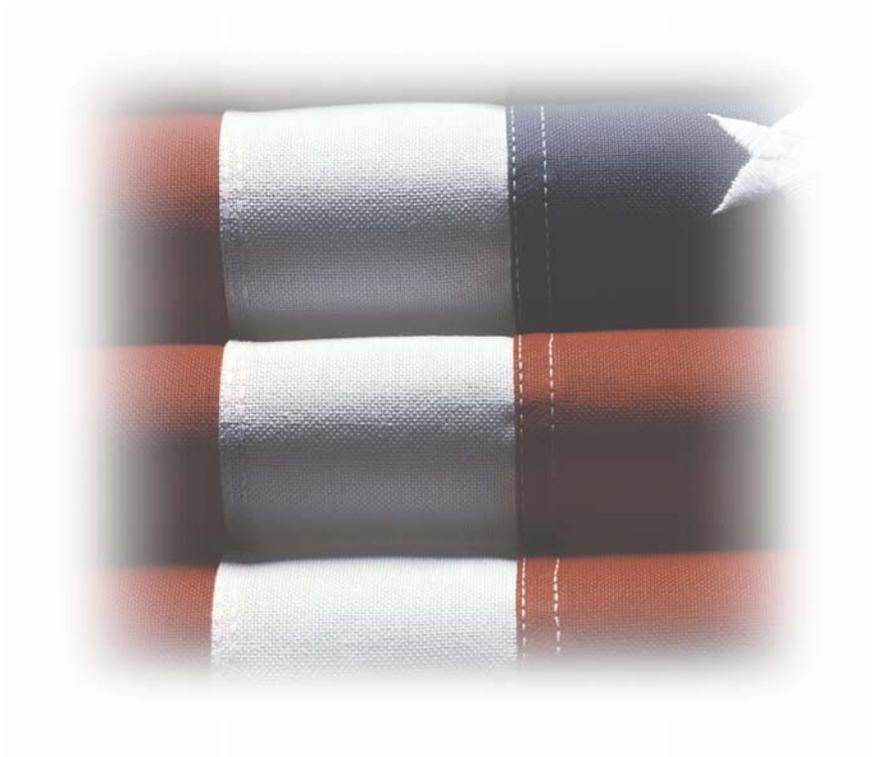


LAND PROTECTION



LAND PROTECTION CONCENTRATES ON LAND REVITALIZATION

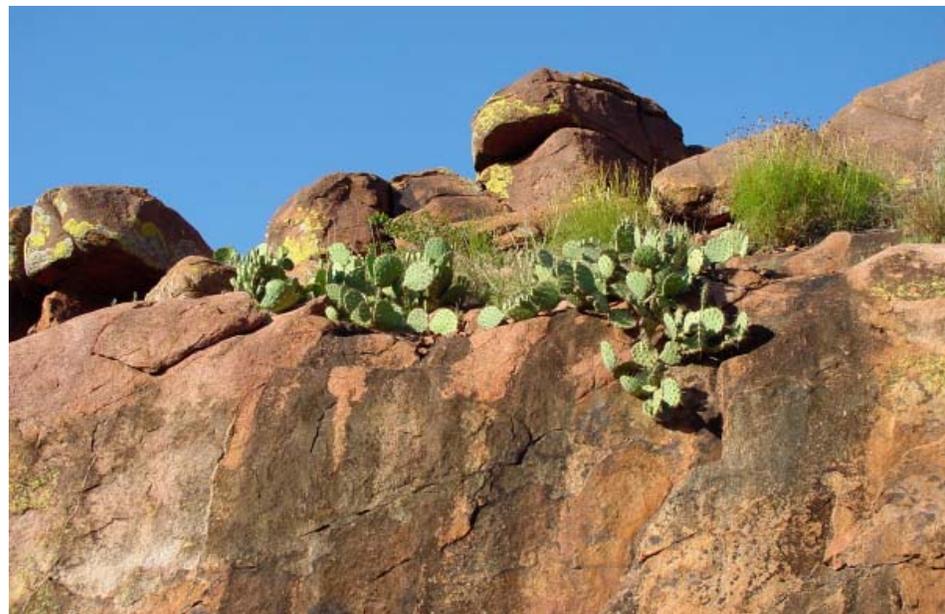


Bison grazing near the Wichita Mountains

Oklahomans cherish their State's wide-open spaces and yet recognize the need for economic development and the inherent change that comes with progress. Like most Americans, when progress is achieved, Oklahomans celebrate the new while mourning the loss of bygone days. DEQ understands the relationship between economic development and a clean environment. To that end, DEQ is at the forefront of new environmental programs such as Voluntary Cleanup and Brownfields Redevelopment, Resource Conservation and Recovery Act (RCRA) Brownfields, the One Cleanup Program concept, Land Reuse and Land Revitalization, Ready for Reuse, Community Problem Solving and Land Reclamation. All of these programs share a basic tenet, to reduce the barriers that hinder the cleanup and reuse of contaminated properties. These programs enhance the agency's priority to ensure that contaminated properties are cleaned up in a manner that allows the land to be beneficially reused. Cleaning up and reusing Oklahoma's former industrial sites protects our productive farmlands and beautiful, scenic wilderness areas from development. Several revitalization projects are highlighted in this section.



