June 16, 2025

Subject: Gregory Power Partners LLC Air Quality Analysis Protocol

Permit Application Number: 87153
New Source Review (NSR) Project Number: 393704
Air Dispersion Modeling Team (ADMT) Project Number: 9808
County: San Patricio

I have reviewed the Prevention of Significant Deterioration (PSD) and minor NSR Air Quality Analysis (AQA) Protocol for Gregory Power Partners LLC located in Gregory, San Patricio County, Texas, dated May 2025 and my comments are provided below. The comments in sections **2.1, 5.1.1, 5.2, 5.3, and 6.1** will need to be addressed in a revised protocol.

1.0 Executive Summary – The purpose of any AQA for permitting is for the applicant to make a demonstration that their operation, as represented, would not cause or contribute to a National Ambient Air Quality Standard (NAAQS) or PSD Increment violation or adversely affect public health and welfare. The representation made in the demonstration is typically a worst-case representation of the operation. All representations must be supported with technical justifications. Though assumptions and selections can be made using general guidance, these assumptions and selections must be justified why the particular guidance is appropriate to a specific case. A statement that the guidance has been followed or referencing discussions with TCEQ staff is not sufficient justification.

This section notes that the existing auxiliary boilers are EPNs 101 and 102. However, other sections of the protocol note that the boilers are EPNs 103 and 104. Address this inconsistency in the AQA.

2.0 General Air Quality Dispersion Modeling Approach – When conducting the PSD Significance analyses, consider all new and increased emissions from the site related to the project, including emissions associated with all planned maintenance, start-up, and shut down (MSS) activities. For pollutants with predictions greater than or equal to the associated De Minimis levels, conduct a NAAQS analysis that considers all allowable emissions at the site, including emissions associated with all planned MSS activities, permit-by-rules (PBRs), and emissions from off-property sources and activities. For applicable pollutants, conduct a PSD Increment analysis that considers all Increment consuming sources.

2.1 Significance Analysis – While the De Minimis levels for both the NAAQS and Increment are identical for $PM_{2.5}$, the procedures to determine significance (that is, predicted concentrations to compare to the De Minimis levels) are different. This difference occurs because the NAAQS for $PM_{2.5}$ are statistically-based, but the corresponding Increments are exceedance-based. For the $PM_{2.5}$ Increment analysis, use the highest predicted concentrations of the five modeled years for comparison to the De Minimis levels.

The justification for using the annual $PM_{2.5}$ De Minimis level of 0.3 $\mu g/m^3$ for the NAAQS is reasonable. Include this justification in the AQA. Update Table 2-1 in the AQA to include the proposed annual $PM_{2.5}$ De Minimis level.

The justification for using the annual $PM_{2.5}$ De Minimis level of 0.3 $\mu g/m^3$ for the Increment analysis is not sufficient. Sufficient justification was not provided to substantiate using the Dona

Park monitor for the De Minimis level justification for PSD Increment. The applicant will need to search and identify all major sources of $PM_{2.5}$ that have Increment consuming emissions (related to the $PM_{2.5}$ major source baseline date [October 20, 2010]), as well as minor sources that have Increment consuming emissions (related to the $PM_{2.5}$ minor source baseline date for San Patricio County [April, 27, 2012]) surrounding the facility and monitor site. An analysis out to 10 kilometers should be sufficient. To justify the representativeness of the monitor, the Increment affecting emissions surrounding the monitor should be comparable to the Increment affecting emissions surrounding the facility. Consider the date of this protocol response as the cut-off date for sources to include in the analysis. Document how this information was obtained in the AQA. This should be addressed in a revised protocol.

3.0 Area Map and Plot Plan – The plot plan should include the locations of production activities, locations of emission sources represented in the AQA, and the locations of any buildings or structures represented in the AQA. See Appendix P of the Air Quality Modeling Guidelines (APDG 6232) for a complete list of all plot plan requirements. Clearly label all these features on the plot plan and include it with the AQA.

4.1 Dispersion Model Selection – This section contains a reference error to the building wake effects section of the protocol. Correct this error in the AQA.

4.2 Meteorological Data – Include the meteorological data files associated with the modeling analyses in the final AQA, including any concatenated files that may be used. In addition, provide the AERSURFACE files with the AQA associated with the modeling analyses.

4.5 Building Wake Effects (Downwash) – Provide all structure heights used in the downwash analysis and any computer assisted drawing files with the AQA.

