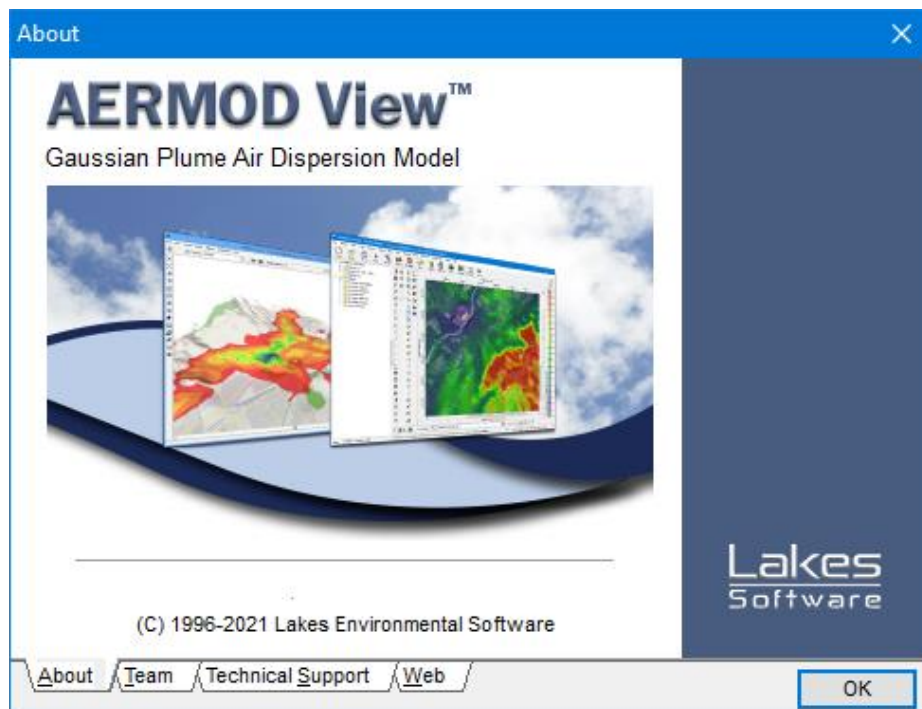


AERMOD View™

Gaussian Plume Air Dispersion Model - AERMOD

Release Notes

Version 10.0



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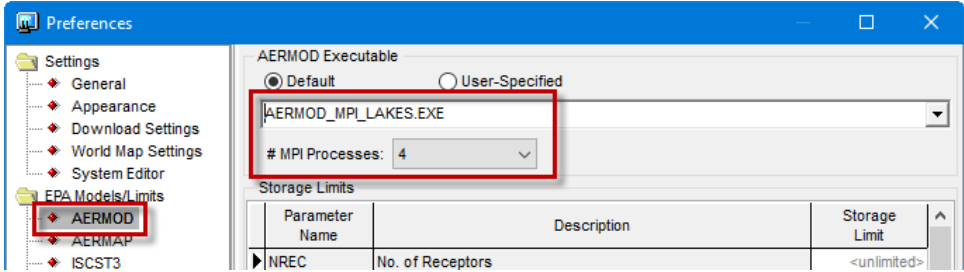
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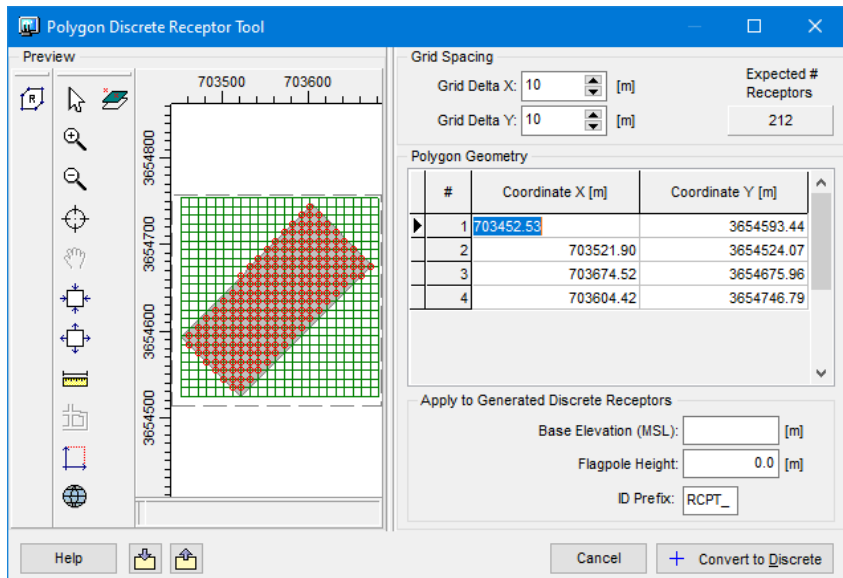
AERMOD View™ Version 10.0