A farmer harvests his grain in Jackson County



Prickly Pear Cactus grows in the Quartz Mountain State Park

The Land Protection Division oversees numerous environmental cleanups of contaminated land, but that is only a portion of its responsibilities. The Division also regulates the disposal of solid waste, non-hazardous industrial wastes, discarded tires, hazardous wastes, biomedical wastes and certain radiation sources. DEQ also assists with household and commercial recycling programs and provides environmental education to the public. Protecting the land from improper waste disposal safeguards the surface water, ground water and air from these pollutants. DEQ's efforts to ensure that wastes are properly disposed strengthens the natural environment by protecting the state's ecosystems thereby ensuring that Oklahoma's lands remain viable and productive for future generations. ★



Buffalo roam across the Wichita Mountains



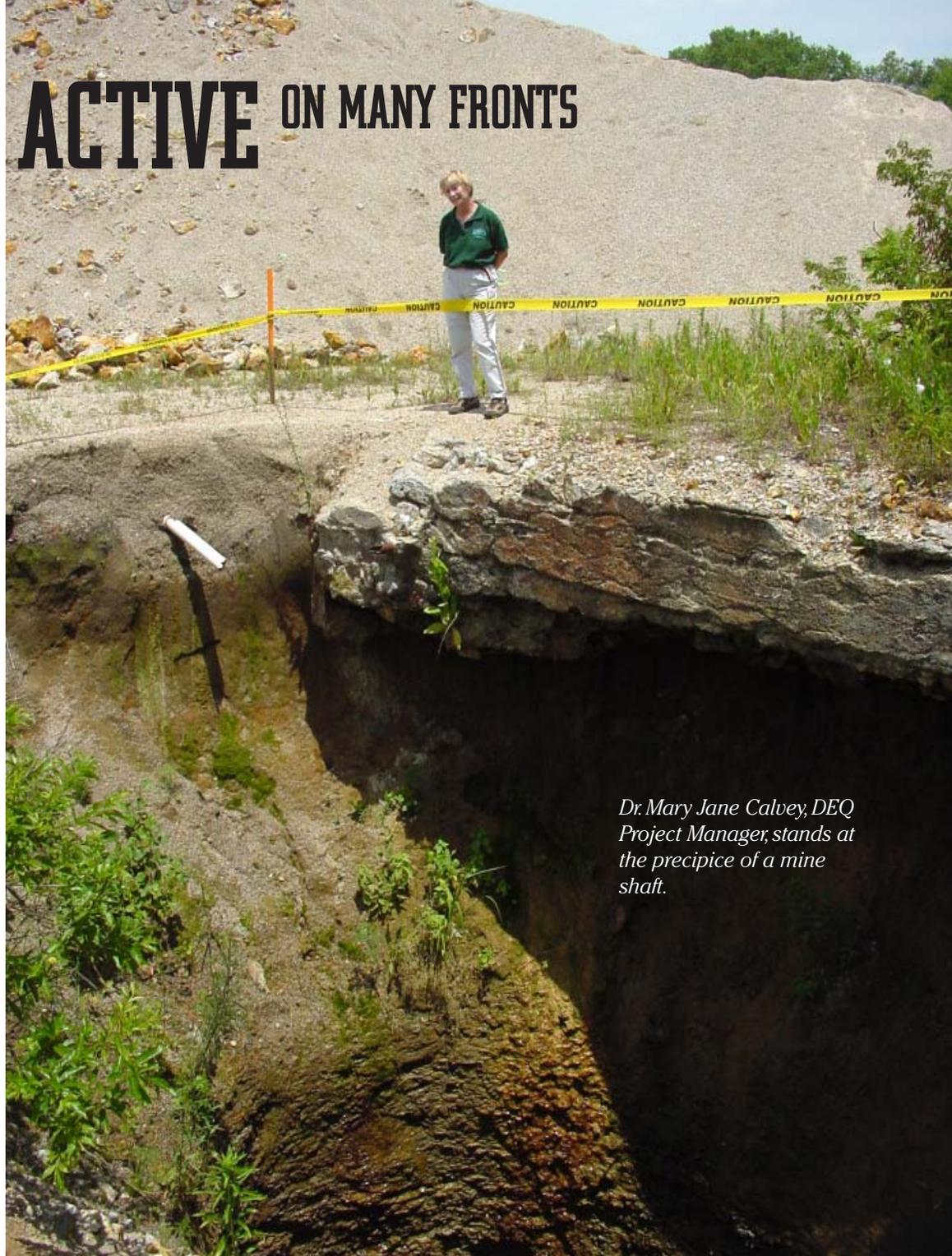
A mountain top view in the Wichita Mountains

TAR CREEK TEAM ACTIVE ON MANY FRONTS

The Tar Creek Superfund site in Ottawa County, Oklahoma continues to garner headlines and much effort from DEQ and other federal and state agencies. This 47 square mile abandoned lead and zinc mining area in northeast Oklahoma made the first list of Superfund sites and is now described by EPA as one of the “mega-sites” that thwarts traditional cleanup methods.

The Oklahoma legislature, recognizing that a more proactive approach was needed to deal with this complex problem, appropriated four million dollars at the end of the 2002 legislative session. The money is for specific targeted projects, which allows DEQ to initiate the site cleanup from multiple directions.

Yard Cleanups - While over 1,400 residential yards in the five-city area have been replaced with clean soil, over 400 yards remain with lead levels greater than the 500 parts per million cleanup level. DEQ contributes 10% of the cost of this remediation to match EPA's costs. This includes addressing contamination found at daycare centers, school yards and public parks. Yard removals have led to a decline in the percentage



Dr. Mary Jane Calvey, DEQ Project Manager, stands at the precipice of a mine shaft.

of area children with elevated blood lead levels, down from about 33 percent to 12 percent. While this is still high, the Ottawa County Health Department reports that it is tracking fewer and fewer children with elevated lead levels.

Lead-Based Paint Testing -

Children exposed to heavy metals in their outside environment may be at higher risk for long-term health effects from indoor exposure to lead-based paint. Recognizing this, DEQ provided \$200,000 for Grand Gateway Economic Development Authority to initiate a lead-based paint testing program for area homes and a lead paint removal program for homes that test positive. Removal eligibility is determined on an income-based scale. DEQ continues its efforts to educate the community on the health risks posed by lead exposure and the devastating effects it can have on children.

