

**Response to Comments Received Regarding the
Beaumont-Port Arthur
Ozone Attainment Demonstration
State Implementation Plan Revision
Proposed May 11, 2005**

The commission received written comments from the United States Environmental Protection Agency (EPA) and the South East Texas Regional Planning Commission's Air Quality Advisory Committee (SETRPC). Two hearings were held in Beaumont on June 16, 2005 at 2:00 p.m. and 6:00 p.m. No comments were received at these hearings.

GENERAL

SETRPC commented in support of the changes that the TCEQ identified in the SIP revision.

The commission appreciates this support.

ATTAINMENT DATE/CONFORMITY

EPA recommended that the SIP be revised to clearly indicate which year, 2005 or 2006, will be the year analyzed (the attainment year) for attainment of the 8-hour ozone standard. Further, EPA stated that the 2003-2005 data for 8-hour ozone values indicates that, due to high ozone readings for the Sabine Pass Monitor, the area will not be able to attain the standard in 2005 but may qualify for a one-year extension to 2006. EPA outlined how the BPA area may qualify for a one-year extension if 2005 were the attainment year, but noted that if 2005 were the attainment year, the attainment date for the area would have to be reconsidered because June 15, 2007, would no longer be as expeditious as practicable. EPA stated that if 2006 is the attainment year, then the State's adopted SIP submitted to EPA for approval must address how the area failed to attain in 2005 and failed to qualify for a one-year extension.

In its comments on the currently proposed (May 11, 2005) 8-hour ozone attainment demonstration, EPA Region VI raised several issues regarding the use of 2005 as the "attainment year." In response, the TCEQ has revised its analysis to use 2006 as the "attainment year." In addition, the commission has also revised several of the calculations used previously to conform with the new "Draft Final" guidance. These revisions and the use of 2006 as the "attainment year" does not affect the conclusion that the area will attain the 8-hour ozone NAAQS by the attainment date of June 15, 2007.

When the commission originally elected to use 2005 for its future year analysis, EPA had not yet published its "Draft Final" guidance defining the "attainment year" as distinct from the "attainment date." The commission in good faith developed an attainment demonstration that complied with EPA guidance in existence and met required EPA deadlines. In the absence of any final guidance from EPA, the commission selected a 2005 modeling year in order to show that the BPA area is consistently progressing toward attainment in 2007.

EPA also pointed out that for whatever attainment year is chosen, an attainment motor vehicle emissions budget must be established. EPA stated that the motor vehicle emissions budget that was submitted for 2007 would be unacceptable and suggested that a 2005 or 2006 budget could be extrapolated from the 2007 budgets.

The commission specifically requested comment at proposal on the MVEB year. In response to

EPA's comments on the MVEB year, on July 6, 2005, the TCEQ staff conducted a conference call to discuss developing a 2006 MVEB using an on-road extrapolation analysis with representatives from EPA, the Southeast Texas Regional Planning Commission (SETRPC), the Texas Department of Transportation (TxDOT), and the Texas Transportation Institute (TTI). Subsequent to the call, SETRPC, TxDOT, and TTI staff concurred that the 2006 on-road extrapolation analysis for the 3-county BPA area was acceptable for establishment of a 2006 attainment MVEB.

This adopted SIP provides a 2006 motor vehicle emissions budget, Table 2-2, Extrapolated 2006 On-road Mobile Source Inventory for 3-County BPA Nonattainment Area. This 2006 budget was generated by interpolating between the 2005 and 2007 vehicle miles traveled used in the May 11, 2005, proposed plan. The results and a full description of the methodology are provided in Appendix S.

A 2007 emissions budget was included in the proposal because EPA did not provide final guidance to the states on determining attainment years until after the majority of work on the May 11, 2005, proposed revision had been completed.

EPA stated that for whatever attainment year is chosen, all control measures relied upon for demonstrating attainment must be in place prior to the attainment year ozone season.

The control measures relied upon for the 2007 8-hour ozone attainment demonstration will be in place prior to the peak ozone season of 2006.

The rulemaking that will lower the exemption threshold to 50 tpy for batch process operations and shipbuilding and repair facilities stipulates that facilities must comply no later than December 31, 2006. However, reductions from these rules are expected to be minimal. These rules were not anticipated to advance the 2007 attainment date and hence were not relied upon for demonstrating attainment.

Additionally, EPA stated that if the attainment year is 2006 then the analysis in the adopted SIP must demonstrate how the area will attain the ozone standard in 2006 and show whether additional reductions in the HGB area and/or the BPA area are needed to show attainment in 2006. Further, EPA stated that the SIP must specifically address local controls are necessary.

