

Eighth Biannual Report on the
Early Action Compact for
Northeast Texas

December 19, 2006
Draft 1

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Background

On December 20, 2002 local governments in a five county area of Northeast Texas (Gregg, Harrison, Rusk, Smith, and Upshur counties) entered into an Early Action Compact (EAC) with the U.S. Environmental Protection Agency (EPA) and the Texas Commission on Environmental Quality (TCEQ). The purpose of the EAC is to develop and implement a Clean Air Action Plan (CAAP) that will reduce ground level ozone concentrations throughout the five county area to comply with the 8-hour ozone standard by December 31, 2007 and maintain the standard beyond that date. The EAC includes a series of milestones to guide progress toward the development of the CAAP and as shown in Table 1. The area also must submit progress reports to EPA documenting progress in implementing the EAC and achieving the milestones. The requirements for the progress reports are given in EPA's April 4, 2003 guidance. This is the Eighth (December 2006) progress report covering activities for the second half of 2006.

Table 1. Key milestone dates for the Northeast Texas Early Action Compact (EAC).

Date	Item
December 31, 2002	Signed EAC agreement
June 16, 2003	Identify/describe potential local emission reduction strategies
November 30, 2003	Initial modeling emission inventory completed Conceptual model completed Base case (1999) modeling completed
December 31, 2003	Future year (2007) emission inventory completed Emission inventory comparison for 1999 and 2007 Future case modeling completed
January 31, 2004	Schedule for developing further episodes completed Local emission reduction strategies selected One or more control cases modeled for 2007 Attainment maintenance analysis (to 2012) completed Submit preliminary Clean Air Action Plan (CAAP) to TCEQ and EPA
March 31, 2004	Final revisions to 2007 control case modeling completed Final revisions to local emission reduction strategies completed Final attainment maintenance analysis completed Submit final CAAP to TCEQ and EPA
December 31, 2004	State submits SIP incorporating the CAAP to EPA
December 31, 2005	Local emission reduction strategies implemented no later than this date
December 31, 2007	Attainment of the 8-hour ozone standard

Implementing the Clean Air Action Plan

The TCEQ incorporated NETAC's CAAP into a SIP revision on November 17, 2004. The TCEQ submitted the SIP revision to EPA on schedule by December 31, 2004. On May 16, 2005, the EPA published a proposed rule for approval and promulgation of the Northeast Texas CAAP (Federal Register 70(93): 25794-25798). On August 19, 2005 EPA published the final rule approving and promulgating the Northeast Texas CAAP with an effective date of September 19, 2005 (Federal Register 70(160): 48642-48645).

Ozone Attainment Status

The Northeast Texas ozone monitoring data determine whether the area is in compliance with the National Ambient Air Quality Standards (NAAQS) for ozone. The TCEQ operates three ozone monitors (Continuous Air Monitoring Station, CAMS) in Northeast Texas at Longview, Tyler and Karnack. NETAC operates a research ozone monitor that was located at Waskom in 2002/2003 and in Panola County in 2004/2005. The Panola research monitor began operating for 2006 on April 21 and reports data through the TCEQ as CAMS 627. EPA designated all five NETAC counties as 8-hour ozone attainment areas on April 15, 2004 (see 69 FR 23858).

The annual 4th highest 8-hour ozone values at monitors in Northeast Texas for 2004 to 2006 are listed in Table 2 along with the resulting 2004-2006 8-hour design values. The 2006 data are preliminary pending final quality assurance by the TCEQ. The ozone data for the last 3 years show that 2005 was relatively high ozone year in Northeast Texas and the 2005 data tend to drive up the three year average used to calculate the 2004-2006 design values. The TCEQ monitors at Tyler and Karnack have preliminary design values below 85 ppb and therefore monitored attainment of the 8-hour ozone standard in 2006. The research monitor at Panola monitor also is below the 8-hour standard based on three years of data for 2004 to 2006. After the 2006 ozone season, the Longview monitor has a preliminary design value of 85 ppb which is out of compliance with the 8-hour ozone standard. Under the Northeast Texas EAC, the Longview monitor must comply with the 8-hour ozone NAAQS by December 31, 2007.

