



Air Quality

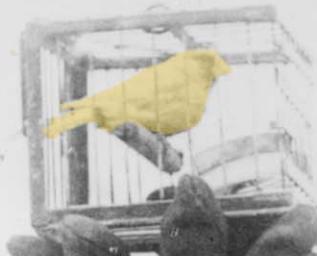
Air Quality: Not Just for the Birds

Air pollution affects all Oklahomans. The Air Quality Division (AQD) knows this because it has been monitoring air pollution in the state for 30 years. For 15 of those years, the division has had to call ozone alerts in specific regions. The alerts have proven effective. Tulsa has moved from nonattainment to attainment status with respect to National Ambient Air Quality Standards (NAAQS) for ozone. Oklahoma City and Lawton have teetered at the brink of nonattainment, but with cooperation from Oklahoma citizens and Mother Nature, both cities should maintain an almost-comfortable level of attainment this year.

Statewide, AQD operates 60 monitors at 34 sites. Until recently, the division used only news media to notify the public when national

air quality standards might be exceeded. With help from an EPA grant, now individuals can receive “e-alerts” directly on their computers or mobile cell phones by signing up at the AQD Web site.

Sing Like a Canary, an AQD public information brochure, recalls the days when caged canaries carried into mines warned of impending danger from poisonous gases. Today, AQD is Oklahoma’s sentinel for air quality. This means Oklahomans can breathe easier — and so can the birds. ■



Sing Like a Canary



5,000 Youth Enjoy DEQ Activities at ScienceFest 2005

On Earth Day, April 21, some 5,000 fourth and fifth graders from around Oklahoma expanded their knowledge of how the world works, at ScienceFest 2005. Interactive science and environmental activities entertained and educated those who stopped at any of the 27 activity stations or attended the Fins and Feathers Show.

ScienceFest is an annual event that promotes scientific diversity. For six hours, students streamed through activity stations, satisfying their curiosity and testing their knowledge and skills. The stations represented various scientific disciplines including biodiversity, the environment and physics. Students also enjoyed an exhibit of alternative-fueled vehicles. In all, 20 agencies and organizations were involved in developing content and activities. "All of the booths were very informative and run by friendly and professional people," said one attendee.

DEQ hosted five ScienceFest activity stations: two on air quality, two on water quality and one



DEQ employees at ScienceFest.

about composting. Test Your Air Quality IQ was a series of air quality questions with multiple-choice answers wired for sound and light to signal correct and incorrect responses. The second air quality station, Air Quality Survivor, was comprised of four puzzles and challenges, each related to a different air quality topic — Fact or Fiction, Word Scramble, Jigsaw Puzzles and Recycle/Non-Recycle. Students listened to a brief presentation on each topic, then raced to complete the challenges. Hands-on activities exposed students to air



Watershed Model

quality issues and tested their comprehension and dexterity. The path to the air quality station was lined with puzzles to keep youth occupied while in line. The Search-and-

Find word puzzle and a maze kept students busy as they waited their turn at the Survivor station. Upon completing challenges, students

continued



Water Limbo Activity



ScienceFest volunteer check-in

could sign the "I Survived Air Quality" Survivor poster.

In a Water Quality activity called We All Live in a Watershed, students investigated a model that showed how individual actions could affect everyone in a watershed, demonstrating the concepts of point and nonpoint sources. Point sources were represented by a pipe coming from a factory; nonpoint sources were illustrated by soil eroding from agricultural fields, cattle wading in streams, automotive fluids washing down a storm drain, lawn-care pesticides running into a stream and similar examples.

At the second Water Quality activity, Water Limbo - How Low Can We Go, students identified pollutants that could contaminate streams and lakes. Role-playing, students tried to get into the water stream, in this case a simulated lake, to dump their pollutants. At that point, they learned several ways to help keep their pollutants out of rivers and streams.

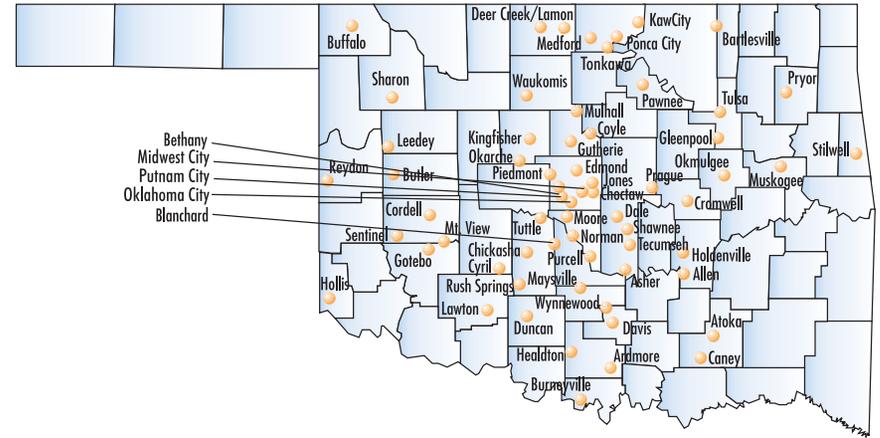
"Our students very much enjoyed the day, and experienced and learned much more about our environment than they would have in the classroom," one teacher said afterward. An event

of this size could not have been undertaken without the support of a terrific team of volunteers. As the day ended, one volunteer said, "Once again, I loved it. The weather was good, kids showed up, and we enjoyed a day being of service." In all, 140 volunteers - 40 of them from throughout DEQ - made the 2005 ScienceFest a success. DEQ, OGE Energy Corp, the Oklahoma Department of Commerce, and the Office of the Secretary of the Environment co-sponsored the event. The 2005 steering committee included the sponsors along with representatives from the Conservation Commission, Tinker Air Force Base, the Department of Tourism and Recreation, the Oklahoma City Zoo, Oklahoma State University Zoology Department and the Department of Education. This was the fourth annual ScienceFest. The event makes a memorable and lasting contribution to the environmental education of Oklahoma students. Exposing youth to the arena of science enhances their awareness of science and stimulates some to pursue careers in the field, while helping all to become better citizens and stewards of the environment. ■



Test Your Air Quality IQ

Schools Registered to Attend ScienceFest 2005



Air Quality Survivor

One of the ScienceFest flags decorated by a participating school.

Kingston Sixth Grader Survives Air Quality Challenge

As the sun set on the low, roaming mountains surrounding the shores of Lake of the Arbuckles in South Central Oklahoma, representatives of four make-believe tribes gathered for the Air Quality Division Environmental Games. The tribes, organized from 58 sixth-grade students from Kingston Public Schools, would spend the third week of April studying science at Camp Goddard.

The first night's challenge was Air Quality Survivor. The tribes: the Pushmakaras, the Lotta Junkas, the Smogafogas and the Polloosha Wooshas. Their guide: long-time Air Quality Program Manager Scott Thomas. Thomas's motto: "Outwit. Outplay. Outlast."

Tribes competed in four team projects and an immunity challenge. The Polloosha Wooshas won the Sally Samplerhead immunity totem, giving their team an edge.

*Polloosha Wooshas
team with Immunity
Totem*





Kingston sixth graders Whitney Carr and Mary Jones survive the Air Quality Survivor Challenge at Kingston Public Schools Science Camp held at Camp Goddard on the Lake of the Arbuckles, April 18, 2005. Pictured with the winner is Scott Thomas of the Air Quality Division.

The Lotta Junkas and the Pushmakaras were eliminated when the Smogofogas won the fifth group project, earning the right to compete against the Polloosha Wooshas in the final team game, the Dirty Air Word Scramble.

The Smogofogas won three of five heats, making their tribal members eligible to vie to be the last person standing. The True/False Transportation Challenge narrowed the field to two students, who at last went head-to-head in a treasure hunt, seeking four substances that produced specific air pollutants. Winning the treasure hunt, Whitney Carr emerged victorious as the Air Quality Survivor of Camp Goddard Science Camp for 2005. Congratulations, Whitney! ■

DEQ Goes Extra Mile To Reduce Ozone



Brandie Carson, Environmental Program Specialist, conducts a gasoline vapor leak test on a tanker truck.

Tulsa County has a specific state rule to help curb ozone emissions from gasoline vapors during spring and summer months. Several times during the ozone season, April through September, DEQ personnel conduct tanker and equipment inspections at Tulsa County's bulk gasoline loading fa-

cilities. Inspectors check for gasoline vapor leaks from facility piping and vapor recovery systems and from tankers as they load. They check for defective gasket seals around the manhole inspection lids on top of the tankers, using special high-tech gasoline vapor testing equipment called COS-

MOS. Inspectors can also detect vapor leaks with sophisticated but basic human detection equipment – their senses of smell and sound. When leaks are found, truck companies have either 5 or 10 days to correct problems, depending on the violation.

