UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION 6
1201 ELM STREET, SUITE 500
DALLAS, TEXAS 75270

July 17, 2023

Mr. Cory Chism, Director
Office of Air
Texas Commission on Environmental Quality
P.O. Box 13087
Austin, Texas 78711-3087

Re: Dallas-Fort Worth (DFW) Moderate Area Attainment Demonstration (AD) State Implementation Plan (SIP) Revision for the 2015 Ozone National Ambient Air Quality Standards (NAAQS), Project No. 2022-021-SIP-NR; Houston-Galveston-Brazoria (HGB) Moderate Area AD SIP Revision for the 2015 Ozone NAAQS, Project No. 2022-022-SIP-NR; DFW and HGB Moderate Areas Reasonable Further Progress (RFP) SIP Revision for the 2015 Ozone NAAQS, Project No. 2022-023-SIP-NR; Bexar County Moderate Area RFP SIP Revision for the 2015 Ozone NAAQS, Project No. 2022-024-SIP-NR; Bexar County Moderate Area AD SIP Revision for the 2015 Eight-Hour Ozone NAAQS, Project No. 2022-025-SIP-NR; Bexar County Inspection and Maintenance (I/M) SIP Revision, Project No. 2022-027-SIP-NR; and the proposed revisions to 30 TAC Chapter 114, Control of Air Pollution from Motor Vehicles rulemaking, Project No. 2022-026-114-AI.

Dear Mr. Chism:

Thank you for acting timely to address the recently reclassified DFW, HGB, and Bexar County Moderate nonattainment areas under the 2015 ozone NAAQS. We appreciate the opportunity to review the seven proposed SIP revisions that address these three areas. We have enclosed comments for your consideration regarding the proposed attainment demonstrations, the proposed RFP plans, the proposed I/M plan, and the proposed revisions to Chapter 114. We appreciate the work by the TCEQ in developing these documents.

We look forward to discussing the enclosed comments with you. Please feel free to contact me at magee.melanie@epa.gov or 214-665-7161 if you have questions.

Sincerely,

MELANIE MAGEE

Digitally signed by MELANIE MAGEE
Date: 2023.07.17 13:13:11 -05'00'

Melanie Magee
Section Supervisor, Infrastructure & Ozone Section

Enclosures

Enclosure: EPA's Comments

Acronyms used in EPA's comments:

Alternative Control Technology (ACT)
Best Available Control Technology (BACT)
Clean Air Act (CAA)
Control Techniques Guidelines (CTG)
Destruction and Removal Efficiency (DRE)
Differential Absorption LIDAR (DIAL)
Emissions Specifications for Attainment Demonstration (ESADs)
Green House Gases (GHGs)
Highly Reactive Volatile Organic Compounds (HRVOC)
Infrared (IR)
Leak Detection and Repair (LDAR)
Light Detection and Ranging (LIDAR)
Limited English Proficiency (LEP)
Lowest Achievable Emissions Rate (LAER)
Mass Emissions Cap and Trade (MECT)
National Ambient Air Quality Standards (NAAQS)
New Source Review (NSR)
Oxides of Nitrogen (NOx)
Reasonable Available Control Technology (RACT)
Rate of Progress (ROP)
Solar Occultation Flux (SOF)
Texas Commission on Environmental Quality (TCEQ)
Volatile Organic Compounds (VOC)

Project Number 2022-021-SIP-NR

Comments addressing DFW Attainment Demonstration (AD) Plan

We appreciate the detailed work submitted in the AD plan. We have the following concerns:

1. The TCEQ's proposal includes contingency measures that rely on emissions reductions from measures that are already implemented, as opposed to measures that are prospective (i.e., that they be undertaken in the future) in nature. As noted in the TCEQ's proposal, in January 2021 the U.S. Court of Appeals for the District of Columbia Circuit vacated EPA's interpretation of the CAA to allow states to rely on already implemented control measures to meet the statutory requirements of section 172(c)(9) or 182(c)(9) for contingency measures in nonattainment plans for the ozone NAAQS (see 83 FR 62998, 63026). *Sierra Club, et al. v. EPA*, 985 F.3d 1055 (D.C. Cir. 2021). The effect of this decision is that the CAA interpretation that contingency measures must be prospective and conditional applies across the U.S.[1] If finalized as proposed, EPA would have serious concerns regarding the approvability of the contingency measures. EPA Region 6 will support TCEQ in the development of approvable contingency measures for ozone reductions. We encourage TCEQ to incorporate environmental justice considerations in developing such measures.

[1] More information on this decision is provided in our proposed disapproval of contingency measures for the DFW and HGB Serious ozone nonattainment areas for the 2008 ozone NAAQS (see 88 FR 24522, April 21, 2023).

2. The TCEQ's proposal asserts that the DFW area is not expected to attain the 2015 ozone NAAQS by the August 3, 2024, attainment date. Therefore, as provided in CAA section 181(b)(3), the TCEQ may request, and EPA must grant, a voluntary reclassification to the next higher classification for the DFW area, which would provide until the August 3, 2027, Serious area attainment date to attain the 2015 ozone NAAQS. We encourage the TCEQ to submit such a request early enough to maximize the available time for assessing, adopting, and implementing emission reduction measures so the area can meet the ozone NAAQS expeditiously and avoid the mandatory statutory consequences for failing to timely attain.
3. The TCEQ's proposal provides a RACT analysis that relies exclusively on a previous RACT analysis from the DFW serious classification attainment demonstration for the 2008 ozone NAAQS adopted by the commission on March 4, 2020. That RACT analysis is based exclusively on EPA's CTGs and ACTs. In EPA's Implementation Rule for the 2008 Ozone NAAQS, EPA stated that "states should refer to the existing CTGs and ACTs for purposes of meeting their RACT requirements, *as well as* all relevant information (including recent technical information and information received during the public comment period) that is available at the time that they are developing their RACT SIPs for the 2008 ozone NAAQS." 80 FR 12264, 12279 (March 6, 2015) (emphasis added). EPA repeated this in the Implementation Rule for the 2015 Ozone NAAQS.[2] As part of their RACT SIP submissions, states should provide adequate documentation that they have considered emission control requirements that are economically and technologically feasible. The analysis of economic and technological feasibility should be based on the information that is current and available as of the time of development of the RACT SIP. TCEQ should document that they examined current and relevant information and should discuss if and how such information affected their RACT determination. This documentation and discussion should be included for all types of RACT: CTG RACT, Major Source VOC RACT, and Major Source NOx RACT.
4. EPA recommends TCEQ consider any potential underreporting of VOC in the DFW area. The presence of the Barnett Shale and associated equipment may provide similar concerns that have been documented in HGB because of the presence of flares and fugitive emissions. TCEQ should consider mobile monitoring studies (fence-line and IR camera measurements) and remote sensing (e.g., satellite-measured columns of formaldehyde to estimate reacted or partially combusted VOC) and any other data and studies that suggest underreporting of VOC persists. Underreported VOC can provide an inaccurate picture of an area being NOx or VOC-limited and produce photochemical modeling results with control strategies that could be inaccurate.
5. In February 2023, the updated guidance document titled "Guidance on Quantifying NOx Benefits for Cetane Improvement Programs for Use in SIPs and Transportation Conformity" was released for cetane improvement programs.[3] This updated guidance accounts for changes in fleet composition and control technology that has occurred since 2004. Please clarify for the record if the updated guidance was considered and provide any supporting documentation.

[2] "Consistent with the EPA's prior guidance (80 FR 12279; March 6, 2015), when determining what is RACT for a particular source or source category, air agencies should also consider all other relevant information (including recent technical information and information received during the state's public comment period) that is available at the time they develop their RACT SIPs." 83 FR 62998, 63007 (December 6, 2018).