Table 2. Annual 4th highest 8-hour ozone values (ppb) and 2006 8-hour ozone design values for Northeast Texas

Year	Longview	Tyler	Karnack	Panola
2004	83	81	77	75
2005	88	83	84	79
2006	84	82	78	79
Preliminary 2004-2006 Design Value	85	82	79	77

Note: 2006 data are preliminary pending final quality assurance by the TCEQ

The recent trends in 8-hour ozone design values for Northeast Texas monitors are listed in Table 3, including the preliminary 2004-2006 design values. The Karnack design value has declined steadily to 79 ppb. The Panola design value is holding steady at 77 ppb based on data for just the 2004-2006 period. The design value at Tyler rose by 1 ppb to 82 ppb for 2004-2006.

The design value at Longview has increased steadily by 1 ppb per year over the past three years and the preliminary 2004-2006 value of 85 ppb is out of compliance with the 8-hour standard.

Table 3. Recent trends in 8-hour ozone design values (ppb) for Northeast Texas

Design Value for Years	Longview	Tyler	Karnack	Panola
2002-2004	83	81	81	N/A
2003-2005	84	81	80	77
Preliminary 2004-2006	85	82	79	77

Note: 2004-2006 data are preliminary pending final quality assurance of the 2006 data by the TCEQ

Based on the 2006 ozone data shown in Table 2, the Longview monitor must have a 4th high 8-hour ozone of 82 ppb or lower in 2007 to return to compliance with the 8-hour standard. Figure 1 shows the trends in the annual 4th highest 8-hour ozone values at the Longview and Tyler monitors. The Longview monitor had an annual 4th highest 8-hour ozone value of 82 ppb in both 2001 and 2003, but those are the two lowest ozone years at Longview in the past ten years.

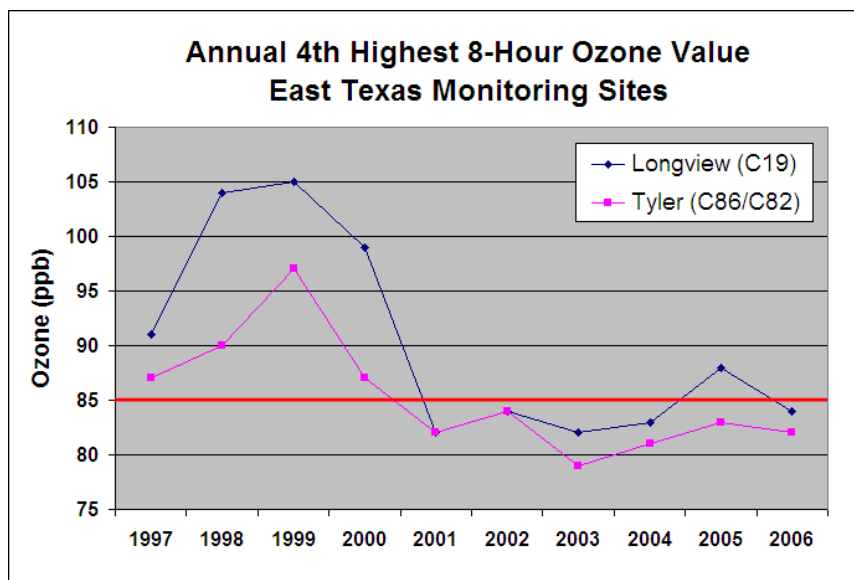


Figure 1. Trends in annual 4th highest 8-hour ozone values (ppb) at the Longview and Tyler monitors in Northeast Texas