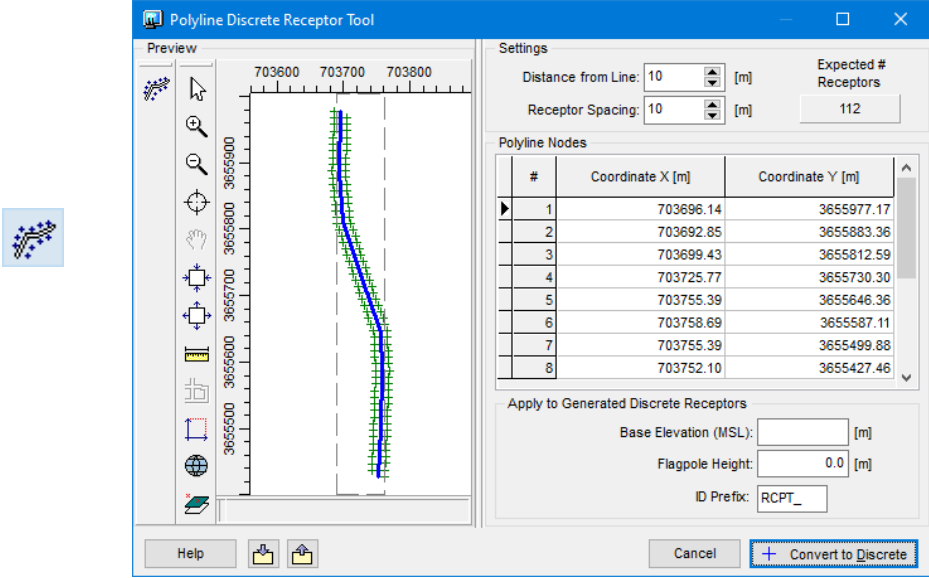
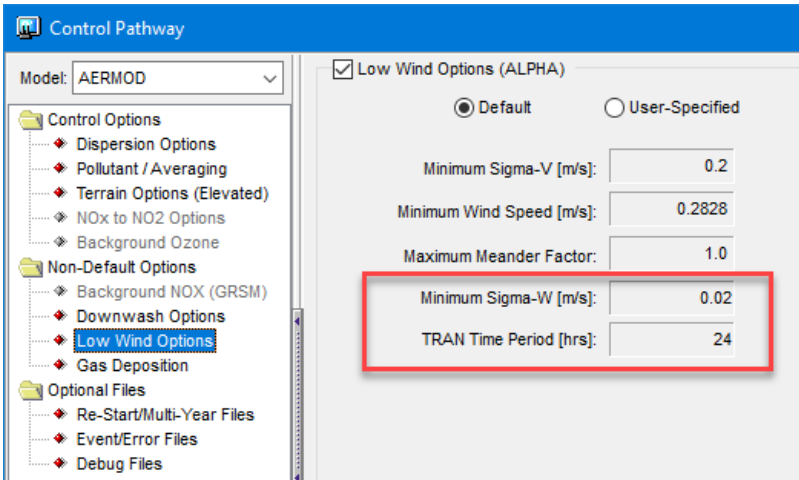
Release Notes

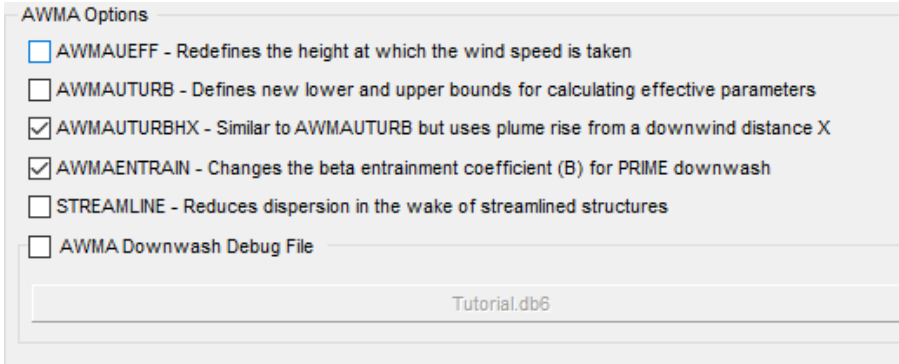
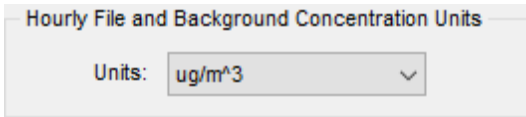
June 24, 2021