Rail Spur Construction -

The 70 million tons of chat have great economic value as aggregate if used appropriately. Seed money for construction of a rail spur near the chat piles enabled Grand Gateway to raise money to build this spur near the Miami Area Industrial Park. The \$300,000 DEQ contributed will improve the economical transport of large volumes of chat for safe reuse.



A chat pile looms over federal lands.

Chat in Asphalt Study - Incorporating chat in asphalt appears to encapsulate the fine sized particles. This stops exposure to the heavy metals in the mine waste. DEQ contracted with the University of Oklahoma Asphalt Research Laboratory to design the optimum asphalt mixture using raw (unwashed) chat and then to test that material to determine whether or not metals' exposure could occur when the asphalt weathers or is reworked. All of the chat for the study has been collected, a survey of current area chat use is finished and testing on

the materials is ongoing. It is expected that the study will be complete in the summer of 2004.

Remediating and Reclaiming Chat-Scarred Land

- A large part of the site includes perimeter areas where remnants of chat piles and other mine features remain and limit reuse of the land. Typically, the residual chat has little or no economic value because the amount remaining costs more to get to market than it is worth. The heavy metal content of the residual mining waste could continue

to expose both people and wildlife and the chat-enriched soil will not support plant life. Open mine shafts and subsidence are physical hazards and also provide pathways for metal contamination to reach the surface water.

Land Reclamation - DEQ contracted with the Oklahoma Conservation Commission Abandoned Mine-Lands program to address all of these problems on a manageable tract of land to show what can be done with these currently unusable lands.

Continued on next page



One of many sinkholes that is being used as a dump.



Abandoned mine shaft.

Candidate sites were identified using a decision matrix, aerial photography, a list of potential sites, willing landowners and problem identification at each site. The first demonstration site has been surveyed and plans for reclamation are in the contractual bidding process. Reclamation on this site includes mineshaft plugging, subsidence filling, removal of surficial chat, grading and contouring and revegetation to grasses. The first project will produce pasture land and several ponds for the landowner. Lessons learned from this first project will be used to develop plans for grasslands or pasture sites in the area.

DEQ's multi-disciplinary team was drawn together across program lines to address many facets of this problem from different angles. Utilizing both the legislative allocation, grant funding and cooperative agreements, DEQ Tar Creek Team is focused on real progress. The following highlights just some of the efforts from the past year:

Water Quality

A Water Quality Coordinator was named for the Grand Lake watershed and a DEQ Water Quality Office was opened in Grove. The office is responsible for monitoring water quality in the Grand

Lake Basin, which includes the Tar Creek Superfund site and coordinating monitoring efforts with Tribal governments, the United States Geological Survey, Oklahoma and programs such as Oklahoma Water Watch. Data from this monitoring will be added to DEQ's GIS database for Tar Creek to improve site knowledge and planning efforts. Additionally, the office will co-

ordinate with the US Corps of Engineers as it begins a proposed drainage and flooding study of the area.

Geographic Information Systems (GIS)

Information from studies of Tar Creek need to be collected, verified and melded into a three dimensional model of the site, including the underground mine work-

ings. DEQ obtained aerial photography and underground mine maps of the area from 1927 to the present and using digital ortho-rectifying software, produced maps that display current and past problems at Tar Creek. These maps allow DEQ to track improvements in the area. Map layers such as land ownership, stream water quality, elevations and other features pro-

vide excellent planning and monitoring tools.

Environmental Complaints and Local Services

The Tar Creek Team is coordinating closely with the local DEQ office in its efforts to respond to complaints related to Tar Creek. The local DEQ office also assists the Team by

Continued on next page



Old foundations and chat piles left by the mining industry.

providing needed local historical information. Geolocating the city blocks where children with elevated blood lead levels live and searching for and mapping mineshafts and other mine features requires local knowledge of the Tar Creek area.

Customer Assistance and State Environmental Laboratory

Monitoring of area fish, their water environment and the lake and stream sediments provides valuable information that guides the decision-making process regarding future cleanup efforts and the safety of consuming local fish. A systematic fish collection program with analyses of fillets, whole and whole unviscerated fish provides baseline and comparison data for the project. A recent report shows that fillets of a variety of fish can be safely consumed, but that lead levels in whole fish suggest limiting consumption or choosing other preparation methods such as filleting.

Air Quality

Blowing dust from chat piles and chat embedded roads concern local residents. While un-encapsulated chat is no longer applied to area roads, dust from past chat use and from remaining piles still lingers. DEQ's air monitoring staff is working with EPA and

the Quapaw Tribe to implement a yearlong air monitoring effort around Picher and Cardin (the two towns with the most remaining chat).

Land Protection

While *Superfund* staff efforts continue, the recent planning for the investigation of Operable Unit 4, the non-residential portions of the site, required exceptional effort. This endeavor includes long-term water monitoring of the deep aquifer, yard cleanup oversight and other coordination with EPA. Coordination with EPA staff and local stakeholders requires many site visits and multiple meetings with local officials and residents.

Land Reclamation works with the Conservation Districts to supply needed organic material for land reclamation. This is accomplished by using local bio-solids from nearby sewage lagoons to provide nutrients to the barren soil. This allows vegetation to grow. The lagoons must be cleaned periodically to maintain their capacity and land reclamation is an excellent way to recycle the sludge. Initial efforts at applying this material over metal contaminated soils produced healthy plantings that will be sampled for lead to ensure that the potential forage crops are safe.

