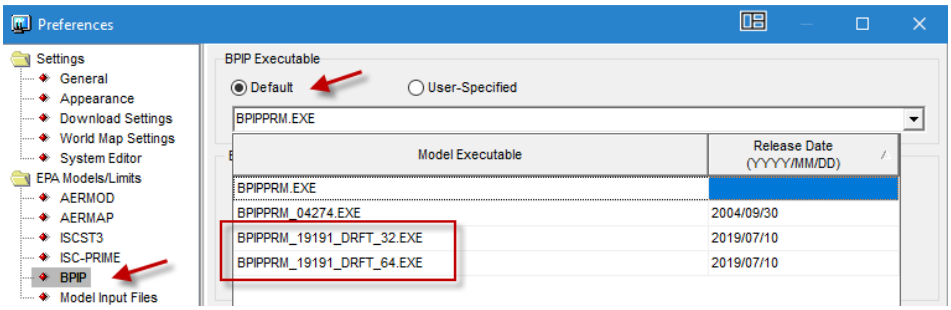
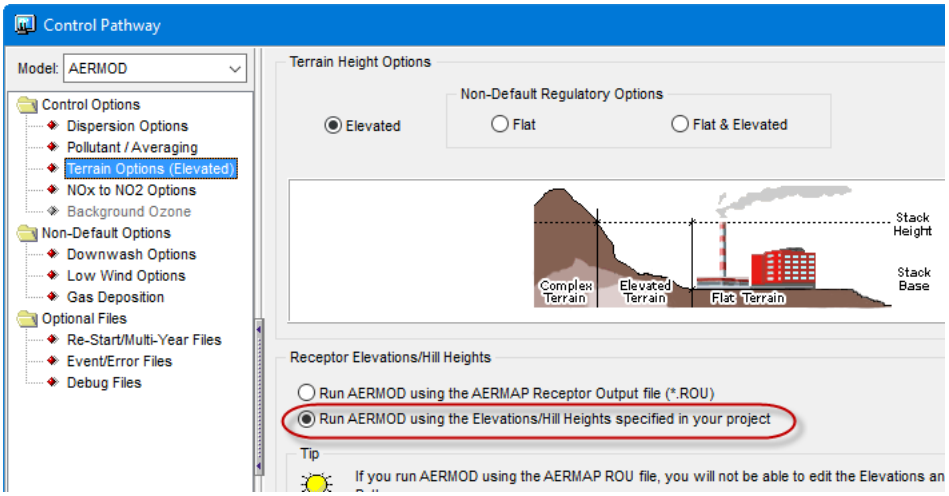
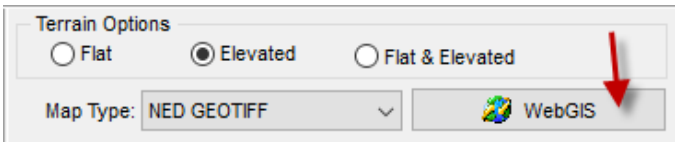
| Topic | Feature Description |
|---|---|
| **BPIP** | **New US EPA BPIP Version Available as DRAFT– Dated 19191_DRFT**<br><br>On August 21, 2019, the US EPA released a new version of the BPIP PRIME model as a DRAFT (19191_DRFT). This version is to facilitate testing of the ALPHA building downwash options (see item above).<br><br>Two executables are available and can be selected from the **Preferences** dialog:<br><br>1) BPIPPRM_19191_DRFT_32.exe (32-bit)<br>2) BPIPPRM_19191_DRFT_64.exe (64-bit)<br><br>See the Model Change Bulletin at:<br><br>https://www3.epa.gov/ttn/scram/mcbs/BPIPPRM_MCB_v19191_DRFT.pdf<br><br>  <br><br>**Note:** Please note that version 19191_DRFT is **not** a replacement for BPIP PRIME version 04274 (BPIPPRM.EXE). This draft version should not be used in a regulatory context. |
| **Buildings** | **Unlimited Number of Building Coordinates to Import**<br><br>The option to import Buildings from an Excel file (Import \| Buildings… menu option) was limited to 256 columns of data. Therefore, building shapes with more than 123 pairs of X, Y coordinates could not be imported.<br><br>This new release has no limit on the number of polygon X, Y points for a building that can be imported from an Excel file. |

| Topic | Feature Description |
|---|---|
| **Terrain Processor** | **Coordinate Conversion for Non-UTM Projections**<br><br>For projects utilizing the map projections **other than UTM**, a modification was made to the Terrain Processor which now internally converts all coordinates to UTM. This change was necessary to import correct terrain elevations at all known objects due to the differences in projection tilts at high latitudes.<br><br>**Note:** This modification requires users to enable the **"Run AERMOD using the Elevations/Hill Heights specified in your project"** option on the **Control Pathway \| Terrain Options** dialog.<br><br>  |
| **AERMAP** | **Updates to the USGS NED Terrain Data Download**<br><br>Recent changes to USGS data servers have directed download access for NED terrain data to new servers. Lakes Environmental made the necessary modifications to the WebGIS download routines for these files.<br><br>  |