In 2004, DEQ inspectors veri-

fied that a number of tankers had been tested by certified tank-tester maintenance shops, and that test methods established by Oklahoma's Department of Transportation Department (ODOT) and EPA were being used. During testing, tankers are first pressurized and then vacuum-tested. Both tests are performed twice to confirm vapor integrity. When a tanker passes, the tester places a DEQ sticker on the upper, left-hand side of the rear of the tanker and attaches an ODOT sticker on the front. During the 2004 ozone season, approximately one-third of all gasoline tankers tested at Oklahoma's four bulk-gasoline loading facilities had vapor leaks. One facility inspected in 2004 had a leak at a vapor recovery hose; the leak was fixed by tightening the hose clamp.

Just as ODOT protects the public by taking steps to prevent hazardous gasoline spills from faulty tankers during an accident, DEQ works to prevent gasoline vapors from tankers and loading facilities from being emitted into the Tulsa atmosphere. ■

Risky Business: A New Risk-Based Approach to Air Toxics

Oklahoma's Department of Environmental Quality (DEQ) is in the process of adopting a new state air toxics rule. When effective, the proposed rule will replace much of the existing state toxics rule (OAC 252:100-41 Control of Emission of Hazardous Air Pollutants and Toxic Air Contaminants) and its cumbersome and sometimes unnecessary permitting requirements. The new Control of Toxic Air Contaminants rule (252:100-42) offers a more logical, monitoring-based approach to controlling air toxics.

DEQ began the rulemaking process by reviewing perceived problems with the current toxics program. The existing rule has of-



continued Flowers reach toward the sun in rural Cleveland County.

ten been criticized as confusing, difficult to implement and including too many substances. With more than 2,000 toxics to consider, the rule has been unwieldy, at the very least. New subchapter 42 attempts to streamline the program.

Among other things, DEQ wanted to reduce the number of substances addressed. From a list of all known toxics, staff focused on substances that were on the EPA priority lists and priority lists from other states. Next, substances not emitted in Oklahoma were removed and for the toxics remaining, staff reviewed detection limitations. If current available technology could not detect the substance at the proposed maximum acceptable ambient concentration (or MAAC) action level, then the substance was removed from the list. The final list now contains 21 toxic air contaminants and can be found in appendix O of the applicable rule. The MAAC established for each substance is based on EPA's lifetime risk assessments.

Oklahoma's redefined toxics program will be implemented unlike any other. The new rule shifts program focus from permitting to monitoring and public notification; DEQ will monitor areas thought to have elevated levels of toxic air contaminants and will notify the public of its findings. In con-

sultation with industry, local governments and affected communities, the department plans to develop strategies for reducing contaminant levels whenever acceptable levels are exceeded.

The toxicity of the air contaminants remaining on the list – that is, the

risk they pose to human health – makes the program an agency priority. The legislature supported general revenue funding to address this critical public health and safety program. Monitoring is costly; the new program could require as much as \$1 million a year. The Air Quality Council ap-

proved the program at its April 20, 2005, meeting. The proposal was presented to the Environmental Quality Board on June 21, 2005. For more information or to view the proposed rules, go to www.deq.state.ok.us/AQDnew/council_mtg/councilmtg.htm. ■



The clouds disperse over a snow covered plain in Oklahoma.

Early Action Plans Finalized for Ozone Reductions

In December 2004, the Oklahoma Department of Environmental Quality, through the Secretary of Environment, officially submitted state implementation plan (SIP) revisions to EPA. The revisions concerned early action compacts for ozone control in the Oklahoma City and Tulsa areas. Early action compacts give local areas the flexibility to develop their own approaches for meeting the national 8-hour ozone standard, provided that the community controls emissions from local sources earlier than the federal Clean Air Act would otherwise require.

For the past several years, the Air Quality Division has been assisting the Indian Nation Council of Governments and the Association of Central Oklahoma Governments develop local control strategies by performing air quality modeling. The Oklahoma City and Tulsa areas now meet the current 8-hour ozone standard at all monitoring locations, but officials in each area have elected to continue participating in Early Action Com-



Transportation improvement projects can contribute to air pollution reductions.

pact programs as a proactive strategy. As part of their SIP submissions, both areas have agreed to implement certain transportation

improvement measures that should reduce mobile source emissions that produce ozone. Air quality modeling now indicates con-

tinuing, if marginal, attainment of the 8-hour standard in Oklahoma's metropolitan areas for the foreseeable future. ■

DEQ's New Source Review Reforms

Proposed reforms to EPA's New Source Review Program will affect all major facilities in Oklahoma. To provide the best permitting service possible to the regulated community, permit engineers such as Jian Yue and Roya Sharifsoltani review the implications of the new rules.



The federal New Source Review (NSR) provisions of the federal Clean Air Act combine air quality planning and air pollution control technology program requirements, both for new and modified stationary sources of air pollution. The

program was originally established by the 1977 Clean Air Act Amendments. The purpose was to ensure that new and modified stationary sources install state-of-the-art pollution controls, assess air quality impacts and prevent violation of

health-based National Ambient Air Quality Standards.

EPA, after more than 10 years of effort, finally published the NSR program reforms in the Federal Register for December 31, 2002. The final federal rule (part 51) re-

quires that DEQ revise its state rule (part 51) to require the state's permitting programs to implement the new minimum program elements no later than January 2, 2006. The changes apply to both attainment and nonattainment areas.

The thrust of NSR reform is to improve the method of determining whether a particular modification to an NSR source is, by definition, a "major modification." The definition itself has remained unchanged. It contemplates that a source will first determine whether a physical or operational change is going to occur. If so, the source will determine whether the change will result in an emissions increase beyond baseline levels. The existing NSR was changed in two places, affecting how sources calculate emission increases and how they determine whether their physical or operational changes trigger NSR requirements. The reform introduces a new procedure to determine baseline actual emissions. Also, the existing actual-to-potential applicability test is replaced with an actual-to-*projected*-actual applica-

bility test, to determine whether a physical or operational change at an existing emissions unit will result in an emissions increase.

The reforms also add Clean Unit Exclusions, Pollution Control Project (PCP) Exclusions and Plantwide Applicability Limitations (PAL) Exclusions. The Clean Unit Exclusion is a new kind of applicability test for emissions units

designated as Clean Units. The test recognizes that when a source goes through NSR review and installs what is referred to as the Best Available Control Technology, or BACT, any changes the source may make to the clean unit will not trigger additional NSR review. The reforms also introduce a new list of environmentally beneficial technologies that qualify

as PCPs for all source types. Finally, NSR reforms allow a voluntary option that enables sources to manage facility-wide emissions without triggering a major NSR review.

For the past year, a DEQ work group has been drafting the proposed state program that would implement NSR reforms. The group has completed a working draft of

modifications to the applicable rule (parts 7 and 9 of OAC 252:100-8). The proposed changes will be presented at future public hearings before the Air Quality Council. Hearing schedules and proposed rule changes will be posted on the council's Web site at www.deq.state.ok.us/AQDNEW/council/AQCouncil.htm. ■

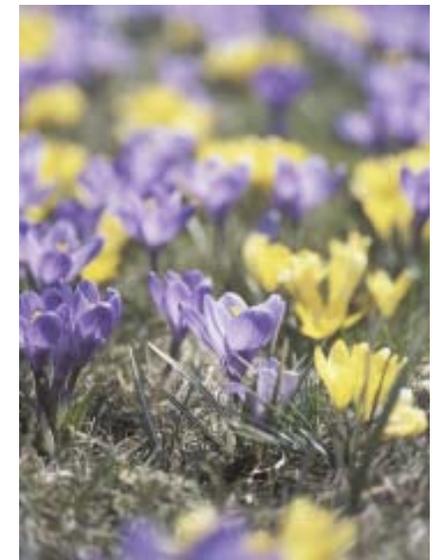
Partnership for Progress

To improve the air quality permitting process in Oklahoma, the Air Quality Division has joined with eight neighboring states (Nebraska, Kansas, Missouri, Iowa, Louisiana, Texas, Minnesota and Arkansas) in the central region of the United States to share ideas and discuss common issues. Working through the Central States Air Resources Agencies (CenSARA) with the assistance of a moderator from EPA Region 6, the regional group is focusing on permit streamlining. During 2004, the moderator led several strategy sessions for the group by conference call.

The moderator also visited a number of the states to discuss specific issues. One immediate result was the establishment of an electronic bulletin board on a CenSARA Web site, facilitating quick communication on permitting issues and regulatory questions among the states. The rapid communication medium now helps the states to solve problems by consulting one another about their experiences and to avoid miscommunication.