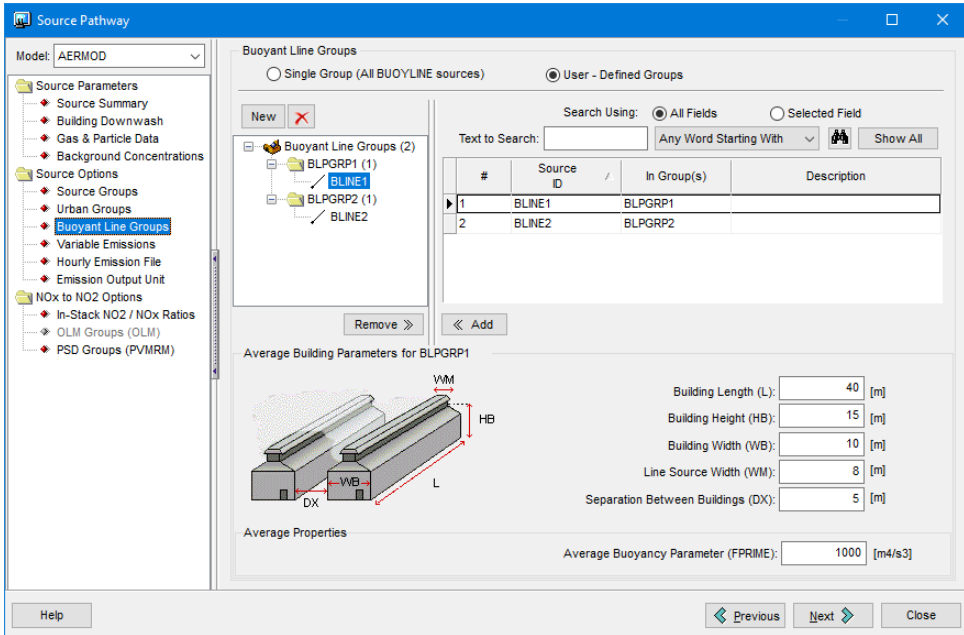
New Features

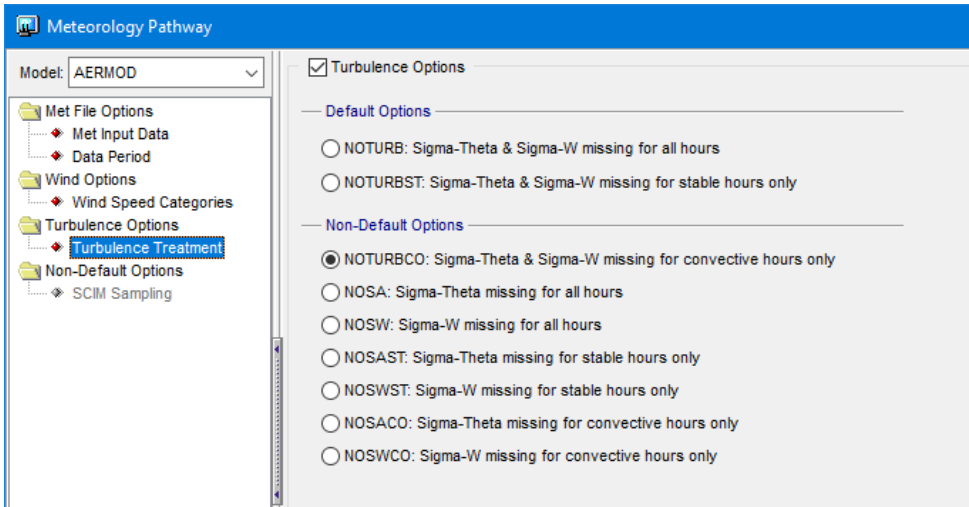
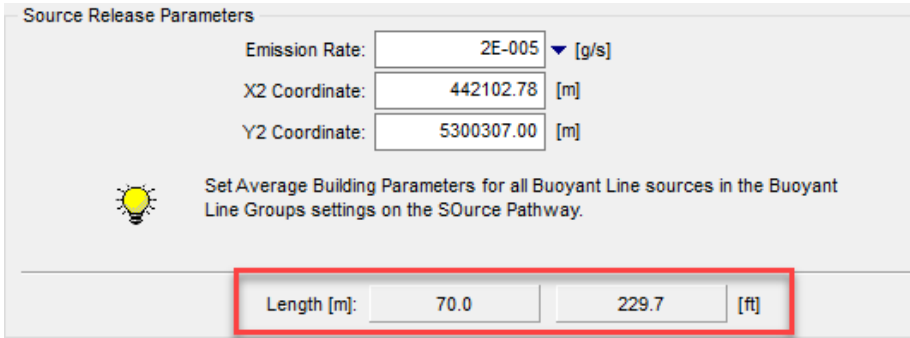
| Topic | Feature Description | | | | | | |
|-------------------|---|----------------|-------------|---------------|------|------------------|-------------|
| AERMOD | <p>Latest Release of U.S. EPA AERMOD Model Available – Dated 21112</p> <p>The following U.S. EPA Models were released on May 11, 2021 and are incorporated into AERMOD View Version 10.0:</p> <ol style="list-style-type: none"> 1. AERMOD.EXE is the latest version 21112 (32-Bit Version) 2. AERMOD_21112_X32.EXE – The same as above (32-Bit Version) 3. AERMOD_21112_X64.EXE – 64-Bit Version <p>See the Model Change Bulletin for a list of changes and bug fixes: https://gaftp.epa.gov/Air/aqmg/SCRAM/models/preferred/aermod/aermod_mcb15_v21112.pdf</p> | | | | | | |
| AERMOD MPI | <p>New Version of Lakes AERMOD MPI 21112 (Parallel Version)</p> <p>A new version of the Lakes AERMOD MPI for the US EPA Model Version 21112 is now available (AERMOD_MPI_LAKES_21112.exe). Install includes 64-bit and 32-bit versions. You can specify to use this model under the Preferences dialog.</p> <p>Note: AERMOD_MPI_LAKES_21112.EXE or AERMOD_MPI_LAKES.EXE will run the latest version of the AERMOD model (21112) in parallel mode using <u>up to a maximum of 8 cores</u>.</p>  <table border="1" data-bbox="683 1696 1409 1770"> <thead> <tr> <th>Parameter Name</th> <th>Description</th> <th>Storage Limit</th> </tr> </thead> <tbody> <tr> <td>NREC</td> <td>No. of Receptors</td> <td><unlimited></td> </tr> </tbody> </table> | Parameter Name | Description | Storage Limit | NREC | No. of Receptors | <unlimited> |
| Parameter Name | Description | Storage Limit | | | | | |
| NREC | No. of Receptors | <unlimited> | | | | | |