Project Coordination

DEQ's approach using a



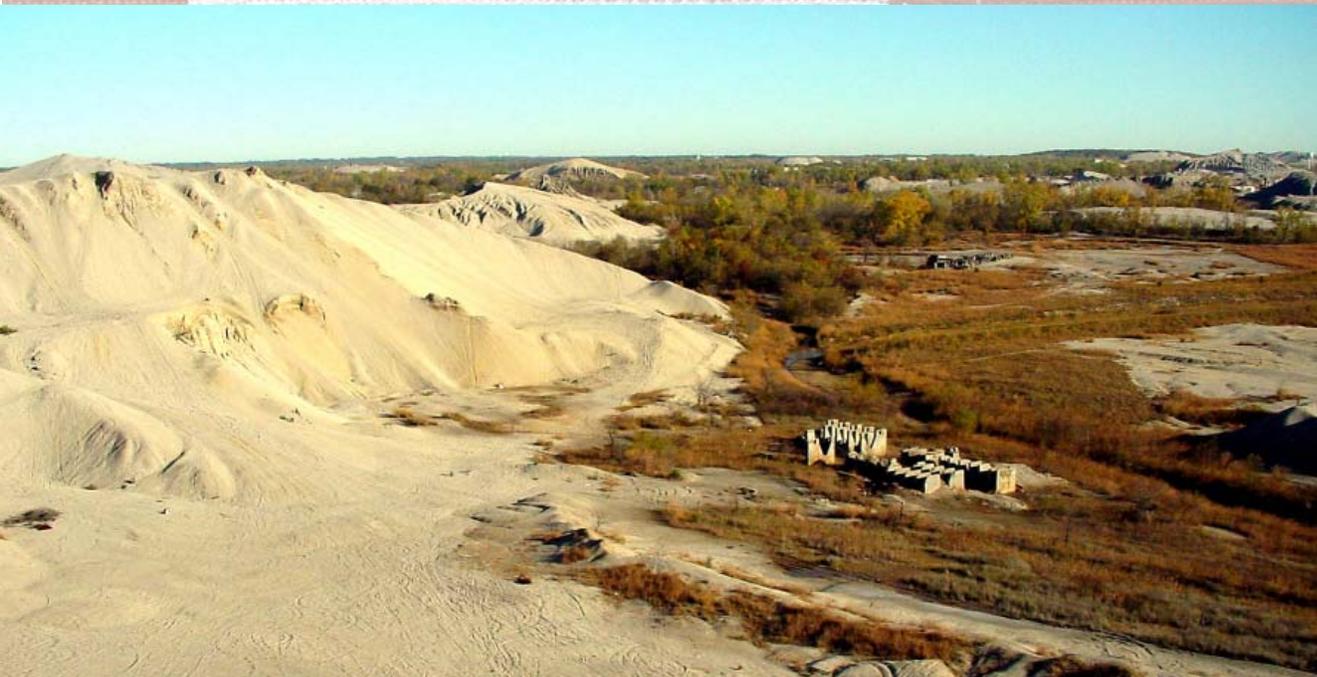
Processing chat for sale as asphalt road aggregate

multi-disciplinary team is developing and implementing practical projects that will show real improvements for the residents of Northern Ottawa County. Protection of human health and the environment continues to be the focus of DEQ efforts, but coordination with EPA, Army Corps of Engineers, Bureau of Indian Affairs (much of this land is managed by BIA for individual Indian Allottees), other state agencies and local governments ensures a synergistic improvement, increases efficiency and allows for "Big Picture" planning for long-term use of the site.

Many of the projects that were initiated within the last year are demonstrating visible improvements and improvements have been made behind the scenes as well. The challenge presented by the Tar Creek Mega-Site is great, but not overwhelming. Oklahoma's Governor, Brad Henry, Secretary of the Environment, Miles Tolbert and the entire congressional delegation all indicate that now is the time to effect real change at Tar Creek. DEQ will meet this challenge. ★



*A “monstrous”
chat pile, weath-
ered over time.*



*Vast chat piles
dot the land-
scape.*

FISH FLESH MONITORING IN THE TRI-STATE MINING AREA FOR SAFE FISH CONSUMPTION

Customer Services Division (CSD) performed a study to determine the safety of consuming fish caught in waters affected by runoff from the Tri-State Mining Area and the Tar Creek Superfund Site. Responding to concerns of local residents and tribes, the study was designed to determine levels of metals in fish tissue. A level of metal in fish tissue that could be harmful to human health if consumed in excess amounts was also determined. Tribes from the Tar Creek area indicated that traditional customs included eating whole fish, including

bones, which had been canned using a pressure cooker. Since metals accumulate in the bones and organs of fish, there was a concern that these traditional methods of preparation might be unsafe.

CSD field personnel worked cooperatively with the US Fish and Wildlife service to collect fish from the Neosho and Spring Rivers as well as local ponds receiving mine waste runoff. The State Environmental Laboratory (SEL) developed special sample preparation and analysis methods specifically



Brian Magott collecting river water for fish monitoring.



Brian Magott and Randy Parham collecting fish for analysis.



Randy Parham holding a completed sample ready for analysis.

MORE PHOTOGRAPHS OF THE CUSTOMER SERVICES FISH MONITORING TEAM



Above : Anthony DeGeare and Jennifer Fennil preparing fish for analysis.

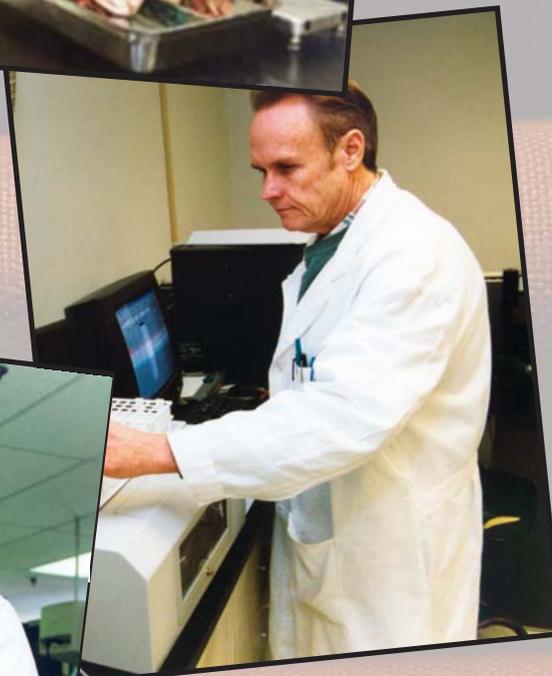


Left: Brian Magott also grinding fish for laboratory analysis.

for this study. Risk assessment personnel used EPA guidance to calculate acceptable fish tissue levels for cadmium and zinc and developed a method for determining safe lead concentrations in fish.