A workshop was held June 15-17, 2005, for participating states and EPA to share their individual

efforts to improve permits and the permitting process. By communicating with our neighbors, we expect to continue to improve our product and share our successes. Other cooperative activities include the development of regional haze implementation plans through CenRAP and participation in ad hoc committees to discuss and formulate recommendations on such issues as the I-35 corridor, the Mercury Rule and emission trading. These are just a few examples of the Air Quality Division's continued participation in regional air quality planning. ■



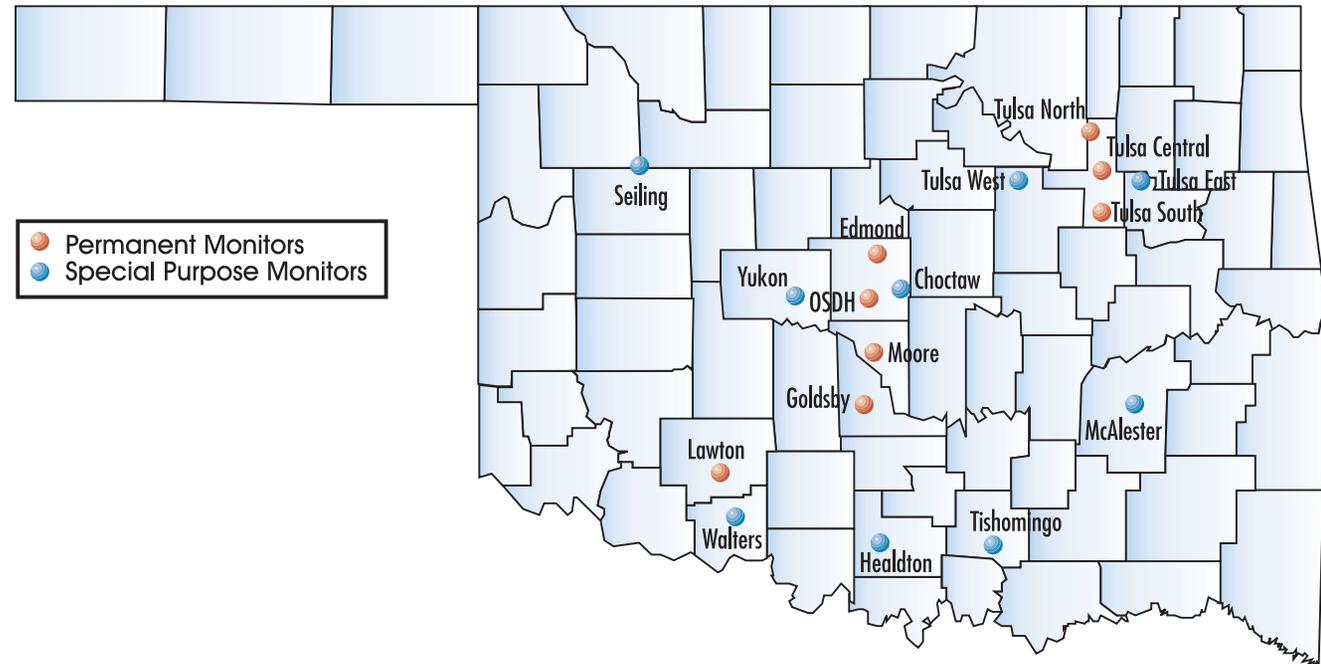
Colorful wildflowers grow in an Oklahoma field.

2004 Air Monitoring Update

The Air Monitoring Section of the Air Quality Division operates a state-wide system of ambient (outside) air pollution monitors. The monitors detect concentrations of what EPA has defined as potentially harmful "criteria" pollutants: particulate matter, ozone, sulfur dioxide, carbon monoxide and nitrogen dioxide. Data collected by the section during 2004 indicate that ambient concentrations of criteria pollutants in Oklahoma continue to be within the limits defined by National Ambient Air Quality Standards (NAAQS).

Each year, the monitoring section reviews its strategy to assure that what it tracks and how it tracks it is as accurate as possible. These strategic decisions affect how well DEQ can address changes in national standards and issues related to the health effects of air pollution. No major revisions were made to the monitoring strategy in 2004, but monitoring for particulate matter soon will change with the addition of PM Coarse. PM Coarse is the part of particulate matter that is 2.5 to 10 micrometers in diameter. (PM Fine is the part that is less than 2.5 micrometers in diameter.) Particulate matter in our air consists of a mixture of solids and liquid droplets

Oklahoma DEQ Ozone Monitoring Network



The Oklahoma ozone monitoring network has expanded from the Tulsa and Oklahoma City areas to cover most of the state.

2004 OKLAHOMA OZONE

Highest 8 Hour Averages through 11/07/04

Site	1st			2nd			3rd			4th			01-03 Avg*	02-04 Avg*
01 4th	02 4th	03 4th	(date)	(date)	(date)	(date)	(date)	(date)	(date)	(date)	(date)	4th Highs	4th Highs	
Walters (680) (new)		0.077	0.086 20-Sep	0.081 10-Sep	0.077 1-Jun	0.074 11-Sep								
Healdton (297) (new)		0.081	0.080 13-Sep	0.078 20-Jul	0.078 21-Jul	0.077 18-Aug								
Tishomingo (323) (new)		0.070	0.093 18-Aug	0.080 21-Jul	0.079 20-Jul	0.073 9-Apr								
Tulsa West (144) (new)		0.081	0.074 20-Jul	0.073 1-Sep	0.072 18-Aug	0.071 30-Sep								
Tulsa East (178)			0.081 1-Jun	0.076 14-Jul	0.076 9-Aug	0.073 20-Jul							0.079	
Tulsa Central (1127)	0.078	0.080	0.084	0.069 20-Jul	0.069 11-Sep	0.068 21-Jul	0.068 12-Sep	0.080					0.076	
Tulsa North (137)	0.081	0.080	0.080	0.073 11-Sep	0.073 30-Sep	0.072 12-Sep	0.071 20-Jul	0.083					0.079	
Tulsa South (174)	0.084	0.083	0.083	0.080 1-Jun	0.074 10-Aug	0.073 23-Mar	0.071 30-Sep	0.081					0.079	
Edmond (037)	0.077	0.082	0.086	0.080 1-Jun	0.080 10-Sep	0.077 24-Jun	0.077 20-Jul	0.080					0.079	
OKC (033)	0.082	0.078	0.082	0.079 24-Jun	0.078 10-Aug	0.078 10-Sep	0.076 9-Aug	0.079					0.078	
Moore (049)	0.078	0.080	0.080	0.082 9-Aug	0.077 10-Aug	0.074 10-Sep	0.070 2-Apr	0.076					0.073	
Goldsby (073)	0.079	0.075	0.076	0.080 9-Aug	0.070 10-Sep	0.068 2-Apr	0.068 10-Aug	0.078					0.074	
Choctaw (096)	0.080	0.078	0.077	0.076 20-Jul	0.074 10-Sep	0.073 11-Sep	0.072 24-Jun	0.073					0.076	
Yukon (101)	0.063	0.078	0.078	0.077 10-Sep	0.074 10-Aug	0.072 13-Sep	0.071 20-Jul	0.072					0.075	
Lawton (647)	0.058	0.081	0.078	0.086 20-Sep	0.082 10-Sep	0.077 21-Jul	0.075 20-Jul	0.077					0.076	
McAlester (415) (new)	0.078	0.076	0.078	0.072 21-Jul	0.072 30-Sep	0.071 18-Aug	0.068 3-Aug						0.073	
Seiling (860) (new)	0.076	0.076	0.076	0.072 1-Jun	0.069 20-Sep	0.067 11-Jun	0.067 24-Jun						0.071	

*0.085 or greater indicates exceedance of National Ambient Air Quality Standards

August 18 and September 20 were the only two days in 2004 on which 8-hour average ozone concentrations greater than 0.08 ppm were recorded.

that come in a range of sizes. Particulate matter 10 micrometers and smaller in diameter can be breathed into the lungs and potentially cause health problems.

According to 2004 data collected by the Air Quality Division, ozone levels have steadily dropped in recent years. In simple terms, ozone is created when gas waste products from engines and other sources are literally cooked in the atmosphere by the sun; there, they can linger to create visible smog and unhealthy breathing conditions. EPA determines the levels at which most people, including designated vulnerable populations such as children and asthmatics, will suffer no ill-health effects. The National Ambient Air Quality Standards are set at levels believed to protect public health.