This adopted SIP uses 2007 as the attainment date, and 2006 as the attainment year. Modeling has shown that many of the BPA exceedances are due to transport from the HGB area and that the combination of controls planned for BPA and Houston areas will lead to attainment when the HGB controls are implemented. The 2006 backcasted modeling takes into account future reductions in the HGB area as well as the local controls in the BPA area.

REASONABLY AVAILABLE CONTROL TECHNOLOGY (RACT)

EPA suggested that the TCEQ provide evidence that the VOC and NO_x inventory has been reviewed and all major sources are covered by RACT rules.

The TCEQ has reviewed the point source inventory to confirm that all major sources are covered by RACT rules in Chapters 115 and 117. Documentation of the review is provided in Appendix T. The commission has confirmed that, with the exception of the batch process rules and the

shipbuilding and ship repair rules, there are no exemptions for sources that have potential to emit greater than or equal to 50 tpy but less than 100 tpy. The commission is adopting changes to the cited rules to change the exemption level to 50 tpy. The rules in Chapter 117 regarding control of NO_x emissions define a major source in the BPA area as emitting or having the potential to emit 50 tpy.

As shown in the tables in Appendix T, the review indicates only nine sites that may be classified as major sources of VOC at the 50 tpy definition that were not already considered major at the 100 tpy definition. One of these sites would be covered by RACT under the change to the shipbuilding and ship repair rules. As stated in Appendix T, the other sites are covered by Chapter 115 VOC RACT rules. All major sources of NO_x emissions are covered by Chapter 117 NO_x RACT rules.

REASONABLY AVAILABLE CONTROL MEASURES (RACM)

EPA stated that the TCEQ must provide the modeling sensitivity results that indicate that reductions of 1 ton per day (tpd) of NO_x and 3.8 tpd of VOC will have a de minimis impact on ozone in the BPA area.

One tpd of NO_x represents approximately 0.5 percent of the total NO_x emissions in the BPA area. Using a model run from the 2007 future case, it was estimated that reducing NO_x emissions by 1 tpd reduces the future ozone design value by 0.0368 ppb, and similarly, reducing VOC emissions by 3.77 tpd reduces the future design value by 0.0368 ppb.

The commission determined that a reduction that should impact the modeled future design value by only 37 parts per trillion was an acceptable de minimis level for a RACM analysis. The commission, therefore, set the de minimis level at 1 tpd NO_x and 3.8 tpd VOC.

These de minimis levels are the same for the 2006 backcasted modeling provided in this adopted SIP.

EPA also suggested that the TCEQ cross reference the emission inventory tables with the control measure tables so it is clear that potential emission reductions from control measures are truly de minimis. EPA also requested that the TCEQ provide information that supports the categorization of a category that is above de minimis in emissions, but for which additional reductions would be too small to advance the attainment date.

As noted previously in this response, the commission determined that 1 tpd NO_x and 3.8 tpd VOC was an acceptable de minimis level for RACM.

The control measure tables, as proposed, have two reason categories that depend on the de minimis level established by the TCEQ. One reason category describes the circumstance when the *reductions* provided by the control measure are either below 1 tpd of NO_x or 3.8 tpd of VOC. For the purposes of this discussion, this category will be called “*reductions are de minimis.*” The other reason category is when the *total* emissions from the source category are below 1 tpd of NO_x or 3.8 tpd of VOC. For the purposes of this discussion this category will be called “*total is de minimis.*”

Staff reexamined the *total is de minimis* categorization and affirmed that the total emissions (before additional control strategies) are indeed below 1 tpd of NO_x or 3.8 tpd of VOC.

Staff re-examined Appendix O, “Point/Area Source NO_x RACM Analysis for Beaumont/Port

Arthur” regarding the *reductions are de minimis* reason category and determined that the majority of these control measures would be more appropriately categorized as “control strategies that cannot be reasonably implemented early enough to advance the 2007 attainment date.” The one exception is the “banning agricultural burning during the ozone season” control strategy, which would be better categorized as *total is de minimis*. These changes are reflected in Appendix O.

Staff re-examined Appendix P, “Point/Area Source VOC RACM Analysis for Beaumont/Port Arthur” and determined that the only control measure that is categorized as *reductions are de minimis* is a control measure that is already in place and in the BPA area and staff determined that further reductions would not accelerate attainment. Therefore, “Surface Coating Processes” has been removed from Appendix P, as it is in TCEQ rules in 30 TAC 115 Subchapter E, Division 2 and applies to the BPA area.

EPA suggested that the commission cite the applicable rules for the control measures that the TCEQ determined were not warranted because comparable or superior control measures are already being used.

See Appendix U, Comparable VOC and NO_x Control Measures.

EPA commented that the control measures that the TCEQ already uses for larger units, and for which additional reductions from smaller units would not accelerate attainment, the TCEQ should provide the information supporting this conclusion.