Analysis of 2006 Ozone Data

NETAC has studied the high ozone days recorded in 2006 and considered how the 2006 ozone season compares to previous high ozone days that were considered in developing the CAAP for the EAC. There were eight days in 2006 when 8-hour ozone levels of 85 ppb or higher were monitored in Northeast Texas. Factors that contributed to high ozone in Northeast Texas in 2006 were:

- Five ozone days at Longview were associated with ozone production from local sources combined with a regional 8-hour ozone background of about 65 to 80 ppb. On several high ozone days at Longview elevated sulfur dioxide was observed at the same time as the ozone peak, indicative of plume impacts from nearby power plants. Some days had light and variable winds that may have combined emissions from several nearby sources to produce elevated ozone at the Longview monitor.
- Two high ozone days at Tyler had easterly/northeasterly winds that combined ozone production from Northeast Texas sources with regional background ozone.
- Regional 8-hour ozone levels in air entering the region were 70 ppb or higher on half of the days when Northeast Texas monitors record values of 85 ppb or higher.
- Three high ozone days at the Panola and Karnack monitors, which are located close to the border with Louisiana, were influenced by easterly winds that transported elevated ozone across the border into Texas.

The factors that contributed to high ozone levels in Northeast Texas in 2006 are consistent with the factors that occurred on the days that NETAC modeled to develop the CAAP. The surface monitoring data from the 2006 ozone season do not change the conceptual understanding of what factors lead to ozone levels exceeding the 8-hour ozone standard in 2006. Emissions from sources within Northeast Texas were an important contributing factor on high ozone days at Longview in 2006.

Emission Reduction Measures

NETAC's CAAP includes modeling for a 1999 episode and a demonstration that the area expects to remain in compliance with the 8-hour ozone standard through 2007 and 2012 due to a combination of local and regional emission reduction measures. NETAC is developing new ozone models for recent ozone episodes and will reevaluate the effectiveness of local emission reductions and other expected emissions changes through 2012. The local measures included in the CAAP attainment demonstration are reductions in NO_x emissions at several facilities operated by AEP, TXU and Eastman Chemical Company in Northeast Texas and VOC reductions at facilities operated by Eastman Chemical Company and Huntsman Chemical Company. The local NO_x and VOC reduction measures have been in place since 2005 or earlier.

The CAAP also describes additional local emission reduction strategies that go beyond the attainment demonstration to further improve air quality in Northeast Texas. In particular, NETAC initiated a "pilot program" to demonstrate NO_x emission reduction technologies for gas compressor engines. NETAC's 1999 emission inventory estimated that 32 tons/day of NO_x emissions are generated by a large number of relatively small gas compressor engines that are widely distributed throughout the five county area. A recently completed 2005 emission inventory estimated even higher NO_x emissions from small gas compressor engines in the five county area. To date, NETAC's pilot program has retrofitted six gas compressor engines and demonstrated that NO_x emissions could be reduced by approximately 96% at a cost effectiveness of less than \$200 per ton of NO_x reduced. NETAC sought funding in 2005 for broader

implementation of the gas compressor retrofit program through TCEQ's supplemental environmental projects (SEP) program and through the TERP program. To date, funding has not been authorized under either program. NETAC is continuing the gas compressor pilot program and is continuing to seek TCEQ funding for early and widespread implementation of gas compressor emission controls in Northeast Texas.

EPA's October 17, 2005 memorandum to EAC areas provided guidance on reporting progress with implementing local emission reductions. The status of the six local measures discussed in the CAAP at the end of 2005 is reviewed below.

1. Eastman Chemical Company enhanced leak detection/repair (LDAR)

- Summary: Enhanced leak detection/repair programs were implemented in the cracking plants and polyethylene units at Eastman Chemical Company near Longview.
- Status: Measures were implemented by July 11, 2005 and are documented by Voluntary Emissions Reduction Permits #47007, #48588 and #48590.
- Implementation date: July 11, 2005.
- Emission reductions: 0.63 TPD of VOC.
- Resources: Eastman Chemical Company implemented the LDAR programs.