The applicable national ozone standard for our cities is met when the annual average of the fourth-highest 8-hour ozone concentrations at each monitoring site equals 0.08 parts per million or less. Statewide, Oklahoma's ozone monitors have recorded 8-hour average ozone concentrations greater than the national standard. In 2000, the levels reached 0.08 parts per million or more on 27

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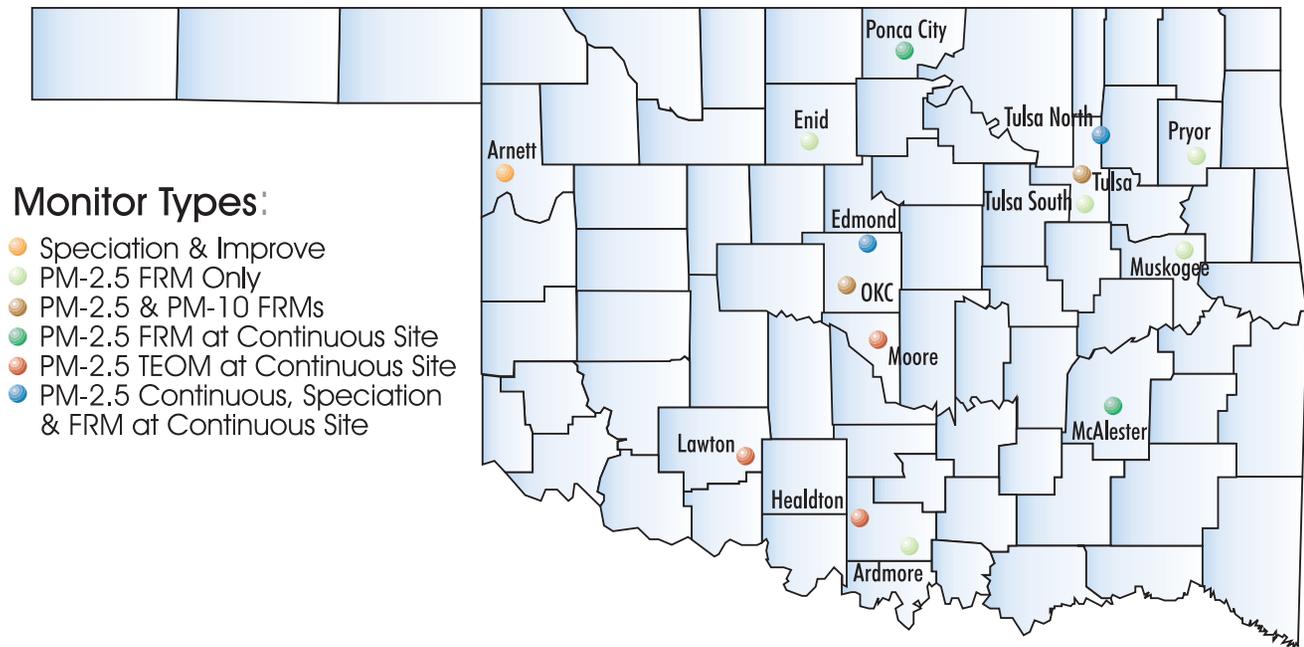
different days; levels exceeded the standard on 15 days in 2001, 13 days in 2002 and 2003, and only 2 days in 2004. No ozone monitoring sites have exceeded the 8-hour standard using the above calculation method since 2001 (chart 1).

The PM Fine (PM-2.5) monitoring network was expanded in 2004 with the addition of a site at Healdton. Currently, five continuous monitors are located in Lawton, Oklahoma City, Tulsa and Healdton. The monitors are used to determine the Air Quality Index and for mapping. Additional continuous monitors will come online in the near future at Seiling, McAlester, Glenpool and Ponca City, improving statewide coverage and providing more rapid public data.

As it continues monitoring air over Oklahoma, the Air Monitoring Section will realign its methods and locations with current monitoring strategies and technologies, protecting Oklahoma residents. The monitoring section is always glad to report good news, too: The 2004 data indicate that Oklahoma's air is getting cleaner.

For more on ozone, standards and monitoring, see www.epa.gov/oar/oaqps/peg_caa/pegcaa03.html#topic3a. ■

2005 Oklahoma DEQ PM-2.5 Monitoring Network



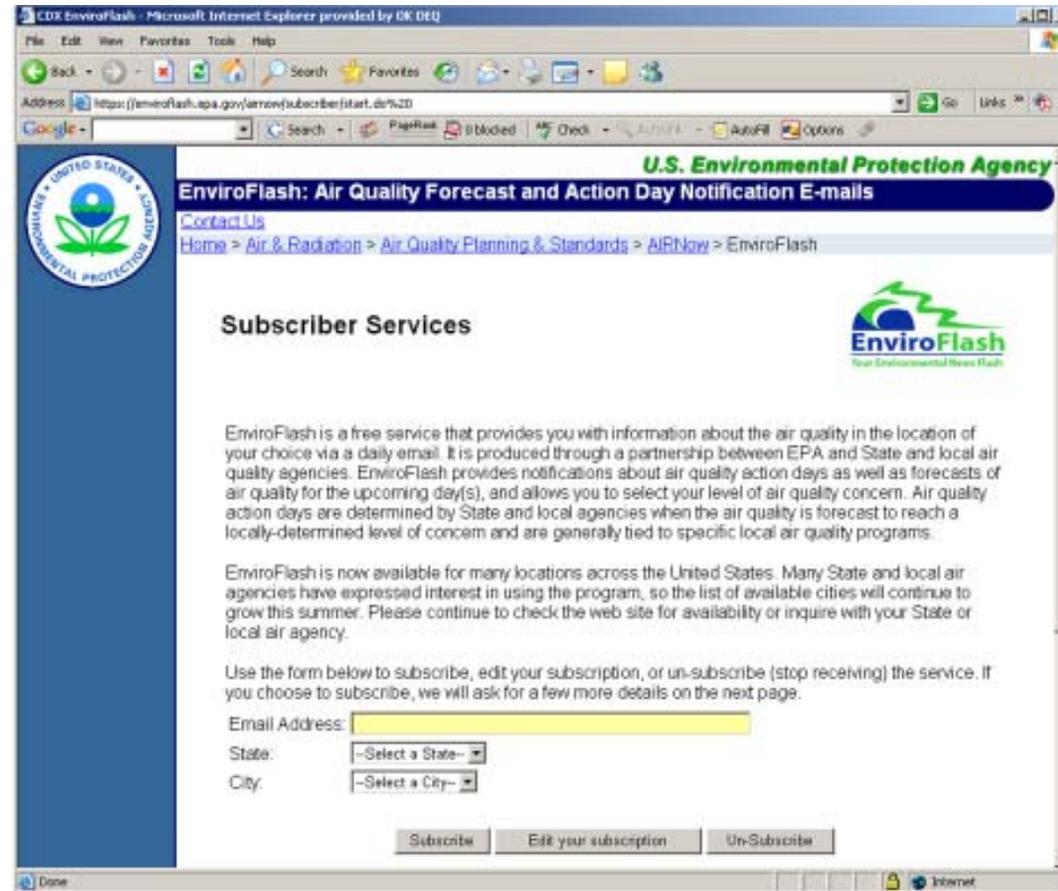
The Oklahoma PM-2.5 monitoring network shows good coverage for the state, but is changing from Federal Reference Method monitors to continuous monitors.

Oklahoma City Pilots *EnviroFlash*

Individuals living in the Oklahoma City area can receive personalized air quality advisories by e-mail or mobile phone text messaging, as of October 2004. Anyone in the area can enroll online to try the no-cost *EnviroFlash* pilot program. Oklahoma's Department of Environmental Quality (DEQ) specialists already forecast the daily Air Quality Index (AQI) and maintain nearly real-time data on the DEQ Web site and the EPA AIRNow Web site (cfpub.epa.gov/airnowindex.cfm?action=airnow.main).

Much like weather forecasting, index forecasting gives the public advance notice of air quality conditions. The two pollutants of concern for Oklahomans are ground-level ozone (monitored when the weather warms up, April to September) and fine particulates. The AQI indicates whether on any given day air quality is considered good, moderate, unhealthy for sensitive groups, unhealthy or very unhealthy.

EnviroFlash adds a new dimension to DEQ's forecasting service. So they can plan accordingly, the system notifies subscribers about



the following day's expected air quality. Users self-select the health levels that will trigger their advisories, getting only the information

they want. For example, deep-breathing outdoor exercisers and those with young children or family members with respiratory problems

may want to know when the air will be "unhealthy for sensitive groups." Others may only want to



EnviroFlash provides e-mail alerts to forecast air pollution levels.

continued

be alerted when air is predicted to be “unhealthy” for everyone. Later versions of *EnviroFlash* will deliver near real-time air data, communicate emergency air situations and send bulletins on environmental news such as water quality or beach closings.

The pilot program has been launched in Oklahoma City, but soon developers hope to make *EnviroFlash* available in cities across the country. For now, those in Oklahoma City can enroll at the DEQ Web site, www.deq.state.ok.us/aqdnew/enviroflash.htm. Those who try the pilot program can help refine the free service, evaluate the air quality messages and influence the eventual shape and content of this innovative, personalized environmental advisory system. ■



EnviroFlash notifies subscribers via e-mail or text message on your cell phone so that users can adjust their daily activities when poor air quality conditions are anticipated.

New Air Quality Service: Compliance and Enforcement Technical Resources and Training

In December 2004, the Air Quality Division formed a new section, currently known as Compliance and Enforcement Technical Resources and Training. As the name implies, the section serves as a training ground for newly hired agency inspectors. While assigned to the section, new inspectors are encouraged to take professional courses both in the classroom and by using satellite and Internet-based training. They also get on-the-job training from experienced inspectors in the field, where they learn a wide range of applicable methods and techniques. The combination of coursework and experiential training helps new employees become knowledgeable, well-rounded inspectors.