Staff re-examined Appendix O and re-categorized most control measures that were assigned a reason category of “4”, which is the reason code for “the commission has already established reasonable controls for units of certain sizes; however, additional reductions from categories of smaller units would be insignificant and would not accelerate attainment”, to reason category “1” which is the reason category that states that the commission has already implemented a comparable or superior control measure. Additionally, more stringent controls in these categories would not accelerate attainment nor could they be implemented in time to advance the attainment date.

The source category of “Gas Turbines - Jet Fuel” associated with the control measures “Selective Catalytic Reduction + Water Injection” and “Water Injection” were reassigned the code of “6” which is “There are no sources of NO_x in this category.” No stationary jet fuel turbines exist in the BPA area.

EPA suggested that the RACM analysis for emissions from flares at petroleum refineries and fugitive emissions from petroleum refineries and synthetic organic chemical manufacturing industry be reexamined due to the heavy refining and chemical plant base in the area. EPA suggested that a *de minimis* label on these sources seems counterintuitive.

Appendix P, “Point/Area Source VOC RACM Analysis for Beaumont/Port Arthur” lists “Fugitive Emissions: Oil and Gas Production Facilities and Conveying Stations,” “Synthetic Organic Chemical Manufacturing Industry (SOCMI) fugitives,” “HRVOC Sources - Fugitives,” and “Flares (total)” as having total emissions that are below the *de minimis* level set by the TCEQ.

The TCEQ staff relied on the emission inventory data to categorize these sources as *de minimis*. Appendix R lists emission inventory data, and shows that these sources are under the *de minimis* levels set by the commission. Further, no controls could be put on these sources in time to advance

the attainment date.

In Appendix P, the general source categories “Fugitive Emissions” and “Petroleum Refinery Fugitives” and their associated control measures are categorized in the RACM analysis as “1” which is the reason category stating that the commission already has established comparable or superior controls. These more general categories include fugitives from refining and chemical plants and are attributed with much larger emission levels in Appendix R than are the categories cited above that are categorized as de minimis.

All of the point sources classified as flares in Appendix R add up to 1.4 tpd of VOC emissions, which is well below the de minimis level set by the commission for this RACM analysis. More recent inventories in 2002 and preliminary 2003 data show similar levels of VOC emissions from flares.

While the commission seeks to constantly improve the emissions inventory, it must rely on the data that is available at the time of the SIP revision. As discussed elsewhere in this response, the commission has made improvements to the emissions inventory and continues to examine methods to assure that the emissions inventory data is accurate.

CONTINGENCY MEASURES

EPA commented that the reduction in emissions for marine vessel loading from 13.10 tpd in 1990 to 1.92 tpd in 2002 must be documented as real, permanent, and federally enforceable.

The commission is no longer using the actual reduction in VOC emissions from marine vessel loading as a contingency measure. Instead, the commission is documenting other reductions in NO_x emissions that have been used to replace the marine vessel loading contingency measure.

EPA commented that if the TCEQ wishes to substitute the reductions from the lean-burn engine rule for the marine vessel loading contingency measure, then it must show a 3 percent reduction of the target level from 1996 because that is the attainment year that triggered the reclassification from “moderate” to “serious” for the 1-hour standard. Further, EPA stated that the TCEQ must show that the reductions that occurred in 2004 or earlier were not relied upon in any pre-2004 rate-of-progress plans and attainment demonstrations, and were above the level of reductions required for reasonably available control technology (RACT).

A target level for NO_x for 1996 is not directly available in SIP documents because the initial reasonable further progress requirement for 1990 - 1996 was for VOC only. NO_x reductions were first allowed to be used as part of a rate of progress (ROP) in target year 1999. The NO_x target level for 1999 (as reported in the Post 1996 ROP Demonstration SIP for BPA, adopted October 27, 2004) is 303.37 tpd. That SIP indicates that the 9% reduction from 1996 to 1999 was 7% VOC and 2% NO_x. Thus, the "target" 1996 NO_x value would have been 2% higher than the 1999 target, or 309.56 tpd. The 3% reduction required for the contingency measure would thus be 9.3 tpd.

In 2004, three companies (Mobil Chemical Company, Division of Exxon Mobil Oil Corporation; Motiva Enterprises LLC; and Premcor Refining Group, Inc.) in the BPA area agreed to make voluntary reductions in emissions. On December 15, 2004, the commission adopted an agreed order SIP to make these voluntary reductions federally enforceable. The agreed orders included NO_x reductions of 2,359 tons per year (tpy), which is equivalent to 6.46 tpd.

The Texas Emissions Reduction Plan (TERP) provides grants to eligible projects in nonattainment areas and affected counties to offset the incremental costs associated with reducing emissions of NO_x. Projects in the BPA area that have been funded thus far together with future TERP projects are projected to result in NO_x reductions of 3.0 tpd by 2007.