2. Huntsman Chemical Company enhanced leak detection/repair (LDAR)

- Summary: Enhanced leak detection/repair programs at Huntsman Chemical Company near Longview.
- Status: Measures were implemented in the first half of 2005 and are documented by Flexible Plant-wide Applicability Permit Limit (PAL) Permit # 18105.
- Implementation date: 2005
- Emission reductions: 0.08 TPD of VOC by 2005; 0.12 TPD of VOC by 2008
- Resources: Huntsman Chemical Company implemented the LDAR programs

3. NOx reduction strategies for gas compressor engines

- Summary: Retrofit small (< 500 hp), spark-ignited, rich-burn compressor engines used in natural gas production with exhaust catalysts and electronic air/fuel ratio controllers.
- Status: In 2005, NETAC completed a pilot project to demonstrate the effectiveness and cost-effectiveness of this strategy on five engines within the NETAC area. At the end of 2005 these controls were achieving an estimated emission reduction of 0.1 TPD NO_x. This emission reduction is not claimed because the pilot project was a demonstration project, not an enforceable emissions reduction strategy. NETAC sought funding in 2005 for wider and enforceable implementation of this strategy through the TCEQ "TERP" and "SEP" programs. To date, funding has not been authorized under either program.
- Implementation date: NETAC completed its pilot program to demonstrate gas compressor controls in August 2005. The program has yet to be implemented on a wider scale due to lack of TERP or SEP funding.
- Emission reductions: No enforceable emissions reductions to date.

- TCEQ is still evaluating NETAC's application for "SEP" funds and has made no decision concerning funding the program using "TERP" funds.

4. DOE "Clean Cities Program" voluntary on-road vehicle emission reductions

- Summary: Funding for clean-fueled propane vans for local transit agencies.
- Status: 23 propane-fueled vans placed in service by the end of 2005
- Implementation date: On-going
- 0.5 TPY VOC 2.5 NO_x TPY
- Funded by DOE's Clean Cities program

5. Public awareness program

- East Texas Council of Governments (ETCOG) runs public awareness programs for the NETAC area. Includes: ozone watch and warning communications network between local gov't & industries to communicate ozone action day forecasts issued by TCEQ; a NETAC website; public service announcements; school programs and teacher training workshops; distribution of public information & educational materials; and an Annual Ozone Season kick-off meeting for the NETAC area.
- ETCOG runs the NETAC public awareness program in 2006 as in previous years.
- Implementation date: On-going through 2006.
- Emission reductions: This measure has program-based benefits but specific emission benefits are not quantified.
- Funded by the State of Texas through Rider funding for near-nonattainment areas (NNAs)

6. Energy efficiency programs

- Summary: The City of Tyler program includes: building lighting; HVAC & Controls Upgrades; Traffic Light Upgrades; Park Lighting Upgrades; and Wastewater Plant Motor and Controls Upgrades. The City of Longview program includes: Improvements in lighting; HVAC systems; swimming pool operations; and purchase of energy efficiency rated equipment for Public Safety communications; The City of Marshall is initiating an energy efficiency plan with assistance from Texas A&M University.
- Status: On-going.
- Implementation date: 2003-2008
- Emission reductions: Emission benefits for the NETAC area are not quantified because it is difficult to determine where the reduced electrical generation would occur.