Ensure that all Good Engineering Practice heights used in BPIP PRIME are justified according to Guideline for Determination of Good Engineering Practice Stack Height:

https://www.epa.gov/sites/default/files/2020-09/documents/gep.pdf

For structures not included in the downwash analysis or for air quality analyses conducted without consideration of downwash, please provide technical justification for supporting this approach. Please note that piping fugitives should not be included as a downwash structure unless sufficient justification can be provided.

5.1.1 Modeled Emission Rates – The protocol notes that three operational scenarios will be evaluated for the turbine. However, the protocol did not discuss the turbine's various operating load levels. In a revised protocol, provide discussion on the operating load levels for the turbine, the associated stack parameters for all loads, and the determination of the worst-case operating condition of routine and startup/shutdown operations.

5.1.2 Modeled Source Parameters – Include full documentation for each source characterization and complete technical justification for the associated source parameters in the AQA.

Provide justification for the modeled release height for the pseudo-point source in the AQA.

5.2 On-property Sources – Existing – The protocol did not discuss the existing turbines' (EPNs 101 and 102) various operating load levels. In a revised protocol, provide discussion on the operating load levels for each turbine, the associated stack parameters for all loads, and the determination of the worst-case operating condition of routine and startup/shutdown operations.

Table 5-1 includes PM_{10} and $PM_{2.5}$ emissions for EPN 201-OV. However, Table 5-5 does not include PM_{10} and $PM_{2.5}$ emissions for EPN 201-OV. Address this inconsistency in the AQA.

In Table 5-5, PM_{10} emissions are included for EPN 107. However, emissions are not included for $PM_{2.5}$. Address this inconsistency in the AQA.

In Table 5-5, PM_{10} and $PM_{2.5}$ emissions are not included for EPNs 105 and 106. Table 5-4 includes short-term emission rates for these EPNs. Address this inconsistency in the AQA.

In Table 5-5, short-term PM_{10} and $PM_{2.5}$ emissions are included for EPN STEAMVENT. However, long-term emissions are not included. Address this inconsistency in the AQA.

Table 5-6 does not include model IDs 201_TDB, 201M, 201_A, 101_TDB, 101M, 101_A, 102_TDB, 102M, and 102_A. These model IDs are included in Table 5-5. Address this inconsistency in the AQA.

5.3 Off Property Inventory Sources – The approach to develop the off-property inventory by utilizing the TCEQ's Air Permits Allowable Database (APAD) is reasonable. APAD may be incomplete or not up to date. Therefore, ADMT recommends that the applicant review the retrievals for completeness and accuracy prior to conducting any modeling. In addition, clearly identify and justify any changes to the retrieval sources. If the applicant is aware of data not contained in the retrieval, such as recently issued permitted facilities, the data should be included as applicable. Any changes to data or exclusion of sources must be clearly documented and justified. Provide any retrieval files that were obtained from APAD and all supporting materials with the AQA.

Limiting the review of off-property source based on the date of the protocol response from ADMT is reasonable. In addition, limiting the review of sources located at a distance of 10 km is reasonable.

The protocol notes that sources within the ROI or 10 km will be added, as appropriate, based on a review of case-by-case NSR applications completed since 2024. No justification was provided for selecting 2024 as the cut-off date for reviewing permit applications. Address this in a revised protocol.

6.1 Pre-application Analysis and Monitoring Data – As noted in the protocol, a preapplication analysis is required for ozone. The protocol did not address the analysis; ozone monitoring data were not provided. Address this analysis in a revised protocol. The analysis should include justification for the monitor selected.

6.2 NAAQS Analysis Monitor Background Concentrations – The text notes that 2021-2023 monitor data were used. However, the monitor data includes 2022-2024. Address this inconsistency in the AQA.

The NO_2 monitor data do not meet EPA completeness criteria for the third quarter of 2023 and the first quarter of 2024. Perform the substitution test, as outlined in Appendix S of 40 Code of Federal Regulations Part 50, to determine if 2023 and 2024 monitoring data are still valid to use with the analysis.

The PM_{10} monitor data do not meet EPA completeness criteria for the third quarter of 2022 and first quarter of 2024. ADMT recommends comparing the third and first quarter concentrations for 2022 and 2024, respectively, to the respective quarters in the other two years and determine if concentrations are comparable.

Table 6-3 indicates that NO_2 and CO have emissions within 10 km of the project site greater than 10 km of the monitoring sites. In the AQA, address this difference in emissions as it relates to the emissions from the sources being explicitly modeled.