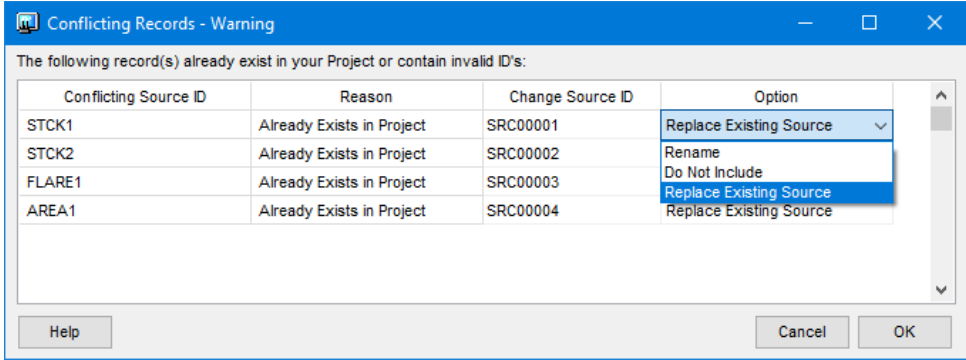
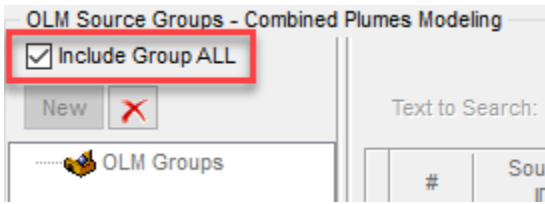
| Topic | Feature Description | | | | | | | | | | | | | | | |
|--------------------------------|--|------------------|------------------|------------------|---|-----------|------------|---|-----------|------------|---|-----------|------------|---|-----------|------------|
| <p>AERMET</p> | <p>Latest Release of U.S. EPA AERMET Model Available – Dated 21112</p> <p>The following U.S. EPA Models were released on May 11, 2021 and are incorporated into AERMET View Version 10.0:</p> <ul style="list-style-type: none"> • AERMET.EXE is the latest version 21112 (32-Bit Version) • AERMET_21112_X32.EXE – The same as above (32-Bit Version) • AERMET_21112_X64.EXE – 64-Bit Version <p>See the Model Change Bulleting for a list of changes and bug fixes: https://gaftp.epa.gov/Air/aqmg/SCRAM/models/met/aermet/aermet_mcb10.pdf</p> | | | | | | | | | | | | | | | |
| <p>Receptor Pathway</p> | <p>New Polygon Discrete Receptor Tool</p> <p>This new receptor tool allows users to create a series of discrete receptors which fill a user-defined polygonal space in a Cartesian grid pattern. This is useful in cases where receptors are needed in well-defined polygons like on top of buildings or within a sensitive residential neighborhood, for example.