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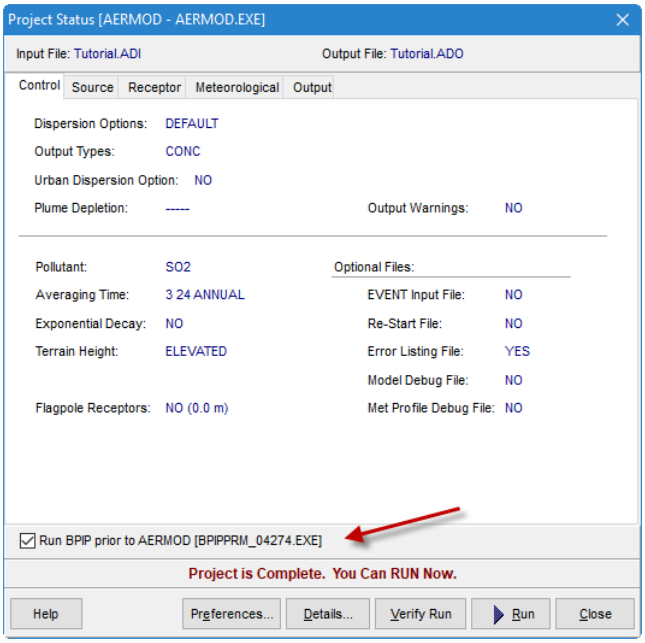
| Topic | Feature Description |
|---|---|
| **AERMOD Run** | **AERMOD Run – Project Status Dialog**<br><br>The **Project Status** dialog is now also shown when the user selects the menu option **Run \| Run AERMOD**. This makes the AERMOD Run options more consistent and allows the user the option to Run BPIP prior to AERMOD.<br><br>  <br><br><br>**Note:** The BPIP Executable, being used for the run, is now also shown in the **Project Status** dialog. |



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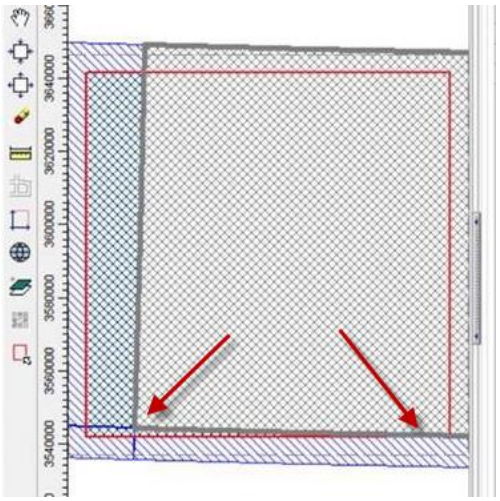
# Fixed Issues

| Topic | Issue Description |
|---|---|
| **Input File** | **BUOYLINE Source Input File Order**<br><br>The US EPA updated their AERMOD Implementation Guide to include some additional modeling guidance. One item related to Buoyant Line sources recommends "users always list the BUOYLINE source last in the AERMOD input file" to prevent a bug in how the model handles other sources.<br><br>AERMOD View now writes any Buoyant Line Sources (BUOYLINE) after any other type of source.<br><br>**Note:** See section 7.1 of the AERMOD Implementation Guide, for more information about this US EPA AERMOD model bug:<br><br>https://www3.epa.gov/ttn/scram/models/aermod/aermod_implementation_guide.pdf |
| **Terrain Processor** | **AERMAP Freezes During NED 1/3 Processing**<br><br>Fixed freezing issue related to the processing of NED 1/3 terrain data. This happened in very few cases where tile edges where close to the selected domain edges.<br><br>  |
| **Buildings** | **Application Freezes When Accessing Buildings**<br><br>In very few cases, AERMOD View was occasionally freezing when attempting to modify parameters in the **Buildings Inputs** dialog. This issue has been resolved. |



