

July 4, 2023

**Subject: Quail Run Carbon, LLC Air Quality Analysis Protocol**

Permit Application Number: 173197

NSR Project Number: 359380

ADMT Project Number: 8656

County: Ector

I have reviewed the Prevention of Significant Deterioration (PSD) and minor New Source Review (NSR) Air Quality Analysis (AQA) Protocol for Quail Run Carbon, LLC located in Odessa, Ector County, Texas, dated June 2023 and my comments are provided below.

**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.

**2.1.1 Significance Analysis** – If it is determined that a full impacts analysis is required for  $PM_{2.5}$ , then the estimated secondary  $PM_{2.5}$  impacts should be considered in the determination of the AOI receptors for the  $PM_{2.5}$  full impacts analyses. When determining significant receptors to include in the cumulative analysis, add the contributions associated with the secondary  $PM_{2.5}$  impacts to the modeling results associated with the direct  $PM_{2.5}$  emissions on a receptor-by-receptor basis. Then identify receptors with total predictions greater than or equal to the SIL and use these receptors in the cumulative modeling analyses. Note that this demonstration will need to be conducted for both the NAAQS and Increment analyses.

**2.1.3 NO<sub>2</sub> Modeling Considerations** – This section notes that the latest AERMOD version is 21112. Note that the latest AERMOD version is 22112.

**3.0 Area Map** – Note that Figure 3-1, QRC Area Map, was not included with the protocol. Be sure to include an area map with the AQA. The area map should include information outlined in Appendix P of the APDG 6232.

**4.0 Plot Plan** – Note that Figure 4-1, General Project Site Plan, was not included with the protocol. Be sure to include a plot plan with the AQA. The plot plan should include the site property line, site fence line, locations of production activities, locations of emission sources represented in the AQA, and the locations of any buildings or structures represented in the AQA. Please be sure to clearly label all of these features on the plot plan.

**5.1 Dispersion Modeling Selection** – This section notes that the latest AERMOD version is 21112. Note that the latest AERMOD version is 22112.

**5.2 Meteorological Data** – The protocol states that the data sets that will be used are the 2017, 2018, 2019, 2020, and 2021 preprocessed meteorological data for PSD analyses. Note the meteorological data for Ector County is 2016 and 2018-2021.

**5.5 Receptor Grids** – The protocol states that if a Full Impact Analysis is required, only the receptors with modeled impacts greater than the SIL (i.e., the significant receptors) will be modeled for the particular pollutant and averaging period that is above the SIL. As noted above, if it is determined that a full impacts analysis is required for PM<sub>2.5</sub>, then the estimated secondary PM<sub>2.5</sub> impacts should be considered in the determination of the AOI receptors for the PM<sub>2.5</sub> full impacts analyses.

**6.1.2 Modeled Source Parameters** – Appendix A lists EPN AUXB-MSS multiple times with different model ID and source parameters (release height, exit temperature, exit velocity, and exit diameter). It is unclear why release height and exit diameter change with the mode of operation (Routine vs MSS) and by time during MSS activities. In the final AQA, be sure to include in the descriptions more details to identify what each model ID/source parameters represents (e.g., proposed boiler type/activities/operating scenarios).

**6.3.1 NAAQS Inventory** – 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, the ADMT recommends that the applicant review the retrievals for completeness and accuracy prior to conducting any modeling. In addition, be sure to 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. Be sure to provide any retrieval files that were obtained from APAD and all supporting materials with the AQA.

**7.2 NAAQS Analysis Monitor Background Concentrations** – The protocol states that since it is expected that PM<sub>2.5</sub>, PM<sub>10</sub>, and CO impacts will be below the SILs, background monitor concentrations for these pollutants will not be required. Note that the text in other sections of the protocol indicates the preliminary results for PM<sub>2.5</sub> and PM<sub>10</sub> will be above the SILs. In the final AQA, be sure the text is consistent across all sections of the protocol.

**7.2.1 NO<sub>2</sub> Monitor Selection** – The Hobbs, NM monitor (EPA AIRS monitor 350250008) is located in an area of oil and gas activity similar to the project area; therefore, the Hobbs monitor is more representative than any monitors located in other regions of the state. Please consider the Hobbs monitor for NO<sub>2</sub> background concentrations.

**7.2.2 PM<sub>2.5</sub> Monitor Selection**– The protocol states Table 7-5 shows the PM<sub>2.5</sub> data collected during 2018, 2019, and 2020 are complete (i.e., at least 75% of the sampling days for each

quarter are valid) and provides summaries of the background concentrations for PM<sub>2.5</sub> obtained from the Austin Webberville Road Monitor. Note that the selected monitor for PM<sub>2.5</sub> is the Odessa Gonzales Monitor. In the final AQA, be sure the text is consistent across this section.