</p>  <table border="1" data-bbox="954 1129 1377 1339"> <thead> <tr> <th>#</th> <th>Coordinate X [m]</th> <th>Coordinate Y [m]</th> </tr> </thead> <tbody> <tr> <td>1</td> <td>703452.53</td> <td>3654593.44</td> </tr> <tr> <td>2</td> <td>703521.90</td> <td>3654524.07</td> </tr> <tr> <td>3</td> <td>703674.52</td> <td>3654675.96</td> </tr> <tr> <td>4</td> <td>703604.42</td> <td>3654746.79</td> </tr> </tbody> </table> | # | Coordinate X [m] | Coordinate Y [m] | 1 | 703452.53 | 3654593.44 | 2 | 703521.90 | 3654524.07 | 3 | 703674.52 | 3654675.96 | 4 | 703604.42 | 3654746.79 |
| # | Coordinate X [m] | Coordinate Y [m] | | | | | | | | | | | | | | |
| 1 | 703452.53 | 3654593.44 | | | | | | | | | | | | | | |
| 2 | 703521.90 | 3654524.07 | | | | | | | | | | | | | | |
| 3 | 703674.52 | 3654675.96 | | | | | | | | | | | | | | |
| 4 | 703604.42 | 3654746.79 | | | | | | | | | | | | | | |

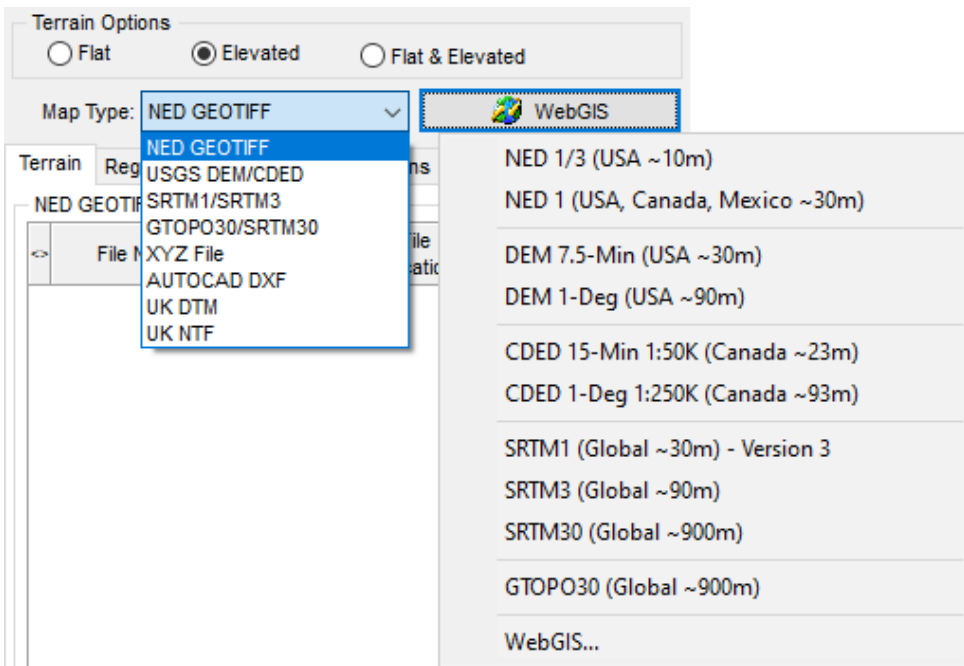
| Topic | Feature Description |
|--------------------------------|--|
| <p>Receptor Pathway</p> | <p>New Polyline Discrete Receptor Tool</p> <p>Another new receptor tool allows users to define a polyline around which discrete receptors are placed at an even distance from the line. This tool can be used to add receptors which follow a roadway.</p>  |
| <p>Control Pathway</p> | <p>New ALPHA Low Wind Options</p> <p>AERMOD Model Version 21112 adds two additional Low Wind Options:</p> <ul style="list-style-type: none"> • Minimum Sigma-W for handling vertical turbulence • TRAN Time Period for setting the time scale at which wind data at the source is no longer correlated to a downwind receptor.  |