Results of the study concluded that whole fish from the Tri-State Mining Area should not be consumed, but fillets were safe to eat. In other words, preparation that removed the bones in which metal accumulated prior to cooking resulted in fish that was safe to eat. Fish from the Tar Creek area had higher concentrations of lead than those found in fish collected in a national study. The higher fish tissue lead concentrations were positively correlated to lead concentrations in the sediments of the area waters. ★

Right: Steve Forrest analyzing samples.



Left: Erin Lovelady working in the State Environmental Laboratory.



USE OF GIS IN THE TAR CREEK AREA

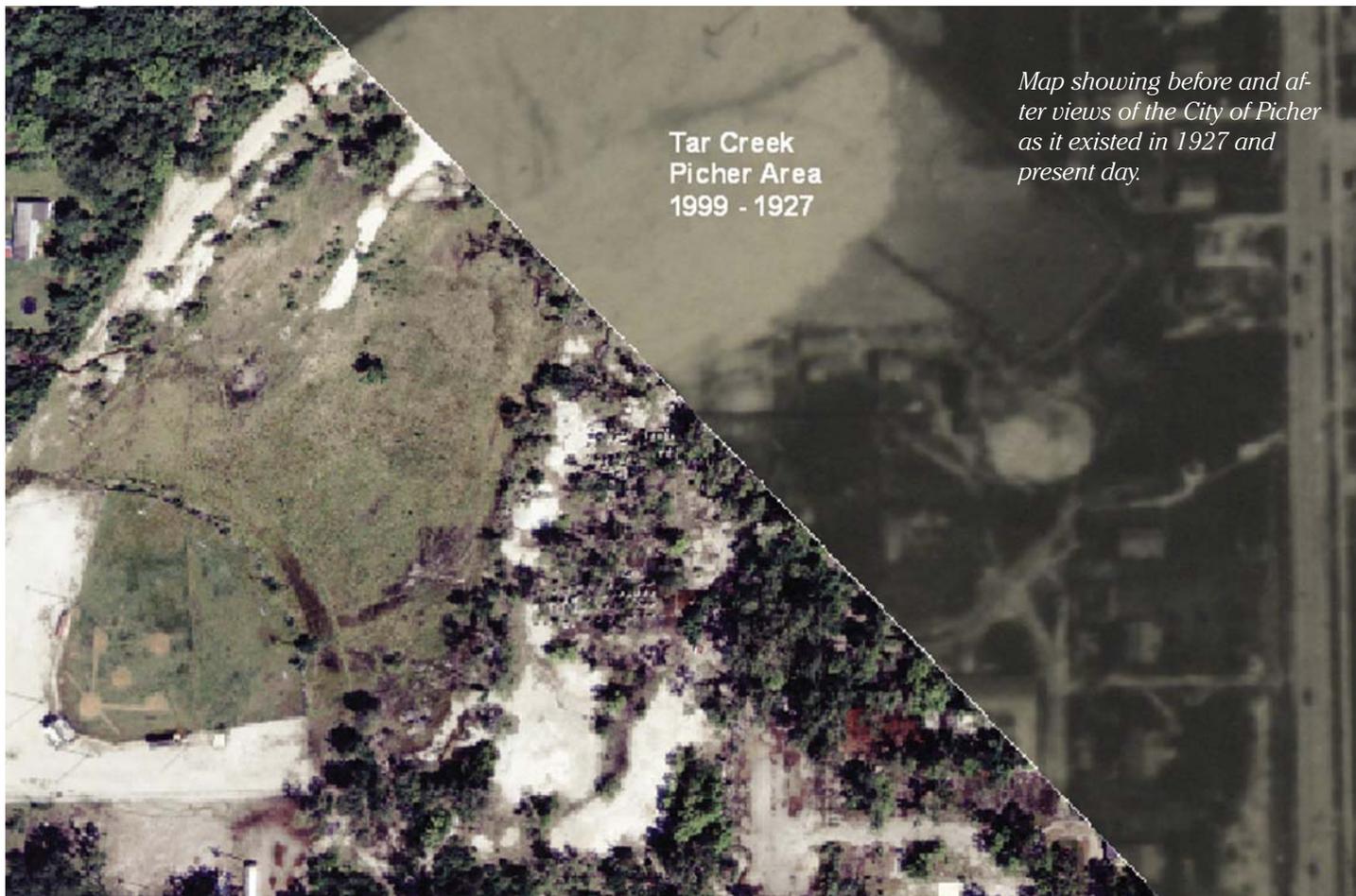
In support of efforts to address environmental problems associated with the Tar Creek Superfund Site, DEQ has been tasked with compiling geographical information for the area and providing visual tools for evaluation and planning. A significant amount of information has been col-

lected that includes both historical and newly generated data.

Information ranging from historical mine maps to aerial photography has been brought into various Geographic Information System (GIS) applications to aid staff in determining appropriate

options for addressing environmental concerns in the area. Although the benefits of GIS are too numerous to list, a good example would be using aerial photography from various points in time (1927-1999) to evaluate cause and effect of mining activities throughout the years.

In many areas, existing surface features simply do not tell the whole story for a site. It is imperative that we have the ability to evaluate historical data as well as provide accurate information on mine extents, areas that may be susceptible to subsidence and locations of mine shafts. ★



Map showing before and after views of the City of Picher as it existed in 1927 and present day.



Commerce Central Mill Area
1927 - Present

Map showing before and after views of the Central Mill near the City of Commerce as it existed in 1927 and present day.