The new section is also home to the excess emissions and asbestos programs. The excess emission reporting program is streamlining the reporting process for the regulated community and agency staff. One of the most anticipated im-



DEQ staff and industry personnel read smoke at the Spring 2005 Visible Emissions Evaluation Training, more commonly known as "Smoke School."

provements is Web-based reporting, due to come online soon. The asbestos program is working on increasing compliance and, when needed, enforcement. Division staff recently held workshops in Oklahoma City and Tulsa to bring con-

tractors, asbestos inspectors and municipalities up-to-date on program changes, including noncompliance penalty enforcement. The DEQ Web site now includes the asbestos enforcement matrix and the penalty policy for violations.

With renewed emphasis on training and improved access to reporting and procedures, the Technical Resources and Training Section is positioned to better serve the public and to help maintain the quality of Oklahoma's air. ■

Excess Emissions Reporting Procedures Updated

Businesses follow specific procedures (described in OAC 252:100-9) for reporting excess emissions whenever they cause an emission of a regulated pollutant above permitted levels. The Air Quality Division (AQD) is about to make the reporting process faster, easier and more complete with a Web-based reporting option.

When excess emissions occur, the responsible facility has until 4:30 p.m. the following business day to contact the division, by either calling the Excess Emission Hotline or faxing a brief description of the event. The facility must then follow up with a detailed, signed report within 10 business days. Reporting became a little easier back in 2002, when AQD standardized the excess emissions form and made it available for printing from the division's Web site.

When DEQ receives the reports, the information is entered into a database. Staff can generate reports from the database, including the responsible business's name and the type and amount of excess emissions released for a given period.



Shown in both photos, visible emissions from facilities.

The database was recently upgraded to include the duration of events, the types of pollutants and cumulative amounts released.

After observing the success of another online submission program,

Emission Inventory's *Redbud* system, AQD is developing a similar concept for excess emissions reporting. With the new process, facilities will be able to complete and submit the excess emissions form entirely

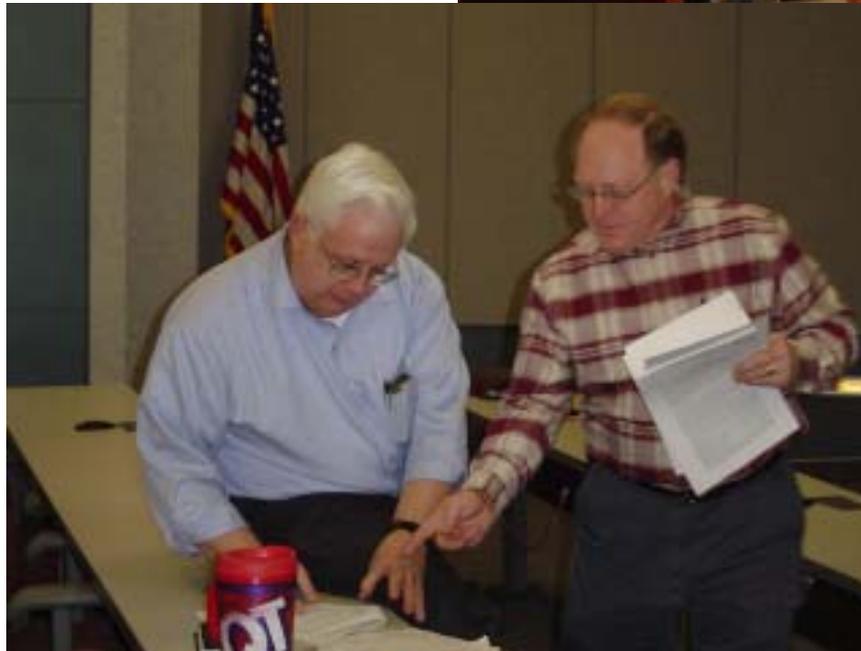
online. By mid-2005, the electronic submission program is scheduled to be in effect, streamlining the reporting process and making the work of inspectors who conduct compliance evaluations more efficient. ■

Air Quality Asbestos Programs

Oklahoma's Department of Environmental Quality (DEQ) enforces regulations pertaining to the National Emission Standards for Hazardous Air Pollutants (NESHAP). As of November 1, 2004, the agency has been assessing more consistently and equitably the fines for various violations, in accord with a new penalty policy. Asbestos is included among the hazardous air pollutants that EPA believes to be a significant risk to human health. Regulations are meant to prevent and control release of asbestos fibers into the air. These fibers have high tensile strength, are incombustible, resist corrosion and friction, and have acoustical and thermal-insulation properties. As a result, asbestos fibers are found in more than 3,600 commercial products. When disturbed (e.g., during demolition or renovations), asbestos-containing materials release fibers that become airborne. Asbestos is on the EPA list because breathing asbestos fibers presents a health risk.

continued

Asbestos Outreach presentation in Oklahoma City (March 2, 2005).



Individual discussion after the Asbestos Outreach presentation in Tulsa (March 4, 2005).

Strong Partnerships Aim to Eliminate Lead Poisoning

The Air Quality Division, along with DEQ's Small Business Assistance Program, recently conducted two informational workshops for asbestos and demolition contractors and cities and municipalities that are involved in demolition or remodeling. The goal was to provide information on asbestos NESHAP requirements and the new penalty policy. Workshops were held on the Oklahoma State University-Oklahoma City Campus on March 2, and on the Tulsa Tech Center-Riverside Campus on March 4, 2005. Both were well attended by representatives from industry, municipalities and educational institutions.

To help members of the regulated community and the general public find answers to their questions about asbestos and its regulation, the division has posted a new page at its Web site. Visitors can find general information about asbestos and links to asbestos-related regulations, notification forms, guidance documents and EPA documents and resources. The resource pages in particular contain useful information about asbestos and how to deal with it.

To visit AQD's asbestos Web page, go to www.deq.state.ok.us/AQDnew/asbestos/index.htm. ■

The Lead-based Paint (LBP) Management Program in the Air Quality Division is strengthening organizational partnerships to help eliminate childhood lead poisoning in Oklahoma. Last year, program staff attended the 2004 National Lead and Healthy Homes Grantee conference co-sponsored by the Centers for Disease Control and Prevention, the U.S. Department of Housing and Urban Development, and the U.S. Environmental Protection Agency. The tri-agency meeting promoted strategies to eliminate barriers and build relationships among state and federal agencies.

Maria Collard, Mary Jane Calvey and Cheryl Bradley represented DEQ on the Oklahoma Childhood Lead Poisoning Prevention Advisory Council. The council was created by the Oklahoma Legislature in 1994 to assist the state Board of Health in establishing criteria, standards and rules for the Childhood Lead Poisoning Prevention Program in the state Department of Health. The council became inactive around 2000, but was reactivated in September

2003. It is comprised of state and city representatives, Housing and Urban Development grantees, health professionals and scientists. Members meet quarterly to discuss common issues and to participate with the Health Department in developing the *Oklahoma Strategic Plan for Elimination of Childhood Lead Poisoning by 2010*. This plan serves as Oklahoma's blueprint for eliminating lead poisoning.

State and federal focus is shifting from identifying and treating lead-poisoned children to primary prevention. The LBP program certifies lead professionals and accredits LBP man-

agement training programs, integral functions in making housing safer. During 2004, DEQ received notice of more than 100 lead-abatement projects — twice as many as in previous years — a large percentage of which were submitted by Oklahoma's tribal nations. LBP staff are working to establish relationships with tribal lead programs and to increase education outreach to better serve tribal lead professionals, as well as tribal members. The LBP program has a role in establishing and strengthening partnerships to attain the state and national goal to be lead-free by 2010. ■



Air Toxics Monitoring: Ponca City and Tulsa



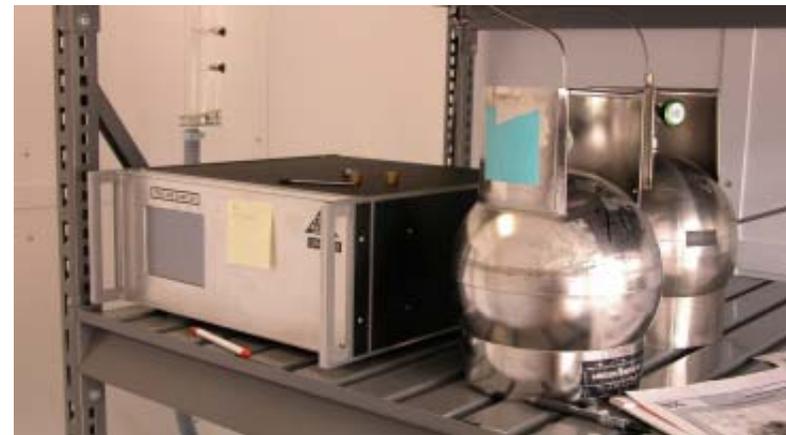
Trailer with samplers and equipment.