[3] Link to the main guidance page with a summary on the cetane guidance: https://www.epa.gov/state-and-local-transportation/guidance-control-strategies-state-and-local-agencies. Direct link to the cetane guidance: https://nepis.epa.gov/Exe/ZyPDF.cgi?Dockey=P1016IFV.pdf.

Project Number 2022-022-SIP-NR

Comments addressing HGB Attainment Demonstration (AD) Plan

We appreciate the detailed work submitted in the AD plan. We have the following concerns:

1. The TCEQ's proposal includes contingency measures that rely on emissions reductions from measures that are already implemented, as opposed to measures that are prospective (i.e., that they be undertaken in the future) in nature. As noted in the TCEQ's proposal, in January 2021 the U.S. Court of Appeals for the District of Columbia Circuit vacated EPA's interpretation of the CAA to allow states to rely on already implemented control measures to meet the statutory requirements of section 172(c)(9) or 182(c)(9) for contingency measures in nonattainment plans for the ozone NAAQS (see 83 FR 62998, 63026). *Sierra Club, et al. v. EPA*, 985 F.3d 1055 (D.C. Cir. 2021). The effect of this decision is that the CAA interpretation that contingency measures must be prospective and conditional applies across the U.S.[4] If finalized as proposed, EPA would have serious concerns regarding the approvability of the contingency measures. EPA Region 6 will support TCEQ in the development of approvable contingency measures for ozone reductions. We encourage TCEQ to incorporate environmental justice considerations in developing such measures.
2. The TCEQ's proposal asserts that the HGB area is not expected to attain the 2015 ozone NAAQS by the August 3, 2024, attainment date. Therefore, as provided in CAA section 181(b)(3), the TCEQ may request, and EPA must grant, a voluntary reclassification to the next higher classification for the HGB area, which would provide until the August 3, 2027, Serious area attainment date to attain the 2015 ozone NAAQS. We encourage the TCEQ to submit such a request early enough to maximize the available time for assessing, adopting, and implementing emission reduction measures so the area can meet the ozone NAAQS expeditiously and avoid the mandatory statutory consequences for failing to timely attain.
3. The TCEQ's proposal provides a RACT analysis that relies exclusively on a previous RACT analysis from the HGB serious classification attainment demonstration for the 2008 ozone NAAQS adopted by the commission on March 4, 2020. That RACT analysis is based exclusively on EPA's CTGs and ACTs. In EPA's Implementation Rule for the 2008 Ozone NAAQS, EPA stated that "states should refer to the existing CTGs and ACTs for purposes of meeting their RACT requirements, *as well as* all relevant information (including recent technical information and information received during the public comment period) that is available at the time that they are developing their RACT SIPs for the 2008 ozone NAAQS." 80 FR 12264, 12279 (March 6, 2015) (emphasis added). EPA repeated this in the Implementation Rule for the 2015 Ozone NAAQS.[5] As part of their RACT SIP submissions, states should provide adequate documentation that they have considered emission control requirements that are economically and technologically feasible. The analysis of economic and technological feasibility should be based on the information that is current and available as of the time of development of the RACT SIP. TCEQ should document that they examined current and relevant information and should discuss if and how such information affected their RACT determination. This documentation and discussion should be included for all types of RACT: CTG RACT, Major Source VOC RACT, and Major Source NOx RACT.
4. We understand that TCEQ is relying on its MECT Program to implement RACT requirements for NOx in the HGB area. EPA's Implementation rule for the 2015 ozone NAAQS explained that "states may

[4] More information on this decision is provided in our proposed disapproval of contingency measures for the DFW and HGB Serious ozone nonattainment areas for the 2008 ozone NAAQS (see 88 FR 24522, April 21, 2023).

[5] "Consistent with the EPA's prior guidance (80 FR 12279; March 6, 2015), when determining what is RACT for a particular source or source category, air agencies should also consider all other relevant information (including recent technical information and information received during the state's public comment period) that is available at the time they develop their RACT SIPs." 83 FR 62998, 63007 (December 6, 2018).

demonstrate as part of their NOx RACT SIP submission that the weighted average NOx emission rate of all sources in the nonattainment area subject to RACT meets NOx RACT requirements; states are not required to demonstrate RACT-level controls on a source-by- source basis." 83 FR 62998, 63007 (December 6, 2018). This longstanding policy on area wide average emission rates is also explained in the final implementation rule the 2008 ozone NAAQS: "…states have the option of conducting a technical analysis for a nonattainment area considering the emissions controls required by a regional cap-and-trade program, and demonstrating that compliance by certain sources participating in the cap- and-trade program results in actual emission reductions in the particular nonattainment area that are equal to or greater than the emission reductions that would result if RACT were applied to an individual source or source category within the nonattainment area." 80 FR 12264, 12279 (March 6, 2015). The SIP should explain how the TCEQ's program achieves this "equal to or greater than" standard. The SIP should also include such technical analysis to demonstrate and document how the MECT program achieves RACT for the HGB NAA. A successful demonstration must show that the MECT program will result in actual emissions reductions that are equal to or greater than reductions that would be achieved by applying RACT on a source-by-source basis in the HGB NAA. Based on EPA's understanding of the MECT program, we believe the demonstration should include, among other things, (1) evaluation of the ESADs and a determination that each ESAD represents RACT, (2) an evaluation of the number of allowances based on a recent basis for number of sources and activity level, (3) a baseline for allowances that is reflective of the current controls in place and current operation of NOx sources, and (4) demonstrate how the implementation on an annual average to meet the MECT is protective of short-term ozone. EPA Region 6 is ready to work with TCEQ on questions going forward. The analysis included in the SIP to support these demonstrations should be based on current relevant information.[6]

5. In light of the difficulty in demonstrating attainment, EPA offers the following suggestions:
    a. Further control and monitoring of specific VOC other than the currently targeted HRVOC to help achieve attainment in the HGB area. TCEQ previously proposed controlling emissions of other VOC in the HGB 2004 Attainment Demonstration proposal that may be a starting point; TCEQ should also consider VOC species that have elevated levels (both retrospectively and large/increasing proportions in more recent years) in various monitoring efforts, including the extensive interagency cooperative air quality field campaigns since 2000[7] (see next comment). In fact, some of the more recent campaigns have measured very large (including short-lived emission events) ambient fluxes of aromatics and alkanes.[8]

[6] "Consistent with the EPA's prior guidance (80 FR 12279; March 6, 2015), when determining what is RACT for a particular source or source category, air agencies should also consider all other relevant information (including recent technical information and information received during the state's public comment period) that is available at the time they develop their RACT SIPs." 83 FR 62998, 63007 (December 6, 2018).

[7] Texas Air Quality Study (TexAQS 2000), Texas Air Quality Study II (2006), Study of Houston Atmospheric Radical Precursors (SHARP, 2009), Deriving Information on Surface conditions from Column and Vertically Resolved Observations Relevant to Air Quality (DISCOVER-AQ, 2013), and Tracking Aerosol Convection ExpeRiment-Air Quality (TRACER-AQ, 2021-22).