SUPERFUND

THE SUN SETS ON THE HUDSON OIL REFINERY IN CUSHING



Hudson Refinery's last days.

The abandoned and unused refinery in Cushing, Oklahoma, posed a significant environmental hazard. DEQ, EPA and the City of Cushing, with the assistance of the U.S. Army Corps of Engineers and the U.S. Coast Guard Gulf Strike Team, responded to this hazard by demolishing the remaining refinery superstructure at the Hudson Oil Refinery in Cushing. The demolition was conducted as a Superfund Non-Time Critical Removal Action. The project was accomplished quickly and under budget. DEQ is preparing to start the Remedial Investigation/Feasibility Study of the site to find out what additional environmental cleanup may be needed. There is both private and public interest in redeveloping the property once it is remediated. ★



Above: Asbestos workers remove asbestos insulation from the superstructure.



The partners in the demolition.



Cranes bring down the smaller towers.

Oklahoma Department of Environmental Quality



A tetraethyl lead tank is removed from its house.



Larger towers were brought down with explosives.



An aerial photo of the site after demolition.



A worker begins cutting supporting structures.

VOLUNTARY CLEANUP PROGRAM

KERR MCGEE REFINERY, CUSHING

The Kerr McGee Refinery site operated in Cushing, Oklahoma from 1915-1972. Kerr McGee also operated a nuclear plant on the site from 1962-1966. In 1990, Kerr McGee agreed to clean up the site under DEQ and Nuclear Regulatory Commission's (NRC) supervision. Kerr McGee's approach to the site was to take care of the "worst first;" therefore, five large acid sludge pits were excavated, treated and disposed in a constructed cell on-site. This work was completed in 2002.

Kerr McGee is conducting a site characterization of the site. This will include the sampling of the soils, subsurface soils and groundwater on the site. Once site characterization is complete, Kerr McGee will evaluate remedial options, present the alternatives to DEQ and DEQ will evaluate the alternatives and issue a Proposed Plan for the cleanup, which will be available for the public's review and comment.

Concurrent with the cleanup of the chemical contamination, Kerr McGee has been actively decommissioning the radiological contamination. Radiological waste was recently shipped off site



Before and after photos of the former Kerr-McGee refinery in Cushing.

for permanent disposal in Utah under the oversight of the NRC. The decommissioning is expected to be complete in 2005.

Approximately 80-acres of the southeast portion of the site will be transferred to Seminole Transportation and Gathering (STG) for crude oil transmission and storage operations. Kerr McGee will maintain ownership of the remaining 360-acres of the site and preserve that acreage as a greenspace. ★



TULSA HOME DEPOT

The Home Depot Corporation was interested in locating a new store in Tulsa on property that had previously been used for manufacturing electrical products. During an environmental assess-

ment, groundwater contamination was detected. Home Depot entered DEQ Voluntary Cleanup Program to characterize the site. The company is currently monitoring the groundwater. The

monitoring does not interfere with the development or use of the property, which allowed Home Depot to proceed with its enhancement of the property. ★

Photograph of the site after the redevelopment.



WAL-MART SUPERCENTER REVITALIZES FORMER SMELTER SITE

WAL-MART SUPERCENTER MOVES ONTO BROWNFIELD SITE

The former Federated Metals zinc smelter site is long gone. In its place rises the new Sand Springs Wal-Mart Supercenter. Construction is

almost complete and the Supercenter should be open for business in August. The site is a former zinc smelter that closed in the early 1980s. The site was cleaned up un-

der DEQ's Brownfield Program by Federated Metals and is being offered for development by the new owner, Kucharski Development.

Wal-Mart expects that 250 new jobs will be created at the new location. The Wal-Mart is spurring additional development in the area and the city is in discussions with major national development corporations. ★



Wal-Mart Supercenter, Sand Springs, constructed on the former Federated Metals Brownfield site.

BROWNFIELD TARGETED SITE ASSESSMENTS

NEW TILLMAN COUNTY BARN

In 2002, DEQ performed a Brownfields Targeted Site Assessment of a former refinery in Grandfield. Portions of the old refinery are owned by the City of Grandfield, Tillman County and various private owners. The City of Grandfield plans to market its portion of the property to commercial and industrial users and Tillman County built a new County Barn on its portion of the site. DEQ provided a site assessment of the subsurface and wastes on site. DEQ, Grandfield, Tillman County and the Association of South Central Oklahoma Governments (ASCOG) are working with a responsible party to remove the remaining refinery wastes that are scattered around the site.

Tillman County received a grant to construct its new county barn and was able to build on a portion of the refinery property that was shown to be unaffected by refinery wastes. ★



*County Commissioner
Kent Smith stands in
front of Tillman County's
new County Barn.*



SOLID WASTE STAKEHOLDER RULEMAKING PROCESS COMPLETE

On June 1, 2003, a three-year rules development process was completed when new solid waste rules came into effect. OAC 252:515 is the culmination of a three-year process in which DEQ, in partnership with members of the regulated community, environmental consultants, local governments and other interested parties, performed a thorough review and rewrite of the solid waste management rules. This is the first time in DEQ's history that such a coordinated effort has been undertaken to evaluate and

streamline its regulations. The new chapter governs management of solid and industrial waste at 41 landfills across Oklahoma.

The process began in February 2000, when DEQ sent a questionnaire asking for volunteers to participate in this process. Approximately 60 persons expressed interest in participating and became part of what was known as the "rules development group." Between May 2000 and December 2001, the group held 16 meetings. While not everyone attended every meeting,

all members of the group, as well as members of the Solid Waste Management Advisory Council, were kept informed of the meeting discussions and outcomes via an e-mail list that was developed for the project. In addition, all information related to the process was posted on DEQ's web page.