The Air Quality Division (AQD) is completing the second phase of the Ponca City Air Toxics Monitoring project. Last year, division staff measured air toxics levels at one site in downtown Ponca City. This year, monitoring is tracking levels of an additional 57 pollutants at the downtown site and at a mobile site immediately north of the Conoco-Phillips refinery. EPA provided special project funding for the sample analysis trailer and monitors to be used at the mobile site. The Ponca City project is scheduled for completion in July 2005.

AQD is in the planning and procurement phases of an air toxics

monitoring project in Tulsa. Although sampling won't occur until September 2005, AQD is purchasing a sampling trailer and instruments to measure carbonyls (e.g., formaldehyde and acetaldehyde) and volatile organic compounds (VOCs) at three locations around downtown Tulsa. This air toxics monitoring project will be the largest ever performed in Oklahoma.

In addition to the above projects, DEQ is in the process of updating its state air toxics program rules. (See the article *Risky Business*). The monitoring collected in Ponca City and Tulsa will produce the first data evaluated using the new program rules. ■



Air toxic sampling equipment used for sampling in Ponca City and Tulsa.

2004 Record Year in AQD Permitting

2004 was the most productive year for Air Quality Division (AQD) permitting since initial Title V program applications were submitted in 1996. The total number of permits and determinations issued was greater than in any other year since 1997.

Although more permits were issued in 1996 and 1997 than in 2004, the majority issued in those years were the less-complicated Tier I and non-tiered (NA) permits (table 1). To more accurately evaluate the difficulty of processing applications, permit sections developed a Relative Difficulty Index (RDI). Based on relative complexity, an RDI value is assigned to each application, helping to distribute workload appropriately among permit engineers. During 2004, staff issued more permits that were, on the average, more complex (15,342 RDI) than in any other year (table 2). The result was a record issuance rate of 536 RDI points per engineer. Although the annual number of initial Title V applications has declined, an increase in modification and renewal applications has kept overall Title V permit activity high.

Increasing demand from renewal applications is expected to continue (table 3).

Several factors contributed to the strong 2004 results. Most important, the staff's growing experience and education makes it possible for them to analyze and issue more

complex permits independently. Staffing levels that had become severely depleted by the end of 2001 were boosted by the addition of 12 engineers in 2002. As those permit writers have gained experience, overall staff efficiency has grown. Recording the highest number of

permits issued in seven years (table 4) and setting a record for the issuance of complex permits, AQD permit staff have set a standard of performance that is intended to provide the best service possible to Oklahoma's regulated community and citizens. ■



Wind turbines at the Blue Canyon Wind Farm located north of Lawton.

TABLE 1 Air Quality Division Permit History By Tier

	2004	2003	2002	2001	2000	1999	1998	1997	1996
Received									
Tier I	466	422	428	364	300	409	364	409	290
Tier II	116	164	163	57	56	92	80	188	148
Tier III	1	1	1	8	8	6	2	0	1
NA	121	167	295	112	198	144	139	209	452
Total	704	754	887	541	562	651	585	866	891
Issued									
Tier I	426	364	403	317	359	321	350	467	156
Tier II	128	136	73	85	116	91	100	52	5
Tier III	1	1	4	7	4	4	0	0	2
NA	116	136	126	166	127	150	126	242	567
	671	637	606	575	606	566	576	761	730

In 2004 staff issued more permits than in the previous six years. Permits issued in 1996 and 1997 were generally less complex than those issued in 2004.

TABLE 2 Air Quality Division Permits Relative Difficulty Index (RDI)

Year	Total RDI of Permits Issued	Total Number of Engineers	RDI/Engineer	Total	
				Apps. Received	Permits Issued
1996	10772	27	399	892	731
1997	10880	26	418	869	761
1998	9560	23	416	586	576
1999	7935	26	305	650	566
2000	10330	26	397	562	606
2001	10143	24	423	541	575
2002	11302	30	377	886	606
2003	13679	31	441	754	637
2004	15342	29	536	704	671
Averages	11105	27	412	716	637

In 2004, the AQD Permit staff issued permits worth more RDI points than in any previous year. As a result, the staff set the record for the annual issuance of both the number and complexity of permits (536 RDI) per engineer.

continued

TABLE 3 Air Quality Division Title V Operating Permits

	2004	2003	2002	2001	2000	1999	1998	1997	1996
Apps. Received									
Initial Apps.	20	18	28	16	20	69	52	147	131
Modifications	53	55	43	21	14	3	1	0	0
Renewals	46	62	22	21	N/A	N/A	N/A	N/A	N/A
Total Received	119	135	93	58	34	72	53	147	131

Permits Issued									
Individual	0	17	80	77	82	57	29	27	20
Modified	0	0	1	3	8	17	27	36	33
Renewals	0	0	0	0	0	0	0	6	36
Total Issued	0	17	81	80	90	74	56	69	89

Renewal Title V applications were not submitted until 2001. Note the increase in the issuance of renewals during 2004. In future years, the number of renewal applications will continue to rise and increase the overall Title V permit annual workload.

TABLE 4 Air Quality Division Permit History

Year	Applications Received				Permits Issued				Applications Pending			
	TV	PSD	Other	Total	TV	PSD	Other	Total	TV	PSD	Other	Total
1996	131	15	740	892	0	8	723	731				
1997	147	9	713	869	17	5	739	761				
1998	53	9	524	586	81	5	490	576				
1999	72	9	569	650	80	7	479	566				
2000	34	16	512	562	90	8	508	606				
2001	58	19	464	541	74	14	487	575				
2002	93*	13	611	717	56	9	541	606				
2003	137*	9	608	754	69	10	558	637				
2004	119*	17	568	704	89*	17*	565	671	214*	15*	200	429

* Includes modifications, renewals and original TV applications

Since 2001, the total number of Title V applications submitted has increased due to renewals and modifications to existing Title V permits. The majority of the pending Title V applications are renewals.

Excellence in Permitting Assistance Confirmed by Study Results

Oklahoma is one of seven states "...judged to offer uniquely high levels of permitting assistance as compared to the other states," according to a recent study commissioned by the Iowa Department of Economic Development.¹ The study, conducted by Deloitte Consulting LLP, evaluated practices of the various states with an eye toward improving Iowa's permitting-assistance services. Oklahoma was judged to be in Tier I, the "leading" tier. Elsewhere, Oklahoma was described as "offer(ing) superior levels of permitting assistance."

The Iowa study focuses on air quality permitting assistance for both major and minor facilities, as well as for industrial wastewater discharges and Section 106 reviews for historical resources preservation. According to researchers, the ease and timeliness of environmental permitting is a factor that companies seriously consider when locating their new and expanded facilities. Companies tend to generalize their experiences with permitting assistance in judging whether an area is business-friendly.

A PowerPoint presentation of the Iowa study may be requested from the division. AQD is reviewing it to determine whether recommendations made for Iowa might

be applicable in Oklahoma, as well, to further improve our permitting assistance programs.

¹*Comparison of Iowa's Permitting Assistance Efforts to Leading*

Practices of Other States, Phase 2 Deliverable, March 15, 2004, PowerPoint Presentation Handout, ©2004 Deloitte Consulting LLP. ■

AQD Welcomes New Industry to Oklahoma

DEQ's approach to permitting assistance is playing a leading role in industries' decisions to locate or expand their operations in Oklahoma. During 2004, the Air Quality Division received 704 permit applications. Fifty-one were for new construction of facilities that included oil and gas production and transmission, truck manufacturing, brick manufacturing, foam manufacturing, automotive brake and clutch manufacturing, rock quarries, asphalt plants and barite storage. DEQ is committed to continuous service to the citizens of Oklahoma and the goal of maintaining excellence in the performance of its assigned tasks. ■



One of many commercial facilities being built in Oklahoma.

New MACT Standards Issued in 2004

MACT STANDARD Source Categories Affected	CFR Subparts	Final Fed Register Date & Citation	Compliance Date
Auto and Light Duty Trucks (Surface Coating)	IIII	04/26/04(69FR22601)	04/26/07
Industrial, Commercial and Institutional Boilers and Process Heaters	DDDDD	09/13/04(69FR55217)	09/13/07
Iron and Steel Foundries	EEEE	04/22/04(69FR21905)	04/22/07
Lime Manufacturing	AAAAA	01/05/04(69FR393)	01/05/07
Miscellaneous Metal Parts and Products (Surface Coating)	MMMM	01/02/04(69FR129)	01/02/07
Organic Liquids Distribution (Non-Gasoline)	EEEE	02/03/04(69FR5038)	02/03/07
Plastic Parts(Surface Coating)	PPPP	04/19/04(69FR20968)	04/19/07
Plywood and Composite Wood Products	DDDD	07/30/04(69FR45943)	
Reciprocating Internal Combustion Engines (RICE) (NESHAP/NSPS)	ZZZZ	06/15/04(69FR33473)	06/15/07
Stationary Combustion Turbines	YYYY	03/05/04(69FR10511)	03/05/07

MACT Standards issued during 2004.