6.2.1 NO_2 Monitor Selection – The project site is near Corpus Christi Bay. In contrast, the selected monitor is located further inland from ship channels at Freeport. In the AQA, provide additional justification for how the selected monitor accounts for mobile ship emissions that are present near the project location.

8.0 Secondary PM2.5 Formation – This section contains a reference error. Correct this error in the AQA.

10.4 PSD Class I Area Impact Analysis – TCEQ follows 40 Code of Federal Regulations § 52.21(p) which requires the TCEQ to provide written notice of any permit application for a proposed major stationary source which may affect a Class I area to the Federal Land Manager and the Federal official charged with direct responsibility for management of any lands within any such area. EPA, through applicable guidance, has interpreted the meaning of the term "may affect" to include all major source or major modifications which propose to locate within 100 km of a Class I area. The applicant should contact the applicable Federal Land Manager to discuss any potential Class I analyses for air quality related values.

In addition, ADMT has conducted a review of the initial Electronic Modeling Evaluation Workbook (EMEW) for Gregory Power Partners LLC provided May 2025. 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.

1. **General**

   Administrative Information:

   Include NSR Project Number 393704 for the Facility Information's Project Number with the final submittal.

   Enter the name for Facility Name.

   Lastly, update the Modeling Date with the final submittal.

   Required Attachments:

   Refer to the protocol comments in section 3.0 above regarding the plot plan.

   Additional Attachments:

   An 'X' was entered for Discussion on modeling techniques not discussed in workbook. This discussion was not provided. Include this discussion in the final modeling submittal.

2. **Model Options**

   Project Overview:

   This section notes that the existing auxiliary boilers are EPNs 101 and 102. However, other sections of the protocol note that the boilers are EPNs 103 and 104. Address this inconsistency with the final submittal.

   D. Constituents Evaluating:

   Make a selection for row 50.

   F. Determination of Surface Roughness:

   The center UTM coordinates are located outside the north site property line. The coordinates should be representative of the center of the modeled sources.

   G. Meteorological Data:

   Note that the profile base elevation for the San Patricio dataset is 13.4 meters.

   Make a selection for row 93.

   I. Terrain:

   Update the AERMAP version number to 24142.

3. **Building Downwash**

   Fill out this worksheet with the final submittal of the EMEW.

4. **Point Source Parameters**

   Model IDs 201_M, 201_A, and 201_OV were not entered in any of the source emissions worksheets. If these model IDs are not applicable to the minor NSR analyses, then remove these model IDs.

5. **Volume Source Calculations**

   Fill out the Building Name column with the final submittal of the EMEW.

6. **Volume Source Parameters**

   Provide justification for modeling the piping fugitives as an elevated volume source on or adjacent to a building. The Volume Source Size Justification does not indicate that the emissions are associated with any buildings.

7. **Modeling Scenarios**

   This worksheet should be filled out given that multiple operational scenarios were evaluated for the turbine (EPN 201). The applicable scenarios should be used in the Flare & Point Source Emission Rates and Speciated Emission Rates worksheets.

8. **Flare & Point Source Emission Rates**

   Enter the modeled emission rates for the SO_2 State Property Line analysis.

9. **NAAQS-SPL Modeling Results**

   Preliminary results were not provided. It is recommended for future submittals that the preliminary modeling files be provided with the EMEW for review.

   On January 27, 2025, the secondary SO_2 NAAQS revisions went into effect. With the revisions, the 3-hr SO_2 NAAQS has been replaced with an annual standard and does not need to be documented or modeled. The Environmental Protection Agency (EPA) has provided guidance (https://www.epa.gov/system/files/documents/2024-12/secondary-so2-naaqs-psd-memo-12-10-24.pdf) on an alternative demonstration approach to satisfy the new annual standard as long as a 1-hr demonstration is provided. As noted above in the Model Options section (D. Constituents Evaluating), make a selection for how this will be addressed.

10. **Health Effects Modeling Results**

    Preliminary results were not provided. It is recommended for future submittals that the preliminary modeling files be provided with the EMEW for review.

    It is not clear from the EMEW how the health effects analysis will be conducted. In the final modeling submittal, document each step of the Modeling and Effects Review Applicability guidance used in the analysis.

11. **Modeling File Names**

    Fill out the Modeling File Names sheet with the final submittal of the EMEW.

Deliverables – All modeling and downwash input and output files should be sent electronically via email, FTP, or CD/DVD. Electronic copies of the modeling report, plot plan, and maps are also preferred.

If you have any questions, please contact Mattthew Kovar at (512) 239-0180 or by email at matthew.kovar@tceq.texas.gov.