**7.2.4 O<sub>3</sub> Monitor Selection** – The Hobbs, NM monitor (EPA AIRS monitor 350250008) is located in an area of oil and gas activity similar to the project area; therefore, the Hobbs monitor is more representative than any monitors located in other regions of the state. Please consider the Hobbs monitor for ozone background concentrations.

**10.0 Ozone Analysis**– Note the NO<sub>x</sub> project emissions in Table 10-2 are not consistent with NO<sub>x</sub> project emissions in Table 9-2 in the previous section. Be sure to address this inconsistency in the final AQA.

**11.4 PSD Class I Area Impact Analysis** – The TCEQ follows 40 CFR § 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. The 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 kilometers (km) of a Class I area. The applicant may contact the applicable Federal Land Manager to discuss any potential Class I analyses for air quality related values.

**Appendix A** – Table A-1 shows some stack heights exceed 65 meters. Note that the modeled stack heights should not exceed the calculated GEP stack height for these sources.

In addition, the ADMT has conducted a review of the initial Electronic Modeling Evaluation Workbook (EMEW) for Quail Run Carbon, LLC provided on June 23, 2023. Based on the review, the ADMT has the following comments that should be addressed in the final modeling submittal. Note: if the ADMT did not comment on a section of the workbook, then the applicant’s approach is considered reasonable.

## 1. General

### *Administrative Information:*

Be sure to include NSR Project Number 359380, Permit Number 173197, and Regulated Entity ID RN111762076 for the Facility’s Information Project Number, Permit Number, and Regulated Entity ID, respectively, with the final submittal.

In addition, be sure to update the Modeling Date with the final submittal.

### *Table of Contents:*

Be sure to mark the General section with the final submittal.

### *Plot plan:*

The plot plan submitted with the permit application did not depict downwash structures. In the final submittal, be sure to provide a plot plan that depicts all of the modeled sources and downwash structures. Please be sure to clearly label all of features on the plot plan.

## **2. Additional Attachments**

An "X" was entered for "Source Group Descriptions", "Modeling Techniques and Scenarios", "Single Property Line Designation", "Post Processing using Unit Impact Multipliers (UIMs)", and "Tier 3 NO<sub>2</sub> analysis"; however, the attachments concerning these items were not submitted. Please provide the attachments with the final modeling submittal, as applicable.

### *Processed Met Data Information:*

Please note that if TCEQ pre-processed meteorological data are being used in the modeling analysis (as is noted on the Model Options sheet), the processed meteorological data information section does not need to be filled out. Please update this with the final modeling submittal.

### *Other Attachments:*

In the final submittal, be sure to mark this section and list the modeling protocol that was submitted with the EMEW and any other supplemental attachments.

## **3. Model Options**

### *F. Determination of Surface Roughness:*

Note that the coordinates for the center of the study should be entered in UTM coordinates.

Note that the study radius should be 1 km.

Be sure to consider whether the use of the arid region option is applicable to the project location.

### *G. Meteorological Data:*

Note that it is sufficient to use one year of metrological data for state property line analyses.

## **4. Point Source Parameters**

EPN AUXB-MSS was listed multiple times with different model ID and source parameters (release height, exit temperature, exit velocity, and exit diameter). It is unclear why release height and exit diameter change with the mode of operation (Routine vs MSS) and by time during MSS activities. In the final AQA, be sure to include in the descriptions more details to identify what each model ID/source parameters represents (e.g., proposed boiler type/activities/operating scenarios).

## **5. Speciated Emissions**

Be sure to fill out this sheet in the final submittal. Note that it is sufficient to document the speciated emission rates in a post-processing spreadsheet; however, the emission rates for pollutants that are explicitly modeled for a health effects analysis should be listed in this sheet.

#### **6. NAAQS/State Property Line Modeling Results**

Preliminary modeling results were listed; however, the modeling files were not provided, and the results could not be verified. For future submittals, it is recommended to submit the preliminary modeling files to be reviewed with the initial EMEW.

#### **7. Unit Impact Multipliers**

Preliminary modeling results were listed; however, the modeling files were not provided, and the results could not be verified. For future submittals, it is recommended to submit the preliminary modeling files to be reviewed with the initial EMEW.

#### **8. Health Effects Modeling Results**

Preliminary modeling results were listed; however, the modeling files were not provided, and the results could not be verified. For future submittals, it is recommended to submit the preliminary modeling files to be reviewed with the initial EMEW.

In the final submittal, be sure to provide the electronic spreadsheet calculations used with the UIMs for Step 3 of the MERA guidance.

#### **9. Modeling File Names**

Be sure to fill out the Modeling File Names tab with the final submittal of the EMEW.

Be sure to list any attachment document to the EMEW (pdf, excel, etc.) in 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. The ADMT highly recommends submitting an updated initial EMEW if significant changes are made to the modeling methodologies previously reviewed.

If you have any questions, please contact Ahmed Omar at (512) 239-1285 or by fax at (512) 239-1400, or by email at [ahmed.omar@tceq.texas.gov](mailto:ahmed.omar@tceq.texas.gov).