[8] "Air Quality Data Collection for TRACER-AQ-2 Field Campaign in Houston - Monitoring Report", FluxSense AQRP contract report, March 2023. Table 27 (page 51) of this report concludes that compared to studies done in 2009 and since with remote sensing flux "curtains", Houston Ship Channel HRVOC and alkane fluxes are essentially unchanged in 2022, with the reported 2013 EI about 10% of these measured flux values, whereas NO2 fluxes match reported emissions well. Mont Belvieu of that same table has seen more measured flux reductions from

b. Measures to address underreporting that is indicated for VOC in the HGB area. Remote sensing techniques, both ground-based (stationary and mobile, e.g., fence-line, IR camera measurements, and ambient flux measurements with SOF and DIAL technologies)[9] and satellite-based remote sensing (e.g., measured columns of VOC, GHGs, or formaldehyde to estimate reacted or partially combusted VOC) conclude that underreporting of VOC persists.[10] This was specifically noted in a Journal of Geophysical Research synthesis report of the 2009 SHARP field campaign.[11] Underreported VOC can provide an inaccurate picture of an area being NOx or VOC-limited and produce photochemical modeling results with control strategies that could be inaccurate. This was one of the study goals for the TRACER-AQ field campaign of 2021-22.[12] The EPA has not yet seen a synthesis of TRACER-AQ findings.

c. One source of underreporting that could be addressed is use of the default (maximum allowed) flare DRE values for flared VOC and HRVOC, as described in the attached letter EPA provided to TCEQ on May 8, 2023, providing Quadrennial Review Comments ("Attachment 1"). When DRE is allowed to be overestimated, actual emissions are underestimated and underreported; thus, related attainment demonstrations would not contain accurate emissions of VOC for accurate photochemical ozone reactions. See the FluxSense footnote above for the conclusions concerning poor combustion efficiency, hence large propylene emissions, from propylene flares in its flux measurement data. In 2009, the TCEQ had a Flare

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2009 to 2022, but the tabulated EI is still roughly 10% of the 2022 measured fluxes of HRVOC and alkanes. The report also concludes that many of the fluxes appear to still come from directions of propylene flares with poor combustion efficiency, as was found in the earlier studies.

[9] A good synthesis reference for this was provided in presentations hosted by the Houston Advance Research Center (HARC) as part of "Remote Sensing VOCs and GHGs", December 7, 2009.

[10] Id. Also note that NASA Health and Air Quality Applied Sciences Team (HAQAST) and its predecessor, AQAST, provided many good analyses, reports, and publications from academic researchers of the various campaigns. For formaldehyde, especially note the July 2014 presentation by Dan Cohan at https://haqast.org/aqast-presentations/, which concluded that "Houston HRVOC emissions in the 2008 NEI are 5x too low." HAQAST meetings and presentations newer than 2016 can be found at https://haqast.org/get-involved/meetings/. Also note that even before TexAQS 2000 and TexAQS II (2006) (see https://www.tceq.texas.gov/airquality/research/texaqs), additions of VOC were provided to modeling inventories to help match monitored values in areas of HGB and to assist the photochemical models to perform better (simulate ozone in the right places at the right times to correspond with the ozone monitors). This was performed via the addition of rule effectiveness for specific source categories and for known emissions upsets. TCEQ no longer includes these in its modeled emissions inventory. Improvements were suggested through various TCEQ and pass-through funding for contract projects through the Texas Environmental Research Consortium in coordination with the Houston Advanced Research Center (https://www.tercresearch.org/aqr/projects). These pointed out many unknowns and future potential projects to study regarding HGB emissions. Some of these have been addressed, others have not. TCEQ does spend money on Air Quality Research Program (AQRP) (https://www.tceq.texas.gov/airquality/airmod/project/pj.html) contracts for emissions inventory improvement and photochemical modeling projects. EPA would like to see TCEQ implement the suggestions from these projects to understand emissions events and ongoing underreported emissions variables better, so that meaningful emission reductions can be made for improved modeled and monitored ozone impacts.

[11] "Overview of the SHARP campaign: Motivation, design, and major outcomes", Olaguer, EP, et al, 2014: http://easd.geosc.uh.edu/rappenglueck/pdf/Olaguer%20et%20al%20JGR%202014%20SHARP.pdf

[12] TRacking Aerosol Convection ExpeRiment-Air Quality (TRACER-AQ, 2021-22), at https://www-air.larc.nasa.gov/missions/tracer-aq/. TCEQ "HGB Technical Information Meeting, June 28, 2022" presentation: https://www.tceq.texas.gov/downloads/air-quality/modeling/meetings/hgb/2022/20220728-traceraq-tceq-knapp.pdf

Task Force, including internal teams, stakeholders, and a subsequent 2010 Flare Study.[13] EPA encourages TCEQ to resurrect the Flare Task Force and not rely on 40 CFR 60.18 default maximum 98% DRE and its unproven 99% DRE for 3-carbon or less VOC, which include two of the most prevalent HRVOC in HGB – ethylene (ethene) and propylene (propene). For the reasons identified throughout Attachment 1, EPA also encourages TCEQ to re-evaluate the flare DRE assumptions allowed by its guidance for 40 CFR 60.18-compliant flares and ensure that appropriate DRE assumptions are identified.

d. We encourage TCEQ to establish requirements to retrofit improvements (including monitoring or testing) and for replacements for old flares, especially those that are not emergency flares. Standard process vents can almost always be routed to relatively inexpensive condensers. BACT or LAER for controlling standard process waste gases should almost never include flares. Best practices should include flare minimization and alternative control processes for waste gases, and TCEQ should incentivize such. For many industrial processes, better technology exists. TCEQ studies and guidance (see prior references and Attachment 1) identify most of the variables that make for best practices, and we would like TCEQ to implement such improvements. Permit conditions vary on a case-by-case basis, and we would like TCEQ to take a retrospective look at existing flares upon permit renewal.

Project Number 2022-023-SIP-NR

Comments addressing the DFW and HGB Reasonable Further Progress (RFP) Plans

We appreciate the detailed work submitted in the RFP plan. We have the following concerns:

1. The TCEQ's proposal includes contingency measures that rely on emissions reductions from measures that are already implemented, as opposed to measures that are prospective (i.e., that they be undertaken in the future) in nature. As noted in the TCEQ's proposal, in January 2021 the U.S. Court of Appeals for the District of Columbia Circuit vacated EPA's interpretation of the CAA to allow states to rely on already implemented control measures to meet the statutory requirements of section 172(c)(9) or 182(c)(9) for contingency measures in nonattainment plans for the ozone NAAQS (see 83 FR 62998, 63026). *Sierra Club, et al. v. EPA*, 985 F.3d 1055 (D.C. Cir. 2021). The effect of this decision is that the CAA interpretation that contingency measures must be prospective and conditional applies across the U.S.[14] If finalized as proposed, EPA would have serious concerns regarding the approvability of the contingency measures. EPA Region 6 will support TCEQ in the development of approvable contingency measures for ozone reductions. We encourage TCEQ to incorporate environmental justice considerations in developing such measures.
   EPA has explained that "[s]ection 182(c)(9) requires that certain state submissions must provide for the implementation of contingency measures in the event of a failure to meet a milestone; it does not require the state to submit separate and distinct contingency measures allocated exclusively for a failure to meet a milestone." 86 FR 27524 at 27527 (May 21, 2021).
2. In February 2023, the updated guidance document titled "Guidance on Quantifying NOx Benefits for Cetane Improvement Programs for Use in SIPs and Transportation Conformity" was released for

[13] https://www.tceq.texas.gov/airquality/stationary-rules/stakeholder/flare_stakeholder.html. The TCEQ's 2022 Emissions Inventory Guidelines document, Appendix A, Technical Supplement 4, Flares, found at https://www.tceq.texas.gov/airquality/point-source-ei/rg-360-22 also discusses much of this topic, and has provided updates to this since 2012. The TCEQ's NSR permitting guidance, as identified in Attachment 1, provides similar details.