Some of the major benefits of the new regulations include clarifying which rules apply to which facilities, reducing requirements without jeopardizing environmental protection, streamlining various pro-

cesses and eliminating unnecessary requirements. In conjunction with the rulemaking effort, DEQ staff developed several guidance documents to help owner/operators comply with the new rules.

OAC 252:515 represents a significant revision to the solid waste rules, which DEQ expects will remain in place for many years. The success of the rules development process has shown that DEQ and the regulated community can work closely to develop rules that are agreeable to all affected stakeholders. ★

The Allied Waste Systems Landfill in Newcastle.



HAZARDOUS WASTE COMPLIANCE SECTION DEVELOPS NEW GENERATOR INSPECTION FORMS

The Hazardous Waste Compliance Section of the LPD is composed of Inspection and Enforcement personnel and Data Management personnel. The Inspection and Enforcement personnel are responsible for inspections of permitted hazardous waste treatment/storage/recycling/disposal facilities and hazardous waste generator facilities. In addition, personnel conduct hazardous waste complaint investigations, criminal investigations, facility waste sampling, preparing and issuing enforcement actions and regulatory research. The Inspection and Enforcement personnel initiated an effort to develop new generator inspection forms to be used in fiscal year 2003 in lieu of more lengthy narrative generator inspection reports. With the development of the new generator inspection forms, personnel have been able to visit more generator facilities to assess not only hazardous waste, but also the various facilities' nonhazardous waste disposal practices. Generator facility inspections for fiscal year 2003, which included the same number of available inspectors, increased 54% from fiscal year 2002 with the development of the generator inspection forms. ★



*DEQ inspector, Mike Stickney (right), inspects a facility.
Inset: DEQ inspector, Jonathon King collects a sample from a drum.*

HAZARDOUS WASTE DATA MANAGEMENT

Land Protection Data Management staff is responsible for collecting and managing hazardous waste data in both an internal database and a federal database. The data inputs include facility inspections, facility violations (identification and closure), facility enforce-

ment actions, fines assessed and collected, facility notification form information, biennial reporting information, monthly and quarterly report information, permit issuance, permit modifications, corrective action activities and groundwater activities. Various reports can be

prepared from input data such as to identify the number of facilities' inspections in a specified time period, types of violations at individual facilities, types of enforcement action issued to individual facilities, permit modification approvals, corrective action status and

state disposal plan status reports. Data Management personnel also prepare reports from the data to identify amounts of hazardous waste generated and disposed in Oklahoma, including amounts of hazardous waste imported to Oklahoma for treatment, storage and disposal. ★



Hazardous wastes placarded for disposal.

DEQ ASSISTS IN THE INVESTIGATION OF METHAMPHETAMINE LABS

DEQ in conjunction with the Oklahoma State Department of Health, the Oklahoma Bureau of Investigation and the Oklahoma Bureau of Narcotics and Dangerous Drugs developed guidelines to help clean up houses in which a methamphetamine lab operated. DEQ receives several calls a week from concerned citizens requesting information in this area. The citizens are either referred to DEQ/LPD web page for the guidelines or a printed copy of the guidelines is mailed to them.

Local law enforcement agencies have requested DEQ's assistance in the investigation of several properties where they suspected that the soil and water had been contaminated by illicit methamphetamine production. DEQ has participated in several training events to educate local law enforcement agencies and the real estate community about the environmental hazards of clandestine labs. ★

Michael Freeman, DEQ enforcement officer, educates real estate professionals.



*Busted!
The remnants of a meth lab.*



MAJOR RCRA PERMITS ISSUED

The Land Protection Division issued three major permit renewals, as well as a number of minor permits and permit modifications, during the 2003 Fiscal Year. In the RCRA hazardous waste program, renewing a permit can be nearly as difficult and time-consuming as obtaining a new permit, since all technical aspects of the permit are reconsidered. Of note were the Post-Closure Monitoring Permit issued for Cavenham Forest Industries, in Sallisaw, the Operations Permit for Total Petroleum (TPI), in Ardmore and the Operations Permit for the ConocoPhillips Refinery in Ponca City.

Cavenham The Cavenham Sallisaw plant produced wood and timber products and treated wood using creosote as a preservative. Wastes produced by the plant were disposed on-site and were consolidated into a single landfill. The permit addresses maintenance of the closed landfill and performance of groundwater monitoring during the post-closure period to assure that no hazardous constituents are escaping from the site. Several decades of post-closure maintenance and monitoring will be needed.

The plant originally opened in 1946 and has been closed for several years. Cavenham is headquartered in Hattiesburg, Mississippi.

Total Petroleum (TPI, Inc.) TPI owns and operates a petroleum refinery in Ardmore that produces a wide range of petroleum distillates and related products. Wastes from these processes have been managed and disposed on site for many years and are being produced today from this active facility. The permit provides for better management of wastes produced by the continued operation of the refinery, as well as post-closure maintenance and monitoring of several areas where petroleum wastes were disposed of by "land-treatment" methods. Some of the land treatment plots remain in operation for disposal of non-hazardous wastes. In addition, the permit covers an on-going Corrective Action program at the refinery to locate, investigate and remediate (as needed) old spills or disposal areas.

"Land Treatment" for wastes involves the spreading of controlled quantities of organic wastes (such as petroleum-related materials) onto prepared land areas. These

OTHERS PENDING

wastes are then tilled into the soil and the plots are fertilized and watered as needed to encourage bacterial action to degrade and weather the wastes to reduce their toxicity.

