Initial Electronic Modeling Evaluation Workbook (EMEW) Review Response

Purpose: This form is used by the Air Dispersion Modeling Team (ADMT) to document ADMT's review of initial submittal of the EMEW and any attachments.

Date: July 30, 2024
Permit Application Number: 78440
New Source Review Project Numbers: 376677 and 376678
ADMT Project Number: 9326
County: Hale
Assigned Modeling Staff: Kevin Tang and Jeffrey Stevenson
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Review Summary

ADMT has conducted a review of the initial Electronic Modeling Evaluation Workbook (EMEW) for Plainview Bioenergy, LLC provided on July 18, 2024. Based on the review, ADMT has the following comments that should be addressed in the final modeling submittal. Note: if ADMT did not comment on a section of the workbook, then the applicant's approach is considered reasonable.

A new version of the EMEW (version 2.4.1) is available containing updates regarding the revised $PM_{2.5}$ annual standard. This new version should be used with future modeling submittals.

1. **General**

   Administrative Information:

   Include NSR Project Numbers 376677 and 376678 for the Facility Information's Project Number with the final submittal.

   Update the Modeling Date when the final modeling is submitted.

   Table of Contents:

   Information was reported in the Modeling Scenarios and Secondary Formation of $PM_{2.5}$ sheets. Select an "X" for these sheets.

   Plot Plan:

   Provide an updated plot plan with all modeled sources and buildings labeled by their building/source IDs as several sources reported in the EMEW are omitted. Note that area sources should be represented by their approximate footprint consistent with the model. In addition, label all sources or buildings by their source type (flare, point, area, or building). Report the plot plan in the Modeling File Names sheet.

Area Map:

Un-select the “X” for the annotation of schools within 3,000 ft of source’s nearest property line and non-industrial receptors as they were not identified in the submitted area map. Report the area map in the Modeling File Names sheet.

2. Additional Attachments

Other Attachments:

A NAAQS SCREEN3 analysis spreadsheet is reported to be a part of the modeling submittal. Please verify which analysis, if any, was conducted using SCREEN3 and ensure only analyses using AERMOD are reported in the non-SCREEN3 EMEW.

If SCREEN3 is not part of the provided modeling demonstration, please remove references to it in the non-SCREEN3 EMEW. If SCREEN3 was used in the impacts analysis, please confirm with the permit reviewer if a separate EMEW is required for review.

Provide the MERA analysis spreadsheet with the final submittal.

3. Model Options

A. Type of Model Used:

Please note that the current version of AERMOD is version 23132. Although preliminary modeling has been conducted using version 21112, version 23132 should be used. If results from version 21112 will be relied on, then address any applicable model changes between the two versions and discuss why using the version 21112 is reasonable. Please use the most recent version in all future modeling demonstrations.

F. Determination of Surface Roughness

AERSURFACE filles were not provided for review. Please note that 2021 land cover, percent impervious, and tree canopy data (NLCD datasets) are available and should be used when running AERSURFACE. Include the AERSURFACE files with the final submittal.

Additionally, The EMEW reports that a 100 km study radius from the project site was used in AERSURFACE analysis. Note that the AERSURFACE analysis should be based on 1 km study radius. Please update the EMEW documentation to “1 km” and update the AERSURFACE analysis, as needed.

G. Meteorological Data:

The version of AERMET used to develop the TCEQ pre-processed meteorological data is version 22112, and this version should be reported in the EMEW.

If one year of TCEQ pre-processed meteorology data is relied upon, data associated with year 2020 should be used, not the year 2016 as reported in the EMEW. Update the EMEW and/or the modeling to address this discrepancy. In addition, include all meteorological data files with the final submittal.

H. Receptor Grid:

Modeling guidance for the tight receptor grid spacing is 25 m extending up to 200-300 m from the facilities being evaluated. Separate and/or smaller receptor grid spacing is not required for receptors along the facility boundary.

Document the approach used to determine the GLCni as reported in the Health Effects Modeling Results sheet.

4. Building Downwash

Include all downwash files with the final submittal.

5. Point Source Parameters

There are several tank vents listed under the POINTHOR source type. Confirm if these tank vents are horizontal stacks.

In addition, these tank vents are listed with diameters of 0.001 m and velocities of 0.001 m/s. Note that the actual values of the vent diameters and exit velocities should be modeled and reported in the EMEW. Verify these values and revise the analysis as applicable.

6. Area Source Parameters

Based on the plot plan provided, there appears to be two possible locations of Model ID MSSLOAD; however, only one area was modeled. Confirm if this is accurate and if so, provide additional justification on the model approach for this source.

It was noted that the area source sizes for model IDs MSSDIST, MSSFERM, and MSSTANK are based on the approximate sizes of the equipment associated with these MSS sources. Provide additional discussion on how the associated equipment are grouped into each model ID.

7. Monitor Calculations

Revise the concentrations reported in the sheet based on the most recent three years of available data (2021-2023) for each applicable pollutant and averaging period. In addition, the "3rd Year Concentration" should be based on the most recent year (2023).

8. Background Justification

As noted above, the monitoring data years should be based on the most recent three years of available data (2021-2023). Revise the years reported on this sheet.

For the $PM_{2.5}$ monitor relied on in the analysis, provide the point source inventory and county population comparison to justify the values reported in the EMEW.

No project or monitor information was provided for the PM_{10} monitor relied on in the analysis. Provide the applicable monitoring justification data with the final submittal of the EMEW. Note that the background monitor selection should be based on the representativeness of the monitor to the project site location. However, if the monitor

was selected due to the level of conservativeness, ensure that it is still applicable to the most recent three years of data (2021-2023).

9. Secondary Formation of $PM_{2.5}$

Verify with the permit reviewer that the emissions used in the MERPs calculations are appropriate.

As noted above in section 2, it is unclear what context, if any, NO_X and SO_2 emissions were reviewed in this project. Please provide additional information on the review context for these pollutants (e.g., whether these emissions evaluated using SCREEN3).

10. NAAQS/State Property Line Modeling Results

Although preliminary results were provided, the modeling files were not submitted for review. Therefore, the reported results could not be verified. It is recommended for future submittals that the preliminary modeling files be provided with the EMEW for review.

Results for a full PM_{10} and $PM_{2.5}$ NAAQS analysis were reported; however, results from the respective SIL analysis (Tables 3 and 4) are not provided. Document the approach to clarify if a SIL analysis was conducted and if SCREEN3 was used, or if only a full NAAQS analysis was conducted.

11. Health Effects Modeling Results

Although preliminary results were provided, the modeling files were not submitted for review. Therefore, the reported results could not be verified. It is recommended for future submittals that the preliminary modeling files be provided with the EMEW for review.

All cells labeled with “n/a” can be left blank.

The reported GLCmax and GLCni are equivalent for all chemical species and averaging periods. As noted above in section 3, document this approach in the Model Options sheet.

12. Modeling File Names

Update the Modeling File Names sheet as applicable and provide all files with the final submittal of the EMEW.

In addition, document and provide all plot files generated in the modeling analysis with the final submittal.

Please be aware that federal and state standards can change over the life of a project, therefore, the facility may be asked to update EMEW to reflect applicable changes. Any deviations or information not submitted with the initial modeling workbook could cause delay in the final modeling review. ADMT highly recommends submitting an updated initial EMEW if significant changes are made to the modeling methodologies previously reviewed.