[14] More information on this decision is provided in our proposed disapproval of contingency measures for the DFW and HGB Serious ozone nonattainment areas for the 2008 ozone NAAQS (see 88 FR 24522, April 21, 2023).

cetane improvement programs.[15] This updated guidance accounts for changes in fleet composition and control technology that has occurred since 2004. Please clarify for the record if the updated guidance was considered and provide any supporting documentation.

Project Number 2022-024-SIP-NR

Comments addressing the Bexar County Reasonable Further Progress (RFP) Plan

We appreciate the detailed work submitted in the RFP plan. We have the following concerns:

1. Bexar County was not classified as Moderate nonattainment or higher under a previous ozone NAAQS and thus, does not have a previously approved RFP or Rate of Progress (ROP) plan for a previous ozone NAAQS. In accordance with the CAA and EPA's associated regulations, the state shall submit a plan consistent with CAA section 182(b)(1): "… the State shall submit a revision to the applicable implementation plan to provide for volatile organic compound emission reductions … of at least 15 percent from baseline emissions …."[16] However, the TCEQ's proposal does not demonstrate the required initial 15 percent ROP in emission reductions for VOC. The TCEQ's proposal declares that emission reductions of NOx are expected to be more effective at reducing ozone concentrations in the Bexar County nonattainment area than VOC emission reductions and thus, relies on a mix of NOx and VOC emissions reductions to provide the 15 percent ROP through the attainment year (2023). The statute and implementing regulations for the 2015 ozone NAAQS at 40 CFR 51.1310(a)(4) are clear regarding the initial VOC ROP requirement for nonattainment areas without an approved prior ozone NAAQS 15 percent VOC ROP plan, and EPA's action must be consistent with such rules.

   We recognize the TCEQ has engaged a contractor to further investigate potential reductions. We encourage TCEQ to fully investigate feasible reductions to meet the requirement. The CAA appears to provide only one option if the 15% reductions cannot be achieved. CAA section 182(b)(1)(A)(ii) provides that a percentage less than 15 percent may be used for purposes of [CAA section 182(b)(1)(A)(i)] in the case of any State which demonstrates to the satisfaction of the Administrator that—

   (I) new source review provisions are applicable in the nonattainment areas in the same manner and to the same extent as required under subsection (e) of this section in the case of Extreme Areas (with the exception that, in applying such provisions, the terms "major source" and "major stationary source" shall include (in addition to the sources described in section 7602 of this title) any stationary source or group of sources located within a contiguous area and under common control that emits, or has the potential to emit, at least 5 tons per year of volatile organic compounds);

   (II) reasonably available control technology is required for all existing major sources (as defined in subclause (I)); and

   (III) the plan reflecting a lesser percentage than 15 percent includes all measures that can feasibly be implemented in the area, in light of technological achievability.

[15] Link to the main guidance page with a summary on the cetane guidance: https://www.epa.gov/state-and-local-transportation/guidance-control-strategies-state-and-local-agencies. Direct link to the cetane guidance: https://nepis.epa.gov/Exe/ZyPDF.cgi?Dockey=P1016IFV.pdf.

[16] See 83 FR 62998, 63034 (December 6, 2018), 40 CFR 51.1300(m), and 40 CFR 51.1310(a)(4).

To qualify for a lesser percentage under this clause, a State must demonstrate to the satisfaction of the Administrator that the plan for the area includes the measures that are achieved in practice by sources in the same source category in nonattainment areas of the next higher category.

2. The TCEQ's proposal indicates that the TCEQ will require additional analysis to determine the best means to address the 15 percent VOC ROP requirement. What is the TCEQ's schedule for such analysis?
3. The TCEQ's proposal includes contingency measures that rely on emissions reductions from measures that are already implemented, as opposed to measures that are prospective (i.e., that they be undertaken in the future) in nature. As noted in the TCEQ's proposal, in January 2021 the U.S. Court of Appeals for the District of Columbia Circuit vacated EPA's interpretation of the CAA to allow states to rely on already implemented control measures to meet the statutory requirements of section 172(c)(9) or 182(c)(9) for contingency measures in nonattainment plans for the ozone NAAQS (see 83 FR 62998, 63026). *Sierra Club, et al. v. EPA*, 985 F.3d 1055 (D.C. Cir. 2021). The effect of this decision is that the CAA interpretation that contingency measures must be prospective and conditional applies across the U.S.[17] If finalized as proposed, EPA would have serious concerns regarding the approvability of the contingency measures. EPA Region 6 will support TCEQ in the development of approvable contingency measures for ozone reductions. We encourage TCEQ to incorporate environmental justice considerations in developing such measures.

Project No. 2022-025-SIP-NR

Comments addressing the Bexar County Attainment Demonstration (AD) Plan

We appreciate the detailed work submitted in the AD plan. We have the following concerns:

1. The TCEQ's proposal includes contingency measures that rely on emissions reductions from measures that are already implemented, as opposed to measures that are prospective (i.e., that they be undertaken in the future) in nature. As noted in the TCEQ's proposal, in January 2021 the U.S. Court of Appeals for the District of Columbia Circuit vacated EPA's interpretation of the CAA to allow states to rely on already implemented control measures to meet the statutory requirements of section 172(c)(9) or 182(c)(9) for contingency measures in nonattainment plans for the ozone NAAQS (see 83 FR 62998, 63026). *Sierra Club, et al. v. EPA*, 985 F.3d 1055 (D.C. Cir. 2021). The effect of this decision is that the CAA interpretation that contingency measures must be prospective and conditional applies across the U.S.[18] If finalized as proposed, EPA would have serious concerns regarding the approvability of the contingency measures. EPA Region 6 will support TCEQ in the development of approvable contingency measures for ozone reductions. We encourage TCEQ to incorporate environmental justice considerations in developing such measures.
2. The TCEQ's proposal does not include a RACT analysis. For each nonattainment area classified Moderate or higher, the state shall submit a SIP revision that meets the VOC and NOx RACT requirements in CAA sections 182(b)(2) and 182(f).[19] We look forward to reviewing the TCEQ's proposed Bexar County RACT SIP revision later in 2023 and appreciate that the AD proposal indicates the final adopted RACT analysis and any regulations to implement RACT will be submitted to the EPA by May 7, 2024.
3. The TCEQ's proposal asserts that Bexar County is not expected to attain the 2015 ozone NAAQS by the September 24, 2024, attainment date and declares that ozone formation in the San Antonio

[17] More information on this decision is provided in our proposed disapproval of contingency measures for the DFW and HGB Serious ozone nonattainment areas for the 2008 ozone NAAQS (see 88 FR 24522, April 21, 2023).
[18] More information on this decision is provided in our proposed disapproval of contingency measures for the DFW and HGB Serious ozone nonattainment areas for the 2008 ozone NAAQS (see 88 FR 24522, April 21, 2023).
[19] 40 CFR 51.1312.

nonattainment area is primarily NOx limited. Therefore, as provided in CAA section 181(b)(3), the TCEQ may request, and EPA must grant, a voluntary reclassification to the next higher classification for the Bexar County area, which would provide until the September 24, 2027, Serious area attainment date to attain the 2015 ozone NAAQS. We encourage the TCEQ to submit such a request early enough to maximize the available time for assessing, adopting, and implementing emission reduction measures so the area can meet the ozone NAAQS expeditiously and avoid the mandatory statutory consequences for failing to timely attain.