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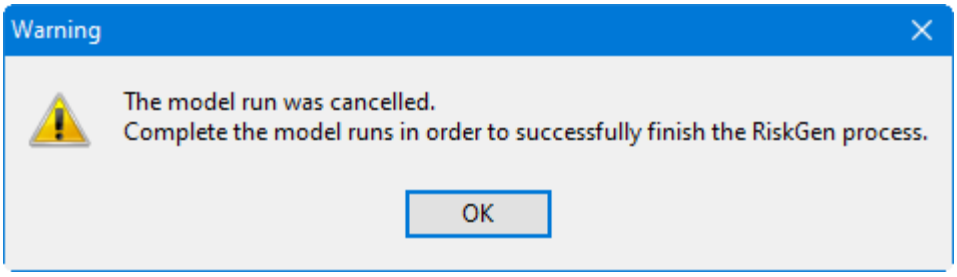
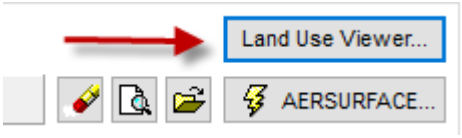
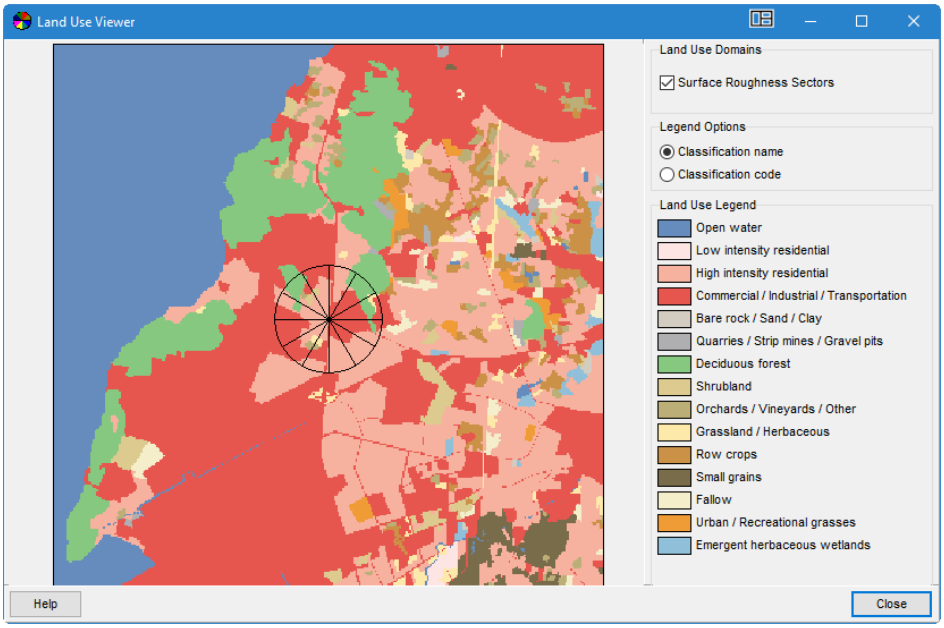
| Topic | Issue Description |
|---|---|
| **Multi-Chemical Utility** | **Multi-Chemical Run Fails due to Spaces on Project Path**<br><br>Projects with spaces on the name and or path failed to run with the Multi-Chemical utility when source IDs were greater than 8 characters. This issue has been fixed. |
| **Multi-Chemical Utility** | **Multi-Chemical Warning Messages**<br><br>After successful completion of some Multi-Chemical runs, a warning was issued stating some years were not calculated. This issue has been resolved to remove the erroneous message. |
| **RiskGen** | **Improved Error Handling**<br><br>In previous releases, cancelling model runs and exiting **Batcher** caused an error message to be issued as the utility tried to read incomplete output. A standard Warning message is now issued if runs are cancelled prematurely.<br><br>  |
| **AERSURFACE** | **Executable for AERSURFACE Replaced by 32-Bit Version**<br><br>The US EPA AERSURFACE executable version 19039_DRFT, introduced on AERMET View Version 9.7, was only compatible with 64-Bit Windows operating systems. This executable now can be used in 32-Bit and 64-Bit operating systems. |

| Topic | Issue Description |
|---|---|
| **AERMET View** | **Land Use Viewer Display Fix for 1992 Data**<br><br>The **Land Use Viewer** tool displayed incorrect categories when running the AERSURFACE 19039_DRFT version with 1992 land use data. This issue has been fixed.<br><br>  <br><br>  |



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