When the federal Clean Air Act was amended in 1999, Congress required EPA to take a different approach to controlling hazardous air pollutants, referred to as HAPs. Amended legislation specified particular pollutants and the industrial categories for which EPA must develop emission control standards. The list of pollutants includes substances such as benzene, formaldehyde,

toluene and metals that are common to refineries, chromium electroplaters, dry cleaners and many other industries. The standards were to require affected industries to apply the Maximum Achievable Control Technology (MACT) to control HAP emissions. The task was enormous. To help manage it, industries were grouped into 4-year, 7-year and 10-year "bins," according to the

state's rules all standards that were in effect as of July 1, 2003. In December 2004, the Air Quality Council approved and recommended a rule update to incorporate federal MACT standards in effect as of July 1 of that year. The rule was approved by the Environmental Quality Board in early 2005 and is now in effect. The division has been authorized to implement the MACT

expected complexity of developing industry-specific standards.

In 2004, EPA issued the final MACT Standards, a number of which are currently subject to litigation. Oklahoma's Air Quality Division had incorporated into the

standards program under Oklahoma statutes and rules. Of particular interest to Oklahomans are the MACT standards issued for stationary reciprocating internal combustion engines. The standard affects many natural gas compressor stations and processing plants throughout the state. The standards for industrial, commercial and institutional boilers and process heaters also affect many Oklahoma facilities.

In addition to the MACT Standards now in place, EPA has begun implementing the Residual Risk program, designed to review MACT industry categories for which standards are fully implemented and to determine what (if any) additional controls are needed to minimize residual risk from HAP emissions. The Air Quality Division will follow EPA progress and will continue to administer the MACT Standards for Oklahoma and to assist industry to understand and implement those standards. ■

New Permit Exempt Category for Sources Under 40 TPY Approved by Environmental Quality Board

Recent changes to the Air Quality Division (AQD) minor source permits program became effective June 11, 2004. The changes raise the amount of emissions that may be emitted by a facility without triggering requirements for permits, fees and reporting. The modification reduces the regulatory burden on smaller facilities while still allowing the division to effectively use its limited permitting and compliance resources. The change will have a negligible effect on the state's air quality.

The revision creates a new facility category: the permit-exempt facility. By definition, a permit-exempt facility is one that releases into the air 40 tons per year (TPY) or less of actual emissions of each regulated pollutant. These facilities are now exempt from paying annual operating fees and are not required to submit an annual emissions inventory. However, the division director is authorized to request a special emissions inventory

when emissions data are needed for program planning or for compliance with state or federal rules and standards.

The modified rules include emission calculation methods that simplify matters for small oil and gas exploration and production facilities and natural gas compressor facilities. A facility may assume that it is permit-exempt without specifically calculating emissions if its total maximum rated horsepower for all reciprocating internal combustion engines in compressor service equals 240 or less. A provision also exists for facilities to be considered permit-exempt based on a low natural gas throughput, rather than having to calculate emissions from dehydration units and certain other equipment.

Major sources and major stationary sources, of course, are not eligible for permit-exempt status, nor are facilities that are subject to an emission standard, equipment standard or work-practice stan-



A solitary pine tree braves the elements.

dard required by a New Source Performance Standard (NSPS) under 40 CFR Part 60, a National Emissions Standard for Hazardous Air Pollutants (NESHAP) under 40 CFR Part 61, or a NESHAP (MACT Standard) under 40 CFR Part 63. A facility that is subject only to recordkeeping requirements under one of these federal standards may qualify as a permit-exempt facility.

AQD's permitting staff have been working with facilities that believe they qualify for the permit-exempt category and therefore no longer need a permit. A number of oil and gas facilities that do not qualify under the permit-exempt definition previously operated under Standard Operating Procedure 20; these facilities have been required to obtain an AQD permit. ■

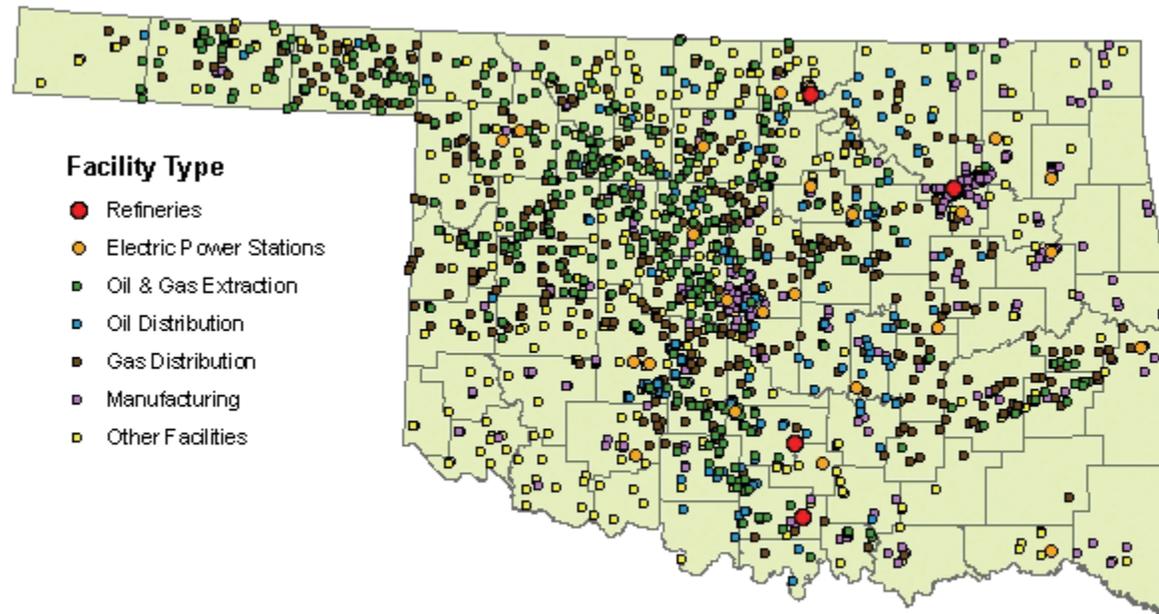
Submitting Emissions Inventories: Making the Job Easier

What is Emissions Inventory?

Each year, the Emissions Inventory Section compiles a statewide inventory of emissions into the air of regulated pollutants. These emissions come from many sources such as fixed or *point* sources (e.g., power stations, oil and gas facilities, refineries and manufacturing plants), *area* sources (e.g., gasoline stations and dry cleaners), *mobile* sources (e.g., cars and aircraft) and *biogenic* sources (e.g., trees and other vegetation, oil and gas seeps, and microbial activity). The resulting data are used for planning — especially critical in areas not solidly attaining one or more national air quality standards — and in modeling as part of the rulemaking process.

Emissions Inventory information is reported annually to EPA as required by the federal Clean Air Act. The data are also used to determine the operating fees paid to DEQ annually

by point source facilities permitted to operate in Oklahoma (maps 1 and 2). These fees then fund the majority of the Air Quality Division's (AQD) annual operating budget.

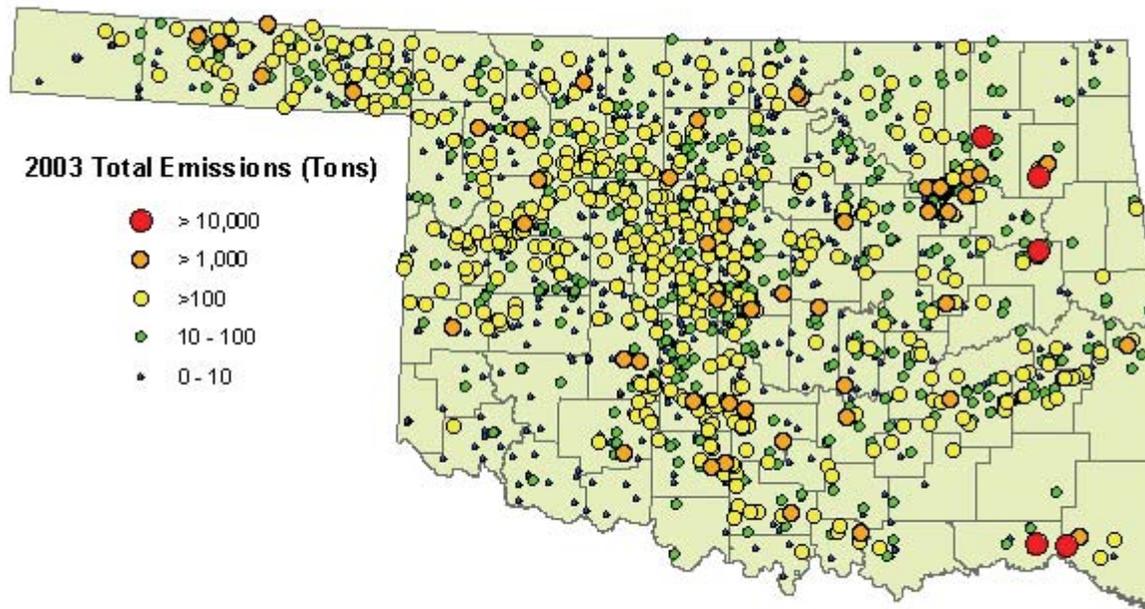


Map 1: Point sources of air emissions in Oklahoma by industry type. Note the wide distribution of oil and gas facilities, an indication of how important this industry is to Oklahoma's economy.