4. How many tons of NOx reductions does the model predict as needed for the Bexar County nonattainment area to attain the ozone NAAQS?
5. In February 2023, the updated guidance document titled "Guidance on Quantifying NOx Benefits for Cetane Improvement Programs for Use in SIPs and Transportation Conformity" was released for cetane improvement programs.[20] This updated guidance accounts for changes in fleet composition and control technology that has occurred since 2004. Please clarify for the record if the updated guidance was considered and provide any supporting documentation.
6. The TCEQ's proposal includes a certification that nonattainment new source review and Stage I gasoline vapor recovery program requirements have been met for the Bexar County nonattainment area for the moderate classification. 30 TAC Chapter 115.229 in the approved SIP addresses gasoline dispensing facilities in Bexar County that dispense at least 25,000 gallons of gasoline per month. We encourage TCEQ to adopt the same Stage I requirements for Bexar County as are implemented in the DFW and HGB areas, which currently exempt gasoline dispensing facilities that dispense less than 10,000 gallons of gasoline per month from the Stage I requirements.
7. We support the inclusion of the SmartWay Transport Partnership program, which works to reduce mobile source emissions from partners located in and traveling through Bexar County.
8. We support the energy efficiency/renewable energy (EE/RE) measures, even though the EE/RE emission reductions are not quantified in the SIP. We appreciate that these EE/RE measures result in lower emissions from fossil-fuel fired electric generating facilities state-wide.
9. We support the continued implementation of the TERP, which has been a cost-effective way to reduce NOx from mobile sources.
10. EPA would like the TCEQ to consider field study data conducted[21] around the Eagle Ford Shale area indicating emissions contribute to upwind ozone production; this should include upwind/downwind analysis of Bexar County monitors that showed elevated NOx and VOC levels when Eagle Ford Shale emission sources are upwind of Bexar County monitors.

[20] Link to the main guidance page with a summary on the cetane guidance: https://www.epa.gov/state-and-local-transportation/guidance-control-strategies-state-and-local-agencies. Direct link to the cetane guidance: https://nepis.epa.gov/Exe/ZyPDF.cgi?Dockey=P1016IFV.pdf.

[21] One of these studies is "Comparing Permitted Emissions to Atmospheric Observations of Hydrocarbons in the Eagle Ford Shale Suggests Permit Violations," Holliman and Schade, Texas A&M Univ., Feb 2021, https://www.mdpi.com/1996-1073/14/3/780. Another example study for this area "Quantifying Emissions from the Eagle Ford Shale Using Ethane Enhancement," Roest and Schade, Texas A&M Univ., Dec 2014, https://ui.adsabs.harvard.edu/abs/2014AGUFM.A13F3250R/abstract

Project Number 2022-026-114-AI

Comments addressing 30 TAC Chapter 114, Control of Air Pollution from Motor Vehicles

30 TAC 114.1 (Definitions): We have no comments regarding the proposed revisions to these definitions.
30 TAC 114.2 (Inspection and Maintenance Definitions): We have no comments regarding the revisions to 114.2(10)(D) and (10)(E).
30 TAC 114.50 (Vehicle Emission Inspection Requirements): We have no comments regarding the revisions, which add Bexar County to the vehicle emission inspection requirements.
30 TAC 114.53 (Inspection and Maintenance Fees): We have no comments regarding these revisions, which add Bexar County to the various sections addressing I/M fees.
30 TAC 114.309 (Affected Counties): We have no comments regarding the removal of Ellis, Johnson, Kaufman, Parker, Rockwall, and Wise counties from this list of counties required to comply with the low Reid Vapor Pressure (RVP) program.

Environmental Justice and Civil Rights

Executive Order 12898, directed each listed federal agency to make "achieving environmental justice part of its mission by identifying and addressing, as appropriate, disproportionately high and adverse human health or environmental effects of its programs, policies, and activities on minority populations and low-income populations."[22] Executive Order 14008, made explicit that federal agencies should address "climate-related and other cumulative impacts on disadvantaged communities, as well as the accompanying economic challenges of such impacts."[23] Provisions ensuring that environmental justice and civil rights be addressed in a State Implementation Plan (SIP) is one way to help ensure fair treatment of all communities affected by government decisions all represent a fairer distribution of environmental burdens and benefits. The TCEQ should carefully review applicable authorities for opportunities to incorporate environmental justice considerations and to ensure that such considerations are adequately and appropriately incorporated into SIP revisions.

EPA is committed to advancing environmental justice (EJ) and incorporating equity considerations into all aspects of our work. We encourage the TCEQ to screen their SIP actions for EJ concerns and to consider potential issues related to civil rights of the communities potentially impacted early in the SIP process by utilizing EJScreen and knowledge of the impacted area.[24] This screening will indicate whether a SIP revision has the potential to contribute to significant public health or environmental impacts, if the community may be particularly vulnerable to impacts from the SIP revision, and whether the community is already disproportionately impacted by public health and/or environmental burdens. A sound screening practice will also provide important information as to whether there are residents of the affected community who could be disproportionately subjected to adverse health, environmental and/or quality of life impacts on the basis of income, national origin (including LEP status), or other demographic factors. The TCEQ should also take into consideration whether facilities (major and minor sources of pollution) contribute to community risk. An area with an above average number of sources, especially if those sources are large or in close proximity to residents, is an area of concern.

[22] Exec. Order No. 12898, 59 FR 7629 (February 16, 1994)

[23] Exec. Order No. 14008, 86 FR 7619 (February 1, 2021)

[24] EJScreen is an environmental justice mapping and screening tool that provides the EPA with a nationally consistent dataset and approach for combining various environmental and demographic indicators. The EJScreen tool is publicly available at https://www.epa.gov/ejscreen.

Attachment 1
(Enclosure to EPA Comments to the TCEQ's Proposed SIP Revisions)

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION 6
1201 ELM STREET, SUITE 500
DALLAS, TEXAS 75270

May 8, 2023

Ms. Gwen Ricco
Office of Legal Services
Texas Commission on Environmental Quality (MC 205)
Post Office Box 13087
Austin, Texas 78711-3087

RE: Quadrennial Review Comments, Non-Rule Project Number 2023-045-115-AI

Dear Ms. Ricco:

The United States Environmental Protection Agency (EPA) has prepared comments for consideration regarding the 30 Texas Administrative Code (TAC) Chapter 115, Control of Air Pollution from Volatile Organic Compounds, open for public review as part of the Quadrennial review process under the Texas Government Code §2001.039. Please see EPA comments provided in the enclosure of this letter.

If you have any questions, please contact our Air Permits Section Manager, Cynthia Kaleri at (214) 665-6772, or Jonathan Ehrhart at (214) 665-2295.

Sincerely,

Jeff Robinson
Branch Manager
Air Permits, Monitoring & Grants Branch

Enclosure

ENCLOSURE

30 Texas Administrative Code Chapter 115
Quadrennial Review - EPA Comments

Summary:

The Texas Administrative Code ("TAC") Chapter 115 rules allow flares to be used as a method to control emissions from process vents. As discussed in detail below, in the years since TCEQ adopted and EPA approved the 30 TAC Chapter 115 flare monitoring requirements, a great deal of information has been collected showing that the traditional monitoring requirements provided for in 40 CFR § 60.18 and referred to by 30 TAC Chapter 115 are not adequate to ensure assisted flares continuously provide for 98% destruction and removal efficiency ("DRE") at all times. EPA has had to address similar concerns as part of a Title V petition. *See e.g., In the Matter of BP Amoco Chemical Company,* Order on Petition No. VI-2017-6 at 19-25 (July 20, 2021).