| Topic | Feature Description |
|-------------------------------|---|
| <p>Control Pathway</p> | <p>New ALPHA Building Downwash Options</p> <p>AERMOD Model Version 21112 contains two new additions to the research-grade downwash options implemented by the Air & Waste Management Association (AWMA): AWMAUTURBHX & AWMAENTRAIN.</p> <p>These options remain Non-Default ALPHA options meaning they are provided for testing and evaluation purposes.</p>  |
| <p>Source Pathway</p> | <p>Gas & Particle Data Default Parameters</p> <p>AERMOD Model Version 21112 will now employ default Gas Phase Options and Method 2 particle deposition parameters for specific pollutant IDs. For the pollutant IDs listed below, entering values of 0 for the above parameters will automatically enable default values in the model's calculations:</p> <ul style="list-style-type: none"> • Gas Phase: NO2, SO2, OTHER (as HG0, HGII, TCDD, or BAP) • Method 2: OTHER (as AR, CD, PB, HG, or POC) |
| <p>Source Pathway</p> | <p>Background Concentrations Units Update</p> <p>AERMOD Model Version 21112 separates the Background Concentrations unit selection by pollutant:</p> <ul style="list-style-type: none"> • For NO2, SO2, or CO, users can choose from ug/m³, PPB, or PPM • All other pollutants must use ug/m³  |

| Topic | Feature Description |
|---------|--|
| Sources | <p>Buoyant Line Groups for Average Building Properties</p> <p>AERMOD Model Version 21112 introduces a new buoyant line group function (BLPGROUP keyword on the Source Pathway). This feature allows for multiple groups with unique average building properties in a single AERMOD project. This allows users to define sets of buoyant lines with different orientations.</p> <p>In AERMOD View, the Buoyant Line Groups function was added to the Source Pathway. This replaces the Average Properties button previously on the Source Inputs dialog for buoyant line sources.</p> <p>All lines within a single group must be parallel to one another.</p>  <p>Note: This feature does not change or replace Source Groups for reporting results in the model output files. For calculating effects from one or more sources, modelers must still include a source group via the Source Groups option.</p> |

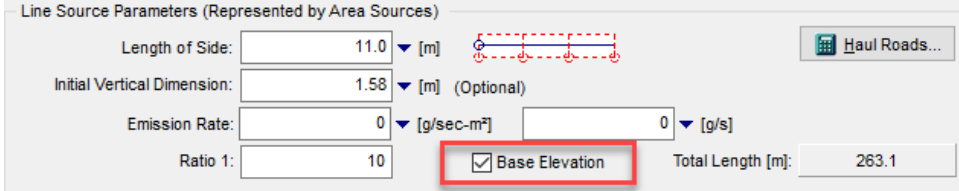
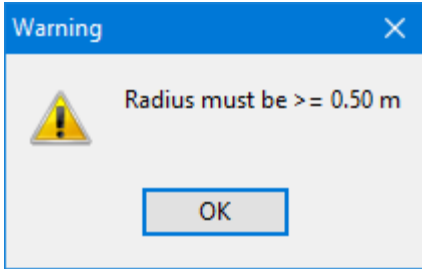
| Topic | Feature Description |
|-----------------------------------|--|
| <p>Meteorology Pathway</p> | <p>New Option to Disable Meteorology Turbulence Parameters</p> <p>AERMOD Model Version 21112 allows users to ignore non-missing values for turbulence data (sigma-θ or sigma-w) from the profile meteorology file (*.PFL). This facilitates use of meteorological data from an offsite location without needing to re-run AERMET.</p> <p>Both turbulence parameters can be ignored for all hours or for stable hours only in regulatory Default mode.</p> <p>When running in Non-Default mode, all turbulence can be ignored for convective hours, or each parameter can be ignored separately for all, stable, or convective hours only using the defined model options.</p>  |
| <p>Sources</p> | <p>Length Field Added to Buoyant Line Source Inputs Dialog</p> <p>An auto-calculated Length field has been added to all Buoyant Line sources so users can more easily verify their source data within the Source Inputs dialog.</p>  |