NETAC's Stakeholder Process

In 1995 local elected officials and other leaders in local government, business and industry created Northeast Texas Air Care (NETAC) in order to provide leadership and guidance in addressing ozone air quality issues in a five county area consisting of Gregg, Harrison, Rusk,

Smith, and Upshur counties. A policy committee consisting of representatives of local government, business and industry, the general public and environmental interest groups governs NETAC. (Attachment 1)

From its inception NETAC has emphasized the need to ensure that air quality planning activities are developed using scientifically sound techniques. In order to achieve this objective NETAC created a Technical Advisory Committee to undertake, supervise, and guide technical studies such as emission inventory development, air quality modeling and control strategy development, and specialized monitoring studies. The Technical Advisory Committee reports to the policy committee. The Technical Advisory Committee consists of representatives from local government, local business and industry, EPA technical staff, TCEQ technical staff, Texas Department of Transportation planning staff, and the general public and environmental interest groups. (Attachment 2)

NETAC is actively involved in public education and outreach programs concerning ozone air quality issues. This work is guided by NETAC's Public Education/Outreach Committee, which consists of representatives from local government, local business and industry, TCEQ staff, and environmental interest groups (Attachment 3). The Public Education/Outreach Committee reports to the NETAC Policy Committee.

NETAC receives staff support for its activities from the East Texas Council of Governments (ETCOG), which receives and administers grant funds provided by the Texas Legislature for air quality planning activities.

NETAC and its subcommittees meet on an as-needed basis. All meetings are open to the public and are posted at the East Texas Council of Governments and advertised through the distribution of information packets to local media outlets.

During the second half of 2006 NETAC the Technical Advisory Committee held meetings on August 10, November 17 and December 19, 2006. The NETAC Policy Committee met on August 10 and December 19, 2006.

The August 10, 2006 Technical and Policy Committee meetings discussed: (a) Potential ozone impacts in Northeast Texas of several proposals to build new coal-fired power plants and TXU's proposal for emissions offsets; (b) Progress on continuing NETAC's gas compressor pilot project to demonstrate engine retrofits that reduce NOx emissions in Northeast Texas; (c) Progress on a 2005 emissions inventory for gas compressor engines in Northeast Texas; (d) Plans for NETAC's 2006 aircraft study; (e) Analysis of high ozone days in 2006.

The November 17, 2006 Technical Committee meeting discussed: (a) Status of proposals to build new coal-fired power plants in Eastern Texas and TXU's proposal for emissions offsets; (b) A report on NETAC's gas compressor pilot project to demonstrate engine retrofits that reduce NOx emissions in Northeast Texas; (c) Status of a TCEQ's plans for a rule that would regulate emissions from small engines, including gas compressor engines in Northeast Texas; (d) A review of recently completed NETAC technical studies; (e) Plans for NETAC technical studies in 2007; (f) Analysis of high ozone days in 2006.

The December 19, 2006 Technical and Policy Committee meetings discussed: (a) An analysis of high ozone days in 2006 and implications for 2007; (b) Reports on recently completed technical studies including ozone modeling of 2002, ozone modeling of 2005, an emission inventory of gas compressor emissions in 2005, and NETAC's gas compressor pilot program; (c) Status of proposals for new coal-fired power plants and TXU's proposal for emissions offsets; (d) Status of several efforts to achieve early and widespread implementation of gas compressor controls in Northeast Texas; (e) Submission of the December 2006 semi-annual EAC progress report (this document).

Public Outreach

NETAC is actively engaged in public education and outreach activities concerning ozone air quality issues. The public outreach committee organized an ozone season awareness kickoff event for April 25, 2006. The purpose of the "kickoff event" is to raise public awareness of ozone air quality issues and encourage public support for programs designed to minimize ozone formation.

NETAC Public Education/Outreach activities for 2006 have consisted of the following:

- Hosting the NETAC website (www.netac.org). The website is regularly updated with meeting dates, associated agendas and enclosures for Committee meetings. The public can also find minutes of past meetings, various air quality reports, and a directory of all participants in NETAC.
- In cooperation with the Texas Commission on Environmental Quality, NETAC and local governments in the area provide "ozone action alerts" for the public on days when TCEQ predicts meteorological conditions are favorable for high ozone formation. Notification is provided through the NETAC website, local government public access channels, and the display of ozone alert flags.
- The Annual Ozone Season Awareness Event was held in Tyler at the Rose Garden Center on April 25, 2006. Speakers at the event included David Schanbacher, TCEQ Chief Engineer, who discussed the DFW SIP and potential rules affecting East Texas. Other speakers included Jim Mathews, NETAC Legal Counsel, who gave the NETAC Progress Report for 2005 and Laura Higgins of Drive Clean Across Texas.
- NETAC also sponsored a series of public service announcements (PSAs) that ran on several local radio stations from May through September 2006. A series of five different PSAs sought to educate the public about what they can do at both work and home during the ozone season to reduce their impact on air quality readings.