Given the number of flares in the Houston/Galveston area, it is especially important that TCEQ address this issue by considering requirements that align with the most advanced scientific knowledge available at the time. The Highly-Reactive Volatile Organic Compounds ("HRVOC") rules for flares rely on 99% DRE for ethylene and propylene and 98% DRE for all other HRVOCs. TCEQ has also developed guidance which contains agency-accepted flare destruction efficiencies that are based upon the assumption of 99% DRE for compounds with three carbons or less and 98% DRE for compounds with greater than 4 carbon atoms. However, EPA has not explicitly identified flare parameters and monitoring requirements that can ensure 99% DRE at all times. As such, EPA recommends that the Chapter 115, HRVOC rules, and any agency guidance applying similar DRE assumptions for 40 CFR 60.18-compliant flares, are evaluated and revised to ensure that appropriate DRE's are identified and verified through ongoing compliance measures. To claim such DRE's, EPA recommends that TCEQ update their flare monitoring and operational requirements consistent with the substantive requirements laid out in EPA's sector-specific rulemakings – e.g., Petroleum Refinery MACT and Ethylene Production MACT. In the absence of adequate monitoring and operational requirements sufficient to account for potential issues relevant to flare performance, EPA does not believe that assisted flares in compliance with the current 30 TAC Chapter 115, Subchapter H requirements can assume 98% DRE or higher for the purposes of demonstrating compliance with the HRVOC cap at § 115.722.

What Did EPA Approve?

The 30 TAC Chapter 115 HRVOC rules supplement Texas' existing rules for controlling volatile organic compounds ("VOCs") by providing more extensive requirements for certain equipment in HRVOC service and provided improvement to the Texas SIP's VOC Reasonable Available Control Technology ("RACT") rules. These additional controls of HRVOC emissions were to help attain and maintain the National Ambient Air Quality Standards ("NAAQS") for ozone in the Houston, Galveston, and Brazoria ("HGB") ozone nonattainment area. This area was classified as moderate[1] attainment status at the time of the original SIP approval of the 30 TAC

[1] Adoption Date: 05/23/2007 Proposal Date: 12/13/2006 EPA Action: Approved on 04/22/2009 (74 FR 18298) Background: Effective June 15, 2004, the HGB area (Brazoria, Chambers, Fort Bend, Galveston, Harris, Liberty,

Chapter 115 HRVOC rules on October 6, 2006 (71 FR 52655). The 30 TAC Chapter 115 HRVOC rules were adopted by TCEQ based on findings that certain highly reactive chemicals (ethylene, propylene, 1,3 butadiene and butenes) contribute disproportionately to the ozone problem in the HGB area. VOCs are a class of compounds that react in the atmosphere with oxides of nitrogen and oxygen in the presence of sunlight to form ozone. HRVOC is a term used to refer to chemicals that because of their very high propensity (reactivity rate) to form ozone had been targeted for additional control beyond the level of control that had been established for controlling VOCs in general. At the time of SIP approval, ambient measurements from both airplanes and ground based monitors had shown that the historical emissions estimates for HRVOCs were substantially underestimated. *See* 70 Fed. Reg. 17641 (April 7, 2005).[2] Therefore, there was a need to improve the emissions estimates of HRVOCs through better source monitoring. The rules established improved monitoring requirements for flares, cooling towers, process vents and pressure relief valves and established a 1200 lb/hour site-wide short-term limit on HRVOCs for sources in Harris County.

When EPA approved the 30 TAC Chapter 115 rules into the SIP, this included 30 TAC 115.10 – Definitions. TCEQ defines HRVOCs at § 115.10(21) and defines them separately for Harris County from the other seven counties that compose the eight county HGB non-attainment area. TCEQ defines HRVOCs in Harris County to include 1,3-butadiene; all isomers of butene (e.g., isobutene (2-methylpropene or isobutylene), alpha-butylene (ethylethylene), and beta-butylene (dimethylethylene, including both cis- and trans-isomers)); ethylene; and propylene. TCEQ only includes ethylene and propylene in the HRVOC definition for Brazoria, Chambers, Fort Bend, Galveston, Liberty, Montgomery, and Waller Counties.

Flares Subject to 30 TAC Chapter 115

Flares are used in a wide variety of applications both for the control of continuous vent emissions and for the control of intermittent emissions during start up, shutdowns and malfunctions. The ability of flares to safely handle a wide range of flow rates and chemicals makes them a popular choice for vent gas disposal. Because flares are not enclosed combustion devices, it is difficult to directly measure the emissions from flares. EPA established minimum requirements for the operation of flares in the General Provisions of the New Source Performance Standards ("NSPS") and National Emission Standards for Hazardous Air Pollutants ("NESHAP") rules at 40 Code of Federal Regulations (CFR) §§ 60.18 and 63.11(b). The requirements in the General Provisions are then coupled with more specific requirements in the various NSPS and NESHAP Subparts for sources subject to Parts 60, 61, and 63. Texas adopted, by reference, minimum

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Montgomery, and Waller Counties) was designated nonattainment for the 1997 eight-hour ozone National Ambient Air Quality Standard (NAAQS) (69 FR 23951). The area was classified as moderate nonattainment with an attainment date of June 15, 2010. On May 23, 2007, the commission adopted the 2007 HGB 1997 Eight-Hour Ozone Nonattainment Area RFP SIP Revision along with the 2007 HGB 1997 Eight-Hour Ozone Nonattainment Area SIP Revision and associated rule revisions. On June 15, 2007, the TCEQ submitted the SIP revisions to the EPA along with a request that the HGB area be reclassified from a moderate to a severe nonattainment area for the 1997 eight-hour ozone NAAQS, with an attainment deadline of June 15, 2019. (See the Governor's 2007 reclassification request letter).

[2] Specifically, data from the Texas 2000 Air Quality Study ("TexAQS 2000") and subsequent TexAQS 2006 both included plane flights, helicopter flights, and mobile ground monitoring that indicated the emission inventories underestimated the HRVOC emissions.

performance requirements for net heating value ("NHV") and exit velocity in § 60.18 for flares in HRVOC service within the 30 TAC Chapter 115 HRVOC rules. These rules include limits for the minimum heating value for the inlet gas to a flare and for maximum gas exit velocity at the flare tip.

The Texas Chapter 115 HRVOC rules establish additional flow and composition monitoring requirements beyond those in § 60.18 to ensure flares controlling HRVOCs are operated properly. Using the flow data and an assumed DRE for a properly operated flare, a company could estimate the HRVOC emission rate to determine compliance with the short and long-term caps for HRVOC emissions. When meeting the heating value and exit velocity requirements of 40 CFR § 60.18, the 30 TAC Chapter 115 rules allow companies to assume a 98% DRE for most VOCs and a 99% DRE for ethylene and propylene routed to a flare for the purposes of demonstrating compliance with the short-and long-term caps. Flares not operated in compliance with the heating value and exit velocity requirements of 40 CFR § 60.18 are required to assume a lower DRE of 93% for HRVOC. *See e.g.,* 30 TAC § 115.725(d)(7). *See also* 70 Fed. Reg. 17642 (April 7, 2005).[3] Texas bases these assumed destruction efficiencies on EPA studies of flare destruction efficiencies that were performed in 1983-1986.[4]

For flares, TCEQ has indicated that the SIP-approved 30 TAC Chapter 115 HRVOC requirements at 30 TAC § 115.725(d)(7)[5] allows for the assumption of 99% DRE for ethylene and propylene and 98% DRE for all other HRVOCs when the flares are complying with the continuous monitoring requirements at § 115.725(d) and in continuous compliance with the net heating value and velocity specifications of 40 CFR § 60.18. However, a considerable amount of research in flare combustion efficiency has occurred since EPA originally approved the Chapter 115 HRVOC rules into the Texas SIP. Consequently, EPA has added specific requirements to various subparts of regulations addressing the use of a flare as a control device. For example, in the NESHAP for Refineries at 40 CFR Part 63, Subpart CC, EPA requires additional operational limits and monitoring for flares beyond what is in 40 CFR. § 60.18. Yet, Section 115.725(d)(5) requires that the NHV is calculated according to the equation at § 60.18(f)(3), which only accounts for the heating value of flare inlet gas as it enters the flare header. This value does not account for any dilution in heating value from assist media (e.g., steam), nor does it require calculation of the NHV of the combustion zone gas ("NHVcz") as defined in 40 CFR § 63.641. The HRVOC DRE assumptions at § 115.725 were approved into the Texas SIP in 2006 (71 FR 52655), long before EPA's evaluation and data analyses regarding the potential for flare over-

[3] Although the Chapter 115 HRVOC regulations authorize the use of these assumed DRE's, the 2022 TCEQ Emissions Inventory Guidelines acknowledge the potential for flare over-assistance, including flares subject to Chapter 115. *See* TCEQ, 2022 Emissions Inventory Guidelines, RG-360/22 at 133 (January 2023) ("For assisted flares, there is potential for over-assisting the waste gas stream, and the destruction efficiency may be lower than either the permitted efficiency or the appropriate efficiencies contained in Chapter 115 HRVOC regulations or Table A-8. Emissions determinations must be adjusted accordingly.")

