

Air Quality



A NEW Decade: A *NEW* Environment

Up in the Air



In fiscal year 2010, Oklahoma was in attainment with all National Ambient Air Quality Standards (NAAQS), which made this a very good year. But standards don't last forever.

The Environmental Protection Agency (EPA) is

required to review primary and secondary federal air quality standards every five years. Standards for all six primary and five secondary air pollutants are either just coming out or are still in review except for lead, which was reset in 2008.

Ongoing NAAQS Reviews: Current Schedule

MILESTONE	POLLUTANT						
	Lead	Nitrogen Dioxide (NO ²) Primary	Sulfur Dioxide (SO ²) Primary	Ozone	NO ² /SO ² Secondary	Carbon Monoxide	Particulate Matter
NPR	New schedule being developed	<u>Jun 26, 2009</u>	<u>Nov 16, 2009</u>	Dec 21, 2009	<u>Feb 12, 2010</u>	<u>Oct 28, 2010</u>	Jan 2011
NFR	Oct 15, 2008	<u>Jan 22, 2010</u>	<u>Jun 2, 2010</u>	Aug 31, 2010	<u>Oct 19, 2010</u>	<u>May 13, 2011</u>	Oct 2011

NOTE: NPR is notice of proposed rulemaking. NFR is notice of final rulemaking. Underlined dates indicate court-ordered or settlement agreement deadlines. Schedule for PM subject to change pending Administrator's decisions on how to respond to remand of 2006 PM decisions.

Staying in attainment is a balancing act. Scientific studies show that health may be affected by even smaller and shorter exposures to pollutants, prompting more stringent measures to protect public health. More protection often comes in the form of regulation seeking emission reductions. This could be through more stringent permitting, new

control technology or maintenance practices, but it almost always carries a heavy price tag for everyone.

That's why 2010 has been a year of planning, hypothesizing and anticipating changes. The Air Quality Division has explored many options because much is "*up in the air*."

A Look at Ozone



Oklahoma is now in attainment with the 0.075 parts per million (ppm) standard for ozone that was set in 2008. However, EPA is reconsidering the standard and may revise it to a value between 0.070 and 0.060 ppm to better protect

human health. When the Air Quality Division forecasts expected values at monitoring sites across the state, attainment status comes into question.

At a standard of .070 ppm for ozone, 7 of the 15 sites would not meet standards. At .068 ppm, 10 of the 15 sites would not meet standards. At .066, 13 of the 15 sites might not attain the NAAQS.

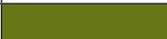
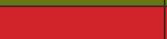
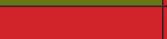
New standards and monitoring requirements for nitrogen dioxide, sulfur dioxide, lead and carbon monoxide bring their own distinct challenges. New sites will be added for “near road” nitrogen dioxide monitoring in Oklahoma City and Tulsa. Some method changes and additional monitoring for

lead and particulate matter will be conducted in north central Tulsa to enhance DEQ’s lone NCore (National Core multi-pollutant and trends) site. This NCore site is the most comprehensive and important site in the DEQ Air Monitoring Network.

Air Quality Health Advisories will be expanded to notify the public not only of ozone and particulate matter in smaller concentrations but to advise of hazards associated with nitrogen and sulfur dioxides and coarse particulate matter.

Color Key	Projected Status
	Attainment
	Near Non Attainment
	Non Attainment

Values expressed are in parts per million (ppm)

Ozone Monitoring	Current Standard	Proposed	Proposed	Proposed
Sites	.075	.070	.068	.066
Tulsa West				
Tulsa East				
Tulsa Central				
Tulsa North				
Tulsa South				
OKC North				
OKC Central				
OKC Moore				
OKC Goldsby				
OKC Choctaw				
OKC Yukon				
Lawton North				
Lawton South				
McAlester				
Seiling				



What's Up In the Air?

Emission data identifying emissions in Oklahoma's air are processed in Redbud.

Every year Oklahoma facilities report their air pollutant emissions to the emission inventory unit of the Air Quality Division. Six years ago, DEQ developed an electronic emissions inventory interface called Redbud. After DEQ worked through the growing pains any new computer application will have, Redbud became a valuable tool for collecting data. The inventory cycle for 2010 became a year for fine tuning.

Redbud has continued to evolve to meet new EPA requirements and in response to customer requests. In 2010, the division added a field to improve reporting of control equipment. Redbud now also includes a check box for reporting emissions less than the minimum. A field for horsepower allows staff to better replicate reported emissions.

Using client input, staff members rearranged portions of the turnaround documents and grouped similar items, eliminated unneeded fields and improved the flow of data. They expanded and improved the queries used for quality control so the division can have greater confidence in its inventory.