Emissions Inventory in 2005

A major thrust of the Emission Inventory Section's work in fiscal 2005 has been to ease the

reporting burden for the regulated community, including providing assistance through education, training and advice. Development of *Redbud*, a user-



Map 2: Total air emissions in 2003 of regulated pollutants from Oklahoma point sources.

friendly Web-based reporting system, has reduced paperwork and industry time spent on the reporting process. *Redbud's* deployment has also released section staff from repetitive data entry, allowing them to focus more on detailed quality assurance audits and improvements of other aspects of the Oklahoma Emissions Inventory, such as evaluating area source emissions.

Redbud: Web-based Reporting of Emissions Inventories

For quite some time, the Emissions Inventory Section has been developing electronic data systems and submission processes, moving away from a paper-based system. The first step was to integrate emissions inventory data into TEAM, AQD's main database, to give other AQD sec-

tions rapid access to this data. That achievement reaped several benefits, including improved compliance, permitting and planning. Next, the section wanted to enable regulated companies to report emissions data electronically using the Internet. Developing and testing information technology systems is always time-consuming, and the Emissions Inventory Section's programming requirements are in-

herently complicated. For instance, different industries need to be able to report pollutant emissions from multiple processes using various methods of calculation. The collected data must be formatted and structured correctly for integration with AQD's TEAM database and for submission to the EPA National Emissions Inventory electronic database.

The *Redbud* system (named after the Oklahoma state tree) was deployed in January 2005 for the 2004 emissions-year reporting cycle. Problems experienced in previous years have been solved and the system offers many benefits. Company personnel can now easily and securely access the Web-based program and their data from any computer connected to the Internet. No special software needs to be installed and data are immediately saved and maintained on DEQ servers as they are entered. Users can update data at any time before the final submission date. Several employees at different locations can work on their company's emission inventory si-

continued

multaneously. By agreeing in advance to certain conditions, users can quickly make electronic submissions without an official signature – just like filing personal taxes online. Companies can view and print a formal copy of their submissions (known as a “turn-around document”) at any time during the year, even after the submission deadline.

Redbud has proved successful, despite the initial teething problems inherent in any new software rollout. The division received submissions from 380 of the 610 companies required to submit detailed emission inventories (62 percent) and submissions for 1,553 of 1,869 facilities (83 percent). The section has learned a great deal – and plans to do even better! Planning is already underway for a host of improvements and enhancements for the 2005 reporting cycle. The next version of *Redbud* will be more intuitive to use, and data checking and validation will be enhanced. These developments will minimize both industry and staff time spent on correcting errors and omissions.

Redbud has served as an excellent pathfinder and testing

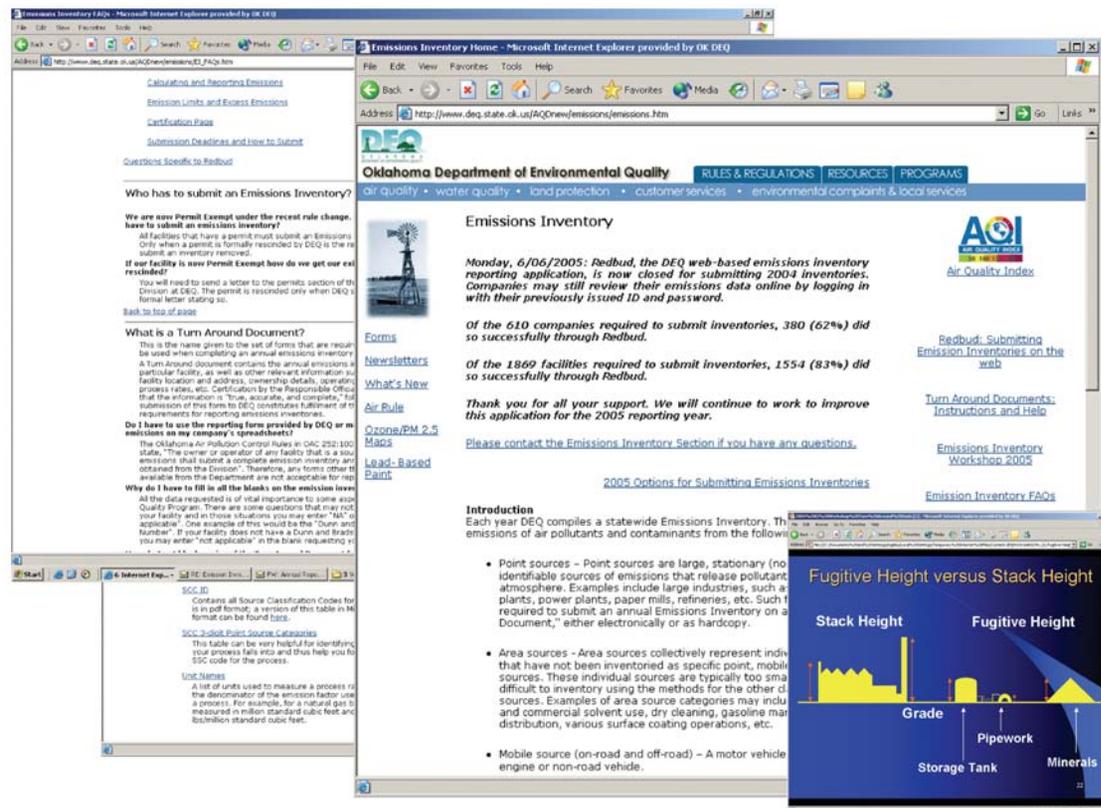
ground for upcoming Web-based applications meant to lighten the regulatory burden on industry and to streamline the work of other AQD sections. Improving *Redbud* and promoting greater use by the regulated community will be a major goal of the Emissions Inventory Section for fiscal 2006.

Emissions Inventory Web Site: Easier to Navigate, Resources More Accessible

Early in 2005, the Emissions Inventory Web site was substantially upgraded with improvements in its navigation and structure. Online resources are now centralized and users will find clear, easy-to-use help with the emissions inventory reporting process. Web site visitors can learn what the Emission Inventory Section does and

why, and find facts such as which methods of calculating emissions are acceptable to DEQ. The Web site is an accessible source of the latest information on critical issues, such as changes in reporting requirements, up-to-date instructions and references. Information posted on the site reduces the

need for customers to phone with frequently asked questions (FAQs), and it can supplement telephone advice on more complex issues. DEQ customers can read and learn at their own pace at a convenient time, including outside normal business hours. The Emissions Inventory Section Web site



Examples of the Emissions Inventory Section web pages.

After Three Years, Leak Detection and Repair (LDAR) Programs Succeed

Regulated Leak Detection and Repair (LDAR) programs are designed to minimize unintended emissions of volatile organic compounds (VOC) and hazardous air pollutants (HAP) from specific industrial and commercial processes and equipment. The programs are meant to catch and repair pollutant leakage early, at the equipment or process level, before it becomes a facility-wide problem.

Most LDAR programs consider that a leak is occurring at a monitor reading of either 500 or 10,000 parts per million (ppm), depending upon the program requirement. In 2003, the Air Quality Division began a program of on-site comparative monitoring at affected facilities such as refineries, natural gas processing plants, chemical manufacturing and other facilities subject to national pollution standards (NSPS, NESHAP and MACT). LDAR regulations require facilities to self-monitor affected sources periodically, often monthly, and to report the results to DEQ semi-annually. Each year, the agency

goes on-site to evaluate compliance at a representative number of regulated facilities.

When the division first initiated the on-site program, staff found in-

adequacies in the majority of the facilities' monitoring and reporting efforts. For the past three years, Air Quality staff have worked with the affected facilities to improve com-

pliance. As a result, the state's required LDAR programs are becoming increasingly successful at reducing fugitive emissions from regulated facilities. ■

Portable Emissions Analyzer (PEA)

DEQ's Portable Emissions Analyzer (PEA) program monitors pollutant emissions from combustion sources such as turbines, internal combustion engines and other sources. Combustion emission limits are set by permit or regulatory requirements. Sources may be located at refineries, chemical manufacturing plants, wood products facilities, compressor stations, pump stations, natural gas processing plants, shipping and receiving depots, small electric generation facilities, and other similar places. In Oklahoma, drivers for natural gas compression (internal combustion engines and turbines) make up the largest population of subject sources.



Kevin Carter of Air Quality preparing the department's Portable Emissions Analyzer for a compressor engine compliance test.