[4] *See e.g.,* Evaluation of the Efficiency of Industrial Flares: Test Results, EPA-600/2-84-095 (May 1984); Evaluation of the Efficiency of Industrial Flares: Flare Head Design and Gas Composition, EPA-600/2-85-106 (September 1985); Evaluation of the Efficiency of Industrial Flares: H_2S Gas Mixtures and Pilot Assisted Flares, EPA-600/2-86-080 (September 1986).

[5] *See also id.* §§ 115.725(e)(3), 115.725(f)(5), and 115.725(g)(2)(E) (Containing similar language regarding the assumption of 99% and 98% DRE; each with varying monitoring requirements depending on flare service.)

assistance and DRE reduction was conducted as a part of the Petroleum Refinery MACT and Ethylene Production MACT rulemakings some 6 to 8 years later.[6]

According to TCEQ, "The use of a 99% destruction efficiency for ethylene and propylene in a flare meeting the requirements of 40 CFR §60.18 is based on a limited amount of data from EPA flare studies conducted in the early 1980's."[7] *See* 29 Tex. Reg. 11656 regarding Rule Project No. 2004-037-115-AI (December 17, 2004). Since this time, and as discussed at length throughout the Petroleum Refinery MACT and Ethylene Production MACT rulemakings, EPA has found that compliance with General Provisions at 40 C.F.R §§ 60.18(b) and 63.11(b) are inadequate to ensure proper performance of flares at refineries and other petrochemical facilities (including ethylene production units), particularly when either assist steam or assist air is used. *See* 84 Fed. Reg. 54294 (October 9, 2019) and 79 Fed. Reg 36905 (June 30, 2014).[8] As a result, compliance with the NHV and velocity requirements at §§ 60.18(b) and 63.11(b) are not sufficient to ensure 98% DRE, let alone 99% DRE, for steam or air assisted flares. EPA acknowledges that for certain types of flares and/or vent gases, the General Provisions (combined with the relevant NSPS or NESHAP) may be sufficient provided they are not susceptible to over-assistance. EPA promulgated the additional requirements in specific rules such as the Petroleum Refinery MACT and Ethylene Production MACT (i.e., in addition to the part 60/63 General Provisions - e.g., flare tip velocity requirements, visible emissions requirements, and continuously lit pilot flame) to ensure 98% DRE when in continuous compliance with these regulations. However, these regulations were not designed to ensure compliance with 99% DRE. As the EPA explained in its final rule for petroleum refineries:

> Based on the results of all of our analyses, the EPA is finalizing a single minimum NHVcz operating limit for flares subject to the Petroleum Refinery MACT standards of 270 BTU/scf during any 15-minute period. The agency believes, given the results from the various data analyses conducted, that this operating limit is appropriate, reasonable and will ensure that refinery flares meet *98-percent destruction efficiency* at all times when operated in concert with the other suite of requirements refinery flares need to achieve (e.g., flare tip velocity requirements, visible emissions requirements, and continuously lit pilot flame requirements).

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[6] As the EPA explained for flares at petroleum refineries: "In 2012, the EPA compiled information and test data collected on flares and summarized its preliminary findings on operating parameters that affect flare combustion efficiency . . . The EPA submitted the report, along with a charge statement and a set of charge questions to an external peer review panel. The panel concurred with the EPA's assessment that three primary factors affect flare performance: (1) The flow of the vent gas to the flare; (2) the amount of assist media (e.g., steam or air) added to the flare; and (3) the combustibility of the vent gas/assist media mixture in the combustion zone (i.e., the net heating value, lower flammability, and/or combustibles concentration) at the flare tip." *See* 79 Fed. Reg. 36905 (June 30, 2014).

[7] The EPA flare studies referenced in 29 Tex. Reg. 11656 were based on a particular flare operating under certain conditions. According to the RTC, TCEQ relied on this limited test data to apply a 99% propylene and ethylene DRE to future flares subject to 30 TAC Chapter 115 HRVOC regulations.

[8] EPA made similar findings for flares in the April 6, 2023, proposed amendments to the New Source Performance Standards for the Synthetic Organic Chemical Manufacturing Industry (SOCMI) and the National Emission Standards for Hazardous Air Pollutants that apply to the SOCMI (commonly known as the Hazardous Organic NESHAP or "HON") and Group I and II Polymers and Resins Industries. *See* 88 Fed. Reg. 25147 (April 25, 2023); *see also* EPA Office of Enforcement and Compliance Assurance, Enforcement Alert, EPA 325-F-012-002 (August 2012).

80 Fed. Reg. 75211 (December 1, 2015) (emphasis added).

The EPA similarly explained in its proposed rulemaking for the Ethylene Production MACT:

> The Agency believes, given the results from the various data analyses conducted for the Petroleum Refinery Sector Rule, that this NHVcz operating limit promulgated for flares used in the Petroleum Refinery Sector source category is also appropriate, reasonable, and will ensure flares used as APCDs [air pollution control devices] in the Ethylene Production source category *meet 98-percent destruction efficiency* at all times when operated in concert with the other proposed suite of requirements that flares need to comply with (*e.g.,* continuously lit pilot flame requirements, visible emissions requirements, and flare tip velocity requirements) (see the memoranda titled *Petroleum Refinery Sector Rule: Operating Limits for Flares* and *Flare Control Option Impacts for Final Refinery Sector Rule* in Docket ID Nos. EPA-HQ-OAR-2010-0682-0206 and EPA-HQ-OAR-2010-0682-0748, respectively).

84 Fed. Reg. 54298 (October 9, 2019) (emphasis added).

In response to EPA comments on the proposed amendment to the HRVOC regulations at 29 Tex. Reg. 11656 (December 17, 2004), TCEQ stated, in relevant part, that ". . . the commission will continue to follow technological advances in this area [referring to PFTIR pilot studies for the determination of actual flare destruction efficiency] and will reevaluate use of the assumed destruction efficiency in the future if reliable data indicate a need to do so." Since their adoption on December 01, 2004, the § 115.725 rules have undergone quadrennial review by TCEQ only once (that EPA could find a record for in the Texas Register)[9] which did not receive any public comments and did not result in a revision to the DRE assumptions for HRVOCs. Additionally, these Chapter 115 Subchapter H rules have not been amended since they became effective on December 23, 2004.

EPA believes that in light of the aforementioned rulemakings, EPA and TCEQ[10] have sufficient data concerning assisted flares to conclude that the HRVOC standards, and the monitoring therein, may not ensure that assisted flares will achieve 98% or 99% DRE at all times. EPA encourages TCEQ to evaluate the § 115.725 assumed destruction efficiencies for steam and air assisted flares, as the agency has previously committed to do, now that reliable flare performance data is available and such data has been used in EPA rules addressing the control requirements of

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[9] *See* 44 Tex. Reg. 485 (February 1, 2019).