Total NO_x emission reductions from the agreed orders and TERP projects that will occur by 2007 total 9.46 tpd, which is greater than 3% of the 1999 target level. These reductions are real, permanent, and federally enforceable. They were not relied upon in any pre-2004 rate-of-progress or attainment demonstration. The agreed order and TERP reductions will occur within the same time frame as reductions from the contingency measure would have occurred. For these reasons, the NO_x emissions reductions resulting from the agreed orders and TERP projects are sufficient to replace the marine vessel loading contingency measure.

EMISSION INVENTORY

EPA stated that they are still concerned about the accuracy of the point source VOC inventory for the petrochemical industry. The EPA mentioned the TCEQ stakeholder process for emission inventory improvement in the HGB area, the requirement for the use of correlation equations for estimating fugitive emissions, and the monitoring rules in Chapter 115 and their impact on the highly reactive VOC (HRVOC) inventory in the HGB area as positive steps the TCEQ is taking to improve the emissions inventory. However, the EPA stated that uncertainty in the emissions inventories of HRVOCs in the BPA area and the inventories of less reactive VOCs in both the HGB area and in the BPA area still exist and must be addressed in future planning efforts.

The TCEQ is committed to continually improving emissions data throughout the state. The TCEQ's revised emissions inventory guidance requires the use of correlation equations for estimating fugitive emissions. The revised guidance also includes technical supplements providing specific detailed instruction for calculating VOC emissions from combustion sources, cooling towers, flares, and marine facilities.

The TCEQ also conducted a remote sensing VOC project in July 2005. The primary goal of this project was to identify VOC emission sources that have possibly been unreported or under-reported in the TCEQ emissions inventory. To identify VOC plumes, the TCEQ conducted helicopter flights around the Houston Ship Channel, the Texas City industrial area, the BPA industrial areas, and the areas between those geographic locations using a VOC-imaging infrared camera. The TCEQ also conducted observations from public roads, public areas, stationary elevated positions, and public waterways such as the Houston Ship Channel. The commission anticipates new information from this project about VOC sources that can be used to support emissions inventory guidance development.

Additionally, the new standard language for new source review air permit flare conditions includes continuous monitoring for flares that emit greater than 100 tons per year. This provision has been required for several refineries in the state. The commission is confident that these measures will lead to better characterization and quantification of existing emission sources in the BPA area and will in turn lead to substantial further reductions in hydrocarbon emissions.

EPA expressed concern that the emissions inventory stakeholder process has lost momentum. EPA believes that future SIP revisions must be based on improved emissions information and encouraged the TCEQ to use the information collected so far in the stakeholder process to make future proposals on how to improve the emissions inventory.

The TCEQ remains committed to the emissions inventory stakeholder process and continued improvement of the emissions inventory. The last stakeholder meeting was held on July 15, 2005. The TCEQ is open to suggestions on how emissions inventories can be improved.

PHOTOCHEMICAL MODELING AND ANALYSIS

SETRPC commented that their independent assessment of the 8-hour ozone episode day classification scheme suggests that there are more instances where transport influenced an exceedance than indicated in the proposed SIP.

The commission takes note of this disagreement and looks forward to continuing to work with SETRPC to accurately assess the influence of pollutants from different sources on monitors in the BPA area. The commission notes that a major goal of the Texas Air Quality Study Part II (TexAQS II), being conducted in 2005 and 2006, is the identification and quantification of transported ozone and ozone precursors throughout eastern Texas. The study should further define the role of transport in the area's air quality.

EPA recommended that TCEQ conduct modeling sensitivity analysis for the chosen attainment year and include this analysis in the final submittal of the SIP.

As stated in previous responses, the TCEQ has included 2006 modeling (backcasted from 2007 modeling) in this adoption. EPA classified the BPA area as marginal for the 8-hour ozone standard, and as such, the state is not required to submit photochemical modeling under provisions of the 1990 amendments to Federal Clean Air Act. By modeling the area for 2007 and applying a reasonable backcasting approach to 2006, the commission has already exceeded its requirements under the Act.

EPA stated that if 2005 is used as the attainment year, the analysis should include the additional HRVOC emissions that exist in the HGB area since facilities are not required to comply with the HRVOC cap in 2005.

The SIP revision now uses an attainment year of 2006, instead of modeling 2005 as a representative year showing progress toward attainment, to demonstrate attainment in 2007. Therefore, this analysis is not necessary.

EPA requested that the TCEQ letter dated February 11, 2005, which discusses applying a screening test to ensure unmonitored areas within the modeling domain have no ozone exceedances in the future, be included in the final SIP submittal.

The February 11, 2005, letter is included as Appendix V.