- The NETAC Public Education/Outreach Committee approved the purchase of book covers for school districts in the five county region for the 2006-2007 school year. The book covers have an informational theme as well as including information on where to learn more about air quality. This is one of the most well received activities as ETCOG receives numerous thank you letters from students and school administrations.
- The NETAC Public Education/Outreach Committee approved the purchase of additional signage for the inside of transit buses operated by ETCOG Rural Transit. The signage promotes the air quality benefits of public transit and the alternative-fueled buses operated by these transit providers.

Technical Activities

NETAC carried out the following technical activities in the second half of 2006 to support the EAC and CAAP.

Air Monitoring

Air-quality data for Northeast Texas in 2006 are available from TCEQ monitoring sites and several NETAC studies. NETAC's air monitoring activities in 2006 are described below.

NETAC has operated an ozone research-monitoring site for several years. For the 2006 ozone season the research monitor was located in northern Panola County near the border between Texas and Louisiana. The research monitor collected data for ozone, oxides of nitrogen (NO_x), sulfur dioxide (SO₂) and meteorological parameters that were reported via the TCEQ's web site as CAMS 627. The quality assurance procedures for the NETAC monitor are consistent with operating the site as a research site rather than a NAAQS compliance monitor.

For several years, NETAC has collected canister VOC samples at CAMS 19 to augment the TCEQ's monitoring activities at Longview. NETAC's VOC auto-sampler also collects continuous (hourly) data for total non-methane hydrocarbons (TNMHC) and methane that are reported through the TCEQ's web site. VOC sample collection at CAMS 19 in 2006 was directed toward understanding VOC composition during periods of high TNMHC.

The CAMS 19 monitor near Longview frequently records higher maximum ozone levels than other monitoring locations in Northeast Texas. Contributing factors appear to be proximity to local point sources and wind patterns that sometimes re-circulate emissions from nearby sources. Lake breezes from nearby Lake Cherokee could influence the wind patterns at CAMS 19. NETAC conducted a low-cost study of wind patterns near Lake Cherokee using home weather stations operated by local volunteers. The study concluded that lake breezes do not cause the wind recirculation patterns that influence ozone at the CAMS 19 monitoring site.

NETAC conducted an aircraft study in August and September of 2006 to obtain data on ozone contributions from local sources in Northeast Texas and ozone transport. These data are being analyzed and will be reported on in 2007.

Ozone Modeling

NETAC completed seasonal ozone modeling for June to September of 2002 and May to September of 2005. These periods were selected to coincide with NETAC's 2002 and 2005 aircraft studies. The modeling makes use of recently completed emissions data from the Central Regional Air Planning Association (CENRAP). The seasonal modeling was less detailed than the SIP quality modeling completed for the CAAP and EAC, but was still useful for technical studies. The 2002 modeling evaluated the relative contributions of local sources and ozone transport to high ozone events in 2002 and concluded that both local sources and regional transport play important roles, consistent with NETAC's conceptual model of the causes of high ozone. The 2005 seasonal modeling was developed to episodic models for two periods in 2005 that had high ozone days in Northeast Texas. The modeling for two episodes periods in 2005 may serve as the basis for more refined ozone modeling in 2006.