[10] Dating back to at least 2012, multiple TCEQ publications have documented TCEQ's awareness and research regarding the potential for issues that affect flare destruction efficiency. *See* TCEQ, 2011 Emissions Inventory Guidelines, RG-360/11 at A-51 to A-52 (January 2012) ("In the fall of 2010, TCEQ funded a research project on flare destruction and removal efficiency (DRE) at a flare-test facility. The results demonstrated that air-assisted and steam-assisted flares must operate with a very limited range of assist rates to achieve the assumed DRE of 98 percent or greater. This project also demonstrated that operating a flare in compliance with 40 CFR 60.18 does not ensure that the flare will achieve 98 percent DRE. Flare assist rates and other operating information should be reviewed and assessed to determine whether a flare may be operating at assist ranges that do not achieve 98 percent DRE, in which case the flare DRE must be reduced accordingly when determining and reporting flare emissions in the EI. The final report and additional project information are at www.tceq.texas.gov/goto/2010-flare-study.")

flares. If TCEQ wishes to continue to afford the attribution of 98% or 99% HRVOC DRE for all air or steam assisted flares, TCEQ should provide rigorous technical justification for their continued use and should consider amending the 30 TAC Chapter 115, Subchapter H, Division 1 requirements to contain essential operational limitations and monitoring provisions that are sufficient to ensure such destruction efficiencies at all times. Without adequate monitoring and operational requirements sufficient to account for potential issues affecting flare performance, EPA does not believe that assisted flares in compliance with the current Chapter 115, Subchapter H requirements can assume 98% or higher DRE for the purposes of demonstrating compliance with the HRVOC cap at § 115.722.

In addition to authorizing a > 98% DRE assumption for demonstrating compliance with the short- and long-term HRVOC caps under 30 TAC Chapter 115, EPA understands that TCEQ has also developed flare guidance with similar assumptions. This guidance similarly contains agency-accepted flare destruction efficiencies that allow for the assumption of 99% DRE for compounds with three carbons or less (e.g., acetylene, ethylene, propylene, methylacetylene, as well as methanol, ethanol, propanol, ethylene oxide, and propylene oxide) and 98% DRE for compounds with greater than 4 carbon atoms. *See* TCEQ, Air Permits Division NSR Emission Calculations, Attachment A – Flare Factors at 8 (March, 2021); *See also* TCEQ 2022 Emissions Inventory Guidelines, RG-360/22, Table A-8 at 143 (January 2023) (Allowing for a 99% DRE assumption C1-C3 VOCs and 98% DRE for C4+ VOC compounds). EPA's concerns for the Chapter 115 flare DRE assumptions are the same concerns we have with the DRE assumptions allowed by TCEQ's flare guidance. The guidance allows for DRE assumptions that TCEQ's very own flare performance study concludes are not guaranteed. Specifically, since at least 2012, TCEQ's emissions inventory guidance has referenced its 2010 flare study which identified that operating a flare in compliance with 40 CFR § 60.18 does not ensure that the flare will achieve 98% DRE. *See supra* note 10. However, this same document appears to afford flares in compliance with § 60.18 the ability to assume and apply 99% and 98% DRE depending on waste stream composition. For the reasons identified throughout this letter, EPA encourages TCEQ to also take a hard look at the flare DRE assumptions allowed by its guidance for 60.18-compliant flares and ensure that appropriate DRE assumptions are identified.

Additionally, TCEQ previously received public comments on 30 TAC Chapter 115 related to the addition of other reactive VOCs. TCEQ replied that the Commission would use the stakeholder process, in conjunction with data from other air quality studies and monitoring, to determine future actions regarding other VOCs. TCEQ also received comments that additional monitoring was needed. In responding to these comments, TCEQ stated, "The commission will continue to evaluate new technologies and methods of measuring VOCs, data collected from ambient monitors in the HGB area, as well as other ongoing research activities to determine if further control and monitoring of specific VOCs other than the current HRVOCs is necessary to achieve attainment" *see* 29 Tex. Reg. 11642 (December 17, 2004). Monitoring that is currently available for flares includes pilot flame monitor, auto gas chromatograph (GC), H_2 analyzer, calorimeter, flare gas flow monitor, steam fine controls/metering, and air fine controls/metering.

Flares subject to the Chapter 115 HRVOC rules can be found in multiple counties in the HGB area and are not limited to only Harris County. EPA believes that TCEQ should consider if the definition of HRVOC needs to be revised and updated to apply consistently to all eight counties

in the HGB area. TCEQ should consider whether the initial factual, legal, and policy reasons for adopting each rule in these subchapters continue to exist and to take into consideration current industry and scientific knowledge and the current attainment status of the HGB area. Effective November 7, 2022, the HGB area was reclassified to severe nonattainment for the 2008 Ozone NAAQS.[11] EPA encourages TCEQ to use this opportunity to increase the effectiveness of the Chapter 115 rules as enhanced monitoring, operational requirements, and compliance measures for flares could contribute to an improvement in regional air quality.

Lastly, EPA Region 6 conducted an analysis for Harris County using EPA's EJScreen to assess key demographic and environmental indicators. This analysis shows a total population of approximately 4.68 million residents, 11% are limited English speaking and 36% are low income. The current air toxics cancer risk (excess lifetime risk per million) is equal to or greater than 36, whereas the state risk is, on average, 31. Upon review of the EJScreen EJ Indices, which combine certain demographic indicators with 12 environmental indicators, the results show that eight of the 12 EJ Indices in the county exceed the 70th percentile in the state of Texas. EPA knows from previous EJScreen analysis performed for permit reviews in Harris County, that there are localized areas with greater EJ Indices scores and where AirToxScreen has shown greater air cancer toxic risk.

EJ communities are most impacted by ozone and therefore it is important that TCEQ take what actions they can to ensure permit holders are accounting for their flare emissions properly versus simply assuming flare DRE's will be achieved at all times. HRVOCs are precursors to the formation of ground level ozone and thus contribute to exceedances of the NAAQS for ozone in the HGB area. As you know, children are at greatest risk from exposure to ozone because their lungs are still developing and they are more likely to be active outdoors when ozone levels are high, which increases their exposure. Children are also more likely than adults to have asthma. When inhaled, ozone can damage the lungs. Relatively low amounts of ozone can cause chest pain, coughing, shortness of breath, and lung irritation. EPA utilized the CDC PLACES[12] mapping and data tool to better understand the health impacts that ground level ozone would have on the communities in the HGB area. This data shows that the prevalence of asthma among adults is at 9.3% in Galveston and Chambers Counties and 8.8% in Harris County, while the U.S. average is 9.2%. The prevalence of coronary heart disease was equal to or greater than the U.S. average of 5.5% for the majority of the counties in the HGB area. The percentage of the population that currently lack of health insurance among adults aged 18 – 64 years was significantly higher in the HGB counties (35.8% in Harris, 28.5 in Chambers) when compared to the U.S. at 13.5%.

We encourage TCEQ to consider using EJScreen and other available data when evaluating rulemaking actions for EJ and civil rights concerns. TCEQ should ensure that its actions help protect those most vulnerable to air pollution impacts. Addressing flare efficiency and ensuring that assumed DRE's are being achieved in practice through appropriate monitoring and operational requirements would be beneficial throughout the HGB area.

[11] *See* 87 Fed. Reg. 60926 (October 7, 2022).
[12] *See* https://www.cdc.gov/places/index.html