| Topic | Feature Description |
|------------------------------|--|
| <p>Sources</p> | <p>Replace Existing Sources When Importing</p> <p>The Import Sources function now permits users to replace data for existing source IDs via the Conflicting Source IDs dialog.</p> <p>When using this option, the source parameters for the existing source will be updated using the data from the imported file, but other properties (e.g., Source Groups, Urban Groups) associated with the source ID will remain.</p>  |
| <p>Source Pathway</p> | <p>Gas & Particle Data Export to XLSX</p> <p>Data for deposition analysis input via the Gas & Particle Data can now be exported to XLSX in addition to the existing XLS functionality.</p> |
| <p>Source Pathway</p> | <p>Automatic Application of OLMGROUP ALL</p> <p>When using the Ozone Limiting Method (OLM) NO2 conversion routine, the U.S. EPA recommends use of the OLMGROUP ALL model option which combines plumes from all sources when considering pollutant concentrations.</p> <p>This option is now employed by default when enabling OLM.</p>  |

| Topic | Feature Description |
|---------------------------------|---|
| <p>Receptor Pathway</p> | <p>Additional Plant Boundary Export Options</p> <p>Cartesian plant boundary data can now be exported to an Excel spreadsheet in XLSX format as well as CSV format. Previously, the export function only supported XLS format.</p> |
| <p>Terrain Processor</p> | <p>Default Map Type and WebGIS Reordering</p> <p>Following recommendations from the U.S. EPA regarding the preferred terrain data format for AERMAP, the NED GEOTIFF Map Type has been set as the default format in the Terrain Processor and the NED options have been moved to the top of the WebGIS download list.</p>  |

| Topic | Feature Description | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
|---|--|---|--------|----|--|--|------------------|------|------|-------|--|------|-----|----------|--------|----|-------|-----|----------|--------|----|------|-----|----------|--------|----|-------|-----|----------|--------|----|--------|--|---------|--------|----|------|----------|----------|--------|----|-------|----------|----------|--------|----|
| <p>Reports</p> | <p>Percentile Labels Added</p> <p>In the Results Summary and Sensitive Receptor Results reports, labels were added to more clearly define which rows represent percentile output.</p> <div style="background-color: black; color: white; padding: 5px; text-align: center; margin: 10px 0;"> <p>Results Summary</p> </div> <table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th colspan="5" style="background-color: #f2f2f2;">NOX - Concentration - Source Group: ALL</th> </tr> <tr> <th style="width: 15%;">Averaging Period</th> <th style="width: 10%;">Rank</th> <th style="width: 15%;">Peak</th> <th style="width: 15%;">Units</th> <th style="width: 45%;"></th> </tr> </thead> <tbody> <tr> <td>3-HR</td> <td>1ST</td> <td>33.08606</td> <td>ug/m^3</td> <td>44</td> </tr> <tr> <td>24-HR</td> <td>1ST</td> <td>20.45625</td> <td>ug/m^3</td> <td>44</td> </tr> <tr> <td>3-HR</td> <td>2ND</td> <td>29.59091</td> <td>ug/m^3</td> <td>44</td> </tr> <tr> <td>24-HR</td> <td>2ND</td> <td>20.30930</td> <td>ug/m^3</td> <td>44</td> </tr> <tr> <td>ANNUAL</td> <td></td> <td>5.05519</td> <td>ug/m^3</td> <td>44</td> </tr> <tr> <td>3-HR</td> <td>95.00pct</td> <td>21.24587</td> <td>ug/m^3</td> <td>44</td> </tr> <tr> <td>24-HR</td> <td>95.00pct</td> <td>15.75993</td> <td>ug/m^3</td> <td>44</td> </tr> </tbody> </table> | NOX - Concentration - Source Group: ALL | | | | | Averaging Period | Rank | Peak | Units | | 3-HR | 1ST | 33.08606 | ug/m^3 | 44 | 24-HR | 1ST | 20.45625 | ug/m^3 | 44 | 3-HR | 2ND | 29.59091 | ug/m^3 | 44 | 24-HR | 2ND | 20.30930 | ug/m^3 | 44 | ANNUAL | | 5.05519 | ug/m^3 | 44 | 3-HR | 95.00pct | 21.24587 | ug/m^3 | 44 | 24-HR | 95.00pct | 15.75993 | ug/m^3 | 44 |
| NOX - Concentration - Source Group: ALL | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Averaging Period | Rank | Peak | Units | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 3-HR | 1ST | 33.08606 | ug/m^3 | 44 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 24-HR | 1ST | 20.45625 | ug/m^3 | 44 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 3-HR | 2ND | 29.59091 | ug/m^3 | 44 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 24-HR | 2ND | 20.30930 | ug/m^3 | 44 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ANNUAL | | 5.05519 | ug/m^3 | 44 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 3-HR | 95.00pct | 21.24587 | ug/m^3 | 44 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 24-HR | 95.00pct | 15.75993 | ug/m^3 | 44 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| <p>Project Status</p> | <p>Error Check Optimization</p> <p>The process of validating project details has been optimized to ensure all project inputs are verified.</p> | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |

Fixed Issues

| Topic | Feature Description |
|-----------------------------------|---|
| <p>Source Pathway</p> | <p>Added Flat Option for All Source Types</p> <p>When modeling with the non-default option to set individual sources to FLAT mode, not all source types included a checkbox for disabling elevation values. This checkbox has been added to the Line Area, RLINE, & RLINEXT source types.</p>  |
| <p>Source Pathway</p> | <p>Circular Area Radius Warning</p> <p>A warning message is now immediately displayed if the user-defined radius is less than 0.50 meters which is the coded limit on this variable.</p>  |
| <p>Source Pathway</p> | <p>Auto-Generated Source Groups Support for Buoyant Lines</p> <p>Because AERMOD has specific standards regarding the order of buoyant lines in the model input file, buoyant line sources caused unexpected behavior in the Auto-Generated Source Groups tool when the source IDs were not in alphabetical order. A fix has been applied.</p> |
| <p>Meteorology Pathway</p> | <p>Reading Short Data Files</p> <p>An error was generated in AERMOD View when reading surface (*.SFC) and profile (*.PFL) files containing only one hour of data. This has been fixed.</p> |

Fixed Issues (Continued)

| Topic | Feature Description |
|--------------------------|---|
| Receptor Pathway | <p>Long Source IDs for Discrete Polar Receptors</p> <p>Previous versions of AERMOD View would only write 10 characters for individual source IDs when processing Discrete Polar receptors. AERMOD View now supports full 12-character IDs for these receptors.</p> |
| Plots | <p>Multi-Chemical Plots Displayed in Project Copies</p> <p>When creating a project copy with the File Save Project As menu command, plot files created by the Multi-Chemical Run utility were included in the copy but not shown in the Plots tab by default. Now, opening the project copy will display these plots as they appeared in the original project.</p> |
| Terrain Processor | <p>GEOTIFF File Reading</p> <p>Updated visualization routines for custom GEOTIFF files to match AERMAP's reading behavior. If multiple images are found within the file, the Terrain Processor now reads the first image just like AERMAP.</p> |
| Base Maps | <p>Shapefile Inspector</p> <p>Addressed an issue where an error was displayed when attempting to click and view attributes for imported shapefiles in the main display. All attributes can now be viewed using the Inspect context menu option.</p> |
| Batcher | <p>Separate Drive Support</p> <p>When working with input files stored on a separate hard disk, Batcher would sometimes fail to progress when the data files were created using an older version of AERMOD View. Batcher now progresses as expected in these cases.</p> |

Known Issues

| Topic | Issue Description |
|----------------------------|---|
| AERMOD 21112 | <p>Background NO2 Doubled with PVMRM</p> <p>The US EPA has reported a bug in which Background Concentrations (input via the Source Pathway) are inadvertently doubled when modeling NO2 with the Plume Volume Molar Ratio Method (PVMRM).</p> <p>The advised workaround is to input background values which are 50% of the actual background concentrations.</p> |
| AERMOD 19191, 21112 | <p>RLINEXT Results Sensitive to Receptor Order</p> <p>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.</p> |
| New Project Wizard | <p>No Spaces in Project Name with ISC</p> <p>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.</p> |