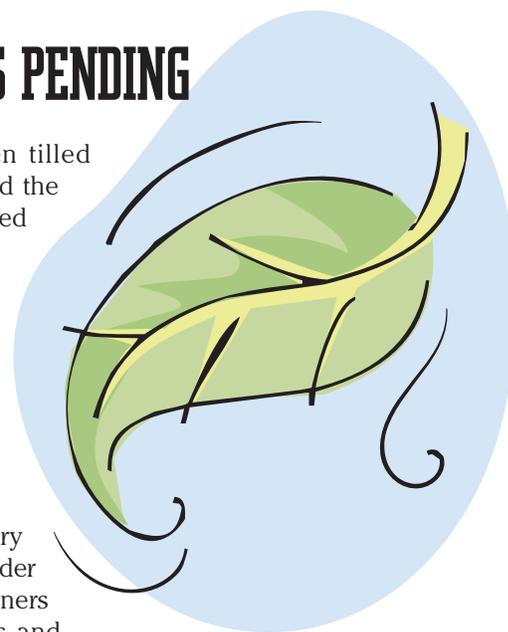
The TPI refinery has operated under a number of owners since the 1920s and continues in operation today.

ConocoPhillips Refinery

The operating permit for the ConocoPhillips Refinery in Ponca City, was renewed late in FY 2003. It is very similar in concept to the TPI Permit described above although it presents a number of different challenges. The ConocoPhillips permit was over five years in the making, due to the complexity of its waste management situation.

The Ponca City refinery began operations early in the last century and remains the largest active oil refinery in Oklahoma.

Waiting in the Wings One more major permit renewal is nearing completion as of the end of the 2003 Fiscal Year. The draft of the post-closure



permit for the ZCA (Zinc Corporation of America) facility in Bartlesville is nearing completion and will be available for public comment by later this year. The ZCA facility had operated since early in the 20th century as a smelter for lead and zinc and other metallic components and is now closed. The facility is completing a large, multifaceted Corrective Action program to consolidate thousands of tons of waste materials into several landfill units and cap and close them. Long-term monitoring of the groundwater will be required to assure that no contaminants are leaving the site. ★

UNDERGROUND INJECTION CONTROL PROGRAM ENHANCED

The practice of injecting liquid wastes into deep underground formations for disposal is highly complex and closely controlled, since the actual "disposal site" can be several thousand feet underground. This makes monitoring of the performance and behavior of an injection well a complicated task. The Un-

derground Injection Control program has seen major enhancement during FY 2003 to provide even greater assurance that the behavior of injection wells is understood and regulated as needed.

With the assistance of an EPA grant, DEQ purchased a commercial computer software program that has greatly

expanded the Division's capabilities to analyze the behavior of a given well through careful evaluation of well pressures during pumping and "fall-off" testing. The PanSystem 3.0 software purchased is unique and is used by the petroleum industry throughout the U.S. This software can provide multiple si-

multaneous data plots and evaluations, allowing LPD staff to closely examine the effect that changes in well parameters have upon well performance. It also allows predictions regarding the useful life of an injection well, which is vitally impacted in planning for future disposal needs. ★

"USE LESS STUFF" CAMPAIGN ENSURES THAT LESS OF OUR NATURAL RESOURCES IS USED



Use
Less
Stuff

The second annual Oklahoma Use Less Stuff Week was proclaimed for April 19-26, 2003. DEQ coordinates this campaign and partners it with Earth Day, which is held annually on April 22. Since using less stuff is something everyone can easily do to celebrate Earth Day, the agency

decided to combine these events. Ways to "Use Less Stuff" include recycling and source reduction.

Recycling is a way to ensure that less of our natural resources is used to satisfy our daily needs and maintain our modern lifestyles. However, to make a real impact on saving resources and energy, we must learn not to create so much waste in the first place, by reducing and reusing products and packaging.

Source reduction can be practiced effectively on a corporate, community or personal level. It helps the environment, but it can also be

financially rewarding. If you simply "Use Less Stuff," some good things will happen. For one thing, you'll save money every time you shop. Also, your town will save money. That's because the cost of preventing waste is zero, while the cost of recycling, not to mention landfilling, can be very expensive. Thus, prevention means more money for important services such as education, crime prevention, road maintenance and human services. Using less stuff therefore plays a major role in efforts to develop a sustainable society, one that makes efficient use of resources while minimizing man's impact on the environment.

DEQ provides many materials to Oklahomans who are interested in the idea of Using Less Stuff. The agency has developed a series of articles, which have been disseminated as press releases, on topics such as composting, ozone awareness, water conservation, grass recycling and household pollutants. DEQ has also developed a resource list and a series of articles on the Secret Lives of Stuff to help inform Oklahomans about the large quantity of resources that go into producing a product. DEQ also has educational handouts to help promote the concept of Use Less Stuff such as recycled Styrofoam pencils and "Use Less Stuff" buttons, decals and posters. ★

DEQ CONDUCTS ENVIRONMENTAL SEMINARS FOR REAL ESTATE COMMISSION

At the request of the Oklahoma Real Estate Commission, DEQ provided environmental seminars to real estate professionals across Oklahoma. Both residential and commercial issues were addressed in the seminars. Topics included many subjects that affect real estate transfers such as methamphetamine labs, septic tanks, mold, lead paint, dilapidated buildings, radon, mercury, pesticides, illegal dumps, contaminated property and DEQ's Brown-field Program. The seminars were well received and DEQ continues to receive requests to conduct these meetings. ★



Fenton Rood, left fields a question from the audience. Also shown is Marvin Boatright.



Seminar for the real estate professionals in Duncan.

OKLAHOMA DEQ HOSTS 5-STATE RCRA INSPECTOR'S WORKSHOP



Hazardous Waste placards.

DEQ hosted the RCRA Inspector's Workshop, April 22 – 24, 2003, at the Marriott Hotel (Northwest Highway), in Oklahoma City. This 3-day seminar is held yearly to provide a training environment for inspectors and permitting staff in the hazardous waste programs of the five states covered by EPA Region 6. For the past several years, the Workshop has been held in Texas, but DEQ worked tirelessly to move it to Oklahoma this year.

Some 110 attendees were at the Workshop, representing various states, city or county

law enforcement and environmental programs and several Tribal environmental programs. A total of 27 speakers made presentations over the course of the Workshop. ★