This data is the major factor used to ascertain program effectiveness, measure progress and determine viability of air quality programs in Oklahoma and across the nation. Industry annual operating fees to the state are determined by their yearly reported emissions. Those fees partially fund Oklahoma's air quality program, which is one reason why it is critical to know exactly what's up in Oklahoma's air.



Smelly air doesn't always equate to unhealthy air.

What Is That?

Being able to smell air pollution can be a good thing because at least it is detectable. Many air pollutants are invisible. Air pollutants can be colorless, odorless and can escape into the air from joints in pipes, tiny holes in tubing or malfunctions of equipment. In fact, equipment leaks contribute significantly to air pollution and often are not apparent to the public. The Air Quality Division has purchased its first Infrared Hawk Camera to use in Leak Detection and Repair (LDAR) evaluations. The camera is a critical tool to identify sources of leaking volatile organic compounds (VOCs.)

In recent years, EPA has made LDAR evaluations a regional priority, aiming to reduce the amount of toxic

air emissions and VOCs by ensuring compliance with federal Maximum Achievable Control Technology standards. Primary targets for LDAR are natural gas processing plants, petroleum refineries and landfills.

The Air Quality Division Compliance and Enforcement Group responded to EPA's priority by stepping up the state's LDAR program. The group developed a more systematic review of periodic LDAR reporting and formed inspection teams to conduct on-site compliance evaluations of LDAR equipment. The teams use COSMOS XP-316 gas detectors and a TVA-1000B Flame Ionization Detector to check components for leaking VOCs. Information collected by the team is then used to determine compliance.



Monarch butterflies, like excess emissions, will migrate but where and when?

Accounting for the Uncountable

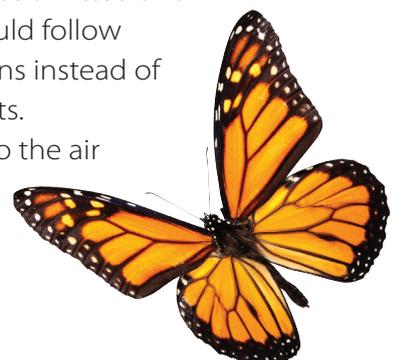
Excess emissions are often difficult to track. These emissions are caused by process start-up, shutdown and malfunctions at facilities – things that cannot be predicted or controlled. To get a better estimate of these unexpected pollutants, the Air Quality Division amended Subchapter 9 of Oklahoma’s air quality rules to streamline and clarify the reporting requirements.

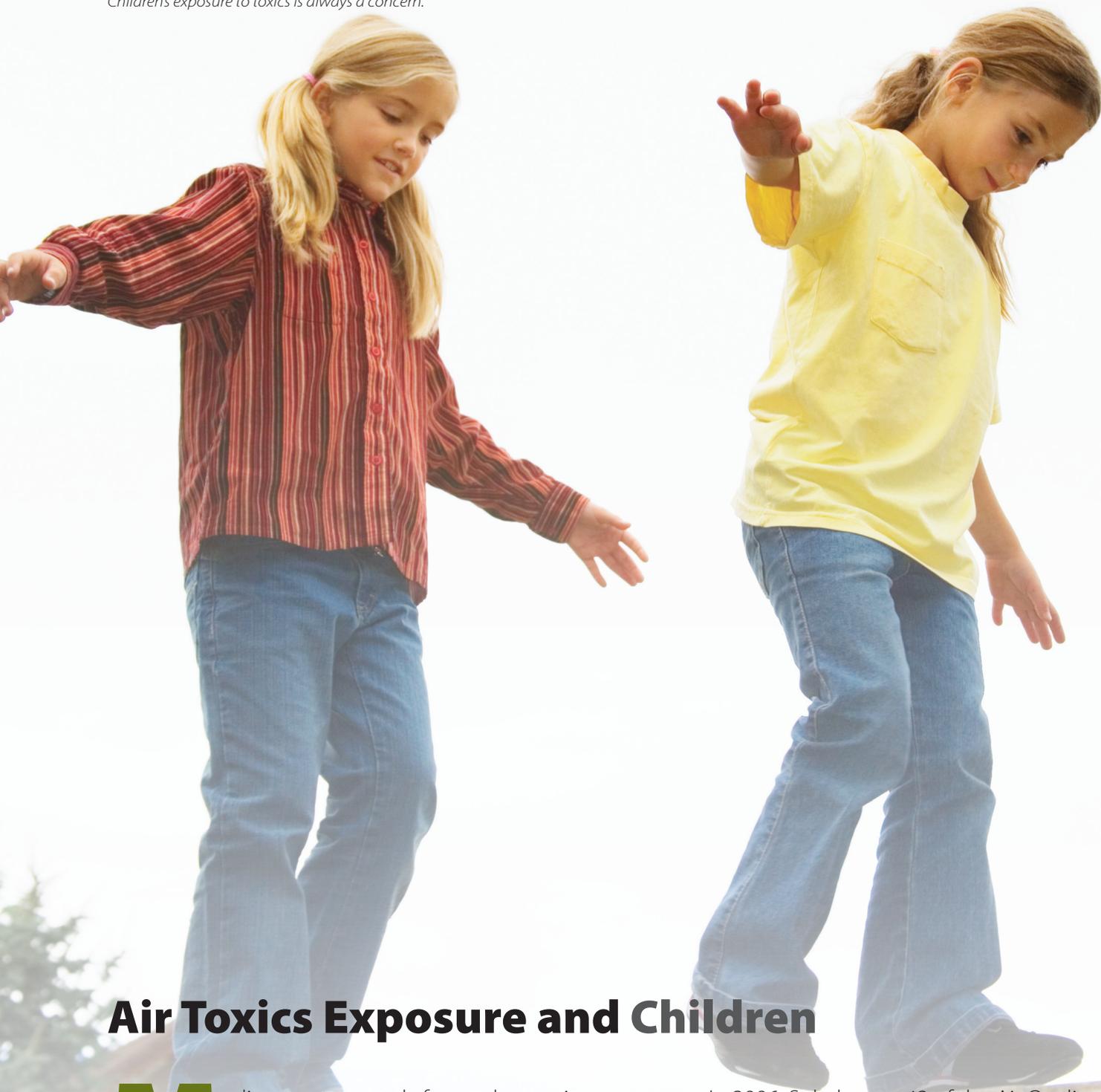
The new rule established affirmative defenses to encourage reporting without fear of monetary penalties. However, every excess emission is considered a violation of a facility’s permit and the Clean Air Act. The affirmative defense is used only to eliminate the penalty, not the violation. It eliminated immediate notice requirements for excess emissions above a certain threshold that were not likely to pose a significant threat to human health or the environment. The new rule also extended reporting