Evaluating Emissions Growth

The TCEQ has received permit applications to construct several new coal-fired electrical generating units (EGUs) in eastern Texas to meet future energy demand in the state. NETAC evaluated the potential ozone impacts on Northeast Texas of the proposed new EGUs using NETAC's ozone model for August 1999. TXU has proposed an emissions offset strategy to mitigate emissions increases from proposed new EGUs. NETAC has modeled the impact of TXU's offset strategy in Northeast Texas. NETAC's modeling shows that ozone increases and reductions in Northeast Texas occur close to the locations of emissions changes and will be sensitive to the magnitude of the emissions changes. Changes at TXU's Martin Lake plant are of particular importance to ozone at the Longview CAMS 19 monitor. The specifications of proposed emission controls at Martin Lake will be important. NETAC will continue to closely follow TXU's plans for Martin Lake and other power plants.

Attachment 1

NETAC Policy Committee

- Mayor Joey Seeber, Co-Chair, City of Tyler
- Judge Bill Stoudt, Co-Chair, Gregg County
- Judge Becky Dempsey, Smith County
- Judge Fowler, Upshur County
- Judge Wayne McWhorter, Harrison County
- Judge Sandra Hodges, Rusk County
- Mayor Jay Dean, City of Longview
- Mayor Edward Smith, City of Marshall
- Mayor John Fullen, City of Henderson
- Jeff Howell, City Manager, City of Kilgore
- Greg Morgan, Project Coordinator, City of Tyler
- Jeff Ellington, City Manager, City of Gilmer
- Chuck Ewings, Interim City Manager, City of Longview
- Janet Cook, Asst. City Manager, City of Marshall
- Tammy Campbell, WE CAN
- David Duncan, Environmental Regional Manager, TXU
- Darrell J. Rachels, Eastman Chemical Company
- Keith Honey, General Manager, AEP/SWEPCO
- Scott Snedden, Environmental Supervisor, Delek Refining
- Cliff Todd, Executive Director, MEDCO
- John M. Stroud, Executive Director, LEDCO
- Tom Mullins, Executive Director, Tyler Economic Development Corporation

Attachment 2

NETAC Technical Advisory Committee

- Mayor Jay Dean, City of Longview
- Robert Ray, Assistant City Attorney, City of Longview
- Councilman John Bolster, City of Longview
- Karen Owen, Longview MPO
- Greg Morgan, Projects Coordinator, City of Tyler
- Heather Nick, Tyler MPO
- Janet Cook, Assistant City Manager, City of Marshall
- Jim Mathews, NETAC General Counsel
- Erik Snyder, EPA Region 6
- Carrie Paige, EPA-Region 6
- Keith Mars, SIP Coordinator, TCEQ-Austin
- Doug Boyer, TCEQ-Austin
- Charles Murray, TCEQ-Region 5 Air Program
- Dale Spitz, TXDOT-Tyler District
- Sharon Wellman, Eastman Chemical Company
- Scott Snedden, Delek Refining
- Kelly Spencer, AEP/SWEPCO
- Bruce Moore, Manager Air Quality West, AEP/SWEPCO
- Kimberly Hughes, AEP/SWEPCO
- Dick Robertson, TXU Air Quality Manager
- David Duncan, TXU
- Dennis Leahey, Huntsman Chemical
- Rick Lowerre, Caddo Lake Institute, Inc.
- Ramon Alvarez, Ph.D., Environmental Defense Fund
- Laura Guthrie, CenterPoint Energy

Attachment 3

NETAC Public Education/Outreach Committee

- Robert Ray, Assistant City Attorney, City of Longview
- Greg Morgan, Project Coordinator, City of Tyler
- Janet Cook, City of Marshall
- Sharon Wellman, Eastman Chemical Company
- Rick Hanning, TXU
- Kathy Bell, TCEQ-Region 5 Air Program
- Leigh Ann Brunson, TCEQ-Austin
- Kelly Spencer, AEP/SWEPCO
- Scott McCloud, AEP/SWEPCO