timelines from 10 to 30 days. Maintenance activities are not included in the affirmative defense. Those emissions will need to be included in a permit.

The division also encouraged facilities to permit their excess emissions as much as possible. By including them in a permit, excess emission reporting will be substantially decreased. A six-month enforcement amnesty was given to facilities that included their excess emissions in a permit. Once a permit application was submitted and deemed complete, a facility could follow those proposed excess emissions instead of submitting Subchapter 9 reports.

Even if a pollutant gets into the air by accident, it’s important that the division knows it is there, either by reporting or by permitting.





Air Toxics Exposure and Children

Media reports recently focused on toxic pollutant concentrations that children across the nation might have been exposed to near schools. These reports were alarming, but in Oklahoma, the Air Quality Division had already revamped the state's toxics rules and developed a monitoring program. In response to the media attention, EPA established toxics monitoring at 63 schools in 22 states - which did not include Oklahoma. However, four of the division's five current air toxics monitoring sites in Oklahoma already are located near schools. Those locations are north Tulsa, Pryor, north Oklahoma City and Midwest City. The data collected at these sites will be critical to the determination of the safety of Oklahoma's school children.

In 2006, Subchapter 42 of the Air Quality rules outlined the framework of a state-based toxics program, eliminating the complexity of the previous program by focusing on chemicals most likely to be emitted in Oklahoma. Appendix O of the rule currently contains state standards for 21 air toxic pollutants and all sites are far below those standards. The state toxics rule and the location of all toxics monitoring sites are formally reviewed annually by the toxics program manager to keep them relevant to chemicals emitted in Oklahoma. More details about Appendix O and the level of measured pollutants can be found in the Appendix O Annual Review document on the Air Quality Division's Web page.



Earth Day, April 22, 2010, at the Oklahoma City Zoo: That day the animals shared their stage with science.

ScienceFest: Is That Excitement in the Air?

More than 5,000 students from across Oklahoma gathered on Earth Day 2010 to celebrate ScienceFest, a unique hands-on approach to environmental science that is organized by the Air Quality Division and other agency and industry partners.

The fourth- and fifth-grade students enthusiastically investigated 25 education stations for demonstrations, experiments and games teaching the

science behind alternative fuels, new technologies and basic environmental practices. The day-long event was at the Oklahoma City Zoo.

In all, DEQ has sponsored ScienceFest for nine years. This year more than 70 schools were represented at the event. Besides the students, more than 1,400 teachers and adult sponsors attended ScienceFest – and perhaps learned a little themselves.

**A NEW Decade:
A NEW Environment**

WEST

